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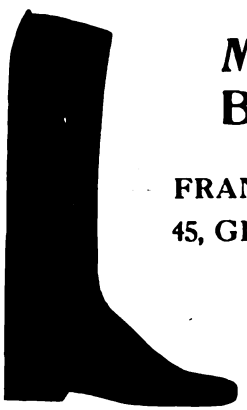
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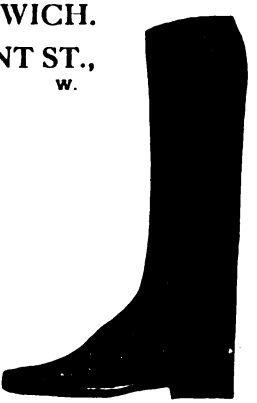
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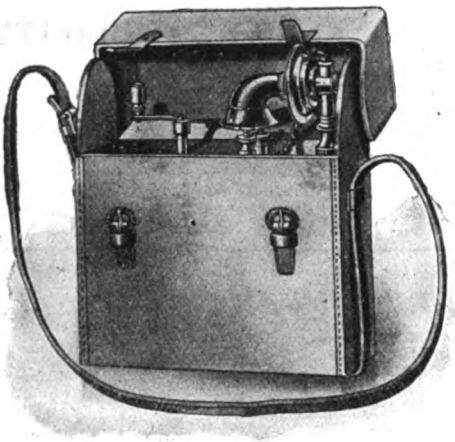
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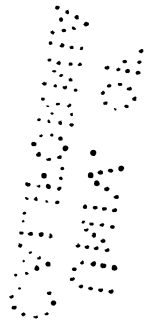
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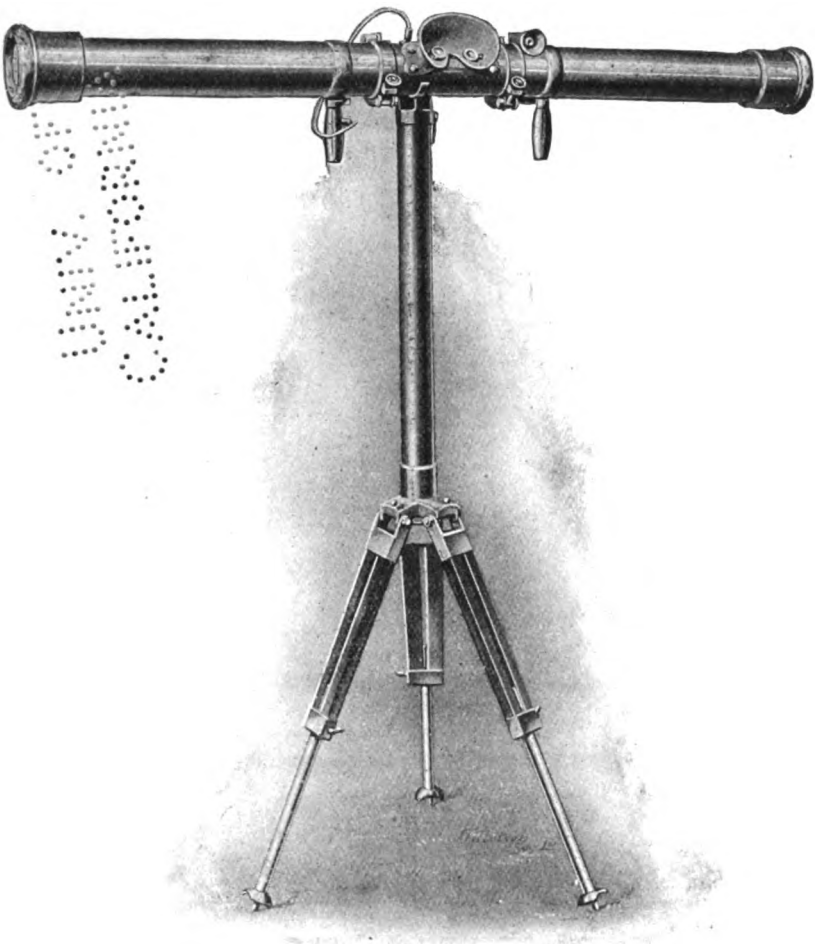
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VOL. LV. JANUARY, 1911. No. 395.

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SECRETARY'S NOTES.

I. NEW MEMBERS.

The following Officers joined the Institution during the month of December:—

Lieut.-Colonel T. W. H. Mitchell, 5th Bn. York and Lancaster Regiment.
Major A. S. Hamilton, 52nd Sikhs.
Lieutenant R. J. H. Purcell, K.R.R.C.
Major H. L. Roberts, 91st Canadian Highlanders.
Second-Lieutenant H. B. Peacock, R.F.A. (T.F.).
Captain F. W. Darwall, late Northumberland Fusiliers.
Lieutenant W. M. Edwards, R.G.A.
Lieutenant G. F. Carlton, R.N.R.
Major H. W. F. Cooke, 24th Punjabis.
Captain B. H. Fanshawe, R.N.
Captain R. F. Riley, D.S.O., K.O. Yorkshire Light Infantry.
Captain J. L. B. Vesey, Royal West Surrey Regiment.
Major W. D. Phillips, 5th Bn. Welsh Regiment.
Lieutenant E. G. Hall, 117th Mahrattas.
Rev. W. H. Tod, M.A., Chaplain, R.N.
Lieutenant A. H. Stewart, Gloucestershire Regiment.
Captain L. H. Tudor, South Wales Borderers.
Lieutenant J. F. Gray, R.E.
Captain A. E. Burnett, K.O. Scottish Borderers.

II. SUMMARY OF MEMBERS.

The Council have pleasure in reporting that during the past year 295 officers joined the Institution. There were 131 withdrawals and 88

deaths (of whom 29 were life members), making an increase of 76 on the year.

The details of Members joining were:—

Regular Army	183
Royal Navy	49
Territorial Force (including Yeomanry)	36
Special Reserve	12
Royal Marines	9
Indian and Colonial Volunteers	5
Royal Naval Reserve	1
	295

The total number of Members of the Institution on 1st January was 5,611. It is hoped that Members will not relax their energies in introducing new Members; a pink form is placed in each JOURNAL with this special object.

III. COUNCIL.

The following Members of the Council retire at the Anniversary Meeting on 7th March, having completed three years' service:—

Lieut.-General Sir R. S. S. Baden-Powell, K.C.B., K.C.V.O.
Lieut.-General H. D. Hutchinson, C.S.I.
Brigadier-General F. I. Maxse, C.V.O., C.B., D.S.O.
Brigadier-General H. H. Wilson, C.B., D.S.O.

Admiral-of-the-Fleet Sir G. H. U. Noel, K.C.B., K.C.M.G.
Vice-Admiral Sir C. Campbell, K.C.M.G., C.B., D.S.O.
Vice-Admiral A. M. Field, F.R.S.
Colonel The Viscount Hardinge.
Lieut.-Colonel Hon. T. F. Fremantle.

IV. ROYAL PROCESSION TO OPEN PARLIAMENT.

On the occasion of His Majesty the King opening Parliament in State on 6th February, the Museum will be closed to the public until after the Royal Procession has returned. The Institution will be open as usual, but to **Members only.**

V. THE WAR GAME.

The Council has arranged that sets of maps and pieces for holding a War Game can be lent to any Regular, Special Reserve and Territorial Unit, or recognised Society of the same, at a fee of 10s. per occasion, the Unit or Society paying carriage both ways and making good any loss or damage incurred. Umpires, Assistant Umpires, Schemes and all other arrangements to be made by the parties engaged. Should it be desired, a room at the Institution can be placed at the disposal of the players after 5 p.m. at a charge of 10s. per evening, but not less than a week's notice should be given in respect of it.

VI. MUSEUM.

It will be of interest to the Members that no less a number than 1,974 petty officers, bluejackets and marines of the United States Navy, besides a very large number of their officers, visited the Museum during the recent visit of that Fleet to this country.

VII. ADDITIONS TO THE MUSEUM.

(6271) A Nelson Memorial Jug of Liverpool Ware and contemporary date, bearing the inscription "Horatia Nelson, born September 29th, 1758, died October 21st, 1805. Britannia weeping o'er the ashes of her matchless hero, Lord Nelson." On the back of the Jug are the landlord's cautions to his customers. —*Given by Captain J. F. Leigh Clare.*

(6272) Sword presented to Lieutenant Charles Brand, R.N., by his shipmates of H.M. Sloop *Cygnet*, on 22nd April, 1823, with the following address: "I am requested in the name of the ship's company of H.M. Sloop *Cygnet* to present you with this sword, as a small though sincere token of their esteem and regard for your upright and officer-like conduct in the *Cygnet*, as well as for your perseverance and humanity, some time since, in saving the lives of four shipwrecked sailors off Beachy Head, and supporting them out of your own purse till their recovery. We pride ourselves that you will wear this sword with credit to your country and with satisfaction to yourself, and that you may speedily have an epaulette on your larboard shoulder as well as on your starboard one is their fervent wish. You will please to pardon the homely terms of this address, as coming from a class of His Majesty's subjects who are always more ready to act than to speak, where either the honour of their country or their profession is the theme. It is an additional pleasure to me to have this opportunity of adding my own accordance in the sentiments and wishes of my shipmates on the eve of separating." Charles Brand joined the Navy in 1810, and retired in 1825, and saw much active service in various parts of the world.— *Given by Captain J. F. Leigh Clare.*

(6274) The following Medals:—

1. Silver Medal awarded by the Prince Regent for the Battle of Waterloo.

2. Commemorative Bronze Medal, bearing on the obverse the head of the Duke of Wellington and inscribed "Lieut.-General Lord Viscount Wellington, K.B., 1810," and on the reverse a winged figure of Victory.

3. Pewter Commemorative Medal, bearing on the obverse the head of the Emperor Napoleon I. with the inscription "Died 5th May, buried in Rupert's Valley, St. Helena, 9th May, 1821," on the reverse the head of George Washington, President of the United States.

4. A Silver Thaler, struck at Bremen in commemoration of the Peace of 1871.—*Given by Captain J. F. Leigh Clare.*

(6275) An Oriental Dress Scimitar, richly inlaid with gold on the hilt, blade and scabbard.—*Given by Commander C. R. Low, late Indian Navy, and formerly Assistant Secretary and Librarian of the Institution.*

siderable reserve. Had Burgoyne been permitted to land at New York and to avail himself of the well known loyalist feeling prevalent in that Province, it is highly probable the advance of their combined battalions had taken the form of a mere demonstration. The possession of the Hudson River from Albany to New York, a distance of one hundred miles, severed the Eastern or New England States from the residue of the disaffected area, and by isolation not only would gradually exhaust the resources of the town understood to be the storm centre, but also effectually check reinforcements reaching Washington's army from Massachusetts, Connecticut and other Eastern States.

But the Cabinet had decided that in no case was Burgoyne to proceed by sea from Canada to New York. Germaine appears to have been afraid of losing Canada, notwithstanding the failure of Arnold and the death of Montgomery in 1775, in their calamitous attack on Quebec.

American loyalist opinion considered that Germaine, on the principle of holding a candle to the devil, made Burgoyne chief of the Expedition because his appointment was expected to placate the Opposition. In appointing Burgoyne to this command, Germaine seized the occasion of inflicting a slight on Sir Guy Carleton, whom he hated, for Burgoyne on arrival in Quebec in May brought instructions to Carleton how to act in furtherance of the Expedition from Canada, so minute as to be insulting. Carleton had been conspicuously successful in management of his very difficult province; to which service may be joined his repulse of the marauding expedition promoted by patriots against Canada in 1776, at a time when Canada still regarded the Southern Colonies as bound to the Crown by the same ties as herself.

The failure of this filibustering expedition did not provoke Carleton to reprisals. Many New England men, ragged, hungry and sickly, fell into his hands, to find themselves the object of an almost paternal solicitude on the part of the Governor of Canada. He put clothes on their backs, shoes on their feet, and food in their wallets, exhorting them to return peacefully to their homes and to leave him to his own repose in the management of the tens of thousands of French Canadians with whom the memory of the fall of Quebec was too recent to be welcome. His clemency had not been approved in Whitehall, where being regarded as inert and unresourceful, the King, in view of Germaine's rancour, did not venture to push Carleton's interests, although it was well understood that the King and Lord North would have preferred to see Carleton in charge of the enterprise.

It says much for Burgoyne that, although he had become the official instrument of the slight offered to his senior officer, he managed to retain Carleton's regard in a friendship

always expressed in cordial terms. But Burgoyne's mellow disposition is admitted. Sergt. R. Lamb, who served in this campaign, tells how greatly Burgoyne was beloved by his army; Anburey confirms this opinion; Madame de Riedesel offers evidence of his joyous disposition under very adverse circumstances. After the memory of his disaster had become indistinct, Burgoyne in the House supported in generous terms a proposition to confer a pension on Carleton's family; a project that would have matured before, but for the rancorous opposition of Germaine.

At this time the American "Army of the North" was commanded by Schuyler. This New York patroon, whose services in the North have been characterised as "more solid than brilliant," had a mere simulacrum of an army, and was perhaps unfitted by temperament for the leadership of New Englanders excited as they were by the stimulating influence of a liberty on which, in their personal conduct they placed no practical limitations. He disliked New Englanders, and they retaliated by hating him. Graydon describes Schuyler's bias against New Englanders . . . "He (Schuyler) was at no pains "to conceal the extreme contempt he felt for a set of officers who "were both a disgrace to their station and the cause in which they acted." The general's hauteur induced the New Englanders to refuse service in the Northern Army, which had at this time been described by a military visitor as having "commis- "saries without provisions: quartermasters without stores: "generals without troops, and troops without discipline."

Schuyler, in anticipation of Burgoyne's advance from the North, had asked Congress for an army of 15,000 men, with the further condition that the bulk of the troops should be men of the South, that is Philadelphians or Virginians. His request was not granted; he was instructed to raise and equip locally as many regiments as possible. To his call New England States turned a deaf ear, hence recruiting was very slow, and the quality of the recruits, officers as well as men, unsatisfactory. Madame de Riedesel reports that after the capture of Burgoyne's army the escort conducting the prisoners of war to Boston consisted of New Englanders, of whose officers "some "had been shoemakers, who, on our halts, made boots for our "officers, and sometimes even mended our soldiers' shoes."

Officers from the sister States resented commissioned men engaging themselves to mend the shoes and shave the chins of private soldiers, whether British or Continental, for feudal ideas about knightly demeanour lingered yet among Virginian and Philadelphian and Knickerbocker gentlemen.

Mr. E. F. De Lancey states that in July, 1777, Schuyler had only 2,500 men under him at Fort Edward, and that after the Americans retreated from Ticonderoga his numbers, increased by the retreating force, were only 4,500, of whom 2,500 were Continentals or regulars and the rest militia. Of these,

two Massachusetts regiments deserted in a body bound homewards. Schuyler consequently withdrew before the British advance, his shadow of an army decreasing all the time until on the 4th August he had not 4,000 men to meet the approaching enemy.

"We have," wrote Schuyler to Washington, "not above 4,000 Continental troops, if men, one third of which are negroes, boys, and men too aged for field, or, indeed, any other service, can be called troops. The States from whence these troops came can determine why such boys, negroes and aged men were sent. A great part of the army took the field, in a manner, naked, without blankets, ill armed and very deficient in accoutrements. Too many of our officers would be a disgrace to the most contemptible troops that ever collected and have so little sense of honour that cashiering them seems no punishmen. *They have stood by and suffered the most scandalous depredations to be committed upon the poor, distressed, ruined, and flying inhabitants.*" The marauding propensities of the American Militia were, in the report of their own commanders, a matter of common remark. This being, according to corroborative evidence, the state of the Northern Army, it is obvious that a British advance up the Hudson from New York would without difficulty have pushed the American force backwards towards Canada.

Quitting these pleasing speculations as to what might have happened, we join Burgoyne in Montreal in June, 1777. He had on his arrival discovered matter for his most stringent censures in the fact that all his plans had for some weeks become the common talk of the town. How these stories got about is by some considered traceable to the plague of women, by others to Germaine's inability to keep his mouth shut: at any rate, the Expedition from Canada seems to have been discussed everywhere between Morristown and Montreal. The delays customary in a leisurely age when all business closed with the three o'clock dinner were increased both by the apathy of the Canadian French or by their active opposition to the preparations going
1777 forward. Burgoyne reached Quebec on the 6th May, after which date four weeks elapsed before any sign of preparation was observed. He required 1,500 horses for the equipment of his artillery and military train and a large number of batteaux for the navigation of the inland seas, usually spoken of as lakes.

The Government contracts were managed on the same principles as were recently the administrative contracts of certain London Boards of Guardians. There was a squeeze of the auriferous sponge by every hand into which it came. It is asserted, for instance, that timber for a Government batteau planned for building in Quebec had to be brought from England owing to the terms of certain building contracts in Bristol and elsewhere. This assertion may refer to an extreme case, but in view of the corruption Army or Government contracts every-

where seem to engender, Burgoyne's aims were baffled or frustrated as were Washington's by the malfeasance of contractors. There is a tendency to blame sometimes Carleton, sometimes Burgoyne, for want of foresight. As well blame Lord North for delays in finding British recruits for the British army. All these high personages were victims of the system of marauding, extending from My Lord the Paymaster of the Army, or from Sir George, the Treasurer of the Navy, down to Nipcheese, the purser's clerk on board Lord Howe's flagship the *Eagle*, or to any sub-deputy-assistant-vice-commissary in the pay of Mr. Joshua Loring of Boston.

The traditional censure for Burgoyne's failure has fallen upon Howe. The view entertained in this paper does not concur in that censure. It helps but little now to attempt an exact appreciation of Howe's motives during these fateful four months of 1777. Both British and American writers, particularly the latter, regard Howe as a kind of Saint Sebastian, at whose unprotected frame any shot may be fired. Mr. J. R. Green is perhaps the exception who calls him an active general and leaves him with that simple phrase. Whether it is Stedman, or Jones, or Gordon, or Bancroft, or Fiske, or Professor Tyler, or Major-General Cullum, or Mr. Lecky, or Mr. S. G. Fisher, the concert of adverse opinion, whether in tones speculative and shrill, in the American style, or in Stedman's deeper notes, is consistently harmonious. Mr. S. G. Fisher has laboured the points against Howe with remarkable ability, and with a touch of acerbity, too. Galloway and Johnstone, contemporaries of Howe, attacked him both before the House of Commons and by pamphlets and papers. Howe's defence was not convincing, and for obscure reasons his apology for himself was not allowed to be concluded in the Committee of the House of Commons entrusted with the enquiry. It is morally certain that he was not free to tell the whole story, whether to his credit or discredit: and now it is highly unlikely the story will ever be fully told.

Among the salient points are: that all three Generals, Howe, Burgoyne and Carleton, were instructed from Whitehall: that Carleton was addressed in terms of such official frigidity that he immediately resigned his post as Governor-General of Canada, that Burgoyne started on his Expedition southward undermanned and too late, that Howe's movements on Philadelphia were at first approved, that his application for more troops was declined, and that Whitehall subsequently withdrew its approval of Howe's movement on Philadelphia in a document that lay unnoticed in some official pigeon-hole for weeks after Burgoyne was a prisoner of war.

The Expedition thus started some time in June poorly furnished for its task. There was a vast armament of artillery. "A powerful brass train of artillery," Gordon calls it, "among the finest and best of any army of that size."

There are remarkable differences in the estimates of this field force. Burgoyne says that on 1st July, 1777, his command consisted of 6,740 regulars, exclusive of artillerymen, 250 Canadians and 400 Indians. Six companies of artillery brought up his numbers to something short of 8,000 men. With Sir Guy Carleton remained for the defence of Canada about 4,000 men. Burgoyne had hopes of securing the assistance of at least 2,000 Canadians to act as guides and as a kind of Army Transport Corps. Their duties were to comprise boating, haulage and carriage of stores over the portages. Special preparations had been made for conveying batteaux, rafts and canoes across the tract of land which lay between the final waterway southward along the chain of lakes to the northern arm of the Hudson; for ten miles of a saddle of land had to be traversed by a traveller leaving Lake George to gain the Hudson.

The services of Canadians skilled in woodcraft, keen hunters, and excellent marksmen, might have proved invaluable; services, too, fully appreciated by Burgoyne, who had written most emphatically about the special perils of marching through the forests between Lake George and Albany. But for various causes Burgoyne's expectations proved fallacious; Canadians declined service, probably, according to Jones and other loyalist writers, for the reason that the veterans (as the British troops were called, most of whom had not yet been under fire) flouted and slighted the local men. Complaints by Provincials about the insolence and arrogance of European officers towards their Provincial comrades in arms were incessant. The Provincial contingent, according to Beatson, was about 700, who alleged they were scurvily treated both by Burgoyne and by his divisional generals. They were placed, "in the forefront of all the army to receive the first blows of the enemy and be guardians to each wing and rear, and that the loyal Provincials under his command (Burgoyne's) were killed ten to one of the Royal Army." These Provincials were, many of them, the refugees who had quitted Boston for Halifax and Canada under Howe's protection in March, 1776, or they were loyalists of the Province of New York. The power of the loyalist party was probably greater in the Province of New York than in any other Province, but their leaders lacked the courage and decision of character needful to turn it to the best advantage. The wealthy merchants, the proprietors of the great feudal manors (the patroons), the adherents of the Church of England; more numerous here than elsewhere; the Dutch farmers and the recent German immigrants were generally disposed to be loyal or absolutely neutral.

In the city of New York two-thirds of all the property was owned by loyalists, and outside the city there was scarcely a symptom of disaffection. It is held therefore with some show of reason that more courtesy and consideration might have

vastly increased the ranks of the Provincial battalions. American Loyalists said that had Burgoyne listened to the Provincial Colonels prior to the Battle of Bennington, that disastrous expedition had never been despatched. British historians, moreover, have either accorded scanty notice to the Provincial contingent or have not noticed them at all. The Provincial's lot was indeed a hard one. Slighted by the professional military men, shot on sight or hung by their patriot captors, ruined by attainder or wholesale confiscations, and denied the tardy recognition of historians, they are the real martyrs of this struggle. Thus:

"After the Battle of Bennington, Tories (that is the captured "Provincials) were the sport of the soldiery. They were tied "together in pairs and attached by the traces to horses which "were in some cases driven by negroes. One Tory who had "his left eye shot out was led mounted on a horse who (*sic*) "had also lost his left eye. It seems to me," says the narrator, "cruel now; it did not then." From these reports we are led to infer that the Tories tied to horses ridden by negroes were either maimed beyond future recovery or knocked to pieces. Burgoyne heard of the fate of these unhappy captives, and made his protest both on behalf of the Provincials and the Germans who suffered treatment equally barbarous.

At Bennington very few British soldiers fell into the hands of the Americans, who in any case gave little quarter. Burgoyne remonstrated in dignified terms: "It is with great concern I find myself obliged to add a complaint of the bad treatment the Provincial soldiers in the King's service have met with. I have reports upon oath that some of these men were refused quarter after having asked it."

Gates, formerly a British officer on the Establishment, responded to this charge with a kind of lumbering irony: but Burgoyne's charges are now admitted to have been based upon facts. It is certain that but a fraction of these barbarities has been recorded; such records as these are come to the surface of things as Confessions or in scanty diaries kept by illiterate men. Albany was subsequently the scene of much Jedburgh justice. One diarist notes that seven Tories were hung there in one day.

Burgoyne, on the 11th July, wrote a private letter to Germaine to say that some hundreds of men "professing "themselves loyalist have come in wishing to serve; some to "the end of the war, some for the campaign. Though I am "without instructions on this subject, I have not hesitated to "receive them, and as fast as companies can be formed I shall "*post* officers. I mean to employ them (the loyalists) to keep "the country in awe, and in procuring cattle, and to foster "the impression caused upon public opinion should Pro-"vincials be seen acting vigorously in the cause of the King." On the 11th July the British, after the capture of Ticon-

deroga, had entered rebellious country, whereupon Burgoyne notes that "the Vigilance Committees *around* and in front of "him (that is, to the southward) watch and imprison suspects, "compel the neutrals to take up arms, to remove their cattle "and burn their corn under penalty of immediate death; "*they have hanged large numbers of loyalists;* they are "devastating the country with fire and sword."

We reach now the question of the employment of Indians in the northern campaign. In no detail of their conduct of the war have the British authorities met with so much censure as in respect of their bringing in of Indians into this quarrel. The atrocious cruelties inflicted upon their captives by Redskins, their practice of scalping, their silent and stealthy method of warfare, their indiscriminate murder of infants, children and women, their use of fire and flame in attacks on Colonial homesteads, the ghastly records of personal reminiscences, the massacre of wounded men, of the sick, and of women and children after the guaranteed surrender of Fort William Henry, and a host of minor instances of torture and blood in the warfare of the Border had excited in Colonial homes an unquenchable horror of the Redskin, and had given rise to the saying that the best Indian is a dead Indian, and to the practice of shooting Indians on sight. Notwithstanding these feelings of repulsion so justified in Colonial eyes, all authorities French, or British, or Colonial had made use of the Redskin against their respective foes.

Fort George

The main facts are admitted. Indians brought Braddock to his doom in his expedition to Fort du Quesne in 1755. Indians aided Montcalm in his capture of Fort William Henry in 1757, and claimed afterwards all the profit and plunder of the capture. The treachery of the Indians on that fatal day made the cry "*Remember Fort William Henry*" a signal for no quarter when Redskin or Canadian woodsman in later episodes of warfare was screaming for mercy.

On the other hand, the loyal Colonial settlers in Western New York up along the smaller lakes and about Ontario's eastern shore had built up a kind of offensive and defensive alliance with the Long House: the Six Nations, whose eastern tribe, the Mohawks, guarded the Hudson, and whose western tribe, the Senecas, watched the headwaters of the Ohio. These tribes had a system of land tenure, the like of which holds good in the Maori reservations in New Zealand. The title to this land was vested in all full members of the tribe, including the women. No conveyance of land could be made without the authorisation of each tribe concerned, symbolised by the affixing of the tribal mark to the document of conveyance under the hand of the head of each tribe. This complicated system of land transfer was the parent of frequent fraudulent transactions.

Of the innumerable crimes committed on the persons and property of coloured men all over the world by European

settlers in the name of civilisation, the robberies and murders perpetrated on the Redskin form no inconsiderable chapter. Among the earliest acts of George III. was a proclamation forbidding the conveyance of Indian land to private individuals by bargain and sale or by any other form of contract. As represented by Sir William Johnson, the King's agent in those parts, the White Father across the black water was a kind of earthly providence, always benevolent and often beneficent; and Sir William Johnson's over-lordship and protectorate of the Six Nations of the Long House, exercised with great prudence and firmness, has become the subject of material for much heroic reminiscence and romantic writing. His sudden death in 1774 removed the hand of one who restrained as well as protected. But with his death the murders and land grabbing by Colonials multiplied and increased.

The Long House of the Six Nations, dimly understanding the quarrel between the Great White Chief over the sea and his Colonial children, had a general impression that the King was within his rights, while they had daily experience that the Colonial whites were absolutely in the wrong. They remained, therefore, loyal to the British Crown; though when deprived of their local protector and guide, their uncertainty what to do in these times of change resulted for a considerable period in their doing nothing.

But the Whigs of New England, being keenly alive to the irreparable loss sustained by the King's friends on Johnson's death, had secretly approached the Indian tribes by means of two emissaries of a Presbyterian Board of Missions, who were at work amongst the Oneidas and the Onondagas, two tribes of the Long House. Of these missionaries, Mr. Kirkland was an ardent Whig and a most successful proselytiser. Kirkland, a type of the Scots Presbyterian, settled in the Colonial hinterland, detested England as a kind of Valley of Hinnom and the English as Amalekites. Amongst the tribes lying against the borders of Connecticut and Massachusetts his mission had been so entirely successful that several Indian bands went down to 1775
Boston to take their full share of the siege operations there. Kirkland, whose opinion appears to have been that the preaching of Christianity is best set forward by the assertion of the preacher's political views, taught the Indians fantastic things about George the King, who, he said, had raised the price of powder to three dollars a gill, and intended to cut off the supply of powder altogether. As they lived by their guns this information filled the Indians with dismay. Chiefs of tribes also complained that the missionary had refused to baptise the children of Indians, whose loyalty to the British Protectorate could not be shaken. By such ways the propagandist operations advanced.

Kirkland, as mentioned above, had been approached in 1775 before the actual outbreak of hostilities with a request that

he would use all his influence to engage the Long House on the American side to "whet their hatchets and be prepared to defend their liberties and ours." This appeal was made in vain. Nevertheless, Indians commonly served in the American Army. There were enlisted Indians at the battle of Long Island and in the operations about New York. Many Indians, however, declined to enter the American service unless permitted to carry on war in their own way, that is, according to the approved traditional methods of border warfare. Their
1776 services were not refused on that account. It is beyond all doubt that before the English had invited them to join in the struggle, Indians were enrolled in the American battalions. Some American writers ignore the assistance rendered by Indians, but it is right to point out that other American authors frankly admit the insincerity of the charges levelled at the English authorities.

"The Indians," says Mr. Andrew M. Davis, "engaged "upon the American side produced no material influence upon "military movements; *the responsibility for the intention is "the same as if the effort had been successful.*" In the face
1775 of the evidence, as recorded by later American writers, it is instructive to observe that, when Jefferson was drafting "the one American State Paper that has reached to supreme "distinction in the world, and that seems likely to last as long "as American civilisation lasts," he included in the indictment of George the Third, since known as the Declaration of Independence, the following clause:—

"He has endeavoured to bring upon the inhabitants of "our frontiers the merciless Indian savages, whose known rule "of warfare is an undistinguished destruction of all ages, sexes, "and conditions of existence"; and that while this clause was in penning instructions reached Washington, authorising him to "call forth and engage the Indians of St. John's (Nova Scotia) and Penobscot tribes."

Nova Scotia, a part of the King's dominions, was at that time in absolute quietude, and doing its best to provide a resting-place for loyalists fleeing from the wrath of Congress as materialised by New England patriots. But as it is now admitted that the absorption of Indian tribes into this quarrel was first set moving by the revolting Americans, further enlargement on this subject is unnecessary. The Declaration of Independence has been censured on many grounds by compatriots of its authors; but the annual promulgation to American children of such a misleading statement as this clause about Indian warfare may, it is hoped, cease some time before American civilisation ceases. The enlistment of Indians into the American ranks was in full operation a whole year before Burgoyne began to summon braves to his assistance. As Indians had taken part in every war in America during the struggle between France and England for North America, it

became inevitable that the tribes must also be drawn to take sides in this contention. Burgoyne's route, or line of march, lay through a country from time immemorial occupied by powerful Indian tribes. He could not have advanced ten miles into this country without either collision or collusion.

Alliance with Indians was most offensive to English gentlemen, especially to men of Burgoyne's temperament; but as he needs must employ them, he thought fit to utter to the tribes willing to serve the British flag a long and stilted address, which at the best was pompous, and at the worst was tactless. Among other exhortations he mentioned how he regarded them as brothers in warfare, but that it was his task, "from the dictates of our religion, the laws of our war-" fare, the principles and interests of our policy, to regulate " your passions where they overbear, to point out where it is " nobler to spare than to revenge, to discriminate the degrees " of guilt, to suspend the uplifted stroke," and so forth, in language intended for appreciation in St. James's, but probably quite unintelligible to the braves assembled by the Bouquet River; for the Indian tongue was and is somewhat sparse in the vocabulary of abstract ideas. But of one thing the braves seem to have been appreciative: they were told by interpretors that they must not scalp the living nor murder the defenceless. From their subsequent behaviour the braves appear to have regarded Burgoyne's vetoes as unwarrantable interference with their reasonable liberties and customs.

There were but five hundred of them, who, from the very first, began to give trouble. Burgoyne's refusal to allow them to do their own fighting in their own way appears to have paralysed their value as warriors, while it directed their energies into probably more destructive, or, at least, more mischievous channels. Colonial opinion blamed him for this interference. It was said in Quebec that " he encouraged the Indians to join " him under their own captains, and to fight the enemy in their " own way: the only argument that could have prevailed with " the Indians to join him," and that he virtually broke faith with them in his harangue to the chiefs in the camp by the Bouquet. It was also pointed out that the Americans had put no such restriction on the Indians in their employ.

Under such inauspicious conditions Burgoyne's Expedition from Canada began to move to the southward in June, 1777. At the outset the British troops sailed along the chain of lagoons known as Lake Champlain with banners flying and streamers displayed, to the sound of military music. In front of the flotilla and round about were the red men in their canoes, a huge water party rendered gay by splendid weather and illumined by the smiles and witchery of a somewhat numerous bevy of women. Probably ten thousand was the approximate number of that Katabasis. Of the troops themselves Lamb had an excellent opinion. He thinks they were in a high state of

discipline, and mentions they had been kept in their winter quarters with greater care in view of this expedition.

Burgoyne's *family* and subordinate officers comprised men of uncommon ability, experience, and devotion to their profession. His second in command, Major-General Phillips, a distinguished artilleryman, had seen service in Germany. Major-General Baron de Riedesel presents a personality made prominent, not only by his own writings, but by the pen of his charming and lively spouse, who, if her portrait speaks the truth, possessed, among other gifts, a most pleasing and expressive countenance. Baron de Riedesel had already served a year in Canada under the command of Sir Guy Carleton, taking an active part in the expedition of 1776. All the winter of 1776 he appears to have spent in his quarters at Three Rivers. Having, therefore, good experience of Canadian operations, he was put in command of the German contingent of about 3,000 men. It is consequently somewhat baffling to read in his memoirs that :—

"From the beginning of 1777 General Riedesel was never "permitted to take a part in the deliberations held by the "British generals in the counsels of war in regard to the "military operations, nor was he ever made acquainted with "the instructions which General Burgoyne had received from "his Government on that subject." Burgoyne, however, in his statement about this Expedition laid before the House of Commons in 1779, speaks in the highest terms of de Riedesel's qualities, and praises his zeal. Perhaps this opinion was an afterthought. The baron appears to have come in for his share of the insolent hauteur at that time pervading English society; a fact his sprightly wife discloses in her unqualified strictures of Burgoyne.

Then there were Colonel Kingston, Lord Balcarres, the gallant Fraser, and the gallant Acland, of whom the two former survived to appear before the House of Commons to support their chief in his defence, and of the two latter, one was killed, the other captured. There were also Lord Harrington, the veteran officers Hamilton and Powell, with Brudenell, the heroic chaplain in a day when chaplains were few (there were four of them in this army), and perhaps somewhat inferior men.

The general's *family*, the divisional officers, the brigade commanders, were a fine body of experts, and the army assembled at Crown Point on the 1st of July, 1777, were full of spirit and eager for a brush with the rebellious Colonials. Anburey, who took part in the expedition as a volunteer, left his opinion recorded that :—

"As to our army, all I can say is that if good discipline, "joined with good health and spirit among the men, by being "led on by General Burgoyne, who is universally esteemed "and respected, can ensure success, it can certainly be ex-"pected."

The amount of artillery was thought to be prodigious. Gordon, as mentioned above, speaks of the "brass pieces" as forming part of a train unequalled for an expedition of this magnitude. One hundred and thirty-eight guns, mortars, and howitzers made up the total of the ordnance. The greater number of these were *Park* guns, that is, for garrison use only. As the expedition advanced, guns were detailed for the forts or ships: St. John's, Ticonderoga, Fort George: and the ship, the *Royal George*, which embarked sixteen pieces. This distribution of artillery being completed, probably not more than twenty-six field pieces proceeded with the army as it stumbled through the woods south of Lake Champlain. Fraser's division took along ten pieces with the men of their service, the Germans had four light pieces, and the whole artillery force was completed by the distribution of twelve pieces among the three mixed battalions. The actual number, therefore, of cannon accompanying the army on its southward march was not excessive, but, whatever its amount, the difficulty of moving it was discovered to be almost insuperable.

"I hope," wrote Burgoyne to Germaine, "this will be "the last water business of this kind I shall ever have to do "with, for I honestly confess I never met with so much fatigue "in consequence of very heavy artillery, stores, &c., being so "often landed and embarked during the course of this service." The artillery proved, however, to be insufficient for the battering down of the abatis and blockhouses constructed by the Americans, while the slow movements of this arm retarded the general advance of the Expedition.

Of the conduct of the German contingent during this brief campaign there were some hostile critics. About their courage and soldierly qualities there is no question. But the Hessian brought with him neither a liking for England nor a dislike for America. Burgoyne confesses that the purpose of the Expedition demanded the impulse of a good deal of enthusiasm, and hints that the German troops were not exactly afire in the cause. Perhaps the exclusion of their divisional commander, de Riedesel, from the General's Councils of War may have had a damping effect on the German ardour. It was at any rate noted that German battalions moved in a leisurely and spiritless way: encumbered by "haversacks, longskirted coats, long "swords, enormous canteens, grenadier caps with heavy brass "ornaments, much powder and pomatum in the hair, and "clumsy queues, they jogged spiritless through dense forests, "over impassable roads, heart-sick of a mercenary warfare and "longing after their dear Fatherland."

To these drawbacks were joined the jealousies natural to the occasion, and animated by the hauteur of the British officers. Burgoyne's *apologia* for the Germans in extenuation of his disasters was: "The mode of war in which they (the Germans) "were engaged was entirely new to them: temptations to desert

"were in themselves great, and had been enhanced and circu-
"lated amongst them by emissaries of the enemy with much
"art and industry. Jealousy of predilection in the allotment of
"posts and separate commands ever subsists among troops of
"different States, and a solid preference of judgment in the
"commander-in-chief often appears a narrow national partiality.
" . . . . I studied to throw them (the Germans) into situations
"that might give them confidence in themselves, credit with
"their Prince, and alacrity in pursuit of an enterprise which,
"when its difficuties were considered, in fact, required
"enthusiasm."

Burgoyne had told his army in a kind of bulletin :—

"The services of this expedition are critical and con-
"spicuous. During our progress occasions may occur in which
"nor difficulty, nor labour, nor life are to be regarded. The
"army must not retreat."

The advance of the first twelve days was a kind of triumphal march. Yet there were certain symptoms of serious disorder. Major-General Phillips issues on the 1st July an order thus :—

"Major-General Phillips is sorry he is under the necessity
"of repeating what he thought would have been sufficiently
"impressed upon the officers' minds, that the fatigues and diffi-
"culties which certainly attend this campaign made no doubt
"that they would go through the same with cheerfulness, with
"credit to themselves and zeal for the King's service, yet they
"cannot but be sensible that some things have happened not
"quite to his satisfaction."

His officers were for the most part young fellows with the defects of their time of life, but the older men were none the less hard to keep in check. What an amount of quiet insubordination and irregularity is hinted at by Phillips having to issue an
7 Aug. 1777 order insisting upon the ammunition wagons being used on the line of march for their obvious purposes and not for officers' kits and belongings! He actually threatens to burn all the stuff he finds in the cartloads other than material for the artillery. The order is repeated ten days later, emphasising the General's displeasure. Two days later he complains that officers being driven, so to speak, from their raids on the artillery carts, have seized the provision carts, with their horses, to carry their own personal baggage and "for other purposes." He has occasion to pass severe strictures on the fact that no less than 30 carts were appropriated to the use of Burgoyne's own personal stores, vehicles, as he points out, collected in the
19 Aug. 1777 service of the King for the use of his army. If Burgoyne authorised the appropriation of 30 carts with their horses for the conveyance of his *batterie de cuisine* and his casks of Madeira and rum, then there may be some credibility in the story Madame de Riedesel tells about his splendid suppers

and his drinking bouts. It should be borne in mind that in those days, although the expression "train" is common enough, there was but a very rudimentary organisation of the military and artillery train, nor was there any attempt at detailed organisation before Napoleon's efforts in that direction in 1800.

The frequency of Phillips' complaints and the weakness suggested by his iteration of them, indicates something wrong with this Expedition even in the days of its ephemeral triumph. For this surmise Burgoyne's own Orderly Book offers corroborative evidence. Thus: "The officer who was so "unmindful of his Duty some days ago as to quit his Post to "attend upon Private Business, having expressed a thorough "sense of his Misconduct, and as far as in him lies atoned for the "same by evident marks of concern is released from arrest (for) " . . . . the Officers of this Army in general do not want an "example of Punishment to impress upon their minds a know-"ledge of the great principles of their Profession, a conscious-"ness of their respective Stations, and a regard to personal "honour, and he (Burgoyne) forgives and will forget the fault "in question, convinced that it is impossible it should happen "twice."

This unnamed officer was freely pardoned for an offence, of which the customary penalty was death: three weeks before, a man of the 9th Regiment had been shot for the same offence. But the disorderly conduct of officers, either expressly censured or indicated by innuendo, is a somewhat painful feature of Burgoyne's daily orders. He reprimanded officers for using for their private ends horses and carts belonging solely to the public service. He hints that officers are privy to the hiding in the woods and stealing of horses, and that Commissaries and Agents lend themselves to these fraudulent transactions. In fact, this class of complaint continues right up to the first Battle of Freeman's Farm; to say nothing of complaints about the indiscipline of soldiers in roaming in search of potatoes and corn. Burgoyne, as late as 18th September, 1777 mentions that "to the great reproach of discipline and of the "Common Sence (*sic*) of the Soldiers, who have been made "prisoners, the Service has sustained a loss within ten days that "might in action have cost the lives of some hundreds of the "enemy." Heavy morning and evening fogs contributed much to make the enticements of the woods irresistible.

The first objective was Ticonderoga. Benedict Arnold and the Green Mountain Boys, in the course of a filibustering expedition, had captured this most important post early in 1775. Ticonderoga lies in a direct line 75 miles south of Cumberland Point, from which the Expedition had started on the 20th June, and fifteen miles south of Crown Point, where the army had disembarked on 26th June. Thence the army marched along the lake shore, while the stores in batteaux proceeded towards the head waters of the lake. Before the army, on the

1st July, appeared two forts, one on the east, the other on the west shore of these same waters: the one called Fort Independence, the other was the famous Ticonderoga. From the time of its capture by Arnold down to the end of 1776 the Americans had worked at this position to make it impregnable. Connecting the two forts had been built a bridge, and northward of the bridge a huge boom, works that occupied ten months to construct.

The combination of the two forts, strongly trenched and supplied with artillery, with the abatis or obstacle work at which the colonial militia were experts, constituted a most formidable check to the British advance. But in their general scheme the American engineers had overlooked the probability of the position being turned. General St. Clair held the place with 3,000 ill-assorted men, among whom, nevertheless, were some of the best shots in the American army, under the command of Colonel Francis, a zealous and capable officer. To the south of this very strong position lay a hill called Sugar Hill. Major-General Philips, an officer of long service and a good artillerist, had been placed in command of the British contingent advancing along the left or eastern shore of Lake Champlain, where the Lake tapers away to its termination. His experienced eye quickly observed the tactical advantage of this eminence, while noticing its defenceless condition. Whether the Americans had left this hill unprotected because it was thought to be naturally impregnable, or whether, as some think, the garrison was too weak to defend all the ground entrusted to it, remains an open question. Philips at least completed its occupation without much difficulty. From the moment the British flag floated over Sugar Hill, Ticonderoga became untenable. St. Clair apprised by his scouts that the British forces, already in possession of three-fourths of a circle around him, might be expected to close the ring within a very few hours, withdrew from this menacing situation, leaving his reputation behind him. Thus on the 6th July all the works in or about this important outpost of the United States were captured with very little trouble. The Americans managed with considerable loss of life to get away southwards.

Meanwhile the great boom built to the north of the bridge was holding up the flotilla—the batteaux with their cargoes, the little gunboats, the two brigs, the *Royal George* and the *Inflexible*, both carrying 18 guns, and the canoes of the red men. But the handy men of the British flotilla made speedy destruction of the boom on which so much material and labour had been expended. Lamb, who probably saw the demolition of the structure, says the forcing of the boom occupied about the same time as he took in describing the operation. Burgoyne, who appears to have remained on board the flotilla, now passed

onwards towards the Falls of Skenesborough, which lie some miles to the south. The English naval officers pushed on in pursuit of the American galleys, which had been hurriedly loaded up with stores and artillery, overtook them, captured two out of five galleys, and completed the destruction or seizure of the whole of the American water force to the number of two hundred vessels of all sorts and tonnage.

Gordon's account of the incident is:—

"The General (St. Clair) meant to push for Skenes-"borough, and there to have met the 200 boats and five armed "galleys, on board which were embarked at night as much "cannon, stores, and provisions as time would permit. All the "cannon that could not be removed were to be spiked up, and "many were; the knocking off of the trunnions was omitted, as it "might alarm the enemy. Previous to striking the tents every "light was to be put out. Though the evacuation was resolved "upon about three in the afternoon, it could not be carried "into execution till night, and it was at a season when nights "were at their shortest and when it was moonlight. The neces-"sity of keeping the matter a secret until the very moment "prevented any preparatory steps to expedite the business."

But the officer commanding on Sugar Hill set fire to his residence, and so illumined the hill that the movements of the retreat were fully disclosed. Perhaps this conflagration gave rise to Burgoyne's report that the whole place was on fire. Confusion ensued among the Americans, who withdrew in a manner not unlike a rout. The arduous exertions of St. Clair restored something like order. The retreating force reached Castleton, 30 miles south-east of Ticonderoga, through a country heavily timbered, intersected by streams and interspersed by lagoons.

Their retreat was covered by two regiments which appear to have comprised some of the toughest material of the American battalions. These halted at Hubbarton on the night of the 6th July, and were attacked on the morning of the 7th by Frazer. Burgoyne had directed Frazer and de Riedesel to urge on pursuit, and in the execution of this order the British regiments, out-marching the Brunswickers, hurried into action without waiting for their allies. Colonel Francis, an experienced bushman who fought in the American rearguard, set up a splendid defence, aided by breastworks of felled trees and by the natural embarrassments of the terrain. The British force was outnumbered, outclassed, and ran a close risk of being routed, but de Riedesel came up, bands playing, and making such a parade that the Americans, conjecturing the German force to be in full strength, retreated, leaving dead or dying on the field the gallant Francis and many other brave men; de Riedesel is said to have brought up only 80 men. Digby calls them "a party of Germans." The Americans fought with conspicuous bravery, yet not without instances of pusillanimous

conduct and of treachery, for Colonel Hill, of the Militia, disobeyed orders, and two regiments from the reserve being directed by St. Clair to advance to the support of the fighting line, refused obedience.

"Sixty Americans," says Mr. Fortescue, "with rifles "clubbed in token of surrender, were allowed to come within "ten yards unharmed, when they suddenly stopped, fired a volley "and ran into the bush." Major Ackland, being shot through the legs, was lying helpless, when an American militiaman approached to kill him, but was checked by his own officer: for killing the wounded seems to have been an unhappy practice on the American side.

The British lost at least one quarter of their whole number. Major Grant was the first to fall, deliberately shot down by a scout, according to the new American tactics of killing off commissioned officers by preference. Lord Balcarres was badly wounded. About 17 officers were put out of action. Next day the British could muster little more than 500 men. The wounded lay about under little penthouses of bark made to shelter them from the sun and rain. The heat and the rain were terrible. The swamps of to-day's downpour became the pestiferous puddles of to-morrow's tropical heat; the ground was swarming with rattlesnakes and the air with mosquitoes, while around prowled wolves which disinterred the buried corpses and left the gnawed remains to add to the stench of the woods. No medical or surgical appliances lay nearer than Ticonderoga, as the surgeons had "forgotten" the medicine chests. The force, according to Digby, had for two days nothing to eat but the carcase of one cow. Sergeant Lamb was put in charge of the wounded; he had no help except that rendered by the wife of a man of the 23rd Regiment, a heroic woman who had remained by her husband's side during the fighting. For a whole week Lamb took charge, while torrents of rain ruined all his feeble first-aid arrangements for his pitiable patients. His directions were to surrender at once, to a hostile force, and to place the wounded under their protection. In fact, the British force being, it was thought, too much "in the air" for its welfare, was hurriedly withdrawn from Hubbarton for fear of an attack by the enemy in strength. The Americans, however, were marching quickly to the southward: having, at the end of ten days, lost all the border forts, a large flotilla of 200 details, a hundred pieces of cannon, and a prodigious quantity of stores, with most of their ammunition.

Schuyler now withdrew towards Albany. Burgoyne concentrated himself on Skenesborough, close by the southern creeks of the muddy Champlain. A general review was ordered. Divine service of thanksgiving was performed and a *feu de joie* fired amidst general rejoicing.

At the end of three weeks action was resumed; roads and bridges were constructed by the advancing army, which pro-

gressed about a mile each day. More than 40 creeks, to say nothing of small fordable streams, pools and lagoons, embarrassed the little force, and necessitated every man becoming a sapper and a woodsman. Burgoyne's numbers were too small to admit of the detachment of companies to act either as convoys for provisions or as garrisons for strongholds. He begged Carleton to send men of his command to occupy Ticonderoga, but Carleton, pleading stringent instructions from Whitehall, sent back a flat refusal to Burgoyne's request. Yet Burgoyne's letter to Carleton enumerates reasons which Carleton must have felt to be cogent.

"My communications will widen so much as I proceed, "the drain upon the army for posts will be so considerable, "not to speak of detachments and safeguards to protect and "awe the country, that if that first diminution is not replaced "my effective strength may become inadequate to the service "intended."

However, Carleton, in whose mind rankled both the substance and the terms of Germaine's letters of instructions, appears to have resolved to interpret the letters with the utmost punctilio. He pleaded that he could do nothing. Thus Burgoyne's effective force was diminished by nearly a thousand men left in occupation at Ticonderoga.

The General was at this time busy wielding his pen in his much-admired elegant style. A long despatch contained his warm congratulations to the Minister for American Affairs on the success of the Minister's own plans. Yet in the despatches and letters of this month he reveals an undertone of great anxiety. He either cannot or does not trust the loyalists; he is short of supplies; with no enemy in front of him and no one on the line of his communications, yet his men have been two days short of food; there is plenty of stuff and a full supply of stores if he could only get them up to the front. At the portage between Lake Champlain and Lake George every effort is being made to get provisions and stores over into Lake George with the batteaux, but there is a shortage of labour, horses are few, and the Canadians are unwilling allies. His men have no tents, no camp kettles, no spades, although on Lake George there should have been plenty of all kinds of stores if only transport were available. The army now occupied a long straggling position with twelve miles of front; the western, or right wing, facing southward, resting on Wood Creek, and the eastern, or left wing, resting on Skenesborough, on some bluffs just to the west of the little town. Headquarters were at Skenesborough, and the distracted General writes:— "It is unfair to compare or judge an American campaign "according to European ideas. How zealously so ever a "General in such an undertaking as mine may be served by the "chiefs of departments, *for one hour he can find to contemplate*

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"how he shall fight his army, he must allot twenty to contrive "how to feed it."

The Whitehall orders directing the line of march of his brigades drew from him a reluctant protest.

"Your lordship will pardon me if I a little lament that "my orders do not give me the latitude I ventured to propose "in my original project for the campaign to make a real effort "instead of a feint on New England. As things have turned out, "were I allowed to move to my left instead of to my right, I "should have little doubt of subduing before winter the provinces "where the rebellion originated."

12 July, 1777. This humbly-worded protest occurs twice in his correspondence of this month. However, whatever visions of failure may have haunted the mind of the Commander-in-Chief and the shrewder of his subordinates, the success of the expedition to the army at large seemed to be assured: and when arrived at Whitehall the news of the bloodless campaign, the capture of Ticonderoga, the destruction or confiscation of such vast quantities of American stores and artillery, the non-resistance of the rebels, the fact that Schuyler did little but retire slowly to the south before the British advance, the Court and the King were elated with a sense of certain victory. It was immediately suggested that the Red Riband should be conferred upon Burgoyne, as it had already been conferred upon Howe; but for some obscure reasons Burgoyne had declined by anticipation the K.B. He had told influential friends at home he should certainly refuse the knighthood were it offered to him. On getting wind of the Royal intentions these friends informed Germaine of Burgoyne's determination, and so, to save the face of every one concerned, the proposal was dropped. Had the proffer gone forward the promotion would have come to hand about the date of the Convention of Saratoga.

Weeks were thus occupied in a slow general advance. The American axe had been busy in advance of the British front. Along the roads and tracks, every score of yards a tree had been felled; everywhere as they advanced the British became more hopelessly entangled in the forests and lagoons, swamps and fallen timber. Gradually, however, at the cost of some minor actions entailing slight loss of life, but at the price of herculean efforts which taught his men, as Burgoyne remarks, woodcraft, the British expedition reached Fort Edward.

30 July, 1777. Burgoyne was now 40 miles from Albany, and in about as hopeless and helpless a position as his bitterest foe could have devised for his downfall. As they retired before his advance the Americans took great pains to remove or destroy all supplies. They left neither a hoof nor a blade of corn. It was "a desert," says an officer of the German contingent, "not only "with reference to its natural sterility, and Heaven knows it was "sterile enough, but because of the pains which were taken, and

"unfortunately with too great success, to sweep its few cultivated "spots of all articles likely to benefit the invaders."

News, however, was brought in that large quantities of stores, especially of provisions, were accumulating at Bennington, a town within ten miles of the border of Massachusetts and about 30 miles to the south-east of Fort Edward. Burgoyne planned a raiding expedition, entrusting the execution of his design to Lieutenant-Colonel Baum with a mixed force of Germans, Loyalists, Indians, Canadians; about 500 in all.

De Riedesel's dismounted dragoons or chasseurs who had saved the situation at Hubbarton, and a small body of fifty riflemen chosen from the British regiments, formed the nucleus of this Hope of the Army. A contingent of the Hanau artillery with two guns, Peters' Corps of Loyalists, and a handful of Canadians, completed the effective force. Of the Indians an uncertain number embarrassed the movements of Colonel Baum; "the savages cannot be controlled, they ruin and take every-"thing they please," he reported to his commander-in-chief. Burgoyne's instructions to Baum were very minute, elegantly expressed, and filled many folios. "The object of your Ex-"pedition is to try the affections of the country, to disconcert "the councils of the enemy, to mount de Riedesel's dragoons, "to complete Peters's corps and to obtain large supplies of "cattle, horses and carriages."

Burgoyne mentions 1,300 horses as the least supply that must be fetched in, and as many more as possible: the careful General even indicated how the confiscated horses are to be fastened together, "in strings of ten," for sending along to Fort Edward, and adds many other interesting directions with the minuteness of a good *chef de cuisine* to his assistants.

Lieutenant-Colonel Baum did not know English and the country folk did not know German. Thus furnished, he sallied forth "to try the affections of the country." During his slow advance through forests and over mountains it was reported all over the country that he was a gentleman of easy disposition and willing to accept recruits practically on their own testimonials.

"He allowed people to go and come from his camp, readily "believing their professions of sympathy with the Royal cause, "and imparting to them most fully and completely all informa-"tion as to his strength and designs. This course did not meet "with the approval of his subordinates. They believed that "concealed beneath the plain manners and open countenances "of the visitors there was a keenness and avidity in collecting "facts, and that under the guise of simple questions and a care-"less listening to the answers valuable information was being "intentionally sought for, and too readily obtained."

It appears to be certain that many neighbourly people dropped in to the British camp, perhaps to save their goods, because Burgoyne had issued orders that the property of rebels

was not to be respected: while the Committee of Safety at Bennington had issued private commissions with right of search, authorising the holder to "arrest any person you "shall have sufficient grounds to believe are enemies to the "United States of America, and you shall seize all their "movable effects, and you are to call to your assistance such "person or persons as you shall find necessary." The few farmers along the line of the British were thus in rather a bad way: it is reasonable to suppose that if a little finessing could save their game, they would finesse. Later American writers roundly impeach these unfortunate victims of civil warfare as cowards. Baum had been allowed a fortnight for the completion of his venturesome enterprise. Breaking camp on 12th August he came within a mile or two of Bennington three days later. Reports of the concentration of a force three times as numerous as his own had already reached him. The truth of these reports was confirmed on his arrival near Bennington. Instead, therefore, of his executing a surprise attack on the Americans, he found it essential to his safety to entrench himself. Very heavy rains on the 15th August rendered all firearms useless, but facilitated spade work. Baum's force contained only 300 regulars, of whom 50 were English marksmen. As soon as the Red men found themselves to be in real danger they permitted themselves to retire. Thirty or forty Provincials had been left some miles behind to take charge of captured stores. The morning of the 16th August broke with a clean washed earth and a cloudless sky. The scanty numbers of the Germans bivouacked on the hill put heart into the American attack. Colonel Stark commanding the Americans had at his disposal 1,800 men. He determined to make a feint frontal attack while despatching about 600 men, some to the right and some to the left rear of the entrenched position. If we may credit the report of a German officer who fought on that day, Colonel Baum seems to have been as dull witted a man in his way as Rahl was in his. Burgoyne in the Orders of 27th August, 1777, corroborates this opinion. "The failure of the Enterprize," says he, "seems in the first instance to have been owing to the "credulity of those who managed the Department of Intelli- "gence."

Captain Glick asserts that Baum was the mere dupe of the shallowest pretences: "he was somehow or other persuaded to "believe that the armed bands of whose approach he had been "warned were loyalists on their way to make tender of their "services to the leader of the King's troops." He consequently withdrew his advanced troops from positions "which might "have been maintained for hours against any superiority of "numbers," and in fact was guilty of almost incredible fatuity.

Gordon, however, thinks Burgoyne was duped in a similar way by a Major Keene, who assured him "the friends of the "British cause were as five to one, and they only want the

"appearance of a protecting power to show themselves," and that diverted by this assurance from his original intention of throwing forward a very large force to surprise Bennington, he despatched a comparatively feeble force.

Colonel Baum, thus entrapped, chiefly as is alleged by his own want of commonsense, had to put up the best fight he could. His Indians, not waiting for the jaws of the trap to close, got away in good time with the loss of two or three braves.

The Germans, the Loyalists and Frazer's English marksmen fought with the utmost bravery and tenacity in defence of their poor entrenchments. Finally the last tumbril of their ammunition blew up and left them with nothing but the bayonet and sabre for armament. Surrounded, and falling rapidly in their tracks, they were all either captured or killed, with the exception of Glick, who with sixty men burst through the hostile circle and found refuge in the depth of the forest. Baum, mortally wounded, died in the evening about sunset.

The action had lasted two hours. The American Militia dispersed to plunder the camp. While thus engaged Colonel Breyman, with a second German division, was drawing nigh. Heavy rains and the weakness of his cattle had retarded Breyman, who found it impossible to move artillery faster than two miles an hour, and without his artillery Breyman considered it imprudent to advance. Hence he marched about 24 miles in 16 hours. Although early on the morning of the 16th August within six miles of Bennington, he for some very obscure reason did not arrive on the scene of action before evening, yet all reports concur in describing the noise of the fighting near Bennington from three to five o'clock in the afternoon of the 16th as loud and continuous. Breyman was thus too late; and notwithstanding that he caught the American Militia in a disorderly search for plunder, yet the arrival of Colonel Seth Warner with reinforcements stiffened the American defence, and the giving out of their ammunition broke up the value of the German artillery, on which Breyman chiefly depended. The Americans captured the German field pieces, while the Germans made good their retreat as well as the fatigue of their enemies and the close of the day permitted. The whole action reflected great credit on the Americans, who were vastly stimulated by their success.

For trophies they had the four brass pieces, "twelve brass drums, 250 dragoon swords, and 700 prisoners." Of slain the number was given at 300. These figures, however, taken together, exceed the whole force, for it will be remembered that Glick had got away with 60 men; the result, however, remains that Burgoyne's plans had failed, and that his little army was depleted by 500 men.

The prisoners in the hands of the Americans had a hard time of it. The provincials, or loyalists, were brutally treated by the victors: but much of the evidence of these cruel acts

has been hushed up, yet a few grisly things sticking up out of the ground thus trodden flat suggest the grim total.

Burgoyne has been severely censured for sending German troops to do all this bush fighting. Stedman says that both the German colonels acted as if they were on open roads in Germany, that they halted every ten minutes to dress ranks, and that the kit of the Germans was terribly heavy.

Burgoyne's army, thus reduced by these losses, and by the garrison left at Ticonderoga, to less than 6,000 men, was by this time near Saratoga. He could neither advance nor retreat. Being now completely disillusioned as to the aid the loyalists were willing or able to offer, he writes:—"I have daily reason "to doubt the sincerity of the professing loyalists. The great "bulk of the country is undoubtedly with the Congress in prin- "ciple and in zeal, and their measures are executed with a "secrecy and despatch that are not to be equalled."

For three weeks he lay on the east side of the Hudson awaiting supplies and some reinforcements from Canada. This wasteful halt Madame de Riedesel describes as a delightful sylvan holiday spent in conjugal joys.

"In consequence," says she, "of the unfortunate engage- "ment which shortly afterwards took place at Bennington I
18 Aug., 1777. "had the pleasure to see him (her husband) again on the 18th, "from which we passed three weeks in a delightful tranquillity." Madame with her husband and their children were now at Fort Edward on the eastern bank of the Hudson, about ten miles south-east of Lake George. About the end of the third week the British moved across the Hudson to the west side and advanced southward to Saratoga, which was reached on 13th September. Burgoyne having by this time collected about 30 days' food with stores, moved towards Albany. All his plans were as well known to his enemies as to his own officers.

"I observed with surprise," wrote Madame de Riedesel, "that the wives of the officers were beforehand informed of all "the military plans, and I was much the more struck with it "as I remembered with how much secrecy all dispositions were "made in the armies of Duke Ferdinand during the Seven Years' "War." The camp women disseminated further afield the gossip of the officers' wives, so that the Americans easily discovered everything worth knowing. It does not appear that the spirits of the army were in the least degree dashed by the disaster and losses at Bennington or the derelict condition of the expedition. Their cheerful march lay "through endless forests and a beautiful district," and so forward to heights above Saratoga.

Meanwhile remarkable changes had come over the affairs of the American *"Army of the North."* General Schuyler earlier in this campaign had found himself quite powerless to resist the British advance. Ticonderoga and the four sister forts had fallen into Burgoyne's hands, the grand boom above

Ticonderoga had been destroyed, large accumulations of stores had been captured or dissipated, with the consequence that Congress and its partisans were much cast down in spirit, and began to look about for a victim for the appeasement of the popular wrath. It has been already mentioned that General Philip Schuyler was of an ancient New York family. To an aristocrat by descent, a patroon by inheritance, and a gentleman by taste and feeling, the hostility of the New Englanders was implacable. Feeling in Congress consequently ran high; it was proclaimed by Schuyler's enemies that the Eastern Militia were refusing service under a General whose personality was odious to them, and whose antipathy towards them was too strong to be explained away by his friends. Schuyler's foes prevailed.

"We have given New England men what they will think "a complete triumph in removal of generals from the nŏrth-"ward." Thus wrote the irrepressible John Adams to his wife. Later on he told her: "I think we shall never defend a post "until we shoot a general. No other fort will ever be evacuated "without an enquiry, nor any officer come off without a court-"martial." Indeed, the Congress, in its angry fits, ever in a dim sort of way, imitated the (reputed) example of the Wise Men of Carthage of a former day. Congress ousted Schuyler, insulted Greene, reprimanded Knox, slighted Stark, snubbed Benedict Arnold, court-martialed Sullivan, St. Clair, Wayne, and Maxwell, and fostered a cabal against Washington himself. At the same time, it held Charles Lee and Horatio Gates in high repute, of whom the latter now, by a Resolve of Congress, superseded Schuyler.

Gates arrived at Stillwater, a few miles south of Saratoga, at a time when the success at Bennington was bringing in the New York and Eastern farmers by the score. Much of the harvest was over. Word had been passed round that the British were in a ring fence, and that there was a reasonable prospect of good shooting that autumn. In a very few weeks the Americans, whose ragged and attenuated battalions had been the subject of Schuyler's caustic comments, began to muster as many thousands as they had previously mustered hundreds. At the conclusion of the brief campaign of Saratoga Gates had 20,000 men, while among the chiefs of his command were Daniel Morgan and Benedict Arnold.

Arnold's exploits, his wounds, his escapes, his hardihood, and his treason; how at one time he was the darling of every fighter in the States, and second in command to Washington; how at another time his name became a curse and a hissing, belong as much to the region of romance as they do to the sober pages of history. It was at this time his unhappy lot to be ever the object of rancorous hostility to the New England party in Congress, as it indeed was the lot of every man for whom Washington expressed any admiration or preference.

Such, too, was the case with Daniel Morgan, that remarkable bushman and sharpshooter. A New Jersey man, whose early training and experience had been in the hinterland of Virginia, he had collected, and was the leading spirit of a body of marksmen probably at that time without compare in any part of the world. Morgan's huge frame and stature, his handsome features, his rough yet kindly demeanour, and the glamour attaching to his mysterious earlier adventures on the Indian borders, made him an ideal scoutmaster in a war of surprises, guerillas and snipers.

General Horatio Gates, with his ever-increasing force, lay in the neighbourhood of Stillwater, where, under the direction of the Polish engineer, Kosciusko, skilful spade work had been carried on on Bemis (Bemus) Heights, a kind of mamelon immediately to the west of the Hudson. A good road to Albany along the banks of the river was enfiladed by Kosciusko's redoubts and batteries, and the whole mamelon was completely fortified. Behind the shelter of these fortifications Gates, with plenty of room and skilful dispositions for retreat, thought it prudent to await the British attack. Burgoyne had determined to force Gates's position or perish. His construction of his orders from Whitehall left him no option but to fight his way through to Albany. On the 19th September he quitted his camp, himself commanding in the centre, d. Riedesel being despatched along the west bank of the Hudson, and then by a sharp turn to the westward to turn the American position and Frazer away to the right. With Burgoyne marched the Ninth, Twentieth, Twenty-first and Sixty-second Regiments. The Sixty-second Regiment, which came away from Canada in June 500 strong, at the close of the campaign was reduced to fifty men, with four or five officers. Although the prudent Gates abode within his lines, scouts in clouds scoured the forest in front, by whom the British advance was discovered early in the afternoon. De Riedesel meanwhile was developing the turning movement, and Frazer, with Grenadiers, Light Infantry and the 24th Regiment, was advancing to a position on the right. For about an hour or so the chief American army remained inactive, but Arnold almost compelled Gates to order his left wing to advance and turn Frazer's position. Arnold at the head of three thousand men, with expectation of more to follow, fell on Frazer, who, however, had already occupied a good position on a place called Freeman's Farm, from which place Arnold could not dislodge him. Arnold, perceiving the futility of further attacks on Frazer, and with his remarkable insight surmising that Frazer would not leave his advantageous position without orders, executed a change of front to his own left, and fell upon Burgoyne's centre. This portion of the British line had been weakened by the withdrawal of the 9th Regiment to act as reserve, whereby Burgoyne's immediate and effective command could not have amounted to more than 1,100 men. Arnold had

passed some hints back to Morgan, who indeed needed no instructions, for he had perched up in the bigger trees a few of his smartest shots to kill the British officers. In those days there was a good quantity of brass and gilt about an officer's clothes, and especially a little half moon of metal which, hanging by a chain about the neck, represented the handsome gorget of the older costume: at this glittering object the marksmen aimed.

Morgan's men did their share of this battle excellently. The English officers fell like pheasants; only one English artillery officer (Lieutenant Hadden) was on his feet at the end of the action. The three English regiments charged again and again with the bayonet, for which weapon the Americans, like the Boers in later days, felt a strong dislike. But more men came up from the American camp on Bemis Heights, and Arnold was pressing home his final attack, when de Riedesel arrived on Arnold's flank and compelled the Americans to desist.

Had Gates moved out himself with two or three thousand troops, beyond all doubt the British centre would have been crumpled up. But the judicious Gates is said to have occupied his energies among the wagons to the rear of his position, making his teamsters acquainted with the smartest method of getting away before an advancing foe.

The first battle of Freeman's Farm, half-way between Stillwater and Saratoga, proved to be on either hand very costly. Both sides fought furiously for more than four hours. General Burgoyne behaved during the action with conspicuous bravery. Bullets hit his accoutrements at least three times. He displayed fine soldierly qualities, gave his orders calmly, and directed with great care the operations of his little army. Upon three regiments, the 20th, 21st, and 62nd, reduced by the detachment of their flank companies to form part of Philips' Division, the brunt of the fighting fell.

Not more than 1,100 men composed the British centre which resisted Arnold and Morgan's attack of at least three times their number for the whole afternoon. The disasters of the 62nd have already been mentioned. But the inference from their stout resistance is that the straight shooting was not all on one side. The 62nd is said to have comprised some of the best shots in Burgoyne's army.

Evening closed down on the British bivouacked on Freeman's Farm, and the Americans returning to their camp and quarters on Bemis Heights.

Colonel Kingston before the House of Commons estimated that the British had 500 men put out of action; the American Board of War put the American losses at 319.

It is difficult to compute approximately the losses as well as the number of men engaged in this as in other actions of this war. The damage, however, to Burgoyne was appalling. Of his Indian allies, never of much value to him,

a great number at once quitted the British service to seek enrolment in the American ranks, where a hearty welcome awaited them. His Provincial or Loyalist troops had partly melted away; there were no more recruits from Canada, while for his European soldiers, British or foreign, as each man fell there were no substitutes nearer than men in Ireland. His army was thus in desperate straits.

Altogether on both sides there were dejection and alarm. Burgoyne had failed to break through the American barrier; the Americans had failed in their counter attack to oust Burgoyne from his place. As regards the results of fighting, the laurels belonged to Burgoyne. The substantial gain, however, now lay with Gates. Men were coming in to join his battalions in scores. His policy was to sit tight and wait, for disquieting reports had reached him from Albany that another British force was ascending the Hudson to menace his communications. News to this effect had reached Burgoyne on tne 20th September. The messenger was probably one of three or four despatched by Sir Henry Clinton to announce his plans and hearten up Burgoyne in his most precarious position. Of the other men it is likely their fate was capture and death. Gates certainly knew of Sir Henry Clinton's advance from New York. His apologists say that his knowledge of the cloud gathering behind him made Gates chary of using up his men on the morrow of the action at Freeman's Farm. The skill and good fortune of the nameless man who brought the cheering message to Burgoyne at Freeman's Farm now failed him, for while returning to Sir Henry Clinton with Burgoyne's reply he was captured and hanged. Burgoyne had, however, like Sir Henry Clinton, sent another messenger by another route. Captain Scott, of the 53rd Regiment, got through in safety. Both the English Generals were now slightly in touch with each other.

While danger was thus menacing the rear of the American Army, disaster had overtaken the line of Burgoyne's communications with Canada. Independently of Gates, and without his knowledge, the American Militia, men from New Hampshire, by a series of attacks on the six forts over which the British flag was flying, endeavoured to cripple the value of Ticonderoga. It was not thought advisable to assail directly that commanding position, but to destroy all the batteaux at the portage between the northern end of Lake George and Lake Champlain, which design, if achieved, would add seriously to the already overwhelming embarrassments of the British. The enterprise succeeded in the capture of the batteaux and of three or four companies of the 53rd Regiment. A few days later, at Diamond Island, in Lake George, the patriots met a repulse with the loss of a considerable quantity of these spoils, but the net result was to the credit of the Stars and Stripes. Burgovne even then might have organized retreat with some hope of success had

not runners brought news of Clinton's march up the Hudson to Albany. Burgoyne's strong conviction that Gates would not wait to be entrapped between two British armies kept him at Freeman's Farm, expecting this succour.

Sir Henry Clinton had been left in charge of New York and Rhode Island with sufficient battalions for the defensive. Early in October about 2,000 men from England arrived in New York after a voyage of uncommon duration. Their arrival gave Sir Henry Clinton a good nucleus for a small expedition of 4,000 men, which was rapidly put together and began movement up the river too late to avail the luckless Burgoyne. About forty miles above New York had been constructed with great skill and labour a boom to impede navigation of the Hudson. On the eastern bank, contiguous to the boom, lay a fortified post commanded by the veteran bushman, Israel Putnam, one of the stalwarts of former colonial wars. Clinton surprised this post, captured the stores, ousted the garrison, and drove Putnam to the west bank of the river. Next day Clinton sent two thousand of his men over the river, who in two bodies of about a thousand each, marched to surprise Forts Montgomery and Clinton, which had been constructed at about a mile apart to guard the passes of the Western Highlands as well as the river. Both attacks were entirely successful, although the fighting at Fort Montgomery was very sharp, entailing considerable loss, for the fort was well constructed and protected by the usual outwork of trees skilfully felled and interlaced. The Americans, in consequence of this ably planned and executed British enterprise, lost in killed and wounded and prisoners about 400 men, besides 70 guns, all their stores and the whole of the boats collected on the north side of the now useless boom. The British were now masters of the Western Highlands (New Jersey), and their lighter boats had the advantage of an unimpeded run northwards to Albany. On the 7th October a force proceeding up the river another forty miles destroyed stores and a few minor fortified posts. Captain Scott, of the 53rd, got through to Sir Henry Clinton, who at that date was on board Commodore Hotham's ship in the river. Leaving next day for Burgoyne's headquarters with the good news of the capture of the two forts and of the clear passage to Albany, this brave man crossed the forests to within a short distance of Freeman's Farm, only to hear of the calamitous result of the second battle at that place.

3 Oct., 1777

9 Oct., 1777

Gates, apprised of the American losses on the Hudson, had every reason to reflect that with Sir Henry Clinton at a place only sixteen miles below Stillwater and a messenger on his way to Burgoyne with this cheering news, his own position stood in need of reconsideration. But the news reached Burgoyne too late. Between the former battle of Freeman's Farm and the second engagement there elapsed an interval of

Oct., 1777. nearly three weeks. The British were now put on short rations, which does not appear to have prevented the gallant Madame de Riedesel from inviting the chiefs of the army to dine with her on the 7th October. She had personally witnessed the whole of the former battle of Freeman's Farm, and when on the morning of the 7th October her husband mentioned that a reconnaissance in force was fixed for that day, she expressed no alarm. The preparations for dinner went forward, the table was laid and the dinner served at three o'clock, at which hour the first and only guest arrived in a hand barrow, when the bearers brought in, mortally wounded, Brigadier-General Frazer, whose services on the right flank of the British in the former engagement at Freeman's Farm had been so conspicuous. He expired in the dining room next morning.

1777. Burgoyne's movement on the morning of the 7th October was imperative. The forces of the enemy, as he well knew, were increasing daily, for as it was now morally certain that the British were doomed, all the country side resolved to be in at the death. With fifteen hundred of his best men he began a flank movement, somewhat of the nature of a reconnaissance in force. His division was composed of Germans under de Riedesel, supported by Colonel Breyman, and of British commanded by himself, supported by Philips and Frazer. Moving away to his right front from the encampment, he was advancing towards the American position when a violent assault from Morgan's deadly rifles, aided by eight battalions sent to their support, converted the engagement into an American attack in great strength on the British position, of which the left wing, consisting of British Grenadiers and the German contingent under Breyman, was rapidly enveloped by an overwhelming number of the enemy.

Major Ackland wheeled rearward his flank company of Grenadiers, and thus blunted the American attack for an hour or two. The Brunswickers finally on the left centre fell back in confusion, but the remaining German troops fought with persistent courage and coolness until overwhelmed by numbers. Colonel Breyman was slain and his men were compelled to retreat with the loss of all their artillery and ammunition, leaving their wounded in the entrenchments.

While disaster had thus befallen the British on the left, matters had fared no better in another part of the field. A very heavy column of Americans, much strengthened by riflemen, was enveloping the British right, which became so hard pressed that General Frazer weakened Burgoyne's centre by withdrawing the 24th Regiment with some light infantry to support the distressed right wing. At this juncture the whole remaining line began to retreat slowly toward their camp, while Burgoyne hastily sent a message to the artillery to retire with all speed, but, to the great disadvantage of this

little distressful army, his aide-de-camp, Sir Francis Clark, was shot down ere the message was delivered.

The British were withdrawing in an orderly manner when Arnold, although suspended from duty and absolutely without official authority, burst into the action at the head of a strong contingent to storm the British earthworks. He was quite unsuccessful at the British centre, which inflicted upon him great loss, but with yet more and ever increasing numbers he fell on the British right, and by the expulsion of the Germans from their trenches, established himself on the right flank of Burgoyne's lines, which thus became untenable.

Burgoyne himself remained under fire all that dreadful day. Lieutenant Digby, of the 53rd, was near him towards the close of the engagement, and reports that "he appeared "greatly agitated, as the danger to which the lines were "exposed was one of the most serious nature at that particular "period. I should be sorry if from my expression 'agitated' "the reader should imagine that the fear of personal "danger was the smallest cause of it. He must be more than "man who could undisturbed look on and preserve his natural "calmness when the fates of so many were at stake and "entirely depended on the orders he was to issue."

The early darkness of an autumn day closed the sanguinary struggle. It had been a fight in which bravery and determination shone conspicuous in every quarter of the field. The dashing frenzy of Arnold, the ripe experience of the gallant Frazer, the stolid resistance of Colonel Breyman, the splendid courage of the youthful warriors, whether privates or officers, who made up most of the English battalions, witness to the military qualities of the combatants, whether American or British or German.

Frazer fell fighting under Burgoyne's own eye. Of the artillery, every man was shot down, every horse killed. Sir Francis Clark, aide-de-camp to the Commander-in-Chief, was mortally wounded as he rode with a message that Burgoyne subsequently declared would have changed the fortunes of the day, had it been delivered.

This was the officer who, earlier in the campaign, brought into the British camp a captured American flag, the Stars and Stripes, then newly authorised as the flag of the United States. He died in Gates' quarters. Many of Burgoyne's junior officers were mere children. Ensign Young, of the 62nd, was perhaps in his sixteenth year. Ensign Cosby Philips was in his fifteenth year; he, disabled by a shot, and lying on the ground, was mortally wounded by an American camp follower and his person rifled. Lieutenant Hervey, also sixteen years of age (whose closing hours are described by Sergeant Lamb), and many others of a like tender youth perished. In fact, Burgoyne's "veteran" army was largely recruited from children of a larger growth, elder boys kidnapped, pressed, or, as the case may be, sold by the parish authorities in Merry England.

The diminished and defeated Expedition from Canada was now in a terrible plight. Such miserable hospital accommodation as there was had proved to be quite unequal to the wants of the sick and wounded even before this final action. Incessant rains with sharp frosts at night induced agues, pneumonia and rheumatisms, with all the other ills sequent to insufficient food and inadequate clothing.

The heavy garments suitable for autumn wear had been sent back to Ticonderoga from Skenesborough. Meanwhile the gallant Frazer and many others lay dead, and on the next day towards evening he was, according to his last wish, buried in the redoubt committed to his charge. The ceremony of Frazer's burial under the fire of the enemy has engaged both Burgoyne's fluent pen and Graham's brush; that was a most impressive scene when the warrior's corpse, wrapped only in a sheet, was lowered into its hasty grave, while the senior chaplain, Mr. Brudenell, read the service for the Burial of the Dead. But as the retreat of the whole army was delayed until the conclusion of the ceremony, it was afterwards felt and freely said that the delay added to its misfortunes.

All the generals, with their attendant officers, stood about the grave, on which group an American battery concentrated its fire, but as the practice was poor, nobody was hurt. It should be added that the American General, on ascertaining what was proceeding, gave the order not only to cease firing, but that minute guns should mark his appreciation of Frazer's gallant and glorious end.

The same night the whole army began to fall back towards the Hudson in the direction of Fort Edward in the hope of getting to the eastward of that river before the arrival of the pursuing enemy.

It rained incessantly on the 9th and 10th October, a point of atmospheric condition in favour of the British, for in very damp weather there was no musketry practice in those days of priming and flint lock, and the British supremacy with the bayonet was incontestable. As Arnold the impetuous, had been badly wounded in the second action at Freeman's Farm, the cautious Gates, with full information as to the condition of Burgoyne, was contented to weave around the British Army a network of redoubts and breastworks, and had already profited by these delays to lay hold of the banks of the Hudson eastward at the fords, and by rifle pits render the river impassable.

Every point of his strategy being thus made secure, Gates on the 14th October held Burgoyne in the hollow of his hand. It is true that the British, being now quite aware that they were compassed about on every side, endeavoured with axe and spade to render their position impregnable, but Gates had no intention of attacking his enemies, who had little food, little clothing, and were quite exhausted by fatigue; so exhausted indeed, that in hundreds they threw themselves down on the miry and sodden ground to fall into an immediate sleep.

At this point of the misfortunes of the expedition Madame de Riedesel's narrative is full of surprising statements. She roundly accuses Burgoyne of incapacity and criminal indulgence in drink and debauchery. She says there was plenty of fresh meat in the camp, but that the commissaries were too indolent to distribute it; she speaks of herself as indignantly expostulating with Burgoyne for his pusillanimous behaviour, and states that her husband had given advice which, if adopted, would have secured the safety of the army. In fact, this lively lady detested Burgoyne, and takes no pains to conceal her hatred.

There was now a huddle of women and children with hundreds of sick and wounded on some elevated ground lying to the eastward of Saratoga, between that village and the Hudson. Twenty thousand Americans encircled the hapless Burgoyne, whose effective force did not now amount to 5,000 men. Burgoyne's own account is that "his magazines were exhausted, "the weather was unusually severe, the men were worn out by "toil and privation, by hard fighting and incessant watching, "were without shelter, and short of food. The store batteaux "in the river were commanded by the enemy's batteries, and "provisions had to be carried up hill on the shoulders of the "troops under a galling fire."

Digby adds that the horses and oxen crowded into the British lines began to die fast, and the stench ensuing was terrible. Meanwhile the American sharpshooters from branches of trees kept up a continuous sniping, while the enemy's cannon was brought closer to enfilade the British, who were now compelled to construct a system of traverses. On the 14th October Burgoyne sent by Lieutenant-Colonel Kingston a kind of challenge to Gates, inviting an attack on the British position; but the wary Gates declined a suggestion that he should burn his fingers, when the chestnuts were already out of the fire. After some *pourparlers*, the famous Convention of Saratoga was signed on the 16th October.

The terms of the Convention were, for the British, more than reasonable. The British troops were to march out of their camp and the artillery out of their entrenchments with the honours of war, and proceeding to the verge of the river, to leave all their arms and cannon there at the word of command of their own officers. All troops were to be granted a free passage to Europe on condition of their not serving in North America again during the war.

Under the head of "troops" were included all followers of the army, women as well as men, boatmen, drivers, artificers and sutlers. The minor details were of similar clemency and highly creditable to Gates' prudence and humanity Prudence: because he had no means of feeding his captives, while his army of farmers and woodmen had already begun to scatter; humanity: for by sitting quietly he might have left the whole British force to starve. The Canadians refused

as prisoners were dismissed on parole to their own homes under a guard of Indians.

Burgoyne in his final address to his little army, read over the articles of Convention: added the terms were better than he had any right to expect: and concluded with an assurance that with provisions enough or any hope whatever of extricating himself he would not have surrendered.

15 Oct. 1777 Thus closed the famous Expedition from Canada, the welcome fruits of which had been prematurely anticipated with much joy in high quarters both in Windsor and Whitehall. The opinion of the army at the time traced all these misfortunes to Germaine.

Sir Guy Carleton wrote a few weeks after this disaster:—

"This unfortunate event it is to be hoped will in future "prevent Ministers from pretending to direct operations of "war at three thousand miles distance, of which they have so "little real knowledge as not to be able to distinguish between "good, bad or interested advices, or to give positive orders "on matters which from their nature are ever on the change: "so that the expedience or propriety of a measure at one "moment may be totally inexpedient or improper at the next."

Lieutenant Digby's opinion may be reckoned in reason as fairly representative of the men of his class and rank. He says: "Thus was Burgoyne's army sacrificed either to the "absurd opinions of a blundering ministerial power (and) the "stupid inaction of a General (Howe) who from his lethargic "disposition neglected every step he might have taken to "assist their operations." But Howe asserts that at no time, under the circumstances, was there any intention on his part to assist the Northern Army.

22 Oct. 1777 "I was surprised," he wrote from Philadelphia, "to find the General's (Burgoyne) declaration in his "message to Sir Henry Clinton by Captain Campbell "that he would not have given up his communications "with Ticonderoga had he not expected a co-operating "army in Albany, since in my letter to Sir Guy Carleton, a "copy of which was transmitted to your lordship in my "despatch of 2nd April, 1777 (No. 47), and of which his "Majesty was pleased to approve, I positively mentioned that "no direct assistance would be given by the Southern Army. "This letter I am assured was received by Sir Guy Carleton, "and carried by him to Montreal before General Burgoyne's "departure from thence."

If this be so, Burgoyne before leaving Montreal should have clearly understood that Howe had no intention of stretching out his hand to help the Expedition. Yet Howe, as we have already seen, and may repeat, had carefully planned an expedition for the capture of the Hudson, in a despatch to Germaine, in which he had proposed that "An "offensive army in the province of New York to move up the

"North River to Albany to consist of not less than 10,000 "men and 5,000 for the defence of New York and adjacent "parts."

"A defensive army of 8,000 men to cover Jersey and to "keep the Southern Army in check by giving a jealousy to "Philadelphia which I would propose to attack in Autumn." The suggestion was coldly received in Whitehall, and not subsequently noticed.

The extraordinary sequence of events appears to be:—

1. Howe in November, 1776, proposes to Germaine a plain of campaign comprising an advance of 10,000 men up the Hudson to capture Albany: this proposal was pigeon-holed.

2. Howe in April, 1777, writes Carleton before ever Burgoyne arrived in Canada (6th May) that the Expedition from Canada would get no help from the Southern Army (Howe's) by co-operation at Albany.

3. Carleton in July, 1777, sends an unqualified refusal to Burgoyne's request for men to keep open the line of communication with Canada, and to garrison Ticonderoga: Carleton pleads in defence his stringent order from Whitehall.

4. Burgoyne writes two despatches in August, 1777, complaining of stringency of instructions from Whitehall, alleging that a reasonable liberty of action would have been better counsel.

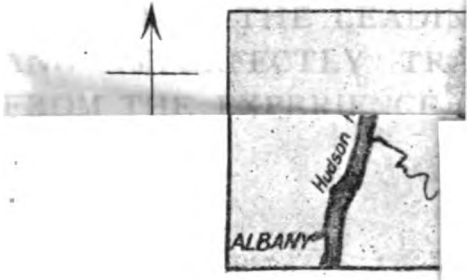
Thus his masterly idea of November, 1776, being merely acknowledged and pigeon-holed, in April, 1777, Howe writes a letter (of which the terms met with his Majesty's approval) completely obliterating his proposal of November, 1776.

Carleton cannot help Burgoyne, who should have known before leaving Montreal that he must not expect any help from Howe. Who tied up this knot? Who sent off Howe to the South, locked up Carleton in Canada, and made Burgoyne's Expedition from the first an enterprise of overwhelming peril?

Burgoyne in his moments of expansion and flattery early in July told Germaine that the whole credit of the Expedition lay with "Your Lordship."

Both the Howes share, at least in American and Canadian opinion, some of the discredit of this series of disasters. But the conduct of the Howes leads us along lines there is now no time to follow. Let us transfer our attention to the neighbourhood of the Valley Forge, at which place the great news reached Washington on 18th October, 1777, who reports: "The General "has his happiness compleated. In the 14th instant General "Burgoyn and his whole army surrender'd themselves Prisoners "of War. Let every face Brighten, and every heart expand with "greatful joy and praise to the Supreme disposer of all humane "events, who have granted us this signal success." Grammar does not seem to have been a strong point with the mighty Virginian: but his meaning was clear enough. A vast amount of powder was subsequently burnt in what the Father of his Country calls a Few-de-joy—for Burgoyne's disaster.

THE CHAIRMAN (Lieut.-General H. D. Hutchinson):—As no one desires to speak, it is my duty to bring these proceedings to a close. In doing so, there is little for me to say, except on your behalf to offer a most cordial vote of thanks to Dr. Belcher for his very interesting lecture. I am afraid very few of the present generation have ever paid much attention to the history of the American War of Independence. It is at best a record of unhappy misunderstandings, of deplorable mismanagement, both political and military, and of disastrous mistakes; and thus, for more than one reason, is not a very attractive study for Englishmen. This "Expedition from Canada," which Dr. Belcher has so clearly narrated to us, is only one small incident of a protracted and painful struggle, but it is typical of the way in which our warfare was waged in those far-off days, in what was then that remote region. In its conception, and in its execution, it may be said that almost every principle of strategy, every rule of tactics, and every consideration of prudence and of common sense, seems to have been disregarded; and really, a not inappropriate title for this lecture would be "The Expedition from Canada, or How Not To Do It." It was inevitable in the nature of things that failure should ensue. It is, indeed, quite pathetic to note, and to contemplate, the extraordinary difficulties and dangers by which General Burgoyne was beset, and oppressed, throughout his ill-fated enterprise. There were the orders and instructions from England, 3,000 miles away, with which he with his superior local information could not agree, but which effectually tied his hands; there was the insufficiency of his force for the task assigned to it, and the impossibility of getting any re-inforcements as time passed on and its strength became depleted; and there was its incongruous and motley composition. It included, as we have been told, English, Germans, Colonists, French Canadians, and, above all, Red Indians, all differently, and yet at the same time all indifferently, armed and equipped, and all speaking different languages. There was a total lack of organisation of transport and supply; there was no Intelligence Department; there were no medical arrangements; there were crowds of women, children, and camp followers, and above all, there were the extraordinary physical difficulties, both by land and by water, which were encountered on plunging into that unknown country. Therefore only one result could be expected, and while we can only feel pity for those brave men who perished in this forlorn hope, we must be moved to condemnation of those who were responsible for thoughtlessly sending them on such a hopeless errand. One conclusion, one lesson, is manifest, and that is that in all cases of this kind where operations are undertaken in far distant regions, the Commander-in-Chief, the man on the spot, should, within certain limits, be allowed a free hand. It has been the history of many wars in Europe, and in all parts of the world, that unfortunate meddling and interference with the man on the spot by Ministers and Governments sitting in ease at home, have led to disaster in the field. And this being so, who can say that telegraphs and telephones, and similar modern scientific inventions, are unmixed blessings? We may at least be thankful, for the sake of our Indian Empire, that they did not exist in the days of Clive and Warren Hastings, of Lord Gough or of Lord Dalhousie. In conclusion, I will only say to Dr. Belcher that we greatly appreciate the labour and care with which he has prepared this lecture for us, and assure him that we have been greatly interested in it.


Hudson
ALBANY

THE LESSONS THAT CAN BE DRAWN WITH REGARD TO THE LEADING OF HASTILY AND IMPERFECTLY TRAINED TROOPS, FROM THE EXPERIENCE OF THE OPERATIONS IN THE EASTERN THEATRE OF THE AMERICAN CIVIL WAR, UP TO THE 5TH MAY, 1863.

By Major E. F. HALL, R.F.A.

THE subject may be conveniently discussed under the following headings:—

I. The general results of want of Training and Discipline.
II. The inferences that may be drawn from I.
III. The lessons applicable to our own Territorial Army.

I.—THE GENERAL RESULTS OF WANT OF TRAINING AND DISCIPLINE.

Early in April, 1861, both Federals and Confederates had begun organising their forces for war. The first serious engagement was at Bull Run, on 21st July, over three months afterwards.

[1] At the commencement of the war there were about 4,000 officers, wholly or partially trained, only about 700 of whom were actually serving. About 1,000 of these joined the South. The Federals, therefore, had the majority. Had these officers been set to work, under a proper system and under capable direction, to train the raw levies, a great deal might have been accomplished before the battle of Bull Run. However, the man upon whom the North relied—General Scott—had become too old, and but little was done in the matter of organisation. For instance, the Militia and Volunteer regiments should have been brigaded and capable officers appointed to the command of each brigade whilst the regiments were being recruited. This was not done, however, until a forward movement was in con-

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[1] Colonel Edmond's lecture, R.A.I., 17th December, 1908; but Henderson, in "The Science of War," says: "Only 1,200, of whom about one-fifth joined the Confederacy."

templation, and it was only after 24th June that the Union Army was organised into brigades and divisions. The Federal Government did not show wisdom in its selections for command, and many appointments were given for purely political reasons.

Meanwhile, the Confederates were being organised on a sounder basis. President Davis was wise in accepting the advice of his most experienced generals as regards selections for command, and persons without previous military training were not given important posts until they had proved their capacity in the field. All the chief commands were reserved for officers who had served in the Regular Army, and they were given proper rank in accordance with their commands.

At first both sides enlisted Volunteers, but conscription had to be resorted to in the South after one year. The Northerners, by means of large bounties, staved it off for two years, but many of their so-called "bounty men" took the bounty and deserted at the first opportunity.

Henderson's graphic description of the march from Washington of the practically untrained Federal troops on 16th July, 1861, shows the extraordinary results of want of discipline. Although they started full of patriotism and martial ardour, men fell out on all sides; the army marched only six miles, and the stragglers did not rejoin their regiments till late the next day.

Now, in an army broken to discipline, straggling on the line of march is practically unknown, and as Colonel Henderson says: "The most marked difference between regular troops "and those hastily organised is that with the former the waste "of men will be small, with the latter, great."

In the actual fighting at Bull Run the Americans on both sides behaved, generally speaking, with great gallantry, but the Northerners were set by far the more difficult task of the two. To quote from Johnston's narrative: "In mere physical "courage the recruit or militiaman is generally not deficient; "he can fight; he proposes to fight; and he can usually be "relied on to fight; but in the first place he must be brought "in the field in good order and condition; and, secondly, he "must have no cause to distrust the skill of his commanders "or the possibility of achieving success. Subject him to the "ordinary vicissitudes of warfare, and his confidence departs; "his courage leaves him; he becomes deaf to the call of his "officers and utterly untrustworthy. In handling green, un-"disciplined troops, therefore it is wiser, as a rule, to remain "on the defensive." The Northerners had the disadvantage of being the attackers. They fought well, but having to advance under fire were much more liable to confusion than the generally stationary ranks of the Confederates. As Lord Wolseley says: "They ran away because they neither understood what dis-"cipline was nor the necessity for it, and because the Staff

"and regimental officers, with few exceptions, were untrained "and inexperienced."

The Confederates were, however, quite as disorganised by their victory as the Federals were by their defeat, and General Johnston's arrangements for pursuit were entirely upset by the incompetence of his Staff. The fruits of the victory were entirely lost to the Confederates. Without a trained Staff and an efficient commissariat an army is incapable of combined movement.

Discipline is the very life-blood of an army. The instinctive habit of obedience and mutual confidence among all ranks is essential. Both armies were sadly lacking in this most important quality, and it was owing to this and to the want of trained Staff officers that there were no decisive victories.

Compare this march of the Federals from Washington with Jackson's great march on 25th and 26th August in the following year. Near the end of the first day, when over 20 miles had been covered, Jackson's troops were still moving briskly, well closed up, and without stragglers. When they reached Salem Village they had completed 26 miles. Another 25 the following day brought the troops to Bristoe Station.

This march would appear to exemplify the results of training and discipline. That the state of even Jackson's command, however, was by no means perfect is shown by the statement that the "ill effects of hasty organisation were still "glaring, the regimental officers had not yet learned to study "the wants and comforts of their men, the troops were harassed "by the ignorance of a Staff that was still half trained, and the "commissariat officials were not abreast of their important "duties."[1]

Straggling was the curse of both armies, and punishments seemed to have no effect upon it. Again and again it is stated to what a pitch the vice of straggling had reached. Both armies were alike. Jackson's command was by no means free from it. Between 17th May, 1862, and the Battle of Cross Keys, on 8th June, by absenteeism alone, Jackson's army was reduced by 3,000 men. After Sharpsburg, on 17th September of the same year, one corps of the Northern Army had 13,000 present and 15,000 absent, and by the returns of the Confederates it may be inferred that at the time of the fighting on the Antietam there were nearly 14,000 stragglers. It was reported that the number of officers among them was astonishing. At this time, even in Jackson's command, there must have been 1,300 absent out of a total strength of 10,600. Again, after the war had lasted for nearly two years, it might have been expected that the troops would be thoroughly disciplined,

[1] "Stonewall Jackson," Vol. 2, p. 203.

seasoned as they were by the stern reality of hard marching and fighting, yet when the army was resting after Fredericksburg once more desertion became rife. In one of Jackson's own brigades 1,200 officers and men were reported absent without leave. About the same time, when Hooker took over command of the Federals, there were 2,922 officers and 81,964 non-commissioned officers and men absent.

How necessary severe methods were found to be is shown by the fact that Jackson, in his great flank movement on 2nd May, 1863, before the battle of Chancellorsville, gave the order that all stragglers should be bayonetted.

Another example of want of organisation and inefficiency of officers is the indiscipline of Ashby's cavalry at Middletown (23rd May, 1862). After capturing a convoy, they turned aside to pillage, some, indeed, seizing a horse or two, rode off with them to their own homes, which were in some cases at a distance of one or two days' march. It was owing to their not being present to pursue that Jackson attributed the escape of the Federal Army under Banks. At this time, although the strength of Ashby's regiment was over 2,000, there was only one other field officer besides himself. This speaks for itself. With such complete want of organisation it is scarcely to be wondered that discipline was scant.

On the whole, however, the Confederates had the sounder organisation of the two. Their system of reinforcement exemplifies this.

With the Federals regiments were raised and allowed to die out. In the Southern Army they were kept up to strength by drafts. There is no doubt as to the advantage of the latter system. Tradition and *esprit de corps* were maintained, and the young soldiers profited by the experience of the veterans.

It is recorded that before the Battle of Sharpsburg the Northern Army had been reinforced by 24 entirely new regiments, with little knowledge of drill, the officers being as ignorant as the men.

In addition to straggling, both armies showed the results of want of discipline and training by—

a. The indifferent way in which the outpost duties were carried out by the infantry. There were far too many instances of surprises, not of small parties only, but of whole armies.

b. The absolute want of fire discipline. Directly firing began there was practically no control over it. This, of course, vastly increased the difficulties of ammunition supply.

The more the American War is read the more the value of steady drill and steady discipline is realised.

II.—THE INFERENCES THAT MAY BE DRAWN FROM I.

In trying to deduce lessons from this war the fact must at no time be lost sight of that both sides were, generally speaking, of the same character, and that neither side had to fight against regular troops, with the exception of about 3,000 men, who were employed during the war by the Federals. The remainder of the Regular Army (about 12,000) was required, as in peace, to watch the Indian frontier.

There can be no question, at any rate as regards the first year of the war, "that the co-operation of even one army corps "(35,000 men) of regular troops would have given complete "victory to whichever side it fought on" (Lord Wolseley).

It is impossible to believe that it would be of any use to lead troops as undisciplined as the American troops were with any hope of success against the regularly organised armies of modern Europe.

As regards the regular troops employed by the Federals, both Bull Run, on 21st July, 1861, and Gaines Mill, on 27th June, 1862, are good examples of their superiority. On both occasions they alone remained firm among the throng of fugitives. At Bull Run the utterly undisciplined levies of the North were, as Henderson has it, "scattered to the four winds with "the solitary exception of the Regular Battalion, which, although "composed of young soldiers, stood firm."

This must be ascribed in great part to their being led by regular officers.

Many valuable lessons may be deduced from a study of the campaign. Among the foremost are:—

a. The importance of selection of leaders.

b. The necessity of a properly organised and well-trained staff.

c. The need of good regimental officers.

In both armies no arrangements for any of the above had been made previous to the outbreak of the war, with the results already enumerated in Part I.

The vast proportions that straggling had assumed tells its own tale.

It is true that a man of Jackson's stamp could at times so imbue his command with his own ideas as to be able to effect a long strain of successful marching and fighting.

No personality of the leaders, however, was alone able to put a stop to straggling entirely, and it must be ascribed altogether to the want of good staff and regimental officers. Had the armies possessed organisations before the war by which they could have trained a General Staff and a sufficiency of regimental officers it is impossible to believe that the state of indiscipline which existed could have lasted as it did.

The importance of selection of leaders is shown in nearly every battle that occurred. Compare the methods of Lee, Longstreet, and Jackson with those of Frémont, Banks, Pope, and Burnside, and it is not to be wondered at that the Confederates were almost uninterruptedly successful, in spite of being inferior in numbers and in the quality of their weapons.

A thorough belief in the leader is, without doubt, of the first importance as regards the success of any force. With partially trained troops the necessity of it is much enhanced.

To show the marvellous results of personality in the leader, another great march of Jackson's may be cited. In November, 1862, he accomplished with his Army Corps 120 miles in eight days from Winchester to Orange Court House, and there were scarcely any stragglers.

Over and over again it is seen how Lee and Jackson, when the number of their own troops was far less than that of the Federals, were so fully sure of their own superiority that with confidence they planned apparently the most hazardous operations, and almost invariably were successful. So sure of success were they that the men necessarily became imbued with their characteristics.

But however good the leader may be, he is seriously handicapped unless he has a properly arranged and workable Staff to carry out his orders and see that they are understood. Without a trained Staff and good regimental officers raw troops may fight well as individuals, but as organised bodies they cannot have the necessary cohesion to enable them to manœuvre under fire for combined effort. Henderson cites no less than seven serious failures in co-operation during the "seven days," nearly all of which must be put down to bad Staff arrangements.

d. The tactics best suited to the leading of a partially trained army.

The great advantage of manœuvring so as to be on the defensive has been already clearly shown by the example of the battle of Bull Run. All movements should be of the simplest character. Any complicated manœuvres with imperfect Staffs and with Generals unused to working together are only likely to be a cause of disaster.

Except for this, it does not appear that the tactics suitable to the leading of raw troops are in any way peculiar to such.

III.—LESSONS APPLICABLE TO OUR OWN TERRITORIAL ARMY.

A study of the campaign shows that considerable time is required before imperfectly trained troops can be made of any value, and how little at first they are to be relied on. The blow of a European foe would probably be sudden, and possibly

without warning. No country can therefore afford the risk of relying on troops whose training is to be carried out or even completed after the outbreak of hostilities.

The main object of the Territorial Army is defence. But defence against whom? Obviously only against the highly-trained armies of countries which have adopted conscription or universal service. It is also manifest that a considerable time for training is necessary in which to bring the Territorial Force up to a standard sufficiently high to enable it to cope with these armies.

That the Territorial system, however, is an enormous advance on that of the old Volunteers is certain, and it will have to be made the best of until some scheme of universal service is inaugurated.

As regards the Territorial Army, it may be taken that the leaders have already been carefully selected, its organisation is on a sound footing, and it has at any rate a proportion of the trained staff that is necessary for war.

Its weak point, however, is undoubtedly its regimental officers, and whatever the length of time that our antagonists allow us, it is on these officers that the training of the units will mainly depend.

It is true that there are a certain number of retired regular officers serving, and also regular officers acting as adjutants, but these are not nearly sufficient to leaven the whole mass.

What is required is that all branches should be strongly backed with regular regimental officers.

That the weak point is the officers there can be no question. This is through no fault on their part, but simply from want of opportunity and of experience.

During the progress of a war doubtless many Territorial officers would become thoroughly efficient, but it is in peace time and at the commencement of a war that trained officers are required.

The American Civil War shows that thoroughly competent officers are required in the first instance to train their men, and then to carry out discipline and leading, and also points to the necessity for a large proportion of these officers being regulars.

Few Territorial officers have the necessary practical knowledge, and with the best of intentions it is impossible for officers unused to command to properly look after and enforce their will upon those under them. With but rare exceptions, those who have not had experience in the ordering and handling of men are wanting in self-reliance and extremely diffident about taking command. That this is so is well known to any regular officer who has acted as an adjutant of the auxiliary forces.

It is related that when Jackson took over command at Harper's Ferry at the beginning of the war there were many of the officers of the old Militia, even up to the rank of General,

who were really but civilians in uniform, most of whom were useless in the higher ranks. All above the rank of captain were, however, deposed by the State. It is not intended in any way to compare these useless persons with our comparatively well-trained Territorial officers, but the wisdom of the action taken by the State is apparent.

If the Territorial Army is to get no more training in peace time than it does at present, it is improbable that all the officers in the country could make it fit to meet an army of one of the great military Powers at the outset on equal terms. But assuming that it is to get a few months' training after the outbreak of war, the addition of a fair proportion of regular officers should be able to make it so, not otherwise.

It would be impossible to obtain these officers after war had been declared without seriously weakening the Regular Army, and therefore they must be provided in peace time. This would mean largely increasing the establishment of officers of the Regular Army.

The need for this backing with trained officers applies to all branches, but is especially necessary in the Horse and Field Artillery, because of the technical training and constant practice which is required to make an efficient artillery officer.

It is not too much to ask that all Territorial Artillery brigades and batteries should be commanded by regular officers.

It is suggested that a major should command each artillery brigade, and a captain each battery.

These officers should not remain seconded from the Regular Army for more than two (or at the outside three) years. They should then return to regimental duty, and their places be taken by others.

This would ensure not only that the officers doing duty with the Territorial Army are up to date, but also more intimate connection and sympathy between the two branches of the service.

As to the infantry, it is suggested that the double company system should be brought in, and regular officers appointed to the command of battalions and double companies.

A similar arrangement is required in all branches, and probably in none more than the Army Service Corps, upon whom the well-being and maintenance of the army in the field is dependent.

That this would cost the country a considerable sum is not denied; but on the understanding that some months are available after the war has commenced, it is worth it. If this assumption is not sound, as every soldier knows in his heart, the Territorial Army will not come up to its requirements.

The attached table shows the officers of the Territorial Force whom it is proposed to replace with regulars, and also what the system would probably cost.

Objections are sure to be made to this system. It will be argued that the posting of regular officers to command will be unpopular with the Territorials, and that these officers will find it difficult to obtain recruits. It is true that they could not be expected to put their hands in their pockets to the same extent that is apparently looked for from present commanders of units. The country should not, however, expect this from any officers, either Territorial or Regular. It was common for Militia and Volunteer commanding officers to spend small fortunes on their units. This is, happily, or should be, a thing of the past.

It is the firm conviction of the writer, from knowledge gained as an adjutant of Militia, and also from an acquaintance with both Volunteers and Territorials, that the advent of these regular officers would in the majority of cases be heartily welcomed by both officers and men. Of course, it goes without saying that they must be keen, be good instructors, know their job thoroughly, and have the necessary tact. Provided they have these qualifications there should be no dearth of officers and men coming forward to serve under them.

Again, it will be objected that in peace time there will not be sufficient work for these officers, nor can it be denied that this is a difficulty. During the periods of the year when the Territorials practically close down, they could be attached to their own branch of the regulars, where they could be usefully employed and also keep themselves up to date. Opportunity might also be taken to send them through courses, or to attach them to the other arms. Thus, incidentally, the Regular Army would be benefited, because units would be relieved from the necessity of having to send officers away, as so often happens at present, when their services are urgently required to train their own men.

During the training periods and annual camps keen officers will find their hands only too full. If they are not keen they are not worth keeping in the service at all.

Again, the fact that these officers will have no local connection or interests will be put forward as a bar to the scheme. With the Territorials, however, this is of not nearly so much consequence as it was with the Volunteers. The Territorial Force Associations should be able to supply all that is necessary in this respect.

The supply of these extra officers, under existing conditions, would appear difficult. As it is, candidates in sufficient numbers are not forthcoming to fill the present establishments.

There are many obvious measures worth trying to remedy this state of affairs. One of the first is the reduction of the charges at Woolwich and Sandhurst. These are national establishments for the education of cadets, and it seems only reasonable that the State should pay and not the parents. There is no doubt that the large initial expenses prevent many of the

latter from sending their sons into the army. It is not intended, however, to discuss the general question of the supply of officers. The matter is an urgent one, and is doubtless being taken in hand.

At the present time in the Territorial Infantry the only regular officer is the adjutant. He is not only responsible for all the training, but also for all the routine and administrative work, and he is in many cases in addition practically the commanding officer. To assist him with all this he has no regular quartermaster.

It was an ordinary occurrence in the Volunteers for a retired regular quartermaster (or quartermaster-sergeant) to accept office and receive payment for his services out of the private funds of the regiment. This, however, is not possible with the Territorials, and the consequence is that during training, when the adjutant should be free to devote his whole time and energy to instruction, he is up to his ears in office work and immersed in the worrying details of interior economy and administration.

Under the system advocated the regular officers would naturally take over the entire training of their units. It might, therefore, be possible to dispense with the services of the present adjutants and replace them with quartermasters.

As regards the appointments as C.R.A. of divisions and commanding infantry brigades, these should be as at present, but with the proviso that they should be made within two years of retirement or going on half-pay. Five years from the latter date, except under most exceptional circumstances, they should be required to give up their commands.

It is necessary that officers should be selected with great care for these important posts, and should be thoroughly up to date.

The Territorials being primarily intended for home defence, arrangements should be made for them to manœuvre near probable points of invasion, and not at places like Salisbury Plain, where it is most unlikely that they would have to fight.

Thus under good generals, with a competent Staff and a proper stiffening of regular regimental officers, the fighting value of the Territorial Army would quickly improve, and after a few months' training should almost, if not quite, equal that of the army of a modern military Power.

NOTES ON TABLE.

The table is based on establishments of the Territorial Force for 1909-10 issued with Army Order dated 1-9-09. (Amended by "Changes" issued with Army Order dated 1-12-09.)

The total cost per annum will be seen to be less than one-fifth of that of one "Dreadnought."

The cost would be considerably reduced by the number of regular retired officers serving as at present.

As regards the R.A., provision of regular officers for the ammunition columns has not been considered possible.

In the R.E. the 14 lieut.-colonels for the headquarters of divisional Engineers, and in the A.S.C. the 14 lieut.-colonels, C.O.'s of Divisional T. and S. Columns, have not been included. It is probable that retired officers would come forward, as in the case of infantry brigadiers and C.R.A.'s of divisions.

In the A.S.C. it is only proposed to replace half the number of Territorial majors and captains.

The 512 infantry Territorial captains might be retained to command their companies under the double company commander.

The basis of 12 days for Territorial training is taken as a mean period for purposes of calculation.

ANNUAL COST OF REGULAR OFFICERS.

(1) Includes Armament, Engineer and Corps Pay.
(2) ,, Lodging, Fuel and Light, and Servant's Allowances, also Forage.

Units.	Nos.	(1) Annual Pay. £ s. d.	(2) Annual Allowance. £ s. d.	Total. £ s. d.
16 *Regiments Yeomanry.*				
Majors, Cavalry	16	4,380 0 0	1,792 13 4	6,172 13 4
Captains ,, ...	64	15,184 0 0	4,284 13 4	19,468 13 4
14 *Batts. R.H.A.*				
Captains, R.H.A.	14	3,832 10 0	936 16 8	4,769 6 8
41 *Bdes. R.F.A.*				
Majors, R.F.A.	41	11,972 0 0	4,593 14 2	16,565 14 2
Captains ,, ...	123	26,001 13 9	8,230 15 0	34,232 8 9
14 *Howitzer Bdes.*				
Majors, R.F.A.	14	4,088 0 0	1,568 11 8	5,656 11 8
Captains ,, ...	28	5,919 1 8	1,873 13 4	7,792 15 0
1 *R.G.A. Mountain Bde.*				
Major, R.G.A.	1	355 17 6	112 0 10	467 18 4
Captains ,, ...	3	798 8 9	200 15 0	999 3 9
14 *Heavy Batteries.*				
Captains, R.G.A.	14	3,726 0 10	936 16 8	4,662 17 6
Div. Engrs., 28 *Field Coys.*				
Captains, R.E.	28	8,985 1 8	1,873 13 4	10,858 15 0
14 *Divl. Tel. Coys.*				
Subalterns, R.E.	14	2,767 18 4	872 19 2	3,640 17 6
5 *Groups, Army Troops Engr.*				
Majors, R.E.	5	2,281 5 0	560 4 2	2,841 9 2
5 *Wireless Tel. Coys.*				
Subalterns, R.E.	5	988 10 10	311 15 5	1,300 6 3
5 *Cable Tel. Coys.*				
Captains, R.E.	5	1,604 9 7	334 11 8	1,939 1 3
5 *Air Line Tel. Coys.*				
Captains, R.E.	5	1,604 9 7	334 11 8	1,939 1 3
INFANTRY—204 *Battalions.*				
Majors, Infantry	204	50,570 15 0	22,856 10 0	73,427 5 0
512 *Double Coys.*				
Captains, Infantry	512	108,234 13 4	40,953 0 0	149,187 13 4
A.S.C.				
Majors	14	5,450 13 4	1,568 11 8	7,019 5 0
Captains	14	3,981 10 10	936 16 8	4,918 7 6
Subalterns	70	12,740 0 0	4,364 15 10	17,104 15 10
Tot. cost of Regular Officers		275,467 0 0	99,497 19 7	374,964 19 7
Deduct cost of Terrl. ,,		10,857 9 0	2,233 6 0	13,090 15 0
Net cost of Regular Officers		264,609 11 0	97,264 13 7	361,874 4 7

COST OF TERRITORIAL OFFICERS CALCULATED ON A BASIS OF 12 DAYS TRAINING ANNUALLY.

(3) Includes Armament, Engineer, and Corps Pay.
(4) ,, Half Lodging and Forage Allowances.

To replace Territorial Officer as under.	Nos.	(3) Pay calculated on 12 days' training.	(4) Allow'nces calculated on 12 days' training.	Total.
		£ s. d.	£ s. d.	£ s. d.
Lieut.-Colonels	16	206 8 0	42 8 0	248 16 0
Majors	64	576 0 0	150 8 0	726 8 0
Majors	14	155 8 0	32 18 0	188 6 0
Lieut.-Colonels	41	442 16 0	108 13 0	551 9 0
Majors	123	1,180 16 0	289 1 0	1,469 17 0
Lieut.-Colonels	14	151 4 0	37 2 0	188 6 0
Majors	28	268 16 0	65 16 0	334 12 0
Lieut.-Colonels	1	13 16 0	2 13 0	16 9 0
Majors	3	35 2 0	7 1 0	42 3 0
Majors	14	163 16 0	32 18 0	196 14 0
Majors	28	420 0 0	65 16 0	485 16 0
Captains	14	147 14 0	17 10 0	165 4 0
Lieut.-Colonels	5	96 0 0	13 5 0	109 5 0
Captains	5	52 15 0	6 5 0	59 0 0
Majors	5	75 0 0	11 15 0	86 15 0
Majors	5	75 0 0	11 15 0	86 15 0
Lieut.-Colonels	204	2,203 4 0	540 12 0	2,743 16 0
Captains	512	3,558 8 0	640 0 0	4,198 8 0
Lieut.-Colonels	14	201 12 0	37 2 0	238 14 0
Majors	14	179 4 0	32 18 0	212 2 0
Captains	70	654 10 0	87 10 0	742 0 0
Total Cost of Territorials based on 12 days' training annually		10,857 9 0	2,233 6 0	13,090 15 0

RASPLATA.

("THE RECKONING.")

By Commander VLADIMIR SEMENOFF, Imperial Russian Navy.

Translated, by permission of the Author, by L. A. B.

(Continued from December JOURNAL, p. 1622, and concluded.)

CHAPTER XI.

DIARY OF THE LAST PASSAGE—"THE RECKONING."

TO-DAY, 14th May, is Sunday, and [Russian] Mayday. One would think that these are the most favourable auspices for starting on a journey. At 6 a.m. the ships commenced to leave the bay. About 8.30 we took up cruising formation, then the auxiliaries received the signal: "Take destroyers in tow." Jonquières was present in the *Guichen* in a somewhat demonstrative manner.

Now he was able to report with a clear conscience that we were off at last. An amiable gentleman! One could not help feeling that his good wishes were sincere. (They had been transmitted by wireless.) What should we answer him?—"*Adieu, mon Amiral,*" or "*Au plaisir de vous revoir?*"

By eleven o'clock we had shaped our long course and were going 9 knots. May fortune favour us!

The spirits in the fleet are not so bad. They will just keep up till the fight begins. Jokes are even made. It is said that the next admiral who comes out with the "Third Squadron" will fly his flag in the *Slava*,[1] but that he would not reap any glory.[2] Either he would reach us, if God so willed it, or he would find in our stead an empty space, and then he would not be able to accomplish anything. Not bad! Something like the Dying Gladiator's *Morituri te salutant*. Lieutenant S—— is more gloomy than the night. He croaks. Pointing at the chart (and our track on it), he says: "*Via dolorosa.*" After mass and the prayer for a safe passage, we emptied a glass of "Mumm's extra dry" in honour of the start. Lieutenant S—— speaks out again: "Feasting at the time of the plague." I

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[1] A battleship then nearing completion.

[2] "Slava" means "glory."

remonstrated with him, even good-naturedly scolded him. Why was he wallowing in his grief? We knew that well enough ourselves. Now we must hold out; it was not in our power to choose anything else. More than once one could not die. . . .

15*th May*.—So far all is going well. Late in the evening, as I was wandering through the ship, I looked into the ward room. I found W—— (the chief engineer) sitting with K—— and G—— (naval reserve sub-lieutenants) drinking beer and eating sandwiches.

"What is the meaning of this?"

"Don't you understand? A navigator, too, like you! There is a difference of seven hours in longitude. Now just at this hour every German in St. Petersburg is eating his dinner at the St. Katherine Hotel." They laugh. Capital fellows! The devil take all presentiments!

Weather calm. Warm. Met three steamers, crossed the trade route (normal track) from Singapore to Hong-Kong.

16*th May*.—As regards night cruising we have hit it off well. It will be full moon in two days' time. The night is as bright as the day. Searchlights are quite unnecessary now. So long as we are not free to move about as we like (we are convoying the auxiliaries), torpedo attacks at night are our greatest danger. Defects make their appearance on board some of the ships. We are now three days out, and the following have already had breakdowns: *Tamboff* twice, *Orel* (battleship), *Navarin* and *Sissoi* each once. They did not last long, but it always means a delay, and the worst of it is one does not feel quite certain that these defects have now been put to rights properly. How shall we fare in action? The scouts are ahead, they have spread. We try to push them further out whilst keeping touch by wireless. But it won't work. It is hopeless! Whose fault is it? The inexperience of our torpedo officers or the Slaby-Arco system, which the Technical Committee accepted? The devil take the lot! . . .

17*th May*.—In the morning a fresh breakdown on board the *Navarin*. We had to ease down for five hours. The scouts are reduced to mere look-outs within signal distance. This is now accepted as the rule. At half-past five in the evening the *Orel* sheers out of the line; her steering engine had gone wrong. It is especially hot and close to-day. The sun is in the zenith, and a death-like silence reigns everywhere.

18*th May*.—The night passed quietly. At daybreak we stopped engines and commenced coaling. In the "Third (Nebogatoff's) Division" it goes badly; they are not accustomed to it. However, they are not much in need of it. By 3 p.m. the business is finished. *Tamboff* and *Mercurya* are detached to Saigon, and we express to them by signal our special thanks for the "admirable assistance rendered to the squadron." At 8 o'clock we were once more formed up. Suddenly—a fresh delay. On account of the *Tamboff's* departure, the destroyer

she had been towing is turned over to the *Livonia*. The latter messed about with her for an hour and a half before she was ready to go ahead. We now moved off, and exactly two hours later the hawser parted and the old story began once more. The *Livonia* was at last relieved of the job she was not equal to, and the destroyer was turned over to the *Svir*. It is terrible. The whole of this time we were crawling along at 3 knots. At 8 p.m. we sighted a steamer astern. We sent the *Oleg* to overhaul her. She was English; the captain said his cargo was petroleum; that he had no papers; that he was bound for Nagasaki. We made him keep company and put off the inspection and decision to the morning.

19th May, 2 a.m.—The *Apraxin's* machinery has developed defects. She reported by signal that the repairs would take twenty-four hours and that until then she could not make more than 6 knots. Not bad for a beginning! Cursed be our "strategists" and the "reinforcements" sent out by them! The steamer *Oldhamia* appears highly suspicious. K—— (naval reserve sub-lieutenant), an experienced merchant seaman, declares the steamer's coal-bunkers are nearly empty; the coal on board would just last to Nagasaki; all the same the steamer was down to her "Plimsol-mark."[1] Petroleum in tins or casks is a bulky but light load. He has sailed with such a cargo. They had then filled up, not only all the holds, but all empty spaces, even carried a deckload; the ballast tanks had been filled with water (to ensure her stability); they had taken on board more than the normal stowage of coal, and still the Plimsol-mark had been several feet out of the water. On board the *Oldhamia* they had little coal left; the cargo was confined to the ordinary holds, the upper deck was clear. What, then, produced this deep draught? It was evident that down below, underneath the petroleum tins, there was something heavy. The captain declared he had no papers. On questioning the crew it turned out that, with the exception of two men who were in the captain's confidence, the whole lot had only been shipped the day before sailing, had, therefore, not been on board when the cargo was being stowed, and could not give any definite information as to the contents of the holds. The captain and his two mates, the engineers as well as the two men who had been present when the holds were stowed, did not, or rather would not give any explanation. On the other hand, one of the seamen (a German) informed us that he had gathered from a conversation between two of those in the secret, which he had chanced to overhear, that the forehold contained shell, the main-hold guns. The Admiral decided to seize the steamer and to send her to Vladivostok, where the nature of the cargo

[1] A special mark painted on the outside of the hull, which is placed according to certain rules by Lloyds, and which indicates when the ship is fully laden. When this mark disappears below water the ship is overladen to a dangerous extent, and no company will insure her.

could be ascertained. As she had not enough coal on board to steam that distance, the *Livonia* was ordered to supply the *Oldhamia* with 600 tons. We sent a working party with several officers to the steamer. We lay stopped the whole forenoon. At 10 a.m. we stopped another steamer. She was Norwegian. She was empty, bound south. We let her go. We made use of the stoppage to distribute amongst the ships copies of General Order No. 240, of 19th May, dealing with the night cruising formation while passing the Japanese islands, and with the measures of precaution to be taken against mines, which might have been strewn in our path. (The measures to be taken against masked night attacks, as to the possibility of which we had received information from our agents, had already been laid down in General Order No. 216 of 3rd May.) At 11.30 a.m. we proceeded. The *Livonia* is towing the *Oldhamia* and coaling her at the same time. Whilst this is going on, a special working party is endeavouring to search through the fore and after holds. This work is much impeded by the fact that the cases are badly stowed (intentionally or in consequence of hurried loading). It was necessary to make regular shafts, the sides of which had to be secured, and yet the unloading progressed very slowly from want of practice in this kind of work. A further suspicious circumstance: a cargo which is stowed so carelessly takes up still more space—whence, therefore, the draught up to the mark?

20th May, 5 *a.m.*—How strong is the force of habit, the love of that element with which one is bound up, in the service of which one has spent the best part of one's life! Last night it came on to blow from the east. Towards midnight the *Livonia* and *Oldhamia* had to cast off. During the night the sea got up. Scuttles had to be closed. The spray is already coming over. We are rolling. But what a sunrise! I hurry on deck to get fresh air, and feel disinclined to go below again. It is thus that I love the sea. There is a certain amount of sea, a grand, refreshing sea breeze is blowing. One takes it in in deep breaths. We are just passing Batan and Sabtan (islands between Formosa and the Philippines). Thank God! We seem to have left that awful stuffy belt of calms behind us. I greet thee, boundless ocean!

21st May.—Nothing of any consequence happened yesterday; or during the night either. This morning the working parties returned from *Oldhamia*. It had not been found possible to search the holds right down. Never mind—it will all be cleared up at Vladivostok. She is going through the Straits of La Pérouse by herself. T—— (a naval reserve sub-lieutenant) of the *Suvoroff* is placed in command. He was permitted to select his mates. The crew is provided by several of the ships. The skipper, the engineer, and their mates had to be removed out of her, as they were inclined to be troublesome. Attempts had been made to damage the machinery,

even to sink the steamer. Where were they to be taken to? On board one of the men-of-war? The Admiral had a sudden access of tender feeling: why should one bring neutrals under fire, even if they did deal in contraband of war? He had them sent to the only neutral territory in the neighbourhood—the hospital ship, *Orel*, under the protection of the Red Cross. From there we received the astonished signal: "Five healthy Englishmen have come on board. What are we to do with them?" The Admiral's reply was somewhat in the sense of: Look after their health until the next port.—At 2 p.m. first the *Zemtchug*, then the *Ossliabia*, and eventually the *Svetlana* sighted a balloon. The latter even reported its bearing and altitude. The *Oleg* and *Zemtchug* were detached in that direction, but without any result. From us (flagship) the balloon was also seen, by many people in fact. I did not see it. Flag-Lieutenant N—— pretended that it was not a spherical balloon, but a large kite or aeroplane, which had broken loose. It was at a great height and travelling south. If it carried any passengers I don't envy them.

Towards evening the sky became overcast. There was thunder and it came on to rain.

22nd May.—The night was hazy, but cool. One notices that we have left the tropics. At 8 a.m. we altered course to N. 20° W.; this takes us between Miyako and Liu-Kiu.

Overcast, foggy, some sea running, wind N.N.E. We meant to coal to-day, but it was not possible, on account of the weather.

Yesterday the *Kuban*, and to-day the *Terek*, parted company, to cruise off the east coast of Japan. God grant that they may attract as much attention as possible! The wind is backing to N.W. We are carrying out evolutions, so as to work up the "Third Division." They have had no practice whatever.

Only one formation ever succeeds: the formation of "huddled-up-mass." A sad sight! Towards noon the weather improved somewhat. Perhaps it will be of use to us now. It prevented our coaling, but on the other hand it prevented us from sighting the islands between which we passed; that means we have not been seen from there. Our whereabouts is up to now a riddle. God grant that we may be able to coal to-morrow, when we shall be quite out of sight of the islands, and at the same time in an utterly unfrequented region, not crossed by any regular steamer tracks!

Towards evening it fell calm.

23rd May.—The night passed quietly. At 5.30 a.m. we stopped engines and started coaling. It is calm, but the look of the weather is suspicious. There is an appearance of rain. By visual and wireless signal the ships were informed that this will probably be the last time of coaling. We were to do our very best to have still the normal stowage in our bunkers on the

morning of 26th May.[1] Bad news of Fölkersam: his mind is wandering, temperature 95° F., pulse 60. I asked the fleet surgeon what this meant, translated into ordinary language. He mumbled something about "the end," waved me aside and passed on. The captain of the *Ossliabia* received secret orders not to strike the flag when Fölkersam had died. The nerves of all were so sensitive. The death of an admiral on the eve of battle! How would this be taken? Perhaps without any special emotion, but perhaps they would take it as an ill omen, suddenly break down and lose heart.

We made use of the time devoted to coaling to issue the last General Order. It began with the words: "Ready for action any hour. . . ."[2]

24th May.—The weather is decidedly getting worse. All the better! We had no more breakdowns and no more delays. That is excellent! The spirits are good. They have all pulled themselves together and appear to be full of confidence.

25th May.—Overnight the rainy weather has set in determinedly. The sky is uniformly grey. There are frequent light showers. A fresh breeze is blowing. Before sending off the collier transports we wanted to fill up the destroyers' bunkers for the last time, for there will hardly be any opportunity to do so between here and Vladivostok. It did not succeed owing to the state of the weather. But what is to be done? If nothing special happens, what they have on board ought to suffice. All the same, something in reserve never does any harm.

When 90 miles off Shanghai (estimated distance) we despatched the auxiliaries to that port. The *Dniepr* and *Rion* go with them. These latter are to convoy the defenceless ships as far as the Yangtse, and are then to carry out cruiser operations on the southern trade routes leading to the ports of Western Japan and the Yellow Sea.

Touching signals were exchanged at the parting. Our range of vision is reduced by the rain to 2 or 3 miles, so that from the southern point of Formosa up to now no one has seen us.[3] That is not so bad. Let us hope that it will continue like this. S—— is wandering up and down the bridge, blacker than the night. I take him by the arm. . . .

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[1] How impudently those lied who pretended that the ships had been overloaded with coal during the battle!

[2] General Order No. 243 of 23rd May:—Is it possible to say whether after all everything would not have been lost if the captains of the *Byedovy* and *Bystry* had faithfully carried out their task as laid down in this order—to take the Admiral and his staff to another undamaged ship the instant the *Suvoroff* might have to haul out of the line of battle? The last wound, and the one which caused him the greatest suffering, the Admiral received about forty minutes after the *Suvoroff* had been deprived of the power of leading the squadron.

[3] It was so in fact.

"Well, don't you see we have come so far, and . . ."
"And?"
"And we shall get further yet."
"We are going, we are going. . . . How did you put it then? I don't recollect. . . . Oh, yes.—*To our reckoning.*"[1]

FINIS.

APPENDIX.

THE HULL AFFAIR.

On our arrival at Vigo we heard how great and widespread was the stir which the incident with the fishing-boats in the North Sea had caused. The English papers called the squadron simply the "squadron of mad dogs," which ought either to be turned back or destroyed. The incident itself they stigmatised as an "act of open piracy." (This is juridically absurd, since the condition *sine-qua-non* of piracy, that is, sea robbery, is personal gain.) But public opinion in England was above all excited about the fact that "one of the Russian torpedo-boats remained on the spot until the morning and rendered no assistance to the fishermen, who were saving their comrades."

This piece of news, which emanated from the fishermen scattered on the sea, was discussed from every point of view. It was said that even the barbarians of old had spared the lives of those who had become the victims of war by chance, and had reprieved them; after this there could no longer be any doubt that it was a slap in the face for England, an insult which could only be wiped out by blood, unless the Russian Government offered complete satisfaction.

The return of the squadron and the trial by a Court of Law of the admiral commanding, the captains, and all those implicated in the affair, *but above all of the captain of the torpedo-boat*, was the least satisfaction which could be accepted.

For me, these statements were a complete revelation. My sceptical views could not be upheld against the testimony of old and experienced seamen.

"*One of the torpedo-boats remained on the spot until the morning.*"

This means that as a matter of fact there were torpedo-boats present. Thanks to our good look-out we had therefore escaped from an extraordinary danger. We happily succeeded in repelling the attack. If in doing so innocent people were made to suffer, this was no doubt most deplorable, but what was to

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[1] The days of 25th, 26th and 27th May have been fully described in my book "The Battle of Tsu-shima." [Published in English by J. Murray, 1906.]

be done? At Port Arthur women and children were killed during the bombardment. Our Government should express its regret, pay damages to the families concerned, but that was all.

I will now ask leave to depart from my rule for once and relate now what I only heard later.

As soon as the Admiral had received information about the campaign initiated in the English press, he at once telegraphed to our Naval Attaché in London requesting him to bring to the notice of the press the fact that at the time when the incident under discussion took place our destroyers were 200 miles, possibly even more, ahead of the squadron, a fact which could be easily verified if the time of their arrival in French ports were taken into account; consequently the torpedo-boat which remained on the spot until morning undoubtedly belonged to those which had attacked the squadron, and had, moreover, been badly hit. Evidently the boat was repairing its own damages, or waiting for the other boats.

It is very significant that this well-reasoned and substantiated statement hardly appeared in any paper, and that the well-disciplined [*sic*] English press suddenly and completely forgot the evidence of the fishermen, which it had obstinately upheld until then. But this is a small matter compared with the fact that at the meetings of the Commission in Paris the English delegates expressed their conviction that the fishermen had undoubedly made a mistake, that there was no torpedo-boat on the spot; that the *Kamtchatka* had passed there in the morning, and that it was this vessel which had been taken for a torpedo-boat. It was possible (according to calculation of time and speed) that the *Kamtchatka* did, in fact, pass the locality in question on the morning of 22nd October, but the accounts had spoken of a torpedo-boat which had *remained* on the spot until morning. And finally—I appeal in this to the experienced seamen of the whole world—can one admit that in broad daylight old "sea-dogs" in the pursuit of their calling could possibly mistake the *Kamtchatka*, a peculiarly mis-shapen merchant steamer with a high free-board, for a torpedo-boat? Even the child of a fisherman could not make so gross an error.[1] A further very convincing factor was the fact that all those in the squadron who maintained that "they had seen the torpedo-boats with their own eyes," agreed in their statements, viz.:—number of funnels and masts, colour, superstructures, etc., etc. And this, moreover, not on board one ship, where one might have assumed that they had all been the victims of the same hypnotic influence, but on board five different ships, which, at the time, had not been in communication with one another.

I believe that even Monsieur Charko would not have admitted the possibility of such a "thought-transmission"; but that is not all.

[1] [And yet precisely this mistake has been made more than once by naval officers.—In this case is was *not* broad daylight, but a misty dawn.]

Nine months later I was in bed in the Japanese hospital at Sasebo, and heard from brother officers who had also been wounded, but had by then been healed and allowed to walk about the hospital, that in the adjoining hut there was a Japanese lieutenant and former captain of a torpedo-boat suffering from acute rheumatism. At that time the negotiations which were bound to lead up to the conclusion of peace had begun at Portsmouth (America). This was clear to all, and therefore our neighbour probably did not consider it necessary to be particularly secretive as regarded the past. He said quite openly that he had caught his illness during a bad passage from Europe to Japan.

"Your European autumn is worse than our winter," he said.

"Autumn?" I asked. "What month?"

"October. We, our detachment, started on our passage at the end of that month."

"In October? At the same time as our Second Squadron? How was it that we knew nothing of you? Under what colours did you sail? When did you pass the Suez Canal?"

"You are asking too much," the Japanese answered, laughing. "Under what colours? Naturally, not under Japanese. Why you did not discover us?—That you must ask yourself. When we passed through the Suez Canal?—Behind Admiral Fölkersam's division."

"But then—you were probably connected with the famous Hull affair?"

"Ha, ha! That is a very indiscreet question."

More than this we were unable to get from him, but it was, it seems to me, quite sufficient. All the more so, as at that time (October-November, 1904) vague paragraphs appeared here and there in the European press about certain torpedo-boats (four in number, built in Europe) which were then on their way to the Far East to reinforce the U.S. Squadron.

Why did our delegates at the International Commission of Inquiry in Paris concede so readily the possibility of experienced seamen mistaking *the Kamtchatka, which was passing at the time, for a torpedo-boat, which had remained the whole night until the morning on the scene of the event?*—I am unable to form a judgment. History will decide.

In November, 1904, a Schwartz-Kopf torpedo was found by fishermen on the south-east coast of the North Sea, which had been much battered by the surf. A picture of this torpedo was published in the European illustrated papers. As is known, every torpedo carries, stamped on all its parts, the name of the firm which made it and a number. If one has some of the parts of such a torpedo before one, this suffices to establish with absolute certainty, by means of the above-mentioned marks, to whom and when the torpedo was sold.

Our delegates, as it would appear, did not devote their attention very particularly either to the testimony of the fishermen, as regarded the presence of the torpedo-boat, or to this find. This is perfectly intelligible, since the supreme direction of these negotiations was in the hands of our diplomatists. As regarded these, I had, based on my lengthy experience acquired during my sea-service in foreign waters, formed the following opinion:—According to the views of those employed under the Foreign Office, every Russian subject who approaches them with a request for assistance is beyond doubt a suspicious personage, for a respectable individual never and nowhere in the civilised world gets into difficulties. Whilst, for instance, an English Consul is ever ready to stand out in the interests of any subject of His Britannic Majesty (even if he does not know him personally), to point out possible complications which might arise, threaten with summoning a squadron, with a naval demonstration, possibly with war—"our man," if he has not been able to simply send the supplicant to the right-about, tries to persuade him to drop his request somewhat after this style:—

"Is it really worth the while to make so much fuss over it? Between ourselves, you might as well confess that you yourself are not quite free from blame in the affair. You had better drop it; it will be the best course in the end."

This prejudice against their own countrymen, the firm conviction that our side always have *les pieds dans le plat* ("put its foot in it"), of course played a not inconsiderable part in the settlement of the "Hull Affair."

[NOTE BY THE TRANSLATOR.]

The Suez Canal records at Port Said have recently been searched, and show that no vessel remotely resembling torpedo craft of any class passed through the Canal anywhere near the time when Admiral Fölkersam took his detachment East.

THE VON LÖBELL REPORTS ON MILITARY MATTERS IN 1909.

Précis from the German by Lieut.-Colonel E. GUNTER, *p.s.c.*, *(late) East Lancashire Regiment.*

(Continued from December JOURNAL, p. 1604.)

PART II.

REPORTS ON THE SEPARATE BRANCHES OF MILITARY ART. INFANTRY AND COMBINED TACTICS, 1909.

A.—WAR EXPERIENCE AND QUESTIONS OF GENERAL INTEREST.

THESE reports open with a notice of the essay in the *Deutsche Revue* by *General Count Schlieffen*, formerly chief of the German General Staff, *Der Krieg der Gegenwart*, who thinks armies must now approach the field of battle in many columns spread over a wide front. Each corps must attack the enemy wherever it finds him. The Russo-Japanese War has shewn the possibility, but also the fruitlessness of frontal attack, as the results are usually barren.

The tactical developments of the year under review are chiefly the result of working out the experiences of the late war, the only changes of note indicated in the immediate future being those that novelties such as silence-producing appliances and automatic rifles are likely to cause. The improvements in shrapnel fire and the general use of shielded guns may give rise to new problems. The effect of the present artillery fire may modify our views as to the "encounter battle," and lead to the utilising still further of cover in approach or of night marches. Obstacles flanked by machine guns and searchlights make flank attacks of increased difficulty. This must be overcome by constant practice. No decisive actions will be fought at night. But the night is always a valuable ally of an energetic leader with well-trained troops. Only when screened by waves of fire can the Infantry attack be carried forward. It is difficult to locate one's own artillery. The invisible uniforms now universally adopted increase the difficulty of distinguishing friend from foe. In-

fantry telephone parties will be of much use, but one must be prepared with means of reinforcement and repairing damage.†

The manœuvres of 1909 show that dismounted action of Cavalry is of increased importance. But as long as human nature remains what it is, and surprises are possible, mounted cavalry attack is also possible. It must not be supposed that cavalry action on the field of battle is a thing of the past because certain opportunities in war have not been utilised, but only cavalry which has practised the attack in peace will charge in war. To a certain extent General von Bernhardi opposes the German regulations in saying that in future few opportunities will offer themselves for great decisive cavalry attacks, the proper use of ground, and the far-reaching effect of firearms being understood. Under these circumstances he counsels cavalry to await no longer the opportunity for attack, but to *create opportunities* even by fire action, and not merely look on inactive to see how the other arms strive for victory. He thinks attacks against flank and rear, against artillery, ammunition columns, and reserves are often more decisive than questionable great attacks, which in any case demand great sacrifice. The experiments with pack carriage for Machine Guns have proved successful in Austria.†† Whether they should be furnished with protective shields, or, as in Russia, dig shelter trenches for their cover, is still an open question, as is consequently the best method of opposing them.

As regards Cyclists, as about one-third of the population have cycles, it seems that these should be utilised for cavalry who have lost their horses. It is not practicable to deprive the regiments who have cyclists attached to them of their indispensable services in order to form special detachments of them. Cyclist Companies should not exceed 150 in strength.

Dirigible Balloons. — This question is touched on here. It is stated that their employment at manœuvres shows that a speed of 34-35 miles per hour can be attained while an average height of 4,900 ft. has been reached. Their use for observation, &c., is indicated, but not for the carriage of sufficient shells, &c., for destructive purposes. The means of combating these are still in the experimental stage.

INFANTRY TACTICS IN INDIVIDUAL STATES.

Austria-Hungary.—The New Infantry Drill is not yet published. Much progress has been made in the co-operation of infantry and artillery, and officers of both arms take part mutually in the exercises of the sister arm. Especial care is taken that no obstacles are to be allowed to prevent the advance of the guns with the infantry when required. Infantry regi-

† See Report on Austria-Hungary further on.

†† See THE JOURNAL for February, 1910, p. 230.—E.G.

ments and rifle battalions were provided with two machine guns each at the manœuvres. The Austrian Landwehr regiments had machine gun detachments of four machine guns each; the other Landwehr regiments of two machine guns. At all practices observation positions are occupied whence in action favourable targets are at once pointed out to the machine gun sections as they occur. Each battalion has now four telephone stations and four magnetic telephones† with six kilometres (3¾ miles) of cavalry telegraph wire, also 16 flag signal stations (extending to 6¼ miles), and for night work four night signalling stations with petroleum (5 miles) and four stations with acetylene signal lamps (9¼ miles). These apparatus are distributed among the companies; the flags to the Züge (one-third companies).

France.—The Report criticises the French fire discipline. The views held in France that fire is only required to render the forward movement possible has led to this, that the opponent's fire is not systematically combated so as to overcome it, but only to *hold* it while neighbouring bodies are advancing or being reinforced. In defence, whenever a good target presents itself, fire is delivered with such excessive rapidity that it must lead to no aim being taken. Of course, it is not meant to disparage rapidity of fire. Well-aimed fire, increasing in rapidity according to the target offered, is the foundation of good fire tactics.

The directions for the employment of machine guns are: Fire not to be opened at extreme distance, avoidance of artillery fire, powerful support of infantry in attack and defence and against counter-attack, protection of flanks, and the sweeping of defiles and immediate action in pursuit.

Germany. — The marching, endurance, and good battle training of the infantry are praised. The alterations recommended in the "Infantry Drill" of the 29th May, 1906, took effect in October, 1909, when they were embodied in the new issue of the *Exerzier-Reglement*, 1909. The amendments for the most part merely clear up points about which some doubts were felt, and tend to simplification.

New Sections. — The part dealing with "the battle" is concerned chiefly with infantry tactics. These are influenced by the enhanced value of night attacks, the close combination of machine gun and infantry fire, and the introduction of shielded quick-firing guns. Recruits even are to be taught the elements of fighting by night. Noiseless entrenching is to be practised. The new issue of "Musketry Instruction" (21st

† Major Hoppenstedt has published a brochure, "*Taktische Besprechungen im Gelände*" (E. S. Mittler, Berlin), as to this.

October, 1909) lays the greatest stress on battle practice. More latitude is allowed to the company commander, and superior officers are only to interfere if he blunders. More scope is given to judging distance. Attention is drawn to Major Hoppenstedt's "*Sind wir kriegsfertig*" (Are we ready for war?) and Lieut.-General Count V. Haslingen's *Ausbildung für den Krieg* (Training for War), and Gen. v. Falkenhausen's *Der Krieg der Gegenwart*, Berlin, 1908.

Great Britain.—The report on the changes in the training is long and detailed, the instructions in the field service regiments being in many cases verbally translated. The importance of the offensive is more insisted on in the new regulations than formerly, and the value of the initiative inculcated. As usual, the German writer comments on the very few directions we give for the "encounter battle," and on the great importance we ascribe to night attacks. He speaks of the Guards' rapid motor rush of 87 kilometres (54 miles) in three hours as a sporting affair. It was impracticable to keep the column closed up, and its total depth, with transport cars, varied from 5 to 15 kilometres ($3\frac{1}{8}$ to $9\frac{3}{8}$ miles). The manœuvres round Swindon in 1909 are barely mentioned.

Manœuvres. — The German, French, Austrian,† and Italian manœuvres are described at some length, and it is much to be regretted that it is impossible for want of space to do more than epitomise very briefly some of the reports on these. In the Baden manœuvres†† modern appliances were brought into use, motors for staff, road traction engines for transport, &c. Dirigibles were tried, but the weather was against them. The French manœuvres, 1909, shewed an advance on those of 1908. They were conducted by Général Trémeau, the new Commander-in-Chief, who is a strenuous supporter of the offensive (even to recklessness some say). The commanders did not receive their "special ideas" until the day before their movements in execution of them. Excepting night attacks, which required their special sanction, the directing staff did not interfere with the movements. The midday truce of former years was given up. The situation was always a simple one. Infantry and artillery worked well together; the cavalry work was on a higher level than that of the previous year in action, but its reconnaissance and screening were not up to the mark. Diminished action with cyclists and machine guns was often skilfully used in the attack of smaller bodies. The observations

† A *Précis* of the Austrian Manœuvres in 1909 was given in THE JOURNAL for February, 1910, p. 253. It was stated therein that the Cow Pattern Field Kitchens were too heavy, but the Infantry ones followed close on the troops.—E.G.

†† These manœuvres were of especial interest owing to the tactical ability of General von Bock und Polak, who commanded.

made from the dirigible "La République" were held to be satisfactory, but they were only made from a height of 700 metres (2,596 feet). By its means hostile troops in hitherto unsuspected positions were located, and its own troops were warned of impending attack. The report says there is still a great want of unanimity among the leading French generals as to the principles which should govern the training of troops and especially as to the co-operation of infantry and artillery.

Italy. — Manœuvres are not in favour. The heat necessitates the cessation of all operations from noon till 6 p.m. daily. Those held in 1909 were of less interest than in former years. Lieut.-General Pollio, Chief of the Staff, conducted them. He gave a lecture on the objects to be attained by the manœuvres to the commanders of the forces beforehand. The preparatory movements were carried out between the 26th and 30th August in the district of the Po. Want of unity and co-operation in attack and of regard to hostile fire was criticised, also the disinclination to entrench and too great dispersion in defence. The General (himself a cavalry officer) praised the activity and endurance of the cavalry of both sides, which he said shewed that, if properly trained, this arm was capable of important service in battle. The cyclists were chiefly worked in companies. They should not be sacrificed in holding special points and required training in manœuvring.

CAVALRY TACTICS, 1909.

The conviction of the necessity of great Cavalry Masses being thrown forward in front of armies has gained ground, and led in England and now in Italy to the formation of permanent Cavalry Divisions. In most countries the enhanced importance of dismounted action is recognised. In Germany a new issue of "Cavalry Training" was made, but the Cavalry must be given time to assimilate the changes of recent years before a final judgment can be pronounced as to the effect of these new regulations. The main point is that even in future wars the decisive action of Cavalry will be mounted action.

In France the two years' service has led to the expression of a wish to avoid cavalry attack, and to oppose by fire action hostile cavalry charges. Great value is attached to the support of Cavalry by Machine Gun detachments and advanced bodies of Infantry, a practice always favoured in France. It cannot be doubted, however, that the mobility and independence of the Cavalry must suffer hereby.

In England it is conceivable that such notions should prevail, owing to their comparative weakness in Cavalry, but still, in the new Field Service Regulations the necessity for offensive Cavalry Reconnaissance is more than ever insisted on. The Russians are devoting much attention to Rifle practice, with-

out as yet any great measure of success. The Austria-Hungarian Cavalry remains true to its old tactical principles, but it was not employed to advantage in the Kaiser manœuvres of 1909.

CAVALRY TACTICS IN INDIVIDUAL STATES IN 1909.

France. — It is apparently because the French do not feel themselves in a position with cavalry soldiers of only two years' training to attempt mounted action against the German Cavalry, which has three, that they renounce the endeavour to push forward Cavalry Masses to a great distance, and are content with advancing mixed Detachments with cyclists, &c., and Cavalry pushed forward but a short distance ahead of these. These *"détachements de sureté"* are said to have answered well in the 1909 manœuvres when opposed to General Trémeau, who had two cavalry divisions as well as the cavalry brigades. The cavalry divisions were unable to penetrate the screen of the weaker bodies, and suffered great losses in the attempt.

General de Négrier, in his essay *"La Cavalerie et la Service de deux Ans,"* thinks the Cavalry might attack by Squadrons when the opponent is in confusion, the opportune moment being left and utilised by subordinate leaders; but on the whole fire action is preferred by most in opposition to hostile mounted attack. The men are to be trained to ride long distances at top speed, but no manœuvring is to be practised. Still, cavalry enterprises on a large scale against the enemy's communications, against hostile outflanking columns, and in support in battle by attacks against their flanks and rear, are to be undertaken. How these are to be effected before the hostile cavalry is driven out of the Field is problematical. It is doubtful if General Négrier's views will prevail, for there is a strong "Cavalry Spirit" in French cavalry officers now, and they are not likely to consent to be turned into Mounted Infantry.

Germany. — In the Cavalry Training, 1909, the word "Treffen" is to be confined to cavalry operating in bodies directly behind one another. These may overlap. This is *"Treffenweise."* If side by side it is called *"flügelweise."* But any unit thus disposed may in itself be drawn up *treffenweise.* For attack on Cavalry the Brigades and Regiments of a Cavalry Division are, as a rule, drawn up *"flügelweise,"* and generally in *échelon.* Only quite exceptionally would a whole Cavalry Division be engaged in the attack. The formation of the Brigades would depend on the Enemy's movements. They would generally be disposed *"flügelweise"* in preference, as having greater freedom of action. The first line is now only to be as strong "as the circumstances require," whereas the old rule was to ensure the success of the first line, which the other bodies kept in hand were to consummate, which many

still prefer. This was certainly the view of the late Lieut.-General von Pelet-Narbonne.† Frontal and flank attacks must be simultaneous against mounted Cavalry. Against Infantry, however, attack is to be carried out in "*Treffen*" by surprise. But every part of an infantry body must be simultaneously attacked, and, unless unshaken infantry can be taken by surprise, success is doubtful.

The writer goes into details of Cavalry Drill, saying that the new German Cavalry long-range carbine demands more careful musketry training, though it cannot be as thorough as that of the Infantry. The carbine is carried on the right side of the saddle hanging down perpendicularly behind, muzzle downwards.

The German Cavalry Manœuvres and the movements of the Cavalry taking part in the Imperial Manœuvres in 1909 are described at length, which cannot, of course, be done here. For these and the alterations in the new "Cavalry Training" the originals should be referred to. The chief work on Cavalry published during the year was Lieut.-General von Bernhardi's "*Reiterdienst,*" Berlin, 1909, E. S. Mittler (8.5 marks). There are several smaller works and articles on the new "Cavalry Training" mentioned in the "*Literatur,*" or list of books. The *Militär Wochenblatt* has "*Beihefte*" (appendices) about it. No. 4 and 5, 1909. In the "*Offizier Blatt,*" of the 30th December, 1909, there is an article on "The Employment of Cavalry by Night.'

FIELD ARTILLERY TACTICS, 1909.

General.

The chief problem discussed in the past year has been how most effectually to support the Infantry. The chief points in the solution of this are: (1) correct choice of the objective in the different phases of an action; (2) perfection in the training of leaders and troops in reconnaissance, watching the course of the action, control of the fire of units and of widely-separated groups, and observation of fire effect. The co-operation of Heavy and Field Artillery is also necessary, and a decision come to as which to employ, or whether the use of both will be most effective. The will to annihilate the enemy by fire must find expression in the means adopted to develop one's own fire power to the attainment of one's object from the commencement of the action till the victory is won, careful consideration of the advantage of covered, half-covered, or positions in the open in each case, ammunition supply, &c. The question of the

† For many years editor of this publication and a notable Cavalry authority, who died in October, 1909 (see THE JOURNAL for January, 1910, p. 82).—E.G.

Light Field Howitzer being the only weapon for Field Artillery is again cropping up in the desire to increase the effect and yet simplify the Armament of Artillery. In Germany the Field Howitzer shell of 1905 is being everywhere experimented with, and the question as to whether common shell is required for Field guns is being considered. The writer goes into technical questions of the use of brackets, fixed ammunition, fuses, &c., which cannot, of course, be reproduced here, and the advantages of covered positions, &c., are discussed. To the use of the telephone by the Artillery commanders in communication with the officer commanding the troops much attention was devoted in 1909. Its advantages are obvious.

FIELD ARTILLERY IN INDIVIDUAL STATES.

Austria-Hungary. — The reorganisation of the Artillery was completed in 1909. New Regulations and Training Manuals were issued. The main object of these as regards the direction of Artillery when engaged against other Troops, and not merely in material destruction, is to so act as to support and to give effect to the other arms, especially to the Infantry. The regulations emphasise the fact that success is not so much due to a preponderance in the number of guns as to better command, suitable choice, and arrangement of the Fire positions, calm direction, accurate shooting, and good ammunition supply. The chief point requiring good judgment is when to fire on hostile Artillery hindering the advance of our own Infantry, and when to fire on the enemy's Infantry. It is recommended that at first indirect fire should be opened from concealed positions, but later on, when the objectives are often in movement or have frequently to be changed, then fire should be delivered from half-covered positions or even in the open. Fire from groups of guns often in échelon is recommended. In the attack on an enemy deployed in position every effort should be made to obtain early preponderance of fire over his artillery, so as to give full support to our own Infantry. If the hostile Artillery is so hidden as to be invulnerable advance in échelon is recommended covered by the fire of the batteries remaining in position directly the enemy is compelled to show up. For the rest the regulations are in accord with those of the German artillery.

Belgium. — New Artillery training regulations (provisional) were tried at the beginning of 1909. Each Field Battery consists of six guns and six ammunition wagons. The second line of seven ammunition wagons and one provision wagon, the "heavy baggage" of one baggage wagon, and one provision wagon. The number of rounds carried in each limber is 40, in each ammunition wagon 61. Total, with first line, 846 rounds; with second, 707 = 1,553.

France.— The establishment of 30 Batteries of four guns each per Army Corps,† total 120, does not satisfy artillerists as a finality. In the course of time it is hoped six other batteries will be raised, making 144 guns per Corps. Provision is now made for 312 rounds per gun to be carried with the batteries and 232 in the Ammunition Columns; total, 544 per gun.

It is thought that each Artillery Brigade should have a section of Machine Guns attached to it to ward off sudden flank attack when in position or when limbered up. A Telephone equipment is now supplied to each Battery, carried by three mounted men for communication with the Artillery Brigade Commander, &c. A committee is revising the Artillery Training Regulations. The Morocco experiences lead to no conclusions worth notice for want of proper objectives.

Germany. — The New German Regulations and tactical methods are given at great length, the Report going into the employment of Horse Artillery with Cavalry, particularly inculcating the necessity of the Horse Artillery taking up a covered position in support of the latter when the hostile Horse Artillery is already in position; otherwise, when covering the rapidly changing phases of the Cavalry Fight, they usually take up positions rapidly in the open. There is a section giving the arrangement of the different échelons of the Ammunition Columns with the method of supply, which is interesting, but there is not space here to reproduce it. The changes in the method of using Common Shell and shrapnel in the Field are given, including the precautions when firing over the heads of their own Infantry.

Great Britain — In reporting on the British Field Service Regulations the writer remarks: "It is worth our knowing that the Heavy Artillery is entrusted among other duties with that of combating Shielded Arillery with oblique fire, and that Mountain Batteries can be used with less risk to accompany the Infantry in the attack, as they can, even in a flat country, more easily take advantage of cover. The writer remarks somewhat satirically that it is remarkable that the British Artillery is instructed to fire at moving targets such as dirigible balloons from platforms (boats, &c.) that are themselves in motion. In the manœuvres of 1909 the good training and grasp of the tactical situation of their artillery was remarkable, but very little use was made of covered positions.††

Italy.—The reorganisation of the Field Artillery was founded on the 6-gun Battery basis. But experiments have

†See THE JOURNAL for February, 1910, p. 234.—E.G.

†† The same remark was made regarding the practice of our Field Artillery in the German account of the South African War.—E.G.

been made with 4-gun Batteries at their annual practice, and also with the Horse Artillery at manœuvres. The Heavy Artillery is to consist of two Heavy Field Howitzer Regiments of 14 Batteries, and one Heavy Artillery Regiment of six Batteries. Each Battery has four guns only.

FIELD ENGINEERING IN 1909.

In Field Engineering theory and practice are oceans wide apart. The Boer War, and, above all, the Russo-Japanese War, so impressed upon us its importance in the conduct of war with modern weapons that those voices which cried out that the use of the spade killed the offensive spirit were silenced. In all armies directions were elaborated for the construction of Field entrenchments by Infantry. In all Field Service Regulations it was laid down that the Infantry must be practised in throwing up Field entrenchments without the aid of Engineers, that all officers must be able to choose suitable ground and to supervise the work. Entrenching tools were also (more or less) provided. What is, however, the use of all this when the spade or entrenching tool is grudgingly carried as a burdensome appendage to the equipment, and is never taken out of its case during the Autumn Manœuvres,† let alone its habitual use in co-operation with the rifle in the regular course of Instruction of the Infantry soldier? Major Töpfer, in an abridgment of the Russian General Poljanski's Pamphlet published in the *Jahrbücher* for December, 1909, brings to notice the saying of this General that Troops only perform in War what they have *well* practised in Peace, and that if they are not well taught in Peace they will when forced to entrench in War do it so badly that their offensive spirit will suffer, and that, though we may carry more tools, we shall in the next war probably use them with less intelligence than in the past if we do not practise more. Captain Kunze says in the August *Jahrbücher* that year by year young soldiers are passed into the reserve without having learnt how to entrench. Unless practised, the art of Field-intrenchment will be found more difficult than in the old days when they could relegate this to the Engineers. It is thought that anyone can throw up Infantry Trenches—a little practice in handling tools is all that is required. This is not so. Their correct designing and application to the ground is not easy. The French are paying the greatest attention to this. They always have a main position, an advanced position, and a rear or rallying position chosen with much skill, and their Troops are constantly practised in their construction. Attention

† It would be of interest to know whether trial was made of the new Infantry entrenching tool, which was issued to some British troops during the recent Autumn Manœuvres, 1910.—E.G.

is drawn to Bastien's "*L'organisation du terrain sur le champ de bataille.*" Paris, 1909. Ch. Lavauzelle. Our Commanders must awaken to the necessity for this instruction if our Subalterns, who have to carry out the work, are to be inspired to do it. In the French Army each Infantry soldier carries an intrenching tool, and every Battalion carries (on pack-horses in regimental transport) 48 shovels, 16 picks, and 8 F axes in addition. Each Company carries 112 spades, 32 picks, 12 hand axes, 4 felling axes, 16 fascine knives, 1 folding saw, and 4 pairs of wire nippers.

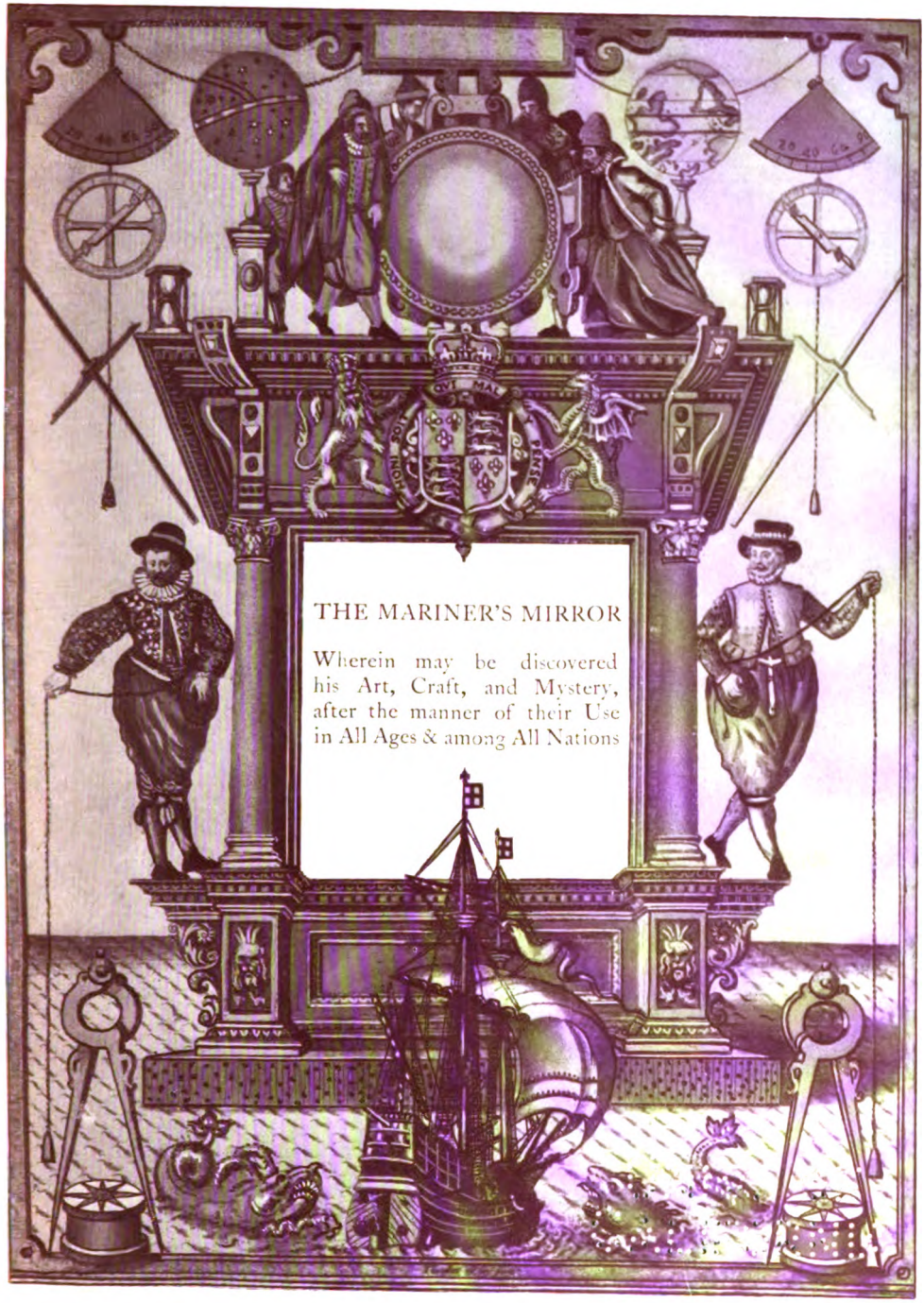
Military Bridging. — There is nothing in this year's Report to add to that given last year† as regards Germany. It notices the proposals by General Spaccamela for the reorganisation of the Italian bridging trains as published in the *Rivista di Art. e Genio,* January, 1909. It gives a sketch of an auxiliary Trestle Bridge from the *Kriegstechnische Zeitschrift* over a stream about 130 ft. wide and 17 ft. above the water, the total length being 256 ft. It was constructed chiefly of two-legged trestles of simple material with four sets of four-legged trestles in the centre standing on piles. Cross bracing was used to strengthen the structure. The skilful use of bridging expedients by the British Engineers, profiting by their rich experience in the Colonies, India, &c., is much praised, especially their floating bridges, and the articles in the *Royal Engineer Journal* describing these are alluded to. The portable bridging train carried on camels and used by the Russians in their Trans-Caspian Provinces is mentioned. As regards organisation, the Report notices the proposals of Captain Grubb, R.E., for the reorganisation of the Engineers with the British larger divisions, and remarks that the total of train demanded for the four Royal Engineer companies would amount to 99 carriages.

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† See THE JOURNAL for March, 1910, p. 372.—E.G.

(*To be continued.*)

The Society for Nautical Research.



The following articles are, by agreement with the Society for Nautical Research, reproduced from the current Number of "The Mariner's Mirror."



EMINENT MARINE ARTISTS.

By Harry Parker.

No. 1.—The Two Van de Veldes.

TO all who use the sea in particular, but to all who are interested in ships and sailors also, there must be a fascination in what, for want of a better term, I will call nautical iconography. By this term I mean not only the portraiture of naval worthies, which in itself is a most attractive subject, but all kinds of pictorial representation of sea life. There will be many members of this society, then, who will want to know something about pictorial presentment of men, events, and things connected with the sea. Some of these may be collectors of pictures and prints, some investigators of questions concerning ships, rigging, and the like, and others merely interested in the subject. I have been asked to do what I can to help these inquirers with such special knowledge and experience as I may have of the matter.

Now there are various methods of dealing with this matter, as, for example, the sub-division under subject-headings, a plan having much to recommend it, and there are others. But to my view, the best and, therefore, the most suitable way is to describe briefly the men who produced works of naval or nautical interest.

Of the earlier artists in this country who devoted themselves to sea pieces, the two Van de Veldes naturally take the most prominent place. The principal members of this remarkable family of artists were Esais, born about 1590, who excelled in battles, cavalry skirmishes, and the like; John, a younger brother, noted for his landscapes and merry-makings, as well as for his engraving; Adrian, born about 1639, who, whilst yet a boy, covered his father's house with sketches of all kinds of animals; and finally, the two whom we are now considering, William Van de Velde the elder, and his son of the same name, who by universal consent take precedence over any other naval painters of the early school.

William Van de Velde the elder was born at Leyden in 1610, and his younger days were spent at sea in the capacity of Kondschapper (reporter) to the Admiralty service at Amsterdam, where he acquired the technique which will be found so prominent in all his works. He began his artistic career by sending sketches with the reports he had to make at the close of each

cruise, and later on in his spare time he executed larger drawings in sepia and Indian ink of the rough draughts he had made during these voyages. His talents came before the notice of the Dutch States, and he was given the use of a small ship, so that he might view with greater ease the design and movements of vessels present in various fights. At times he exposed himself to the most imminent danger in order to witness and describe more fully some detail or instance of value.

After leaving the Dutch employ he accepted the invitation of Charles II., and came to England in 1675, accompanied by his son. The two were appointed marine painters to the King, and were granted separate pensions from the Crown by order of the Privy Seal, as follows:—"Charles the Second, by the Grace of God, etc., to our dear cousin Prince Rupert, and the rest of our Commissioners for executing the place of Lord High Admiral of England, greeting. Whereas we have thought fit to allow the salary of one hundred pounds per annum unto William Vandervelde the elder, for taking and making draughts of sea fights; and the like salary of one hundred pounds per annum to William Vandervelde the younger, for putting the said draughts into colours for our particular use; our will and pleasure is, and we do hereby authorize and require you to issue your orders for the present and further establishment of the said salaries to the aforesaid William Vandervelde the elder and William Vandervelde the younger, to be paid unto them, or either of them during our pleasure, and for so doing, these our letters shall be your sufficient warrant and discharge.

"Given under our privy-seal at our Palace of Westminster, the 20th day of February, in the 26th year of our reign (viz., 1675)."

Both father and son enjoyed these salaries during the reign of King Charles and also that of his brother James.

Whilst still in the Dutch employ, the elder Van de Velde accompanied Admiral de Ruyter to Solebay. His enthusiasm was so great over sketching this action that he sailed in and out amongst the enemy's ships without the least anxiety of the danger he was every moment exposed to, attentive only to his drawing and the most minute details, for the portrayal of which he came to be so much admired among connoisseurs. James, Duke of York, greatly patronized Van de Velde on his arrival in England, and requested him to paint for him the action in Solebay, correcting the artist's drawings from his own personal experience and observations; and it is said that in the Duke's collection there were no less than eighteen by this artist alone.

Those best acquainted with nautical affairs are unanimous in commendation of his pictures. His later works were nearly perfect, the composition, the architecture, and rigging of the

ships, and the manner in which their movements were shown, being beyond reproach.

Latter-day artists are no less delighted with the facility and clearness of his pencilling and colouring, whether in his storm pieces or the light breezes and calms.

The present value of his drawings and paintings has not depended, like those of other artists, on the fashion of the day. Whenever they appear in the sale rooms their value almost invariably increases, and what might be considered a high price at one sale is greatly exceeded on a subsequent occasion. The elder Van de Velde ended his days at Greenwich in 1693, and he was buried in St. James' Church.

His son and pupil, William Van de Velde the younger, was born at Amsterdam in 1633. He received elementary instruction from his father, and afterwards studied under Simon de Vleiger, a masterly painter of sea storms and gales, etc. Under this able director he made rapid progress, and soon arrived at perfection in this particular branch. On arriving in England with his father, as already mentioned, he worked for a time upon the less difficult details of the latter's pictures; but this did not satisfy his ambition, and soon he went ahead, not only of the elder William, but of every other artist of his school. His composition was more tastefully arranged, his ships were more correctly designed, and were of a more graceful and pleasing form. Perhaps this was due in part to the improvement in the more modern vessels, but no eye has ever produced any work equal to his in the clearness of the clouds, the variety of the serene skies, the gloomy horror of the storms, the look of genuine nature in his agitated or still waters, or the lovely graduation of his distances.

His pictures were greatly admired in England, and those that were distributed around the Low Countries were eagerly sought after and purchased for large sums. In Holland, therefore, very few remained, and at the present day the majority are to be found in English homes or in the Royal collection. Very few that I have particularly noticed are on view in our public galleries.

Records of the number of his drawings and paintings are unknown. Smith's Catalogue Raisonne describes about 330 of his pictures, and recounts many particulars regarding them; but about the years 1778-1780, 8,000 were sold by public auction, mostly sketches. He was an adept at work of this kind, which he produced with great rapidity. It is said that in one evening he would fill a quire of paper and write over the drawing of each ship her name and commander, proving thereby that he had been present at the scene he was portraying. The value of his finished works is continually increasing, drawings which were

publicly sold for a few shillings not many years ago now realising as many pounds, and as these masterpieces are distributed more and more into private collections, or are lost, burnt, or destroyed by accident, so prices will go on increasing for the few that remain for the enthusiast and collector to compete for.

The younger Van de Velde died on 6th April, 1707, leaving behind him a name that is world renowned and works that are the envy of our present-day artists and the glory of lovers of naval art.

NOTE.—A portrait of Van de Velde the younger, which want of space will not allow us to reproduce, is given in the current number of the *Mariner's Mirror*. It is from an engraving by J. Smith after Godfrey Kneller, and it is believed that no other authentic portrait survives.—ED. R.U.S.I. JOURNAL.

THE BOATSWAIN'S CALL.

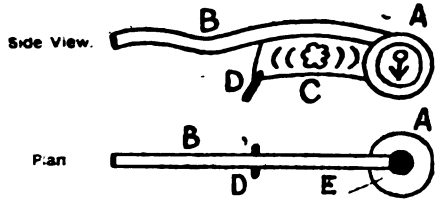
As It Was, and as it Should Still Be, used in H.M. Navy.

By a Lieutenant, R.N.

TERMS: "The Boatswain's Call" or "Boatswain's Whistle" is an instrument by means of which orders may be passed round a ship in the quickest and easiest manner; firstly, by recognised "calls" or signals, differing from each other in notes, tone and shrillness—these should be understood by all hands on board without the interpretation being "piped" by the boatswain's mate, that is to say, without its being shouted verbally; secondly, by recognised "pipes" which draw the attention of all hands to an order which the boatswain's mate is about to "pipe" or "sing out"; thirdly, by recognised "calls" which should be understood as salutes or marks of respect.

It is correct generally, however, to use the word "pipe" as a verb, *e.g.*, "pipe reelers" or "pipe down." In some cases the verb to be employed must be "call," *e.g.*, "call the hands" or "call boatswain's mates." This, however, appears to mean call in a literal sense. It was till recently usual for a boatswain's mate after having called attention by means of his "call," when about to deliver a long order or a "long pipe" to preface it with "D'ye hear there!" This custom, however, is being rapidly forgotten.

Parts of the "call":



A.—The "Buoy."

B.—The "Gun."

C.—The "Keel."

D.—The "Shackle."

The "buoy" is the whistle proper; the "gun" is the blow-pipe; the "keel" is to facilitate its manipulation; the "snackle" takes the chain. (*Note*: The dark spot E is intended to represent the hole into the "buoy.")

The Manner of Using the Boatswain's Call.

If the call is blown into with moderate force a certain note, dependent on the make of the call, will be obtained. If, however, it be blown into with greater force and the air which would escape is throttled by the fingers, a note of almost an octave above the former one will be sounded. By moderating the throttling, that is, by not closing the fingers completely over the side of the "buoy," any note between these may be obtained. I will be bold enough to state that there are at least eight notes capable of production by the hands (or the

hands and mouth) of an expert boatswain's mate. By gradually closing the fingers over it is possible to run from one note into the other, giving a somewhat similar effect as would be obtained by sliding a finger down a string of a fiddle. The hand should contain the side of the "buoy" close against the ball of the thumb. The tip of the thumb should be resting on the "shackle" or rather beyond it. The first finger should grasp the call to the ball of the thumb by resting on the middle of the side of the "keel." When throttled, the hand should be clenched, bringing the middle finger to the outer side of the "buoy," and the third and fourth fingers close against it, taking care not to touch any part of the edge of the hole in the "buoy," as this would stop the sound altogether. When open, the second, third and fourth fingers should be lifted together. When running a note up, as mentioned above, the second, third and fourth fingers are slowly closed (or opened).

The three methods of blowing the call: (1) By blowing with an even pressure, with sufficient, but not too great power to get the clearest note at the particular state of the throttling. (2) As above, but introducing throughout a trill similar in effect to that produced in a whistle with a pea inside. This may be done by allowing the tongue to vibrate whilst blowing, as if making the sound of a prolonged "R" without allowing any voice to escape. (3) As in (1), but blowing with a "vibrating pressure," producing an effect similar to a canary singing.

The Method of Shewing Various Pipes and Calls Graphically.

It should be understood that the "expression," if such a term may be used, gives the method or the "touch" with which many calls are carried out, *e.g.*, in the call "walk back" (or ease a rope) the speed of the undulations indicates to the hands what speed of "walking back" is required of them. Similarly, "belay" sharply piped indicates "Catch a turn," not "Take your time and belay and coil down"; consequently the length of the calls shewn below is only arbitrary; the actual expression I am unable to convey on paper. Along the top of each figure is a horizontal scale of seconds of time, which represents roughly the period of the pipe or call. Line i, or lower, represents the open note; line ii, or upper, the fully throttled note; the slope of the pen line represents the rate of rise and fall owing to throttling, which has been described.

1st method of blowing is shown by the plain line thus

2nd method of blowing is shown by a hatched line, thus

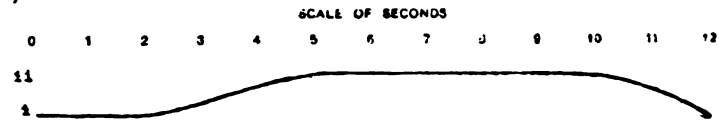
3rd method of blowing is shown by a wavy line, thus

CALLS.

(1). "Call Boatswain's Mates."

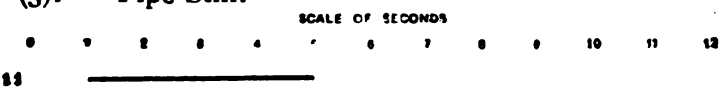
-- -- -- -- etc., until they turn up. This is to call boatswain's mates before a long call such as "Dinner" is piped, when the custom is for all boatswains' mates to pipe in chorus.

(2). "Pipe the Side." (*Note*: There is no trill in this pipe; the scale of seconds is a little too low).



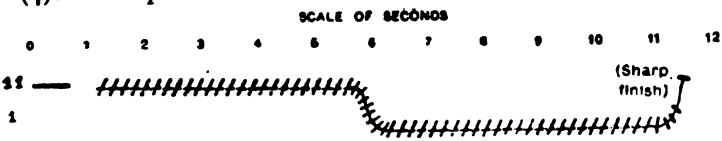
This is a mark of respect paid to admirals and captains, and officers in command of ships in the Royal Navy, also to foreign officers (naval) at all times when coming on board or leaving one of H.M. ships. It is also piped when a funeral leaves the ship as the coffin containing the remains passes over the side. It is also piped when an officer flying a pendant, that is, an officer representing his captain or admiral, passes over the side. It is piped always twice: when coming on board—firstly, when bow oars are laid in, secondly, as the officer comes over the ship's side. When leaving the ship—firstly, when the officer goes through the gangway, secondly, when bow oars are got out. This mark of respect is very rarely paid to military or civil officers, but is purely a naval custom. This was the call piped at Windsor on the occasion of the funeral of H.M. King Edward VII. (*Note*: The longer this call is drawn out the better. Above is shown a sort of average for one boatswain's mate. Several may carry it on in chorus to greater length).

(3). "Pipe Still."



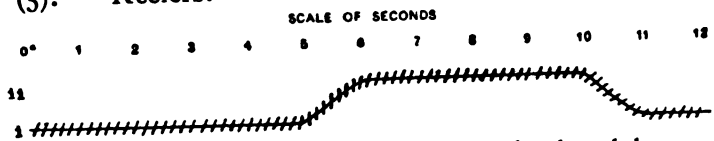
(*Note*: Should be started sharply and finished sharply.) Indicates stand "still" or to "attention" either as a salute to a passing ship, or to avert an accident during work.

(4). "Pipe Down."



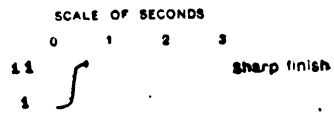
Means (1) Hands to turn in; (2) Hands down from aloft; (3) Hands not required until further orders. The meaning should be immediately understood by the time of day and week. This is the call for lowering washed clothes. I know of no call for "stand by to wash clothes" and have never heard of such an order being given.

(5). "Reelers."

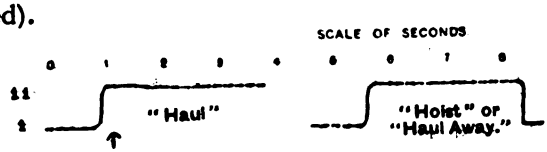


Calls the hands told off for heaving the hand log; up to recently this when piped called the sounding party, who work the sounding machine.

(6). "Haul taut."



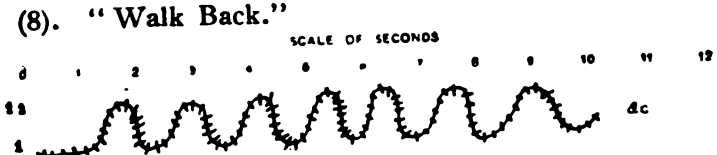
(7). "Haul," "Hoist," or "Haul Away" (according to how piped).



Haul is a signal for all to haul together. All fall back at the point shown by the arrow head.

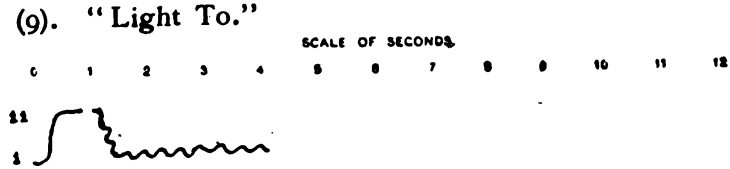
Hoist, or haul away, is a signal to walk or run away with it.

(8). "Walk Back."



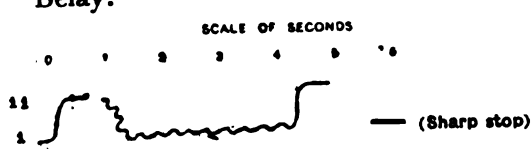
A very expressive call, meaning "ease" (a rope). The rate at which it is required to ease varies as the undulations in the call. It proceeds as long as the "walking back" continues.

(9). "Light To."



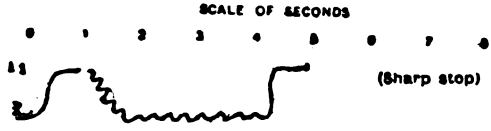
Means, "Let go."

(10). "Belay."

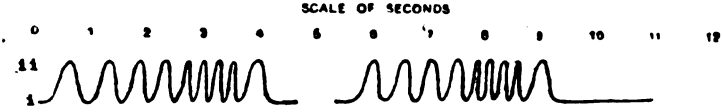


Means "Turn up," "Catch a turn," etc.

(11). "Avast!" or "High Enough!"

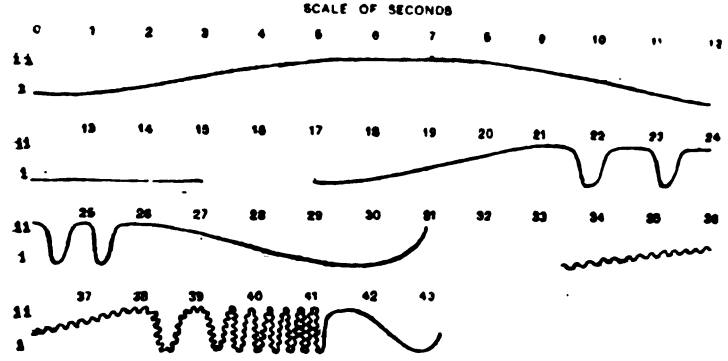


(12). "Sweepers."



(*Note*: More undulations may be put in. Calls the upper deck and lower deck sweepers to their work).

(13). Dinner or Supper.



N.B.—Finish up with "Pipe Down."

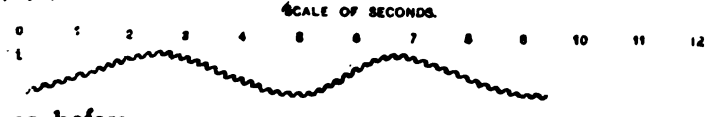
Usually played in chorus for any meal, and should be lengthened out as far as possible.

(14). "Heave Round the Capstan."



etc., for about a minute, boatswain's mates relieving each other. Very difficult without practice. It may be noted that in this call every "note" is used from that of the whistle itself to what may be termed the "throttled whistle." This, as shown, is the correct method of playing the call; but, because this method is difficult, the call is often played as shown in (14a), which is easier:—

(14a).



etc., as before,

(15). "Veer and Haul," First "Veer," or "Walk Back" for about five seconds, then "Heave round the Capstan" for about five seconds, and repeat as before as long as it is required, boatswain's mates taking turns. "Haul and Veer"—ditto, the opposite.

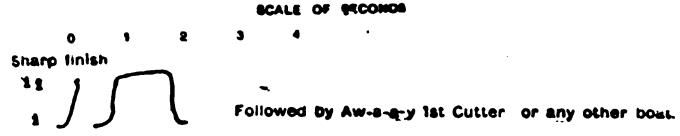
(16). If an order be given by an officer which it is desired should be obeyed "All together," the executive order will be similar to the "still" piped on the boatswain's call, but about one quarter as long.

N.B.—I know of no call for "Lash up and Stow Hammocks."

PIPES.

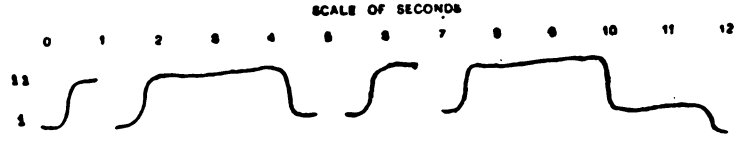
(17). "Away Galley." As for "Piping the Side," followed by a long-drawn "Aw-a-a-y Galley," the longer the better.

(18). Away any other boat, or before any short "pipe."



Sharp finish.
Followed by "Aw-a-a-y First Cutter" (or any other boat).

(19). Before a long pipe such as "Call the Hands," "Call the Starboard (or Port) Watch," "Lash up and Stow Hammocks," all of which are drawn out as long as possible. Scale in seconds:—



Followed by "D'ye hear, there," and then the "Pipe."

THE LAST OF THE EAST INDIAMEN.

By W. B. Whall.

UNTIL the year 1833 the Hon. E. India Company's fleet formed as regular a service as did the Royal Navy. "John Company's" ships were in build almost identical with the King's frigates; they were armed and manned sufficiently to repel an attack by a privateer, and in many notable instances they more than held their own against ships of war. [W. S. Lindsay, "History of Merchant Shipping," Vol. II., Appendix 11, gives a summary of these war services.]

The size of the Company's ships gradually increased. About the year 1700 the largest were under 500 tons, though their "burthen" was one-third greater. By the middle of the century the regulation size seems to have been 499 tons (why?) and about 668 tons "burthen"; their armament was 22 guns, carried on one deck. At last, about 1770, this stock size was departed from, and in 1788 we find a sudden jump to the *Warley* and others of over 1,100 tons; 1,200 tons was seldom exceeded until the early part of the XIX Century. E. W. Cook, R.A., has left us a fine drawing of the *Thames*, of 1829, of 1,424 tons, pierced for 40 guns.

The Company's service was quite apart from the rest of the Merchant Service. For example, rules as to cadets and officers, hiring of ships, and other matters, were regulated by Act of Parliament. The commands were very valuable, and were often bought and sold. In those palmy days, what with pay, commissions, tonnage space allowed for trade, and so on, a commander often made as much as £10,000 in a voyage. If a man made four successful voyages he was expected to retire.

The Company's monopoly of the Indian trade was taken from it in 1814; and when the China trade was also thrown open, by the terms of the Charter of 1833, the Company could no longer trade, and its ships were sold. In place of it many private firms sprang up, buying the old "tea-wagons" and building new ships. In this connection such names as Somes, Wigram and Green at once come to mind. [Lindsay, Vol. II., Appendix 14, shows what became of the ships of the Company's fleet.]

Before Government built the special transports for the Indian service these modern Indiamen did nearly all the trooping; and in the pre-canal days, when the P. & O. was the only steam passenger line to India, all but the rich and those in a hurry went out "round the Cape," so that they were always full of passengers.

The ships built for the Eastern service after 1833 were of the highest class, and the best examples were found between 1850 and 1870. The finest vessels of all were those of T. & W. Smith. These ships were built at Newcastle-on-Tyne.

Perhaps nothing better shows the vast change that has come over merchant shipping than advertisements. In the days of the Indiaman the first page of the *Times* was taken up with such notices as this:—

> Madras and Calcutta. The East India Ship *Hotspur*, A1, 14 years, 1,050 tons, Henry Toynbee, F.R.A.S., commander, will sail for the above ports on July 5th. Carries an experienced surgeon and a good milking cow.

Passengers engaged a cabin or part of a cabin absolutely void of fittings. They had to provide their own bedding, washing arrangements, and furniture. The meals were somewhat elaborate considering the period. The dinner was of three courses and dessert, fish being absent. No liquor could be bought, but wine and beer were served at dinner, and at "grog" (11 a.m. and 9 p.m.), and there was champagne twice a week; besides the "good milking cow," sheep, pigs, ducks and fowls were carried for cuddy use, and the calf, which always accompanied the cow, appeared on the table when down South. As much as £300 was sometimes paid for a stern cabin.

The seamen slept in hammocks which were piped up into the nettings; at sea the hammocks of the watch on deck, in Calcutta those of all hands. This was a good arrangement, as it gave more air space in the forecastle. The midshipmen also slept in hammocks, their berth in the steerage being a somewhat dismal hole; the third mate lived with them in charge; the second mate and surgeon shared a cabin between them, the first mate and commander each having a cabin of their own. Grog was served out to the men at dinner time and on Saturday nights, "sweethearts and wives"; and whenever all hands were called out at night to reef topsails or shorten sail the main brace was spliced after the work was done.

The ceremonies at crossing the Line and "Dead horse" were encouraged, and a voyage never passed without theatricals and dances in the cuddy.

Possibly the best remembered firm of that period is "Green's." Besides Smith's and Green's were Wigram's, Dunbar's, and others of less note; but at the time we are considering the last two were gradually withdrawing from the Indian trade for the Colonial.

All the ships were of wood. All were, for merchant vessels, heavily manned. A thousand-ton ship would have a crew, all told, of seventy. In this number, besides the seamen, were butchers, cooks and cuddy servants. The watch on deck would number twenty-five seamen, besides midshipmen and the officer. These "midshipmen" came from families where £400, or so, could be spared for a boy's sea career; they were,

therefore, of a better class socially than the general run of merchant officers. From these youngsters the mates were picked, and a stranger from outside was a rarity. The seamen were as good as Britain ever possessed; fine, able men, all thorough sailors. A "Dutchman" was a rarity, though there were always some West Indian negroes; numbers had served in the navy. The ships were "frigate-built," and copper fastened throughout; a ship of 1,100 tons, in 1860, cost close on £40,000. Smith's ships were pierced for guns, having regulation gun ports and ring and eye bolts for the breechings. The *Blenheim* and *Marlborough* of their fleet were built exactly, in design and scantlings, as the 40-gun frigate of their date 1848); they were submitted to a special Government survey and reported fit to carry armaments. In 1851 they were judged to be the finest merchant ships afloat. Smith's smaller ships, such as *Hotspur* and *Saint Lawrence*, were equal to the large corvette class, but were not true corvettes, inasmuch as they had poop and forecastle. The ships of Green and Wigram of the same date were not pierced for guns, though they had square windows in their poops for lighting the passengers' cabins; they were more graceful models than the bluff frigates of Smith.

These ships obtained all the choicest freight, out and home; and, always being full of troops and passengers, they paid so well that unless they made 40 per cent. they were thought to be doing badly. Considering their build, for they were not clippers, though they had a sharp rise of floor, they made wonderful passages; this was due to the facts that owing to their large crews they could make and shorten sail quickly, and could "carry on"; and that they could run out a gale without heaving to. It used to be said that they made their passages at night; no matter what the hour, as soon as there was the least decrease in wind, sail was made instantly. Again, sail was never shortened until absolutely necessary. In tropical squalls, when by the wind the ships were luffed and shaken through them, instead of lowering royals and skysails; and topmast and square lower studding sails were often hung on to when the royals and first reef of topsails were in; they were, in fact, carried on to for all they were worth, but legitimately it was considered bad seamanship to lose a sail or spar, other than a studding sail boom.

An average passage was 90 days, but often such runs as 70 to 80 days "from pilot to pilot" were made, and when in 1857 some of the celebrated clippers were engaged to carry troops to India, they were beaten by the slower but better sailed "Blackwallers."

From 1869, when the Suez Canal opened, freights went sharply down. By 1871 scarcely a passenger went round the Cape. The trooping was all done *viâ* the Canal; and the sailing Indiaman passed away.

NAVAL NOTES.

Home. The following are the principal appointments which have been made:—

Rear-Admirals—Sir H. B. Jackson, K.C.B., K.C.V.O., F.R.S., to command Royal Naval War College at Portsmouth; C. Burney to command the Fifth Cruiser Squadron; E. E. Bradford, C.V.O., to command the Fourth Cruiser Squadron; L. Bayly, C.V.O., to command the First Cruiser Squadron. Captains—R. E. Wemyss, M.V.O., to be Commodore 2nd Class, for command of Royal Naval Barracks, Devonport; F. C. Learmouth to *Hearty*; F. C. C. Pasco to *Research*; A. C. Leveson to *Indefatigable*; W. E. Goodenough to *Cochrane*; E. La T. Leatham to *King Alfred* and as Flag-Captain to Rear-Admiral Farquhar; C. M. de Bartolomé to *Neptune*; A. A. M. Duff to *Indomitable* and as Flag-Captain to Rear-Admiral Bayly; H. S. Grant to *Black Prince*; M. E. Browning, M.V.O., to be Inspector of Target Practice; F. G. Eyre to be Chief Inspector of Naval Ordnance; A. W. Waymouth to *Triumph*. Commanders—H. G. Somerville to *Alert*; W. Tomkinson to command of Portsmouth Submarine Flotilla; C. T. Borrett to *Cormorant*.

Vice-Admiral H. S. H. Prince Louis of Battenberg, G.C.B., G.C.V.O., K.C.M.G., etc., transferred the command of the Atlantic Fleet to his successor, Rear-Admiral Sir J. R. Jellicoe, K.C.V.O., C.B., at Portsmouth, on the 20th ult., his flag being struck on board the *Prince of Wales* the same evening; Sir J. R. Jellicoe has been granted acting rank as Vice-Admiral, and his flag was hoisted on board the *Prince of Wales* the following morning.

The first-class battleships *Prince of Wales* and *Queen* were paid off at Portsmouth and Devonport on the 14th ult., respectively, and recommissioned on the following day for a further term of service in the Atlantic Fleet.

Vice-Admiral Sir G. Le C. Egerton, K.C.B., transferred the command of the Cape of Good Hope Station to his successor, Rear-Admiral P. W. Bush, M.V.O., at Simon's Bay, on the 4th inst., and left for England by the mail steamer the same day; the *Hermes*, the flagship, had been paid off on the 20th ult. at Ascension, and recommissioned on the following day for a further term of service as flagship on the Cape Station, Rear-Admiral Bush, the new Commander-in-Chief and her new crew having been conveyed to Ascension in the first-class cruiser *Hawke*, which has brought the old crew home. The *Hermes*, flying the flag of Rear-Admiral Bush, left Ascension on the 23rd ult. for St. Helena and the Cape, where she arrived on the 4th inst.

Steam Trials.—The new first-class battleship *Neptune*, which was commissioned on the 11th inst., and is eventually to take the place of the *Dreadnought* as the flagship of the Home Fleet, completed all her

Home.

trials satisfactorily in September last. The *Times* gives the following details in its issue of the 7th October:—

"The results of the trials of the *Neptune*, battleship, are now available. As regards the gun trials, the feature of interest was the effect of the firing of guns with their muzzles almost exactly over the turrets of the guns in front; for the two turrets aft were thus arranged, the guns of the one to the rear and at a higher level than those of the turret in front. No inconvenience was caused by the blast, and thus the four guns in these two turrets, as well as the two guns on each broadside, may be fired simultaneously astern. The gun mountings, of the hydraulic type, for ensuring accuracy and rapidity of fire (supplied by the Vickers Company), gave full satisfaction.

"As regards the speed performance, it is interesting that the *Neptune* is the first battleship tried without cruising turbines. In place of these separate units fitted in many recent ships, the ordinary high-pressure turbine is lengthened. At low power the steam does useful work for the full length of the high and low pressure turbines, by which a satisfactory range of expansion is got; but at higher powers the steam is admitted at an intermediate stage in the length of the turbine with economical results. Progressive trials, each of four hours, were run at powers ranging from 1,800 up to 26,000 shaft horse power. During part of each trial *data* were taken of the economy—(1) with the auxiliary machinery exhausting into the auxiliary condenser; and (2) with such exhaust steam passing into the low-pressure turbine. The great advantage of the Parsons low-pressure turbine in the latter case was clearly demonstrated. Indeed, it has been proved that using only such exhaust steam from auxiliaries, the *Neptune* could travel at least five knots. When the auxiliary exhaust was passed to the auxiliary condenser the power on one trial was 3,662 shaft horse power, but when the exhaust went into the turbine the power increased to 5,069 shaft horse power, without any additional demand upon the boilers. There was a corresponding increase on another trial from 6,911 to 8,579 shaft horse power, and on others from 13,438 to 16,513, and from 23,579 to 26,886 shaft horse power. The fuel economy was correspondingly increased.

"On the 30 hours' trial at 70 per cent. of the full power the turbines developed 18,373 shaft horse power, and the speed on the measured mile was 19 knots; while on the full power eight hours' trial, the mean power was 27,721 shaft horse power, and the speed on the mile 21·786 knots. The *Neptune* was built at Portsmouth Dockyard, and the contractors for the machinery were Messrs. Harland and Wolff, Belfast, for whom Messrs. John Brown and Co. (Limited), Clydebank, manufactured the turbines, which are all of the Parsons type."

Before relieving the *Dreadnought*, the *Neptune* is to proceed on an experimental cruise to the Mediterranean. It is worthy of note that this fine ship has been completed for sea and actually commissioned a week under two years from the date of her first keel plate being laid, a fact which reflects the greatest credit upon all concerned in her construction at the Portsmouth yard; she is also for her size the cheapest ship among the *Dreadnoughts* which has yet been built, as her total cost works out at £86·85 for each of the 19,000 tons displacement, compared with an

Home. .

average of £101·29 for the *Dreadnought*, £93·065 for each of the three *Bellerophons*, and £88·115 for the three *St. Vincents*.

The new third-class cruiser *Blanche*, which was built at Pembroke, also concluded her trials in September last with the following results:—

"The machinery consists of an installation of Parsons turbines, having one H.P. ahead and one H.P. astern turbine on each wing shaft, and one L.P. ahead, with which is incorporated one L.P. astern turbine on each of the centre shafts—that is to say, there are four lines of shafting in all. In this vessel the latest Admiralty practice of dispensing with a separate cruising turbine has been carried out, and so an improved engine-room arrangement in the limited space available has thus been possible. The turbines are supplied with steam by 12 Yarrow boilers of the latest type.

"The speed trials required were eight hours at 15,000-shaft horse power, to be followed immediately by 22 hours' trial at 11,000-shaft horse power, making one continuous period of 30 hours, and an eight hours' full-power trial at the contract power of 18,000 shaft horse power, there being the usual circle, steering, gun, and torpedo trials in addition. On the first eight hours of the 30 hours' trial 15,274 was the average shaft horse power, the mean revolutions being 472·6 per minute. During this trial measured mile runs were taken, which gave a mean speed of 24·4 knots, the corresponding shaft horse power being 15,473, while the coal consumption was 1·48 lbs. per H.P. During the remaining period of 22 hours further measured mile runs were taken, when the machinery developed exactly 11,000 shaft horse power, which gave a speed of 23·33 knots, while the coal consumption worked out for this period of 22 hours at 1·78 lbs.

"On the full-power trial the mean of 18,542 shaft horse power was developed on 502·7 revolutions per minute, the coal consumption being 1·02 lbs. and oil ·404 lb., which is equivalent to a coal consumption of 1·58 lbs. per shaft horse power. During this trial also a series of runs were made over the measured mile, and a speed of 25·67 knots was obtained with a shaft horse power of 19,755, the engines working at 516 revolutions per minute, and the boilers being only subject to an air pressure of 1·1-inch. The whole installation of machinery and boilers worked satisfactorily, and the exceptionally small water loss indicated the tightness of the joints of the system. The trials were run during a period of very stormy weather."

The *Blanche*, which was commissioned on the 10th November last for service with the First Destroyer Flotilla, is one of four third-class cruisers of 3,350 tons, her sister-ships being the *Boadicea*, which is flying the broad pennant of Commodore 2nd Class Sir R. K. Arbuthnot, Bart., M.V.O., in command of the First Flotilla; the *Bellona*, which is also in commission and senior officer's ship of the Second Destroyer Flotilla; and the *Blonde*, still completing at Pembroke. The nominal speed of these ships is 25 knots, but this has been considerably exceeded in the *Boadicea* and *Bellona*, which have made 27·9 knots and 27·8 knots respectively.

The Barnardo Homes and the Navy.—Everybody is aware of the excellent work which is carried out in the Homes for Children established by the late Dr. Barnardo, but it is not perhaps so well known that the

Home.

Navy is now benefiting by the system he established, and we have been asked to draw the attention of readers of the JOURNAL to what is now being done towards training boys for the sea. A few years ago a Naval Training School was added to the many branches of the Homes, in which 300 boys are being constantly trained for the Navy and Mercantile Marine. The Watts' Naval Training School (the name by which it is now known) is established at Elmham on the Norfolk coast, with a branch at Yarmouth, and a small sailing vessel, the *George L. Munro*, is attached, in which the boys are sent to cruise and to be initiated into the work of a seaman's life afloat. This school is now officially recognised as a source from which boys may be regularly drawn upon for the naval service, and the following extract from a letter sent to the Captain Superintendent of the Training School at Elmham by the Inspecting Captain of Boys' Training Ships may be of interest:—

Impregnable, Devonport.
12th June, 1910.

SIR,—I desire to inform you that I have to-day received a most favourable report on 15 boys who have recently been approved for entry into H.M. Navy from the Watts' Naval Training School under your orders, and further to state that I have awarded the Admiralty gratuity of £25 for each of 5 of the number sent forward.

2. The following extract from the report is forwarded for your information:—

"Taking this batch as a whole, they are an exceptional lot, "and compare more than favourably in knowledge, intelligence "and appearance with any similar draft of Mercantile Training "Ships Boys received during the last two years."

I am, Sir,
Your Obedient Servant,
(Signed.) HERBERT SAVORY,
Inspecting Captain of Boys' Training Ships.

The Captain Superintendent,
Watts' Naval Training School,
Elmham, Norfolk.

France. The following are the principal appointments which have been made:—

Rear-Admirals—L. H. Dufaure de Lajarte to command of the Second Division of the Second Squadron; A. J. Bouxin to be Chief of the Staff of the 5th *Arrondissement Maritime* (Toulon); C. P. M. Poidloüe to be Chief of the Staff of the 2nd *Arrondissement Maritime* (Brest). Capitaines de Vaisseau—L. C. H. Martel to *Waldeck-Rousseau*; M. F. Grasset to *Patrie*; M. P. F. De la Roche Kerandraon to *Marseillaise*; G. Lejay to *Gloire*. Capitaines de Frégate—J. F. Le Bihan to *Calédonien*; E. L. A. Malcor to *Epicu* and command of Dunkirk Torpedo Flotilla; M. H. Du Merle to *Bélier* and command of Cherbourg Submarine Flotilla; G. F. C. Varney to *Réquin*; J. F. Prouhet to *D'Estrées*.—*Journal Officiel de la République Française.*

France.

Vice-Admiral Bellue hoisted his flag on the 5th inst. at Toulon on board the first-class battleship *Patrie*, on taking over the command of the First Squadron, in succession to Vice-Admiral Fauque de Jonquières. Vice-Admiral Bellue has selected Capitaine de Vaisseau Didelot as his Chief of the Staff.

Vice-Admiral Kiésel took over the duties on the 5th ult. of Commander-in-Chief of the 1st *Arrondissement Maritime* (Cherbourg).

Appointment of Capitaines de Frégate.—By a decree of 1902, signed by M. Pelletan, names of Capitaines de Frégate were placed on a list for embarkation, and these officers received their appointments afloat strictly according to their order on the list.

A new decree, promulgated on 15th October, has changed this arrangement, and all such appointments in future will be by the selection of the Minister of Marine. The new battleships of 18,000 tons are to carry two Capitaines de Frégate, one as second-in-command, and the junior under the orders of the captain and second-in-command is to have charge of all the guns, both main and secondary armament, musketry, torpedoes, and electricity.

Appointment to Legion of Honour.—Captain Dupendant (Mercantile Marine), Harbour-Master at Calais, has received the Cross of the Legion of Honour for his services during the raising of the *Pluviose*.

Launch.—The destroyer *Fourche* was launched at Nantes on 22nd October. She is one of the series of large destroyers of 700 to 750 tons that have been ordered: length 242·7 feet; beam, 23·4 feet; speed, 31 to 33 knots; crew, 65; fitted for wireless.

New Vessels.—In accordance with the instructions of the Minister of Marine the following new vessels were to be commenced in the last quarter of 1910:—

At Toulon.—The destroyers *Bisson* and *Renaudin*.

At Rochefort.—The destroyer *Protet* and submarines *Clorinde* and *Cornélie*.

At Cherbourg.—The submarine *Gustave-Zédé*.

By contract.—The destroyers *Magon*, *Mangini* and *Commandant-Lucas*.

Names of Ships.—Admiral de Lapeyrère, Minister of Marine, has decided in future only to give the names of naval officers or those of former ships to new vessels, and not to continue those of politicians and distinguished civilians lately given to the new battleships and cruisers.

The names *Bisson*, *Protet*, *Magon*, *Mangini*, and *Gustave-Zédé* have figured in the Navy List before. As regards *Renaudin* and *Commandant-Lucas*, the former commanded the *Vengeur*, sunk with all hands and with her colours still flying, [1] according to French reports of that period and many French histories, in the action of 13th Prarial (1st June, 1794), and the latter commanded the *Redoutable* at Trafalgar.

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[1] As a matter of fact, part of the crew were saved, including her Captain, Renaudin, who was made a Rear-Admiral (*see* Laird Clowes, p. 235, Vol. IV.).

France.

Clorinde and *Cornélie* were formerly frigate names; these form part of the new series of submarines, the first of which, *Oméga*, has been renamed *Argonaute*.

Submarine Construction in France.—The *Temps* says that France still keeps the lead in submarine construction, and that many other nations are copying French designs, due to the genius of M. Laubeuf.

The following vessels to his plans are in commission or under construction for the French Navy:—

In Commission.

4 type *Siréne*, 202 tons (1901);
2 type *Aigrette*, 172 tons (1904);
2 type *Circé* 351 tons (1907);
18 type *Pluviose*, 400 tons (1907-8-9-10);
of which latter 14 are in commission and 4 on their trials.

On Trial, Under Construction, or Projected.

16 type *Brumaire*, 400 tons (1909-10-11-12), these are improved *Pluviose* type with higher speed, greater radius of action, and Diésel motor; 2 type *Brumaire*, 400 tons or over (1911-12). 30 submersibles of this type are projected, part of the new programme presented to the Chamber.

M. Laubeuf has under construction in private yards a certain number of these improved submersibles for foreign nations.

Steam Trials.—The new first-class armoured cruiser *Edgar-Quinet* has at last satisfactorily concluded her trials. She is the last armoured cruiser to be completed, and it does not appear that any more of this class of vessel are to be built. She was laid down at Brest in November, 1905, launched in September, 1907, so has taken as nearly as possible five years to complete, and although a powerful ship, she represents a type which is now practically obsolete.

Her dimensions are as follows:—Length, 515 feet; beam, 70 feet 4 inches; draught, 27 feet 6 inches, on a displacement of 13,780 tons. She is protected by a complete belt of hard steel 6·7 inches thick, tapering to 3·6 inches forward and aft from 7 feet 6 inches above to 3 feet 5 inches below the water-line. Above is a second belt, 5 inches thick, tapering to 2·2 inches. Her double turrets are protected by 7·8-inch armour, the single turrets by 5-inch, and the casements by 4-inch. There are two protective decks, the upper 1·3-inch tapering to 0·8-inch; the lower 2·6-inch tapering to 0·8-inch. Her armament consists of fourteen 7·6-inch 50-calibre Q.F. guns, four in pairs in turrets fore and aft, six in single turret amidships, and four in casements, with eighteen 6-pounders, eight 3-pounders, and two submerged torpedo tubes.

Her machinery consists of three sets of vertical 4-cylinder triple-expansion engines, to develop 36-000-I.H.P., and with 136 revolutions to give a speed of 23 knots, steam being supplied by 40 water-tube boilers of the Delaunay-Belleville type, which have a total heating surface of 7,605 cubic metres (268,582¼ cubic feet), against a grate surface of 231

France.

cubic metres (8,158 cubic feet); they are tested to a pressure of 46 lbs. to the square inch.

The results of the official trials were as follows :—

Ten hours at full power, with 40 boilers working: I.H.P. (as per contract, 36,000) actually developed, 36,823; coal consumption per indicated horse-power per hour (as per contract 2 lbs.), actual consumption, 1¾ lbs.; coal consumption per cubic metre of grate surface, 274 lbs.; mean speed for the 10 hours, 23·8 knots, with 137 revolutions. Three hours at full speed, with three-fourths (30) boilers working: I.H.P. (as per contract, 36,000), developed, 39,893; coal consumption per indicated horse-power per hour, 2 lbs.; coal consumption per cubic metre of grate surface, 424 lbs.; mean speed, 23·92 knots.

Twenty-four hours without forced draught, with fires under all 40 boilers: I.H.P. (as per contract, 24,000), developed, 25,416; coal consumption per indicated horse-power (as per contract, 1¾ lbs), actual, 1½ lbs.; coal consumption per cubic metre of grate surface, 153 lbs.; mean speed, 21·93 knots.

Six hours coal consumption trials, with 20 boilers alight. I.H.P. developed, 16,705; coal consumption per indicated horse power (as per contract, 1¼ lbs.); coal consumption per cubic metre of grate surface, 183 lbs.; mean speed, 15·5 knots.

The new first-class battleship *Voltaire*, which has been built at the Chantiers de la Méditerranée, La Seyne, near Toulon, has completed her preliminary trials, which do not appear to have been so satisfactory as were expected. She is the first large ship fitted with turbines in the French Navy to be tried. The first trial the engines had to develop 12,000-I.H.P., with a coal consumption per mile run of from 1,410 to 1,510 lbs.; in the result, the engines developed 11,741-I.H.P., with a consumption of 1,470 lbs., the mean speed being about 17 knots. At a three hours' full speed trial, a speed of 19·2 knots was maintained, the contract speed being 19 knots. At another trial with 10 boilers alight, a speed of 8 or 9 knots should have been attained, but only 5·6 knots was made, the coal consumption per square metre of grate surface being 110 lbs., and the total consumption per hour, 6,300 lbs.

The new destroyer *Cavalier*, of 600 tons displacement, built at the Normand works, on a six hours' full speed trial, maintained a speed of 31·02 knots, the contract speed being 28 knots. Two sister vessels of the same series, the *Fantassin* and *Janissaire*, made 29·11 and 28·5 knots respectively.—*La Vie Maritime* and *Le Yacht*.

The Distribution of Our Naval Forces.—The *Temps* recently published an article under this title, which reads as follows:—

In a letter addressed to *Dépêche de Brest*, M. de Lanessau explains his views on the distribution of our fleet, and advises the concentration of our most powerful ships in Northern waters, believing this to be necessary on account of the extraordinary development of the German fleet. M. de Lanessau's opinion incontestably is of great value, nevertheless the contrary view has many supporters, and deserves consideration.

France.

The situation of France with reference to the Triple Alliance, say the advocates of the concentrations of our chief force in the Mediterranean, has not changed in the last ten years, and if, since the *entente cordiale* with England, we need no longer consider the British fleet as an eventual adversary in the Mediterranean, there are nevertheless other powerful fleets that are possible enemies. These are the fleets of Italy and Austria, which are increasing, if not very rapidly, at least very regularly and methodically; these fleets form part of the Triple Alliance and must not be neglected.

For some time now it has been seen that the available forces of the Triple Alliance must not be confined to the land armies beyond the Vosges and the Alps, and that the fleets of these allied Powers are the wings of the immense armies of central Europe. The right wing is the German fleet, which ten years ago hardly existed, and which to-day is advancing by strides in the attempt to equal that of England. The left wing is the Italian and Austrian fleets, the former country having just launched the *Dante-Alighieri* of 20,000 tons, while the latter is building *Dreadnoughts* at Trieste and Pola. These wings would create a diversion to the action on the Vosges, and would be as dangerous in the Pas de Calais as on the littoral of Provence. These diversions must be met; it is indispensable that the struggle on land be limited to the terrestrial frontier, and that our sea-board in the North and in the South be exempt from attack by sea.

In the North the action of the German fleet must be confined to the North Sea; our mobile defences and our submarines are obstacles against its passage through the Straits of Dover, and England, to whom we are united by bonds of sympathy and undeniable community of interests, could not remain passive to a naval war, whose results might mean a great increase to the power of a rival navy. She has already shown that she is alive to the situation by concentrating in her home waters almost the whole of her naval forces, to enable her to face with success the effort being made to wrest from her her naval supremacy, and by continually increasing the power of her Home fleet she shows a wish to leave the care of the Mediterranean to France, while she herself watches the North Sea.

The development of the naval forces of Austria and Italy, though less rapid than that of Germany, is none the less steadily progressing. An Italian fleet of twelve powerful battleships has just lately been assembled for manœuvres, and Italy has now launched the first of her *Dreadnoughts*. In the Austrian arsenals splendid vessels are being built; each year a new battleship is added, and the increase is so persistent that England, which has reduced the number of her battleships in the Mediterranean to four, is replacing them with more modern vessels. But these four battleships are not sufficient; they will not alone be able to hold the Eastern basin of the Mediterranean against the left wing of the Triple Alliance, and this duty must fall to France. A line of defence exists; its two extreme points are Toulon and Bizerta, with the *points d'appui* of Malta and Corsica. There is an idea abroad that the adversaries in the battle of Lissa could never agree together, but if the constitution of their fleets is considered, it is evident that ships like the *Napoli*, *Roma*, *Dante*, and *Leonardo-Vinci*, and like the *Radetski* and *Lrinyi*, are not designed to

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fight only in the Adriatic, as they are vessels of great speed and large radius of action.

It is of the greatest moment to France that these ships should not be able to force the line Toulon-Biserta, and her chief naval forces are by no means too great for the task.

United States.

Navy Fleet Plans. — A two-ocean policy of battleship distribution is likely soon to be made possible for the Navy Department. Within a very short time we shall have battleships enough to maintain a fleet in each ocean. The Atlantic Fleet, counting the *North Dakota* and *Delaware*, and the *Indiana*, *Iowa*, and *Massachusetts*, has twenty-one ships available for practically any sort of service that can be expected from battleships. In one year more the *Utah* and *Florida* will be added. It is not difficult to see that when there is provision for men and officers there will be ships enough to maintain a fleet in the Pacific. It would be idle to send there a small force. A division of the Atlantic Fleet would only be a temptation for trouble. There should be a strong fleet or none. With present facilities the fleet can be moved to the Pacific in ninety days. With the completion of the Panama Canal only a few days will be required.

Secretary Meyer contemplates the movement of the armoured cruisers *Tennessee*, *South Dakota*, *Montana* and *North Carolina* to the Pacific this fall. The two former will be joined on coming around the Horn from the Pacific by their sister ships, the *Montana*, now on the way to Buenos Ayres, and the *North Carolina*, which is lying at Rio de Janeiro, where she went with the remains of the late Ambassador Nabuco. The rendezvous will take place at Maldonado. The four armoured cruisers and the scout cruiser *Chester* will be organised into a Special Service Squadron, and will visit Buenos Ayres during the celebration to be held there on 24th May.

The First Squadron of the Pacific Fleet, consisting of the *California*, *Washington*, *Colorado*, and *Pennsylvania*, will start from San Francisco on 20th August for Valparaiso, where they will be joined by the *South Dakota*, *Tennessee*, *Montana*, and *North Carolina*, and the crews will participate in the bi-centennial celebration of Chilian independence at Santiago, the capital, in September. After the festivities the armoured cruisers may be ordered on up to the west coast of the United States, but it is also possible that they may return to the Atlantic and be ordered to sail with the Atlantic Fleet to the Mediterranean. The Pacific Fleet will return to San Francisco, except the *Washington*, which will come on to the Atlantic side.

A plan is under consideration to reorganise the Atlantic Fleet within the next year or so. With the increment of new battleships it will be possible to place five ships in each division, instead of four, so that all the ships may dock at their home yards twice a year, and one ship may be in her yard for repairs at any time without taking from the practical strength of the division. The ships of the four divisions will be assigned to the yards at New York, Norfolk, Philadelphia and Boston, and all

the ships of each division will go to the same yard. Thus the division commander will have all his force in reach and under his eye. As each ship would, under the proposed plan, have two or three months uninterrupted by duty for a thorough overhauling for repairs, and by relying on the crew for some of the work of overhauling, the ships would be in service condition more nearly continuously. Practically no ship would be put out of commission or in reserve. Ships in yards would have as nearly a full complement of men as possible, and no battleship crew would be allowed to go below three hundred and fifty men. A crew of this size would be expected to keep every ship in shape to go into immediate service on twenty-four hours' notice. When it was desired to have a ship go to target practice or manœuvres, the crews of two ships could be combined on that ship. Next year the plan would be to have the First Division dock at the New York Yard, the Second at the Norfolk Yard, the Third at the Boston Yard, and the Fourth at the Philadelphia Yard. The Armoured Cruiser Division, consisting of the *Tennessee*, *Washington*, *North Carolina*, and the *Montana*—if some do not remain in the Pacific—would dock at the Portsmouth Yard. In July, 1911, the Battleship Fleet would be as follows:—

Connecticut, flagship. First Division: *Connecticut*, *Florida*, *Utah*, *Delaware*, *North Dakota*, *Michigan*. Second Division: *Louisiana*, *South Carolina*, *Kansas*, *Vermont*, *New Hampshire*. Third Division: *Georgia*, *Nebraska*, *New Jersey*, *Virginia*, *Ohio*. Fourth Division: *Minnesota*, *Mississippi*, *Idaho*, *Maine*, *Missouri*. Fifth (armoured cruisers) Division: *Tennessee*, *Washington*, *North Carolina*, *Montana*.

The fleet in April, 1912, would be organised as follows: *Wyoming*, flagship. First Division: *Wyoming*, *Arkansas*, *Florida*, *Utah*, *Delaware*, *North Dakota*. Second Division: *Louisiana*, *Michigan*, *South Carolina*, *Vermont*, *New Hampshire*. Third Division: *Connecticut*, *Kansas*, *Minnesota*, *Idaho*, *Mississippi*. Fourth Division: *Georgia*, *Nebraska*, *New Jersey*, *Rhode Island*, *Virginia*. Fifth Division (armoured cruisers): *Tennessee*, *Washington*, *North Carolina*, *Montana*.

The Reserve Fleet would in the latter year consist of the *Missouri*, *Ohio*, *Maine*, *Wisconsin*, *Illinois*, *Alabama*, *Kearsarge*, *Kentucky*, *Iowa*, *Massachusetts* and *Indiana*. Of these the *Maine*, *Missouri* and *Ohio* would be available to take the place of any ships of the fleet that must go to yards for extensive overhauling. The auxiliaries *Celtic*, *Solace*, *Culgoa*, *Panter*, and *Yankton* would make the New York Yard their home yard. The scout cruisers *Chester*, *Birmingham*, and *Salem* would dock at the Boston Yard.

In the organisation outlined above, the aim would be to assemble in the same division ships of the same general type, in order to make the divisions homogeneous. The largest ships would dock at New York and Norfolk, because the docks at those yards are the largest and the best facilities are at those yards. The commander-in-chief and the fleet auxiliaries would always make their home at the New York Yard, as that is most central and has adequate facilities.

It would thus appear that two years hence we shall have thirty-one battleships in the fleet. There would always be four ships in each division ready for sea service. Each yard would probably have one battleship on

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hand for repairs the year through. Thus the work could be systematised and handled more economically. Each division commander would have all the ships of his division immediately near him all the year.

The most effective destroyers and torpedo boats would be kept in commission at New York, Boston and Norfolk. Those in reserve would be kept at Charleston. The Reserve Fleet would be kept at Philadelphia. All the minor craft, gunboats and those of no especial military value, except six or seven now in use for police duty, would be put out of commission and stored at convenient points.—*U.S. Army and Navy Journal.*

MILITARY NOTES.

THE KING.

The King has been graciously pleased to confer upon The Norfolk Regiment the honour of becoming its Colonel-in-Chief.

The King has been graciously pleased to become Honorary Colonel of the Royal Malta Artillery.

The King has been graciously pleased to approve of the undermentioned changes in the designation of certain Regiments of the Indian Army, and the grant to them of the specified honorary distinctions:—

Former Designation.	New Designation.
18th Prince of Wales's Own Tiwana Lancers	*18th King George's Own Lancers
26th Prince of Wales's Own Light Cavalry	*26th King George's Own Light Cavalry
38th and 39th Prince of Wales's Own Central India Horse	*38th and 39th King George's Own Central India Horse
1st Prince of Wales's Own Sappers and Miners	*1st King George's Own Sappers and Miners
14th Prince of Wales's Own Ferozepore Sikhs	*14th King George's Own Ferozepore Sikhs
61st Prince of Wales's Own Pioneers	*61st King George's Own Pioneers
130th Prince of Wales's Own Baluchis	*130th King George's Own Baluchis
1st Prince of Wales's Own Gurkha Rifles (The Malaun Regiment)	*1st King George's Own Gurkha Rifles (The Malaun Regiment)
127th Princess of Wales's Own Baluch Light Infantry	†127th Queen Mary's Own Baluch Light Infantry

Additional Honorary Distinctions.

* The Royal and Imperial Cypher.

† The Cypher of Her Majesty the Queen in lieu of the Coronet of the Princess of Wales.

Home The following are the principal appointments which have been made:—

Major-Generals—George M. Bullock, C.B., to be Colonel of the Devonshire Regiment; the Hon. Sir Savage Mostyn, K.C.B., to be Colonel, The Royal Welsh Fusiliers; Colin J. Mackenzie, C.B., to be a Major-General, General Staff, while employed as Chief of the General Staff and First Military Member of the Militia Council of the Dominion of Canada. Colonel—N. R. Reade, C.B., to be a temporary Brigadier-General in charge of Administration, Northern Command.

Territorial Force.—Colonel Edward K. Daubeny, D.S.O., to command Gloucester and Worcester Infantry Brigade (Southern Command); C. V. Hume, M.V.O., D.S.O., to command the Artillery, South Midland Division (Southern Command).

Indian Army.—Colonel H. F. Mercer, C.B., to be Inspector of Artillery, Southern Army, with temporary rank as Brigadier-General.

Some Notes on Aviation.—The following Notes on Aviation have been contributed by an officer who has recently been working in France for the Certificate of the Aero Club of France:—

"While attending Farman's School at Etampes, I naturally met all the other pupils and also those of Blériot's school, which was about 600 yards away, consequently I had an opportunity of learning the arrangements made by other countries for their air service.

France.—It is only after gaining some knowledge in aviation that one realises the lead the French have gained.

Not only have they the best men and machines, but there are also nearly 100 reservists who gain their livelihood by flying.

Service in the air is highly thought of, and so sought after that officers gladly pay civilian firms for their apprenticeship, in the hope of entering the air service.

Material.—The material is bought from civilian firms, and as far as I could learn there is no attempt at construction by the Army. Consequently the various constructors are on the *qui vive* to build a suitable military aeroplane and to gain the Government orders. Farman's military biplane is at the moment considered the most successful, as it has greater facilities for observation, but the French Government have purchased some Blériot monoplanes. At the moment the system is: the Government states its requirements and leaves it to the various firms to produce the best articles. There is keen competition for Government orders. Maps, suitable for aviation, are about to be made by civilian firms.

Personnel.—The officers are drawn from every corps and generally gain their *brevet de pilote-aviateur* before entering. Ability in aviation is the sole test. The rank and file are taken from those whose callings in civil life make them useful. But at the moment there are a number of men entering the Army who come from the various aeroplane works, and consequently are sent to an Air Corps.

Home.

For example, an extremely smart mechanic at my school (Farman's) was called up for military service while I was there, and after a little drilling, will serve with aeroplanes. The Government thereby getting for the pay of an ordinary soldier a man with three years' experience on motors used in aeroplanes.

Training.—To train officers every use is made of mercantile enterprise. Everything new is seen, whether in flying or in machine and aeroplane construction. The Aeronautical School at Paris is also utilised. Consequently, theory and practice go hand in hand.

The great advantage the French have is that the entire nation are interested in aeroplanes and proud of their success. At the moment there are good civilian schools and constructors who have made a life study of the subject.

The French stipulate that the aeroplane carries a passenger; but, as I have said, take no steps to systematically train observers.

Note.—For successful observation from an aeroplane, practice is necessary, the driver being far too much occupied to carefully observe the country. It struck me as strange that no arrangements have been made to train the students at the *École Supérieur de Guerre* as observers. Too much stress is laid on having officers as drivers; there is no reason why the drivers should not be privates; but officers would be required as observers and should be able to drive in case of emergency.

Surely the great value of the aeroplane, from a military point of view, is to gain information and transport Staff Officers from point to point. The fullest value will be obtained by having officers accustomed to the observation from aeroplanes, and I suggest that it should be part of the Staff College course.

Germany.—The Germans do not at present go direct to the makers in France to learn.

They apparently go to Belgium, and there is a Belgian aviator who is putting all his money in a school intended for German officers.

Italy.—Apparently aviation is taken seriously in Italy. A section of aviation is formed under Commander Ginoccio, of the Navy, and comprises officers of both services, also experts brought into the service. They have officers in all the French schools, and also send their best men to the Aeronautical School in Paris.

They certainly seem to be starting on sound lines. The five officers I met are men with a natural aptitude for mathematics, and are practical fliers, and are searching for the principles on which to construct the best aeroplane.

To show the careful way they are approaching the subject, I might mention they are constructing instruments to aid them in their researches. For instance, one instrument will show every movement made by the driver and the machine in a flight, and consequently enable these to be studied at leisure.

Japan.—Officers are being sent to the French schools. A Captain of the Engineers of the Guard was at the same school as myself, and left nothing undone to gain information, at the same time giving none.

Rome.

Russia.—Russian officers of both services are going privately to the French schools and learn to drive, but the theory of the subject seems neglected.

Summary.—For a nation commencing aviation, the Italian system is, I think, the best. They clearly recognise the necessity of a school of progressive thought in aviation, which, at the same time, should be thoroughly practical.

The Italian Government has brought into the Air Service keen and expert civil engineers, and sends them to study at the French motor and aeroplane works, in particular to study the Gnome motor, which at the moment is the most successful.

However in no case could I find that any nation are seriously and systematically studying atmosphere and winds as affecting aeroplanes, and yet practical airmen pay a lot of attention to these two.

I also could not find any arrangements for a steady course of instruction in observation from an aeroplane."

France.

The Exercises and Manœuvres during 1911.—The Grand Manœuvres will be carried out in the North, under the direction of the Vice-President of the Superior Council of War. These manœuvres will last nine days, exclusive of the time devoted to the concentration and dispersal movements.

There will take part in the Grand Manœuvres the Ist Army Corps (Lille, General Davignon) and the VIth (Châlons-sur-Marne, General Goiran), the 8th and 26th Chasseur battalions, the group of Zouave battalions of Paris, a brigade of Reservists of the IInd Army Corps, the 4th and 5th Cavalry Divisions, and one of Heavy Artillery. The artillery of the two Army Corps will be completed to 30 batteries for the Ist Corps, and 39 batteries for the VIth Corps. It is believed that the scene of operations for the manœuvres will be in the Hirson region.

The VIIth Corps (Besançon) and the Xth Corps (Rennes) will also carry out manœuvres under the direction of Members of the Superior Council of War. They will last nine days, exclusive of the time employed in concentrating and dispersal. The artillery will be completed in accordance with later arrangements.

Divisional Manœuvres will be carried out by the XIth, XIIth, XIVth, XVth, XVIIth, and XVIIIth Corps.

Brigade Manœuvres will be carried out in the following Army Corps: IIIrd Corps (9th and 10th Brigades); IVth, Vth and VIIIth Corps (30th, 31st and 32nd Brigades); IXth and XIIIth Corps (51st and 52nd Brigades) and XVIth Corps, as also by the 7th and 10th Infantry Divisions.

The Divisional Manœuvres will last 14 days, going and returning included; the Brigade Manœuvres will last 12 days. The Commandants of Army Corps are to arrange the movements so as to ensure that each unit will have at least five days of effective operations.

The Ministerial Circular lays it down that, with the view of developing the instruction of the staffs and of assuring, during the manœuvres, the working of as great a number among them under the command of their normal chief, the Army which will manœuvre under the direction

of the Vice-President of the Superior Council of War, will be commanded by a member of the Council, assisted by a proper Army Staff. With the same object in view, each of the Army Corps executing corps manœuvres will operate, during the last days, against an imaginary enemy, under the command of its head, but under the direction of a member of the Superior Council.

All the home Army Corps, with the exception of the XIVth and XVth, will receive special credits for the carrying out in the Camps of Instruction of combined evolutions by a certain number of their units. The troops will be distributed among the Camps as follows:—

The Ist and IInd Corps, at Sissonne; the IIIrd, IVth (with the exception of the 26th Chasseur Battalion and the Paris group of Zouaves), and VIth Corps, and the Colonial troops, at Châlons; the Vth and XXth Corps, at Mailly; the VIIth and VIIIth Corps, at Le Valdahon; the Xth and XIth Corps, at Coëtquidan; the IXth, XIIth, and XIIIth Corps, at la Courtine; the XVIIIth Corps, at Souge; the XVIth and XVIIth Corps and Colonial troops, at Larsac. The 5th Infantry Brigade (IInd Corps) will take part in some of the exercises and in some of the manœuvre days at the camp at Châlons.

Four combined cavalry manœuvres, lasting seven days, will be carried out by:—

1. The 2nd and 3rd Cavalry Divisions and the 2nd Corps Brigade;
2. The 6th Cavalry Division and a provisional division formed of the 14th and 15th Corps Brigades, and a group of Artillery of the XIVth Army Corps;
3. The 1st and 7th Cavalry Divisions, whose manœuvres will take place at Mailly in September.
4. The 8th Cavalry Division and a provisional division formed of the 7th and 20th Corps Brigades, and a group of Artillery of the VIIth Army Corps.

The Minister of War has issued the following additional Instructions in regard to the participation of the troops of the Military Government of Paris in the exercises and manœuvres which are to be carried out this year:—

The three Infantry Divisions of the Government of Paris, the 5th Infantry Brigade, the 5th Colonial Brigade, the 26th Chasseur Battalion, and the Paris group of Zouaves, will proceed to Camps of Instruction to carry out firing practice and combined exercises.

The 5th Colonial Brigade will proceed for 12 days in May to the Camp at Châlons;

The 7th Infantry Division (General Chapel), to which will be joined the 26th Chasseur Battalion (Vincennes) and the Zouave group, will be 17 days in Camp at Châlons, 10 days of which will be devoted to technical exercises and 7 to evolutions. The necessary credits for moving the Chasseur battalion and the Zouaves will be placed at the disposal of the General Commanding the IVth Corps;

France.

The 10th Infantry Division (General Bolgert) will remain for 17 days in the Camp at Mailly, during which 10 days will be devoted to technical exercises and 7 to evolutions;

The 6th Infantry Division, with its Reservists of the first levy, will join the Camp at Châlons in August for 18 days, 10 of which will be devoted to technical exercises and 8 to evolutions; but the Division will not take part in the Grand Manœuvres.

The 3rd Infantry Division, with its Reservists of the first levy, will also be at the Camp at Châlons for 18 days, 10 days of which will be devoted to technical exercises, 4 days to evolutions, 2 days to manœuvres at the Camp, and 2 days to manœuvres away from it. These exercises and manœuvres will be partly combined with the first combined cavalry manœuvres;

The Divisions and mixed Brigades will be constituted as in 1910, and the movements of the troops regulated in a similar manner;

The Generals Commanding the Army Corps concerned will act in concert with the Military Government of Paris in all questions relative to the movement of the units stationed in the Military Government of Paris;

All the troops, moreover, are to be in Paris on the 14th July to take part in the Review.

At the Grand Manœuvres, the 26th Battalion of *Chasseurs à pied* and the Zouave Battalion, will be attached, for the organisation of the manœuvres, to the VIth Army Corps;

A group of 3 batteries of the 3rd Artillery Brigade of the Versailles, Vincennes and Rueil Regiments (to reinforce the Artillery of the two Army Corps), and a group of Heavy Artillery from Rueil will also take part in the manœuvres. Special instructions will be issued later as to how these different Artillery units will be constituted, as well as regulations for their movement, their commissariat and supplies;

The participation in the manœuvres of automobiles and of the horses to complete to war footing, will also be settled later.

The Minister of War has further given directions that a brigade composed of two regiments of the Reserve, belonging to the IInd Army Corps, shall take part in the Autumn Manœuvres with the 1st Corps (Lille).

This Reserve Brigade will be composed of the 267th Infantry Regiment (Soissons) and the 287th Infantry Regiment (Saint Quentin). The men of the 2nd Levy of these two regiments, after they are called out, will be sent to the Camp at Sissonne, at the beginning of September, where they will carry out the first part of their training; they will then proceed to join the 1st Corps for the manœuvre operations.

As the regiments, to which the 267th and 287th Infantry Reserve Regiments are attached, could not, in view of the very considerable crowding, receive at the same time the Reservists of the 1st and 2nd levy, the Minister of War has directed that certain Reservists of the first levy should not be called out until the time for the combined evolutions of the brigades (7th and 8th Infantry) to which they belong. The evolutions

of these brigades will take place obligatorily in May.—*La France Militaire* and *Bulletin de la Presse et de la Bibliographie Militaires.*

Aeronautics in the Army—Appointment of an Inspector.—Major-General Roques, who has been for some time head of the Engineer Department at the Ministry of War, has been appointed Permanent Inspector of Military Aeronautics. It is a new appointment, which was, however, foreshadowed by the Minister of War, when the Estimates for 1910 were under discussion, created in order to group all the aeronautic services and to simplify and render their administration more practical.

General Roques will have among his duties that of following the progress of aeronautics generally and of studying their application to military needs, and will communicate directly with the Minister of War on all matters connected with his department. He will have charge of the *personnel* of all the aeronautic establishments, laboratories, schools, and depots of military aeronautics, which up to now have been in charge of the Engineers. It will be only in the matter of general military discipline that the *personnel* and establishments will come under the authority of the generals commanding the territorial corps. As regards the promotion of aviator officers no matter from what branches of the services they come, it will be in the hands of the Inspector, who will alone have the necessary knowledge for forming an opinion as to their efficiency and aptitude, and will make his recommendations to the Minister. He will make all changes of station that he may consider advisable, and can be accompanied on his inspection by one or more of the officers under his orders.

Since the first meeting at Béthény in 1908, the Establishment at Chalais has purchased from the different aeroplane constructors, who won prizes at that great competition, machines with which incessant trials have since been carried on. It is thanks to these that the officer pilots, who have recently given such proofs of their prowess, have received their training; but during the whole period of transition, which is now coming to an end, administrative complications and confusion of duties have placed difficulties in the way of prompt realisation, as far as the Army is concerned, of all the progress which civilian industry has achieved. General Roques will now, however, under the direct authority of the Minister, be able to forward the necessary studies, construct, carry out experiments, &c., without the vexatious interference and annoyance of the bureaucracy.

As a commencement, the General is about to organise a great competition for military aviation machines, which is to take place in October. The principal idea of the Minister and his able assistant being, while serving the immediate interests of national defence, to give useful encouragement to civilian constructors, whose incessant work has been the means of perfecting the first heavier-than-air machines to the point of making them valuable instruments for reconnaissance and even for fighting. The conditions of the competition will be as follows:—

1. The machines, including the motors, to be constructed in France;
2. A flight in an enclosed course without alighting of 186 miles;

France.

3. To be able to carry for this flight a weight of 661 lbs. consumable materials, oil, water, &c., not being included;
4. Three seats on the machine, for the pilot, the assistant pilot, and the observer;
5. A mean speed at least equal to 37 miles an hour;
6. Easy landing in cultivated country, grass lands, stubble, &c., with the ability to rise for a new flight.—*La France Militaire.*

Japan.

The Corps of Occupation.—The Protectorate of Japan over Corea, which has lasted since 1905, has been terminated by the official announcement of the annexation of that country on the 30th of last August.

From the military point of view, it is unlikely that the new political situation will necessitate changes in the strength and disposition of the troops.

The Japanese troops in garrison in the country were called: *Kankoku* (*Corée*), *Chusatsu Gun* (Corps of Occupation); for the future they will be known as *Chosen* (Corée, Japanese pronunciation), *Chuto-Gun* (stationary troops).

These troops comprise the 2nd Division, plus a frontier brigade.

There exists in addition a corps of Gendarmerie, commanded by a General of Brigade, and which, in addition to the Japanese element, includes 4,000 native Gendarmes and 4,000 native police agents.

The Corean Army was suppressed in 1905, with the exception of the Guard battalion of the Sovereign; this troop, although temporarily maintained, is, without doubt, destined to disappear.

The Conscription Law will not at present be extended to the Corean people.

There are some half score Corean Cadets in the Japanese Military Schools, who, at the conclusion of their studies, will join the Japanese Officers' Corps.

From the budgetary point of view, the expenses due to the Gendarmerie, Corean police, the Guard battalion, and the Cadets are assured up to the end of December last (the end of the Corean financial year) by the Corean Treasury.

The increase of the effectives of the Japanese Gendarmerie will necessitate a supplementary expenditure of £200,000, which will be placed to the account of the Extraordinary Budget of the Ministry of War. The maintenance of a division in Corea amounts to £500,000.

Aerostation and Aviation.—The sum of £4,800 was allotted in last year's Budget to aeronautical investigations, and has been partly expended in the purchase of ground suitable for experiments.

After numerous trials, rendered more difficult than would generally be supposed by the strength of the prevailing winds in the country, the choice of the Committee of the provisional Experimental Institute fell on the department of Saitama, in the environs of Tokorozawa. The ground purchased has a superficies of 200,000 "*tsubo*," that is about 98 acres. A hangar for dirigibles is under construction, as well as sheds for

Japan.

aeroplanes, and the question of the construction of barracks for the corps of military balloonists is also under consideration.

Two aeroplanes on the Wright system have already been purchased and sent to Japan.

Certain officials, who are to study the aviation question, have already been sent to Europe. The War Department has selected two officers, Captain Tokugawa, an Engineer officer attached to the Balloon Corps, and Captain Hino, of the line, one of the professors at the Toyama School.

The Minister of Marine has selected Lieutenant Aibaba, and the Minister of Public Instruction, has selected M. Tanaka, Professor of Mechanics at the Imperial University, who has devoted much study to the question of aviation. They are to visit France and Germany, and will doubtless apply to the Schools of Aeronautics and Aviation in both countries.

Recruiting Report for 1909.—The following are the results of the examination by the Recruiting Board:—Total number of young men who have attained the age for conscription, 559,317; of these there were 102,864 put back from 1908. Increase in the numbers over 1908, 17,350.

Put back:—

626	Supporters of Families;
42,394	Students;
33,275	Residing abroad;
27,861	Unknown, Failed to report themselves, or under judicial examination;
434	Excluded as worthless;
8,731	Sick or infirm.

Among the men accounted fit for service, the two best categories show 704 out of 1,000 examined, an increase of 10 per 1,000 over 1908.

Diseases.—Trachoma, 23 per 100; Ven, 2·3 per 100.

Height over 5 feet.—31 per 100.

Illiterate.—5 per 100 (diminution of 0·8 per 100).

Volunteers below the age of 20: 3,437, of whom 2,227 were accepted. —*Revue Militaire des Armées Etrangères.*

Mexico.

Works for the Manufacture and Repair of War Matériel.—Mexico has been compelled for long years to obtain her war *matériel* from Europe and the United States, but works are now being established for the manufacture and repair of war *matériel*, which shows the increasing prosperity of the country and foreshadows the day when the country will be able to dispense with foreign help.

1. *Cartridge Manufactory.*—The cartridge manufactory was founded in 1907. After having applied to the Schneider Company for the installation of this manufactory at Tacubaya, the Minister of War finally accepted the more advantageous proposals of a German firm, and the whole of the plant of this important manufactory is of German make.

There are produced at the present time at Tacubaya 9,000 cartridges per day, but the workshops could double that output if necessary.

Under the orders of a General of Brigade, assisted by a Sub-Director, 126 workmen and 30 workwomen are employed in making cartridges for

Mexico.

the infantry. At the present time the cartridges manufactured at Tacubaya are not entirely Mexican. The case, the leaden part of the bullet, and the primer are entirely made in Mexico, but the smokeless powder and the hard steel casings for the bullets still have to be obtained from Germany.

Experiments are, however, being made with the view to the manufacture on the spot of the hard steel casings, and it was hoped that last autumn the manufactory of smokeless powder on the German model would be inaugurated.

2. *National Powder Manufactory at Chapultepec.*—The National Powder Manufactory at Chapultepec has been also provided with plant recently purchased. Up to the present time the output of this manufactory has been very small; its four rolling mills, its furnace, and its two cutting machines only serve to prepare the brass for the cases in the cartridge manufactory.

In a small workshop which forms part of the manufactory, the parts sent from St. Chamond for the transformation of the de Bange guns of the old model into quick-firers are adjusted.

3. *The Arms Manufactory.*—This manufactory, which possesses a German plant, is at present simply a workshop for repairs. Some thirty civilian workmen and some soldiers are employed in the workshops to repair the Mauser rifles used in the Mexican Army. The guns, the breech mechanism, and the sword-bayonets, are all purchased in Germany; the stocks only are made on the spot.

Some 4,000 automatic rifles, called "Porfirio Diaz," on the Mondragon system, which are to be supplied to the Mexican Army, have been ordered at Neuhausen, in Switzerland.

4. *The Arsenal at Mexico.*—As a matter of fact, up to the present the arsenal at Mexico has been simply a workshop for the repair of artillery *matériel*, but the necessary plant has now been set up, which will allow of the manufacture and mounting of the artillery caissons.

Under the orders of the Colonel, who is the Director, some fifty workmen are employed in the arsenal in the manufacture of caissons, and, above all, in the repair of the artillery *matériel* on service. The overseer of the arsenal comes from St. Chamond. This clever workman has become the real head of the establishment, where his presence allows of important repairs being carried out on the spot, without it being necessary to send the injured parts to France.

5. *The Almacénès (Depôt of the Artillery).*—The Almacénès is a simple depôt where the artillery *matériel* used by the regiments and the harness, saddlery, etc., used for mobilisation, are stored. There are at the Almacénès more than double the number of guns placed on service. In this depôt are also stored sixteen Hotchkiss machine guns, purchased some eight years ago, but which have never been issued for service. Side by side with this depôt are workshops for keeping in a perfect state of repair the *matériel* stored in the Almacénès.

6. *The Naval Arsenal at Vera Cruz.*—The naval arsenal at Vera Cruz is also hardly more than a place for repairs. The plant, however, is sufficient for keeping in a good state of repair the small Mexican fleet which lies at anchor in the roadstead of Vera Cruz. All the units of the

Mexico.

fleet have been purchased abroad, and their armaments, with the exception of a few American guns, are French.

To the number of military establishments must be added the powder manufactory at Santa-Fé, which produces enough black powder to meet the needs of the country, and the new smokeless powder manufactory at the same place, which should by this time have commenced work.

To resume, the production of Mexico is confined at the present time to the making of infantry cartridges, artillery caissons, the stocks for the Mauser rifles, and black powder, to which will be added almost immediately the manufacture of smokeless powder. Finally, the numerous repairing establishments suffice for keeping in a good state of maintenance the *matériel* bought abroad, and even to the mounting on the spot of guns ordered from the United States and Europe.

When it is remembered that none of these establishments have as yet been ten years in existence, it must be recognised that Mexico has made considerable progress in the organisation of her military plant, and from all accounts the advance to be made in the near future is likely to be far more rapid.—*Revue Militaire des Armées Etrangères.*

Roumania.

The Organisation of the Army.—The modifications introduced into the organisation of the Army by the Budget are as follows:—

Commands.—1. The creation of a post of Inspector-General of the Army, which is to be filled by H.R.H. Prince Ferdinand who retains at the same time his duties as Inspector-General of the Cavalry, and the creation of a staff for him.

2. The suppression of the posts of Inspector-Generals of the various arms, as far as regards their budgetary functions; these appointments will, however, continue to exist as honorary posts, and they will be filled by the most distinguished among the generals. From the point of view of the service, the old duties of Inspector-General of a branch are carried out by a *Directeur Supérieur*, a post newly created.

3. Organisation of a new Army Corps Command, the Vth, to be situated at Constanza, in the territory of the Dobroudja, by the attachment to the 9th Division of the 10th Reserve Division, which is stationed at Tulcea.

4. Organisation of a staff for the 10th Division and two Brigade Commands, the 19th and 20th.

5. Organisation of all services necessary for the Vth Army Corps.

It results from all these new creations that the 10th Division will have, in time of peace, its staff and that of the brigades complete. It will consist of four regiments of three reserve battalions each. The cadres of these 12 battalions include as permanent *personnel* of the Active Army: 24 officers and 114 lower cadres and men, that is 2 officers, 6 non-commissioned officers, and 1 or 2 men per battalion.

In addition, it will have at its disposition the 18th Regiment of Artillery during the periods of instruction of the men *en congé* and of the reservists who compose it.

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With regard to the Vth Army Corps, it is supplied in time of peace with all its staffs and services, the same as the ordinary active Army Corps.

Military Schools.—Suppression of the school for the sons of soldiers at Targovishte and the school of the *dispensés* (*Tineri en termen redas*).

The *plutonniers* are trained in the Military Schools of their respective arms, with the exception of those of the infantry who are trained at the Infantry School of Musketry at Slobozia.

The creation of a permanent Artillery School of firing at the experimental range at Mihahu Bravul.

Regiments.—The companies or *pelotons* of non-combatants, etc., of all units take the name of depôt companies, batteries, squadrons, and pelotons.

Infantry.—All the Chasseur and Infantry Battalions have four companies, one of which is a company cadre.

The three first companies have a uniform effective of 116 men. The fourth company has its cadres complete, but consists of only 40 men in the infantry and of 81 men in the *Chasseurs à pied*, in order to allow of a more rapid mobilisation of those units called to be employed as covering troops. The effective of 116 men has been adopted to permit of proper instruction in conformity with the new regulations, according to the terms of which the company consists of 3 or 4 pelotons of 38 men.

The company-cadres will have the duty of instructing the *retardataires*, the men *en congé*, and the reservists when called out. The necessity of avoiding the modification of the course of instruction of the recruits is thus avoided. The cadres of these companies will also serve eventually to complete those of the other units of the battalion. They will also include all the officers detached from the corps for any reason whatever.

The thirty-six infantry regiments will have three battalions and a depôt company.

The nine battalions of Chasseurs will have four companies, plus a depôt company.

Two new Reserve Battalions, attached to the 35th and 36th Regiments, which do not as yet possess any, are being created.

The 35th Reserve Battalion will have its headquarters at Urziceni (provisionally at Calarashi), and will recruit in the recruiting district of the Elomitza Regiment No. 23.

The 36th Reserve Battalion will have its headquarters at Braila, and will recruit in the recruiting district of the Siret Regiment No. 11.

All the Reserve battalions will have the same permanent Active Cadre in time of peace, viz.: 1 Major or Captain Commandant of the battalion, 1 Lieutenant Instructor, 1 *Plutonnier* Instructor, 2 Sergeants (non-re-engaged men), 3 Corporals (non-re-engaged men), 2 or 3 Orderlies, and 1 soldier for office service.

Cavalry.—All the cavalry regiments have four squadrons and one depôt squadron, with the exception of the Escort Regiment, which consists of only three squadrons and one depôt squadron.

The strength of each active squadron is 120 men and 110 horses. That of the depôt squadrons will be 45 men and 35 permanent horses.

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In the *Roshiori* regiments, the depôt squadron includes all the *Calarashi au schimbul* of the district to which the regiment is assigned, and which are intended to raise these units to war strength. These *Calarashi* receive their training in this regiment of *Roshiori* during the whole length of their service.

The ten regiments of *Roshiori* are grouped by twos in brigades, and are intended to form two divisions of independent cavalry.

With the 12 machine guns which Roumania possesses, 6 machine gun sections have been formed.

The *Calarashi* division (*Demi-regiment*) of the Dobrudska is to form the 10th *Calarashi* regiment of four squadrons and one depôt squadron.

The *au schimbul* squadron of Moldavia becomes the 8th *Calarashi* Regiment of four squadrons, plus one depôt squadron.

The ten *Calarashi* regiments, all with four squadrons and one depôt squadron, are numbered from 1 to 10, and grouped in five brigades, each attached to one of the five Army Corps, of which they are to form the Corps Cavalry.

Artillery.—The 18 existing regiments of artillery are grouped in 9 brigades. The 8 first are attached to each of the 8 first divisions; the 9th Brigade has its 13th Regiment attached to the 9th Division, and the 18th Regiment to the newly created 10th Division, during its periods of training.

There are in addition three groups of Reserve Artillery intended to serve as the nucleus for the Reserve Divisions of Artillery.

In all there are 72 field batteries, 18 battery-cadres, 7 howitzer batteries, and 9 Reserve batteries, making a total of 106 batteries with 18 depôt batteries.

The battery-cadres, which numbered 24 last year, are now reduced to 18. They should have an effective of 2 officers, 1 *plutonnier*, 2 sergeants, 2 corporals, 2 orderlies, and a private.

The artillery includes, in addition, one division (group) of Horse Artillery of 4 batteries (one of which has been lately formed), intended to form the artillery for the cavalry divisions.

Pioneers.—The five Pioneer battalions and the battalion of Fortress Pioneers, have each three companies and a depôt *peloton*. All the companies have a uniform strength of 116 men.

Troops of Communication.—The pioneer and the railway battalion both have a strength of four companies with a depôt company. These troops further include a special company for wireless telegraphy, searchlights, automobiles, carrier pigeons, etc., and a balloon section.

Calling Out of the Men "en congé" and the Reservists.—The Budget for 1910-11 provides for a considerable increase in the number of men called out, as follows:—43,000 men for 22 days' training in the Camps of Instruction, and 53,000 men for 10 days during the manœuvres; in all, 96,000 men.

Turkey.

The Army and Navy Estimates for 1326 (*14th March*, 1910—*14th March*, 1911).—The following proposals were submitted by the Minister of Finance to Parliament for the Budget for 1326 (14th March, 1910—14th March, 1911). These proposals included

Turkey.

the Votes for: (1) The Minister of War; (2) The Grand Master of the Artillery; (3) The Minister of Marine; (4) The Gendarmerie; and constitute the whole of the Military Credits demanded for 1326.

These credits amount to:—

For the Minister of War	... £6,971,012
For the Grand Master of the Artillery ...	... 300,159
For the Minister of Marine	... 842,380
For the Gendarmery	... 1,427,004

The total Budget of National Defence amounts this year to £9,520,000, last year it amounted to £10,440,000.

The total Budget of the Empire shows an expenditure of £27,243,222, with receipts amounting to £23,263,499, showing a deficit of £3,979,723.

Reorganisation of the Army.—The Imperial *Iradé* sanctioning the reorganisation of the army, raises the number of the Army Corps to 14, and that of the mixed divisions to 5.

The Army will be constituted as follows:—

1st Ordou.—An Army Corps of three divisions, with headquarters at Constantinople;

2nd Ordou.—Three Army Corps of three divisions each, with headquarters at Adrianople, Kirke Kilissé and Rodosto respectively;

3rd Ordou.—Three Army Corps of three divisions each, with headquarters at Salonika, Uskub and Monastir respectively; and three independent mixed divisions, with headquarters at Scutari (Albania), Janina and Kozana respectively;

4th Ordou.—Three Army Corps, one of which has three divisions, the two others two divisions each, with headquarters at Erzindjan, Erzeroum and Vlon respectively;

5th Ordou.—An Army Corps of three divisions, with headquarters at Damascus;

6th Ordou.—Two Army Corps of two divisions each, with headquarters at Bagdad and Mosal;

7th Ordou.—An Army Corps of two divisions, with headquarters at Sana (Arabia).

An independent mixed division at Mecca, and finally the Tripolitan division, making a grand total of 42 *divisions.*

These divisions will not be all of the same type as far as regards the infantry.

Those of the first type will be composed of three regiments of three battalions, *plus* a battalion cadre (that is, three battalion cadres per division), and a *Nichandji* (rifle) battalion), that is to say, 10 active battalions in time of peace, and 13 in time of war.

Those of the second type will be formed of regiments having at least one battalion; that is to say, 7 active battalions in time of peace and 10 in time of war.

This organisation lends itself to a progressive increase in the effective strength of the Army.

Turkey.

Creation of Companies of Frontier Guards.—The garrisons are much dispersed in all parts of the Ottoman Empire, and this is particularly the case in the territory of the 3rd *Ordou* (Macedonia). This dispersal of troops in small bodies is a serious obstacle to their proper training.

In order to partly remedy this inconvenience and, at the same time, to bring back to active service units which up to the present have been employed on what is practically police duties, the Minister of War has decided to entrust the duty of guarding the frontiers, no longer to soldiers of the active army, but to a special corps, composed of Volunteers who have completed their term of military service.

It is proposed to create 22 companies of Frontier Guards, called *hondoudi*. These companies will have an effective strength of 200 men, and be commanded by 4 officers (1 captain and 3 lieutenants), and they will be distributed as follows:—7 on the Bulgarian frontier, 5 on the Servian frontier, 2 on the Austrian, 3 on the Montenegrin, and 5 on the Greek.

18 Sowars or mounted men will be attached to each company.

The men composing these companies will be clothed and equipped by the Government; but they will have to feed themselves. For this purpose the monthly pay for dismounted men will be £1 7s., and £2 5s. for mounted men.

New Distribution of Q.F. Batteries.—In consequence of the adoption of four-gun batteries, there has been a new distribution of the Q.F. field batteries, at present possessed by Turkey, between the artillery regiments of the first four Army Corps.

The old six-gun 93 batteries have provided 139½ four-gun batteries, which have been distributed as follows:—

To the Ist Army Corps: 30 batteries, in the proportion of 6 batteries to each of the regiments 1, 2, 3 and 4, and of 3 batteries to each of the regiments 5 and 6. These two last regiments have, in addition, 3 mountain batteries each.

To the IInd Army Corps: 48 batteries, in the proportion of 6 batteries to each of the regiments 7, 8, 9, 10, 11, 12, 27, and 28.

To the IIIrd Army Corps: 48 batteries, in the proportion of 6 batteries to each of the regiments 13, 14, 15, 16, 17, 18, 29, and 30.

To the IVth Army Corps: 13 batteries and a half, in the proportion of 6 batteries to each of the regiments 19 and 20, and a battery and half battery to the regiment 21.

NAVAL AND MILITARY CALENDAR.

DECEMBER, 1910.

2nd (Fri.) 1st Bn. Yorkshire Light Infantry arrived at Hong-Kong from Cape Town per *Hardinge*.

4th (Sun.) T.R.H. the Duke and Duchess of Connaught left Durban for England in *Balmoral Castle*.

8th((Thur.) First and Third Divisions of U.S. Fleet left Portland and Gravesend respectively for Cherbourg and Brest, their places being taken by the Second and Fourth Divisions.

„ , 9th Lancers arrived at Southampton from Durban per *Soudan*.

14th (Wed.) H.M.S *Prince of Wales* paid off at Portsmouth.

, „ H.M.S. *Queen* paid off at Devonport.

15th (Thur.) H.M.S. *Prince of Wales* recommissioned at Portsmouth.

„ „ H.M.S. *Queen* recommissioned at Devonport.

20th (Tues) H.M.S. *Hermes* paid off at Ascension.

21st (Wed.) H.M.S. *Hermes* recommissioned at Ascension.

22nd (Thur.) Captain Trench and Lieutenant Brandon found guilty of Espionage by Supreme Court at Leipsic and sentenced to four years imprisonment in a fortress.

28th Wed.) T.R.H. the Duke and Duchess of Connaught arrived at Portsmouth at conclusion of their Tour in South Africa.

FOREIGN PERIODICALS.

NAVAL.

ARGENTINE REPUBLIC.—*Boletin del Centro Naval.* Buenos Aires: October, 1910.—"The Argentine Navy in History." "Discipline." "Lecture on Naval Tactics." "Krupp-Germania Submersibles." "Determination of the Exact Time."

AUSTRIA-HUNGARY.—*Mittheilungen aus dem Gebiete des Seewesens.* No. 1. Pola: January, 1911.—"On Submarines." "Sinking of the Japanese Submarine No. 6." "Comparison between the Value of Capital Ships." "The Use of Airships in the Navy." "Instructions for the Handling of Liquid Fuel on Board U.S. Warships." "The New Speciality *Timoniers* in the French Navy." "The Latest Automobile Torpedoes." "The New White Star Liner *Olympic*." "Experiments Against the *Puritan* with Gelatine Explosive." "On Modern Fire-

Extinguishing Steam Floats." "The Battleship Division of Four Units." "Flight with a Biplane from on Board a Warship." "The Armament of Battleships." "The New Designation of Italian Naval Guns."

BRAZIL.—*Revista Maritima Brazileira.* Rio de Janeiro: October, 1910.—"The Portuguese Republic." "School Ships." "A Naval General Staff." "The Brazilian Navy" (*continued*). "Military Penal Code." "Cosmogony." "Second Brazilian Geographical Congress." "The Timber in the Province of St. Catherine."

CHILI.—*Revista de Marina.* Valparaiso: October, 1910.—"Economy and Foresight." "The Primer of the Painter" (*continued*). "The Combined Employment of Turbines and Reciprocating Engines." "On Compasses." "The Book of Altitudes of the Hydrographical Office." "The Calibrating of Guns."

FRANCE.—*Revue Maritime.* Paris: November, 1910.—"The French Navy in Crete." "Some Observations on Hurricanes in the Region of Diégo-Suarez: Remarks on the Employment of Wireless Telegraphy in Tropical Regions." "Official History of the Russo-Japanese Naval War" (2nd Part, *concluded*). "Artillery, Torpedoes and Tactics." "Results of the Trials of the Brazilian Battleship *São Paulo.*" "Administration of the Navy, Bureaucracy and Administrative Reforms." "The Development of Submarines."

La Marine Française. Paris: December, 1910.—"A Naval Programme." "Of the Navy." "The Trials of the *Voltaire*: Were they Wonderful?" "The New Under-Secretary of State for the Navy." "*Apropos* of Naval Constructions." "The Proportional Retirement and the Civilian *Employés* Among the Crews of the Fleet."

La Vie Maritime. Paris: 10th December, 1910.—"The Efforts of a Patriotic Englishman." "The Report of M. Benazet." "Manœuvre against Guns." "The *Personnel* of Our Fleet." 26th December.—"The Command of the Flotillas." "The Promotion Crisis of the *Personnel* in the Navy." "M. C. Bos' Book." "Fight of the *Blanche* with a French Squadron." "Impressions of the American Fleet." "The Port of Dakar."

Le Yacht. Paris: 3rd December, 1910.—"The Order in Regard to the Internal Economy on Board." "Yachting Notes." "The Explosion Motor at the Fisheries Exhibition at Yarmouth." 10th December.—"The Habitability of Submarines." "Yachting Notes." "The Official Reception of the Charcot Expedition." 17th December.—"A Practical Guide for Naval Officers." "Yachting Notes." "Automobile Navigation at the Twelfth International Automobile Exhibition." 24th December.—"The Age Limits of Ships and the Naval Programme." "Yachting Notes." "The Aeroplane in the Squadrons." 31st December.—"The Navy and the Hague Conference." "Yachting Notes.' "The Future of the Hydroplane." "The U.S. Destroyers *Paulding* and *Drayton.*"

La Marine Française. Paris: 3rd December, 1910.—"The Navy in Parliament." 10th December.—"Two or Four?" "The Navy in Parliament." "Turbines." 17th December.—"The Clearing of Channels." "The Navy in Parliament." 24th December.—"The Service of Reconnaissance." "Preparatory Course at the School of Cadets." 31st December.—"The Navy in 1910." "Gunnery and Musketry." "The New Uniform for the Men.'

GERMANY.—*Marine Rundschau.* Berlin: January, 1911.—"The New Naval School at Flensburg-Mürwik." "The North Sea." "On the Armament of Battleships." "The Trade of Persia as an International Problem." "The Netherlands Naval Manœuvres, 1909-1910." "The Twelfth Ordinary Meeting of the Technical Society of Naval Constructors" (*continued*). "An Order of Battle of De Ruyter's in the Year 1667."

ITALY.—*Rivista Marittima.* Rome: November, 1910.—Not yet received.

PORTUGAL.—*Revista Portugueza, Colonial e Maritima.* Lisbon.—Has not been received.

Annaes do Club Militar Naval. Lisbon: October, 1910.—"The Portuguese Republic." "The Torpedo Boat." "The Naval Academy at Annapolis." "The Mozambique Fishing Industry."

SPAIN.—*Revista General de Marina.* Madrid: November, 1910.—"Rectification of the Compensation of the Compasses." "Utilisation of Gas Power on Board Ships." "The Work Problem in the Dockyards." "Construction, Management, and Organisation of Modern Ships of War." (*continued*). "Official History of the Russo-Japanese Naval War" (*continued*).

MILITARY.

AUSTRIA-HUNGARY.—*Danzer's Armee-Zeitung.* Vienna: 8th December, 1910.—"The Question of the Inspection of Musketry Training." "The Right of an Officer to use his Sword." "The Position of Non-Active Officers." "The Necessity for Special Cartridges for Watchmen." "Honour Insignia in Theory and Practice." 15th December.—"Military Character Sketches." "Tactical Examination Work." "Experimental Mobilisation of Machine Gun Detachments." "A New Signal Apparatus." "Brazil, the Youngest Great Power." 22nd December.—"Observations on the New Turkey and its Military Strength." "The Importance of Military Geography." "The One Year Volunteer System and Trade."

Streffleur's Militärische Zeitschrift. Vienna: December, 1910.—"Contributions to the History of the Russo-Turkish War, 1877-78" (*continued*). "What Influence will the Field Artillery Exercise on the Course of a Battle in a Coming War?" (*concluded*). "Conclusion of the Albanian Expedition." "The New French Umpire Instruction." "The Russo-

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"The New Organisation of the Russian Army: Its Basis and Results" (*continued*).

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SWITZERLAND.—*Revue Militaire Suisse.* Lausanne: December, 1910. —"The Battle of Neuenegg (5th March. 1798)" (*concluded*) "Krupp Howitzers." "Some Days with the Turkish Troops." "The Employment of Dirigibles and Aeroplanes in War, and the War against these Machines" "An Arm of the Austrians at Morgarten."

UNITED STATES.—*Journal of the U.S. Cavalry Association.* Fort Leavenworth, Kansas: January, 1911.—"American Officers at Saumur." "The Military Seat in the Flat Saddle." "A Criticism of Our Cavalry Drill Regulations" (*continued*). "A Scheme of Instruction for a Cavalry Command." "Forage Poisoning amongst Animals of the 15th U.S. Cavalry during the Encampment at Gettysburg, July. 1910." "Mounted and Foot Combat in American and European Cavalry" "A Practical Practice March." "Notes on the Progenitors of Certain Strains of the Modern American Horse." "Long Distance Rides and Raids."

NOTICES OF BOOKS.

History of the War in South Africa, 1899-1902. Written by direction of His Majesty's Government, by Captain MAURICE HAROLD GRANT. Vol. IV. London: Hurst & Blackett, 1910.

The story of the South African War of 1899-1902 has now been officially told in four bulky volumes. Of these the first three, edited by Major-General Sir Frederick Maurice, were devoted to the operations conducted successively against the armies of the South African Republics by Sir Redvers Buller and Lord Roberts, while in the fourth volume, now under review, Captain Maurice Grant, late of the Devonshire Regiment, has undertaken the task of describing the eighteen months of warfare, in which Lord Kitchener succeeded in subduing the dogged resistance of the Boer guerilla forces that survived the destruction of the organised armies of the two Republics.

It hardly requires demonstration that in thus compressing the description of protracted and intricate operations, conducted over so wide an area, while retaining the close attention of his readers, Captain Grant has performed a most difficult, indeed, a formidable task, for the execution of which he fortunately possesses no ordinary qualifications. All who have read Captain Grant's volume, entitled "Words by an Eye-Witness," must have been struck by the exceptional dramatic power of the writer, by his remarkable gift of description, and by the perceptive talent which enabled a regimental officer, confined by his duty to a particular, an isolated portion of the field of action, to describe in vivid language the whole operations, of which the work of his own unit formed but a fractional part. In the work under review, irrespective of the faults of design, for which he is not to be held responsible, we find Captain Grant demonstrating the same qualities by which he earned his reputation as a military writer; the same power of accurate observation and of dramatic

description, the same high standard of taste and discretion, the same comprehension and sympathy that lent so much charm to his narrative of the Natal campaign.

As for the salient defect of the official history of the South African War, the absence of criticism, that deprives the work of so much of its interest, as well as of its educational value, that defect is, perhaps, inevitable in an official record written so soon after the events described. Military narrative of this dispassionate nature loses both savour and weight, and, in our view, must be considered rather as material for the use of some future historian than as history itself. Regarded as material of this nature, Captain Grant's work deserves high praise, and will doubtless be read with great interest by all who took part in the operations which he so lucidly and ably describes.

As must be the case, the passages of the history that are most agreeable to read are those describing hard-fought actions, daring marches, desperate attacks, rather than the equally necessary descriptions of the formation of the block-house lines and the guarding of the long lines of communications that formed the duties of so large a proportion of Lord Kitchener's army. Yet one portion of the operations has to be described as well as the other, and it is much to Captain Grant's credit that he has not exalted the more attractive and picturesque side of the war by depreciation of the dull, heavy task that fell so wearily on the bulk of the infantry during the guerilla warfare.

The volume under notice contains many spirited accounts of actions, among which we would select as specially worthy of attention the narratives of Major-General Clements' fight at Nooitgedacht, on 13th December, 1900, and the attack on Colonel Benson's column at Bakenlaagte on 30th October, 1901. Both of these actions were Boer victories, and in describing them Captain Grant does full justice to the tactical skill of the Dutch commanders and to the fine fighting qualities of their burghers. He also does, what many arm-chair critics of the war period failed to do, equal justice to the defeated British commanders and their troops.

Time has already, to some extent, righted the wrong inflicted on the army that fought England's battle in South Africa in the years 1899-1902, and to-day the educated criticism of continental military writers deals comparatively gently with the occasional failures of that army, and acknowledges the difficulties through which it struggled to a successful issue. It was, as many will remember, quite otherwise during the actual progress of the war; but England can hardly complain of the injustices and the slanders of foreign enemies when every hostile utterance could be supported by the base testimony of politicians of our own blood. We may hope, though we can hardly expect, that here and there one of the British-born slanderers of the national honour may read in Captain Grant's pages the true story of our army in South Africa, and blush for the calumnies with which he armed our foreign enemies.

Those who desire to understand the nature of the work performed in the closing operations of the war will read with interest the following passage relating to the last of the "drives" that brought about the end of the long struggle, and with the extract we will conclude our remarks:—

"Thus ended an operation which may be taken as type of many, of which space has forbidden so full a record. The difficulties entailed in its successful performance can only be outlined, though to ignore them altogether might be to inspire a delusive confidence in the future. Only by a trusted and trustful commander with a corps of troops of supreme excellence can such a scheme be carried out. Sir I. Hamilton had under him men who were able and willing to make no halt by day and take no rest by night, for each long day's march, often nearly foodless and waterless, was intended only to bring them to the place of vigil or of fighting. Their labours were almost incredible. Long and deep trenches, impervious wire-entanglements, fortified laagers of wagons, redoubts to hold from seven to twenty men—not only bullet-proof, but proof against artillery—sprang up each night under the hands of men who had already performed the extremity of toil since dawn, and were to do the same on the morrow, and for days after. During the day every man was a scout; at night not one but had to become a sentry, with eyes, ears, and rifle alert. Such efforts would cause more casualties among inferior troops than amongst their adversaries. For a like reward they have seldom been equalled by soldiers in the field, and, indeed, there have been but few who could have sustained them."

PRINCIPAL ADDITIONS TO LIBRARY, DECEMBER, 1910.

The Greenwich Royal Hospital and the Royal United Service Museum. By EDWARD FRASER. Crown 8vo. 2s. 6d. (Presented.) (Wells, Gardner, Darton & Co., Ltd.) London, 1910.

The British Museum of Natural History (South Kensington). By W. P. PYCRAFT. Crown 8vo. 2s. 6d. (Presented.) (Wells, Gardner, Darton & Co., Ltd.) London, 1910.

Cambridge Modern History. Vol. XII.: *The Latest Age.* 8vo. 16s. (The University Press.) Cambridge, 1910.

Mémoires sur la Campagne de 1796 *en Italie.* Par Le Capitaine G. FABRY. Publié sous la Direction de la Section Historique de l'Etat-Major de l'Armée. 8vo. 8s. (R. Chapelot & Cie.) Paris, 1905.

Rapports Historiques des Régiments de l'Armée d'Italie pendant la Campagne de 1796-97. Par le Capitaine G. FABRY. Publié sous la Direction de la Section Historique de l'Etat-Major de l'Armée. 8vo. 9s. 6d. (R. Chapelot & Cie.) Paris, 1905.

Etudes sur la Campagne de 1796-97 *en Italie.* Par le Capitaine J. COLIN. 8vo. 4s. (R. Chapelot & Cie.) Paris, 1898.

Opérations Maritime de la Guerre Russo-Japonaise. Historique Officiel publié par l'Etat-Major-Général de la Marine Japonaise. Traduite par HENRI ROUVIER, Enseigne de Vaisseau. Ministère de la Marine. Vol. I. 8vo. 4s. (R. Chapelot & Cie.) Paris, 1910.

Alexander Hamilton: An Essay on American Union. By FREDERICK SCOTT OLIVER. 8vo. Cs. (Archibald Constable & Co.) London, 1909.

Ships and Men. By DAVID HANNAY. Crown 8vo. 6s. (William Blackwood & Sons.) Edinburgh, 1910.

Ce que le Peuple Belge doit savoir. Par le Capitaine R. BREMER. 8vo. 1s. 6d. (Misch & Thron.) Brussels, n.d.

History of Submarine Mining in the British Army. By Lieut.-Colonel W. BAKER BROWN, R.E. 8vo. 8s. (W. & J. Mackay & Co., Ltd.) Chatham, 1910.

George the First's Army, 1714-1727. Vol. I. By CHARLES DALTON, F.R.G.S. Imp. 8vo. (Presented.) (Eyre & Spottiswoode, Ltd.) London, 1910.

1*st Battalion Suffolk Regiment, Malta,* 1909. (Photographs.) Oblong 8vo. (Presented.) Malta, 1909.

Zululand and Cetewayo. By Captain W. R. LUDLOW. Crown 8vo. (Presented.) (Simkin, Marshall & Co.) London, 1882.

List of Admiralty Records Preserved in the Public Record Office Vol. I. Foolscap fol. 8s. (Mackie & Co., Ltd.) London, 1904.

Lord Clive's Right-Hand Man: A Memoir of Colonel Francis Forde. By Colonel LIONEL FORDE. 8vo. 5s. (James Nisbet & Co., Ltd.) London, 1910.

Overland to India. By SVEN HEDIN. 2 Vols. 8vo. 30s. (Macmillan & Co., Ltd.) London, 1910.

With a Prehistoric People: The Akikûyu of British East Africa. By W. SCORESBY ROUTLEDGE and KATHERINE ROUTLEDGE. 8vo. 21s. (Edward Arnold.) London, 1910.

The Spanish Journal of Elizabeth Lady Holland. Edited by the Earl of ILCHESTER. 8vo. 15s. (Longmans, Green & Co.) London, 1910.

RECENT PUBLICATIONS OF MILITARY INTEREST.

COMPILED BY THE GENERAL STAFF WAR OFFICE.

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PREFATORY NOTE.

This Pamphlet will be issued quarterly, in April, July, October and January. Its purpose is to draw the attention of Officers to British and Foreign publications of Military interest which are likely to assist them in their professional work. Copies of the pamphlet will be distributed to the Headquarters of Commands Educational Establishments, Units and Reference Libraries.

PART II.[1]

SECTION I.

TRAINING AND EDUCATION.

Exploration and Security (Esplorazione e Sicurezza). Italian General Staff. 69 pp. 12mo. Rome, 1910. Voghera. -/5½d.

This small handbook forms part of the Italian Field Service Regulations now in course of publication. The following are some of the more interesting points that are dealt with:—

1. Strategic Cavalry.—The general rôle allotted to the strategic cavalry is similar to that laid down in our own Field Service Regulations. As regards the transmission of information, mounted orderlies, it is said, should be utilised for short distances, cyclists or motor cyclists for medium distances, and mechanical message lines (telephones, telegraphs, &c.) for long distances. Both the G.O.C. Main Army and the G.O.C. Strategic Cavalry should establish one or more information offices to which all messages should be sent. Owing to the great confusion that is likely to ensue if these offices are moved, they will usually remain in the same places during the whole period of strategic reconnaissance. Cyclists are to be attached to both strategic and protective cavalry; they are to be used either to break through the enemy's covering troops or to hold important tactical points. It may be mentioned that cyclists do not as yet form part of the War Establishment of an Italian cavalry division. In the 1909 manœuvres a battalion of cyclists was allotted to each cavalry division. These cyclists did no scouting, but either preceded the main body of the cavalry in order to seize some tactical point, or acted in close tactical co-operation with the cavalry, and were used as a pivot for shock action.

2. Protective Cavalry.—The protective cavalry is usually to be directly under the G.O.C. of the unit "protected," but may be placed under the commander of the advanced guard. Its rôle is to precede the advanced guard at a sufficient distance to secure liberty of action to the army commander; it is not, however, to be compelled to move at a fixed distance in front of the advanced guard, nor need it necessarily follow the same route as the advanced guard.

3. Aerial Exploration.—Dirigibles will find the greatest scope during the period of strategic reconnaissance. Captive balloons may be used both for distant and close reconnaissance; their range of effective vision is stated to be about five miles in open country. For purposes of reconnaissance the frontage occupied by the enemy may be approximately estimated as follows:—Infantry battalion, 300 to 400 metres; infantry regiment, 500 to 600 metres; infantry brigade, 1,000 to 1,500 metres; infantry division, 1,600 to 2,500 metres.

4. Flank Guards.—Flank guards will usually be found by the advanced guard. When roads run parallel to the route followed by the main body, flank guards will utilise them. When no such roads exist, the advanced guard will periodically send out flanking parties to the important tactical points. These parties will remain in position until the main body has passed, and will then join the rear-guard.

5. Outposts (ordinary).—The foundation of a good outpost system is a severe discipline. Outposts should consist of one-third of the force or less, and will be disposed in piquets (*piccole guardie*), supports (*gran' guardie*) and reserves. The piquets will consist by day of at least one corporal and four or five men, and by night of 15 men, each piquet finding one or two single sentries. Supports will not be less than double the collective strength of the piquets sent out by them; all patrols are found by the supports. The strength of the reserve will be at least equal to the collective strength of the supports; the line of resistance will almost always be at the reserve.

When a force is stationary supports will be relieved every 24 hours; the units finding outposts will not be relieved until all have done a tour of duty in the line of supports, so that units usually remain on outpost for 48 hours.

The method of putting out the outpost line is as follows:—When the protective cavalry and the advanced guard have reached the destination mentioned by the column commander they halt and put out sentries. The units told off for outpost supports and reserves then march direct to their destinations, preceded by their commanders, who carry out a hasty reconnaissance. On these units reaching their objectives the outpost commander allows the cavalry and advanced guard to withdraw.

6. Outposts in Siege Warfare.—Before the line of investment is really established outposts maintain a defensive attitude; after the investment is completed the outposts become the advanced fighting line.

The strength of the outposts is usually one-third of the troops told off to the sector, the remainder forming the sector reserve.

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1 The titles of all books are given in English; this does not indicate that the books have been translated. The original title in the language in which a work is written, if not in English, is given in brackets.

The distribution of the outposts is similar to that in ordinary warfare; the line of resistance is usually at the supports. Outpost troops in siege warfare should do longer reliefs than in field warfare, and supports should be on duty more than 24 hours unless contact with the enemy is very close.

General Principles for the Employment of Large Units in War (Norme generali per l'impiego delle grandi unità di guerra). Italian General Staff. 133 pp., with 5 plates. 12mo. Rome, May, 1910. Voghera. -/11.

This handbook replaces one on the same subject issued in April, 1903, and represents the latest views of the Italian General Staff on the leading of armies containing two or more corps. Grand tactics only are dealt with, the principles of minor tactics being contained in the handbooks of the various arms, and in the official treatises on marches and cavalry exploration.

As mentioned in the preface, the principles here laid down are for the guidance of the higher leaders, but since all the other tactical handbooks are founded upon this one, the book should be carefully read by officers of all ranks.

The handbook is divided into the following parts:—Part I.: The concentration march. Part II.: The march when the enemy may be met with. Part III.: The battle of encounter. Part IV.: The pitched battle. Part V.: Pursuit and retreat. Part VI.: Breaking off an action. Part VII.: Mountain warfare.

The most notable features in the new edition are, firstly, the wider scope of the book, the authors of which now think in armies instead of in army corps; secondly, the great emphasis that is laid on the value of the offensive, chiefly as a means of retaining the initiative. Stress is repeatedly laid on this point in such expressions as "the spirit of the offensive constitutes the essence of war."

The following principles are laid down on other matters:—

1. *Cavalry Exploration.*—The two cardinal points to bear in mind are firstly the importance of gaining and retaining continuous touch with the enemy; and, secondly, the importance of locating the enemy's main armies and not merely his cavalry or security troops.

2. *Strategic Advanced Guard.*—This will usually consist of one corps or less, and may be used when the hostile cavalry screen cannot otherwise be pierced, or when it appears likely that the enemy may be in a position to advance and compromise the army's concentration. In cases when the enemy is already in battle formation or is on a wide front with a number of roads at his disposal, it will be preferable not to employ a strategic advanced guard. Under exceptional conditions the G.O.C. Strategic Cavalry may be placed under the G.O.C. Strategic Advanced Guard, but this should not usually be the case, on account of the delay that would ensue in transmitting information to the Army Commander.

3. *Tactical Advanced Guard.*—The duties of the advanced guard commander are to support the protective cavalry, to brush aside small parties of the enemy, and to reconnoitre the enemy's main force without committing itself. As these duties are hard to reconcile with each other, it is laid down that an advanced guard commander is not to become engaged if he is not satisfied that he possesses "a crushing superiority of force over the enemy in his front"; if this is not the case, he will confine his activities to "intensive reconnaissance."

Artillery is not, as a rule, to be attached to an advanced guard composed of one infantry regiment (three battalions) or less.

4. *The Attack (Battle of Encounter).*—The best method of obtaining a decisive result is to combine a frontal attack with an attack on one or both flanks of the enemy.

Time should not be wasted in getting the troops into formation of assembly, but they should be deployed from column of route.

The attack will usually be made in three lines. The first line should consist of half the force, one quarter should be in local reserve, and one quarter in general reserve. As regards frontage, an infantry division will usually occupy a front of 3,000 metres (3,280 yards), an army corps 6,000 metres. If one of the attacks is a secondary attack, this fact may be communicated to the higher commanders, but not to the subordinate commanders.

The divisional artillery will usually be left under the command of the divisional artillery commanders; in the exceptional case of the whole of the artillery being grouped under the corps artillery commander, the latter will decentralise the power of direction to the divisional artillery commanders as far as is possible. It is impossible to lay down the exact manner in which the artillery should be brought into action, but the importance of a simultaneous opening of fire by artillery is emphasised. The artillery told off to support the decisive attack should very rarely be employed before the decisive attack is launched, as it is of the first importance that the batteries should come into action with their strength unimpaired and their ammunition supply intact. It would, however, be a waste of power to keep howitzers in reserve until the decisive attack is launched; the support of the decisive attack should be entrusted to field guns.

The general reserve should be looked upon as the weapon to be used by the commander-in-chief in order to make the action decisive. Its position should at first be concealed and protected; at the conclusion of the first phase of an action it should be about half a mile in rear of the firing line. The general reserve should be composed of all three arms, and should consist of a complete unit as far as possible; mobility is of such importance that the troops composing the general reserve should be relieved of all unnecessary equipment.

The timing of the decisive attack is a difficult matter, which must depend on circumstances; the attack will usually take place during the later phases of the battle, it is, however, a lesser evil to launch it too soon than to leave it until too late, and it is an even worse error to fritter away the general reserve in filling gaps and replacing casualties.

5. *The Defence* (*Encounter Battle*).—If a commander is compelled to assume the defensive, he should hold his line with half to three-quarters of his force, decentralising all local control to the local commanders; the remainder of the troops should be kept in general reserve, which is to be used for decisive counter-attack. In an encounter battle infantry will rarely have time to prepare the ground with trenches and obstacles.

6. *The Attack* (*Pitched Battle*).—Exhaustive reconnaissance must be made by cavalry, cyclists and officer's patrols, and also by infantry, strong patrols which will penetrate the enemy's outposts. During this period the ground between the hostile forces will be prepared, the engineers will perfect means of inter-communication, and artillery positions will be selected.

Cavalry must be boldly used. The first step towards decisive action is the defeat of the enemy's cavalry; this can often be brought about by drawing this cavalry under the fire of the guns of the attack. The hostile cavalry once disposed of, the cavalry should co-operate with the attack by acting boldly against the enemy's flanks and rear; supported by cyclists and horse artillery, cavalry has now sufficient fire power to do this with effect. The method of bringing forward the artillery must depend on circumstances; but, in any case, the infantry cannot wait until the hostile artillery is silenced before it begins its advance. As regards the direction of the decisive attack, this cannot be arranged before the commencement of the action, and depends not only on the ground and on the strategic situation, but also on the enemy's dispositions, which may alter from time to time.

The enemy may undertake aerial reconnaissance. In this case captive balloons should be fired at by field guns, aeroplanes should be met by rifle fire, and dirigibles by fire from specially constructed artillery.

7. *The Defence* (*Pitched Battle*).—The ideal defensive position is seldom to be met with. It is usually sufficient to choose a position with a good field of fire and ground suitable for manœuvre.

Before the enemy's attack begins it will usually be sufficient to hold a few points only on the position, keeping the greater part of the force in rear.

Surprise batteries should be constructed for unexpected fire at decisive ranges; if no field guns are available machine guns may be used for this purpose.

Advanced posts may be occupied either when their possession is indispensable to the enemy or when it may, under certain conditions, be eventually desirable to move the defensive line forward.

Troops should be disposed in firing line, local reserve, and general reserve. The last may consist of as much as half the force, and should be regarded as primarily intended for counter-attack; there may, however, be occasions when part of the general reserve may be utilised either for reinforcing the first line or for prolonging a flank. Since the defence presupposes numerical inferiority, the artillery attached to the general reserve may be employed, at any rate in part, in the defence of the main position.

8. *Employment of Detached Forces of the Strength of a Division or More.*—The security troops must display increased activity and boldness. When the enemy is encountered it is by no means an invariable rule that he should be attacked; it may frequently be advisable to avoid battle. Should an action be decided on, it is more than ever necesary that strong reserves should be retained in hand.

9. *Breaking off an Action.*—This form of tactics will generally be employed when a force has been fighting in order to gain time for the completion of some operation in another part of the theatre of war. The breaking off of the combat will be easier to the attacker than to the defender, but it is a dangerous operation unless the line of retreat is at right angles to the line of battle.

The general principle to be observed is the establishment of a strong line of artillery, under cover of which the first line may be gradually withdrawn, strong reserves taking up a position sufficiently far in rear to compel the enemy to deploy a second time after he has occupied the position originally held by the retreating firing line.

To carry out successfully this difficult operation is not only necessary to have well-disciplined troops, it is even more necessary that the commanders should keep their troops well in hand.

10. *Mountain Warfare.*—This form of war may be divided into three phases: (*a*) Capturing the passes; (*b*) crossing the mountains; (*c*) issuing from the passes.

In phases (*a*) and (*b*) the attacker has the advantage, for he can concentrate superior numbers against one pass, and once this is captured the others are usually "turned." In phase (*c*) the advantage is with the defender.

Success depends upon the dispositions being kept as simple as possible, on the general object being kept in view by all columns, and on good logistic arrangements.

It will be seen from the above summary that, as regards strategic advanced guards and the use of the general reserve, the tendency of the Italian General Staff is towards the French school of tactics rather than the German; while in some particulars their views resemble those laid down in our own Field Service Regulations.

PART II.

SECTION II.

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Solutions of Tactical Problems (Conclusion). By Captain Audibert. R.M.G., June, August.

Evolution of Infantry Tactics and Progress in Armament (To be continued). By Major E. Loiseau. J.S.M., 1st July.

Horse Artillery and Cavalry (Tactical Notes). By A. Andreev. V.S., July, August.

Machine Guns in the Infantry Fight; a Few Tactical Schemes Worked Out, with Sketches. By Lieutenant v. Raoul Schimak, Austro-Hungarian Army. O.M.Z., June, p. 885.

Experience of Night Attacks. M.W.B.. 12th July, p. 2007.

Communications from the Austro-Hungarian School of Musketry. The Tactical Employment of Machine Gun Detachments, Illustrated by Tactical Schemes (To be continued). O.M.Z., July, August.

Communications from the Austro-Hungarian School of Musketry. Attack and Defence of Machine Guns in Cavalry Engagements. O.M.Z., May, June.

The Extension of Battle Fronts, Their Influence on the Manœuvring of Large Masses (To be continued). R.M.I., July, p. 1367.

How Far can Infantry Depend on Artillery Support in the Attack? (To be continued) By Colonel Lalubin. L.S.M., July, August.

The Formation and Leading of Lines of Skirmishers. By Lieutenant-Colonel von Parst. M.W.B. (II), 1910, pp. 2541. 2570, 2591 and 2611.

Strategy in a New Light. By Colonel F. N. Maude, C.B. U.S.M., June, p. 292.

British and French Tactics in the War, 1808-1815. By Denkmar. U.S.M., June, p. 296.

Surprises and Strategems (Continuation). By Major W. S. Bannatyne. U.S.M., June, p. 318.

The Military Value of the River Amur as a Line of Communications and as a Frontier. By Major-General a. D. v. Zepelin. M.P.G. (II), June.

The Battle of Encounter. By A. Shemanski. V.S., No. 8, 1910.

Systematic Attack by a Company. By F. Panov. V.S., No. 8, 1910.

TRAINING AND EDUCATION.

Education and Instruction of the Men and the Permanent Staffs in the Infantry (Continuation). By Major de Blondeau. J.S.M., 15th June, 1st July.

The New Japanese Infantry Training Manual (Conclusion). Translated by Major Painvin. L.R.I., 15th June.

The German Imperial Manœuvres in 1909 (Conclusion). By Lieutenant Colonel Streicher. L.R.I., 15th June.

Is the Army an Educator? (To be continued). By Captain Cognet. J.S.M., 15th June, 1st July.

The French Manœuvres in the Bourbonnais in 1909 (Continuation). B.P.B.M., 31st May, 15th June.

The German Imperial Manœuvres in 1909. By the Belgian General Staff. B.P.B.M., 15th August.

The Tactical Training of Officers in a Group of Batteries (*i.e.*, Artillery Brigade). By Major Bourguet. L.S.M., 1st July.

The Russian Grand Manœuvres. By L. Radus-Zenkovich. V.S., June.

Professional Reading for Officers. U.S.I., Vol. 7, p. 33, July.

The Creation of the Japanese National Spirit. By Major Sir A. Bannerman. J.U.S.I., July, p. 697.

Some Remarks on Military Training. By Lieutenant-Colonel A. Pollock. N.D., August, p. 401.

Boy Scouts. By Lieutenant-General Sir R. S. S. Baden-Powell. N.D., August, p. 434.

Judging Distance and Range-Finding Competitions (Translated from Streffleurs Mil. Zeitschrift). J.U.S.I., August, p. 1047.

TELEGRAPHS AND COMMUNICATIONS.

The Polarized Telephone Relay, and its Application in Military Telegraphy. By Lieutenant Ignatiev. Inj., Nos. 5 and 6, 1910.

Signalling and Wireless Telegraphy in the Shawia (Morocco) Campaign. By Lieutenant Metz. R. du G., July, p. 5.

Telegraphy in China from 1901 to 1906. By Captain Sabatier. R. du G., July, p. 47.

TRANSPORT.

The Workings of the Transport in War for the Supply of Troops from the Expense Magazines. By N. Elsner. I.J., July.

The Organization and Rôle of the Intendance in Contemporary War (Conclusion). By Major-General Yanuskevich, of the Russian General Staff. V.S., June.

The Organization of March and the Supply of Two Army Corps Advancing by a Single Road. By V. Jeltishev. I.J., June.

Four-Wheeled Field Kitchens with Two Boilers and their Use (Conclusion). By B.V. I.J., June.

Military Intendance in Prussia. By Commissary Captain Lacerenza. R.M.I., May, p. 987.

Winter Transport in Canada. By Captain E. C. Dean, Canadian Permanent A.S.C. A.S.C., July, p. 1.

The Work of the Transport Service in the Field with the German Army Corps (Continuation). Translated from the Revue Militaire. A.S.C., July, p. 39.

The Employment of Mechanical Transport for Military Purposes. By Captain H. R. Hayter, A.S.C. J.U.S.I., July, p. 720.

The Adoption of the Automobile and other Mechanical Draught for Military Purposes (Continued). By V. Zlatolinski. V.S., No. 8, 1910.

MAPS.

The following series of maps have been published or are in course of preparation by the Geographical Section, General Staff, and are on sale to the public :—

EUROPE.

Turkey.—The series covers the Central and Eastern portions of European Turkey, embracing the area: Salonika, Constantinople, Ægean Sea, Bulgarian Frontiers. They are on a scale of $\frac{1}{250000}$ and are printed in four colours.

Malta.—A new map of Malta is in course of preparation. Scale 2 inches to 1 mile, in four colours. It is hoped to publish it about December of this year.

ASIA.

Turkey.—Two sheets of Western Turkey in Asia have been published in three colours. Scale, $\frac{1}{250000}$

China.—Maps of six of the Chinese Provinces at a scale of $\frac{1}{1000000}$ have been published in three or four colours, viz.: Provinces of Chih-li (Southern Sheet), Fu-chien, Ho-nan, Kuang-tung, Shan-tung, Ssu-ch'uan. Also the Province of Yun-nan at a scale of $\frac{1}{1584000}$ (20 miles to 1 inch).

AFRICA.

Northern and Tropical.—A large number of sheets at scales of $\frac{1}{500000}$ and $\frac{1}{250000}$ have been published. These embrace: Morocco, Tripoli, Upper Egypt, Sudan, Gambia, Sierra Leone, Gold Coast, North and South Nigeria, Uganda, East Africa.

During the present quarter the following sheets have been published:

Sierra Leone. — $\frac{1}{250000}$, Sheets 59 M, 59 N, 59 T, 71 A, 71 B. [G.S.G.S., No. 1764.]

East Africa Protectorate.— $\frac{1}{250000}$ Sheet South $\frac{\text{A.37}}{\text{G.11.}}$ [G.S.G.S., No. 2230]. This embraces about 1,200 square miles of country round Nairobi and is in five colours.

East Africa Protectorate.— $\frac{1}{1584000}$. A map of the country round Nairobi (about 600 square miles).

Africa, South.—The survey of the Orange Free State is approaching completion, and some of the sheets on the $\frac{1}{126000}$ have been published.

A Reconnaissance Survey of Basutoland by Captain Dobson, R.F.A., has been completed, and one sheet, 129 J. (Maseru), has been published this quarter. Others will shortly appear.

The Reconnaissance of the Cape of Good Hope is in progress, and some of the sheets at $\frac{1}{250000}$ have been published.

Seven sheets of Rhodesia at a scale of $\frac{1}{250000}$ have been published.

The following important general maps of Africa are on sale :—Map of Abyssinia, scale $\frac{1}{2000000}$. Map of Nigeria, scale $\frac{1}{2000000}$

AMERICA.

Canada.—The survey carried out by the Canadian military authorities is in progress. Several of the sheets, which are prepared by the G.S.G.S., have been published. They are printed in five colours. and are on the scale of 1 inch and half an inch to the mile.

The following sheet was published during the quarter :—Quebec (Chateauguay) 1 inch scale.

PART II.

SECTION III.

BOOKS, PAMPHLETS, &c., WHICH HAVE BEEN DISTRIBUTED TO REFERENCE LIBRARIES.

Report on the Competitive Examination of Officers of the Special Reserve, etc., for Commissions in the Regular Army, March, 1910.

Handbook of Medical Services, Foreign Armies. Part IV. Russia.

Report on the Examination for Promotion. Subjects (*d*) to (*j*), May, 1910.

Report on the Examination for Certificates A and B, Officers' Training Corps, May, 1910.

ABBREVIATIONS.

Abbreviation.	Name of Newspaper or Periodical.		Price.	Place of Publication.
A.F.	Bulletin du Comité de l'Afrique française	M.	2 frs.	Paris.
A.F.H.	Archiv für Schiffs- und Tropen-Hygiene	½ M.	*	Leipzig.
A.H.M.	Annales d'hygiène et de médecine coloniale	M.	3 frs.	Paris.
A.J.	Artilleriskii Jurnal	M.	*	St. Petersburg.
A.M.B.	Artilleristische Monatshefte	M.	m.2.50	Berlin.
A.M.P.	Archives de médecine et de pharmacie militaires	M.	2 frs.	Paris.
A.M.S.	Proceedings of the Aldershot Military Society	...	/6	London.
A.N.G.	Army and Navy Gazette	W.	/6	London.
A.N.R.	Army and Navy Register	W.	15 c.	Washington.
A.Q.R.	Imperial and Asiatic Quarterly Review	Q.	2/6	Woking.
A.S.C.	Army Service Corps Quarterly	Q.	2/-	Aldershot.
A.S.M.	Allgemeine schweizerische Militärzeitung	W.	*	Basle.
B.A.	Broad Arrow	W.	/6	London.
B.Mag.	Blackwood's Magazine	M.	2/6	Edinburgh.
B.M.J.	British Medical Journal	W.	/6	London.
B.P.B.M.	Bulletin de la Presse et de la Bibliographie militaires. (Supplement to J.M.O.B.)	F.	*	Brussels.
B.S.C.	Bulletin international des sociétés de la croix rouge	M.	50 c.	Geneva.
B.S.G.L.	Bulletin de la Société de Geographie de Lyon	Q.	2.50frs	Lyons.
B.U.	Bibliothèque Universelle	M.	2.50frs	Lausanne.
	Budgets of Foreign Countries			
C.J.	Cavalry Journal	Q.	2/6	London.
C. Mag.	Canadian Magazine	M.	25 c.	Toronto.
C.M.G.	Canadian Military Gazette	F.	10 c.	Montreal.
C.O.J.	Colonial Office Journal	Q.	1/6	London.
Con.	Der Continent	M.	m.1.25	Berlin.
C.R.	Contemporary Review	M.	2/6	London.
D.M.S.	De militaire Spectator	M.	1 fr. 50	Haarlem.
D.M.Z.	Deutsche militärärztliche Zeitschrift	½ M.	*	Berlin.
E.	Engineering	W.	/6	London.
Ec.	Economist	W.	/8	London.

W., published weekly; F., fortnightly; M., monthly; Q., quarterly; V., at irregular intervals; A., annually.

* Periodicals which can only be purchased by subscription.

ABBREVIATIONS.—contd.

Abbreviation.	Name of Newspaper or Periodical.		Price.	Place of Publication.
Emp. R.	Empire Review	M.	1/-	London.
E.R.	Edinburgh Review	Q.	6/-	London.
F.M.F.	Feuille militaire Fédérale	V.	40 c.	Berne.
F. Rev.	Fortnightly Review	M.	2/6	London.
I.J.	Intendanski Jurnal	M.	*	St. Petersburg.
I.M.T.	Indisch Militair Tijdschrift	M.	1 fr. 50	Batavia.
Inj.	Injeniernii Jurnal	M.	*	St. Petersburg.
I.R.	Internationale Revue (Armeen und Flotten)	M.	m. 3.25	Dresden.
J.A.M.S.	The Military Surgeon. Journal of the Assoc. of Military Surgeons	M.	35 c.	Carlisle, Penn.
J.A.S.	Journal of the African Society	Q.	6/-	London.
J.D.A.M.	Jahrbücher für die Deutsche Armee und Marine	M.	m. 2.50	Berlin.
J.M.O.B.	Journal Militaire Officiel	M.	*	Brussels.
J.M.S.I.	Journal of the Military Service Institution	2 M.	50 c.	Governor's Island, N. York
J.M.S.S.	Journal of the Military Scientific Society (Russian)	Q.	1 Ro. 50kop.	St. Petersburg.
J.R.A.M.	Journal of the Royal Army Medical Corps	M.	2/-	London.
J.S.M.	Journal des Sciences Militaires	½M.	*	Paris.
J.U.S.I.	Journal of the Royal United Service Institution	M.	2/-	London.
J.U.S.I. (N.S.W.)	Journal of the United Service Institution of New South Wales	A.	*	Sydney.
K.M.	Kavalleristische Monatshefte	M.	k. 2.	Vienna.
K.T.Z.	Kriegstechnische Zeitschrift	M.	m. 1.50	Berlin.
L.	Lancet	W.	-/7	London.
L.A.F.	Comité de l'Asie française, Bulletin	M.	2.25 frs	Paris.
L.B.M.	La Belgique militaire	W.	25 c.	Brussels.
L.R.I.	La Revue d'Infanterie	M.	2 frs.	Paris.
L.S.M.	Le Spectateur militaire	F.	2 frs.	Paris.
M.A.G.	Mittn. über Gegenstände des Art.- u. Genie-Wesens	M.	*	Vienna.
M. Art.	Memorial de Artillería	M.	*	Madrid.
M.B.A.R.	Monthly Bulletin of the Bureau of American Republics	M.	25 c.	Washington.
M.C.	McClure's Magazine	M.	25 c.	New York.
M.I.E.	Memorial de ingenieros del ejército	M.	*	Madrid.
M.P.G.	Mitteilungen Petermann's	M.	m. 2.	Gotha.
M.R.	Marine-Rundschau	M.	m. 2.	Berlin.
M.W.B.	Militär-Wochenblatt	½W.	20 pf.	Berlin.
N.A.R.	North American Review	M.	35 c.	New York.
N.C.	Nineteenth Century	M.	2/6	London.
N.D.	National Defence	Q.	1/-	London.
N.G.M.	National Geographic Magazine	M.	25 c.	Washington.
N.I.A.	Nation in Arms	M.	/3	London.
N.M.B.	Neue Militärische Blätter	W.	60 pf.	Berlin.
N.M.T.	Norsk Militært Tidsskrift	M.	*	Christiania.
N.R.	National Review	M.	2/6	London.
O.M.Z.	Streffleurs militärische Zeitschrift, zugleich Organ der militär-wissenschaftlichen Vereine	M.	*	Vienna.
P.J.	Preussische Jahrbücher	M.	m. 2.50	Berlin.
P.P.R.E.	Profession Papers of the Corps of Royal Engineers	V.	..	Chatham.

W., published weekly; F., fortnightly; M., monthly; Q., quarterly; V., at irregular intervals; A., annually. * Periodicals which can only be purchased by subscription.

ABBREVIATIONS—contd.

Abbreviation.	Name of Newspaper or Periodical.		Price.	Place of Publication.
P.R.A.I. ...	Journal of the Royal Artillery	M.	2/6	Woolwich.
P.U.S.I. ...	Journal of the United Service Institution of India	Q.	2 Rs.	Simla.
Q.D. .	Questions diplomatiques et coloniales...	F.	75 c.	Paris.
Q.R. ...	Quarterly Review...	Q.	6/-	London
R.A.G. ...	Rivista di Artiglieria e Genio	M.	*	Rome.
R.C. ...	Revue de Cavalerie	M.	*	Paris.
R. d'A. ...	Revue d'Artillerie...	M.	*	Paris.
R.D.D.M.	Revue des Deux Mondes...	½ M.	3 frs.	Paris.
R du G....	Revue du Génie militaire	M.	2.50frs	Paris.
R.E.J. ..	Royal Engineers' Journal	M.	1/6	Chatham.
R.F.E.C....	Revue francaise de l'etranger et des colonies	M.	2.50frs	Paris.
R.H. ...	Revue d'Histoire	M.	2 frs.	Paris.
R.I.C. ...	Revue Indo-Chinoise	F.	1.50frs	Hanoi.
R.I.M. ...	Revue du service de l'intendance militaire	M.	2 frs.	Paris.
R.M.B. ...	Revue de l'Armée belge	2 M	*	Liège
R.M.E. ...	Revue militaire des Armées étrangères	M.	1 fr.	Paris.
R.M.G. ...	Revue militaire générale	M.	2.50frs	Paris.
R.M.I. ...	Rivista militare italiana	M.	2 lire	Rome.
R.M.L. ...	Revista militar	F.	200 reis.	Lisbon.
R.M.S. ...	Revue militaire suisse	M.	*	Lucerne.
R.T.C. ...	Revue des Troupes Coloniales	M.	2 frs.	Paris.
S.Z.A.G. ...	Schweizerische Zeitschrift für Artillerie und Genie	M.	*	Frauenfeld.
U.E.	United Empire (Royal Colonial Institute Journal)	M.	1/-	London
U.S.A. ...	United States Artillery Journal... ...	2 M.	50 c.	Fort Monroe
U.S.C. ...	United States Cavalry Association Journal	Q.	50 c.	Fort Leavenworth
U.S.I. ...	United States Infantry Association Journal	Q.	50 c.	Washington.
U.S.M. ...	United Service Magazine (Colburn's) ...	M.	2/-	London.
V.R.K. ...	Vyestnik Russkoi Konnitsi	F.	*	St. Petersburg.
V.S. ...	Voyennii Sbornik (Military Journal) ...	M.	*	St. Petersburg
V.T.H. ...	Vierteljahrshefte für Truppenführung und Heereskunde	Q.	*	Berlin.

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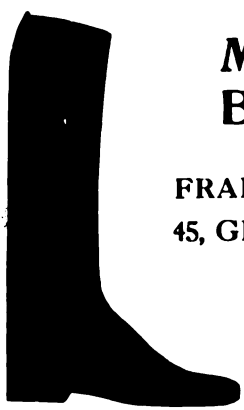
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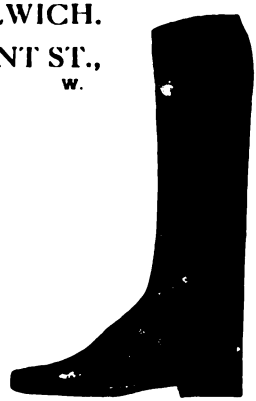
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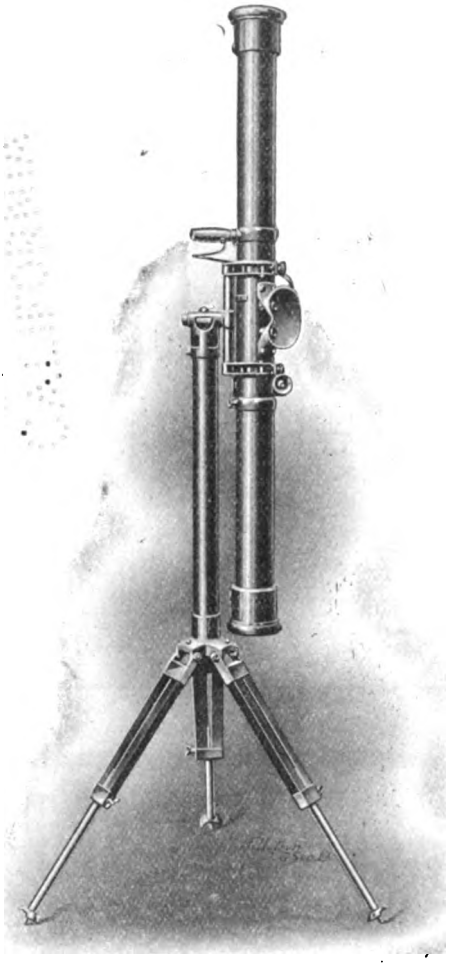
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BARR AND STROUD,

GLASGOW

THE JOURNAL

OF THE

ROYAL UNITED SERVICE INSTITUTION.

VOL. LV. FEBRUARY, 1911. No. 396.

[Authors alone are responsible for the contents of their respective Papers.]

SECRETARY'S NOTES.

I. NEW MEMBERS.

The following Officers joined the Institution during the month of January :—

Captain Count F. R. W. Metaxa, late Royal Scots Fusiliers.
Lieutenant A. F. Coplestone-Boughey, R.N.
Second-Lieutenant J. H. Courtis, Oxfordshire and Buckinghamshire Light Infantry.
Commander A. G. Hamilton, R.N. (retired).
Second-Lieutenant D. Hill, R.F.A.
Captain H. E. Street, R.F.A.
Lieutenant E. T. Jones, 3rd Bn. Royal Welsh Fusiliers.
Captain T. Jackson, 3rd Bn. Highland Light Infantry.
Captain R. W. Pinwill, Liverpool Regiment.
Colonel J. Bonham, C.B., late R.A.
Lieutenant Hon. W. A. Cecil, Grenadier Guards.
Colonel A. L. M. Turner, R.A.
L. P. Walsh, Esq., C.I.E., late Commandant Sawant Wadi Infantry, Local Corps.
Captain J. F. C. Fuller, Oxfordshire and Buckinghamshire Light Infantry.
Lieutenant R. H. R. Hope, R.N.
Captain N. H. S. Fargus, The Royal Scots.
Second-Lieutenant Sir R. V. Sutton, Bart., 1st Life Guards.
Lieutenant J. T. Tenison, R.N.
Captain C. H. Lyon, North Staffordshire Regiment.
Lieutenant W. L. Jones, Middlesex Regiment.
Major W. F. G. Wyndham, M.V.O., King's Royal Rifle Corps.
Rev. J. L. Greenfield late Chaplain to the Forces.
Captain H. N. H. Houghton, R.M.L.I.

Captain E. H. Phillips, D.S.O., R.H.A.
Lieutenant E. W. Swan, R.N.V.R.
Lieutenant R H. De 'Ath, R.N.
Captain G. D. Baillie-Hamilton, Royal Scots.
Lieutenant B. W. Barrow, R.N.
Lieutenant K. J. Duff-Dunbar, R.N.
Lieutenant R. E. Tanner, Liverpool Regiment.
Captain J. C. Gretton, Indian Army.
Lieutenant N. H. Stone, Somerset Light Infantry.
Lieutenant N. C. Orr, Seaforth Highlanders.
Major C. C. Noott, R.A.
Major H. Aris, Officers' Training Corps.
Captain T. D. Byers, 3rd Bn. Durham Light Infantry.
Second-Lieutenant W. J. Ratcliffe, R.F.A. (T.F.).
Second-Lieutenant E. W. Goldsworthy, City of London Yeomanry.
Captain J. D. Pollock, Lanarkshire Yeomanry.
Colonel D. F. Lewis, C.B., late Suffolk Regiment.
Captain C. F. Birney, R.E.
Major F. F. Duffus, A.S.C.
Rev. R. H. Belcher, LL.D., M.A., Chaplain to the Forces (T.F.).
Captain C. E. Hunt, Indian Army.

II. THE CORONATION.

The Council has had under consideration the question of admission to the Institution to view the Coronation Procession and the Royal Progress. It has been found impracticable to erect stands in front of the Buildings, as was done on a former occasion; it has, therefore, been decided by the Council that, owing to the limited window space available and the already very large number of applicants for seats, only members will be allowed admission to the building, as was done at the Funeral of His late Majesty King Edward VII. The Council, however, are in communication with H.M. Office of Works, and it is hoped that a certain number of seats may be allotted to the Institution on stands which are to be erected along the line of route by that department. Further information will be given on this subject in these Notes, but until such information is published no applications of any kind can be considered.

III. VACANCIES ON THE COUNCIL.

The following are the names of the Candidates nominated for the vacancies on the Council. The Election will take place at the Anniversary Meeting:—

ROYAL NAVY (Three Vacancies).

Admiral of the Fleet Sir G. H. U. Noel, K.C.B., K.C.M.G.
Vice-Admiral A. M. Field, F.R.S.
Rear-Admiral R. G. O. Tupper, C.V.O.

REGULAR ARMY (Four Vacancies).

Lieut.-General Sir R. S. S. Baden-Powell, K.C.B., K.C.V.O.
Lieut.-General H. D. Hutchinson, C.S.I.
Brigadier-General H. H. Wilson, C.B., D.S.O.
Brigadier-General F. I. Maxse, C.V.O., C.B., D.S.O.

SPECIAL RESERVE (One Vacancy).
Colonel F. C. Romer, C.B., C.M.G., 4th Bn. Lancashire Fusiliers.

TERRITORIAL FORCE (One Vacancy).
Lieut.-Colonel Hon. T. F. Fremantle, Buckinghamshire Battalion.

IV. CHANGE OF ADDRESS.

The attention of members is called to the necessity for communicating any changes of rank or address to the Secretary. It is essential that such changes should be made in writing. If such changes are not made, Members themselves will be responsible if their JOURNALS fail to reach them through being wrongly addressed, and Officers are requested to write their names with initials distinctly on such communications. Several signatures have recently been received which it has been impossible to decipher, and as there are several instances of Officers bearing the same name and initials, it is requested, therefore, that they will also add their rank.

V. HONORARY LIFE MEMBER.

Mr. John Leyland has been elected by the Council an Honorary Life Member of the Institution for his contributions to Naval Literature.

VI. LECTURES.

Sir Andrew Noble, Bart., K.C.B., F.R.S., late R.A., will preside at the lecture on Wednesday, February 22nd, to be delivered by Walter F. Reid, Esq., C.E., F.I.C.I., President of the Society of Chemical Industry, on "The Use of Explosives in Aerial Warfare, with Some Remarks on Methods of Defence."

General Lord W. F. E. Seymour, K.C.V.O., will preside at the Lecture on Wednesday, March 1st, to be delivered by Major General H. T. Arbuthnot. C.B., on "The Crimea Revisited."

The Right Hon. R. B. Haldane, K.C., M.P., Secretary of State for War, will preside at the lecture on Wednesday, March 29th, by Lieutenant-General Sir R. S. S. Baden-Powell, K.C.B., K.C.V.O., on "Boy Scouts."

VII. ANNIVERSARY MEETING.

The Anniversary Meeting will be held in the Theatre of the Institution on Tuesday, March 7th, at 4 p.m. The Chairman of the Council, Admiral-of-the-Fleet Sir G. H. U. Noel, K.C.B., K.C.M.G., will preside, when the Annual Report will be presented, the Winner of the Gold Medal for 1910 announced, the Election of New Members to the Council take place, and other business of the Institution transacted.

VIII. COUNCIL.

The Council regret to announce the death of Admiral Sir Charles Campbell, K.C.M.G., C.B., D.S.O., who had been a Member of the Council for the last three years.

IX. ADDITIONS TO THE MUSEUM.

(6276) Dervish Emir's parti-coloured silk quilted Gibba.

(6277) Dervish cotton quilted Head-piece.

(6278) Dervish Camel-bit and Head-piece of native workmanship.

(6279) Dervish Camel Neck Ornament of cowrie shells mounted on plaited leather.

These Exhibits were taken after the battle at the Athbara River on April 8th, 1898, by the 10th Soudanese Regiment, and are believed to have belonged to the Dervish Emir Mahmoud, who was taken prisoner at the battle.—*Given by the Executors of the late Captain C. S. Cottingham, 1st Bn. Manchester Regiment.*

(6280) Shoulder Plate of the Colour-belt of the 25th Regiment of Bombay Native Infantry, now the 125th Napier's Rifles. It was in use during the Indian Mutiny.—*Given by Colonel William Plomer, late 87th Royal Irish Fusiliers.*

(6281) Shoulder-belt plate of the 1st Infantry Brigade, bearing the mottoes "Moharaja" and Alijabahd, and supposed to be that of an Indian Native Contingent previous to the annexation of the Punjaub.—*Given by Colonel William Plomer, late 87th Royal Irish Fusiliers.*

(6283) Telescope with Gun-stock Holder, made for the late Field-Marshal Lord Raglan and used by him during the Crimean War, 1854-1856. The holder was made to enable him to use the telescope without support, as he had only one arm, having lost the other at the Battle of Waterloo.—*Given by E. E. Leggatt, Esq.*

(6284) Six Engravings, being representations of the most considerable actions in the siege of a place. The various actions depicted in these prints are taken from one of the Sieges of Barcelona, views of which place are exhibited in them. Published 1794, by Laurie & Whittle, of 53, Fleet Street, London.

(6285) A Water-colour Sketch entitled Earl Howe's Decisive Victory over the French Fleet on June 1st, 1794.

SAMUEL GREIG,
GRAND ADMIRAL IN THE IMPERIAL RUSSIAN NAVY.

By Major-General N. BEKLEMISHEFF, Imperial Russian Army, President of the Russian Imperial Navy League.

IT is a well-known fact that many British sailors have served in the Imperial Russian Navy and that they distinguished themselves in such a manner that they were an honour to the country of their adoption. Of these the most illustrious career is that of a Scot, named Samuel Greig, born 1736.

Thanks to original documents which were found in the family archives of Prince Esper Oukhtomsky, Editor of the *St. Viedomosty*, a relative of the famous Scot on his maternal side, we are in a position to throw some interesting light on the life of Samuel Greig and the part he played in the Russian service.

Prior to entering the Russian Navy, Greig, then a Lieutenant in the Navy of His Britannic Majesty King George III., applied to the Admiralty for leave to do so. In this connection it will be of interest to reproduce the following document received by Lieutenant Greig granting him the permission asked for, viz.:—

"ADMIRALTY OFFICE, 7 May, 1764.

"Sir,

"I am commanded by my Lords Commissioners "of the Admiralty to acquaint you that, agreeable to "your desire, they are pleased to give you leave to "go into the Dominions of the Empress of Russia.

"And, in pursuance of His Majesty's Pleasure, "their Lordships are also pleased to give you Leave to "enter into the service of that Empress, if you think "proper, taking care to transmit hither a certificate "from the British Minister of the time you do so, as "your half pay will be discontinued from that time.

"I am, Sir,

"Your very humble servant.

"(Sd.) STEPHENS.

"To Lieut. Saml. Greig, L. Town."

The ordinance given by the Empress Catherine to the Admiralty (then called the Admiralteistv Collegia), enrolling Samuel Greig, Captain of the first rank, in the Russian Navy

on the 18 June, 1764, contained the following, viz.:—"For the purpose of acquainting himself with the order existing in the Russian Navy, Greig is appointed a volunteer, for the prospective summer campaign, to the squadron under the command of Admiral Poliansky, and should there take the oath to loyally serve Her Majesty Catherine the II., Empress of Russia."

In 1769 Greig, after taking an active part in preparing the squadron for action against Turkey—which country under outside influence was then hostile both to Russia and England—was appointed to the command of one of the divisions of the Fleet when it sailed for the Mediterranean, and he specially distinguished himself at the Battle of Chesme, near the Island of Khilos (24th and 26th June, 1770), which resulted in the complete destruction of the Turkish fleet. It was Greig who was the actual leading spirit of the fleet during that engagement, although, nominally, the fleet was under the command of General Count Orloff, a favourite of the Empress Catherine, who, seeing the rivalry and quarrels which were going on between the various Commanders of squadrons, put an end to it by hoisting his flag as Commander-in-Chief. As a reward for his services on this occasion Greig was awarded a large sum of money, the Orders of St. George and St. Vladimir, and promoted to the rank of Rear-Admiral. He continued to serve under Orloff while the war lasted, taking an important part in the battle of the 10th October, 1773, when a Turkish squadron of ten ships was completely defeated by an inferior Russian force.

On the 10th July, 1775, when peace was solemnly declared with the Ottoman Empire, Her Imperial Majesty was Graciously Pleased to appoint Rear-Admiral Greig to be Vice-Admiral of Her Imperial Majesty's Navy. The order to this effect from Her Majesty to the Admiralty is dated 30th July, 1775, No. 1745, and was found amongst the Admiral's papers. It bears the following inscription made by the late Admiral in his own handwriting: "Ukaz appointing me Vice-Admiral No. 16." A similar order to the Admiralty dated 10th August, 1775, appointing Vice-Admiral Greig to the post of Commander-in-Chief of the Port of Cronstadt also bears an inscription in the Admiral's own hand, "Ukaz appointing me Commander-in-Chief at Cronstadt No. 16."

Greig now took in hand the work of reorganising the Russian Navy, and in his efforts for its improvement secured the services of many British officers, principally Scotchmen, with a result that certainly was of permanent benefit to the fleet; he remodelled the discipline, trained the officers, and gradually brought it up to a high state of efficiency. On the outbreak of the war with Sweden in 1788, he assumed command of the fleet in the Gulf of Finland, and on the 17th July

fought a severe action, which resulted in his triumphant victory, near the bank of Kalboden Grund, which is west from the Hogland Island, over the Swedish fleet under the command of Prince Charles, Duke of Zudermanland. Owing to the defeat suffered by the Swedes they were compelled to seek shelter behind the forts of Sweaborg, and thus the intention of the King of Sweden, to whom the force displayed by the Russians came as an unpleasant surprise, and who had counted on having the command of the sea, to attack Cronstadt and even St. Petersburg, was frustrated, and the "wooden walls" saved the capital of Russia just in the same way as in bygone days they saved Greece. The strategical significance of this victory was, of course, very great, and Admiral Greig was promoted to Grand Admiral and received the highest Russian Imperial Order, that of Saint Andrew.

The following letter written by Her Imperial Majesty the Empress Catherine on the 20th June, 1788, and still kept in the original envelope on which the late Admiral made an inscription —"Letter from the Empress Catherine wishing success—in French—No. 2" will no doubt be of interest to our readers. We give a copy of its original French and a translation in English. It is remarked that the first two lines at the beginning of the letter are written very faint, which, perhaps, was due to the want of a fresh supply of ink in the ink-well. The original letter is covered with glittering spangles of sand which was used by the Empress:—

"Copy. Monsieur l'Admiral Greig. Je viens de
"recevoir votre lettre du 18 Juillet prés de l'Isle de Seskar
"par la quelle vous me dites que les Vaisseaux que restaient
"avec vous sont presque reparés de tous les damages qui'ls
"ont reçu dans l'action du 6 Juillete, que le Pobedonossetz
"et le Pantelemon vous ont joint, et que vous attendez à
"tout coté il me revient qu'on regarde les démarches du dit
"était bon hier j'espérai qu'ils vous ont joint et que presen-
"tement Vous êtes deja a chercher l'ennemis; je prie Dieu
"qu'il Vous bénisse. Je ne doute millement que les motifs
"du Roy de Suede ne soient tels que vous les supposeez, de
"tout coté il me revient qu'on regarde les démarches du
"Roy *comme des vrais-extravagances*, ce sont les propres
"paroles entre autre de my Lord Carmarthen; c'est à mes
"armées de terre et de mer à faire repentir S.M. Suèdoise
"de ces démarches inconsiderées, aussi longtemps que vous
"êtes en Mer les descentes du coté de Reval seront moins a
"craindre; et vers l'hiver les troupes seront renforcées de
"coté la. Jamais l'ardeur de nos troupes ne fut plus grande
"que contre cet ennemi perfid, le nombre des recrus aug-
"mente touts les jours on m'en amène et m'en offre de
"toutes les Provinces, Si je les laissai faire toute la Russie

" ce metrait a cheval. Je vois que la disposition des esprits " sur la flotte sous vos ordres est aussi conforme au bien " Public, j'ai la parfaite confiance en vous Monsieur " l'Admiral, que vous ne negligerai points les occasions " favorables qui ce presentemeront. Que le Ciel bénisse " toutes vos entreprises voila les voeux ardents que je fais " pour vous et la flotte qui est à vos ordres. Adieu, Mon- " sieur l'Admiral Greigh, portez vous bien personellement " et soyez assuré, de mon estime de ma confiance et de ma " très sincère amitié, CATHERINE.

" Ce 20 Juillet, 1788, a St Petersburg."

" Translation. Dear Admiral Greigh,—I have just re- " received your letter of the 18th July near the Island of " Seskar, with which you inform me that the ships under " your command are nearly repaired now of all the damages " which they received in action of the 6th July, that the " *Pobedonossets* and the *Pantelemon* have joined you, and " that you are expecting every moment the Constantin and " the *Swetoslaw;* as the wind was favourable yesterday, I " hope that they have joined you, and that at present you " are also about to search for the enemy. I pray to God " that He will bless you. I do not doubt at all that the " motives of the King of Sweden are not such as you sup- " pose them to be. From all parts I hear that the steps " taken by the King are regarded as real extravagances. " These are the very words used among others by my Lord " Carmarthen. It is the duty of my forces on land and at " sea to make His Swedish Majesty repent of his incon- " sidered steps. As long as you are on sea the descents in " the neighbourhood of Reval are not to be feared; and in " the winter the troops will be reinforced in that part. " Never has the ardour of our troops been stronger than " against this perfidious enemy. The number of troops aug " ments every day; they are coming from all the provinces. " If I should let them have their way all Russia would put " itself on horseback. I see that the disposition of the " spirit of the fleet under your command keeps in perfect " conformity with that which is good for the public. I " have entire confidence in you, Admiral, that you will not " omit any favourable occasion which could present itself. " May Heaven bless all your enterprises—that is my ardent " prayer which I offer for you and the fleet which is under " your command. Adieu, my Admiral Greigh; keep in " good health personally, and be assured of my esteem, of " my confidence, and of my very sincere friendship.

" (Sd.) CATHERINE.

" This 20th July, 1788, at St. Petersburg."

Admiral Greig was very actively engaged in preparing the fleet for a final victory over the Swedes and blockading their ships at Sweaborg, but unfortunately he contracted a chill from which he he died on board of his flagship, the *Rostislav*, on the 15th October, 1788, and was buried at Reval. His memory was honoured by a general mourning, and in addition to a State funeral in the Cathedral, the Empress Catherine ordered a magnificent monument to be placed on his grave, on which is reproduced the fleet with flags at half mast and crossed yards. The memory of the late Admiral was officially honoured by the Government, and also a special lodge of mourning was held by the Freemasons. This lodge was very pompous, many very affecting speeches were delivered, and a special pamphlet dedicated to the memory of Admiral Greig, called "Am Grabe Greighs," was issued.

Greig was a Freemason. He reinstated the Neptune lodge at Cronstadt, and from minutes and lists of members lately discovered it is seen how tactfully he conducted the affairs of the lodge, which was designed by him to serve the object of bringing together the Russian and British officers in intimate and friendly relations. We see from the list for 1780 that the Master of the Lodge was Alexis Spiridoff, Captain of the first rank, the Deputy Master Jean Barsch, Vice-Admiral, and Samuel Greig, the superior officer of the fleet, held the office of Senior Warden. Later, in November, 1781, he was elected Master of the lodge. The minutes of the lodge contain entries praising the energy with which he handled the gavel. During the war with the Swedes the lodge from Cronstadt was transferred on board the Admiral's flagship *Rostislav*.

For the purpose of showing the charm and the grace with which the Empress Catherine rewarded those who assisted her in working for the glory of the country, it will, no doubt, be of interest to give below the following letter addressed to Admiral Greig by Count Alexander Bezborodko. It was written on the 22nd July, 1775, and runs as follows, viz.:—

"My dear Sir, Samuel Karlovitch,

"Her Imperial Majesty has not only affectionately "consented, but has also Graciously commended the desire "of your Excellency to send your two sons for education to "Scotland. Assuming, my dear Sir, that for your younger "son you will also choose service in the Navy in preference "to any other, Her Imperial Majesty has graciously ap- "pointed him to be Midshipman of the fleet. Of the above "I hasten to apprise His Illustrious Highness Count Ivan "Grigorievitch Tchernisheff, and beg to congratulate your "Excellency upon this Imperial favour."

Admiral Greig's son Alexis entered the Imperial Navy, as arranged, and eventually also became an Admiral and the Commander-in-Chief of the Black Sea Fleet. At the very early age of 21 he distinguished himself whilst Captain of a line of battleship during the battle off the Texel, near the Dutch coast, where the Russian fleet was united with the British against a common foe.

Catherine's successors have also valued the services of their useful foreign assistants, and have lavishly rewarded them therefor, and the memory of such workers is still fresh and cherished in the Russian Navy.

There are also many descendants in Russia of other British officers who were in the Russian service, as well as descendants of those Russian officers who were sent for service in the British Navy, and have, side by side with the British, fought under Jervis and on the coasts of East India.

N. BEKLEMISHEFF.

12 Linia, No. 31A, St. Petersburg.

THE DECLARATION OF LONDON AND OUR FOOD SUPPLIES.

By DOUGLAS OWEN, Esq.

On Wednesday, 18th January, 1911.
Admiral Sir Cyprian A. G. BRIDGE, G.C.B., in the Chair.

IN 1899 the Czar of Russia brought about a Conference at the Hague for the reduction of armaments. It was, of course, a failure. Out of it, however, grew the Hague Conference of 1907. Out of this, again, grew a proposal for the formation of an International Court of Appeal against decisions of National Prize Courts. But clearly the first thing needful for such a Supreme Court of Appeal must be an accepted basis for its decisions. In order, therefore, to draw up a code of prize laws of universal acceptance it was agreed to call yet another Conference. At this Conference, known as "The International Naval Conference," held in London in 1908, a code was drawn up, a code now known as the Declaration of London. This code is what we have to-day to consider: solely, however, from the point of view in which it will affect our food supplies in time of war. I wish to emphasise this, in order that in any discussion which may take place the fact may be especially borne in mind. The Declaration in other aspects is no part of our subject.

Now, to give effect to the Declaration, a Naval Prize Bill has been introduced into Parliament; and in the Bill, yet to be passed, an International Court of Appeal is recognised as part of our Prize Law process. The Declaration itself, as such, is not open to Parliamentary discussion, but only as part of the machinery of the Naval Prize Bill. If the Bill is passed, the Declaration of London will be binding on us. If the Bill be thrown out or withdrawn, then, as I imagine, the provisions of the Declaration will fall to the ground.

My object to-day is to demonstrate that, from the point of view of our Food Supplies at any rate, the proposed incorporation of the Declaration of London in the Naval Prize Bill necessarily and inevitably demands rejection of that Bill.

THE TWO VIEWS OF THE DECLARATION.

There are two views of the Declaration: one, that in which Great Britain is a neutral looker-on at the hostile operations

of other States; the other, that in which Great Britain is herself one of the belligerents. There is of course the very widest difference between the two views. The interests involved when we are merely lookers-on are essentially pecuniary interests, and those of only a limited, if important, class. The interests involved when we are at war will be those of every man and woman not merely in the country, but in the Empire. The matter will be one of the nation's very existence; of its life and death. It is true that, under the first aspect, the present divergent views of naval prize law may on occasion result in injury to individual traders and so create friction between us as neutrals and a high-handed belligerent Power. As a matter of fact and experience, however, we have not allowed the grievances of individual traders to force us into war, and it is certainly the fact that, in spite of the divergencies of which we hear so much from jurists, our maritime trade has attained a boundless prosperity. I feel sure you will agree with me that if the maritime traders had in their own interests tried of themselves to induce the Government to get our understanding of naval prize law set aside, the Government would have been in a position to declare convincingly that the grievances of the traders were not such as to call for the machinery of an international conference to right them. However, we need not argue this; for, as a fact, the traders of this country, setting their country's safety before any interests of their own, have practically with one voice cried out against the Declaration. The Chambers of Commerce of London, of Liverpool and Glasgow, and I know not how many more, have individually, after carefully considering the Declaration, protested vehemently against it. They found that, however it might be supposed to benefit themselves, it was, in fact, opposed to the interests of the country. And what is bad for the bee-hive cannot be beneficial to the bee.

The Old Conditions and the New.

In his letter of instructions to our Delegates, Sir Edward Grey laid stress on the fact that the passing away of the old sailing-ship conditions should enable us to go back to "first principles" (whatever these may be) and formulate uniform laws accordingly. But it is not merely that old conditions have passed away. New conditions have arisen which seem to me to be absolutely fatal to any scheme of uniformity. And notably our modern and always increasing dependence on overseas food—four loaves out of every five we eat; half of our meat, butter, poultry, and cheese; and so on. Now, these new conditions are such that it is practically impossible for us and the Continental States to take, in any new scheme of naval prize laws, one and the same view. The well-intentioned Delegates attempted the impossible. They engaged in an amiable plan to mix oil and water. The mixture may or may not be good for the Continental States; for us it is pernicious.

The Continental States are largely, as at one time was the case with us, self-supporting. Owing, however, to their geographical position, for any supplies they may need they are not, like us, dependent on the seas. They can nowadays obtain their supplies (thanks to the modern conditions of inland transport) from contiguous States or through neutral ports. At this very day, in peace, Germany does in fact obtain some three-fourths of her overseas corn through Rotterdam and Antwerp. In our wars of former days we used to blockade the ports of a Continental enemy in order to inflict on him inconvenience and distress. The new conditions have drawn our teeth so far as this weapon is concerned. The Treaty of Paris, too—another modern condition—enables our enemy to carry on his trade under the neutral flag, and so obtain his supplies in neutral vessels through any of his ports which are not blockaded. However, let us return to the altered conditions as regards Great Britain's food supplies: a question which our peculiar circumstances make absolutely vital to us.

Our "Heel of Achilles": Panic.

The outbreak of war always, I believe, sends up the price of wheat, and may do so greatly. Undoubtedly the outbreak of a war in which we were engaged would immediately or, more probably, in anticipation, create not only a serious rise, but also the general expectation of further advances. Immediate purchases by the trade generally would result. In addition, the mere possibility or, as many would think, the probability of hostile interference with our supplies, and the certainty of high or even famine prices, would create a popular run on all the wheat and flour and foodstuffs in the country. The Royal Commission on Food Supplies believed that at the outbreak of war we should have at least 6½ weeks' supply of breadstuffs in the country. That is to say, of course, 6½ weeks' supply for a normal demand. But how if the demand were a panic demand? An eminent Corn Trade witness expressed the opinion that the rush would be such as to clear the market *in a day or two*. This simultaneous and excessive demand would of necessity cause a very rapid rise in prices. These prices only the well-to-do would be able to pay, and a food panic would seize the masses, the panic itself driving up prices to a figure utterly beyond the reach of the working classes, many of them rendered wageless by the war. Our own common sense and knowledge of cause and effect can leave us with no doubt upon the subject. A bank panic, with waiting crowds in the streets all night, is as nothing to a food panic which itself creates the shortage on which the fear of it is founded. Of an actual shortage created by the hostile operations of the enemy I have less fear. But if the markets of the poor be swept clean of food, as I, in common with the Corn Trade experts apprehend they will be, the food of the masses will be as effectually cut off as if the enemy had intercepted it. A year

ago I was privileged to read in this room certain proposals which would prevent or diminish panic by the creation of a public confidence in the measures which would, under the proposals which I outlined, be resorted to; measures to divert to us supplies which would be ample. Now comes this Declaration of London gratuitously exposing our vital food supplies to terrible new risks. If the object of the Conference had been to create and stimulate a British food panic in time of war, it could hardly have been more ingeniously conceived.

Panic is what we have especially to fear. The Royal Commission, in ominous language, plainly warned us of it; a food panic which at a most critical moment in our history might fatefully interpose between the Government and the exercise of its plan of warlike strategy. I could quote many passages from the evidence before, and the Report of, the Food Commission to prove this to the hilt, if need be. We have had food shortages in the past, with riotous mobs parading the roads and streets, pillaging granaries and food stores, blackmailing frightened tradesmen, wrecking and destroying. Even in the Crimean war, with the price of the loaf at only 10d. or 11d., at Liverpool, in the East End of London and elsewhere, food shops were pillaged and their occupants blackmailed for money. In the Napoleonic wars we were self-supporting, and yet bread remained for weeks at eighteenpence the loaf. What the price might rise to, with, as is the case to-day, four-fifths of our bread imported and the enemy's commerce destroyers taking to the seas, it is impossible to say. And whereas, in the old days, be they as resentful as they might of the hardships of war, the masses had practically no effective influence on the policy of the Government, all this to-day is changed. With a labour Press, an important labour representation, and influential labour unions, the masses to-day can speak with no uncertain voice. And what so likely to stir them to the core as a deficiency or high cost of their daily bread? Panic will be our danger; and in the face of panic it is useless to quote facts and arguments to the panic-stricken. There are optimistic persons who seek to re-assure themselves and us by their conviction that a panic "would not last long." Perhaps not. It is the nature of a panic, as of an avalanche or tidal wave, to be short and sharp. It is the consequences which are important. And when the panic, like a sudden devastating storm, has spent itself, and bread is still, or possibly more than ever, at starvation prices, what then? It must be a sanguine disposition which will find much ground for re-assurance in the belief or hope that the panic "won't last long." But what is the assurance that a panic or at all events a dire anxiety, will not last long? Don't let us be under any illusions. Our enemy will have an altogether new and deadly weapon to use against us: the cutting off of our food supplies. He will choose his time, his fast cruisers and converted mail steamers will advertise their

presence off the ports from which corn is shipped to us, and on the trade routes which such shipments follow, and there will be panic, or something very like it, amongst the shippers also. The trade will come to a stop, the duration of this stoppage being dependent on the effectiveness of our patrol and preventive measures, an all-important problem in itself. What right, then, have we to console ourselves with the confidence that a panic or a food anxiety "won't last long"? But even those who may remain of this belief are hardly likely to find in it any argument for an international convention which will of itself increase the risk of panic. And that the Declaration of London will increase this terrible national danger at a moment most critical, when the Government will require the utmost calm and self possession, I am presently going to show.

This danger of a working-class panic, with all its far-reaching possibilities, is peculiarly our weak spot, our Achilles' Heel. And is it for a moment to be supposed that on the outbreak of war our enemy will not make it his special object to send his deadly arrow into it? It will assuredly be given a front place in his warlike strategy. Anything that he can do to distract our Government and war-lords by promoting or fanning the apprehensions of the hunger-fearing masses, this we may depend on him to do. And the Declaration of London will lend him powerful aid.

A Fatal Oversight.

The old sailing-ship and pre-telegraph conditions have, as we well know, and as Sir Edward Grey was at pains to remind our Delegates, quite passed away. But they have not merely passed away: they have, in fact, been driven out by modern progress and developments. And the sheet is not left blank by the disappearance of the old conditions; it is black with the heavy writings of the new. In peace or in war, these new conditions affect us and others in a variety of ways. But in war, broadly stated, they strengthen the position of our enemy, they give him safety where formerly he was vulnerable, and more especially, they expose in us, as we have just been seeing, a new and deadly weakness. In his instructions for the Second Hague Conference (1907) Sir Edward Grey thought it expedient to remind our Delegates of this, himself. "It is essential to the interests of Great Britain," he wrote for their guidance, "that every effective measure necessary to protect the importation of food supplies and raw materials for peaceful industries should be accompanied by all the sanctions which the law of nations can supply." This was his caution to our Delegates at the Second Conference. It was not much, in view of all the facts; but at any rate it was something. It is, however, a remarkable and lamentable fact that in the letter of instructions to our Delegates at the Third or London Conference even this mild warning was omitted. Our Delegates were sent to this

fateful Conference with the predominant idea that uniformity in naval prize law was the great object of the Conference; and that the passing of the old conditions was all in favour of a blessed uniformity. Uniformity was the essential thing. On the substitution of the new conditions, and especially on the transcendent necessity for agreeing to nothing which would hurt us through our food supplies in the event of war, I find in the blue book not one single word. The warning deemed necessary for the Delegates at the Second Conference was apparently omitted in the instructions to the Delegates at the Third: a vital oversight. And as a fact, in the special report of our Delegates, I find not one word to indicate that in the momentous changes to which they had agreed, in the cause of uniformity, our new danger was, as assuredly it should have been, foremost in their thoughts. I find nothing, indeed, to show that it was in their thoughts at all.

And now let us turn to the Declaration and see how, in its aim for uniformity, in its anxiety for the interests of neutral commerce, it imperils our food supplies in time of war, and aggravates that danger of a far-reaching national food panic which it should be our most anxious thought to prevent or minimise.

The Existing Law and the Declaration Law.

The decisions of the British Prize Courts have hitherto asserted the law that a foodstuffs cargo in neutral vessels is, as regards voyage, liable to condemnation "only if there is proof that its destination is for the naval or military forces of the enemy, or for some place of naval or military equipment in the occupation of the enemy." (Int. Nav. Con., p. 4, par. 4.)

The Declaration introduces a new and different law, and greatly to the prejudice of the British food supplies. Thus:—

1. The destination as above defined is presumed to exist if the cargo is consigned to a contractor (dealer) who as a matter of common knowledge supplies such articles to the enemy. (? Enemy's forces; though the word is "enemy.") (Art. 34.)
2. Similarly, if the place of destination serves as a base for the enemy's armed forces. (Art. 34.)

Now I, in common with weighty and responsible critics of the Declaration, maintain, and maintain with confidence, that these new provisions are charged with most dangerous consequences. Those whose business and responsibility it is to defend the Declaration deny that the words can have the meaning or effect that we attach to them. Possibly when those responsible to the country assented to the phraseology, they did not attach to it the meaning which we place upon it, and it is no less possible that they may still recognise in the wording only the sense of their own intention. We all know, however, how often

it has happened that our Courts of Justice have had to interpret statutory sections in a sense said to be foreign to the intention of the framers. Those responsible for the Declaration are, in fact, in a very difficult position, and their only defence can be and is that the critics—the practical, impartial and, many of them, very able critics—of the Declaration place on the wording a meaning which it was not intended to bear and does not bear. The critics, on their part, take their stand on the wording solely, and reiterate the justice of their protests. But it is, after all—or, if not, it certainly should be—just a matter of plain English, and you should be as well qualified to judge of the meaning as either disputant. In any case I am sure of your agreement that in an international declaration of the very first importance to this country, a difference of opinion, at the very outset, as to the meaning of a fundamental clause, is little short of tragic. I think that even those responsible for the Declaration will admit that if the International Court should interpret the wording in the sense put upon it by its adverse critics this would be most serious for our country. That we should expose the country to such a risk, in the hope that the Court would, after all, adopt our Delegates' interpretation, is a proposition not for a moment to be entertained.

THE NOVEL "GOVERNMENT CONTRACTOR" LAW.

The cargo is presumed to be destined for the enemy's—say, for our—armed forces if consigned to a contractor—a word supposed to mean, in the context, "dealer"—who, as a matter of common knowledge, supplies such articles to the enemy; by which word again is supposed to be meant the enemy's armed forces. It is rather sad to have to rely, in a momentous document of this kind, on suppositions for its interpretation; but let that pass. Now I want you particularly to bear in mind this fact: that while no ship or cargo can be condemned by a Prize Court except for breach of the law, practically any ship can be captured in order that it may be determined by a Prize Court whether her voyage was illegal or was not. She will then eventually be either condemned or released as the facts may warrant. But if she be released, the question will arise whether in the circumstances the action of the captor was justified. An irregularity in the ship's papers, or the failure of the captain to satisfy the reasonable enquiries of the visiting naval officer, or other circumstances which might create a reasonable suspicion on the part of the belligerent, will justify the capture; and though the captured ship may in such a case eventually be released, she will get no compensation, but will have to bear all her own expenses and in addition the captor's costs. If it should be found that the ship was free from suspicion and that her capture was unjustified or unreasonable, then, on her eventual release, the captor will have to pay compensation. The point I want you to bear in mind throughout is that many ships may quite reasonably and justifiably be captured only, perhaps, to be

eventually released; but that if captured because of irregularity in the papers or because of want of proper information on the part of the captain respecting either the nature of his cargo; or, under the Declaration Law, at any rate, its ownership or inland destination; then the ship, though released, must be held to blame for her own capture.

And now see the effect of the new law that a neutral vessel carrying food to a port of peaceful consumption shall be liable to capture for adjudication if her captain cannot show that her cargo is not going to a person in the habit of supplying the Government with foodstuffs. The visiting officer from a ship of our enemy boards the vessel, examines her papers and asks the captain who is the owner of the cargo: is it going to a Government contractor? Now, wheat cargoes are sold over and over again between the sailing of the ship and her arrival, ownership of the cargo passing by transfer of the bills of lading and policies of insurance. How, then, can the captain possibly know? In ninety-nine cases out of a hundred he will have to confess to the visiting officer that he cannot answer the question. "Well," says the officer, "you ought not only to know, but your documents ought to contain credible evidence upon the point." The officer will reasonably and justifiably capture the ship, or even, as we shall see presently, he may sink or burn her.

In his letter of instructions to our Delegates, Sir Edward Grey remarked that "what the commerce of the world above all desires is certainty"; and that "the widest possible freedom for neutrals in the unhindered navigation of the seas" should be the object of the Delegates. What sort of certainty, what sort of freedom in navigation, does this new rule confer on neutrals.

But let us pause a moment here to notice this:—Sir Edward Grey says that the Declaration exposes to condemnation no foodstuffs not already so exposed. Quite inaccurate! A dealer who supplies the Government is also and primarily a dealer who supplies the trade. This new law exposes to condemnation foodstuffs going, for popular consumption, to a dealer, because, and only because, the dealer sometimes supplies the Government also. But to return to the blessed certainty and freedom conferred on neutrals:—

If the cargo is consigned to Brown it is free from condemnation. If it is consigned to Jones it is confiscable, because Jones is known as a person who sometimes supplies food to the Government. If the captain is unable to prove whether it is going to Brown or to Jones—and this he cannot know—the ship is capturable for adjudication. If, by chance, the captain should be able to show that the consignment is to Brown, a harmless trader, the ship may none the less be captured and may be condemned (as we shall see presently), because the port of destination is, or may be regarded

as, a base for military forces, and the owners cannot prove that the cargo was not destined for such forces. I ask, again, how such confusion as this can make for "certainty," or "unhindered navigation" in the interests of neutral carriers?

And note especially this: that the inevitable uncertainty whether the cargo is or is not consigned to a person who sometimes supplies the Government in itself exposes to capture for adjudication all food supplies to us in neutral ships.

The Novel "Enemy Base" Law.

Now, the law our own Prize Courts have always asserted is this: that the article of foodstuffs is subject to condemnation "only if there is proof that its destination is for the naval or military forces of the enemy . . . ."

These are Sir Edward Grey's own words. The new law fixes the goods with a presumption of liability "if the place of destination serves as a base for the enemy's armed forces." Now, the Declaration, ignoring the great object of "certainty," attempts no sort of definition of the case in which a port is to be regarded as "serving as a base for the enemy's forces." The new conditions under which every port—certainly in England—is in direct railway connexion with one or more of our naval or military bases, receive no notice whatever. It is a simple and undeniable fact of our transport system that a cargo of wheat or flour, landed, for example, at Cardiff or Bristol, two peaceful ports, can be railed to Devonport, Portsmouth, Aldershot, or Chatham in a few hours. If the enemy's cruisers or commerce destroyers can intercept a neutral ship bound for Cardiff or Bristol, is there any logical reason to prevent them from contending, and contending with reason, let alone plausibility, that these cargoes were, in fact, destined for a port serving as a base for our armed forces? The Declaration declares it as a legal presumption subject to the owners' right of disproof, whatever this might be worth, that foodstuffs consigned to a place serving as a base for armed forces are destined for the use of such forces. It is true that the captor may on adjudication fail to prove that the port was in fact a base; or that the owners of the goods may eventually, perhaps after the war is over, succeed in proving that the forces were not, in fact, the destination of the cargo; but how will that help us: how will it protect the neutral against liability to capture for adjudication? If all or any of our ports are liable to be regarded as a base, then any neutral ship carrying food to any of our ports may lawfully be captured or destroyed, though long afterwards the owners of the property may be able to prove that an unfortunate mistake has been committed. Sir Edward Grey says that this is not his view. Unfortunately any enemy of ours will act on his own liberal view of the Declaration; not necessarily on that of anybody else, however individually dis-

tinguished. Sir Edward points out further that it seems to be overlooked that foodstuffs consigned to a place actually serving as a base are already liable to condemnation, so that there is really nothing in the new provision except that it transfers the onus of proof from the captor to the owners. Also that it will lie on the captors first of all to prove that the port was at the time actually being used as a base. What the Declaration says is that foodstuffs (and other conditional contraband) are presumed to be destined for military uses if consigned to a place "serving as a base." I submit that "serving as" may be plausibly argued to mean either "which is actually being used as" or "which is capable of being used as." But in any case, how, in the heat of conflict, can a naval officer know whether a given railway port is being actually used as a base or not? Is he going to split hairs about it, do you think? If in doubt, will he not arrest the ship and chance it? Under the present law, as asserted by us, Bristol and Cardiff, for example, are ports of peaceful consumption to which, in time of war, wheat and flour in neutral vessels are entitled to free access. Under the Declaration, neutrals will have no right to complain if their ships and cargoes bound to these ports are seized on the ground that the ports are believed, or asserted to be, bases for military centres. And the same with any and every other port. I ask you, ought we to be content to take our chance of all this in the pleasing confidence that our enemy and the Prize Courts will interpret the indefinite wording of the Declaration in its most restricted sense? Don't you think it just as likely that our enemy and the Prize Courts may affirm that, in giving it a wider interpretation, they are only applying to it the meaning deliberately placed upon it by the public opinion of our own great trading centres?

I think I have said enough to leave you with no doubt at all that, whatever the intentions of its individual framers, the Declaration will, as it stands, fully justify the enemy in cutting off any neutral vessels carrying food supplies to this country, whatever the port, even though a final Court of Appeal may decide in certain cases that he must pay compensation. Before passing on, let me remind you that, besides creating certainty, one of the objects of the Conference was to remove causes of friction. How far do you think the splendid uncertainties of this clause are likely to promote that object?

Just another point in connexion with this clause. Hitherto we have held that it was the right of a belligerent to confiscate foodstuffs actually destined for the enemy's forces, notwithstanding that the goods were to be landed at a neutral port. This, under the Declaration, we give up. If we board a neutral vessel full of flour with every sack of it marked with the address of a Continental enemy fortress, we must release it if the discharge is to be made, say, at Rotterdam or Antwerp. Seeing that under the Declaration (as I maintain) a

neutral cargo of flour bound for Bristol can be seized on the possibility that it may be destined for Devonport, our own abandonment of this ancient rule of war seems all the more remarkable. I do not contend that practically the abandonment is of great importance, but on paper, at any rate, the contrast is too remarkable to be passed unnoticed.

The Official Sophistications.

Those responsible to Great Britain for the framing of this momentous instrument laud it to the skies. They can see in it nothing but good and blessing. They are the theorists. Those who regard it with consternation do so because they see in it a serious danger for their country. They are the practical men. The controversy is essentially one between theorists—theorists and jurists—with no practical knowledge of commerce, on the one side; and men steeped in a practical knowledge of trade in all its workings, on the other. It is well to remember this.

As I have already mentioned, the great Chambers of Commerce of this country have received the Declaration with a chorus of repudiation. The official replies to all such protests have been, in effect, that the dissentients don't know what they are talking about: that they are under an entire misapprehension. Foodstuffs, says Sir Edward Grey, have always been liable to be treated as contraband if destined to the enemy's forces, and if they were, in fact, destined to a Government contractor or to a port from which it might be presumed that they would pass to military uses, they would be capturable, Declaration or no Declaration. There has been much ingenious use of official language to demonstrate this; much sophistry; but it is entirely unconvincing. The word "capture" has, of course, a double signification. It may mean "condemnation by a Prize Court" or merely "capture with a view to adjudication by a Prize Court." This ambiguity has been taken full advantage of by the official apologists for the Declaration. It is obvious that an enemy whom the captain of a neutral food ship may fail to satisfy has the right to capture her, or certainly will assert the right to capture her, for adjudication. The apologists argue as if the Chambers of Commerce, in representing that neutral food supplies will be exposed to extended risks of capture, were referring only to condemnation after capture, and not also to capture in the hopes of condemnation. Their—the apologists' —argument is, in effect, as follows:—"You say that the Declaration exposes to capture foodstuffs which hitherto have been exempt. This shows that you are under a misapprehension. No foodstuffs can be condemned under the Declaration which have hitherto been exempt."

I don't for a moment agree with that, but there can, I submit, be no question that food can now be *captured for adjudication* which hitherto, according to the British view, has been exempt. All foodstuffs genuinely going to peaceful ports for

consumption by the populace have been exempt from capture for adjudication. They are all now, I maintain, to be exposed to capture for adjudication, and—owing to the owner's inability to prove a negative—with, for many of them, an excellent chance that they will be condemned. It is difficult to avoid the reflection that if the apologists had been free to use their quite remarkable ability in exposing the Declaration instead of defending it, we should not be here to-day.

What I confidently affirm is that the whole of our neutral-borne food supplies will, under the Declaration, be in practice exposed to the risk of capture for adjudication, or of destruction in anticipation of adjudication. The London Chamber of Commerce made this a central point of their complaint; but all the satisfaction they got was a polite reference to the official replies already given. But these replies, so far as they refer to the point at all, involve it in such a complexity of words that it is by no means clear that they do not refer entirely, as they certainly do essentially, to capture in its sense of condemnation. At any rate, if they were intended to deny the proposition now in question, they are entirely unconvincing, and I fail to see how any denial of it can be otherwise.

It is, as we know, a penal offence to break open and rob an offertory box. A law is proposed, let us say, under which anybody found in church with money in his pocket may be arrested and his money impounded until he can prove that it was not taken out of a box which has been broken open. The seat-holders protest. "You are under an entire misapprehension," reply those who proposed the law. "The penalty for robbing offertory boxes will be just the same as it always has been. It will always be open to the persons arrested to show where their money came from, and on their giving satisfactory proofs it will be returned to them. It is melancholy to find responsible persons protesting against a beneficent law which it is evident they have not understood." The parallel is, of course, only to illustrate the sophistry of the official reply to the Chambers of Commerce. My ingenuity is not equal to supposing a case in which the money can be destroyed pending production of evidence as to its source, and of heavy costs to those found in possession of it without being able to produce such evidence when arrested.

A Coping-Stone: The Destruction of Neutral Prizes.

This all-important new departure demands detailed treatment, but limited as we are to time, I can only deal with it very briefly. Till now, Great Britain has always stood out that no belligerent has the right to destroy a neutral vessel carrying contraband. We have now given way on this, as I will presently explain. But first I want to call your attention to this: As the result of our long and costly struggles for maritime

supremacy, we are the possessors of coaling ports all over the world. This gives us a great advantage over other maritime States, but we bought it at a heavy cost. In the interests of uniformity the Declaration is going, in an important degree, to redress this inequality. Till now, the law asserted by us has been that a captor must take his prizes into one of his own ports for adjudication. As, amongst the nations, only we have ports everywhere, this would mean that to our enemy a prize would be a white elephant. Before he could get it into port we should have at least a prospect of recapturing it. We have now agreed that if the facts are against his getting the prize into a port of his own, the captor may, subject to certain restrictions, destroy it. We, having many ports, shall not have our enemy's excuses for destroying neutral shipping carrying food or other contraband. Our enemy will be able to sink neutral vessels carrying food to us in as rapid succession as he can discover them, because of his want of ports to take them to. The tremendous advantage of numerous oversea ports secured by us at such a cost is thus minimised in the desire for "uniformity." What would our forefathers say! As to the monstrous proposition that anyone has the right to sanction the wanton destruction of that daily bread for which we are all of us taught to lift our hearts in prayer, it is useless to speak of it. To say that it is enemy's bread is no answer, for the destruction of any bread affects the hungry everywhere.

But now as to the restrictions limiting the exercise of the belligerent right of destruction. Our Delegates, in admitting the principle, congratulate themselves that the restrictions will practically render the right inoperative. But will they? This is open to the gravest doubt. For our enemy will, of course, know that, importing as we do four loaves out of five, any interference with our food supplies may have far-reaching consequences, and this knowledge he will put to the utmost use. Possibly in certain cases in which he may fail to justify the destruction to the satisfaction of the Supreme Appeal Court, probably after the war is over, he may have to compensate the neutral owners. But will such a possibility outweigh the temptations of a strategic policy at any cost to deal his adversary a deadly blow in the matter of his vitally important and absolutely indispensable food supplies? Two of our Delegates were distinguished naval officers. Is this really their professional opinion? Am I, at any rate, not justified in saying that the knowledge of this further danger to our food supplies will be an added cause for the food panic which it should be our most anxious care to guard against?

The Official Justification.

Our Delegates were, of course, quite alive to the fact that in consenting to destruction of neutral vessels carrying food

or other contraband, they were sacrificing a principle on which we have till now invariably insisted. The official argument or explanation is that, while this has been the British view, certain other States have not assented to it, and notably Russia in her recent war. Therefore, it is urged, it is better to abandon our contention, and, instead, impose such restrictions on the right of destruction as will reduce its exercise to a minimum. But the abandonment of the principle will have far-reaching consequences. For what till now has been one of the strongest inducements to a maritime belligerent to respect neutral rights? The fact that those rights existed and that to violate them might involve the hostility of powerful neutrals. Under this new law the neutrals will all have signed their rights away. If their property be destroyed this will be in virtue of a Declaration which they have signed. If the facts should give them any right of protest at all, their remedy will be an application, in case of need, to the International Court of Appeal most probably after the war is over. The deliberate and systematic destroyer of neutral vessels laden with foodstuffs will no longer have to fear the anger of powerful neutrals as a wholesome restraining influence. The Royal Commission on Food Supplies laid stress on the importance of the neutral protest as an effective influence in favour of our food supplies in neutral vessels. The Declaration removes this stumbling block to belligerent food-destroyers in the future. It stood in the way of uniformity.

The Effect on our Neutral Supplies.

Up to this point we have been considering the Declaration only in its primary effects: the right which it confers upon the enemy to intercept and destroy our food supplies in neutral vessels. There is, however, another aspect, little if at all less serious. For there is an indirect consequence of these new laws, a consequence which at the same time will be advantageous to our enemy and highly prejudicial to ourselves. This consequence will be that neutral shippers of food supplies will refuse to send supplies at all to this country, seeing that they will be exposed to such grievous and uncertain risks, and will, instead, direct their ships to neutral ports, and so escape the risks. The result will be that food supplies on which, without the Declaration, we could have counted, will be sent, free of all risks, not to us but to the neutral supply-ports of our enemy, to Rotterdam and Antwerp. How, for example, can it be supposed that, in the case of conflict between Great Britain and a Continental Power, America, with the opportunity of safe *neutral* destinations, would send to *us* food supplies liable to capture, in any case, and probably to condemnation, and with a further liability to destruction: liabilities to which only under this new Declaration will she for the first time be exposed?

"There is no doubt," wrote Lord Lansdowne to the London Chamber of Commerce on 2nd November, 1904.

> "that the uncertainty which prevails as to the interpretation by the Russian authorities of their declaration as to contraband has rendered shipowners unwilling to engage in the carrying trade of Japan, and that many leading firms of British shipowners have refused to accept cargo for Japan."

Just so. It is quite refreshing, at last, to find myself with official sanction for my views!

I have heard it urged that we do not get much food in foreign ships. How much we get, I do not know, but probably a good deal more than we could dispense with at a time of panic, or when there was fear of panic. But in time of war the price of food will be so high in this country that a suction will be created which would draw large supplies to us in neutral vessels. Under the existing law, corn could be so brought, at any rate—or so we have hitherto maintained—to our ports of peaceful consumption; and free of heavy war-risk premiums. The Declaration, in the interests of uniformity, is going to stop all this. Neutrals must carry their food to Rotterdam, Antwerp or other neutral port convenient for our enemy, or take upon themselves the risk of capture for adjudication, or of destruction in anticipation of a Prize Court judgment by our enemy.

But there is an answer (of sorts) to everything, and I have heard apologists for the Declaration retort that, after all, we too can get our food from Rotterdam and Antwerp. No doubt, as a general proposition, if one's well runs dry, it is open to us to take our chance of fetching and carrying from a distant pump—if nobody hustles us on the way. But is this a reason for agreeing to a scheme which will make us short of water? We shall, however, not only want food, we shall want it at the lowest possible price. And how much a quarter more will wheat cost us, even if we succeed in getting it, in such conditions?

If the official replies and explanations are unconvincing, they leave at any rate no doubt on this: that the Code is a maze of subtleties and refinements, of uncertainties and dangerous ambiguities. And this when certainty was a special aim!

The Chambers of Commerce have for the most part raised broad practical issues. And just such issues, and they only, can a naval officer, in presence of the enemy, keep before him. No theorist or prize law jurist will be at his elbow, and there will be no hair-splitting under warlike pressure. A doubt or uncertainty he will promptly solve in what he deems the interest of his country: if the law is obscure, so much the worse for the law and the better for him. Where ambiguity exists, he will interpret it his own way, and in so doing he will be far more likely to adopt the practical conclusions of the Chambers of Commerce than the nicely balanced views of theorists or jurists, especially if these latter should stand in his way. Let us never forget what others, I think, have forgotten: that, when war

comes, the practical interpretation of the Declaration will rest with the naval officers of our enemy, bent on injuring us to the utmost. And a law which, by its very obscurities, will promote this object, stands self-condemned.

I regret that I have had to leave without comment points which should not be overlooked: I am well aware that I have done so; but I have already taken too much of your time. What I have endeavoured in my remarks to show: to all who are willing to give impartial study to the Declaration on its merits I believe I shall have shown; is that the Declaration, in its effect on our food supplies in time of war, will be far-reaching and most calamitous. In this conclusion I have to support me the deliberately expressed opinions of the Chambers of Commerce of London, Liverpool, and Glasgow, and I do not know how many more. To all such adverse critics Sir Edward Grey replies that they evidently have failed to understand the Declaration. He agrees, apparently, with his Delegates that the Declaration "will be found to be not merely satisfactory from the British point of view, but to constitute an effective safeguard of the best interests of neutrals in general."

It is for you to make up your minds which view to take: and I think you will have no difficulty in doing so. But whether in this I am right or not, I feel assured that you will at any rate share my unlimited amazement, that whereas not the smallest change can be made in the domestic affairs of this nation except by the will of the people expressed in Parliament, the rights and the very safety of the country and of the Empire for all time can apparently, without any consultation with the nation, be jeopardised at any moment at the option of a temporary Cabinet or, indeed, of individual Ministers, stirred by a belief in the virtues of "uniformity"!

Mr. T. GIBSON BOWLES:—The meeting, I think, is to be congratulated on the extremely able address that Mr. Owen has been so kind as to give us on perhaps one of the most important parts of a subject which began four years ago at the Hague, which has been continued through a disastrous series—as I think—of surrenders, and which has culminated in the Declaration of London in a proposal for an International Court composed of fourteen foreigners and one Englishman, to which Court shall be submitted the judgments of our Prize Courts, the acts of our Navy and of our naval officers, and the judgments even of His Majesty the King in Council which decide the law for the various races of the British Empire. The importance of this subject cannot be over-estimated; the complexity of it is scarcely to be described. In order really to understand it one has to wade through a thousand pages of Blue Book, about one-half of which is in the French language, and therefore unfamiliar to a great many of us. And the end of it is yet to come. When we ask questions of the Foreign Office, we are told in a cavalier spirit that we do not understand what we are talking about, and that none but a Foreign Office

Clerk is competent to juggle with the laws of nations. I wish to make two reservations with regard to Mr. Douglas Owen's Paper. I do not think myself that the new conditions of seafaring and of commercial life have in the least impaired the superiority of the British Navy, provided we recognise those conditions and act upon them. The introduction of steam has not rendered us less but more powerful in comparison with the times when we used sail alone. Then again as to panic. I observe that my friend Mr. Owen says he is not afraid of an actual shortage of wheat——

Mr. DOUGLAS OWEN: Not so much.

Mr. GIBSON BOWLES: Surely if there is to be no actual shortage there cannot be any material increase in price.

Mr. DOUGLAS OWEN: Yes, there can.

Mr. GIBSON BOWLES: I cannot see that. If you get as much wheat as you had before I for one am not going to pay any more for it, and I do not see how you are going to pay any more for it.

Mr. DOUGLAS OWEN: What I stated was that the Royal Commission on Food Supply said we should have six and a half weeks' supply at the commencement of the war, but my contention, and the contention of many corn trade experts, is that there would be such a panic created that the whole of that six and a half weeks' supply would be taken into stock at once and the market would be swept bare. The mere fact would cause a rapid increase of price, which itself induces to panic and would itself ensure shortage.

Mr. GIBSON BOWLES: Broadly speaking, undoubtedly if our supplies are not interfered with—and the Commission was most decidedly of opinion that there would be no material interference with our corn supplies—the price may rise for the moment, but it cannot be kept up. Mr. Owen is not afraid of shortage, but he is afraid of panic. I really do think that if at the beginning of a war we are to give way to panic, we had better give up all idea of waging war altogether and submit to anybody who chooses to impose conditions upon us. We cannot regard the old women of either sex or of either service. When it comes to a fight, you have to put the panic-stricken people down below and you cannot legislate for them or take account of them.

Mr. DOUGLAS OWEN: Half the nation?

Mr. GIBSON BOWLES: I do not at all agree to that. Not half; no, nor a tenth of the nation. I merely make those two remarks, Sir; otherwise I am in entire agreement with the paper Mr. Owen has read, and I think he has not insisted upon all the new disadvantages that would be imposed upon us, not merely by the Declaration of London, but infinitely more by the establishment at the Hague of an alien Prize Court, to judge not merely the Declaration but every English naval officer and every proceeding of the Navy. That is the real danger. Let me enumerate, if I may, very shortly, the new disadvantages to which we should be exposing our food supply. Perhaps, Sir, even in your presence I may go so far as to make an apothegm of Naval War: The object of Naval War is to keep all our trade always going and to stop all the trade of the enemy—to cut his communications and to keep ours always open. That is the end of naval war. You may do it by destroying his fleets or bottling them up—it matters not so long as you can keep your communi-

cations open and stop all those of the enemy. So long as your trade is kept going and his is not, you are certain so to distress him that in a short time he must sue for peace. In connection with commerce in time of war, let us see the new things that this Declaration would do. In the first place, what is to be contraband and what is not is no longer left as it always was left to the judgments of the Courts, considering all the circumstances of the case. It is now put into hard and fast lists. We are told that that will make us more certain as to what contraband is and what it is not. I say No, for these lists may be added to at any moment by a belligerent, excepting of course the list of free goods. The list of contraband and of conditional contraband may at any moment, for his own convenience, be added to by a belligerent by mere declaration, so that a vessel which has sailed from a distant part of the earth when she comes near the belligerents' shores may suddenly find that the cargo with which she started as a free cargo has, during the course of the voyage, become contraband and liable to seizure. Then there is the question, very ably treated by Mr. Owen, of the base of supply. We have only to look at the map of Europe to see how short a distance our ports are from our naval arsenals. Bristol is equally good as a base for Portsmouth, Plymouth, or Chatham. That is not so with the larger Continental States, with their fewer and more distant ports as bases of supply. Whenever it comes to a question of the doctrine of the base of supply, as applied to a port and its distance from naval and military forces, we are at a special disadvantage as compared with every other large nation of the Continent. Then I come to the most outrageous and impossible doctrine, that a cruiser capturing a neutral suspected of carrying contraband may out-of-hand burn or sink her. There is no parallel to that that I know of likely to convey the monstrosity of the thing to the ordinary citizen except to say that every policeman who arrests a man on suspicion of murder may out-of-hand hang him to the nearest lamp-post, without trial or enquiry.

Mr. DOUGLAS OWEN: And try him afterwards!

Mr. GIBSON BOWLES: Yes, and try him afterwards, no doubt. But observe that in this case the destruction of the neutral ship with her cargo said to be contraband not only destroys the culprit, but also destroys the evidence. Therefore it is the more outrageous. Then not merely is this destruction to be effected by the men-of-war of the enemy, but it is to be effected by any one of his merchant ships converted into a so-called man-of-war in any part of the world at any moment. I do not know whether my countrymen realise what that means. It means that a country infinitely weaker than Great Britain in warships, but with a numerous fleet of merchantmen may provide them all with little bits of paper and bunting and a few three-pounder guns, enough to tackle a merchantman, and those ships spread all over the world may, on the outbreak of war, produce their paper commission, run up their bit of bunting, bring out their three-pounders, and announce themselves as men-of-war, competent not only to capture but to sink any British merchantman that she may come across, and also any neutral merchantman that she comes in contact with. Under the old law that was piracy. It is piracy now. It is piracy under a new guise, and it is a revival of privateering in the most insidious and dangerous form. Yet that has been agreed to at the Hague. It is not forbidden by the Declaration of London.

Surely this audience cannot be surprised if some of us feel most indignant as well as most alarmed at what has been done. Now, Sir, all these alterations with regard to neutral trade are against Great Britain, and they are all in favour of her enemy. Mr. Douglas Owen, the able lecturer has already pointed out how in respect of ports for adjudication it works against us. We have ports all over the world to which we can take any capture and submit it to the Prize Court there, as is the only proper way. Our enemy has probably scarcely any ports of the kind, and consequently he will never think of taking his captures in for adjudication. What he will do, and what he will be supported in doing by the Declaration of London, will be to burn them, to sink them, and to dispose as he can of their crews. Now I come, for a moment, if I am not trespassing on your time—and really it is a little difficult to dispose in ten minutes of four years' work and a thousand pages of Blue Book:—

The CHAIRMAN: As in the House of Commons and the House of Lords, the Chairman is entitled by the rules to extend the number of minutes given to each speaker.

Mr. GIBSON BOWLES: I have had the misfortune to cease to be a member of the House of Commons, which I mainly regret on account of this very Declaration of London. But far more important than the maintenance of our own trade and our own food supply to these islands in the time of war is the effect of the Declaration and the Prize Court upon our offensive power at sea. When I am at war it is of course important to me not to be starved or half-starved, but if I am at war I would rather be half-starved than lose the war. That involves everything. That involves not merely my prosperity, but my very existence and the existence of the British Empire. Therefore I say that transcending in importance the subject that has been treated to-day as a part of the Declaration of London is the influence of the Declaration itself upon our offensive power when at war. Take blockading. The Declaration of London practically makes blockading impossible. It makes it all but impossible first of all to establish the blockade, to maintain it in its effective character; it makes it quite impossible to stop the blockade runner, because he has only to stay outside a certain line and wait for his opportunity to get in. It abolishes the power of capturing a blockade-runner up to the end of his voyage, and it therefore impairs your power to punish him. I cannot dwell on the details, although I have them all present in my mind, but practically I do say—and I undertake to say that any naval officer will agree with me—that this Declaration of London would practically render all but impossible that effectual blockade which since the Declaration of Paris is almost the only effectual weapon of offence left to us. Then I come to the convoy. In the year 1800, when it was proposed by the Armed Neutrality that a convoy—a torpedo boat, say, in these modern days—should cover a fleet of fifty merchantmen, William Pitt put into the mouth of King George I.——

The CHAIRMAN: Are you referring to the convoy of neutrals?

Mr. GIBSON BOWLES: Yes, Sir, I thank you; I should have made that clearer. When I speak of convoy I mean the new principle established by the Declaration that neutral vessels under the convoy of a man-of-war of their own nationality shall not be liable to search, to visit, to question, or to anything. They may, perhaps, not be neutrals; they may be false

neutrals full of cargoes of contraband; but not a word can a British naval officer or a British naval fleet ask one of those vessels, and no examination can be made of their papers, as long as they are under the convoy of a torpedo boat or a torpedo boat destroyer, or even of a submarine. Then take the list of contraband. In the list of free goods, goods which can never be called contraband, are mineral ores. Does this assembly know where all the guns of Essen come from? They start from Spain as metallic ores; they go to Rotterdam as metallic ores; they are then taken to Rheinhausen, where they are made into pig iron, from Rheinhausen they go to Essen, from whence they emerge as arms and ammunition. Not a pound of that can you stop on the sea, although it is the most essential of contraband having regard to its destination as I have described.

The CHAIRMAN: I think we must keep to the subject of the destination of our food supplies.

Mr. GIBSON BOWLES: With that single illustration, Sir, I hope I shall not further transgress. Now to come back to the general effect of this Declaration, food supply and all the rest. What is contraband in the way of food or of other things? What is a base for supply of the armed forces of the enemy? All these questions will no longer be decided by the ancient tradition of the honourable Courts of Admiralty putting into force not our municipal law but the law of nations. They will in the end all go at last to a Court of Foreigners sitting at the Hague, fourteen foreigners to one Briton, a Court making the law itself—I am quoting the words—a Court bound by no legal system of proof—I am quoting the words—a Court which comes to its decision with closed doors, and whose decisions always remain secret. That is the Court which will decide whether Bristol really is a base of supply for Portsmouth, or whether any of the other questions relating to food are to be decided for or against us. That to my mind is a greater danger, a more real and effective danger to us than even the Declaration itself. As the food supply hangs on the Declaration, and the Declaration hangs on the Prize Court, so does the Prize Court hang upon that Naval Prize Bill to which the lecturer has alluded. The whole hangs at last upon that Bill. I could speak at length upon the other aspects of this subject, upon the Bill and upon the Court, but I will say nothing further except that I do earnestly hope this meeting at any rate may have the effect of warning Sir Edward Grey from declaring that those who are opposed to this Declaration and this Prize Court are only so opposed because they do not understand the subject. We have come much nearer to understanding this side of the subject, at any rate, since the able address we have listened to to-day, and I am perfectly certain, whether we are concerned with this side or with other sides of the subject, the more we examine the proposed alterations the more we shall determine that they must be resisted, because they are destructive of the rights and contrary to the interests of the country in which we live.

Commander the Right Hon. Lord ELLENBOROUGH, R.N.:—I am very glad that Mr. Douglas Owen has brought this subject of the Declaration of London before us, and I hope that our Chambers of Commerce will persevere in their opposition to it. I think that the lecture we have just listened to will be of great assistance in forming public opinion on this matter. I hope our Chambers of Commerce will continue their agitation

until it is decided that this Treaty shall not be ratified. I would almost as soon hear of a lost battle as of the ratification of this Treaty. It gives away the results of many campaigns, both on land and at sea, without granting us any equivalent advantages. If we were at war I think we should be more likely to become embroiled with neutral Powers under this Treaty than we should if matters remained in their present state. The heading of this lecture is: "The Declaration of London and our Food Supplies," and the Chairman has told us that we are to stick to the food supply part of the subject only. Of course, if we were to touch on the Declaration of London as a whole, it would take far more time than could be given to it, and it certainly could not be adequately discussed in the course of one afternoon. But there is a danger that it may go forth to the world that the Food Supply Clauses are the only clauses in the Declaration of London that have been objected to. Against that interpretation of it I for one wish to enter an emphatic protest. When I first saw the heading of the lecture I came prepared to attack a great number of the clauses, but of course that part of the matter is now struck out, though I hope to find some other occasion for saying what I think about them. I am in thorough agreement with the lecturer when he lays down that when we are neutrals, our risks in war are only pecuniary risks, and that they only affect a very limited class, a comparatively small proportion of the population; but that when we are at war ourselves, our risks will be those of every man and woman in the country, whose very existence as a nation will be at stake. Now think how small were our losses as neutrals in the Russo-Japanese War compared with what they would have been had we been belligerents, even if successful. The possession of a powerful fleet, good diplomacy, and commonsense, brought us safely through that critical period. Mr. Owen has, I think, proved his case when he says that the Declaration leaves the whole of our neutral-borne food supplies exposed to capture or to destruction, and that the meat and grain, on the receipt of which we might have reckoned, would be diverted and sent free from all risks to Rotterdam or Antwerp instead of going to Liverpool or Glasgow. Until Mr. Owen told us I did not know that three-fourths of Germany's overseas corn comes through Rotterdam and Antwerp. It is a fact well worth remembering. By far the greater part of our own food supply is brought to us by British ships, but that is no reason why we should deliberately, by our own act, cut off any other source of food supply. It is better to have two strings to your bow than one. I have read the Blue Book on the subject of our food supplies—a very large book, full of information, which takes a great deal of time to assimilate and study, and I entirely agree with the lecturer in thinking that under the present circumstances a panic as regards our food supply is very likely to occur at the commencement of a war, and that any interference with Neutral-borne food supplies or the possibility of interference with them is very likely to accentuate that panic. The fault of the Treaty from a British point of view is that it appears to have been drawn up by men whose minds were exclusively occupied by thinking of single ship captures only, to the exclusion of stoppage of trade. The real object of the capturing of ships is to stop trade, and success is most complete when no ships are captured at all, when ships are laid up in harbour with their crews and people unemployed, simply because their capture is certain if they attempt to go to sea. By the capture and destruction of the *Knight Commander*, the Russians gained their object

for awhile. After that capture no neutral ships laden with railway iron attempted to go to Japan until some time after the Russian squadron had been defeated and driven back. By destroying one ship they postponed the sailing of others, and thereby interfered with the construction of the military railways of Japan in Manchuria. These questions are not mere matters of £.s.d., to be settled some years later by a Court partly composed of Mulatto judges. The effect of the capture of a ship often has an immediate result. What can the subsequent decisions of an International Prize Court matter to a nation that has lost one-half of its numbers by starvation? No decision of this International Prize Court will bring the dead back to life. Belligerent rights are entirely questions of the higher naval strategy and diplomacy. No country would ever allow itself to be ruined for the sake of a clause in a Treaty. It would be most unwise for us at the commencement of war to insist upon every right that belligerents have ever claimed, but all waivers of right to interfere with neutrals should be temporary only, and we should be in a position to re-assert them on other seas if the theatre of war was changed. If we tie ourselves to a hard and fast Treaty we cannot assert any belligerent right when we want it. I may say that I am in favour of asserting every possible belligerent right on our own coasts and waiving a great many on the distant seas where our interests are not vital. The re-assertion of belligerent rights, once given up, would be more likely to involve us in an additional war with a neutral than a re-assertion under present circumstances. During war, our Admiralty and our Foreign Office ought to do their best to conciliate neutrals on all points not vital to our existence. One would have thought that the opinions of naval men would have been invoked in support of this Declaration; but I have not yet heard that any Admiral who has commanded the Home, the Channel, or the Atlantic Fleets, has expressed himself in its favour. I have found a number of naval officers who think that the Declaration of London does not really matter at all because they say it will be torn to pieces and flung into the waste-paper basket when hostilities commence. Why, then, ratify it at all, and thereby increase our chance of quarrelling with neutrals, if we are to throw it aside when war breaks out? I look upon quarrels with neutrals as one of the chief things we must avoid when engaged in a life and death war; but we must leave the hands of our seamen free to interfere with neutrals when necessary, and we should not bind them down by clauses in an International Treaty. Why not send the Declaration down to Portsmouth and have it discussed by the officers going through their war course studies, and then let us know what their opinions are? It really appears as if some of our countrymen are determined that our seamen's hands shall be so tied as to make it impossible for them to save their country from famine. The Declaration of London may be treated with respect if a war was to break out between two small Powers, like Greece and Turkey, because they would do their fighting in the neighbourhood of superior neutral fleets; but no two first-class Powers would ever allow a sheet of paper to interfere with their prospects of success in a serious struggle. The supporters of this Declaration consider that it adds an International Prize Court to existing Prize Courts. On the contrary, the practical effect of Article 49 is to abolish Prize Courts. By it, every officer in command of an armed ship becomes a Court in himself; he is a Court of first instance with power to burn, sink, or destroy any neutral ship carrying food to England—and by so doing, as

Mr. Bowles pointed out, destroy the evidence which would otherwise have been placed before a Prize Court. Small ships cannot make captures; it is simply impossible. There is not a small ship at sea whose commander could not say: "It interferes with my duty to send twenty or fifty men on board that ship to navigate her, and therefore I can do nothing but destroy her." The lecturer was right when he told us that the practical interpretation of the Declaration will rest with the naval officers of our enemy. Yet British naval officers will not have similar powers over neutral ships carrying food to a port on the Continent because the food would be disembarked in neutral territory within easy reach of the enemy's frontier. It is a one-sided Treaty. We live on an island, and we are now making laws to prevent the importation of food to this country and giving free importation of food to Continental Powers in time of war! The victorious belligerent, whose success might perhaps be due to his having disregarded the Declaration of London, might put a clause in the Treaty of Peace making the vanquished nation liable to all the pecuniary damages that may have to be paid by the successful country in consequence of the decisions of the International Prize Court. He knows that it would not affect him, as he is going to win; and because he has not got to pay damages he will destroy what he likes. Another point that appears to have been forgotten is that at the conclusion of the war one of the belligerents may have become bankrupt or refuse to pay. When the American Civil War came to an end, the Re-United States claimed all the property that was in the hands of neutrals that had ever belonged to the Southern States, and they refused to pay any of the liabilities of the Confederacy; so that you would have got nothing out of Southerners who captured your ships if they had captured any neutrals in that war. Then Article 69 declares that the Treaty cannot be denounced until twelve years have elapsed. By that time new inventions will in all probability have completely altered the strategy and tactics of the sea. This Treaty is out-of-date and retrograde now, but what will it be in twelve years' time? Surface men-of-war may have disappeared from the ocean and their places taken by mechanical inventions, which as yet no man can foresee. One year's denunciation ought to be sufficient. As Mr. Bowles has pointed out, by not mentioning the subject, the Treaty gives tacit permission to convert merchant ships into men-of-war when on the high seas, and *vice versâ*. If an enemy's ship is to be allowed to capture and destroy merchant ships at sea, enter a neutral harbour under a merchant ship's flag, coal and re-provision, and then go to sea again and hoist the flag of a man-of-war, and capture neutrals again, what is she to be called? Privateering is said to have been abolished, but what is a volunteer fleet but a privateering fleet under another name? Any light obsolete gun can stop or sink an unarmed merchant ship. All that such ships require is speed, and an officer holding a temporary commission. That officer need never have served in a man-of-war, and he may be a native of a neutral country. Yet that man is to stand on the bridge and settle whether neutral ships belonging to other neutrals are to be burned or sunk. Formerly, privateers had to send their prizes in for adjudication, but the privateer of the future will be his own Prize Court. In conclusion, I will repeat that I hope the Chambers of Commerce, Mr. Burgoyne, and Mr. Bowles, will continue the agitation against this Declaration.

Admiral the Hon. Sir E. R. FREMANTLE, G.C.B., C.M.G. (Rear-Admiral of the United Kingdom):—I think the ground has been so well covered

by the speakers this afternoon, especially by Mr. Gibson Bowles, who has so thoroughly mastered the subject, that there is not very much left for me to say, especially as I did not intend to deal principally with the food supply but rather with the other aspects of the question, which are at least as important in my opinion as those which have been touched upon this afternoon. I will only just allude to them—deferring to your decision, Sir—with reference to the question we are discussing at this moment. Perhaps I am a bit of a Philistine, but I venture to say that I do differ on the subject of the intention with which our Government has acted with regard to the Declaration of London. I am of opinion that the less we interfere with what is acknowledged, or has hitherto been acknowledged, by custom to be the rules of International Maritime Law, the better. It cannot have escaped the observation of all those who have studied this question that every new war has made some change in what had been previously generally understood as International Law. I should only just like to mention as an example that there are two countries which have been pre-eminent up to the middle of the last century as the greatest opponents of belligerent rights and the greatest supporters of the rights of neutrals; those two Powers are the United States and Russia. Now we know that in the American Civil War the United States strained their belligerent rights to a very great extent. They extended the ideas of blockade as they had never been extended before, and as we had never attempted to carry them out in our war with France. I believe they declared a blockade of 2,500 miles of coast with seven ships originally, and that was directly against what had been a cardinal point of the Declaration of Paris. When we turn to Russia we find that Russia has always supported the rights of neutrals, and yet we saw that Russia in the late war strained her rights—if you may call them rights—by doing what we never did in our great war when we were fighting for our existence—to destroy neutral vessels. It does seem to me that to acknowledge those so-called "belligerent rights," those strained belligerent rights, was undoubtedly a mistake. We should have stuck to our old ideas and said: "We have never allowed this before, and we do not allow it now." The same thing holds good with regard to the importation of food stuffs. We have always protested against making food stuffs contraband. It is true that on certain occasions—and circumstances do alter cases—when food stuffs were really consigned for the benefit of the enemy's armed forces, we have declared them contraband; but we have always protested energetically against their being declared generally contraband under any circumstances. The case of the French in China in 1885 is one in point. The French declared rice contraband. That rice was what was called in China "tribute rice"; it was not simply food for the people but money for the Government, and therefore they had something of a case in declaring it contraband. But we protested in the most energetic manner. It is true that Germany, I believe, acquiesced at that time, but Germany may have had its own reasons for acquiescing. We as the greatest maritime Power, with the greatest experience on these subjects, strongly and energetically protested. It is true also that in 1794 we did stop, or tried to stop, a large cargo coming across for France from America, chiefly in American ships, but we did not propose to sink those ships or even to capture those ships permanently; we proposed to capture them temporarily, bring them into our ports, pay for the food stuffs, and afterwards release the ships. If that proves anything surely

it proves that though under the stress of war we may have been willing to allow that under certain circumstances we were justified in interfering with food supplies, we did so with every consideration, practically acknowledging the fact that, as a rule, food stuffs must be considered immune from capture. In Sir Edward Grey's instructions on 1st December, 1908, he said that certain things were to be considered. I will not read them all, but there were questions like the rules of transfer of merchant vessels from a belligerent to a neutral flag, the doctrine of continuous voyage, and the question of domicile, I admit that those three comparatively subsidiary questions were such as might very properly be considered in peace-time, and that all countries would have a similar interest in dealing with them; but when we come to the other questions, such as contraband, blockade, destruction of neutral vessels, the legality of the conversion of a merchant vessel into a war ship on the high seas, I venture to think those were not questions that we ought to have considered at all; and that when Sir Edward Grey speaks, as he does, of "the proposals of His Majesty's Government having met with a gratifying reception," it was because, evidently, we were prepared more or less to waive those subjects on which we ought to have protested, and have refused to go on with the Convention which dealt with them. I should just like for one moment to refer to the Declaration of Paris.

The CHAIRMAN :—Is that connected with the subject of food supply?

Admiral Sir E. R. FREMANTLE :—No, it is not directly. I was going to say that I did not wish to speak against the Declaration of Paris, but that my contention is that we were dealing there with a fact which was quite obvious to everybody, a broad principle which was easily understood, and that we thought we had been given a counterpoise on the question of privateering. I entirely agree with Mr. Gibson Bowles that allowing merchant ships to become men-of-war at their pleasure on the high seas is privateering in its most virulent form and very much worse than the privateering that was allowed before. If this Declaration of London is ratified, we have waived our maritime rights to a very great extent. I have been reading lately, as many of us have, I have no doubt, Mr. Julian Corbett's recent book on the "Campaign of Trafalgar," and it is very remarkable to see how determined Mr. Pitt was in 1805, notwithstanding that he was desirous above all other things to secure the co-operation of Russia, which was so important to him, not to waive in the slightest degree our belligerent maritime rights. It is very important, whether connected with the food supply or anything else, not to forget the warning which Admiral Mahan gave us when he said that, Germany and the great central Powers of Europe, being so strong on land as they are, the only counterpoise is the belligerent rights and the great maritime power of the British Navy. I certainly do not agree with the International Prize Court. I cannot believe that we shall have justice or fairness from that Prize Court. I cannot understand how rules can be adopted that are equally fair to an island Power and to a Continental Power. Sir Edward Grey has agreed not to ratify this Declaration without the consent of Parliament; he has admitted that we shall have a discussion upon it, and it is fortunately necessary before the Declaration can be ratified that Parliament should pass the Naval Prize Bill. Let me just call attention to one point of the very highest importance—a point that I had the pleasure of bringing to the notice of the British Empire League. We are

an Empire with Colonies. Surely those great Colonies of our Empire, our Great Britains beyond the seas, with their large mercantile marine, ought to be consulted in this question of maritime rights, which touches them very closely. I was looking up the subject the other day and I found that taking Australia and New Zealand only, they come fourth on the list of the mercantile navies of the world. They come before Italy, before Spain, and before Russia, and they come before most countries; and next after France. Under those circumstances I do think it is extraordinary levity, to say the very least of it, to propose to ratify a Declaration which all these Chambers of Commerce that have gone closely into the question declare is dangerous to our national interests. There is just one word more I would like to say. I have taken the trouble to read a great deal of the correspondence—I cannot say I have made a study of it, as my friend Mr. Gibson Bowles has done—and I find there is one triumphant answer which apparently Sir Edward Grey thinks he makes. He says the shipowners of Liverpool approved of the Declaration. Their principal reason for approving it is very remarkable; they approve of it because they say: "Ah, I see now they will be able to destroy neutral ships bringing us our grain; that is most important to us, because we shall not be able to trust the neutrals, and we shall be bound to have our own ships thoroughly protected; and it is more important to us as shippers that our ships should be properly protected than that the country should receive a certain amount of food stuffs in foreign ships." If that is the best that can be said for the Declaration of London, I entirely agree with the lecturer, who has placed the position as regards the supply of food stuffs so clearly before us, and I think it would be a great advantage if we could have another discussion on the Declaration, in which we should be able to deal with all those questions which Lord Ellenborough and others have been so anxious to deal with.

Major S. L. NORRIS, late R.E.:—I am almost ashamed to stand up here because I have now hardly anything to say. I did mean to speak for about two minutes, but the two eminent naval officers who have spoken have mentioned what I thought was the one omission in the valuable address that I read very carefully before I came, the question of privateering. There is one point and one only I should like to mention which does not seem to me to have been brought forward, and one which affects the question of the ratification or not of the Declaration of London. The next war in which we are concerned will not be run on red tape, and I very much doubt whether the old women of the Navy, and the old women of the Army will think very much of sophistications about this, that and the other when they have the country to keep from starving. Therefore I think we should protest against tying their hands beforehand with a whole lot of arguments. I am sorry that I have nothing else to say

Mr. HAROLD F. WYATT:—It might be of some possible interest to the audience to know the names of certain other Chambers of Commerce protesting against the Declaration, besides those of London, Liverpool, and Glasgow mentioned by the lecturer. They have all passed resolutions of protest against the ratification of the Declaration, and I have their resolutions in a pamphlet I hold in my hand, issued by the Imperial Maritime League. Amongst the Chambers which so protested and passed resolutions are, besides London, Liverpool and Glasgow, Leith, Edinburgh, Belfast, Nottingham, Newcastle, and Bristol. That list is only complete

up to a little while ago, and the number has been constantly added to. The Imperial Maritime League are communicating with all the Chambers of Commerce throughout the country and throughout the Empire, because the oversea dominions are also deeply involved in this matter, asking them to pass resolutions of protest, and I think it is more than probable that a very large number of them will do so. We are to be congratulated this afternoon on having been allowed to listen to a paper which we shall all admit is one of the ablest that could have been written on this subject. We have also had the great advantage of hearing the comments of Mr. Bowles, than whom no greater authority on this subject exists. But there is a point of divergence between the lecturer and Mr. Bowles which appears to me to be one of extreme importance; it is as to the effect on prices that will be produced by captures made at sea. An ounce of fact is worth a pound of theory, as is often said, and I venture to allege this fact in support of the lecturer on that point. In the year 1898, when war broke out between the United States and Spain, there was a rumour, quite unsubstantiated, as it proved, of a possible interference by Spanish cruisers with United States ships bringing food to us, and the effect of that rumour, before a shot was fired to materialise it, was to send up the price of wheat on the exchanges of England from 28s. to 37s. a quarter, which was equal to the imposition of a 9s. tax. The effect of that again was to increase the price of the ordinary loaf to the extent of about a farthing to a halfpenny. If that was the result of a mere rumour of a possible interference which never took place, in a war in which we were not engaged, what is likely to be the effect of the outbreak of a war in which we are engaged with a great naval Power, and of the sudden realisation by the British public that we had scarcely any British cruisers on the seas of the world to defend our trade? I should say everybody would agree that the effect would be all that the lecturer forecasts, and that we should have an enormous panic in this country and an immense rise in the price of food. The brevity or length of such a panic is certainly a matter for consideration, but I am afraid the effect which it would produce would not need necessarily to be prolonged. A week's panic or a fortnight's panic would be enough to bring us to our knees when we had starving mobs rushing through the streets and we had to call out the troops to shoot down crowds of looting people. The situation which would be created would be intolerable. Sir Edward Grey practically admits, I think, that the effect of Article 34 in the Declaration of London will be to render all food stuffs coming to this country in neutral ships subject to capture. At any rate, I draw that inference from his reply to the Glasgow Chamber of Commerce. The Glasgow Chamber drew attention to that, and Sir Edward Grey or the Foreign Office, writing under date of 13th October last, said that in all these cases it is still open to the owner of the goods to prove that they were not destined for military or naval forces by saying that they were in fact for peaceful purposes. In short, therefore, the effect of Article 34 is only to shift the onus of proof in the cases specified from the capturer on to the owner of the captured goods. That is all it does, and accordingly Sir Edward Grey contemplates quite clearly that such goods coming to England during a war in neutral ships shall be capturable, and his consolation administered to the Glasgow Chamber is that it will be open to owners of the goods to make representations in the proper quarters, which will be the International Naval

Prize Court if it is ever established—I hope it will not be—and that Court may then, if it thinks fit, grant compensation to the owners of the captured goods. Of what possible avail will that be to starving England, to the crowds of people, the mobs, who are perishing owing to famine prices? What use is it to tell them: "Do not grieve, good people; the owners of the goods may receive compensation by-and-bye"? There never was, I suppose, such an instance of complete inability on the part of a Minister to grasp the vital essence of a subject with which he had to deal. There is one food which is hardly worth mentioning, and one drink, which are exempt from capture; the food stuff is nuts and the drink is hops. Therefore it may be inferred that the diet of England in the next naval war, as designed by the Foreign Office and the present Ministry, is to be a mixed diet of beer and nuts. What this Declaration of London really does, I submit, is to expose neutral shipping, bringing us food stuff in war time, and all other conditional contraband, to exactly the same interruption that will be incurred by British merchantmen. What chance have we of receiving food supplies in our own British merchantmen without interruption? That depends on the state of our Navy. What is the state of our Navy that is actually stationed now on the distant trade routes in order to defend the British people in time of war? I had occasion to go into that point in writing a paper for one of the Reviews last year, and I found that the total number of British cruisers stationed on the trade routes outside the waters of Europe was twenty-seven. The figure which is given by some reliable authorities for the British Mercantile Marine, the total number of sailing ships, steamers, big craft, and small craft, is thirty-seven thousand; it is said that thirty-seven thousand vessels of all kinds are comprehended in the British Mercantile Marine, including the whole Marine of the Empire. A very large proportion of this thirty-seven thousand, an enormously preponderating proportion, must be certainly outside the waters of Europe, and all that proportion has for its defence is twenty-seven British cruisers plus now the *Rainbow*, which has been taken over by the Canadian Government.

The CHAIRMAN:—I should like to point out to you that the question is: The food supply in time of war.

Mr. WYATT:—That is the thing, Sir, on which I am trying to speak.

The CHAIRMAN:—You are talking about the distribution of the Navy in the time of peace, last year.

Mr. WYATT:—I bow to you altogether, but I was trying to illustrate the matter by a point.

The CHAIRMAN:—You must kindly adhere to the subject we are discussing: Food supplies in war.

Mr. WYATT:—Certainly. My reason for mentioning the points I have mentioned was that I thought they had the most vital bearing on the question of our food supply in war. If the naval protection of the British Empire is inadequate to protect the British Mercantile Marine, and to chase away enemies' cruisers and the enemies' converted merchantmen, and thus protect neutrals as well as our own vessels from capture—if the Navy cannot perform that task, it appears to me that our food supply in war must be hopelessly interrupted and famine prices must prevail in this country. That is the main point I want to bring out. I would only

say further that every possible effort is being made by many people, and every effort is being made by the Imperial Maritime League to draw public attention to this question. The League has called a great meeting, which is to be held on the 2nd of February, at the Baltic Exchange by kind permission of the authorities of the Baltic Exchange, and I invite everyone who is interested in this subject to attend at that meeting. The whole future of England seems really to be involved in this question, and if the people cannot be awakened, if the ratification of the Declaration of London and the passing of the Naval Prize Bill cannot be prevented, it would seem vain to hope for any future for the British Empire. But I trust and I believe there still remain forces in this country which will be adequate to the occasion, and that we shall succeed in dissuading His Majesty's Government from putting the hand of England to this instrument of national destruction.

Rear-Admiral R. TUPPER, C.V.O. :—Other speakers have alluded to the possible panic which may arise on the question of food by the outbreak of war, but there seems to be a difference of opinion as to whether there will be a panic or not. Mr. Gibson Bowles apparently thinks not. But my contention is, that whether there is likely to be a panic or not, we ought to organise and prepare for it, as that is the sure way to prevent it spreading if it appears in one or more places. In my humble opinion every lady and gentleman in this room could assist very materially in preparing such an organisation. We have County Councils, Village Councils, Town Councils, and various Municipalities, all of which are perfectly well aware of the state of wages in their particular districts. Generally speaking, we may say that there are seven million people who are dependent on wages *under* 23*s.* a week; there are something like thirteen millions who vary between 23*s.* and £2 10*s.*; and something like six million who have more than that. The seven million who are on the lower wage are the people who must be very hard hit immediately food rises in price; and amongst those seven millions unfortunately there are many who are not in favour of maintaining an Army and Navy at all, and consider that money spent on its maintenance is wasted; in fact, a man who had recently been a Member of Parliament and controls thirty thousand steel workers, told me it did not matter to any of *them*, his followers, *by whom* this country is governed, and they did not want *Dreadnoughts* or armies, or anything of the sort, and no doubt they would also like to do away with police! That is the class that also will probably be hungry the first. It seems to me therefore that we ought at once to consider and organise a means for immediately meeting the situation if food rises in price. All the Municipalities and Councils should review the situation in their respective districts; should find out how much food there is available, how long it can last at full, half, and one-third rations (for it is quite likely it will be difficult to replenish stocks), and should organise to conserve that food and detail buildings, in which the food could be stored and guarded, and the force necessary to guard it, —for it will have to be guarded most likely—and should organise the issue to those who most require it, possibly by tickets. If the officers of the various Councils I have mentioned would sit down and think it out *now*, it is possible that without expending a great deal of money, they might be able to complete an efficient organisation. If they wait to do it until the eventuality arises, I am quite certain they will not be able to effect

anything, and panic must then ensue. It is a matter in which I have been very greatly interested, and I have tried hard in my humble way to interest others. Three Mayors said they would undertake it, but two of them have put it aside altogether, and the other says he is going to do it this year. It seems to me it is quite easy to do. Information about the food can be obtained, also the information about the people who may be in want of it. It seems to me that all that is required is to make out the scheme and put it in a pigeon-hole; with the cards for distributing to the families who may need to purchase food at ordinary prices, or perhaps even be given it when food becomes dear; and then as the price rises the people will present their cards and obtain food. Such an organisation and the knowledge it existed would avoid this panic, and give confidence to all, even though some suffered from insufficient food. If a panic does occur soon after the outbreak of war, and before the Navy is able to prove it can make the sea free and guarantee our food supply, I fear that naval officers like myself, who hope to be some distance from our shores on that occasion upholding the honour of the Empire, may have our hands tied, by the making of an inglorious armistice just when victory is within our grasp, and it is up to us naval officers to do all we can to impress this danger on our countrymen, and persuade them to think of some organisation which can prevent *the possibility* of a panic and riots when people are hungry. I would add that it will also be necessary to see that no food is sent out of this country when war becomes imminent. I have heard of an organisation for buying up as much food as can be obtained and shipping it abroad; this undoubtedly must also be guarded against.

Major R. A. JOHNSON, 4th Battalion Hampshire Regiment:—We have heard a great deal about the evil effects that will ensue if we pass the Declaration of London. Now, I think a good many thick-headed people like myself are not quite clear in our own minds as to what are the facts if we do not pass this Declaration. ("You are as you were.") Quite so, but how are we as we are? So far as I can see—and I have spent some time and trouble over the matter—it appears to me that most of the horrors with which we are threatened, if we do sign the Declaration of London, will threaten us just the same if the Declaration is not passed. That is a question that has not been dealt with by those who attack the Declaration of London, although of course they have no doubt their view upon the matter. It emphatically requires to be dealt with. For instance, we are told by the Lecturer that if we sign this Declaration our enemy will be able to sink neutral vessels carrying food to us in as rapid succession as he can discover them. But if the Declaration is not passed, cannot he do so equally?

Admiral Sir E. R. FREMANTLE:—No.

Major JOHNSON:—Why not?

Admiral Sir E. R. FREMANTLE:—We have protested strongly.

Major JOHNSON:—Well, I should like to know whether the mere fact of Great Britain's protesting strongly against a view which is held and a right which is maintained by all the other maritime Powers——

Admiral Sir E. R. FREMANTLE:—No, that is not so.

Major JOHNSON:—Surely that is the position. The right to sink is maintained by Germany, the United States, Austria, France, Italy, Russia—practically every big naval Power except Japan.[1]

[1] Cp. Blue Book, C.D. 4555, Proceedings of London Naval Conference, pp. 99-102.

Admiral Sir E. R. FREMANTLE :—Can you give me any instance?

Major JOHNSON :—How was it with the *Knight Commander*?

Admiral Sir E. R. FREMANTLE :—That is the only instance that you can give me.

Mr. OWEN :—Perhaps I can assist in this matter. In Sir Edward Grey's Letter of Instructions to Sir Edward Fry of the 12th of June, 1907, at the second Hague Conference, he said "As regards the sinking of Neutral Prizes, which gave rise to so much feeling in this country during the Russo-Japanese War, Great Britain has always maintained that the right to destroy is confined to enemies' vessels only, and this view is favoured by other Powers. Concerning the right to destroy captured neutral vessels the view hitherto taken by the greater Naval Powers has been that in the event of its being impossible to bring in a vessel for adjudication she must be released. You should urge the maintenance of the doctrine upon this subject which British Prize Courts have, for at least two hundred years, held to be the law." Those are Sir Edward Grey's words.

Major JOHNSON :—With all due deference, it seems to me that we have here a fundamental misunderstanding. The whole emphasis is laid by Mr. Owen upon the fact that the British Prize Courts have for two hundred years maintained this right.

Admiral Sir E. R. FREMANTLE :—And others, too.

Major JOHNSON :—Practically only by Japan, and surely the whole argument in Mr. Gibson Bowles' book is that these Clauses have been introduced into the Declaration of London on the action and by the evil suggestion of the Continental Powers, Land Powers *versus* Sea Power. If that is so, we have here not a new view invented by them *ad hoc*, but a view which they have maintained in the past.

Mr. GIBSON BOWLES :—Do you not see the difference between a gentleman asking you for your watch and you giving it to him?

Major JOHNSON :—Mr. Bowles' parable would only be applicable if the law of the town in which I lived regarded theft as theft, while the law of the street in which the gentleman met me did not. The real question is: Is Germany going to ask America for her watch when she is at war with England, and is America then to give it to her? What will America say? Is Germany when at war with us going to sink ship after ship belonging to the United States carrying conditional contraband to Great Britain? There are two parties interested in that action. The first and most important of all is ourselves, and we have said in the Declaration of London that we will leave the question as to whether the ship was sunk under extreme and exceptional military necessity or not to an International Court. But we still stand exactly by the position we always stood by, namely, that the neutral vessel carrying non-contraband of war should not be sunk at sea, except under extreme military necessity, but, if sunk, must be paid for in full. There is this further point, that the other party who is interested is the powerful neutral, the United States of America. Do we for a moment suppose that the great neutral is going to allow Germany to sink ship after ship

carrying contraband of war even "absolute" still more "conditional"?

Mr. OWEN :—If she signs the Declaration she will have to.

Major JOHNSON :—Not so; there could not possibly be military necessity in every case; on the first case the United States would appeal to the International Courts, on the second she would go to war, International Court or no. I come back to my original point. I want to get clearly in my mind what is the present position with regard to all these things. What is the present actual position as regards the sinking of neutral ships at sea, not by us, but by our enemies in time of war? What is the present position as regards their converting merchantmen into war ships on the high seas? Mr. Gibson Bowles made a slip, I think, when he told us we had agreed to that. I take it he means tacitly agreed to it. But if we have not agreed to it, but have expressly said we cannot so agree, I fail to see where the "tacit" part of the business comes in. Our position remains exactly where it was. If we were at war and found a neutral merchantman on the high seas at work as a war ship we should sink her as a pirate, and the Declaration of London does not alter that position. No doubt it would have altered the position enormously if we had been able to induce the other maritime Powers—and this is the kind of point which underlies the whole broad question—to take our view on the subject and to declare that this practice should not continue. If we had been able to do that we should have gained a great victory. However, as we were not able to do that, I do not see clearly how the Declaration of London has given away that right which we have always maintained.

Admiral Sir E. R. FREMANTLE :—Because we have made no protest.

Major JOHNSON :—We reserve the protest, and I fancy, Sir, that if you have anything to do with the control of fleets when war comes, your protest will be vigorous and quite sufficiently effective. The main point I wanted to put before you, is that so far as I can see, if we study these articles one by one and compare them, not only with the present chaotic condition of international law on the point, but with our own British maritime law as interpreted by our own British Pribe Courts, we shall see that, not only have we abandoned none of the rights that remained to us after the signature of the Declaration of Paris, but in addition to that we have gone an enormous way towards getting the Neutral Powers to accept our own law. I fancy all of us here present are rather actuated by the feeling that we might have compelled all Europe to take precisely the same view in connection with the whole of these maritime questions as our Naval Prize Courts do at this moment. That would have been a splendid thing. That we have failed in some respects to persuade them to take that view is regrettable, but hardly to be wondered at. That we have succeeded in many important particulars in persuading them to take exactly the view our own Naval Prize Courts would do is, I think, a very great feather in our cap. There are certain questions which are reserved, questions which are not affected at all by the Declaration of London. There are certain other questions in which it is true we have made very slight concessions. The real question is whether these concessions are, as I claim, very slight, or whether they are so grave as to make it necessary that we should still leave the law at sea in the condition of uncertainty

in which it at present stands. If the latter is the position, then we shall only have two alternatives, whether as a great neutral or as a belligerent, when there is a question at issue between us and another Power. Either we must declare war on that Power, which may be much worse than awkward, when we are already engaged in a war with a sufficiently serious enemy, or we must do as we did when the *Knight Commander* was sunk—write Foreign Office letters for about three years and then say nothing more about it!

Mr. DOUGLAS OWEN, in reply:—With the exception of the remarks of the last speaker I think I have very little to reply to. Mr. Gibson Bowles, I believe, rather misunderstood me when he thought that I said that the altered conditions would prejudice us as a naval power. I did not say that, or at any rate, I did not mean it. I am quite in accord with the view he expressed. As regards panic, Mr. Gibson Bowles and I do not agree, and I am sorry that I cannot agree with him, as I would be only too glad to do so. His opinion also is against that of the Chambers of Commerce and business men in the City. More than that, he is in the minority as compared with the conclusion deliberately arrived at by the Royal Commission on Food Supplies. The Royal Commission at the conclusion of their Report say: "We have to take into consideration the possibility of a panic hampering Government action in time of war." Their report refers to the panic which affected the disposition of the American fleet in the Spanish war, and says: "It is therefore neither unreasonable nor unjust to our people to apprehend that, with more reason, due to our dependence on overseas supplies, it will be likely to exercise pressure to the embarrassment of those responsible for the conduct of war." I entirely agree with Admiral Tupper; I think it is to be regretted that we have no system or organisation dealing with the possibility of a panic, and I think one ought to be promoted. With regard to Major Johnson's defence of the Foreign Office, the point that presents itself very strongly to me is this, and I will illustrate it by a concrete example. As we stand now, putting the Declaration on one side, say we are at war with a Continental Power. America has the right, and would certainly assert the right, of shipping to Bristol and Cardiff supplies of food, and she would deny the right of our enemy to interfere with those supplies. The result of that under the existing law would be this:—It is extremely improbable that our Continental enemy would dare to interfere with American neutral supplies coming to us. The Americans would resent it, and their powerful fleet would be at once prepared to back up their mercantile marine. Under the Declaration of London we are entirely giving away that position. We are signing, and we are asking America to sign, an Agreement that if we should be at war with a Continental Power, and that Continental Power should sink American ships carrying food supplies to Cardiff or to Bristol, America should have no right to protest. All America can say is—"Well, you must go on, if you think it is right, sinking these supplies. We admit that the Declaration of London gives you that power, and we shall appeal after the war is over to the International Prize Court."

Major JOHNSON: Do you seriously suppose, Sir, that the United States would actually do that? Do you think they would allow fifty ships one after the other to be sunk in one day? Do you really mean that the

United States of America, after one ship had been sunk and they had appealed to the Court, if on the next day they heard that fifty ships in succession had been sunk, the United States of America would not say they were not going to have that going on while the adjudication was going on?

Mr. DOUGLAS OWEN :—Certainly.

Major JOHNSON :—Then that is where we differ.

Mr. DOUGLAS OWEN :—America would be bound by the Declaration; she would have no right to interfere. That is where we differ essentially and strongly. I have to thank you, ladies and gentlemen, for the attention which you have been good enough to give me.

The Chairman (Admiral Sir C. A. G. BRIDGE) :—We have been sitting a considerable time, and I do not suppose anybody wishes to remain very much longer, and therefore the remarks I have to make will necessarily be few. It is natural that if there is anything likely or supposed to be likely to touch our maritime position in war it should receive very much attention in this country. There are, to begin with, important and influential sections of the community who are immediately interested, viz., importers of food and raw materials—the shipowners, millers, insurance companies; but far beyond the interest that they have is the interest of the very much larger class, viz., people of the weekly wage-earning working class. To them it is a question that is really vital. The Lecturer has drawn in one section of his lecture a very lurid picture of what we may expect to be the case when we are at war after the Declaration of London has been accepted by this country; and Admiral Tupper also has referred to that. I think it would be as well before taking any steps with regard to the conservation of stocks of food in this country, and the storage of food to read the evidence that has been given before more than one Royal Commission which has considered the subject in the last few years. One of the first things that will have to be settled is how long the war is going to last. Is it going to be a matter of a few weeks or a few months; or is it, as in most wars in which this country has been engaged, going to last for several years? If so, what arrangements should you make for the storage of food, the whole presumption on which you desire to store it being that the conveyance of it to your shore is interrupted or prevented altogether. Of course this whole question ought to have an impartial investigation. I do not mean impartial as opposed to unfair; but investigation which will show the two sides of the case; which does not merely present the weak points and strong points of one side and leave out the weak and strong points of the other side. Another thing is that when history is appealed to it should be correct; also when figures are given they should be accurate, and where inferences are drawn they should be reasonable and at the same time fairly obvious to the people who listen to what is said. With regard to history, the Lecturer said that we did not go to war on account of individual traders. I am afraid that would be hardly borne out by our history. To take an instance far enough back to be no longer a contentious matter, the "War of Jenkins's Ear," I was so impressed by it that I copied what Professor Seely said on the subject: "Commerce sometimes makes for peace; but, given the circumstances suitable to it, it very often makes for war." I

think it will be found that a very large proportion of the great maritime wars in which we have been engaged were brought about by questions of commerce.

Mr. GIBSON BOWLES: All of them.

The CHAIRMAN:—It appears to be thought, and the Lecturer is of that opinion, that our dependence upon imported food from across the sea is modern. As a matter of fact hundreds of thousands of the people in this country depended upon foreign grown corn brought by sea to this country between the years 1800 and 1815. With only about a quarter of the population that we have now in Great Britain, over 850,000—and if you are to take the proportion of corn which we consume now an even larger number than that—depended solely on foreign corn for their food. Therefore, this is no new thing. During our great war between 1792 and its definite conclusion at the Battle of Waterloo, our importation of cotton—raw material which we cannot produce here—increased between three and four-fold. Therefore circumstances then were to some extent such as we have them now. No doubt in degree they are aggravated, if you like to put it so. Then it is believed, and I notice that the Lecturer is of that opinion, that foreign nations in the matter of food are practically self-supporting or nearly self-supporting. Only last Saturday there was a very interesting letter in the *Spectator* by Mr. Edward Paul, who gave some remarkable figures. There is a suggestion of them in Mr. Douglas Owen's lecture. In 1909, in the four ports of London, Liverpool, Bristol and Cardiff, we imported 14,073,000 quarters of wheat. In the two ports mentioned by the Lecturer, Antwerp and Rotterdam, they imported 15,886,000 quarters of wheat. Therefore those two ports imported considerably more than we did in four; and accordingly we may start with the view that for us to be dependent on foreign foodstuffs brought to us during war is not a new condition; and we may also note the fact that the new condition is that foreign nations, with some of whom we may be at war, are dependent on foreign foodstuffs in a way they never were at the beginning of the last century. I think perhaps Mr. Gibson Bowles, on the question of panic, has dealt indirectly with the question of price. In his book he gives us some very interesting figures. He says that in September, 1792, before the Great War, wheat in England was 53s. 4d. per quarter; but in September, 1793, when the War had been going on seven months, it had fallen to 45s. He goes even further than that because he shows that the very high price of wheat—I think about three times as much as the last quoted—occurred two years after the Battle of Waterloo. What is more significant, and I think more relevant to the present question, is that in the late South African War, although freights rose all round from 50 to 100 per cent.—and this deals with one of the subjects mentioned by one of the speakers—the price of wheat fell from 27s. 4d. in October, 1899, to 26s. 11d. for the whole of the yean 1900. Those things should be taken into consideration, as they may tend to alleviate the terror which would be inspired if we took the picture which is drawn, not by the Lecturer alone, but by several of the speakers as to the condition this country would be in when we go to war. We should, of course, be dependent for our food supply and for everything that comes to this country upon British shipping and neutral shipping. Somebody just now read an extract from one of the letters of one of the Chambers of commerce—indeed I read it myself somewhere—to this effect: "We may be able to defend our own shipping on the sea, but how are we

going to defend the neutral shipping?" A more extraordinary failure to appreciate what naval warfare is I do not think it is possible to conceive. It would be a deeply interesting thing if one could peer into the mind of the person who penned that sentence. Where it is important is that it represents the objections raised to the Declaration of London by almost everybody who is objecting to it. To my mind, and to the minds of other people who have studied the question of naval warfare and what the position of this country would be, that is very alarming, because it shows us that there is an entirely mistaken view as to the position of the country in time of war. Look at this curiously significant fact. In this Lecture which we have listened to to-day with such great interest, and which I may say in the presence of the Lecturer and without any false praise, is an extremely able and well considered document, the Lecturer has performed the really remarkable achievement of writing nearly sixteen pages of small print on the question of the supply of food to this country in war, and the British Navy is never alluded to from the beginning to the end. There is not one single allusion to it. There is a mention of the fact that two of our naval officers were connected with the Declaration of London; but beyond that there is absolutely no allusion to the existence of the Navy at all. Naval officers are frequently mentioned, but they are always foreigners. What is the view that the British Navy will be about when these foreigners are doing all the remarkable things we are told they are going to do in this Lecture? Where this matter is so important, so momentous, is that it is evidently a very widespread view. Chambers of Commerce all over the kingdom, and indeed, as Mr. Wyatt said, all over the Empire, would not put forward the views they do if they did not hold opinions which are more or less represented by what I have just tried to describe. The first thing it is desirable that people should get into their minds, whether they belong to Chambers of Commerce or whether they do not, is that war is a game at which two can play; and our policy is not to sit down and allow other people to play the game as they like, but as Mr. Gibson Bowles very clearly and forcibly put it, to prevent them from playing any game at all. If we do that, neutral shipping bringing commodities to this country will be quite as safe as our own; and that they will be practically safe I think has been proved by our previous history. If it is impossible to get the public and those representative and important portions of the public who constitute Chambers of Commerce, and influential bodies of that sort, to realise what the conditions of naval warfare really are and what they specially are for an insular State like this, it seems almost like pouring water into a sieve to discuss the Declaration of London or any other International Agreement. It looks as though people were of opinion first of all that we should stand on the defensive and that we should defend ourselves with pieces of foolscap paper. That is no imagination on my part. I think I can give you word for word an expression used in one of the letters of one of the Chambers of Commerce. It finds fault with the Declaration for recognising the fact that if we are at war we shall have to depend for our existence on our own right arm! In the name of heaven, what else are we to depend upon? I mention those things to show how very far from an appreciation of the real state of things people in these very important positions are; and I think we ought specially to thank Mr. Douglas Owen, not only for giving us a Lecture of great interest which will make all of us think a great

deal, but also for having brought into a strong light how common that opinion is amongst people who are, as I say, in important and influential positions. We ought to thank him for warning us of a danger not threatened by any enemy but growing up in our own midst.

Major-General Sir T. FRASER, who, owing to the late hour to which the discussion was extended, did not find the opportunity to speak, has sent the following note of his intended remarks:—

I noticed at the lecture of the 18th on the Declaration of London, a feeling, to which expression was given, that after all we could, when it was ratified, tear it up in war. It was so late I refrained from delaying the ending, but I desire to say that we cannot tear up Treaties without damaging discredit. The last two great European settlements were in part torn up, and whatever may have been the source that instigated the acts, the consequences have still to be reckoned with by the perpetrators. The example of "Punica Fides" on the part of our great noval prototype, did not save Carthage in the end. Why, when we are free now, should we handcuff ourselves and invite friendly nations to do so too, to please a certain Continental desire for "uniformity," which is rather a "conformity" to what suits them best? We may, perhaps, reckon on breaking loose to our own injury; but will friendly nations do so to oblige us? Better stand fast, and "never give up anything."

THE VON LÖBELL REPORTS ON MILITARY MATTERS IN 1909.

Précis from the German by Lieut.-Colonel E. GUNTER, *p.s.c., (late) East Lancashire Regiment.*

(Continued from January JOURNAL, p. 72).

PERMANENT FORTIFICATION.

The Report contains a long and valuable essay on Permanent Fortification, and brings to notice several modern works and articles on the subject under several headings connected with Fortress Warfare, which there is no space here to epitomise. Coast Defence and some new proposals as to this are also touched on.

There is little to report, it says, as to new works or important additions and improvements. The development of Fortification in certain countries in 1909 is, however, shortly given, of which the following is a brief abstract:—

Austria-Hungary. — *Beiheft* No. 112 of the *Internationale Revue* considers the most important points on the Adriatic to be Trieste, Pola, Fiume, Sebenico, and Cattaro. The Brion Islands lie N.W. of the Bay of Pola, and secure the Roads of Fasana. The northern inlet of the Fasana is very strongly fortified. On the mainland are the Barbariga Group of Forts [Fort Foens, the Benedetto Battery, four 15 cm. (5.9 in.) guns, the Caluzzi Mortar Battery, with four 21 cm. (8¼ in.) mortars and a Q.F. Battery], and Fort Minor on Brioni-Minor, two 30.5 cm. (12 in.), two 28 cm. (11 in.), and four 15 cm. guns, and the St. Nicholo Mortar Battery. The southern entrance is defended by Forts on the Peneda Island (12 in.), the Cavasoda Battery (four 6 in.), the Naviglio Mortar Battery, and the Verudella group. Pola is defended on the land side by a girdle of Forts. Further details are given. Fiume does not seem to be fortified as yet.

Belgium. - The Government gave orders in 1909 for the erection of 11 Forts and 12 intermediate works round Antwerp. Fort Ertbrand and the intermediate works Smoutakes and Drijhoek are being constructed on the North side. The three other Forts and intermediate works there are already finished.

The projected Forts on the East side were not yet commenced. Four Forts and 3 intermediate works are to be constructed here. On the S.E. the Koningshoyckt Fort, with its 3 intermediate works, had still to be constructed, but 4 Forts

are ready. On the South side 3 Forts had still to be built, with 2 intermediate works. When these are all finished the girdle of Forts on the right bank of the Scheldt will be complete. Fort Rupelmonde on the left bank is finished. One large Fort, Haesdonck, and 2 intermediate works await completion here. The circumference of the girdle will be 100 kilometres (62½ m.). These works will, on the whole, cost about 100 million francs (£4,000,000).

Denmark. — The Minister of War has been obliged to postpone his project for new fortifications on the land side of Copenhagen until 1922; on the other hand, the strengthening of the Coast Defences has been sanctioned, for which 16 million kronen (nearly £900,000) has been voted. The Harbour of Copenhagen is not considered well fortified. The Report gives details for which there is no space here. Attention is being chiefly directed towards the South, and the idea of improving the Forts of Körsör and Nybourg to secure the passage of the Great Belt has been given up. The same is said regarding the Saxe Fiord in the North of Zeeland. It is said that it has been agreed in case of a war between England and Germany to give up the Harbour of Esbjerg to the British, in which case no further fortifications in the North would be required.

France. — The Report has many pages giving the treatment of questions of Fortification in France, especially those discussed by Lieut.-Colonel Piarrori de Mondésir, which it is impossible here to go into. He describes the measures taken by advanced positions, "*positions fortifiées exterieurés,*" to engage which, it is thought, the besieger would be obliged to detach fractions of his siege artillery, &c.

Italy.— It was thought the Straits of Messina would be blocked up by the terrible earthquakes there. But this is not the case. The Professor of Geology, Dr. Grävenitz, has reported that there are at the southern entrance 450 metres depth of water. The Batteries and Forts have suffered but little.

The Fortifications of Venice and Brindisi are being proceeded with.

SMALL ARMS IN 1909.

General. — In the year under review a new cartridge with a pointed bullet has been introduced by various States giving improved ballistic effect. In certain States, however, difficulties have been met with (see below Report on individual armies), so that it is probable that their rearmament with automatic rifles. Mexico has been the first State to adopt one of these, the Mondragon 7.7 mm. (.276 in.) repeater rifle. In Switzerland it seems probable than an aluminium envelope for the new rifle cartridge will be adopted. This will enable an infantryman to carry 160 rounds where he now carries 120.

The Hiram-Maxim "Silencer" is described and discussed. General Rohne's objections to it are quoted. These are rapid heating after a few shots, making aim difficult owing to the vibration of the air about the muzzle, and the obscuration of the objective, the impossibility of fixing bayonets while the "Silencer" is on, and the loss of time in removing the "Silencer" owing to its heated state should it be suddenly necessary to fix bayonets. Whether the advantages outweigh these can only be determined by exhaustive trials with troops. The Report appends its usual table of small arms in use by the Military Powers in 1909 (or in process of issue) brought up to date.

Austria-Hungary. — A detailed description is given of the new Austrian hardened steel pointed bullet with leaden jacket. It weighs 10 grammes (154.3 grains), and will be fired with the new powder. The trajectory is much flatter, the fixed sight being used up to 800 metres. The muzzle velocity is 2,738 f.s., and it is said to penetrate gun shields of the usual thickness at 600 metres. The accuracy is much improved. It is, however, not yet in use, and the difficulties in the way do not indicate its introduction in the immediate future.

France. — In the Senate M. Pierrê Baudin expressed the opinion that the introduction of a new rifle was a pressing necessity, as the Lebel had been 23 years in the service, and had done its work. The 200,000,000 fcs. (£8,000,000), which would be the cost of rearmament, would have to be spent. There is no doubt the new weapon will be an automatic rifle, and when France adopts this all the other leading Powers will follow suit.

Germany. — The rearmament of the Cavalry with the new '98 carbine is practically complete. It is 15 cm. (5.9 in) longer than the old weapon. Though it weighs 1 lb. more, this is almost made up by the 60 rounds carried weighing 12½ ozs. less than the former ones. It is sighted to 2,000 metres, and its shooting is nearly equal to that of the Infantry weapon. It has been used in South-West Africa with good results. In detail its weight is 3.6 kg. (7.92 lb.). Its muzzle velocity is about 865 m. (2,466 f.s.). Its pointed bullet weighs 10 gr. (154.3 grains—about ⅓ oz.). At 700 metres the *greatest* height of the trajectory is only 1.9 metres (6.23 ft.), whereas with the old '88 carbine it was 4.3 metres (14 ft.).

The Field Artillery are not yet armed with the carbine. The success of the new automatic pistol '08 has caused many to advocate this as the preferable weapon for the men. It is possible that the drivers, as well as gunners, may be armed with these. The length of this pistol is 217 mm. (8.54 in.), its calibre 9 mm. (.35 in.). The barrel (six-grooved) is 102 mm. (4.02 in.) long. The weight of the pistol is 835gr. (1 lb. 13½ oz.). The magazine holds 8 cartridges in the handle, each weighing 12½ gr. (193 grains, not quite ½ oz.). The bullet weighs 8 gr. (not

quite ⅓ oz). It will carry 1,500 metres, and penetrates beech .05 m. (2 in.), and fir .14 m. (5½ in.) at 50 metres' distance.

Great Britain. — A Committee has been sitting, with Brig.-General H. H. Wilson as chairman, to enquire into and report on an automatic rifle suited for the British Service. The present Lee-Enfield is looked on as no longer the equal of that in use by other armies, as its breech will not admit of its firing a pointed bullet with increased muzzle velocity. It appears, according to the *Army and Navy Gazette*, that the trajectory of the present Lee-Enfield firing regulation ammunition is at a distance of 800 yards (732 metres) only half as flat as that of the German rifle firing the pointed bullet ammunition at that distance. A Service Miniature Rifle for the instruction of Cadets' Rifle Shooting has been introduced of 5.6 mm. (.22 in.). All details of this rifle are given. The *Army and Navy Gazette* in its number of the 21st July, 1909, brought to notice the Farquhar-Hill automatic rifle. The mechanism was said to be simple, and the weight not greater than that of the short Enfield. It congratulated the enterprise of inventors, who worked without State aid or subsidy at things of such national importance. The State should, as it had often urged, lend a hand to those engaged in this industry.

Italy. — The well-known Major Cei† and Captain Revelli, of the Artillery, have, it is stated in the *Esercito Italiano*, made some successful experiments in converting the present breech-loaders into repeater rifles by means of an automatic loading arrangement. With the Cei system it is said 100 shots can be fired in the minute against 18 at present; 100 of the m/91 rifles have been thus converted in Terni, and are to be tried by a Company of Infantry. As, however, the conversion is an expensive business, it is questionable whether the whole Italian Army will be thus supplied.

Mexico. — The first Army to adopt an automatic rifle has been that of Mexico, where the energy of the President, General Diaz, has procured them a number of Mondragon repeating rifles. This Army has until now been armed with the Spanish Mauser, calibre 7 mm. (.276 in.), the rifle with which the Spanish Army has been armed since 1893, and the weapon used chiefly by the Boers in the Boer War, 1899-02. It weighs about 9 lb., it carries 10 rounds in its magazine, it can deliver 60 shots a minute with a muzzle velocity of 2,335 ft. sec. It is quite a strong serviceable weapon. The pointed bullet has not been adopted, and its adoption by the whole Army will proceed gradually, as there is no disadvantage of one part being armed with one weapon and part with another if the latter, as here, is of the same calibre and the same ammunition is used for both. The expense of rearmament will, therefore, be but little felt. The inside of the breech is cleaned out automatically by the breech action each time it is fired.

†See THE JOURNAL for February, 1909 p. 220—E.G.

Spain. — The Spanish Government have adopted the new pointed bullet,§ which is of hard lead, 2 per cent. antimony, copper-nickel-plated, its weight being 10 gr. (154.3 grains), and the whole cartridge 24.5 gr. (.83 oz.). A new "*Spanish-Bayard*" pistol, an improvement on the Bergmann made in Belgium has been adopted as Mark 1908 and given satisfaction. Full details are given of this.

Switzerland. — The introduction of the pointed bullet has necessitated giving the old rifles new barrels of the same calibre, some change in the breech action, and new sights; the magazine now contains 6 rounds the muzzle velocity is calculated to be 2,673 f.s. The trajectory is flat up to nearly 800 yards against targets 5½ ft. high.

SOME DETAILS OF MAGAZINE RIFLES IN USE* FROM VON LÖBELL'S *Jahresberichte*, 1908.

Nation in Alphabetical Order	Designation or System.	Year.	Calibre.		No. of rounds in Mag.	Weight of †Bullet.	Weight of Rifle without bayonet.	Distance sighted to.	Muzzle Velocity.
			mm.	in.		grs.	lbs. ozs.	yds.	f.s.
Austria	Mannlicher	1895	8	·315	5	156 S	8 1	2,452	2,320
Belgium	Mauser Lee	1895	7·65	·275	5	216	8 9	2,817	1,968
France	Lebel ...	1893	8	·315	8	197·5 S	9 4	2,817	2,301
Germany	Mauser ...	1898	7·9	·311	5	154·3 S	9 —	2,242	2,902
Great Britain ...	Lee-Enfield (Mauser)††	1905	7·7	·303	10	215	9 4	1,962	2,099
Holland	Mannlicher	1895	6·5	·256	5	156·5 S	9 6	2,289	2,300
Italy	Mannlicher-Carcano.	1891	6·5	·256	5	126·5 S	8 6	2,180	2,320
Japan	Arisaka Medji.	1897	6·5	·256	8	211?	8 9	2,180	2,410
Mexico	Mondragan (Automatic)	1909	7	·276	10	172	9 1	2,180	2,326
Russia	Mousin-Nagant.	1898	7·62	·299	5	139 S	9 12	2,180	2,378
Spain	Mauser ...	1893	7	·276	5	154·3 S	8 13	2,180	2,820
Switzerland ...	Schmidt Rubin.	1896	7·5	·295	6	211 S	9 8	2,187	2,673
United States of America.	Springfield	1903	7·62	·299	5	157 S	8 12	2,190	2,837

* I have given these figures as nearly as possible from the original, but some of them seem to me of doubtful accuracy. - E.G.

† S opposite the weight of bullet signifies the sharp or pointed bullet. The others have the old rounded original shape.

†† This is as in the original, and perhaps means the short Lee-Enfield is like the Mauser.

§ Reported as tried last year, see THE JOURNAL, 1910, p. 378.

Machine Guns. — Some new lighter Machine Guns have been tried since the last report; the *Madsen*, the *Odkolek*, already described, the Bergmann, and a portable Hotchkiss. A Table is given of all Machine Guns in use by European and outer European States. The Maxim appears to be preferred by 20 out of 31 described. Most States seem inclined to adopt portable shields for these guns. Great Britain is thought to have decided on principle on having rifle-shaped Machine Guns.

In Belgium exhaustive trials of portable Machine Guns designed to fire bullets of the calibre in use in the Field Army are, it is said, to be carried out at Liege. The following systems are, it is said, to be tried: Hotchkiss, Steyr, Schwarzlose, the Herstal, Maxim, the Danish Rekyl, and the Rexer. Japan is said to have ordered 1,500 of the improved Hotchkiss Machine Guns. A detachment of 6 Machine Guns is to be given to each Infantry Regiment, and one of 8 Machine Guns to each Cavalry Regiment. In Turkey Machine Gun detachments of 8 Machine Guns are being formed, 280 being ordered for this. The 2nd Army Corps is to have 8 detachments, and the 3rd 6 Machine Gun detachments.

ARTILLERY MATERIAL, 1909.

The tendency to occupy concealed Artillery positions noted in last year's Report is more pronounced now in Germany, and it has its influence on the designing of Artillery material. Progress has been made in observation apparatus. Especial attention has been paid to telephone arrangements. The Battery Commander will often be obliged to take up his observation position at considerable distance from his Battery. Hence the necessity of the telephone. The apparatus may be carried in a special wagon or on pack horses. The preference for covered positions necessitates methods of aiming and fire that can be carried out from these. Gun shields have now been made with a hinged roof and with side wings for better protection. These have not yet been brought into use. Improved time fuses have been introduced. The old fuses suffered from the effects of the weather, and the uniform action was affected by the presence of the air; the higher and the longer the flight the greater the effect of this. Now Krupp has designed a fuse with a sort of clockwork arrangement, set in motion by the action of firing, which regulates the time of flight to within fractions of a second. The cone of dispersion is about 20 per cent. narrower, and the range of the shrapnel increased by the use of these instead of the ordinary time fuses. These fuses are now being ordered by States which at first did not approve of them.

Certain improvements in Mountain Guns to get increased elevation are mentioned. Barrel-recoiling action for these is mentioned, but not discussed. Attention is drawn to the

arrangements in the gun carriage, by which the change of elevation from 15° to 30° in the 7.5 cm. Krupp Mountain Gun (of which photographs are given) is effected.

The inefficacy of Field Guns against shield-protected Artillery revives the oft-debated question whether the light Field Howitzer is not the gun of the future. Increased attention is being given to this in most States. Light Howitzers of recent pattern have shields. Improvements in the manufacture of steel enable thinner plates to be used for the gun carriages to counteract the weight of the shields. The Austrians have introduced a new Mountain Field Howitzer.

The Heavy Guns are also provided with shields, and are barrel-recoiling, and all the chief Powers have added these guns to their Field Artillery to overcome the shielded Field Guns. Whether heavy Field Howitzers should fire only common shell or be provided with shrapnel also is still debated. In most States the Siege Artillery are of newer and improved pattern and more mobile, so as to be able better to oppose the Fortress Guns of the besieged. They are provided with large shields [a photograph is given of Krupp's 15 cm. (5.9 in.) with shield and wheel belts, as also of the Ehrhardt 21 cm. (about 11⅔ in.) Siege Mortar.]

The Krupp 6.5 cm. (2.56 in.) airship defence gun L/35, described last year, * can now be fired with an elevation of 70°, and ranges 5,700 m. (about 3½ miles). Krupp uses the explosive Shells with smoke track, Ehrhardt Shrapnel against airships. For destroying aeroplanes that will undoubtedly be much used in war for reconnaissance shrapnel is naturally indicated, but Field Guns can only be effectively used within the limits of their extreme elevation, and they are unsuited to rapidly following the swift movements and changes of elevation of modern aeroplanes. Perhaps it would be better to provide a proportion of the Field Guns of an Army with special elevating carriages and gear.

ARTILLERY MATERIAL IN INDIVIDUAL STATES.†

Austria-Hungary. — The rearmament of all the Field Artillery Regiments is now complete.†† The new guns are painted olive green. All Field and Howitzer Batteries are provided with telephone apparatus. Each Battery has a telephone wagon and 3 telephone patrols provided with 3 kilom. (1⅞ miles)

* See THE JOURNAL, March, 1910, p. 375.—E.G.

†A glance at the photographs of some of the Krupp, etc., guns and howitzers of different calibres given at the end of the Von Löbell Original Reports for 1908-1909 will give a better idea than a mere study of these details. THE JOURNAL is, of course, unable to reproduce the photos in this précis.—E.G.

††See THE JOURNAL for March, 1910, p. 375.—E.G

of wire. The Artillery Regiment Headquarters has besides 10 km. (6¼ miles) wire, and an additional "statron," so that 6 "stations" are available.

In view to mountain warfare, the carriages of the 8 cm. (3.2 in.) Field Guns have been made portable, and the parts so arranged that they can be put together quickly for use on narrow mountain paths. One Battery in each Artillery Regiment is to be so equipped. Details are given of the various parts of these portable gun carriages, and of the seven operations by which they are mounted in a confined space, are given. They are without shields.

The Government, in face of the political situation early in 1909, ordered 5 Batteries of 7 cm. (2.75 in.) Mountain Guns from both the Austrian State and Skoda Arsenals. They were barrel-recoiling, the barrels being all wrought of bronze in the first named. They are all of the latest pattern, and provided with shields. Consequently the intended conversion of the old 7 cm. M/99 has been suspended. Rearmament with the 10 cm. (3.94 in.) barrel-recoiling Mountain Howitzer has made rapid progress; the Batteries of the 15th and 16th Army Corps all have them. They are made in the Skoda Works. Full details of these, of especial interest to Artillery officers, are given. For these there is no space.

France. — The Manœuvres of 1909 showed the defects of the French Field Gun, its weight, unhandiness, and the little protection its small shields afforded. The whole of the Artillery is now provided with Field Telephone apparatus. General Langlois continues to urge the necessity for combating shielded Artillery and troops in trenches by some kind of high-angle fire, though they have not introduced a light Field Howitzer. General Mercier remarked on the results obtained from an improved common shell. This is really the "*obuse xplosif.*" According to the *Royal Artillery Journal* the French Government has decided *not* to adopt the barrel-recoiling Mountain Gun. According to General Mercier there were in July, 1909, 72 of the 155 mm. (6.1 in.) Heavy Artillery Guns ready for the Service. These carry a 40 kg. (88 lb.) shell containing a 22lb. charge of Mêlinite.

Trials have been made with a 24 cm. (9.5 in.) "Tournier" Coast Defence Gun. It carries a shell of 163 kg. (3.1 cwt.) weight, with a muzzle velocity of 500 metres (1,635 f.s.) to a range of about 5 miles.

Italy. — The new 8.7 cm. (3.47 in.) guns to replace the old bronze ones of like calibre have been ordered in part from Krupp, and the remainder of the 111 Field Batteries are to be armed from the home arsenals. It is hoped they will all be supplied by the summer of 1911. The new Krupp barrel-recoiling M '06 guns gave great satisfaction in last year's

Autumn Manœuvres. The result of the trials with Howitzers (carried on since 1906) of 10.5 cm.(4.1 in.) and 14.9 cm. (5.87 in.) calibre is that the Krupp 14.9 cm. (5.87 in.) with fixed barrel-recoil has been decided on, and 112 of these guns ordered from that firm.

Japan. — Six Batteries of Horse Artillery are to be added to the Army, and are to be armed with a new light gun. They have, with their Heavy Artillery, a medium Field Gun, which is intended to supplement the shrapnel fire of their ordinary Field Gun† at the longer ranges.

Russia. — The Report does not give much information about the Russian Artillery Material. Mountain Guns of 75 cm. (2.95 in.) of the Schneider pattern were adopted after prolonged trials. These are, however, to be manufactured in Russian gun factories. After many years' trial, the Krupp 12.19 cm. (4.8 in.) long barrel-recoiling Field Howitzer has been decided on as the heavy Field Howitzer. It has a hinged shield. It is provided with a "Goerz" reverse-aiming telescope. The weight of the Howitzer and limber is about 43½ cwt. (the Howitzer itself about 11 cwt.). The shell weighs 50½ lb., shield .19 in. thick. The muzzle velocity is about 851 f.s. The elevation and depression are 43° and 5° respectively, lateral 2°, height fired over 3.3. Its track is 4½ ft. The pattern of the Siege Howitzer has not yet been settled.

Switzerland.— It is said that trials have led to the adoption of the 12 cm. (4.7 in.) Krupp Field Howitzer, and that each of the 6 Field Divisions will include a Brigade of 2 Batteries each of 4 Howitzers. These would be heavy Field Artillery.

Turkey. — Krupp is said to have received the order for the increase of the Field Artillery by 90 barrel-recoiling Field Guns. In the street fighting in Constantinople a Krupp shielded Battery is said to have been exposed to heavy rifle fire from a distance of about 500 metres in the open, and it only lost one non-commissioned officer, who imprudently looked out from behind the shield of his gun. There were in all 400 hits on the shields. The funnel-shaped cap closing the aperture in the middle of the shield answered particularly well, for many bullets were embedded here which would otherwise have penetrated between the barrel and the shield.

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†See THE JOURNAL for March, 1910, p. 396.—E.G.

THE FIRST AFGHAN WAR, 1838-1842.

By Captain BRUCE HAY, p.s.c., Queen's Own Corps of Guides.

AFGHANISTAN saw in the nineteenth century various English expeditions under the most diverse circumstances.

Their object was always to re-establish or to strengthen the preponderance of the influence of England in the country —the uniting, as it were, of Afghanistan to the Anglo-Indian system, which does not mean actual annexation, but the maximum of political influence and the minimum of annexation.

The country has its importance as being one which is a thoroughfare to British India. It is as such that it has been fought for at all times by the most different nations. Through it the great high road conducts to the treasures of India; on the other hand, treasures are not to be found in Afghanistan itself. The great conquerors, such as Genghis Khan in the thirteenth century, and Timur, at the end of the fourteenth century, have left behind them traces conspicuous in the country to this day of their formidable devastations in their progress to the south.

The territory of Afghanistan is somewhat larger than Austria-Hungary, and amounts to some 12,000 square miles. It is a land of mountains, a great elevated, barren *plateau*, some 6,000 feet above the sea, overlooked by lofty mountain ranges. The country is well watered, but has no navigable river besides the Helmand; other rivers are the Hari-Rud, the Kabul, the Kurram, and the Gomal, the latter three bursting through the Suliman Range to the River Indus, and forming the only connection with the sea.

The means of communication in 1839 were very limited. There was only one high road, namely, that from Herat to Kandahar, and thence by Ghazni to Kabul; this is the "Royal Road" marked out by Alexander the Great when he undertook an expedition to India. Other routes were little better than mere tracks.

England and Russia had for some years previously been striving for the paramount influence in Afghanistan, and in 1838 Russia made the first attempt to enter into an alliance with her, with the avowed intention of obtaining easy access to India. When the British Governor-General of India had ascertained that the then Amir, Dost Muhammad Khan, had received assistance in money from Russia, and was endeavouring

to gain over the rulers of Sind in the conflict about Herat, which had been invaded by the Persians, he, on October 1st, 1838, declared war.

In justice, however, to Dost Muhammad it must be said that he made every effort to remain on terms of friendship with us, and in this he was ably supported by Sir Alexander Burnes, our agent at that time in Kabul. But Lord Auckland (the Governor-General) would not have it. His policy was one of all "take" and no "give." He more than once severely censured Burnes, who was loyally endeavouring to carry out a policy of which he himself did not approve, and eventually at the end of April, 1838, Burnes was compelled to leave Kabul with nothing accomplished. Vickovitch, the Russian Agent, had arrived in Kabul during the last few days of 1837, and Dost Muhammad, immediately on his arrival, had gone to Burnes for his advice, actually offering to turn the Russian out if only he had the promise of sympathy from the British. Burnes, tied down to his instructions, could promise nothing, the consequence being that, in contrast to his frigid reception on first arrival, Vickovitch four months later was honoured by being publicly paraded through the streets of Kabul, he having promised the Dost everything that the latter wanted.

Thus was the Amir forced by our "do-nothing" policy, as Burnes termed it, into the Russo-Persian alliance. He saw ere long how specious were the promises of his new friends, who were unable really to assist him. A subaltern of the British Army, Eldred Pottinger, within the walls of Herat, was setting them at defiance.

As an instance of Russia's methods, it may here be mentioned what befel the unfortunate Vickovitch. When he returned to Persia in 1839, after giving a full account of his mission to the Minister at Tehran he was instructed to proceed direct to St. Petersburg. On his arrival there, full of hope—for he had discharged the duty entrusted to him with admirable address—he reported himself, after the customary formality, to Count Nesselrode; but the Minister refused to see him. Instead of a flattering welcome, the unhappy envoy was received with a crushing message to the effect that Count Nesselrode "knew no Captain Vickovitch, except a certain adventurer of that name who, it was reported, had been lately engaged in some *un*-authorised intrigues at Kabul and Kandahar." Vickovitch understood at once the sinister meaning of this message. He knew the character of his Government; he was aware of the recent expostulations of Great Britain, and he saw clearly that he was to be sacrificed. He went back to his hôtel, wrote a few bitter, reproachful words, burnt all his other papers, and blew out his brains.

Not until the siege of Herat by the Persians had lasted nine months did Lord Auckland, at the eleventh hour, make a

demonstration in the Persian Gulf. A battalion of Marines and several native regiments were sent from Bombay and landed on the Island of Karrak about the middle of June, 1838. This movement, small though it was, had the most surprising effect, for when the Shah of Persia learnt that unless he withdrew from before Herat it meant war with England, he raised the siege and set out homeward.

The influence of England, greatly impaired by the parsimonious system of late years, was now restored—in a large measure owing to Eldred Pottinger. Nothing was wanting but a conciliatory and liberal policy to secure the Afghan chiefs, now violently roused against Russia by the onslaught on Herat, in the English alliance.

Not only were these favourable circumstances not turned to account, but they were rather rendered a prolific source of evil by the policy of the British Government. Instead of entering into an alliance with Dost Muhammad, the ruler of the people's choice, and who by his vigour and capacity had won for himself a throne by showing he was worthy of it, they determined on dethroning that chief and placing the exiled, dis-crowned Sovereign, Shah Shujah, on the throne. The fact of his having proved incapable of ruling or maintaining himself in power and of his having been for thirty years an exile in British India, was considered of less importance than that of having a Sovereign on the throne, who owed his restoration to British interference, and was identified with our Government by present interest and past obligation.

Without going into detail, it may at once be said that the result proved that a greater and more lamentable mistake never was committed by any Government. It was to the last degree inexpedient for our Indian Empire, for instead of erecting a powerful barrier against the threatening dangers of Russian aggression, it was calculated to weaken that which did already exist, to involve the English Government in the endless maze of Afghan politics, and, instead of bringing to their support a powerful and brave ally, to encumber them by the defence of a distant dependent.

These and other considerations, which were strongly urged upon Lord Auckland by Burnes and those best versed in Afghan affairs, were entirely disregarded by him.

After a brief negotiation with the "Pensioner of Ludhiana," as Shah Shujah was called, a tripartite treaty was concluded at Lahore on June 26th, 1838, between the Governor-General, Ranjit Singh, and Shah Shujah, which, to the infinite astonishment of the latter, restored him to his throne.

The principal articles of the Treaty were:—

"That the British Government and the Chiefs of Lahore recognised Shah Shujah as the Sovereign of

Afghanistan, and he on his part engaged to cede Peshawar, Attock, and their dependencies to the Rajah of Lahore, the latter undertaking to despatch a body of troops to aid in re-establishing the Afghan Prince on the throne;

"That the three contracting Powers engaged mutually to defend each other in case of attack;

"That the Shah promised not to enter into any negotiations with any foreign State without the knowledge and consent of the British and Sikh Governments, and bound himself to oppose any Power invading the British and Sikh territories;

Lastly, "That Shah Shujah promised not to disturb his nephew, the Ruler of Herat, and renounced all claim of supremacy over the Amirs of Sind."

It was at first intended to assist Shah Shujah by only a small British auxiliary force, and the Governor-General issued accordingly a proclamation that the Shah should enter Afghanistan surrounded by his own troops.

With this view, 4,000 Irregulars were raised and placed under the nominal command of Prince Timur, his eldest son, but really directed by Captain Wade and other British officers, and paid entirely by the British Treasury.

To this force were to be added 6,000 Sikhs, under Ranjit Singh's generals, and the Sikh Rajah was also to station a force of 15,000 men in observation about Peshawar.

It soon transpired, however, that such troops would not suffice, and that if Shah Shujah was really to be restored it must be accomplished by a British force capable of overrunning Afghanistan.

The British force destined for the expedition was known by the somewhat high-sounding title of "The Army of the Indus," after the style of Napoleon's bulletins, and was all assembled at Ferozpore towards the latter part of November, 1838. It amounted to some 28,000 men (including but one British cavalry regiment and three British infantry battalions), with 100,000 followers and 60,000 transport animals.

The Command-in-Chief was vested in General Sir Henry Fane, the then Commander-in-Chief in India, in whom the troops had unbounded confidence.

The Sikh forces had also concentrated in the vicinity, and before any move forward was made, a series of magnificent reviews and pageants by both armies took place, lasting until the extreme end of November.

News had by this time arrived of the raising of the siege of Herat and the retreat of the Persian army. This did not

deter Lord Auckland from despatching the expedition, determined as he now was to depose Dost Muhammad; but less preparation was now deemed necessary, and a part only of the assembled force received orders to move forward.

It consisted of:—

Three brigades of infantry.

One strong brigade of cavalry.

A considerable number of siege, horse, and field guns, amounting to some 9,500 men of all arms, termed "The Bengal Army," while 6,000 more were raised as Shah Shujah's contingent.

Sir Henry Fane, on the reduction of the force, resigned the command, which passed to Sir John Keane, another Peninsula veteran, but one who was not so well known to the troops. He was at that time in command of the Bombay Army, then moving from that port by sea to Karachi, and would assume the Command-in-Chief of the expedition on the junction of the two divisions. Meanwhile Sir Willoughby Cotton commanded the Bengal Army.

Shah Shujah's contingent, under Major-General Simpson, passed through Ferozpore on December 2nd, 1838, and the Bengal Army followed on the 10th.

The route chosen ran S.W. through Bahawalpore to Bukkur, where the Indus was crossed and a north-westerly course was pursued, passing through Shikarpore, Dadur, Quetta, and the Khojak, to Kandahar. The devious route thus adopted was rendered unavoidable, as Ranjit Singh did not wish the force to pass through the Punjab, and, in addition, the Amirs of Sind had to be coerced.

The Bengal Army, moving parallel to the Sutlej, availed themselves of water-carriage, and their sick, hospital stores, and some of the supplies were sent on in boats, which were subsequently to be used in bridging the Indus.

Bahawalpore was reached on December 29th, Sind territory entered near Subzulkote on January 14th, 1839, and the Fort of Bukkur occupied on January 29th.

The enormous number of 30,000 camels and 38,000 camp followers accompanied the Bengal Army, only 9,500 fighting men strong.

Kaye comments thus on this:—

"Sir Henry Fane had exhorted the officers of the Army of the Indus not to encumber themselves with large establishments and unnecessary equipages; but there is a natural disposition on the part of Englishmen in all quarters of the globe to carry their comforts with them. It requires a vast

deal of exhortation to induce officers to move lightly equipped. The more difficult the country into which they are sent—the more barbarous the inhabitants—the more trying the climate, the greater is their anxiety to surround themelves with the comforts which remote countries and uncivilised people cannot supply, and which ungenial climates render more indispensable."

It is on record that one officer of the 16th Lancers took with him forty servants!

The Amirs of Sind now proved somewhat refractory with regard to a war contribution levied on them, and so Cotton and Keane (who had now arrived by sea) were despatched on either bank of the Indus against Hyderabad, the capital of Sind. The two columns were entirely ignorant of each other's operations, and so thus early was the want of a proper intelligence department painfully apparent.

Shah Shujah with his contingent was now at Shikarpore, and he was there joined by Macnaghten, who had been appointed political director of the campaign. The latter looked on this movement on Hyderabad as converting the expedition for the restoration of Shah Shujah into a campaign in Sind, and arrested it. Thus began the friction between the military and political authorities, which was hereafter, as will be seen, in constant evidence.

Cotton retraced his steps to Rohri, crossed the Indus, and reached Shikarpore on February 20th.

While the Shah remained halted there with his contingent, Cotton resumed his advance on the 23rd, reaching Dadur at the mouth of the Bolan Pass, a distance of 146 miles, on March 10th. These sixteen marches were only accomplished with great difficulty, water and forage being so scarce as to entail great privations on the animals, large numbers of them dying. Cotton now had a month's supplies on his transport animals, and seeing little or no chance of collecting more, he resumed his march on the 16th, entering the Bolan.

The pass is nearly 60 miles in length, and its passage was accomplished in six days. Burnes had gone on in advance and obtained the aid of the Baluchi authorities, and though in consequence the difficulties remaining were only physical, these were far from being inconsiderable.

On March 26th, Quetta was reached. It is described as "a most miserable, mud town, with a castle on a mound, on which was a small gun on a rickety carriage"; and here again the prospect of raising supplies seemed hopeless.

Sir Willoughby Cotton acted promptly. He sent his Adjutant-General back to Sir John Keane for orders, and Burnes

was despatched to Kelat, where he was successful to a certain degree in raising some supplies. The troops were meanwhile placed on reduced rations.

The Shah and his contingent moved from Shikarpore on March 7th, followed by Sir John Keane and the Bombay Division. Headquarters were eventually established at Quetta on April 6th, and Keane assumed the supreme command.

The march was resumed next day, one brigade, under General Nott, being left to garrison Quetta. No resistance was offered during the passage of the Khojak, and the Shah and his contingent now headed the force, being joined by many chiefs and people of the neighbourhood.

Macnaghten obtained authentic information of the flight of the Kandahar sirdars towards Persia, and on April 25th Shah Shujah entered the chief city of Western Afghanistan, accompanied by the British envoy, his staff, and the principal officers of his contingent. The wearied troops now found rest and food. Their privations on the march, entirely unopposed though it was, had been enormous; 20,000 animals had perished, and their remains had for a considerable time been the principal food of the men, whose rations had been reduced to one quarter the normal quantity; while of water, so great had been the lack throughout, that historians relate that at times there was not even enough to mix the medicines of the sick.

The brief local excitement which greeted Shah Shujah on his entry into Kandahar was by no means national enthusiasm. When the first outbreak of curiosity had subsided the feeling which remained was one of sullen indifference. Murmurs were heard against the Infidels, and it was soon apparent that his throne could only be maintained by British bayonets.

Meanwhile the army of the Indus remained inactive at Kandahar. Supplies had to be collected, and in order to obtain them in sufficient quantities, it was necessary to await the ripening of the crops.

On May 9th a brigade was despatched, under Colonel Sale, to Ghirishk, 75 miles west, in pursuit of the fugitive sirdars, but no resistance was encountered, they having fled across the Persian border. Sale accordingly returned to Kandahar.

Eventually the army resumed its march on June 27th, by which time the harvest had ripened, and the transport animals gained strength, but sickness was very prevalent among the troops, and money was becoming scarce. On July 21st the army was before the fortress of Ghazni, situated 230 miles from Kandahar, and 90 from Kabul.

Dost Muhammad had thought for some time that the British intended to march from Kandahar on Herat. He now saw that

in this he was at fault, and believed that they were advancing direct on Kabul, merely masking Ghazni, *en route*.

Of his three sons, Akbar Khan was opposing the advance of the Shahzada Timur through the Khyber; Hyder Khan was in command of the garrison of Ghazni; and Afzul Khan, with a body of horsemen, was in the vicinity of that place, with instructions to operate on the flanks of the British in the open.

The Afghans had long boasted of the strength of Ghazni, and believed that it could not be taken by assault. On the other hand, Sir John Keane, in spite of the fact that a battering train had been brought to Kandahar by dint of great labour, and at great expense, and although he knew that he was approaching the strongest fortress in the country, known to be garrisoned by the enemy, and certain to be vigorously defended, still insisted on leaving his heavy guns at Kandahar, and advanced upon Ghazni with nothing but light field pieces, quite unequal to breaching the walls.

The town itself was insignificant, but the strength of the citadel—deemed impregnable throughout Asia—and its position, commanding the road from Kandahar to Kabul, made it a post of the highest military importance.

The rampart of masonry, sixty feet high, was built on a scarped mount, thirty-five feet high, rising from a wet ditch and defended by numerous towers and skilfully-constructed outworks.

To illustrate its size, it may be mentioned that within the citadel there was stabling sufficient for an entire brigade of cavalry.

Hyder Khan had walled up all the gates to prevent them being blown in, except the one on the Kabul side.

Dost Muhammad, never dreaming that the British would attempt to take the place by a "coup de main," thought they would mask it, and took up a strong position himself twenty miles from Kabul, intending that, while he engaged them in front, Hyder Khan, with part of his garrison, and Afzul Khan, with his horsemen, should fall on their rear and flanks.

His plan was foiled, for one of his own nephews, Abdul Reshed Khan, had deserted from the garrison and revealed to the Chief Engineer of the force, the weak point, where an assault might be hazarded, namely, the Kabul Gate.

Accordingly, on July 22nd, a storming party, consisting of the light companies of the four European regiments, under Colonel Dennie, of the 13th Light Infantry, was formed, while the main supporting column was composed of the other companies of these regiments under Brigadier Sale.

The night was dark and gusty, and while the storming party

and supports were forming up on the Kabul road, the attention of the defenders was attracted to the Kandahar side by heavy fire, kept up at random by the guns.

At 3 a.m. all was ready for the assault. The Afghans were now revealing themselves on the Kandahar side, ready to resist the anticipated attack from that quarter, by a row of blue lights. The stormers having meanwhile silently piled their powder-bags against the Kabul Gate, quite unobserved, Lietenant Durand successfully exploded the charge. A column of black smoke was seen to rise, and huge masses of masonry and beams, lifted up by the force of the explosion, came down with a tremendous crash. Colonel Dennie, heading the stormers, gained the opening before the defenders could reach it. A desperate struggle then took place, the British gradually gaining ground. Sale, pressing forward in support, met an engineer officer, who, thrown to the ground and bewildered by the explosion, reported that the opening was blocked by the ruins, and that Dennie was unable to force an entry. Sale at first halted, uncertain what to do, and then began to retreat, but very soon Dennie's bugler was heard sounding "the advance," and back went the column. The Afghans had not failed to profit by the respite thus afforded them, and showed a resolute front at the gateway. A hand-to-hand fight took place, in which the Brigadier himself was cut down, but regaining his feet, he led his column into the fortress, and, other troops coming up, the capture of Ghazni was complete, and the British colours planted on the ramparts. There was still some hard fighting within the walls, but those who ceased to resist were spared, and the women respected. Hyder Khan was immediately afterwards captured with 1,600 other prisoners, and vast stores of ammunition, guns, and provisions fell into the hands of the victors, whose loss were 17 killed and 165 wounded; 18 of these were officers. 500 Afghans were buried, besides a great number who fell in the cavalry pursuit.

The fall of Ghazni was a mortal stroke to Dost Muhammad. Afzul Khan, approaching on the 22nd, prepared to fall on the "beaten invaders," was so astounded and terror struck at the sight of the British Colours waving on the citadel, that he at once abandoned his baggage, elephants, and camp stores, all of which were appropriated by the British, and fled forthwith towards Kabul.

In vain Dost Muhammad endeavoured to get his army to give battle; his men, in response to his appeals, deserted to the victors: it was the counterpart of Napoleon at Fontainebleau. He had perforce on August 2nd to turn back, forsaken by all but a small band, and ride through Kabul to the far side of the Bamian, whither a small band of horsemen pursued him ineffectually for a few days.

Next day, the 3rd, the news of his flight reached the

British, who had moved forward from Ghazni on July 30th. Dost Muhammad's guns, 22 in number, were found in position abandoned *en route*, and Kabul was reached on 7th August. Again no enthusiasm was evinced by the populace at the re-occupation of the Bala Hissar (the citadel) by Shah Shujah after an exile of thirty years.

The object of the expedition was apparently attained, and the Shah restored to what was fondly hoped to be an undisputed throne. Satisfaction was almost universal in England, and only a few, among whom was the Duke of Wellington, maintained that our difficulties were now only about to commence, and that the lesson of Moscow in 1812 should be borne in mind.

The operations of Wade's force by way of the Khyber were dwarfed by the more ostentatious ones of Sir John Keane: but it was in no small measure owing to these operations that the resistance to the main army was so slight. For a long time Dost Muhammad regarded the movement through the Khyber more anxiously than that of the Army of the Indus. Akbar Khan never met Wade in the field, but his force was drawn away from the decisive point at a time when it might have been of great use in the west, and it is in no small measure owing to this division of the Amir's military strength that he was unable to offer any effectual resistance to the British advance from Kandahar.

Wade reached Kabul on September 3rd, and brought Sir John Keane's force up to a total of 15,000 men.

It was still patent that, were the British force withdrawn, Shah Shujah would be deposed, Dost Muhammad reinstated, and that the latter, from motives of revenge, would undoubtedly ally himself with Russia. Thus not only would all objects of the expedition be lost, but the very danger it was undertaken to avert would be enhanced.

Lord Auckland decided to withdraw the major portion of the Bombay Army by way of the Bolan, and most of the cavalry and horse artillery of the Bengal Army, under Sir John Keane, *viâ* the Khyber, leaving troops at Jellalabad, Kabul, Ghazni, and Kandahar, besides a small detachment near the Bamian Pass to watch Dost Muhammad: the whole under the command of Sir Willoughby Cotton.

The Bombay Army started on its homeward march on September 18th, taking Kelat *en route*, on November 13th, with a loss of 32 killed and 107 wounded. Keane and his force left Kabul on October 2nd.

Afghanistan was now governed by a trinity, practically co-equal:—

Shah Shujah, the nominal ruler;
Macnaghten, the political agent; and
Cotton, the military commander;

and the evils of this system were soon felt. The various detachments did not meet with any overt opposition; but they soon discovered that most of the clans only wanted a leader and some prospect of success to break out into insurrection.

To add to this, news came to hand from Pottinger at Herat to the effect that Russia, desiring to re-assert her lost prestige in Central Asia, which had been impaired by her failure at Herat the previous year and by the progress of the British in Afghanistan, was sending a force of 6,000 men with 12 guns against Khiva. All through the winter of 1839-1840 this afforded a subject of much anxious thought, and it was not until March 13th, 1840, that it was publicly announced by the St. Petersburg newspapers what a lamentable failure this expedition had been.

It now came to light that the double-faced Vizier of Herat, Yar Muhammad, while living on British bounty, was deep in intrigue with Persia.

In the Punjab Ranjit Singh had died, and the Sikh chiefs, without his loyal guiding spirit, were by no means so well-disposed towards us.

The Ghilzaies were in open arms, and had cut the communication between Kabul and Kandahar. A detachment of all arms had to be sent against them, and a defeat of 2,000 on May 16th temporarily suppressed the insurrection in that quarter.

Quetta was meanwhile besieged, and Kelat retaken by the Baluchis on June 28th.

Added to all this, Dost Muhammad, after narrowly escaping with his life from the treacherous Khan of Bokhara, had collected a following of 6,000 Usbegs, and was advancing towards the Bamian. The Gurkha Regiment, holding two posts beyond the pass, was in an unenviable position, for the entire surrounding population was hostile, and a locally raised Afghan regiment had deserted bodily to the enemy. The Gurkhas were accordingly ordered to fall back to the Bamian.

The flame of revolt had now spread throughout the country, but an unexpected check to Dost Muhammad postponed the eventual catastrophe for a year.

On September 18th he advanced down the valley of Bamian, where he was met by two companies of sepoys, two of Gurkhas, two guns, and 400 Afghan Horse, the whole under Lieutenant Murray Mackenzie.

In spite of the great disparity of numbers, the odds being one to five, Mackenzie attacked. The Usbegs at first firmly stood their ground, but the guns coming up to closer range played on them with great effect, and they broke and fled, hotly pursued by the cavalry. The superiority of European

arms and discipline was never more clearly proved than on this occasion.

Defeated on the Hindu Kush, Dost Muhammad reappeared in Kohistan. A force under Sir Robert Sale was sent to deal with him, and took two of his fortified posts on September 29th and October 23rd respectively, the first without much difficulty, but the second only after hard fighting and a repulse. On November 2nd Dost Muhammad gained a success over Sale at Parwandarrah, only fifty miles from the capital.

Two days afterwards he suddenly appeared at Kabul, unattended and alone, and surrendered himself to Sir William Macnaghten!

It appeared that after the storming of Ghazni and his defeat in the Bamian he had despaired of his cause, and had only been waiting for a success before giving himself up, in order to be able to do so with untarnished personal honour. On November 12th he was sent under strong escort to India.

The Afghan combination was now deprived of its most formidable character—unity of direction. This fact and two events which synchronised with Dost Muhammad's voluntary surrender contributed in a material degree temporarily to tranquilise the country. On November 3rd General Nott reoccupied Kelat, and on December 1st Colonel Marshall totally defeated a large body of insurgents under the son of the ex-chief of that fortress at Kotri, with a loss to them of 500 men, together with all their guns and baggage.

At the end of the year 1840 there was a renewed insurrection in the neighbourhood of Kandahar. The political direction of this province was now in the hands of Major (afterwards Sir Henry) Rawlinson of the Native Army, and the military under General Nott. The latter despatched a detachment of cavalry and guns to quell the disturbance under Captain Farrington, who came upon 1,500 of the rebel horse on January 3rd, 1841, and inflicted on them a severe defeat. Thus for a time the soldier had done his work. The more difficult task of the politician was to seek for the causes of dissatisfaction and recommend the means for putting down the spirit of revolt. Rawlinson did his work most thoroughly, but unfortunately his views did not commend themselves to the ever-optimistic Macnaghten, and his warnings were disregarded.

Affairs in Herat had been steadily working up to a crisis, and on February 8th Yar Muhammad, the Vizier, when deep in intrigue with Persia against us, formulated a series of preposterous demands to Major Todd, our political agent. These the latter had no alternative but to refuse, which done, he turned his back on the place.

Nothing of much moment now occurred until early in May, 1841, when the Ghilzaies appeared in force near the fort of

Khelat-i-Ghilzaie, on the Kabul-Kandahar road, which we had commenced rebuilding preparatory to stationing in it a strong garrison to act as a curb to the adjacent tribes. Against this they forcibly protested.

Nott sent Colonel Wymer, with a mixed column about 1,200 strong with four guns, to dislodge a somewhat formidable gathering of 5,000 tribesmen. Wymer was compelled to act on the defensive, as he had a large convoy to protect. The Ghilzaies came on in three columns, attacking in front and on both flanks. The native infantry received them again and again with steady musketry fire, and the guns co-operating effectively, after a struggle of five hours the Ghilzaies gave way, having suffered heavily.

The proceedings of the Duranis, the royal clan, gave equal cause for alarm. Under a chief by name Akbar Khan, a body of 3,000 was under arms before Ghirishk, and even Macnaghten realised that it was essential to strike a blow.

Under Captain Woodburn, commanding one of the Shah's regiments, a column of 900 infantry, two guns, and a small body of Afghan horse, set out, and on July 3rd found the enemy posted on the far side of the Helmand, now 6,000 strong and mustered in six divisions with a *Mullah* at the head of each. Woodburn tried the fords, but found none passable. This was in the early morning; at 4 p.m. the enemy commenced the passage of the river at previously known points. They made a spirited advance, but the infantry, well supported by the guns, repulsed every attack, and before daybreak the Duranis withdrew. Unfortunately the success could not be followed up, as no reliance could be placed in the Afghan horse. Woodburn pushed on to Ghirishk, and warned Macnaghten of the disturbed state of the country. Rawlinson from Kandahar again wrote in a similar strain, but the warnings were once more unheeded and denounced as idle statements by the infatuated envoy, who censured his correspondents for what he called their "unwarrantably gloomy views."

In corroboration of Rawlinson, Akbar Khan soon appeared again at the head of the insurrection in Western Afghanistan, and a force of 350 sepoys, 800 horse, and four guns, under Captain Griffin, who had been sent to reinforce Woodburn, was despatched early in August against the rebel chief. On August 17th he was encountered, strongly posted with 3,500 men in a succession of walled gardens and mud forts, from which a heavy fire was maintained against the assailants. The attack with good combination of guns and infantry was successful, and this time the cavalry, headed by the young Prince Saftar Jang, a son of Shah Shujah, charged with great effect, and the Duranis were defeated and dispersed with great slaughter. The Ghilzaies, too, had received another check, Colonel

Chambers, with a detachment of 1,500 men, having scattered a large body of them on August 5th.

These repeated successes were followed by a lull, and had the disastrous effect of inspiring false confidence in the authorities at Kabul. Sir Willoughby Cotton had been succeeded by General Elphinstone, a veteran of the Wellington school, who had commanded a regiment at Waterloo. He is described by Kaye as "a man of high connections, aristocratic influence, and agreeable manners, but entirely unacquainted with Eastern warfare; a martyr to the gout, which rendered him utterly unfit for personal activity, or even sometimes to sit on horseback, and, as the event proved, though personally brave, possessed of none of the mental energy or forethought which might supply its place." How he should have been selected for this arduous situation, when these disqualifications were common knowledge, and when such men as Pollock, Nott, and Sale were on the spot, is one of the mysteries of official conduct never likely to be cleared up, for everyone susbequently shunned the responsibility of his appointment.

The force actually in and about Kabul now consisted of one European, two Sepoy, and two Afghan infantry regiments, a regiment of native cavalry, one troop of Foot and one of Horse Artillery, and a train of mountain guns—5,000 fighting men in all, encumbered by exactly three times this number of camp followers.

Had this force been judiciously posted and properly directed, it was perfectly adequate to deal with any troops that the Afghans could have brought against it, for besides the possession of a train of artillery with ample ammunition they had the Bala Hissar, an immensely strong citadel, situated on a steep height and commanding every part of the city. But, *Quos Deus vult perdere prius dementat*, and all these advantages were voluntarily thrown away; the troops were placed in a low cantonment outside both the citadel and the walls, commanded on all sides by heights and buildings, having been withdrawn from the Bala Hissar by Macnaghten's orders to make way for 160 ladies of the harem! To crown all, the commissariat stores for the whole winter were separate again from the cantonment, with which they were connected by an undefended passage, commanded by the King's Garden, a walled enclosure, and Muhammad Sharif's Fort.

The responsibility for these measures rested entirely with Sir William Macnaghten, who sacrificed everything to a show of security. Still blind to the reiterated warnings of Burnes and Rawlinson, he persisted in writing of everything as *couleur de rose*. He had just been appointed Governor of Bombay, and was on the eve of handing over to Burnes and leaving for India, when at last the inevitable storm brewing for so long burst on November 2nd with the utmost violence.

One of the first attacks was made on the house of the unfortunate Burnes, who, though warned of the danger, refused to leave his post, the consequence being that he, with his brother, servants, and guard were murdered to a man. The Treasury was next assailed, the guard of 28 sepoys and every human being there massacred, and loot to the amount of £17,000 sterling carried off. The mob, now greatly increased, proceeded to loot, burn, and massacre indiscriminately in all parts of the city.

While these events were taking place, 5,000 British troops remained inactive in their cantonments within half-an-hour's march, and not a man was ordered out! Had the least attempt at reprisal been carried out before the mob grew in size, the Afghans themselves subsequently admitted that the insurrection must have been quashed.

Later in the day, Brigadier Shelton's brigade and four guns were moved into the Bala Hissar, but all the remaining troops were kept where they were. Shelton recommended prompt and decisive measures, but was over-ruled by Macnaghten and Elphinstone, and with them rested equally the responsibility of supineness and inactivity.

Next day the detachment from Khurd Kabul, two miles east, was recalled, and succeeded in reaching the cantonments.

The only effort against the insurgents was made by three companies and two Horse Artillery guns. So weak a detachment against an enemy now swelled to thousands and excited by the *Mullahs* to a high pitch of fanaticism, was foredoomed to failure. Fortunately it retired in good time.

The next disaster was the seizure of the little detached commissariat fort with all its stores on November 4th. Ensign Warren, in command of its garrison of 80 men, sent repeated messages for help, but obtained none, and at last, recognising that resistance there was futile, fought his way to the cantonment.

The same day a similar and scarcely less serious catastrophe occurred. Macnaghten had insisted some time previously on the removal of about 600 tons of ground wheat from the Bala Hissar to some camel sheds on the outskirts of the city: here Captain Colin Mackenzie, commanding the small guard, was attacked on November 2nd, and after holding out for two days, was compelled to adopt a similar course to that of Warren. The enemy then proceeded to occupy the remaining forts round the cantonment.

It was now evident to every man on both sides that it was out of the question for the British to maintain themselves in the capital throughout the winter, for they had lost all their supplies, and it was impossible, with the ground under snow and with every village in the hands of he Afghans, to attempt to collect enough to last them; moreover, even could reinforcements from

India force their way to Kabul at that time of year, they would only add to the number of mouths to be fed.

Nothing was done for two days, during which time the Afghans were permitted to carry away supplies looted from us, within 400 yards of the cantonment.

At length, on 6th November, in response to the unanimous clamour of the men, a storming party carried an outlying fort, and various minor, but decisive, successes were gained, showing that had the troops been properly directed, and a general battle brought on, the enemy undoubtedly would have been defeated.

The commissariat officers, too, had shown enterprise, and had procured some supplies from neighbouring villages on payment, so that, the troops being placed on half rations, the pressing difficulty of subsistence had been surmounted.

General Elphinstone now became alarmed about ammunition, although there was a full two months' supply, and, refusing to listen to any active measures, counselled only a capitulation. His health had become so bad that Brigadier Shelton was sent out from the Citadel to help him. Elphinstone's jealousy, however, thwarted him, orders were given and countermanded, plans discussed and their decision deferred, and it soon transpired that, from the disunion of their chiefs, the troops were in a more parlous plight than ever.

The Rikabashi Fort, situated at the north-east angle of the cantonment, was taken with some difficulty on November 10th, Elphinstone refusing to allow our cavalry to co-operate, in spite of the troops being twice charged in flank by the Afghan Horse, who nearly turned the day in their favour. This success afforded a further breathing space to the commissariat officers, who again turned it to good account.

On November 13th there was an action on the Bemaru Heights, north-west of the cantonment, where the enemy had appeared in force and fired with two guns into the cantonment itself. Brigadier Shelton was sent out with four squadrons of cavalry, two guns, and sixteen companies to dislodge them. After some trouble the enemy were driven away and the guns taken, and one, a four-pounder, brought in; but the other was spiked and abandoned.

This was the last success achieved, and nothing but a list of blunders and disasters remains to be recorded.

The enemy remained quiet for some days, and urgent messages were sent by Macnaghten to McGregor and Rawlinson, the political agents at Jellalabad and Kandahar, to send their whole disposable forces.

The requisitions placed these officers in a great dilemma: the envoy's orders ought to be obeyed and the very existence of the troops in the capital might depend on instant relief being afforded, while, on the other hand, affairs in Kabul were so

desperate from the scarcity of supplies, that any additional mouths would court certain destruction of the whole.

After great deliberation McGregor and Sale resolved to disobey the order, and keep their troops at Jellalabad, and although Rawlinson and Nott despatched a force from Kandahar, the draught cattle perished so rapidly, that, after a few days, it was forced to retrace its steps.

A further calamity now befel the British in the total annihilation of the Gurkha Regiment in Kohistan, on November 13th, after a most gallant stand against overwhelming odds, the sole survivors being one officer, one Gurkha, and Eldred Pottinger, who reached Kabul half-dead with wounds.

The only practical course now open was to move every man available with all the provisions that could be obtained into the Bala Hissar: this was favoured by Shah Shujah, while the engineers had counselled it from the first.

It is interesting to note that in Lord Stanhope's book, "Conversations with the Duke of Wellington," the Duke is recorded to have observed that the opinion he had formed on reading all accounts was, that, "if on the day after Burnes' murder, the troops had occupied the Bala Hissar and removed thither all their stores, they would have been perfectly secure, but that three weeks later, if even an angel had come down from Heaven, he could not then have saved them."

Elphinstone had no opinion to offer on the subject of the move, and Macnaghten, unfortunately, yielded to Shelton's vehement arguments against such a course, as being, in his opinion, dangerous and discreditable.

Akbar Khan, Dost Muhammad's son, and the force which had cut up the Gurkhas in Kohistan, arrived at this juncture to augment the Afghan numbers.

Correspondence with a view to capitulation was opened, but before terms could be agreed upon a most disastrous action was fought, which hastened the crisis.

For the first three weeks of November, in spite of the blockade, the commissaries had managed to obtain a certain quantity of grain, chiefly from the village of Bemaru; the Afghans determined to close this source of supply, and posted troops accordingly.

Macnaghten urged an immediate attack, and a feeble attempt was made on November 22nd, but the enterprise miscarried.

Next day the attack was renewed with five companies of British and twelve of native infantry, three squadrons of native cavalry, 100 sappers, and a single Horse Artillery gun. (Why one gun only was taken when there were plenty available does not transpire.) Swarms of Afghans from the city swelled the numbers of the enemy, and Shelton drew up his 1,400 men in

two squares, with the gun in front and the cavalry in rear. The Afghans had the great advantage that their matchlocks outranged the British muskets, and they used this to the full. Shelton's ammunition ran out, and so demoralised were the troops that when called upon to use their bayonets, not a musket was brought down to the charge, even in the English companies.

The Afghans, in bravado, planted a standard within thirty paces of the British ranks: not a man advanced to take it. The officers did their utmost, and for lack of ammunition stood in front and hurled stones at the enemy. A sudden rush captured the gun, which had been well served, but it was soon retaken, the enemy driven back in confusion, and their leader killed.

This was the crisis of the day, and had General Elphinstone acceded to Macnaghten's request to send out reinforcements, all might have been restored. The former, however, gave a flat refusal, saying that it was a wild scheme.

Fresh swarms of the enemy appeared on the scene, and the British were losing heavily, yet nothing would induce them to close with the Afghans, so thorough was their demoralisation. An unexpected flank attack completed their discomforture, and a panic seized the whole force; the gunners gallantly endeavoured to save their gun, but failed, every one of them being killed or wounded. All order was lost, and the whole force, led by the British companies, rushed helter-skelter for cantonments. The Afghans failed to follow up their success, or the cantonments themselves must have been taken.

This disastrous defeat, in which we lost 178 killed and 55 wounded, put an end to military operations, and made it imperative to arrange the best terms of capitulation possible.

On December 11th negotiations with the enemy were opened, and on the 13th the Bala Hissar was evacuated under a treaty, which also provided for a safe conduct of the troops to India and for provision of carriage and supplies. Shah Shujah was to return to India, Dost Muhammad to be restored to Kabul, and the Afghans were not to contract any alliance without our consent.

The Afghans made no attempt to keep their part of the agreement, and on December 23rd Macnaghten, on going unescorted to a conference with their chiefs, was treacherously murdered by Akbar Khan, who used a pistol that Macnaghten himself had given him the previous day.

Though the spot where this occurred was not a quarter of a mile from the cantonment, no attempt at rescue or reprisal was made, or, indeed, even considered. The body was left lying on the plain, whence it was finally carried off, hacked to pieces, to the bazaar, there to be exhibited to an applauding multitude. It seems incredible that British troops and British generals

could have sunk to such depths of demoralisation and degradation as to remain inactive on such an occasion.

After the murder of Macnaghten, Major Pottinger undertook the political duties of the mission, and met the chiefs in conference. Some fresh conditions were imposed, chief of which was the surrender of all but six of the guns.

On January 6th, 1842, though neither of the terms as to transport or escort had been fulfilled by the Afghan chiefs, the retreat was commenced.

690 European troops;
970 native cavalry; and
2,840 native infantry;

in all, 4,500 fighting men, with 12,000 camp followers besides women and children, left the cantonment.

The horrors of this march have been graphically described by Kaye, Alison, and Lady Sale.

From the time that the rearguard filed out on the 6th, until the 13th, when the last survivors (except Dr. Brydon, who managed to struggle alone to Jellalabad), perished at Gandamak, a continuous fire was kept up by swarms of tribesmen on either flank, added to which intense suffering was caused by cold and snow. The widows, married people, and children were given up to Akbar Khan on the 9th, and General Elphinstone, Brigadier Shelton, and Captain Johnson were forcibly detained after a conference at Jagdalak on the 12th. Elphinstone died in captivity on April 25th; Shah Shujah was murdered on the 5th of that month.

Space does not permit of the recital of Sale's and Nott's gallant defence of Jellalabad and Kandahar respectively, or of Pollock's passage of the Khyber and his subsequent victorious march from Jellalabad on Kabul, which he reached on September 15th, 1842; while Nott advanced on the capital from Kandahar, but in conclusion we may briefly examine the causes of the British disasters, and consider the lessons to be drawn from them.

Firstly: The injustice of overturning the reigning power in an independent State, and the forcing of a hated dynasty on a reluctant people.

For a trifling sum Dost Muhammad, the ruler of the people's choice, was willing to shut his gates against Russia and to enter into the British alliance. Instead of closing with his proposals we decided to dethrone him, and place a king on the throne to be a mere puppet in our hands.

A mistake in policy, and a crime in morality.

Secondly: The errors in the conception of the expedition, which was thrown forward 1,000 miles from its base of operations through a desert and mountainous country, peopled by barbarous and hostile tribes, bring to mind the Moscow Cam-

paign of 1812; but the Indian Government did not, like Napoleon, endeavour to repair its error by moving up strong bodies to keep up communications with the rear.

Thirdly: The force employed was inadequate and out of proportion to the object in view, and the stiffening of British troops insufficient. Moreover, when British reinforcements were sent, they largely consisted of raw recruits.

It was the old story of England having disbanded a veteran force on a peace being declared, and trusting to making a civilian into a soldier by putting arms into his hands and a uniform on his back. Present-day politicians would do well to lay this lesson to heart.

Fourthly: The lack of harmony and intimate co-operation between the political and military authorities from start to finish.

This was unfortunately for many years only too common a feature of Indian Frontier Campaigns.

Fifthly: The extreme errors in the military arrangements; the neglect to occupy and hold the Bala Hissar; the mistake in placing the troops in exposed and ill-fortified cantonments with magazines and commissariat separate again; the want of decision on the part of the General; these and other fatal errors conduced to the demoralisation of the troops, who failed at critical moments as British troops seldom do.

Lastly: The ill-considered appointment by a Whig Cabinet of a man, totally unfitted for command, ignorant of the country, people, and language, when better men, well versed in the local conditions and experienced in the type of warfare, were available on the spot.

APPENDIX I.

DETAIL OF THE ARMY OF THE INDUS.

General Sir Henry Fane, G.C.B., Commander-in-Chief in India, Commander-in-Chief.

BENGAL COLUMN.

Cavalry Brigade. Colonel Arnold, 16th Lancers, Brigadier.	16th Lancers.	
	2nd Light Cavalry.	
	3rd Light Cavalry.	
	4th Local Horse; and	
	Det. Skinner's Horse.	
Artillery. Brigadier Graham.	2nd Troop, 2nd Brigade, H.A...	Capt. G. Grant.
	4th Co., 2nd Bn., Ben. A. ..	Capt. Garbett.
	Camel Battery	Capt. A. Abbott

(Bengal) Infantry Division.

Major-General Sir Willoughby Cotton, K.C.B., K.C.H.

(Captain Havelock, 13th Light Infantry, one of A.D.C.)

1st Brigade. Colonel Sale, 13th.
- 13th Light Inf.
- 16th Native ,,
- 48th ,, ,,

4th Brigade (1st Europeans). Lt.-Col. Roberts (35th Native Inf.)
1st Europeans (37th Native Inf.)

2nd Brigade. Major-Gen. Nott.
- 31st Native Inf.
- 42nd ,,
- 43rd ,,

Bengal Sappers and Miners (Two companies).

Reserve Force at Ferozpore.

Major-General Duncan.

Artillery ..
- 3rd Troop, 2nd Batt. H.A.
- 3rd Co., 2nd Bengal Art. (12 guns and 200 men.)

Cavalry
- Skinner's
- Local Horse (600 men.)

3rd Inf. Brigade. Colonel Dennie.
- 3rd Buffs
- 2nd N.I.
- 27th N.I.

5th Infantry Brigade. Colonel Worsley.
- 5th N.I.
- 20th N.I.
- 53rd N.I.

Bombay Column.

Lieut.-General Sir John Keane, G.C.B., K.C.H.

(Captain Outram, extra A.D.C.)

Cavalry Brigade. Lieut.-Colonel J. Scott, 4th Light Dragoons.
- Wing, 4th Light Dragoons.
- 1st Light Cavalry.
- Poona Local Horse, unattached.

Artillery. Lieut.-Colonel Stevenson
- 3rd Troop H.A. .. Captain Martin.
- 4th Troop H.A. .. Captain Cotgrave.
- Horse Field Battery .. Captain Lloyd.

Infantry Division.

Major-General Willshire, C.B.

2nd Queen's	1st Grenadier N.I.
17th Regiment.	5th N.I.
19th N.I.	23rd N.I.

Siege Guns ..
- Two 18-pounders.
- Four 9- ,,

Reserve at Karachi (Bombay Troops).

Brigadier Valiant.

Artillery
- 3rd Co., 1st Bn. Art.
- 5th Golandaz Batt. (200 men).
- Pioneers, 100 men.

Infantry
- 40th Regiment.
- 2nd Grenadiers.
- 22nd N.I.
- 26th N.I.

Strength of the Different Corps, Etc., on Marching into Afghanistan.

	Bengal.		*Bombay.*	
Park ..	Mortars, 8-inch ..	2		
	,, 5⅘-inch ..	2		
	Howitzers, 24-prs.	1		
	,, 12-prs.	—		
	Guns, 18-prs. ..	4	.. ..	2
	,, 9-prs. ..	2		
	Field guns, 6-prs.	2	.. ..	4
	Guns	13	Guns	6
Field Artillery	1 Tr., five 6-pr. & 1 how.	6	2 Troops	12
	1 Co. ft. ,, ,,	6	2 Field Batteries (one of these drawn by mules, was left at Quetta.)	12
	Camel Battery, 9-prs.	6		
	Guns	18	Guns	24
Artillery	Horse and Foot ..	200	.. ..	400
Cavalry	Europn. 16th Lncrs	480	Wing 4th Light Dragoons ..	300
	2 N.C. Regiments	950	1 Native Regiment	500
	Local H. & Dtchmts	1000	Local Horse	400
Infantry	2 Eurpn. Bns. ..	1080	2 European Battalions ..	1080
	7 Native I... ..	5000	4 Native ,, ..	3000
Sappers and Miners	Native ..	250	Sappers and Miners	100
Pioneers	.. .. ..	240	Pioneers	100
	Men	9200	Men ..	5880

Shah Shujah-ul-Mulk's Force.

6,070 Men.

Maj.-Gen. F. H. Simpson.

Cavalry Brigade, Capt. Christie, 3 Bn. Cav. .. — 1st Regt. Cavalry; 2nd Regt. Cavalry

Artillery, Capt. W. Anderson, Beng. H. A. — 1st Troop; 2nd Troop.

Infantry Brigade (5 battalions.)

- 1st Regt. .. Capt. Bean.
- 2nd ,, .. Capt. Macan.
- 3rd ,, .. Capt. Craigie.
- 4th Light Infantry Capt. Hay.
- 5th Regt. .. Capt. Woodburn.

Shahzada Timur's Force.

Under Lt.-Col. Wade.

Artillery	Two 24-pounder howitzers and two 6-pounders, with 20 swivels, under Lt. Maule, Bengal Artillery.		
Cavalry	1,000 Musulmans, armed with swords, shields and matchlocks.		
Infantry	Regulars	3 battalions 2,040 men	With 4 companies of British Native Infantry (320 men).
	Irregulars	1 battalion 820 men	
	Jazailchis	... 320 men	

Making the total of Timur's force about 4,500 men of all sorts, with four guns.

Ranjit Singh's Contingent

consisted of

12 guns with 100 men.
Infantry 4,800 ,,
Cavalry 1,050 ,,

About 6,000 ,,

One Howitzer One Mortar Eight 6-pounders Two 9-pounders

The Sikh Contingent

was also under Col. Wade's direction, who therefore disposed of 10,500 men with 16 guns of various descriptions.

Summary of Available Troops before the Reduction of the Force.

Bengal Column	9,500
Reserve at Ferozpore	4,250
Shah Shujah's Contingent	6,000
The Bombay Column	5,800
Bombay Reserve at Karachi	3,000
	28,550
The Shahzada Timur's force	4,800
Sikh Contingent	6,000
	10,800
Sikh Army of Observation at Peshawar	15,000

APPENDIX II.

DISTRIBUTION OF BRITISH FORCE IN AFGHANISTAN. October 1839.

Kabul Lieut.-Col. Dennie	No. 6 Field Battery, 3 guns. 13th Light Infantry. 35th N. I.
Shah's 1st Cavalry. Some Artillery.	
Jellalabad Lieut.-Col. Roberts	No. 6 Field Battery, 3 guns. 2nd Light Cavalry. 1st Europeans. 37th N. I. 48th N. I. Detachment Sappers and Miners. Skinner's Horse, 1 Risala.
Ghazni Major MacLaren	16th N. I. Skinner's Horse, 1 Risala.
Kandahar Major-Gen. Nott	4th Company, 2nd Brigade Artillery. 42nd N.I. 43rd N.I.
Dadar	4th Local Horse, 1 Risala. 31st N.I. 4th Local Horse, 2 Risala.
Sakkar 2nd Bombay Brigade	1st N.I. 5th N.I. 23rd N.I.

APPENDIX III.

MARCHES AND DISTANCES BETWEEN FEROZPORE AND KABUL.

Miles.		1838.	Marches.
454	Ferozpore to Sakkar	10th December to 24th January	38
171	Sakkar to Dadar	16th February to 10th March	25
86	Dadar to Shalkot	16th March to 26th March	8
148	Shalcot to Kandahar	7th April to 26th April	14
230	Kandahar to Ghazni	27th June to 21st July	22
88	Ghazni to Kabul	30th July to 6th August	7
1177			114

Ferozpore to Kabul, 239 days. Average distance *per diem* just under 5 miles.

The following articles are, by agreement with the Society for Nautical Research, reproduced from the current number of "The Mariner's Mirror."

THE UNION FLAG.

By W. G. PERRIN.

THE History of the National Flag is of perennial interest, yet in spite of the research of the many capable writers who have added to our knowledge of the subject,[1] several questions concerning it still await a complete solution. Such are:—

1. Why is the Union Flag commonly called the Union Jack?
2. When and why was it first flown on the bowsprit?
3. Were the flags of 1606 and 1707 identical or did the "fimbriation" differ?
4. What was the origin of the component "crosses"?
5. What is its history as a "flag of command"?

It is proposed on this occasion to attempt an answer to the first question only, and it will be advisable first to recapitulate the known facts, since no author has as yet given them all. References for the various proclamations will be found in "Tudor and Stuart Proclamations," Oxford, 1910.

The Union Flag (though not so called) took its rise in a Proclamation issued by James I. on 12th April, 1606, when, baulked of his desire to unite the two realms in one, he strove for a lesser degree of union under a common flag. The Proclamation decreed "that from henceforth all our subjects . . . shall bear in their main top the Red Cross, commonly

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[1] See especially "The Heraldry of the Sea," by Sir J. K. Laughton, R.U.S.I. Journal, 1879; "The Union Flag," by Emanuel Green, Archæological Journal, 1891; "The National Flag," by Sir R. M. Blomfield, R.U.S.I. Journal, 1895; "History of the Union Jack," by B. Cumberland, 1900.

called St. George's Cross, and the White Cross, commonly called St. Andrew's Cross, joined together according to the form made by our heralds, and sent by us to our Admiral to be published to our subjects," each nation retaining its own flag in the foretop.

Like most compromises, the new flag did not please either party. The Scots objected that the position of the St. Andrew's Cross was derogatory to that kingdom, while the English thought that the old flag made a fairer show.

It will be observed that the Proclamation recognises no distinction between men-of-war and merchant ships, yet a distinction appears to have been made, either at the time or shortly after, by the addition in the case of the Royal ships of a "Jack" (*i.e.*, a flag flown on the bowsprit) and a pendant. Evidence of this appears in an order issued by Sir John Pennington in 1633 to his pinnace captains, discovered by Mr. Corbett in the Sloane MSS. (*vide* N.R.S., Vol. XXIX., p. 108). The pinnaces were to engage in the suppression of piracy and apparently were to disguise themselves by concealing those things in which they differed from merchant craft: "You are also for this present service to keep in your Jack at your boultsprit end and your pendant and your ordnance."

Inconvenience and misunderstandings with foreign vessels arose through the use of the Union Flag by merchant ships, and in 1634, at the instance of Pennington, a Proclamation was issued reserving the Union Flag "as an ornament proper for our own ships and ships in our immediate service and pay, and none other"; but from the orders and proclamations that followed in regular succession for the next three-quarters of a century it is clear that the merchant service did not give up the flag without a struggle.

In 1649 the Council of State abolished the Union Jack, but it was restored with the addition of a harp at the instance of the Lord Protector's Council in May, 1658: "the Jack fflagge . . . be the armes of England and Scotland united according to the ancient forme with the addicion of the Harpe according to the moddell." (Admy. Lib. 7). The harp was removed at the Restoration, as Pepys tell us, "it being very offensive to the King."

In 1661 (9th March), owing to the continued abuse of the Union Flag by the mercantile marine, the Duke of York found it necessary to issue an order that Masters of merchant ships were to "forbear to wear the flag of Union," and a Proclamation issued on 19th November, "For Prohibiting the Imbezlement of His Majesties Stores," directed that the Flags, Jacks and Pendants of H.M. ships were to be made henceforth of red, white and blue. I must confess that I do not know what

this means,[1] but it is the earliest use of the word Jack in a Proclamation, and it is noteworthy that Jacks are specified as distinct from Flags.

Doubtless the merchant service did not cling to the Union Flag for nothing; indeed, there is evidence that it conferred considerable privileges, both at home and in foreign ports, and we find, in 1664, the Duke of York instructing the Navy Board to empower the vessels employed by the victualler to wear Jacks of such dimensions as they should judge fitting (Admy. Lib. 24.)

In 1674 a further Royal Proclamation was issued. As this is of importance, and is not given by the writers referred to, it will be necessary to quote largely from it:—"Whereas by ancient Usage no Merchant Ship ought to bear the Jack, which is for Distinction appointed for his Majesties ships; Nevertheless, His Majesty is informed, that divers of His Majesties Subjects have of late presumed to wear His Majesties Jack on board their Ships employed in Merchant Affairs, and thinking to evade the Punishment due for the same, bear Jacks in shape and mixture of Colours, so little different from those of His Majesty, as not to be without difficulty distinguished therefrom; Which practice is found attended with manifold Inconveniences: For prevention whereof for the future, His Majesty hath thought fit . . . strictly to Charge and Command all His Subjects whatsoever, That from henceforth they do not presume to wear His Majesties Jack (commonly called The Union Jack) in any of their Ships or Vessels, without particular Warrant for their so doing . . . And His Majesty doth hereby further command all His Loving Subjects, that without such Warrant as aforesaid, they presume not to wear on board their Ships or Vessels any Jacks made in imitation of His Majesties; or any other Flags, Jacks, or Ensigns whatsoever, than those usually heretofore worn on Merchant Ships, viz., The Flag and Jack White, with a Red Cross (commonly called St. George's Cross) passing quite through the same; and the Ensign Red, with the like Cross in a Canton White, at the upper Corner thereof next to the Staff."

Pepys' papers at Cambridge contain several references to the Union Flag as the "Union or Jack Flag," in notes written about 1687.

In 1694 a Proclamation similar to that of 1674 was issued, requiring Merchant Ships not to use the Union Jack or any Pendants of Ships of War, but to use the Flag and Jack White,

[1] Possibly it means that no more red or white Jacks, &c., were to be made these, with rope and canvas, having evidently been surreptitiously sold to the Merchant Service; the words are "and His Majesty hath appointed that the Flags, Jacks, and Pendents of His Majestie's ships shall henceforth be made of Red, White and Blew to the end the offenders herein may not pretend ignorance or mistake."

etc. Letters of Marque were ordered to wear in addition a "Red Jack having the Union Jack in the upper canton next the Staff."[1] But the Merchant Service was obdurate, and in 1702 a further Proclamation was issued in almost identical terms.

In 1707 the Merchant Service was again told that it must not wear the Naval Flags, Jacks or Pendants, or imitations thereof, and the Red Ensign of 1694 was made the proper distinguishing flag of British Merchant Ships. Except for the preamble establishing a Red Ensign with the Union in the upper canton for Merchant Ships in place of the older form, and the absence of provision of any "Jack" for a Merchant Vessel other than a Letter of Marque, this Proclamation is almost identical with the two preceding.

A similar Proclamation was issued on the alteration of the flag consequent on the legislative union with Ireland in 1801.

But the absence of any provision for a "Jack" for Merchant Vessels did not mean that no "Jack" was to be worn. As late as 1808 the King's Regulations direct that the White Jack with St. George's Cross is to be flown by merchant ships, though this provision had disappeared in the next edition (1824).

By an Admiralty Order of the preceding year (7th July, 1823) Merchant Ships were forbidden to use the Union Jack as a signal flag unless it had a white border one-fifth of its breadth. Apparently this must have replaced the old St. George's Jack, although no mention is made of any Merchant Jack in the 1824 Regulations, for in 1864 the Order abolishing the Red, White and Blue Squadrons speaks of "The Red Ensign and Union Jack with a white border, continuing, as at present, the national colours for all other British ships." Probably the use of a Jack by merchant craft was now gradually dying out. Flagbooks of 1845 and 1875 describe the White-bordered Union as "Merchant Jack," but after this date it is called simply "Pilot Jack."

I do not trace any erroneous use of the term "Union Jack" prior to 1833. An Admiralty Circular of 4th July in that year establishing the Flags to be flown by a ship in which the Sovereign was present ordered that the "Union Jack" should be flown at the mizen top-gallant mast head. After this time the mistaken use of the word becomes more common. An order in Council of 1869 speaks of the "Union Jack having been established as the distinguishing flag to be borne by the Admiral of the Fleet," and this erroneous expression only disappeared from the King's Regulations at the last revision (1906).

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[1] This Red Jack is certainly older. It is mentioned by Pepys in notes written about 1687 as "the Budgee Jack now familliarly used abroad (as lately by St. Loe)." The name according to early flagbooks is derived from Bougie near Algiers.

We now see why the Union Flag became known as the "Union Jack." From its first inception, or at any rate from a period shortly after, and except for nine years during the Commonwealth, it had been flown on the bowsprit of H.M. Ships, while from 1634 its use, except for occasional appearances as a flag of command, had been restricted to this purpose. After the old St. George's Jack had disappeared, the Union remained the sole British Jack, and, as the older was forgotten, the name, originally only appropriate to the flag as flown in one special position, became transferred to the Flag itself.

Why a flag on the bowsprit should be called a Jack is another story.

MEDIÆVAL SHIPS IN PAINTED GLASS AND ON SEALS.

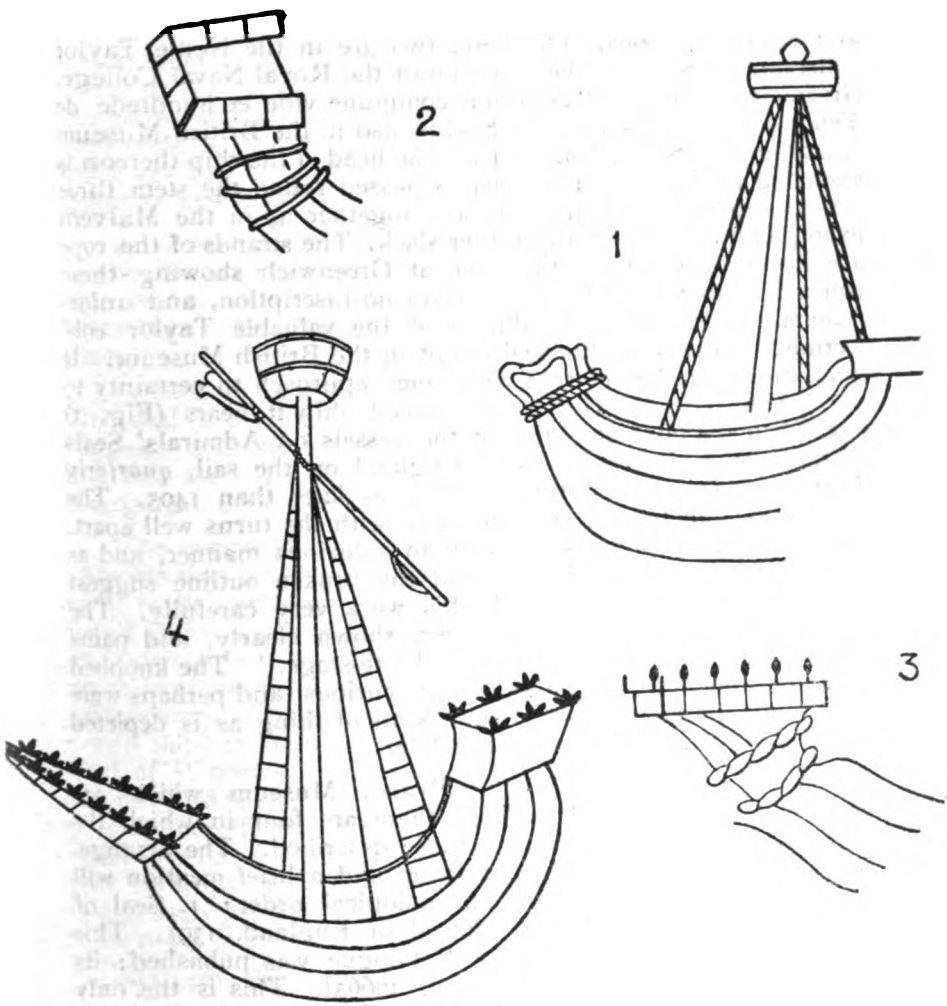
No. I.

By H. H. BRINDLEY.

[It need scarcely be pointed out that, though seals have for long been recognised as a valuable source of information for the ships of the Middle Ages, few students have hitherto attempted to make use of the many stained glass windows in which ships are represented.—ED.]

THE lower portion of the tracery of the east window of Malvern Priory Church consists of twelve lights, each of which is occupied by the figure of an Apostle. In the fourth light from the south is St. Jude, whose right hand supports a model of a ship. The glass of this window dates from between 1440 and 1460, and the ship (Fig. 1) borne by St. Jude represents the short one-masted vessel with high freeboard and considerable sheer which was perhaps still the commonest craft at the time the painting was executed. The artist omitted much, and not everything that he drew is accurate. The ship is so small and occupies so high a place in the window, that to make out its details from the floor a glass must be used. With this assistance we see that the aft end of the poop is cut off by the mullion of the light, and that the planking of the stern is at the present day incomplete, a piece of yellow glass of more recent date having been inserted here, probably in repair. The mast, instead of being amidships, or a little forward thereof, as in vessels of the time, is well abaft the midships line. Its position and also its unusual rake aft seem to result from a desire to show the face of the Apostle without any intervening objects. The mast is stayed by three very heavy ropes. Two of the ropes are probably shrouds, but nothing is seen of how they are made fast to the hull. The third, as thick as the others, runs to the poop, and this may be a back stay or a halyard. The only other fitting of the mast is a fighting top, which is rarely omitted in mediæval pictures of ships. The lozenge-shaped object in the top seems to be the masthead drawn in a conventional manner.

It thus appears that the ship represents very imperfectly the craft of her day and is hardly worth describing, were it not that she has one feature which is interesting and indeed puzzling. Just under the head is a rope—there is no doubt that it is that, for the strands are painted as clearly as in the


2
1
4
3

shrouds—passed twice round over the gunwales. No fall or anything else suggestive of ground tackle is shown. What is this rope? From its position it can hardly be a fender.

When I wrote my query on the subject [THE MARINERS' MIRROR, No. 1, p. 32] these ropes round the stem-head struck me as either an artist's convention, or at least a piece of gear represented imperfectly; but since then I have noticed the same arrangement in several naval and other seals of the XIVth and XVth centuries. Of these, two are in the Kettle Taylor collection of Seals in the Museum of the Royal Naval College, Greenwich. One is "Sigillum commune ville et hundrede de Tenterden." This Kentish Seal is also in the British Museum [Catalogue of Seals, No. 5454]. The head of the ship thereon is sketched in Fig. 2. The warp is passed round the stem three times, and the turns are not close together as in the Malvern example, but are evidently rather slack. The strands of the rope are not shown. The other seal at Greenwich showing these ropes I cannot identify, as it bears no inscription, and unfortunately there is no catalogue of the valuable Taylor collection. Moreover, this seal is not in the British Museum. It may, however, be referred with some approach to certainty to the XVth century, as the one-masted ship it bears (Fig. 3) has the usual characteristics of the vessels on Admirals' Seals of the age, while the arms of England on the sail, *quarterly France modern and England*, fix it as later than 1405. The warp is passed twice round the stem with the turns well apart. The lower turn pinches the stem in a curious manner, and as the impression is good, this and the broken outline suggest that the engraver did not do his work very carefully. The strands of the warp are, however, shown clearly, and pains were taken to give details of the "fore-stage." The knobbed posts or stanchions above its rail are curious, and perhaps were ornamental; they seem the same kind of thing as is depicted in the Malvern window described later.

Among the seals in the British Museum which are catalogued under "Admiralty," there are four in which the ship has stem ropes similar to those described. The arrangement is always essentially the same, and a brief mention will be sufficient. They are, in chronological order: 1. Seal of Edward, Earl of Rutland, Admiral of England, 1391. This seal has been added since the Catalogue was published; its MS. reference is lxxxix [add. ch. 40665]. This is the only instance I can find among the seals of the warp passed four times round the stem. The turns are slightly separated and equidistant. Strands not shown.

2. Seal of Richard Cletherowe, Admiral of the West, 1406 [Cat. No. 1042]. Warp in three turns, separated and diverging slightly. Strands shown clearly.

3. Seal of Thomas Beaufort, 2nd Duke of Exeter, Earl of Dorset, Admiral of England, Aquitaine and Ireland, 1416-26 [Cat. No. 1043]. Warp in two turns, separated and divergent. Strands not shown. The turns are very faintly if at all shown in their lower part, and are *under* the planking in places. This may be due to carelessness of the engraver, and indeed in this seal the panels of the "fore-stage" are also shown imperfectly, a fault which does not seem to lie with the impression. Pettigrew, "Collectanea Archæologica," i., 1862, pl. xv. 2, figures another seal of Thomas Beaufort, which does not appear to be in the British Museum. Here there are three turns of the warp, separated, and their upper parts covered by a curious oval plate or board, on which the bowsprit seems to rest. It hides the rail, and is an unexplained fitting which I have not found in any other case.

4. Another English Admiral's Seal of the XVth century in the British Museum. Warp in three turns, separated and equidistant. Strands not shown. The rail of the fore-stage bears knobs resembling those on the unidentified seal at Greenwich.

5. Seal of Sub-Admiralty of England [Cat. No. 1041]. This seal is ascribed to the XVth century, and the Catalogue suggests that the white hart lodged borne on the poop flag indicates the reign of King Edward IV. Warp in three turns, diverging. Strands shown on two lower turns.

The comparative frequency of these "stem-ropes" on seals suggests that they represent a real fitting. They and an anchor seem to be mutually exclusive. The latter either catted or fished is not uncommon on seals, but if it is depicted there are no "stem-ropes": it is curious that these ropes do not occur, or at least they are rare, in pictures of the age to which the seals belong. There is no instance of them in the very carefully drawn ships in John Rous' MS. "Life of Richard Beauchamp, Earl of Warwick," (Cottonian MS. Julius E. IV., Art. 6). M. de la Roncière ("Histoire de la Marine Française," i., p. 472) reproduces a picture of ships of the XVth century, in which one has something very like the ropes, but what is shown may be strips of wood or metal. Search among early pictures is necessary before a decision can be taken as to the meaning of these ropes round the stem.

Malvern Priory Church contains another painting of a ship (Fig. 4) about a quarter of a century later than that which I have described. In the window of 1502 in the north transept are Adam, Noah and David, with their emblems. The ship of Noah is a model supported in his hands. The hull has such great sheer as to be almost crescent-shaped. The artist bestowed much care on the fore-stage or forecastle, which bears along its rail seven ornaments, ap-

parently *fleurs-de-lis*. In proportion to the hull this fore-stage is as long as in any pictures of the age. Its fore-end is cut off by the leading of the glass, but in the sketch I have ventured to restore it. The short poop has similar ornaments. The mast is much too high for the length of hull, and carries a tub-like top, but no topmast. Besides two shrouds on either side, with ratlines, the only rigging is a rope which is perhaps intended for a halyard. Shrouds were nearly always shown made fast to the mast just below the top, or else coming from its floor, but in this Malvern ship they were evidently drawn carelessly. The leading of the glass cuts short the after yard-arm, though it is a good deal longer than the other. But little of the furled sail is seen; what is shown is made fast with gaskets. The parrell is shown clearly. In this painting there is certainly more technical knowledge than in the ship of St. Jude.

We have to remember how ignorant of nautical matters nearly all early artists and seal engravers were; but though we can accept no one picture as showing us what a ship was like throughout, much may be learned of the details of rig and fittings from these sources.

NAVAL NOTES.

THE KING.

The King has been graciously pleased to approve of the appointment of Admiral Sir L. A. Beaumont, K.C.B., K.C.M.G., as First and Principal Naval Aide-de-Camp to His Majesty.

Home. The following are the principal appointments which have been made:—

Vice-Admiral—H.S.H. Prince Louis of Battenberg, G.C.B., G.C.V.O., K.C.M.G., to command of Third and Fourth Divisions of Home Fleet. Captains—F. W. Caulfield to *Royal Arthur;* E. H. Mowbray to *Suffolk;* H. H. Bruce to *Defence;* D. St. A. Wake to *Prince George;* Hon. H. G. Brand, M.V.O., to *Bellona* and command of Second Destroyer Flotilla; E. P. Back to *Leviathan* and as Flag-Captain to Rear-Admiral Bradford; E. H. Heaton-Ellis, M.V.O., to *Good Hope* and as Flag-Captain to Rear-Admiral Burney; C. S. Hickley, M.V.O., to *Ganges* for command of Shotley Training Establishment; C. B. Miller to *Edgar.* Commander—N. L. Stanley to *Philomel.*

Vice-Admiral H.S.H. Prince Louis of Battenberg, G.C.B., G.C.V.O., etc., is to succeed Vice-Admiral Sir George Neville, K.C.B., C.V.O., whose period of service in command of the Third and Fourth Divisions of the Home Fleet expires on the 24th prox. Prince Louis will hoist his flag on board the first-class battleship *Africa*, which has been selected to relieve the first-class battleship *Bulwark*, as flagship of the Third and Fourth Divisions.

Rear-Admiral R. H. Peirse, M.V.O., hoisted his flag on board the first-class battleship *St. Vincent* on the 5th ult. at Portsmouth, in succession to Rear-Admiral F. C. D. Sturdee, C.M.G., as Rear-Admiral in the First Division of the Home Fleet, and on the same day at Devonport. Rear-Admiral R. B. Farquhar hoisted his flag on board the first-class armoured cruiser *King Alfred*, in command of the Devonport Sub-Division of the Home Fleet, in succession to Rear-Admiral A. A. C. Galloway.

The first-class battleship *Triumph* arrived at Sheerness on the 5th ult. from the Mediterranean, paid off on the 11th ult., recommissioned the following day for a further term of service in the Mediterranean, and left Sheerness again on the 16th to rejoin the Mediterranean Fleet off Vigo.

The first-class battleship *Lord Nelson* paid off at Sheerness on the 11th ult. and recommissioned the following day for a further term of service in the Home Fleet; the *Lord Nelson* has been transferred from the 1st to the 2nd Division of the Home Fleet.

The first-class battleship *Hibernia* paid off at Devonport on the 11th ult. and recommissioned on the following day for a further term of service as flagship of the Rear-Admiral in the 2nd Division of the Home Fleet.

Home.

The first-class battleship *Bellerophon* paid off at Portsmouth on the 31st ult., recommissioning the following day for a further period of service in the Home Fleet.

The three submarines "C36," "C37," and "C38," which are proceeding to Hongkong, where they will be stationed, left Portsmouth on the 8th inst. for Malta, escorted by the second-class cruisers *Bonaventure* and *Diana;* they proceed to Malta under their own steam, but from that port are to be towed by the second-class cruiser *Diana.*

The first keel plates of the two new battleships *King George V.* and *Centurion* were officially laid down at Portsmouth and Devonport respectively. No official particulars of these ships or the two others belonging to the same class, the *Audacious* and *Ajax* have been made known, but it is believed that they will be approximately 564 feet long between perpendiculars and 600 feet over all, with a beam of 89 feet and a displacement of between 23,000 and 24,000 tons; the main armament to consist of ten 13.5-inch guns, the same as in the *Orion* class, with a powerful secondary armament of 4-inch guns and three 21-inch torpedo-tubes.

Health of the Navy for 1909.—*Introduction.*—In the present report one alteration will be found from the reports of previous years.

Owing to the reorganisation of the Fleet in March, 1909, the Channel Fleet was absorbed into and became part of the Home Fleet.

Consequently the returns from the Channel Fleet for the period prior to this reorganisation have been included in those from the Home Fleet.

Total Force.

The returns for the Total Force for the year 1909 show a continuous improvement in the general health of the Fleet as compared with the preceding 5 years. Not only are the case, invaliding, and death ratios for the year under review lower than the average ratios for the last 5 years, but the average loss of service for each person has again dropped from 10·8 to 9·76 days. The final invaliding ratio also shows a small decrease in comparison with the previous 5 years' average.

The Total Force, corrected for time, in the year 1909, was 112,700, and the total number of cases of disease and injury entered on the sick list was 72,540, which gives a ratio of 643·65 per 1,000, a decrease of 75·34 as compared with the average ratio for the preceding 5 years.

The number of entries per man for disease and injury was:—Home Station, ·76; Home Fleet, ·56; Atlantic Fleet, ·62; Mediterranean, ·61; North America and West Indies with Fourth Cruiser Squadron, ·71; China, ·71; East Indies, ·95; Australia, ·61; Cape of Good Hope, ·56; and the Irregular List, ·85. For the Total Force the average was ·64, a decrease of ·05 as compared with 1908.

The average number of men sick daily was 3,015·25, giving a ratio of 26·75 per 1,000, a decrease of 2·84 in comparison with the previous 5 years. The total number of days' sickness on board and in hospital was 1,100,568, which represents an average loss of service of 9·76 days for each person—a decrease of 1·04 in comparison with the average for the preceding 5 years.

Home.

The ratio per 1,000 of men sick daily on the various stations was:—Home Station, 35·42; Home Fleet, 23·19; Atlantic Fleet, 24·01; Mediterranean, 23·83; North America and West Indies and Fourth Cruiser Squadron, 25·42; China, 28·09; East Indies, 25·78; Australia, 20·41; Cape of Good Hope, 20·14; and the Irregular List, 45·76. For the Total Force the ratio was 26·75. The Cape of Good Hope shows the lowest sick rate, and, as in the preceding 4 years, the Irregular List shows the highest.

The average number of men sick daily under the different diseases will be found in the Medical Statistical Returns of the Total Force, Table No. 1.

The total number invalided was 2,007,[1] which gives a ratio per 1,000 of 17·8, a decrease of 4·3 per 1,000 in comparison with the average ratio for the preceding 5 years. The total number of persons *finally* invalided was 1,764 (as shown on Table No. 1 of the Total Force), of whom 66 were invalided after refusing operative treatment (*see* page 149). The ratio per 1,000 of *final* invalidings was 15·65, a decrease of ·86 per 1,000 as compared with the average for the previous 5 years.

Of the 2,007 invalids, 1,851, giving a ratio of 16·42 per 1,000, were for disease, and 156, a ratio of 1·38 per 1,000, were for injury.

For the invaliding ratios on the several stations, *see* Medical Statistical Returns of the Total Force, Table No. 3.

In addition to the information given in Tables 1 and 3, a separate table, which includes invalids from Marine Head Quarters, will be found at pages 14 and 15, giving particulars as to age and length of service of all officers and men finally invalided out of the Service.

In comparison with the average ratios of the previous 5 years, the ratio per 1,000 of Force invalided has decreased in the Mediterranean from 31·49 to 17·64; in China, from 22·63 to 17·43; in the East Indies, from 34·37 to 25·53; in Australia, from 18·41 to 9·79; Cape of Good Hope, from 22·14 to 14·15; Atlantic Fleet, from 23·86 (4 years' average) to 16·29; North America and West Indies with Fourth Cruiser Squadron, from 18·51 (4 years' average) to 16·04; in the Home Fleet, as compared with an average of the Home and Channel Fleets for 1908, from 15·86 to 14·15; and on the Home Station, as compared with 1908, from 27·93 to 26·42. Only in the Irregular List has there been a fractional increase, viz., from 16·81 to 16·85.

The total number of deaths was 362, giving a ratio of 3·21 per 1,000, a decrease of ·54 in comparison with the average ratio for the last 5 years. Of this number, 258, or 2·28 per 1,000, were due to disease, and 104, giving a ratio of ·92 per 1,000, to injury.

The ratio of deaths from disease and injury on the several Fleets and Stations will be found in the Medical Statistical Returns of the Total Force, Table No. 3.

[1] This number includes men temporarily invalided from Foreign Stations, many of whom are again able to join the Active Force. The number finally invalided represents the waste of the Service from this cause during the year.

Home.

In comparison with the death ratios of the preceding 5 years, the ratio per 1,000 decreased from 3·94 to 2·01 in the Mediterranean; from 4·02 to nil at the Cape of Good Hope; from 4·02 to 1·12 in the Irregular List; from 3·02 (4 years' average) to 2·32 in the Atlantic Fleet; from 3·1 (4 years' average) to 2·46 in the North America and West Indies with Fourth Cruiser Squadron; and from 4·05 (average of the Home and Channel Fleets for 1908) to 2·73 in the Home Fleet.

There were increases in 4 stations, viz., in China, the East Indies, and Australia, from 5 years' averages of 4·15, 7·83, and 4·19, respectively, to 4·78, 9·04, and 6·52, and on the Home Station, where the ratio was 4·11 as compared with 3·04 in 1908.

A table (No. 4) will be found in the Medical Statistical Returns of the Total Force showing the ratios per 1,000 of Force of all cases of disease and injury entered on the sick list, invalided and dead, on the various stations during the year.

General.

The warships, exclusive of torpedo-boats and submarines, launched during the year 1910, with their tonnage, I.H.P., and estimated speed, were as follows:—

Great Britain.—First-class battleships: *Orion*, 22,500 tons, 27,000 I.S.P. 21 knots speed; *Colossus* and *Hercules*, both of 20,250 tons, 25,000 I.S.P., and 21 knots speed. First-class armoured cruiser: *Lion*, 26,000 tons, 70,000 I.S.P., and 30 knots speed. Second-class protected cruisers: *Weymouth*, *Falmouth*, 5,300 tons, 22,000 I.S.P., and 26 knots speed; *Bristol*, 4,800 tons, 22,000 I.S.P., and 25 knots speed. Third-class cruiser *Blonde*, 3,350 tons, 18,000 I.S.P., and 25 knots speed. Destroyers: *Acorn*, *Alarm*, *Brisk*, *Cameleon*, *Comet*, *Hope*, *Larne*, *Lyra*, *Nemesis*, *Nereide*, *Redpole*, *Rifleman*, *Ruby*, *Staunch*, all of 790 tons, 13,500 I.S.P., an 29 knots speed; *Basilisk Mosquito*, *Nautilus*, *Pincher*, *Racoon Rattlesnake*, *Savage*, *Scorpion*, *Scourge*, *Wolverine*, of from 870 to 960 tons, 12,750 I.S.P., and 27 knots speed.

Austria-Hungary.—First-class battleship *Zrinyi*, 14,600 tons, 20,000 I.H.P., and 20 knots speed.

Brazil.—Destroyers: *Parana*, *Santa Catherina*, 700 tons, 8,000 I.H.P., and 27 knots speed.

France.—First-class battleship: *Vergniaud*, 18,400 tons, 22,500 I.S.P., and 19 knots speed. Destroyers: *Aspirant Herbert*, *Bouchier*, *Dague*, *Enseigne Henry*, *Faulx*, 746 tons, 12,500 I.H.P., and 31 knots speed; *Cavalier*, 450 tons, 8,500 I.H.P., and 28 knots speed.

Germany.—First-class battleship: *Oldenburg*, no reliable details available, but it is believed that her displacement is about 22,000 tons. First-class armoured cruiser: *Moltke*, no official details available, but it is believed that she has a displacement of 22,500 tons, is to develop 70,000 I.S.P., and have a speed of 28 knots. Destroyers: 12, with a displacement of 650 tons, 16,000 I.H.P., and a speed of 32 knots.

Greece.—First-class armoured cruiser: *Giorgio-Averoff*, 10,100 tons, 20,000 I.H.P., and 23 knots speed.

General.

Italy.—First-class battleship: *Dante-Alighieri*, 19,250 tons, 29,000 I.S.P., and 23 knots speed. Destroyers: *Corazziere*, *Garibaldi*, 375 tons, 6,000 I.H.P., and 28.5 knots speed.

Japan.—First-class battleship: *Kawachi*, 20,800 tons, 25,500 I.H.P., and 20.5 knots speed. Destroyer: *Umikase*, 1,170 tons, 21,000 I.H.P., and 33 knots speed.

The Netherlands.—Destroyers: *Frei*, *Wolf*, 435 tons, 7,500 I.H.P., and 30 knots speed.

Russia.—First-class gun-boats: *Grosa*, *Schval*, *Schtorm*, *Taifun*, *Smertsch*, *Oragan*, *Wichrya*, *Wyuga*, 950 tons, 250, I.H.P., and 11 knots speed.

United States.—First-class battleship: *Florida*, 23,400 tons, 28,000 I.H.P., and 20.5 knots speed. Destroyers: *Burrows*, *Drayton*, *Mayrant*, *McCall*, *Paulding*, *Perkins*, *Sterrett*, *Walke*, *Warrington*, 900 tons, 12,000 I.H.P., and 29.5 knots speed.

Uruguay.—Third-class cruiser: *Uruguay*, 1,400 tons, 5,700 I.H.P., and 23 knots speed.

Great Britain has this year recovered the lead in the matter of the total tonnage of warships launched in 1910 (exclusive of submarines and torpedo boats), which for the last two years has been held by Germany. The figures approximately for the four leading Naval Powers are (allowing the German *Oldenburg* to have about the same displacement as our own *Orion*) as follows:—115,466 tons; Germany, 52,800 tons; United States, 31,500 tons; France, 22,876 tons.

According to *Lloyd's Annual Summary* for 1910, the number and displacement of warships of 100 tons and upwards was as follows:—Great Britain—No. 43, displacement, 133,525 tons; Germany—No. 21, displacement, 49,024 tons; United States—No. 13, displacement, 30,257 tons. France—No. 12, displacement, 24,063 tons. Japan—No. 3, displacement, 23,100 tons. Italy—No. 4, displacement, 19,374 tons. Russia—Not given. Other Powers—No. 26, displacement, 31,451 tons. Total—No. 122, displacement, 310,854 tons.

Argentine Republic.

The New "Dreadnought" Battleships.—Some account of the new Argentine *Dreadnoughts* has now been received from Buenos Ayres. While the Fore River Company will be responsible for the contract for both vessels, which it is proposed to name *Rivadavia* and *Moreno*, the second will be constructed by the New York Shipbuilding Company.

The Argentine ships will have a displacement of 27,500 tons, with a draught of 27 feet in trial trim, and not exceeding 30 feet when completely loaded. Twelve 12-inch guns will be placed in pairs in six turrets, the fore and aft pairs of turrets being superimposed. Those forward are to be not less than 25 feet above the normal line of flotation; the central turrets are to be 22 feet, and those on the poop 17 feet above the load line. These heights coincide with English practice, a smaller elevation than 20 feet being thought to produce bad sea qualities. Superstructure has been entirely done away with, so as not to obstruct the field of fire. The torpedo-defence guns are twelve 6-inch, disposed in

Argentine Republic.

the central casemate, and twelve 4-inch on the top of the four central turrets and at the sides of the bridge. The guns are to be supplied by the Bethlehem Steel Company. The movement of the turrets will be triple—electric, hydraulic, and by hand. The gun power is as follows:—

Calibre	12-inch.	6-inch.	4-inch.
Weight of projectile	867 lbs.	105 lbs.	33 lbs.
Initial velocity	3,000 feet.	3,000 feet.	3,000 feet.
Muzzle energy	16,890 tons.	2,028 tons.	640 tons.
Rapidity of firing per minute ...	2	6 to 8	12

The 12-inch guns are to be capable of perforating armour of 14 inches thick at 6,000 mètres. The centres of the 6-inch guns will be 19 feet 6 inches above the normal load line so as to avoid the necessity for closing the ports in a rough sea. The main armour belt will extend for 250 feet in the centre, and 4 feet 9 inches above and 8 feet 4 inches under the normal water line, the uniform thickness being 12 inches. The armoured band will extend 75 feet toward poop and bow to the barbettes, but with the thickness of 10 inches only. Above the principal belt of armour for the whole length of 400 feet there will be armour of 9 inches in the lower part and 8 inches in the upper part to the height of the main deck. The bow and poop will also be protected by armour of 6 and 4 inches respectively. On the main deck there will be a casemate with armour of 6 inches, in which the 6-inch guns will be placed. The bases of the funnels will be protected to 15 feet from the deck with a special steel plate 1½ inches thick. The total weight of the armour, barbettes, turrets, etc., will be 7,000 tons. The bottom of the ship will be protected against submarine mines with 660 tons of nickel steel.

All the machinery and powder magazines are to be at least four mètres distant from the hull, while the divisional compartments will form a kind of triple protective shell against torpedo attacks and submarine mines.

The turbine engines will be in three separate and independent compartments, and the boilers will be in six compartments, divided into two groups. The capacity of the coal-bunkers is 4,000 tons and there will be tanks for 660 tons of petroleum. The turbines will develop 39,500 H.P. with 25 millimetres of pressure of air in the boilers. This, with a displacement of 27,500 tons, will give a speed of 22½ miles an hour for eight successive hours. With this speed, the radius of action will be 3,600 miles; at a speed of 15 miles the radius will be 7,200, and with 11 miles an hour 10,100 miles. The cost of each ship will be £2,500,000.

The first of the battleships is to be completed in two years and the second three months later. The price of the vessels, £2,190,000 each, includes all guns and ammunition, but not torpedoes. Eighty rounds for each of the large guns, 300 for the 6-inch, and 350 for the small guns are to be supplied. The torpedo tubes are of 53 centimètres (20½-inch) calibre.

Argentine Republic.

The following were the principal tenders for the Argentine battleships:—

1. Fore River, United States, a ship of 27,900 tons; speed 22.5 knots; 12-inch armour; at the price of £2,190,000; delivered in from 24 to 27 months (whose tender has since been accepted).

2. Ansaldo, Italy, a ship of 25,600 tons; speed 22 knots; 10-inch armour; price, £2,200,000; delivered in from 24 to 28 months.

3. Forges & Chantiers, France, a ship of 25,170 tons; speed 22 knots; 10-inch armour; price, £2,200,000; delivered in 29 months.

4. Armstrong & Vickers, England (four proposals), ships of 29,060 and 28,040 tons each; speed 24 and 22 knots; 12-inch armour; prices, £2,500,750 and £2,450,750 respectively; delivered in 33 months.

5. Blohm & Voss, Germany (three proposals), a ship of 25,900 tons; speed 22·5 knots; 12-inch armour; price, £2,304,000; delivered in 30 months.

The type of engines proposed by Fore River was Curtiss or Parsons; all the others offered Parsons, which is the class desired by the Argentine Government. The prices of the different contractors, work out as follows: American, £78·3 per ton; Italian, £85·9 per ton; English, £86·8 per ton; French, £87·4 per ton; German, £88·2 per ton.

Captain Capeola, Secretary of the Argentine Naval Commission, is reported as saying that the reason why the contracts for the two Argentine battleships were awarded to the Fore River Company is that better ships can be obtained for the price in the United States than in England. "The reason why the United States tender was lower than the English," he is reported to have said, "is that steel for construction work and armour-plating is a great deal cheaper in the United States than in England. Wages are higher there, but the contractors will save a considerable amount on the steel, and are able to obtain it more cheaply owing to the manipulations of the Steel Trust."—*Page's Weekly, and Scientific American.*

France. The following are the principal promotions and appointments which have been made :—

Vice-Admirals—H. A. Jauréguiberry to be Inspector-General of the Fleets in Home Waters; L.V. Marin-Darbel to be Commander-in-Chief of the 5th *Arrondissement Maritime* (Toulon). Rear-Admirals—P. Auvert to be Chief of the General Staff of the Navy; L. R. Dartige du Fournet to command of a Division of the First Squadron; H. A. Calloch de Kérillis to be Major-General at Rochefort. Capitaines de Vaisseau—H. A. Calloch de Kérillis to be Rear-Admiral; A. F. Fatou to *Jules-Ferry;* J. A. Habert to *Danton;* E. A. Papaix to *Mirabeau;* L. Jourden to *Dupetit-Thouars;* P. J. Gouts to *Kléber.* Capitaines de Frégate —A. F. Fatou to Capitaine de Vaisseau; A. P. Morache to *Typhon* and command of Cherbourg Torpedo Flotilla.

Gun Armament of the New Battleships.—The Superior Council of the Navy held a meeting on the 16th ult. for the purpose of considering the gun armament of the new French battleships, and particularly the advisability of adopting a larger calibre than the 12-inch.

An article in the *Temps* remarks that this is a question of first importance, as it is already evident that the battleships to be commenced

France.

in 1911 will not be identical with the *Jean Bart* and *Courbet*, only just commenced.

The article continues:—"The evolution of the *Dreadnought* type is in the direction of a continually more powerful fighting engine, and all Navies seem now to have abandoned the principle of homogeneity, finding it most important to increase the protection of the vessel and develop the power of attack. It is said that the (French) Admiralty consider 23,000 tons the limit to be usefully employed in a battleship suitable for our existing Naval Ports and maritime requirements, but this is rather putting the cart before the horse—our ships are not made for our ports, but, on the contrary, the ports and dockyards should adapt themselves to the necessities of the defence of the country."

In the struggle going on to evolve the most powerful type of ship, one improvement succeeds another, and each vessel laid down shows an advance on her predecessor either in the number or the position or the power of the guns. The German Navy has twice changed the calibre of the heavy artillery in three years, and the disposition of the turrets for the heavy guns has been changed four times in England since the first *Dreadnought*.

Given the same calibre of gun, the comparative power of two ships depends in great measure on their disposition; a number of guns is not the only thing necessary: they must also be able to concentrate their fire on the enemy, and superiority will fall to the ship whose guns are so disposed that the greatest number can be brought to bear at the same time within the largest arc of training.

Comparing the *Sebastopol* (Russia), *Wyoming* (U.S.), *Riradavia* (Argentine), and *Jean-Bart* (France), which all mount the same number (twelve) 12-in. guns differently disposed, we find that the Russian battleship mounts hers in four 3-gun turrets in the middle line, the U.S. ship has six 2-gun turrets also in the middle line, the Argentine six 2-gun turrets, four in the middle line and one on each broadside *en échelon*, and the *Jean-Bart* six 2-gun turrets, four in the middle line and one on each broadside, but opposite each other and not *échelon*. A foreign writer criticises our arrangement and says: "The French have sacrificed a sixth part of the offensive power of their ship in the most important bearing so as to increase the power of ahead and astern fire, and for the greater part of a battle it is certain that one of the two broadside turrets of the *Jean-Bart* will be perfectly useless." This is enough to show that we should not build any more *Jean-Barts*.

How, therefore, should the guns be disposed in our new 1911 battleships? In America and in England they place all their guns in the middle line. The U.S. have six 12-in. 2-gun turrets so placed, and the latest English battleship, the *Orion*, carries ten 13.5-in. guns mounted in five 2-gun turrets, also placed in the middle line. It is said that the new battleship to be built at Portsmouth will displace from 27,000 to 28,000 tons, and will carry twelve 13.5-in. guns, so she will be the most powerful battleship actually under construction. Can we afford to build less powerful vessels? M. Bertin, ex-Director of the Technical Section at the Ministry of Marine, says: "It is useless to discuss the pros and cons of large displacements inaugurated by the *Dreadnought* in 1905; they have come to stay, and no Navy can think of now building inferior and less powerful vessels."—*Le Temps*.

United States.

Warship Tonnage and Sea Strength.—Even a two-battleship programme has not kept the United States up to the Navy building pace of the great Powers, according to the annual statement of the warship tonnage and sea strength prepared by the Office of Naval Intelligence, Navy Department. In the past year Germany has passed America and gained a good lap on Great Britain in the tonnage under construction. The United States is still second in the tonnage afloat, but has dropped behind Germany in the tonnage authorised.

Among the other interesting features of this statement is that comparatively little has been accomplished by Japan, despite the popular impression that she is preparing for war with the United States. Her increase in tonnage afloat has been so small during the past two or three years that Japan's Navy has actually dropped back. She has also lost in the amount of tonnage under construction. This accounts for Japan's recent awakening and the efforts of her statesmen to get through a monster programme, even larger than that of Germany. It is understood that, in addition to securing the authorisation of a large tonnage, an effort is being made by the progressive leaders to have the battleships and cruisers authorised last year enlarged several thousand tons. In this connection it is reported that Japan has secretly contracted in England for the construction of the first of the 27,000-ton battleships. The plans for these battleships call for ten 14-inch guns, the armament being built either in England or at Krupp's.

France, the figures show, still retains the fourth place, but has lost more than Japan, which holds the fifth place. In tonnage afloat France lost nearly 100,000 tons, or two *Dreadnoughts*, and she has nothing authorised which will improve her standing in the near future. Russia gained a little afloat, and lost as much as France in building. Italy, ranking seventh, and Austria, last, have gained but slightly.

Germany gained nearly twenty per cent. in total tonnage, while Great Britain advanced not quite twelve per cent. The United States has gained little over five per cent. While this country has put nearly 60,000 tons in service during the past year, it has actually gained 31,000 tons, owing to the large number of vessels which have been stricken from the Navy List. The policy of getting rid of worthless vessels, adopted by Secretary Meyer last spring, was a part of his economy programme. In addition to the saving of hundreds of thousands of dollars in expenses of maintaining the Navy, what ships this country does have in commission under this policy will be effective and ready for actual war at any time.

Analysis of the statement indicates that the *Dreadnought* type has come to stay. All of the seven Powers are following the example set by England four years ago, when she launched the first *Dreadnought* as an advanced type of battleship. The United States was the first to follow, and Germany came close behind with this larger type of fighting ship. Even the minor Powers are making efforts in this direction. Brazil has two *Dreadnoughts*, and it is claimed now has under construction the largest fighting ship in the world. Argentina has two 28,000-ton *Dreadnoughts* building in the United States; Chili is advertising for one;

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Turkey is thinking of entering the *Dreadnought* class, and those in authority in China are investigating the subject. China, it is understood, will start her navy with an armoured cruiser or two and a river gunboat.

In the matter of the world's tonnage the following construction figures are given:—

England.—Tonnage afloat, 1,859,168, an increase of 100,818 during the year; tonnage building, 314,670 tons, an increase of 67,147 tons over that building last year. Total tonnage built and building, 2,173,838, a gain during the year of 167,963.

Germany.—Built, 66,035, gain of 56,335; building, 297,810, gain of 86,818. Total built and building, 963,845, making a gain of 143,153.

United States.—Built, 717,702, gain of 31,757; building, 106,450, a gain of 6,211. Total built and building, 824,152, a gain of 38,207.

France.—Built, 558,306, loss of 46,614; building, 168,925, gain of 12,487. Total built and building, 725,231, loss of 41,675.

Japan.—Built, 413,291, gain of 12,487; building, 80,380, loss of 13,948. Total built and building, 493,671, loss of 33 tons.

Russia.—Built, 289,113, gain of 29,850; building, 112,850, loss of 40,637. Total built and building, 401,463, loss of 10,787.

Italy.—Built, 219,959, gain of 3,921; building, 107,100, a gain of 63,760. Total built and building, 327,059, a gain of 67,781.

Austria.—Built, 153,938, a gain of 35,041; building, 55,961, a gain of 2,241. Total built and building, 209,899, a gain of 41,282.

The relative order of warship tonnage of the Powers is as follows:—

Nation.	Built.	Building.
Great Britain	1,859,168	2,175,838
United States	717,702	824,162
Germany	666,035	963,845
France	566,306	725,231
Japan	413,291	493,671
Russia	289,113	401,463
Italy	219,959	327,059
Austria	163,938	209,899

The relative standing of the nations in the number of *Dreadnoughts* and other vessels built is shown in the following table:—

Nation.	Dread-noughts.	Armoured cruisers.	De-stroyers.	Sub-marines.
Great Britain	8	39	168	67
Germany	4	10	91	8
United States	4	12	28	19
France	0	21	65	69
Japan	0	11	57	9
Russia	0	7	97	31
Italy	0	10	28	7
Austria	0	3	14	6

—*Army and Navy Journal.*

United States.

The Schneider Torpedo-Testing Station.—Messrs. Schneider & Co. have added of late to their specialities the manufacture of automobile torpedoes, and in so doing they have rendered France independent of all outside sources for this type of weapon. They have signed a contract with the French Ministry of Marine for the supply of a number of such torpedoes of 450 millimetres (17·7 inches) in diameter, and they decided to put down on the French sea-coast a proving station, to be used both for regulating these weapons and for carrying out their acceptance tests. After considering all the likely locations round the whole French seaboard, they selected Léoube Bay, which forms a portion of the Hyères roadstead, in the Mediterranean. This met the conditions required for a submarine testing station, as it allowed a free range of at least 5,000 to 6,000 metres (about 6,000 yards), a free width of 200 metres (656 feet) at a distance of 200 metres from the launching-point, and a free width of 500 metres (1,640 feet) at a distance of 400 metres (1,312 feet) from the same point, a mean depth below datum of from 9 to 12 metres (30 feet to 40 feet), clear water and a satisfactory sea bottom, few currents, there being also sufficient shelter against bad weather, and proximity of the site to the coast. Even this site has the defect that a depth of 50 feet is not found sufficiently near the shore to make it practicable to erect the required buildings on land.

Under these conditions the company decided to construct, at the point where this depth is found, and whence the course extends seaward, nearly at right angles to the shore, an artificial island to support a building containing all the appliances required for regulating and launching torpedoes.

This ingenious project is now accomplished and the tourists and fishermen see a many-windowed building, resembling a commodious dwelling, rising 30 feet above the water and apparently resting on it, 800 feet from the shore. The building is made entirely of armoured concrete. It was designed by the engineers of the Schneider and Hennebique firms, in collaboration, and constructed at the shipyard at La Seyne, 20 nautical miles distant from its present site. The lower part of the structure is a huge caisson with slightly inclined walls. After its completion it was towed to its destination by two tugs, very slowly and with many precautions, on a calm, still night, early in November, 1909. The emplacement had been prepared by divers, and a carefully levelled bed of stone, about 12 feet thick, had been laid on the sea bottom. The caisson was moored very exactly over this foundation and gradually sunk by admitting water into compartments designed for that purpose.

The caisson, the greater part of which is submerged, terminates in a platform 11 feet above mean sea level. It is almost a solid mass of concrete, but contains a subaqueous water-tight chamber, in which are placed tubes for launching torpedoes under water. These tubes project through the wall of the chamber, and are fitted with water-tight joints. Their outer ends are surrounded by a lock, which, when closed and pumped dry, permits examination and repair of the tubes and their doors. At and above the water line, the caisson is protected by wooden fenders from injury by vessels, torpedoes, and other floating objects.

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A two-story building is erected upon the platform. The lower story contains tubes for launching torpedoes above the water level and is connected with the chamber beneath by a large opening in the floor. After each torpedo has finished its course it will be picked up by a vessel, brought back to the station, hoisted to the platform by tackle running on a concrete beam and received in a large recess in the first story, whence it will go to the regulating and repair room for further adjustment. All the hoisting, conveying, and other machinery, including a series of railways, a pump for emptying the subaqueous chamber, and air compressors for charging the torpedoes, will be operated by electricity furnished by two generators, driven by petroleum motors.

The upper story of the building will contain offices, lodgings for caretakers, and an observation room placed directly over the launching tubes, and supported on cantilevers outside the wall of the building. This room will have a bay window with a glass floor, so that the moment at which the torpedo leaves the tube can be noted, for the purpose of determining the velocity. The observation room will be surmounted by a signal tower from which communication can be held with observers stationed on floats at various points of the course.—*Scientific American.*

MILITARY NOTES.

THE KING.

The King has been graciously pleased to confer upon the 10th (Prince of Wales's Own Royal) Hussars, the honour of becoming its Colonel-in-Chief.

The King has been graciously pleased to confer upon the Duke of Lancaster's Own Yeomanry the honour of becoming its Colonel-in-Chief.

The King has been graciously pleased to confer upon the 8th (Isle of Wight Rifles "Princess Beatrice's") Battalion, The Hampshire Regiment, the honour of becoming its Colonel-in-Chief.

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The following are the principal appointments which have been made:—

Major-Generals—George Fitzherbert Browne, C.B., D.S.O., to be Colonel The Northamptonshire Regiment; Henry Jardine Hallowes to be Colonel The West India Regiment. Colonels—Hubert De la P. Gough to command 3rd Cavalry Brigade (Irish Command), with temporary rank as Brigadier-General; R. N. R. Reade, C.B., to be Brigadier-General in Charge of Administration (Northern Command); John W. G. Dawkins, C.B., to be Assistant Adjutant and Quartermaster-General, Malta; James E. Counter to be an Assist. Adjutant-General at the War Office; William H. Bowes to be a General Staff Officer, 1st Grade at the War Office; Herbert R. H. Jack, C.M.G., to be Assist.-Director of Supplies and Transport (Western Command).

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Territorial Force.—Major-General—Hubert I. W. Hamilton, C.V.O., C.B., D.S.O., to command North Midland Division (Northern Command).

Indian Army.—Colonels—James A. Bell to be Commander Aden Brigade and Political Resident, Aden, with temporary rank of Brigadier-General; Philip M. Carnegy to command Abbottabad Brigade with temporary rank of Brigadier-General; Ernest H. Rodwell to command Secunderabad 2nd (Infantry) Brigade with temporary rank of Brigadier-General; John E. W. Headlam, D.S.O., to be Director of Staff Duties and Military Training in India, with temporary rank of Brigadier-General; W. P. Braithwaite to be Commandant of the Indian Staff College.

Interim Report of the Advisory Committee for Aeronautics.—The following are the most important points in the Report, which is signed by Lord Rayleigh, the President, on behalf of the Committee:—

"The Report of the Advisory Committee for Aeronautics for the year 1909—10 was prepared in April last and was presented to Parliament on July 25. Since the date of the preparation of that Report a large amount of experimental work has been carried out, and it is thought that a short account of the progress made and the results obtained may be of interest.

"*Equipment for experimental work.*—A general description of the equipment which has been provided at the National Physical Laboratory was given in the Report for 1909-10. The erection of the necessary buildings and the construction of the apparatus occupied the greater part of the year covered by that Report. Modifications in detail which have since been made in some of this apparatus are mentioned below. The equipment installed has proved in general satisfactory for the purposes for which it was provided.

"*Wind Channel.*—This has been improved by the addition of guide planes and honeycombs to secure greater uniformity of flow in the air current. It is necessary for rapidity and accuracy of working that the flow should be uniform across a section of the channel and also that the flow past any point should not exhibit any pulsation; further, this uniformity both in space and time must be maintained for all speeds of the air current at which it is desired to experiment. The problem of securing a completely satisfactory flow under all the varying conditions of experimental practice has received much attention, and the experience gained will be of great value in the future construction of wind channel apparatus for experimental work.

The special apparatus designed and constructed at the Laboratory for the simultaneous measurement of the air resistances, parallel and perpendicular to the direction of the current, of the model under test has proved very convenient in working. As previously described, the design includes an arrangement enabling the model to be rotated readily between each set of measurements so that the "lift" and "drift" at various angles can be very rapidly determined.

The results of some of the earlier experiments in the air channel are given in the Report for 1909-10. A large number of investigations have since been made to obtain the information necessary in connection with the

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constructional work proceeding at Farnborough and Barrow. For some of these investigations the water channel has again proved very useful, valuable information being thus obtained from quite small models to supplement the work done in the air channel. Among the researches carried out may be mentioned specially the determination of the magnitudes of the forces on airship bodies, of different forms, inclined to the wind, and the line of action of the resultant force in each case; the determination of the relative efficiency of different types of rudders and lifting planes; the investigation of the resistance of model gondolas, and also of models of radiators, and of wires and stays, &c. An important series of experiments has also been made to investigate the forces due to the wind on dirigible sheds. These experiments were all undertaken at the request of the Constructive Departments as a guide in designing, and the designs adopted have been based on these experiments. It is hoped to embody particulars of those results of this work which are of general interest in the Report for 1910-1911.

"*Whirling table.*—Some modifications have been made in the apparatus for determining the thrust and torque of a propeller in motion, to secure greater sensitiveness and range in the measurements. It has been found further, that at high propeller speeds the whirling arm, which can be driven independently of the propeller, rotates under the action of the propeller alone more rapidly than is sometimes desired, and a braking apparatus has accordingly been added. An additional motor is also being provided so that propeller speeds up to 4,000 revolutions per minute can be attained.

In conjunction with Messrs. Vickers, Sons, & Maxim, who have kindly undertaken to place at the disposal of the Committee the results of tests of propellers made on the large whirling table they have erected at Barrow, a series of tests is in progress to determine the dimensional co-efficient, a knowledge of which will, it is hoped, enable the efficiency and characteristics of a full-sized propeller of given form to be predicted from experiments on small scale models. This investigation, which is of fundamental importance, will demand the continuous use of the Laboratory whirling table, possibly for some months.

A large number of requests for tests on propellers have been received from private firms and individuals. Arrangements have been made for carrying out such tests, so far as may be possible without interference with the work required for the Constructive Departments, and the investigation to which reference is made above. A short statement as to the conditions appertaining to such tests is given in Appendix 1.

A number of experiments with model propellers of simple form have been made. Tests of model propellers have also been carried out for the Superintendent of the Balloon Factory.

"*Wind Towers.*—The wind towers were completed early in the spring, and the investigation on wind structure which had been planned has since been continuously in progress. To obtain further information as to variations in the wind velocity within the whole area between the two main towers, which are 330 feet apart, lighter towers have been constructed, to be set up between the two already erected, and these are now ready to be

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put in position. Special apparatus has also been designed and constructed for recording the mean wind pressure at a number of points within the area. The records so obtained will give valuable information as to the variations in wind velocity to be expected within a fairly large area, information which is necessary to enable the effect of the wind on a large surface to be estimated with any high degree of accuracy.

The arrangements for open air experiments on large models have also been completed, and tests will be made for comparison with the results obtained on smaller models in the wind channel.

"*Tests on Motors for Aeronautical Purposes.*—The apparatus for tests on motors up to 50 H.P., the design of which was described in the Report for 1909-10, has now been installed. It has been placed in the extension of the Engineering Building at the National Physical Laboratory provided to give space for the aeronautical work, the building having been designed to allow of the special features necessary.

The equipment has proved very satisfactory in use. It has been employed in testing the engines entered for the Alexander Prize Competition, and has thus itself been subjected to a sufficiently severe test.

"*Balloon Fabrics.—Strength Tests.*—Tests have now been carried out on a large number of balloon fabrics. Information of considerable importance has been obtained, and the work is being continued with a view to publishing later a complete account of the results. Several series of tests on specially selected fabrics have been made at the desire of the Constructive Departments, to whom the results have been of value in the choice of suitable materials.

In connection with the strength tests, investigations have been made to determine the effect of the rate of loading, and the effect of repetition of stress. The apparatus employed has been supplemented by a testing machine by Messrs. Avery; this is being modified to enable rates of loading varying from 50 to 1,200 kgs. per minute to be employed. Some further work is being done with a view to determining the form of tensile test which gives the most useful information to the designer. For the ordinary comparative tests of samples of fabric, specimens of the usual dimensions, 20 cm. between the jaws of the testing machine by 5 cm. in width, are now generally employed, and the usual rate of loading is such as to fracture the specimen in not less than two minutes.

The bursting tests on cylinders of fabric have been continued, but considerable difficulty was at first experienced in obtaining a satisfactory join. Cylinders have now been procured in which the join is not less strong than the plain fabric, and a bursting test of one such cylinder gave high values for the ultimate stresses. Some damage was done to the apparatus in this test, and the apparatus has now been reconstructed and the tests are being proceeded with.

A system of tests of strength to resist tearing has been designed, and this work is now in progress.

"*Permeability Tests.*—The apparatus employed for permeability tests was fully described in last year's report. Some minor modifications have been made, but the apparatus has proved generally very satisfactory in

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working. Permeability tests have been carried out on a variety of fabrics, including rubbered fabrics by different makers, proofed silks and cotton, goldbeaters' skin and paper. Some of the figures obtained were published in the Report for 1909-10. In the rubbered fabrics the capacity for holding hydrogen seems to be generally dependent on the weight of rubber in the fabric. It is possible that diagonally doubled rubbered fabrics are superior to parallel doubled, but this cannot be definitely asserted without further investigation. Some samples of proofed silk tested have shown a hydrogen containing capacity equal to that of the best and heaviest rubbered cloths, with a greatly lower weight. The excellence of goldbeaters' skin in this respect was shown by the figures previously published. Paper, sized and unsized, has been tested, but hydrogen passes through it with great readiness.

Some tests have been made to determine the variation in permeability with rise of temperature. The rubbered fabrics tested have shown a somewhat rapid increase of permeability, while a proofed silk gave a slightly lower permeability at the higher temperature. The permeability of goldbeater's skin was found to increase slightly with temperature rise. The effect of low temperatures will also be investigated.

Other Tests of Fabrics.—Durability tests have been made by exposure of samples in the open to sun and weather. After weathering, the samples are subjected to tensile and permeability tests. After an exposure of fifty days proofed silk and rubbered cotton fabrics showed a loss of strength not very different in amount in the two materials. The permeability of the rubbered fabrics, however, very greatly increased, while some of the samples of proofed silk showed actually a decreased permeability. One sample of proofed silk taken down for test on a cold day showed a permeability much larger than that of the other samples, probably due to crumpling at a somewhat low temperature; when re-exposed in the sun the permeability of this again decreased. Goldbeaters' skin deteriorated considerably with exposure both in strength and hydrogen holding capacity.

Tests of rubbered fabrics have also been made under exposure to ultra-violet light, and deterioration observed. The tests are being continued, and the effect of protective colouring is being investigated.

Tests to determine the amount of moisture absorbed by fabrics under different conditions have also been made, and have given useful information. The tests are included in the series of tests now usually applied to fabrics which are being subjected to a thorough examination.

All the above tests will be repeated on the best of the rubbered fabrics previously examined, and on other promising materials such as the proofed silk which has been referred to, and it is hoped that the figures obtained in these and the earlier tests may be included in a full account of the work done on fabrics to be issued later.

"*Meteorological Research.*—For the further study of wind structure researches have been undertaken at Pyrton Hill, Oxfordshire, by Mr. J. S. Dines, with a mechanical assistant, under the direction of the Meteorological Office. The locality has been selected because the work can be carried out there in conjunction with the investigation of the upper air for the Meteorological Office, which is in charge of Mr. W. H. Dines, F.R.S.

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The immediate object of the researches is to find out, by means of careful examination of instrumental records of various kinds, how far up the ordinary gustiness of wind extends, to trace whatever evidence can be obtained of vertical motion or rotary motion in the atmosphere, and to identify the conditions in which such motion exists.

In order to test for gustiness above the surface, apparatus has been designed which registers simultaneously the pull of a kite wire, with the fluctuations therein due to gusts, and the length of wire paid out. From the latter, with a knowledge of the vertical angle, the height of the kite can be approximately determined. A few records have been obtained, and in these the diminution of gustiness with height is clearly apparent.

For the identification of rotary motion a new model of the Dines pressure tube anemograph has been constructed to record both direction and velocity upon the same drum—an indispensable requirement. The recording part has also been remodelled in order that the trace may represent the combinations of variation of velocity with that of direction. The apparatus is completed and works well. It has been erected with the vane at a height of 35 feet above the ground, to begin with. A considerable number of diagrams have been obtained from it, mostly for light winds. The fluctuations as recorded show, for the most part, little trace of the combination of variations in velocity and direction which would correspond with rotary motion; changes in velocity and direction take place independently and spasmodically, but in a few cases the sequence of changes is more orderly. No doubt much depends upon the character of the locality and the type of weather. Working drawings have been made of the essential parts of the apparatus so that corresponding observations can be set on foot elsewhere for the study of the effect of locality.

For the study of vertical motion, self-recording gear has been designed to be fitted to a theodolite so that a single observer can attend to the instrument and obtain a record of the variations of the azimuth and altitude of a pilot balloon. With two such theodolites the path of the balloon can thus be determined both as regards its horizontal and its vertical motion. Two instruments have been constructed, both of which work well, and balloons have been followed by them to heights of about 2,500 feet. The balloons used in these experiments have been toy balloons costing only 6d. and 1s. respectively. The possibility of following successfully the flight of these small balloons makes this important mode of observation available for many useful aeronautical purposes at very reasonable cost. The second theodolite has only recently been completed, and only a few ascents have been observed. One of these shows remarkable variations in the vertical velocity of the balloon, which can only be attributed to variations as regards vertical motion in the air currents traversed by the balloon. The results are in every way satisfactory.

The instrumental equipment for the researches contemplated is now practically completed. As regards plant and installation, what are now required are means for exposing the various instruments at suitable heights. This part of the work will be proceeded with as soon as a sufficient number of observations at the present trial levels have been obtained.

Austria-Hungary.

The Estimates for the Common Army for 1910.—The Budget for the Common Army for 1910, as well as the special credit for armaments of about 180 million kronen (£7,500,000), was voted without modification by the Austrian and Hungarian Delegations, which sat at Vienna from the 11th October to 18th November, 1910.

This vote was, however, a pure formality and could not be refused, since the greater part of the expenditure authorised had already been incurred.

The Delegations have not met since October, 1908, the date when they discussed the Budget of the Common Army for 1909. The reasons for the delay in their meeting were the Ministerial Crisis in Hungary in 1909, the prorogation of the Parliament at Buda-Pesth in March, 1910, and the late date (end of June, 1910) when the session of the new Chamber opened, which had to elect the Hungarian delegates.

The next meeting of the Delegations was arranged for the beginning of 1911, and the Session will be of special importance, because the burning question of the reform of the Military Law and the adoption of two-years' service will be probably brought up, if not discussed.

The Budget for the Common Army for 1910 is made up as follows:—

Budget	*1910.*	*1909.*	
Ordinary	326,497,077	312,478,415	Increase of 14,018,662
Extraordinary ...	10,073,590	12,366,730	Decrease of 2,293,140
Supplementary (Corps of Occupation of Bosnia-Herzegovina)	8,364,350	8,047,000	Increase of 317,350
Total, in Kronen	344,935,017	332,892,145	Increase of 12,042,872

(The Austrian krone is worth a trifle under 10d.)

The corresponding budgetary effectives are divided as follows:—

Budget.	Officers.	Officials.	Subaltern Employés.	Aspirants. Officers. Officials.	Re-engaged Non-Com. Officers.	Non-Com. Officers and Men.	Horses belonging to	
							State.	Officers.
Ordinary ...	16,837	4,594	991	2,344	15,264	264,977	60,632	About 10,450
Extraordinary ...	5	21	„	„	„	3,750	„	
Supplementary...	188	208	51	17	„	3,237	1,667	
Totals (1) ...	17,030	4,823	1,042	2,361	15,264	271,964 (2)	62,299 (3)	
As compared with 1909	+ 188	— 96	+ 65	+ 4	— 541	— 217	+ 20	

(1) To arrive at the total budgetary effective of the Common Army, it is necessary to add to these figures the effective of the Bosnian troops (paid under the Budget of Bosnia-Herzegovina), that is about 400 officers or officials and 6,800 men.

(2) Plus 5,660 pupils in the Military Schools (the same number as in 1909).

(3) Plus 11,172 horses, at home with their owners, but liable to be called up by the military authorities.

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With regard to the effectives of the Reservists and *Ersatz*-Reservists trained in 1910, they practically remain the same as in 1909, that is:

61,400	*Ersatz*-Reservists called up for the first time for	8 weeks
172,200	Reservists and *Ersatz*-Reservists called up for ...	13 days.
92,250		17 days.
8,400		25 days.
5,150		28 days.
4,900	Reserve Officers called out for	28 days.
8,400	Horses in depôt with their owners, and called up for ...	21 days.

The table of the Budgetary effectives shows:

1.—An appreciable increase of officers, principally due:

(*a*) To the transformation of the Engineer Construction Officials into Engineer Officers;

(*b*) To the increase of the troops of communication.

2. A serious diminution of the effectives of the re-engaged non-commissioned officers, who numbered 16,426 in 1907; 16,199 in 1908; 15,805 in 1909, and 15,264 in 1910, showing a deficiency in comparison with 1907 of 1,162.

This increasing deficiency is due to the following cause. Non-commissioned officers receive after 12 years' service a certificate which in principle gives them the right to a civil appointment, but in practice they have to wait several years before obtaining one, often of a very poor character. This insufficiency of available posts leads progressively to a congestion in the *cadre* of the re-engaged men at the top, and above all to discouragement and a refusal to re-engage at the bottom.

The Military Administration is anxious to remedy this unfortunate state of affairs, and put an end to this growing deficiency among the "*rengagés*," of whom the Austro-Hungarian Army stands more in need than any other, on account of the different races of which it is composed.

It hopes to induce the non-commissioned officers to give up the certificate, which is too often of no use, and the following solution has been adopted since 1908.

The amount of the gratuity at the completion of service varies accordingly as the non-commissioned officer applies for the certificate or not. Small in the first case, this gratuity reaches in the second an amount sufficiently high to allow of the recipient living honourably on quitting the service. Thus a sergeant-major on leaving after 12 years' service and taking the certificate, only receives a gratuity of £45, but if he does not take the certificate he receives £88 2s. 6d.

3. With regard to the effective of the non-commissioned officers and men who do not re-engage, it stands almost the same as in 1909. And it could not be otherwise since the annual contingent remains invariably fixed at 103,100 recruits for the Common Army.

But certain modifications are to be noted in the effectives of the different arms. Thus this year the infantry loses about 1,850 men, and the cavalry 618, in order to meet, on the one hand, the increase of the *personnel* in the Navy, which since 1908 has risen by some 3,000 men, and, on

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the other hand, the increase in the number of the technical troops (Pioneers, Telegraphists, &c., &c.), and of the Train. The infantry has, in addition, to provide out of its own resources the men for forming the machine-gun detachments. In this year's Budget the number of these remains the same as in 1909 (48 for the infantry and 2 for the cavalry). In reality this number is higher as it is generally reported that the whole of the infantry has been supplied with machine-guns, in the proportion of one detachment per regiment or battalion.

Thus the real effective of the Infantry Companies is far from reaching the budgetary strength of 97 men; and General Schönaich, in his statement to the Hungarian Delegation on 17th of last October was not afraid to insist on the sensible losses that the newly-created formations cause the infantry, losses "*which gravely compromise the preparation of this arm for war, which singularly hinder the instruction of officers and non-commissioned officers, and which alone absorb the increase in the annual contingent. The real increase of power that the machine-guns give to regiments,*" he added, "*only partially compensates for the weakening of the effective of the small units.*"

1.—*The Ordinary Budget.*

The ordinary budget shows an increase of £584,111 over that for 1909. Of this total, £60,417 in round numbers are required for pensions, and about £83,333 is necessitated by the general rise in price of provisions and materials. Among the other increases, the principal are enumerated as follows:

1.—*The Army as a Whole.*

Increase of pay and improvement in the material condition of the soldiers (£70,565).—At a Ministerial Conference which took place in 1908, it was decided that a sum of £291,667 roughly should be set down for this purpose in the budgets for 1909 and 1910. £145,833 were granted in 1909, of which more than £104,167 permitted of the doubling of the allowance for the morning coffee (raised from 2½ *hellers** to 5).

But the Delegations of 1908 having provided under this head a total credit of £416,667, the Common Minister of War has been able to demand:

(*a*) A further increase of 2 *hellers* a day for the *dejeuner*, which has, therefore been 7 *hellers* since the 1st October.

(*b*) The raising of the different rates of pay of the soldiers, and the unifying them for all branches of the Military Administration.

The increase of the daily pay is as follows:—

For the private, 4 *hellers*, raising his pay to 16 *hellers*.
For the Lance-Corporal, 4 *hellers*, raising his pay to 24 *hellers*.
For the Corporal, 6 *hellers*, raising his pay to 36 *hellers*.
For the Sergeant, 8 *hellers*, raising his pay to 48 *hellers*.
For the Sergeant-Major voluntarily prolonging his service, 20 *hellers*, increasing his pay to 90 *hellers*.

The sick in the military hospitals, who up till now have received no pay, will for the future be allowed from 6 to 20 *hellers* a day as pocket money.

* A heller is rather more than a farthing.

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2.—*The Infantry.*

Appointment of a Field Officer per regiment to direct the Musketry Instruction (£1,213).—The superintendence of the musketry instruction has up to the present been in the hands of the Colonel; in reality the duty was delegated to the musketry officer of the regiment, who, being only a captain, lacked the necessary authority over the Company Commanders. The appointment of a field officer to direct this important branch of instruction had become urgent.

This change of organisation, which necessitates an increase of 107 field-officers (54 Lieut.-Colonels and 53 Majors), and a corresponding diminution in the number of Captains, is spread over several years. Provision has been made in the present budget for the appointment of 25 Lieut-Colonels and 25 Majors, to date from the 1st of last November.

3.—*Cavalry.*

(*a*) *The creation*—rendered necessary as the result of the Austro-Servian crisis—*of a Divisional Cavalry Staff at Temesvar, to date from 1st May of last year.*—This division, formed by the 4th (Buda-Pesth) and 7th (Temesvar) Cavalry Brigades, raises to six the number of Cavalry divisions, the five others being stationed at Cracow, Jaroslav, Stanislau, Vienna, and Presbourg, respectively.

(*b*) *Creation of a new permanent Commission for the purchase of Horses at Marburg*, in order to provide the horses and mules for the mountain troops (Bosnia and Herzegovina inclusive). Up to the present purchases have been made in the open market by committees from the different corps, the members of which, as they were constantly changing, did not always possess the requisite knowledge. The mean price for horses has been raised to £33 6s. 8d.

4.—*Artillery.*

(*a*) *Artillery Firing Schools.*—The total increase in this credit amounts to £64,039, but for 1910 only £4,167 was provided.

This increase is intended:—

To provide a larger amount of ammunition for the Field-Artillery Firing Schools;

To allow of more officers taking part in the firing courses, so that the knowledge acquired may be more diffused through the Army;

To allow of General Officers attending the firing schools who will thus be able in action to demand the co-operation, if necessary, of the artillery and infantry;

To also attract to these courses Reserve officers who have to familiarise themselves with the working of the new 8 cm. field-gun, mark 5;

To give a greater extension to the fortress artillery firing schools;

Finally to create, in the districts of the 15th and 16th Army Corps, a special course for the Mountain Artillery.

(*b*) *Technical Artillery.*—There is an increase of £27,924, which is necessitated partly by the increased amount of ammunition allowed for musketry target practice, and target practice for the fortress artillery, and partly by the ever-increasing cost in the manufacture of

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powders (dearness of the raw materials and the improvement in the position of the civilian workmen, &c.), partly by the increase in the *matériel* of the field artillery, the delicate sights of which are subject to rapid deterioration.

(c) *Increase in the forage ration*, amounting to £7,047, for the draught horses of the heavy field-howitzers and mountain-howitzers. This ration is raised from: 10 lbs. 3 ozs. of oats to 14½ lbs; 10 lbs. of hay to 22 lbs.; 4½ lbs. of straw to 13½ lbs. of straw for litter, and 6 lbs. 10 ozs. of chopped straw.

II.—*Extraordinary Budget.*

The Extraordinary Budget shows a decrease of £95,547 as compared with that of 1909. There have been decreases in the amounts demanded for the manufacture of cartridges to complete up to the war establishment; for the mobile field kitchens; fortifications; telegraphic and telephonic equipment, and for the manufacture of machine-guns.

On the other hand, provision is made for the first time for the progressive construction of mobile workshops in view of the formation of automobile trains in time of war, for which a credit of £2,083 out of a total of £12,500 is demanded.

Supplementary Budget for the Bosnia-Herzegovina Corps of Occupation.

The Supplementary Budget for the Corps of Occupation in Bosnia-Herzegovina shows an increase of £13,223, which is partly due to the increased cost of provisions and an improvement in their character, and partly to the new organisation of the automobile services between Jajce and Banjaluka, already connected by a military railway with Doberlin.

Special Armament Credit.

This credit of £7,500,000 is demanded to cover the expenses, already incurred or which still have to be incurred, that have been entailed by the measures taken, with the assent of both the Austrian and Hungarian Governments, to put the Army on a footing to face a war which might have resulted from the Austro-Servian crisis.

These measures consisted mainly in the movement and reinforcing of troops, in the creation of new units, the manufacture of arms, of war *matériel*, stores and means of transport, all on a large scale, as well as the carrying out of urgent works of fortification.

According to the nature of the measures to which they respond, the expenditure—which extends from the last month of 1908, over 1909 and 1910—is thus distributed:

Continuous expenditure: £1,490,625, £95,417 of which was incurred in 1908; £975,417 in 1909; £419,792 in 1910; and occasional expenditure once for all, £6,009,375. Of the total (£7,500,000), £4,767,917, or 63.6 per cent., is borne by Austria, and £2,730,000, or 34.4 per cent., by Hungary.

The Delegations voted this special credit without hesitation, which, if it has added to the financial burdens of the two States, had at least the fortunate result of preserving peace and avoiding the formidable expenses of a war which a bad military preparation might have brought on the two countries.—*Revue Militaire des Armées Etrangères.*

Germany.

Changes in the Grand General Staff.—By an Imperial Order of the 22nd November last, General-Lieutenant Deines has been relieved at his own request of his duties as Sub-Chief of the General Staff of the Army (*Oberquartier-Meister*) and Member of the Education Commission of the Academy of War, and placed on the retired list. He has been promoted to the rank of General of Artillery, and a title of hereditary nobility conferred on him by the Kaiser.

General-Major von Windheim, commanding the 5th Cavalry Brigade at Frankfort-on-Oder, has been appointed by the same Order to fill the vacant post on the General Staff of the Army, and Colonel von Freytag-Loringhoven has been nominated Member of the Education Commission of the Academy of War.

Officer Aviators.—According to the "*Militärisch-politische Korrespondens*," the number of German aviators actually in possession of the certificate of pilot has risen to 40, among whom are 8 officers of the active Army. The Professor of Military Aviation has up to the present been Herr S. Brunhuber, an engineer placed at the disposition of the Minister of War by the Albatros Factory, and who is now to be regularly appointed. At the present time, 10 officers have been detached to Döberitz to receive instruction in aviation. Several among them already possess the certificate of pilot, but their period of instruction is not yet completed, because it is intended they should themselves become instructors, and must therefore be familiar in the management of all the systems of aeroplanes, which are at present being considered by the military authorities, viz., the "Wright," the two "Albatros" types, the two "Farman" types, the "Rumpler," "Grade," and probably the "Dorner." The 10 officers in question must obtain a pilot certificate for all these systems.

Regulations in regard to sending regimental officers to the School of Aviation at Döberitz are under the consideration of the authorities.

The Sanitary State of the Army in 1908.—The Report on the Health of the Russian, Saxon, and Wurtemburg Armies during the period between the 1st October, 1907, and the 30th September, 1908, has been published.

The following extracts may be of interest:

The mean effectives during the period named stood at 540,790 men. There were in all 318,217 cases of sickness, a percentage of 588.4 per 1,000. During the previous years the percentage per 1,000 was

Between 1896-1901 (the mean)	687.5
Between 1910-1906 ,, ...	610.3
For the year 1906-1907	601.5

There has thus been a steady decrease of sickness which is still continuing, there being a diminution of 13.1 per 1,000 as compared with the year 1906-1907.

Among the cases, 102,589, that is 189.7 per 1,000, have been treated in hospital; 188,191, that is 348 per 1,000, have been treated at the infirmary; 27,437, that is 50.7 per 1,000, have been either in the infirmary or in hospital.

Germany.

The mean effective mentioned above is made up as follows:

77,532 Non-commissioned officers;
435,371 Lance-Corporals and Privates;
11,037 One-Year Volunteers;
16,850 Reservists.

Among the above:

222,251 men were in their 1st year of service;
204,398 men were in their 2nd year of service;
114,146 men had served over two years.

The total number of sick in these different categories was:

	Sick.	Per-centage
Non-Commissioned Officers	31,338	404·2
Lance-Corporals and Privates	268,498	616·7
One Year Volunteers	9,888	895·9
Reservists	8,493	504
In 1st year of service	184,951	832·2
In 2nd year of service	85,105	416·4
Over 2 years	48,161	421·9

From the point of view of the numbers of sick, the different Army Corps stand as follows:

	Percentage
XVth Corps	490·8
XVIIIth „	491
VIIIth „	497·8
XVIIth „	499
Xth „	535·2
XIXth „ (Saxon)	542 5
XIVth „	547·9
IXth „	550·2
VIth „	555·3
VIIth „	562·7
Vth „	563·1
Ist „	581
IIIrd „	586·2
XVIth „	639·2
IInd „	653·7
XIth „	684·5
XIIIth „ (Wurtemberg)	700·2
Guard „	700·6
IVth „	708·2
XIIth „ (Saxon)	728·4

During the same period the statistics for the three Bavarian Corps were:

IIIrd Corps	353·1
Ist „	472·5
IInd „	623·2

The principal causes of illness were as follows:—Wounds (138.1 per 1,000,; Skin Diseases (126.9 per 1,000); Digestive Organs (81.2 per 1,000); Respiratory Organs (76.4 per 1,000); Organs of Movement (63.1 per 1,000); Contagious Diseases (28.9 per 1,000); Opthalmic Diseases (12.9 per 1,000); and of the Ears (11.5 per 1,000); Circulating Organs (12.3 per 1,000).

Germany.

The rate of mortality is the same as in the preceding year, viz., 1.8 per 1,000, the total number of deaths being 998, of which 670 were men under medical treatment, and 328 men not under treatment.

Of these 998 deaths, 612 were caused by disease, 148 by accidents, and 238 were suicides.

The total number of men retired for physical disabilities was 23,419, of whom 12,989 were for causes existing before incorporation. Among these latter, 8,688 were pronounced upon immediately after incorporation, and, 4,301 after a more or less prolonged course of medical treatment.

COMPARATIVE INCIDENCE AND DEATH RATE IN THE FOLLOWING ARMIES.

	Prussian.		French.		Austrian.	
	A.	D.	A.	D.	A.	D.
1881/1885	8.4	5.5	14.7	27.6	6.9	20.8
1886/1890	5.0	5.7	13.1	17.4	4.7	18.1
1891/1895	2.8	7.7	11.3	16.5	4.2	15.8
1896/1900	1.8	9.6	10.2	15.5	3.1	15.8
1901/1905	0.79	11.5	5.1	13.4	1.9	14.1
1906/1907	0.41	15.1	5.1	12.8	2.0	14.2
1907/1908	0.50	12.6	4.8	14.2	2.1	12.9

A—admitted per 1,000 of strength; D—died per cent. of admissions.

The periods are not quite identical, as the German Army year begins on 1st October, the others on 1st January. The French figures include Algiers and Tunis up to 1900, those for subsequent years only troops serving in France.

Revue Militaire des Armées Etrangères.

Portugal. Mr. Raphael Reynolds of Lisbon has forwarded the following inscriptions on two tombstones at Elvas, on the S. João da Corrijeira Bastion. The tombstones in question were found by General Rodriques da Costa, Minister of War, in a dreadful state of dilapidation and abandonment, and he has had them carefully renovated and restored. The inscriptions are as follows:—

UNDERNEATH IS DEPOSITED THE BODY
OF
MAJOR GENERAL HOGHTON
OF HIS BRITANIC MAGESTY SERVICE
WHO FELL IN THE BATTLE OF
ALBUHERA
ON THE 16 OF MAY 1811
AT THE HEAD OF HIS BRIGADE

AQUI IAZ HOGTON MAJOR GENERAL
AO SERVIÇO DE S. MAGESTADE BRITANICA
O QUAL FOI MORTO NA BATALHA DE
ALBUHERA
AOS 16 DE MAIO DE 1811
A TESTA DA SUA BRIGADA

Portugal.

SACRED TO THE MEMOR
OF
LIEUTENANT COLONEL
JAMES, W. OLIVER
WHO WAS MORTALLY
WOUNDED AT BADAJOS
AND DIED IN THIS CITY
THE 17TH JUNE
1811

DEDICADO Á MEMORIA
DO
TENENTE-CORONEL JA-
MES.W. OLIVER QUE FOI
MORTALMENTE FERI-
DO NO CERCO DE BADA-
JOS,E MORREO NESTA CI-
DADE A 17 DE JUNHO DE
1811

Lieut.-Colonel Oliver commanded the 10th Regiment of Portuguese Cavalry.

Turkey.

Tribal Light Cavalry.—An Imperial Iradé has sanctioned a Regulation drafted by the Minister of War for the reorganisation of the Light Cavalry, known as the *Hamidieh*.

The object of this reorganisation is to utilise the valuable resources which can be furnished by the Kurdish tribes.

There will be formed 65 regiments of tribal Light Cavalry under the new appellation (*Achiret Nafif Souvari Al Alary*).

The regiments will be formed, as far as possible, from men of the same tribe. They will consist of 4 to 6 Squadrons, each Squadron being subdivided into 4 sections of from 32 to 48 men each.

To each Regiment will be connected a territorial district, which will furnish, in addition to the active Regiment, a varying number of squadrons of *Redifs*.

Each Regiment will be commanded by a Lieut.-Colonel of the Active Army, assisted by a Native Major, a head of the tribe. If the Regiment is formed of men from two tribes, there will be a Native Major from each of them. The Squadrons will be commanded by Captains of the Active Army, assisted each by a Lieutenant from the Active Army and three Native Sub-Lieutenants.

A certain number of Regiments will be grouped to form the force of a regional *Inspection*, having at its head a Colonel or General of Brigade, assisted by three officers of different grades.

The length of service will be 27 years from 18 to 45 years of age. The three first years will form the "preparatory period"; the twelve following the "Active Term"; the twelve last, the *Redif* period. During these 27

Turkey.

years the Tribal Cavalry will be subjected to all the regulations in force in the Regular Army. The officers will similarly come under the regulations determining the age limits.—*Revue Militaire des Armées Etrangères.*

Appointment of Inspectors-General of Artillery.—Regulations as to the duties of Inspectors of Artillery have just been issued.

There will be appointed for the future Inspectors-General of Artillery (one for each Army *Inspection*), Inspectors of Army Corps Artillery (one for each Corps), and an Inspector of Fortress Artillery.

The Inspectors-General of Artillery are to superintend the instruction of the units and the progress of the officers, whose promotion and retirement are in their hands. They will correspond directly with the Minister on all the questions relative to the improvement of the *matériel*, the modification of the Regulations in force, and the *personnel* of the officers. They correspond with the troops through the Minister of War and the Commanders of Army Corps. They have under their Orders the Inspectors of the Army Corps Artillery in everything that concerns training. The Inspector-General at Constantinople has the right of taking part in all the Artillery trials and he also has under his direct orders the Artillery Firing School.

The Inspectors of the Army Corps Artillery accompany, as far as possible, the Commanders of the Army Corps in the course of their Inspections of the Artillery troops. They are responsible for the training of the Artillery belonging to their Army Corps. They forward each year to the Inspectorate-General all documents relative to the *materiel* and the *personael* of the officers. The correspondence of the Army Corps Artillery Inspectors with the troops passes through the hands of Army Corps and Divisional Commanders.

The Inspectors-General of Artillery are to see each of the units for which they are responsible at least once every two years, the Army Corps Artillery Inspectors their units at least once a year.

The duties of the Inspector of Fortress Artillery are analogous to those of the Inspectors-General of the Artillery.

Reinforcement of the Garrisons in the Yemen and the Assir.—Among the latest Governmental Measures, it is as well to notice the organisation of the Military posts on the Red Sea Littoral, the formation in the Yemen of a Battalion of Militia, 600 strong, and the organisation of two Battalions of Gendarmerie.

1.—It has been decided that on all the Red Sea Littoral and in the interior, that is to say from the Sanjak of Taas up to Aden, new blockhouses shall be constructed. Each of them will have a garrison commanded by a captain. A credit of 50,000 Turkish livres will be devoted to this work.

2.—The formation of the Militia Battalion of 600 men is in process of realisation of the 7th Ordou.

3.—The Superior Council on Military Affairs have reported favourably on the creation of two gendarmerie battalions of 600 men each, one of which will be garrisoned in the Tchame district and the other in that of Djébal.

Turkey.

Regulations as to the Marriage of Officers.—

1.—Senior Captains who are receiving the higher rate of pay can marry without being compelled to furnish a guarantee as to the sufficiency of their personal resources.

2.—Lieutenants and Sub-Lieutenants, as well as Captains who have the requisite seniority to draw the higher rate of pay, must, in order to marry, prove that either they themselves or their *fiancées*, possess an income equal to the difference between their pay and that of the higher rate of senior Captains, or that they have a corresponding monthly allowance from the parents of either.

3.—The documents required for the authorisation of marriage will be the same as those formerly in use. The possession of the income recognised in Article 2, or the undertaking of the parents to provide a monthly allowance must be attested by authentic documents.—*Revue Militaire des Armées Etrangères.*

CORRESPONDENCE.

THE THEORY OF THE TIDES.

To the Editor of the JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION.

SIR,—In my last paper on Tides I made a slip which I am anxious to correct as soon as possible. In speaking of the derived wave from the neighbourhood of the Cape up the Atlantic Ocean, I stated that it would receive some check from the depression passing some six hours later, the locality of its source. I got this impression from a Practical Manual of Tides which is generally favourable to our views, and with a desire to find some justification for the term "oscillation," I too hastily accepted it. A closer examination has shown me that it is quite erroneous, and that even here there is no "oscillation."

What happens is this: As the tidal cone approaches the African Continent it must increase its elevation by reason of the obstruction, and this will set up a derived wave (or waves), or currents along the line (or lines) of least resistance to restore the level. Whilst some of the water doubtless finds its way to the Northward, it seems probable that the bulk of it, assisted by the trend of the coast, will travel south, where there is more open sea, and help to raise the comparatively higher level there, which generates the derived wave towards the equatorial region of the Atlantic.

When, however, the depression passes the Cape there will be no obstruction to the moon's action in drawing the water away from the west coast of Africa, and consequently there will be no derived wave generated, or check to the one already travelling to the N.W. Thus the elevation generates a derived wave, and the depression has no effect in checking it, and any retardation in its speed will be due to diminishing depths and friction.

On the East Coast the effect will be different. Just as the land here increased the elevation by obstructing its passage, it will limit the depression by intervening between the moon and the waters of the Indian Ocean. As the water cannot follow the moon over the African Continent, it must be kept at a higher level than that south of the parallel of the Cape of Good Hope, where the moon has full power (for that latitude) to create a depression and again a derived tide or southerly current must result.

Similar effects should be produced by the banking up of the tidal wave against the East Coast of Australia, except that as the land to the northward trends to the westward (instead of to the eastward as in the African case), and as there is more open water to the northward, there is less reason to look for the line of least resistance to the southward. The Admiralty Current Charts show that whilst there is generally a southerly current on the N., S.W. and part of the Queensland coasts, there is a fairly constant set further north towards the Torres Straits, which is doubtless due to the influences I have described (assisted by the S.E. trade wind), and may account for some of the peculiarities of the tides on the North Coast, which rise to a great elevation when the width becomes contracted.

Even on the African Coast the current seems to split about the N. point of Madagascar, running south through the Mozambique Channel and north along the African shore to a latitude varying according to the season of the year, where it is met by a southerly set.

The only point I feel doubtful about is how much is due to derived waves and how much to surface current, which move at such different velocities and neither of which would be found on the ideal world.

Yours faithfully,

J. F. RUTHVEN.

R.M.S. *Orvieto*, 23rd January, 1911.

NAVAL AND MILITARY CALENDAR.

JANUARY, 1911.

5th	(Th.)	H.M.S. *Triumph* arrived at Sheerness from the Mediterranean.
11th	(Wed.)	H.M.S. *Triumph* paid off at Sheerness.
	,,	H.M.S. *Lord Nelson* paid off at Sheerness.
	,,	H.M.S. *Hibernia* paid off at Devonport.
12th	(Th.)	H.M.S. *Triumph* recommissioned at Chatham.
	,,	H.M.S. *Lord Nelson* recommissioned at Sheerness.
	,,	H.M.S. *Hibernia* recommissioned at Devonport.
14th	(Sat.)	Launch of first-class battleship *Arkansas* from New York Shipbuilding Co.'s Yard, Philadelphia, for U.S. Navy.
16th	(Mon.)	H.M.S. *Triumph* left Sheerness to rejoin Mediterranean Fleet.
	,,	2nd Bn. South Wales Borderers arrived at Durban from Southampton per *Soudan*.
17th	(Tues.)	German Submarine "U 3" sank in Kiel Harbour; 28 men rescued, 3 (two officers and a seaman) remained imprisoned in conning tower.
18th	(Wed.)	Fortieth Anniversary of the Proclamation of King William I. of Prussia, at Versailles, as German Emperor.
	,,	German Submarine "U 3" raised, but the three imprisoned men succumbed.
	,,	2nd Bn. Northamptonshire Regiment left Southampton for Malta, per *Dongola*.
25th	(Wed.)	2nd Bn. Northamptonshire Regiment arrived at Malta.
	,,	1st Bn. Suffolk Regiment embarked at Malta for Egypt, per *Dongola*.
28th	(Sat.)	1st Bn. Suffolk Regiment arrived at Alexandria.
30th	(Mon.)	1st Bn. Yorkshire Regiment embarked at Suez for Port Soudan for Khartoum.
31st	(Tues.)	H.M.S. *Bellerophon* paid off at Portsmouth.

FOREIGN PERIODICALS.

NAVAL.

ARGENTINE REPUBLIC.—*Boletín del Centro Naval.* Buenos Aires: November, 1910.—"Ortogonopolar Method for Determining Position at Sea." "Various Themes of Navigation and Hydrography." "Dirigible Wireless Telegraphy." "The Submergible Torpedo." "Determination of the Exact Time."

AUSTRIA-HUNGARY.—*Mittheilungen aus dem Gebiete des Seewesens.* No. 2. Pola: February, 1911.—"Mine Warfare." "The Causes of the Erosion of Guns and its Connection with the Use of Nitro-Powders." "Austrian Naval Estimates for 1910-11." "The Storm Inundations at Pola on the 15th and 16th November, 1910." "The Truth About the Italian battleship *Dante Alighieri*." "The Italian Naval Manœuvres of 1910." "Vice-Admiral Freiherr von Dahlerup's Reminiscences of his Work in Austria." "The New Organisation of the U.S. Naval Arsenals."

BRAZIL.—*Revista Maritima Brazileira.* Rio de Janeiro: November, 1910.—"The 15th November." "Gunnery Training in the Japanese Navy." "The Deterioration of Guns." "A Naval General Staff." "The Battleship and the Aeroplane." "Question Concerning the Theory of the Curvature of Surfaces." "The Brazilian Navy" (*continued*). "The Timber in the Province of St. Catherine" (*concluded*).

CHILI.—*Revista de Marina.* Valparaiso: November, 1910.—"An Inopportune Assertion." "Profitable Impartiality." "Desertions in the Fleet." "Edison Type of Accumulator Battery." "The Metamorphosis of the Stars and their Temperature." "The Sending of Officers Abroad and the Practical Result on the Fleet." "Is 12-inch Armour Necessary?" "The *Laubeuf* Submersible." "The Engineers of the Fleet." "Petroleum in Chili." "The Importance of Maritime Power." "The Renovation of Our Fleet and the Campaign Against the *Dreadnoughts*."

FRANCE.—*Revue Maritime.* Paris: December, 1910.—"Aviation in the Navy." "The French Navy in Crete." "Official History of the Naval Russo-Japanese War, Published by the Japanese Naval General Staff." "The Battleship of the Future." "Aerial Navigation and Naval War." "The Torpedo Boat." "The Big Guns of the *Dreadnoughts*." "The Work of the English Aeronautical Commission."

La Marine Française. Paris: January, 1911.—"In the Navy." "Proofs." "The Naval Intendance and the Report of M. Bénaset." "Recruiting from the Ranks." "Everybody's Opinions: The Work of an Under-Secretary of State."

La Vie Maritime. Paris: 10th January, 1911.—"The Work of Admiral de Jonquières." "Our Naval Impotence." "The Officer *Personnel*." "The Port of Lorient." "*A propos* of Decorations." "Authority

and the Navy." "The Yellow Navies." 25th January.—"The Two-Unit Divisions and the 12-inch Guns." "A Scandalous Decision." "The Trials of the *Condorcet*." "Naval Economics." "The Port of Cherbourg." "Necessary Proof." "The Concentration of the Forces." "The Duties of Admiral Bellue's Staff." "France and Turkey."

Le Yacht. Paris: 7th January, 1911.—"A Visit to the *Louisiana*." "Yachting Notes." "The Navy in 1910." "The Training Ship *L'Avenir* of the Belgian Mercantile Marine." 14th January.—"After the Grand Manœuvres of 1910." "Yachting Notes." "The U.S. Factory Cruiser *Dixie*." 21st January.—"The Report to the Chamber on the Naval Estimates." "Yachting Notes." "The Pulling-Stroke in the French Navy." 28th January.—"The Loss of the German Submarine U3." "Yachting Notes." "The Pulling-Stroke in the French Navy" (*concluded*). "The Inauguration of the Oceanographic Museum."

Le Moniteur de la Flotte. Paris: 7th January, 1911.—"The School of Responsibilities." 14th January.—"The Naval Situation." "Aviation in the Navy." "The Navy in Parliament." 21st January.—"The Competitive Trials of Salvage Apparatus for Submarines." "Meeting of the Superior Council of the Navy." 28th January.—"Prize Firing in the Fleet." "Aviation in the Navy."

GERMANY.—*Marine Rundschau*. Berlin: February, 1911.—"Prussian Privateering During the Seven Years' War." "Naval Policy and State Expenditure in Japan." "The Climatic and Health Conditions of Kiel and Wilhelmshaven." "The Twelfth Ordinary Meeting of the Technical Society of Naval Constructors" (*continued*).

ITALY.—*Rivista Marittima*. Rome: November, 1910.—"The Presentation of Battle Standards to the Destroyers *Alpino*, *Carabiniere*, *Corazziere*, *Fuciliere*, and *Pontiere*." "The Asiatic Evolution Faced by the Activity of the Civil Populations." "The Structure of Ships in Relation to the Effects of the Submarine Arms." "Pointing Apparatus and the Line of Independent Sight." "Remuneration for Office Work." Letters to the Editor.—"On Some Questions of Nautical Astronomy." "*A propos* of the Four Recent Types of *Dreadnoughts*." "International Conference on Salvage Apparatus for Crews of Submarines." "*A propos* of the Diesel Type of Motors."

PORTUGAL.—*Annaes do Club Militar Naval*. Lisbon: November, 1910. —"A Study on the Chilworth Powder." "English Naval Schools." "Voyage Round the World of the Cruiser *Sas Gabriel*." "Yarrow and Co."

SPAIN.—*Revista General de Marina*. Madrid: December, 1910.—"A Study on the Favourable Conditions for Using Automobile Torpedoes." "Radius of Action of the Automobile Torpedo." "Utilisation of Gas Power in the Navy." "Repairs in General and the System of A + B + C" "Construction, Management and Organisation of Modern Ships of War" (*continued*). "The Future Naval School." "Official History of the Russo-Japanese Naval War."

MILITARY.

AUSTRIA-HUNGARY.—*Danzer's Armee-Zeitung.* Vienna: 5th January, 1911.—"A Radetzky-Ring." "After the Mishap." "The Navy League and the Navy Law." "What Sphere of Activity Can Austrian Officers Find in Brazil?" 12th January.—"On the Eve of the Two Years' Period of Service? The New Army Law; What We Demand of It." The Disadvantages of the Two Years' Service in Italy: How Do the Prussians Create their Under-Officers Corps?" 19th January.—"The General Staff: Observations and Proposals." 26th January.—"The System of Concealment (The Dangers of the Two Years' Service)." "The Struggle Between the Authority of the King and the Nation." "German Military Administration (A Book on the Necessity of Reform)."

Streffleur's Militärische Zeitschrift. Vienna: January, 1911.—"A War-Historical Calendar." "The Battle of Kolin on 18th June, 1757." "The War Budget in the Framing of the National Expenditure." "The Russo-Japanese War: Criticisms and Remarks of Some Who Took Part in It" (*continued*). "The Grand Manœuvres of Foreign Armies in 1910." "The *Etappen* System of the Russians in the Campaign of 1904-05." "Communications from the Army School of Musketry."

Kavalleristische Monatshefte. Vienna: January, 1911.—"Modern and Nevertheless Conservative." "The Cavalry Action at Judsjatun on 30th May, 1904." "On March-Hindering Action by Cavalry." "A Regulation Study." "Soyez des Enthousiastes!" "Easy Riding." "The New Training Regulations for Horse Artillery." "The German Turf Year, 1910."

BELGIUM.—*Bulletin de la Presse et de la Bibliographie Militaires.* Brussels: 15th December, 1910.—"The Cavalry Divisions at the Imperial German Manœuvres in 1909 (*continued*). "The Chinese Army" (*continued*). "Considerations on Defensive-Offensive Positions" (*continued*). 31st December.—"The Chinese Army" (*concluded*).

FRANCE.—*Journal des Sciences Militaires.* Paris: 1st January, 1911.—"The Fusion of the Officers of the Home and Colonial Armies." "The New German Quinquennat." "Studies on the Army of Africa: The Reorganisation of the Regiments of Algerian Tirailleurs and the Infantry of the XIXth Corps" (*concluded*). "Some Indications—Some Systems—But Not a Single Method of Equitation. "Study on the Battle of Wafan-gou, 14th-15th June, 1904." 15th January.—"The Liberty of Action of the Generals in Chief." "Study on Article 249 of the Infantry Manœuvres Regulation of 3rd December, 1904." "The Agents of Communication." "Tactical Employment of Machine-Guns." "The Defence of the British Empire: The Military and Naval Organisation of Australia."

Revue d'Infanterie. Paris: December, 1910.—"Twenty Years of Physical Education in Germany and in France." "Other Realities of the Field of Battle: The Prussian Right Wing at Resonville." "The Russian Army: The New Instructions for the Battle Leading of Infantry" (*concluded*). "Two Months with the Chaouïas" (*concluded*).

Revue de Cavalerie. Paris: December, 1910.—

Revue d'Artillerie. Paris: December, 1910.—"Study on Defilading" (*continued*). "Study of the Aviation Problem" (*continued*). "Mathematical Curiosities."

Revue Militaire Générale. Paris: January, 1911.—"Tactics (New Letters to a Young Officer)." "Solution of a Tactical Problem." "The Russian Cavalry in Manchuria" (*concluded*). "The Doctrine of National Defence" (*continued*). "Two Studies on the Campaign of 1912."

Revue d'Histoire. Paris: January, 1911.—"The Campaign of 1908-09 in Chaouia" (*continued*). "The Recruiting in the Landes from 1789 to 1798" (*continued*). "Zurich" (*continued*). "The Manœuvre of Pultusk" (*continued*). "The Campaign of 1813: The Preliminaries" (*continued*). "The War of 1870-71: The 1st Army of the Loire."

Revue Militaire des Armées Etrangères. Paris: January, 1911.—"The Swiss Manœuvres in 1910." "The Autumn Manœuvres in Sweden in 1910."

Revue de Cavalerie. Paris: December, 1910.—"Notes on Instruction: The Adjustment of a Regiment." "German Ideas on Cavalry" (*concluded*). "Study on Dismounted Fighting." "Seydlitz" (*concluded*).

Le Spectateur Militaire. Paris: 1st January 1911. "The Picardy Manœuvres." "The Autumn Manœuvres of the 2nd Infantry Division in 1909." "Historical Study: The Surprises of Baalon and Stenay in 1870." "Conquest of the South Oranais." "Letters of Major Kretschman." 15th January.—"Monnédy, the Key of the Ardennes Railway, Is it Defended?" "Autumn Manœuvres of the 2nd Infantry Division in 1909" (*concluded*). "Historical Study: The Surprises of Baalon and Stenay in 1870" (*concluded*). "Conquest of the South Orannais" (*concluded*). "Letters of Major Kretschman" (*continued*).

GERMANY.—*Militär-Wochenblatt.* Berlin: 3rd January, 1911.—"War and Politics." "The Army Fencing Tournament." "The Military Situation on the Portuguese Border Territory to German South Africa." 5th January.—"The New French Field Artillery Regulations." "France on the South Tripolitan Frontier and Wadai." "The War School's Handbook on Tactics." 7th January.—"The Influence of Years of Peace on the Waging of War." "The Boer War and its Tactical Lessons According to English and German Conceptions" (*continued*). "France of the South Tripolitan Frontier and Wadai" (*concluded*). "On the Defence of Australia." 10th January.—"Fundamental Differences Between the Carrying on of Sea and Land War." "The Boer War and Its Tactical Lessons According to English and German Conceptions" (*continued*). "The Influence of Years of Peace on the Waging of War" (*concluded*). "Training of Infantry in the Use of Ground." 12th January.—"The French Field-Artillery in Action According to the Provisional Drill Regulations of 8th September, 1910" (*concluded*). "Napoleon at Ligny." "A Memorial on National Training Through Physical Exercises." 14th January.—"What Does the Army Proposal Bring for the Train?" "Jubilee of the Belgian War Minister." "Ethical War Preparation." "The French Field-Artillery in Action According to the Provisional Drill Regulations of 8th September, 1910" (*concluded*). "Greece." 17th Janu-

ary.—"Service Jubilees in 1911." "The Efforts of Japan for the Maintenance and Requirements of her Fighting Forces." "Military-Technical Review." "Progress of Aviation in 1911." "Greece" (*concluded*). 19th January.—"The Birthday of General-Fieldmarshal Graf von Haeseler," "The History of the War in Manchuria by the Russian General Staff" (*continued*). "Dutch Coast Defence." "The French War Medical Regulations for 1910." "The New Turkish Army Organisation." 21st January.—"Wood Fighting." "The French Reserve Corps of Officers." "News from the Austro-Hungarian Army." 24th January.—"On Frederick's Day: One Hundred and Fifty Years Ago: the Political Situation During the Winter and Spring of 1761: Plan of Operations and Preparations of King Frederick." "France's Black Troops in Algeria." "Wood Fighting" (*concluded*). 26th January.—"The Last Shot Against Paris." "One Hundred and Fifty Years Ago." "What We Must Thoroughly Learn if We are to be able to Stand before the Enemy." "On the Belgian Army." 28th January.—"The Capitulation of Paris Forty Years Ago." "News from the French Army." "Military-Technical Review: Progress in German Wireless Telegraphy." "One Hundred and Fifty Years Ago." "News from the French Army" (*continued*).

Artilleristische Monatshefte. Berlin: December, 1910.—"Capped Projectiles." "Opinions on the Modern Employment of Artillery." "The Influence of the Special Umpire for the Criticism of the Effect of Artillery." "The Graphitinisation of the Bores of Firearms." "A Sketch of the Special Organisation of the Austro-Hungarian Fortress Artillery." "The New Instruction for Fortress War."

Jahrbücher für die Deutsche Armee und Marine. Berlin: January, 1911.—"The History of the Russo-Japanese War, 1904-05, by the Russian General Staff." "The Fight About Fortresses from the Official Standpoint." "French Views on the Employment of Machine Guns in Action." "A Contemporary Account of the Battle of Kulm-Nottendorf." "Cavalry Officers as Divisional Commanders." "The Want of Officers and the Officer Reserve in the German Imperial Army."

ITALY.—*Rivista di Artiglieria e Genio.* Rome: December, 1910.—"Before the Monument of Enrico Cosens." "The Piacci Firing Formula and the New Formula." "Rapidity of Work on Telegraphic Lines." "Study of a System of Breech Mechanism and of a Cartridge Without a Metal Case for Q.F. Guns." "On the Training of Field Batteries." "A Forerunner of Our Equitation."

Revista Militare Italiana. Rome: January, 1911.—"The Siege and Defence of Ancona in 1849." "The Danish Army." "Heavy Artillery." "The New French General Instructions on Siege Warfare." "On the Rectification of Some Terms in Our Tactical Regulations." "The Armies of the European States." "Hand Grenades." "Solution of Tactical Themes in Manœuvres and in War." "The Second Category." "General Guglielmo Pepe and His Times."

SPAIN.—*Revista Técnica de Infantería y Caballería.* Madrid: 1st January, 1911.—"The Organisation of the Spanish Army as Viewed by a Prussian" (*continued*). "Aerostation in Our Army" (*continued*).

"Technical and Military Information." "Military *Moral*." 15th January.—"The Organisation of the Spanish Army as Viewed by a Prussian" (*concluded*). "Evolution of Military Law Among Modern Nations" (*continued*). "Military Cycling." Military and Technical Information."

Revista Científico y Biblioteca Militar. Barcelona: December, 1910.—Has not yet been received.

Revista de Caballeria. Madrid: January, 1911.—"An Opinion on the Organisation and Employment of Cavalry." "The Moroccan Irregular Cavalry." "The Racing Horse." "Memorandum on the Special Firing Course." "Information About Foreign Armies." "Observations of His Excellency the Marquis de la Vega de Armijo on Improvement in the Breeding of Horses in Spain." "The Teneriffe Cazadores Squadron, No. 5." "The Problem of Promotion."

SWITZERLAND.—*Revue Militaire Suisse, Lausanne*. January, 1911.—"The Cyclist Question." "The Manœuvres of the 2nd Division in 1909." "The New Austrian Mountain Howitzer." "Fire against Balloons."

UNITED STATES.—*Journal of the U.S. Artillery*. Fort Monroe, Virginia: November-December, 1910.—"The Mechanical Specialist, Coast Artillery Corps." "A Discussion of the War Balloon and Similar Craft and the Best Methods of Attack by Artillery." "An Improvised Ardois." "Composite Artillery Type Telephone." "Initial Velocity as Affected by Erosion."

Infantry Journal. Washington, D.C.: January and February, 1911.—"The Infantry in Washington." "Our Military Posts." "The Cumbersome Firing Line." "Target Practice under the New Regulations." "German Brigade Manœuvres." "Transportation of Military Commands by Rail." "The Development of Infantry Organisation and Tactics."

Journal of the Military Service Institution. Governor's Island, New York: January and February, 1911.—"The Simple Way." "Relation of the Eyes to Rifle Practice." "Opposite Views on Cavalry." "Question of Heavier Guns for Field Artillery." "Field Service." "Regular Army in Civil War: The Infantry." "Memory of Our Great War." "Types and Traditions." "Comment and Criticism."

NOTICES OF BOOKS.

The Naval League Annual, 1910-11. Edited by A. H. BURGOYNE. Price 2s. 6d. London: John Murray.

The current issue of the *Naval League Annual* will be welcomed by that rapidly increasing number of the public who are being educated to take a greater interest in the Navy than was formerly the case, and they will find it a valuable work of reference, containing a vast fund of infor-

mation relating to our own and foreign Navies, the compilation of which reflects the greatest credit upon Mr. Burgoyne. We may even go further and say that for many purposes of reference the *Naval League Annual* is far superior to the *Naval Annual*, and that latter publication is in a fair way of having to yield pride of place as the *premier* Naval Authority to its young rival.

The *Annual* is divided into three parts. Part I., which is devoted to the progress of our own and foreign Navies, is the work of the Editor, and is full of information and valuable details, arranged in a very readable form. This part concludes with a chapter, also by Mr. Burgoyne, on "Comparative Naval Strength," and we find ourselves in complete agreement with the views he expresses on this all important question. Commenting on the position as regards *Dreadnoughts*, he writes:

> "We are pre-eminent to-day, that cannot be gainsaid; but little hope of reduced Estimates can be held out if that pre-eminence is consistently to be maintained in the future. The greatest possible dangers do not, however, come from without. They are to be found in those men in this country who weigh the cost of naval defence against that of social reform—to the detriment of the latter; those who place a too great emphasis upon the vessels of the pre-"Dreadnought" type, and, as a result (arising as it does from lamentable ignorance), compute international strength by the indiscriminate "counting of noses"; in those who cannot realise that "Dreadnoughts" are but a single feature of a fleet, and that docks, cruisers, and torpedo-craft, efficient and in adequate quantity, are equally essential; . . . finally, and these form a considerable section of the community, there are many who fail to understand that the preponderating strength of to-day can in no circumstances be accepted as a criterion of our effective force of three years hence, when current programmes attain completion.

In the above few lines Mr. Burgoyne puts the whole Naval question in a nutshell, and we can only hope that his readers will lay his words to heart. We quite agree with his view that in armoured cruisers we at present possess an unchallenged superiority, not only in regard to numbers, but also in the matter of individual strength; and his opinion that in the matter of destroyers our position is fairly satisfactory and tending each year to improve, especially when our supremacy in submarines is taken into consideration, is probably justified.

Part II. of the *Annual* contains many papers of interest, which will all repay reading. Among the best of these is one by Mr. Nicolas Portugaloff, a well-known Russian Critic, on "The Nature of the Russian Fleet: Some Suggestions"; "Some Side-lights on German Naval Policy," by Mr. H. Bywater; "The Mercantile Marine and Imperial Defence," by Commander Crutchley, R.N.R.; "Social Democracy and Naval Supremacy," by Mr. G. A. Atkinson; and "The Development of Anglo-German Antagonism," a letter written by Mr Burgoyne to the well-known German Naval writer and critic, Graf Ernst von Reventlow, for publication in the Berlin *Zeitfragen*.

Part III. is not the least valuable portion of the *Annual*. It consists of lists of ships, with comparative, statistical, dock and ordnance tables, and is the work of the Editor. Included among these lists are: "A Table of the World's *Dreadnoughts*," "The Evolution of the British Battleship Armoured Cruiser," etc.; statistical tables showing the "Situation of Powers in March, 1911, in Ships Built, Building and Projected"; "The Contemporary Battleships of the Chief Naval Powers at Various Dates"; "Comparative Tables of Contemporary Battleships, Armoured Cruisers, Scouts, Destroyers and Submarines" tables showing the "Relative Position in Completed Capital Ships of Less than Twenty Years of Age and

Displacing 6,000 Tons and Over," "In Completed Armoured Cruisers of Less than Fifteen Years of Age and Displacing Over 6,000 Tons," "In Completed Protected Cruisers and Scouts of Less than Fifteen Years of Age and Displacing Over 2,000 Tons," and "In Completed Destroyers, First-class Torpedo-boats and Sub-marines of Less than Eleven Years of Age," with "Summaries of the Tables Showing Relative Positions of Fleets in March, 1911, and March, 1912"; "The Two-Power Standard," and the "British Empire v. the Triple Alliance," with several other valuable tables, which space will not allow us to recapitulate. With an intimate knowledge extending over many years of different Naval works of reference, we have no hesitation in saying that no such exhaustive and well-arranged tables of Naval statistics have ever been put within reach of the public before as are these which have been arranged and presented by Mr. Burgoyne in this year's *Naval League Annual*.

The illustrations and plans of ships are also excellent, and the low price of the *Annual* brings it within reach of most students of Naval matters, while the information it contains is put in a far more understandable form than is the case in the more pretentious works of Brassey or Jane.

George the First's Army, 1714—1727. By CHARLES DALTON, F.R.G.S. London: Eyre & Spottiswoode, Ltd., 1910.

Mr. Charles Dalton has done the Army another of the many services which he has already rendered to it, and the present important work of reference is the result of a prolonged search among the early Georgian State Papers at the Public Record Office. It is the first volume of a book on the Army of George the First from 1714 to 1727, and covers the period from the accession of George I. to the declaration of war with Spain at the end of December, 1718. It contains the regimental lists and commission registers on the British Establishment for the last four months of 1714 and the years 1715 to 1718; a full list of the regiments serving in Ireland during 1715; and finally a unique list of His Majesty's Train of Artillery in Ireland in 1716. It will be seen from the mere list of "contents" that this is a reference work of very great professional importance, the mere compilation of which is only possible for one who, like Mr. Charles Dalton, is accustomed to and revels in research work of this engrossing character. In place of the usual introduction the author has given us a deeply interesting chapter on "the early Georgian Era," which is in itself a faithful miniature military history of the period with which it deals; and this is followed by a series of all too brief memoirs of the distinguished soldiers—Argyll, Charles Douglas, Hamilton, de Montandre, Molesworth, Keith and others—who gave their services to their country during any portion of the particular period dealt with in these pages. Some few of these memoirs made a first appearance in the pages of this JOURNAL. The regimental lists, which form after all the main purpose and the bulk of this book, are enriched with a mass of biographical information, and the volume is illustrated by reproductions of contemporary documents, portraits and medals. Altogether this forms a professional work of the greatest value to the military historian and student, containing as it does a mass of information presented in a most attractive manner by an expert hand.

PRINCIPAL ADDITIONS TO LIBRARY.

JANUARY, 1911.

The Nation and the Army. By Major W. Roper-Caldbeck. Crown 8vo. 2s. 6d. (Grant Richards, Ltd.) London, 1910.

Centurions of a Century. By Colonel C. H. Gardiner. 8vo. 10s. 6d. London. n.d.

Essays Biographical, Historical and Miscellaneous. By the Rev. G. R. Gleig. 2 Vols. 8vo. 7s. (Longman, Brown, Green, Longmans and Roberts.) London, 1858.

Lord Roastend's Campaign in North Eastern France. By Lieut.-Colonel Algaeer Pollock. 8vo. 2s. 6d. (Presented.) (Hugh Rees, Ltd.) London, 1911.

Cavalry Reconnaissance. By Colonel W. W. Norman. 12mo. 3s. 6d. (Presented.) (Hugh Rees, Ltd.) London, 1911.

Storm Van's Gravesande. The Rise of British Guiana. Compiled from his despatches by C. A. Harris, C.B., C.M.G., Chief Clerk, Colonial Office, and J. A. J. de Villiers, of the British Museum. 2 Vols. (Hakluyt Society), 2nd Series, Vols. XXVI. & XXVII. 8vo. London, 1911.

The History of the 91st Argyllshire Highlanders, now the 1st Battalion Princess Louise's (Argyll and Sutherland Highlanders.) By R. P. Dunn-Pattison, late Lieutenant 91st Highlanders. 4to. 42s. (Presented.) (William Blackwood and Sons.) Edinburgh, 1910.

Règlement Provisoire de Manœuvre de l'Artillerie de Campagne. 4 Vols. 12mo. 3s. 9d. (Henri Charles-Lavauzelle). Paris, 1910.

Letters on Amphibious Wars. By Brig.-Genl. G. G. Aston, C.B. 8vo. 10s. 6d. (John Murray.) London, 1911.

Annuaire Statistique de l'Egypte, 1910. Ministère des Finances. Direction de la Statistique. 4to. (Presented.) (Imprimerie Nationale.) Cairo, 1910.

Military Forces List of the Commonwealth of Australia. Crown 8vo. (Presented.) Melbourne, 1904.

Commemoration of the Four Great Naval Victories obtained by the English during the late War: Earl Howe's over the French, off Ushant, June 1st, 1794; Earl St Vincent's over the Spaniards, off Cape St. Vincent, February 14th, 1797; Lord Viscount Duncan's over the Dutch, off Camperdown, October 11th, 1797; Lord Viscount Nelson's over the French, in the Bay of Aboukir, August 1st, 1798. In Emblematical Engravings from designs by R. S. Smirke, Esq., R.A., to which is annexed a full and authentic account of each Action. 34 in. by 24 in. Printed for R. Bowyer (T. Bensley). London, 1803.

Army Finance. A Lecture delivered at the Staff College, 23rd November, 1907. By Charles Harris. 4to. (Harrison and Sons.) London, 1907.

The History of the Tenth Foot (The Lincolnshire Regiment.) By the Rev. ALBERT LEE. 2 Vols. 8vo. 25s. (Presented.) (Gale and Polden, Ltd.) Aldershot, 1911.

Elijah Fisher's Journal while in the War for Independence and continued two years after he came to Maine (1775-1784.) 8vo. (Presented.) (Badger and Manley.) Augusta, 1880.

Causes of the American Revolution. By JAMES A. WOODBURN. 8vo. (Presented.) (The John Hopkins Press.) Baltimore, 1892.

The Centennial History of the Battle of Bennington. By FRANK W. COBURN. 8vo. (Presented.) (George E. Littlefield.) Boston, 1877.

The Battle of Lexington. By the Rev. JONAS CLARKE. Crown 8vo. (Presented.) (Lexington Historical Society.) Lexington, 1901.

Orderly Book of Lieut.-Gen. John Burgoyne from his entry into the State of New York until his surrender at Saratoga, 16th Oct. 1777. *From the original manuscript deposited at Washington's Headquarters, Newburg, N.Y.* Edited by E. B. O'Callaghan, M.D. Small 4to. (Presented.) (J. Munsell.) Albany, N.Y., 1860.

Notes on the use of the Portable Reversible Instrument, and the method of calculation of Observations. By Capt. C. E. MONRO, R.N., Crown 8vo. 3s. 6d. (Presented.) (J. D. Potter.) London, 1911.

The Russo-Japanese War—The Raid to Yin-Kou and the Battle of San-de-Pu. Prepared in the Historical Section of the German General Staff. Authorised translation by Karl von Douat. 8vo. 8s. 6d. (Presented.) (Hugh Rees, Ltd.) London, 1910.

Hannibal's March through the Alps. By SPENSER WILKINSON. 8vo. 7s. 6d. Presented.) (Clarendon Press.) Oxford, 1911.

Charles Philip Yorke, Fourth Earl of Hardwicke, Vice-Admiral. By his daughter, The Lady BIDDULPH OF LEDBURY. 8vo. 7s. 6d. (Presented.) (Smith, Elder and Co.) London, 1910.

Maritime Discovery—A History of Nautical Exploration from the Earliest Times. By CHARLES RATHBONE LOW. 2 Vols. 8vo. 12s. (Newman and Co.) London, 1881.

Finanzielle Kriegsbereitschaft und Kriegsführung. By Dr. J. RIESSER. 8vo. 2s. 2d. (Gustav Fischer.) Jena, 1909.

A Canadian Manor and its Seigneurs. By Professor GEORGE M WRONG, 8vo. 12s. 6d. (Macmillan Co. of Canada.) Toronto, 1908.

The Official Records of the Guards' Brigade in South Africa. 8vo. 5s. (J. J. Keliher and Co., Ltd.) London, 1904.

RECENT PUBLICATIONS OF MILITARY INTEREST.

COMPILED BY THE GENERAL STAFF WAR OFFICE.

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PREFATORY NOTE.

This Pamphlet will be issued quarterly, in April, July, October and January. Its purpose is to draw the attention of Officers to British and Foreign publications of Military interest which are likely to assist them in their professional work. Copies of the pamphlet will be distributed to the Headquarters of Commands, Educational Establishments, Units and Reference Libraries.

PART II.[1]

SECTION I.

NOTE 1. *When the Price is not given in Part II., Section I., it is not known.*

2. *In Part II., Section I., books whose titles are given in foreign languages as well as English are published in those languages, and are not translated.*

AERIAL NAVIGATION.

The Flying Machine. (Plus lourd que l'air. La Machine Volante.) By Captain Jules Raibaud. 178 pp. Paris: A. Lahure. 3/2

This is a useful little book for anyone wishing to gain some elementary knowledge of the theory and principles of aeroplanes. The opening chapter gives a very brief account of the early experiments of Lilienthal, Ader, Wright and other pioneers. The author then proceeds to explain the principles of the aeroplane, and in some 30 pages discusses the reasons for the elevating and steering rudders, the "ailerons," and closed compartments of certain biplanes, and similar problems. This is the most valuable part of the book, and the text is illustrated by diagrams. In Chapter III. the various existing types of aeroplanes are explained. Another 40 pages are devoted to the actual theory of heavier-than-air machines, but only a mathematical expert can follow the author. The remainder of the book deals with the employment of aeroplanes and the probable lines on which they will be improved.

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1 The titles of all books are given in English; this does not indicate that the books have been translated. The original title in the language in which a work is written, if not in English, is given in brackets.

Aeronautics, from Montgolfier to Graf Zeppelin (Die Luftschiffahrt von Montgolfier bis Graf Zeppelin). By Dr. Franz Linke. 378 pp., with numerous illustrations. 8vo. Berlin. Alfred Schall. 12/6.

This forms an interesting contribution to aeronautical literature generally, while, from the purely military point of view, the fact that it contains a chapter on military aeronautics written by Captain Hildebrandt adds considerably to the value of the volume.

The first chapter is devoted to the development of ballooning, and is chiefly historical. Chapter II. treats of the technique under the following headings:—A. General; B. Material; C. Pilotage. Descriptions of voyages are given in Chapter III., *e.g.*, night voyages, sea voyages, and voyages across the Alps.

Chapter IV. deals with the scientific side of ballooning, but the subjects are treated in a popular manner.

The last four chapters contain accounts of the more recent advances in aeronautical science under the headings of captive balloons, military ballooning, motor aeronautics, and the technique of flying.

The work is well illustrated from photographs.

ARTILLERY.

Guide to Instructors in the Technique of Firearms (Leitfaden zur Unterricht in der Waffenlehre). Published officially for use in war schools. 13th edition. 147 pp., with numerous illustrations. 8vo. Berlin, 1910. 9/-.

This book is of value, both for instructional purposes and as a work of reference. In the latter respect the most interesting portions are those dealing with anti-balloon guns (p. 56); laying stores (p. 61); and methods of getting the line of fire in covered positions, (*a*), by laying all guns parallel to a base gun by means of the goniometric sight; (*b*) by using the director in the following four cases:—

(1) Target visible from a point in front of the battery.
(2) Target visible from a point to a flank of the battery.
(3) Target visible from a point out of sight of the battery.
(4) Target invisible owing to mist or darkness.

In the last two cases the bearing is obtained by compass.

A chapter of especial interest is that dealing with methods of ranging and fire with machine guns (108-115).

The following data are given regarding the artillery telephone *matériel* (p. 7.): For each field artillery group (3 batteries) there are 4 telephone detachments with three sets of apparatus each; for each foot artillery battalion (4 heavy batteries) there are 8 sets of apparatus, viz., 2 for the staff, 1 per battery, and 2 spare; each* of the above has 4,400 yards (4,000 metres) of cable.

There are some useful comparative tables in parallel columns (pp. 115, 122) explaining the difference in the conduct of fire in heavy artillery and field batteries, and some examples, illustrated by diagrams, showing the German method of ranging a field battery with time shrapnel. A separate section (p. 131) gives examples of fire of heavy artillery.

The concluding pages deal with the employment of artillery on a larger scale. The book contains numerous illustrations, including pictures of various types of German ordnance, the "scissors" artillery observation telescope, diagrams illustrating the effect of different kinds of shell on overhead cover, and a plan showing the dispositions of the artillery in the attack on an entrenched position.

BOOKS OF REFERENCE.

The Japanese Army in 1910 (Die Japanische Armee im Jahre 1910). Austrian translation from original Russian work by Lieutenant-Colonel J. Romanowski, by Colonel Pruszynski, Austrian Army. 97 pp., with 9 appendices and table of contents. 8vo. Vienna, Teschen; Leipzig, Karl Prochaska. 4/6.

The translator has previously published several useful works concerning the Japanese Army, and the writer was joint-author of Schwars and Romanowski's well-known work on the siege of Port Arthur. The different portions of the book deal with—I. Field troops (higher staffs, the various arms, technical troops, reserve formations); II. Armament and munitions of war; III. Training regulations; IV. Protection, marches, cantonments, defences.

Appendices deal with:—
(1 Number of divisions in army.
(2) Constitution of a division.
(3) Data concerning artillery.
(4) to (9) Uniforms and distinctive marks.

* It is not clear in the original whether "each" refers to the detachments or to the apparatus; but it is understood to mean that each field artillery group has 16,000 metres of wire (4,000 per battery and 4,000 for the staff) and each foot artillery battalion 32,000 metres (4,000 metres per heavy battery).—General Staff.

Some of the data given concerning artillery differ from those supplied from official sources, *e.g.*, horse batteries are stated to consist of six instead of four guns. There are some errors in the book. The distinctive badge of Staff College graduates is said to be that of the General Staff. The divisional artillery is said to consist of three instead of six batteries. The organisation of heavy artillery is erroneously described.

The distinctive flag of the second battalion of a regiment is given as that of the third battalion, that of the first as second, that of the third as first. Engineers wear crimson and not chocolate-coloured gorget patches. The unit of three (two) batteries is translated as "division," the usual Austrian term.

Despite the few slips referred to the book forms a valuable work of reference.

FORTIFICATION AND MILITARY ENGINEERING.

Work Accomplished by the Italian Military Engineers in the Localities Affected by the Earthquake of December, 1908. (L'Opera Prestata dalle Truppe del Genio nelle regioni colpite dal terremoto Dicembre, 1908.) By Lieutenant-Colonel Nicoletti-Timari. 2 vols., one of 78 pp., one of photographs and diagrams. 8vo. Rome, 1910. Voghera.

The Italian War Office despatched 34 companies of Engineers to the scene of the earthquake in December, 1908. These were eventually organised in four groups, with headquarters at Reggio, Palmi, Bagnara and Messina respectively.

This book gives a vivid idea of the variety and extent of the work that these companies were called upon to do. Not only had they to construct over 400 huts for the accommodation of the inhabitants, but to them also fell the duty of demolishing unsafe buildings, repairing the roads and railways, re-establishing the telegraph and telephone systems, and constructing landing stages and jetties. The photographs and diagrams give a clear idea of the nature of the work done.

HISTORICAL.

The Spaniards in Morocco, 1909 (Les Espagnols au Maroc en 1909). By General De Torcy. 279 pp., with 1 map, 5 sketches. 8vo. Paris, 1910. Berger-Levrault. 4/2.

General de Torcy acted as chief of the staff to the French expeditionary force in Madagascar, and much of his brilliant military career has been passed in Algeria; the distinguished record of the author thus lends great weight to his comments on the Spanish Campaign at Melilla in 1909.

The book is divided into three parts. In the first is traced the history of the Spanish North African possessions; the second part deals with the operations, which are clearly and instructively described. The third part is reserved for the comments of the author.

In the third part, which constitutes a miniature handbook of warfare in North Africa, stress is laid on the value of the doctrines originally laid down by General Burgeaud, and subsequently developed by his successors in Algeria. These doctrines had not been followed by the Spanish commanders, who consequently clung to the old methods of lines of small entrenched posts and did not realise the fatal effects of undue delay and hesitation in operations of this nature.

General de Torcy speaks in terms of admiration of the gallantry, discipline and power of endurance of the Spanish troops, but considers them to be rather lacking in dash and elasticity, while their system of military training leaves a good deal to be desired.

The Royal War Academy from 1810-1910 (Dio Koniglich Kriegsakademie 1810-1910). By Captain v. Scharfenort, Professor and Librarian at the War Academy. 397 pp. 8vo. Berlin, 1910. Mittler. 7/6.

This is a very complete history of the Prussian Staff College from the date of its foundation in 1810 up to the present day.

The author traces the gradual development of this College almost from year to year, and gives the views held by many of its celebrated directors on the training of students.

Interesting chapters deal with the course of instruction at various periods, the directors and directing staff, and the conditions for admission.

An Appendix gives a list of all directors and instructors who have served at the Staff College between the years 1810-1910.

Page 393 shows a tabular list of subjects studied and the number of hours per week devoted to each subject.

Havelock's March on Cawnpore, 1857: *a Civilian's Notes.* By J. W. Sherer, C.S.I. 367 pp., with one portrait. 12mo. London, 1910. 1/-.

An entertaining little book, in which interesting sidelights are thrown upon some of the events of the great rebellion.

Russian Official History of the Russo-Japanese War (Der russisch-japanische Krieg, 1904-1905). Authorised German edition of the original by Lieutenant-Colonel Baron von Tettau. Vol. 1, 515 pp., with 5 maps. 8vo. 12/-. Vol. V. 336 pp., with 5 maps. 8vo, 7/-. Berlin, 1910. Mittler.

The German edition is summarised from the original Russian; 603 pages of the French translation being compressed into 176 pages.

The contents of the five volumes of the German edition, of which two have so far been published, will be:—

Volume I.—The outbreak of war and events up to the battle of Ta-shih chiao.

Volume II.—The battle of Liao yang.

Volume III.—Sha Ho and the fighting before Mukden.

Volume IV.—Mukden and events till the conclusion of peace.

Volume V.—The defence of the Kuan-tung Peninsula and Port Arthur.

The whole work will contain 3,200 pages and some 50 maps.

Russian Official History of the Russo-Japanese War. Vol. 1., Part I. (Guerre Russo-Japonaise 1904-1905. Historique rédigé a l'état-major-général de l'armee russe.) 666 pp., with 2 maps. 8vo. Paris, 1910. Chapelot. 12/10.

The French edition is as nearly as possible a translation *in extenso* from the original Russian. The work is being carried out by 20 officers, principally officers of the staff, under the superintendence of the Head-Quarter Staff.

Vol. I., Part I,. contains five chapters, *i.e.*, half of Vol. I. of the Russian original. The five chapters treat of:—

Chapter I.—Events prior to the outbreak of war.
Chapter II.—The theatre of operations.
Chapter III.—The Russian strategic deployment and plan of campaign.
Chapter IV.—Reinforcement of the Russian troops.
Chapter V.—The Japanese army.

The account of the events prior to the war seems on the whole fair. The reader is struck by the contrast between the future combatants—in Japan a Government urged by the people and the Press to war—in Russia the people indifferent and a Government hopeful of gaining its ends by diplomacy, though urged as early as October, 1903, by the man on the spot, the Viceroy in the Far East, to mobilise in Siberia. Admiral Alexyeev understood that no arrangement compatible with the dignity of Russia would satisfy Japan, and the Russian Military Attaché sent frequent warnings to St. Petersburg of the activity at the Japanese Ministry of War.

Yet when the rupture came Russia, whose Foreign Office had striven to the last for peace, was unprepared. Diplomacy, gambling on the possibility of peace, had neglected to provide for the eventuality of war, and the army was left to fight without allies. Great Britain, Germany, and China, whose attitude was of primary importance, were either semi-hostile or held aloof, and the rear in Europe, the right flank and even, to a certain extent, the rear in Manchuria gave cause for anxiety. On the other hand Japan had won, if not the active alliance, at all events the moral support and sympathy of Great Britain and America, the two Powers with the strongest fleets and the longest purses.

Pages 107 to 198 of Chapter II. are devoted to a minute description of the theatre of war.

The remainder of the chapter contains an interesting criticism of the gaps in the Russian intelligence concerning the army and resources of their future enemy and of the probable theatres of war. Military Attachés at Tokio complained of the difficulty of obtaining information in Japan. Compared to the people of western nations, the Japanese were extraordinarily secretive, secret agents were unobtainable, there was no military Press, and the translation of the few documents that came to hand offered exceptional difficulty. Russia remained to the end without precise information regarding the strength of the Japanese first line troops, the organisation of the reserves, and the wonderful *moral* of the army. It is a common Russian fault to keep secret matters which should be communicated to a large number of officers. Hence, though much information had been collected about Manchuria, its publication had been delayed and conditions in the Far East brought many surprises for the bulk of the troops called upon to serve there.

Chapter III. contains a summary of the various plans which were drawn up for a campaign against Japan from 1898 to 1903, in which years conditions in the Far East were constantly changing owing to the rapid growth of the naval and military power of Japan, the steady but slower increase of the Russian forces, and the improvement of communications in Manchuria.

Pages 320-328 set forth the main lines of the scheme drawn up by the Viceroy's staff in the autumn of 1903, and some interesting remarks thereon by General Kuropatkin, then Minister of War. Admiral Alexyeev's appreciation of the situation was optimistic. He assumed that Russia would retain the command of the sea, and that the Japanese army would be unable to land N. or W. of Chinampo. Kuropatkin considered that the Japanese would probably try to capture Port Arthur, and would then await the assumption of the offensive by the Russians on the line Gensan-Pingyang. He foresaw that the Russian forces would be in an inferiority in Manchuria for the first six months after the outbreak of war, and that the Liao-tung Peninsula would be isolated from perhaps the second month. He advocated the reinforcement of the garrison of Port Arthur and the bold employment of the field army, which should endeavour to tire out the Japanese by means of its overwhelming force of cavalry, and by frequent resort to operations by night. On the other hand he emphasises the necessity of avoiding encouragement to the Japanese by partial successes at the outset of the campaign.

Pages 328-331 give the origin of the initial distribution of the Russian fleet. The object of the main squadron, which was based on Port Arthur was to prevent a Japanese landing on the coast of the Liao-tung Peninsula, that of Vladivostok detachment was to raid the enemy's rear and the weakly fortified ports of the Japanese coast and to act as commerce destroyers.

On the 25th February, Kuropatkin, in a note to the Emperor (pp. 360-362) sketched the probable course of the war, laying particular stress on the necessity for caution pending the concentration of sufficient force, and the need for light railways. On the following day he was selected by the Emperor as Commander-in-Chief in the field from a list of 10 officers which he had himself drawn up on the 9th February.

Chapter IV. gives some idea of the difficulties under which the Russian administration laboured when it at length understood that war was inevitable. On page 462 and subsequent pages will be found a detailed statement of the strength and distribution of the Russian troops in the Far East at the outbreak of the war.

Chapter V. starts with a short account of the growth of the military power of Japan from the year 1871, and of the organisation of the army in 1903.

Page 535 and the following pages, which contain a candid and searching analysis of the Russian intelligence of Japan prior to the war, will probably be found the most interesting in the volume.

Principally owing to the impossibility of obtaining precise information of the reserve formations, the Russian estimate of the available strength of the Japanese army fell far short of reality. The official handbook considered 320,000 to be the highest number that could be mobilised, and the most liberal estimate in the reports amounted to 634,000. In the war itself, the Japanese mobilised and employed 1,185,000 men.

The failure, however, to estimate adequately the numerical strength of the Japanese forces was of trifling importance, compared with the inability to appreciate their training, endurance, patriotism, and *moral*. The attachés at Tokio previous to 1900 reported the astonishing progress of the army, but in that year Lieutenant-Colonel Vannovski was appointed Russian representative.

The new attaché's first report contained the opinion that "decades, perhaps centuries" must elapse before the Japanese army would be able to fight on equal terms with the feeblest of European powers. A note on this report by the Minister of War (Kuropatkin) complimented the author on his common sense, and on the absence in his report of evidence of the fascination exercised by the Japanese army upon former military attachés. Whether Vannovski saw Kuropatkin's note or not is unknown, but his reports continued in the same strain and his preconceived opinions affected the judgment of the Russian observers who attended the Japanese manœuvres in 1901. Apart from animadversions on the poor quality of the horses, and the miserable horsemanship of the mounted troops, their reports dwelt on the "feebleness of the tactical training," the absence of bayonet attacks, the distaste for operations by night, the disregard of cover, the want of proper measures of protection, the lavish expenditure of ammunition, the absence of all directing criticism at manœuvres, the want of discipline, the inability to withstand extreme cold, the ignorance of the military arts, and the conceit of the officers. It was stated that the Japanese were a nation "without a future," and that their army was an "army of babies."

General Jilinski, Q. M. General at Headquarters—a position corresponding to that of our Director of Military Operations—somewhat discounted these reports but still even he stated that "there can be no doubt that the Japanese army cannot possibly be compared to the chief European armies, and especially to the Russian."

In September, 1902, Vannovski was replaced by Lieutenant-Colonel Samoïlov, who took a more favourable view. Kuropatkin's impressions of the army gathered during his visit to Japan in 1903 will be found on pp. 584-585. He commented on the absence of religious sentiment in the country as a weakening factor.

Pages 594-603 contain nothing new, but set forth clearly and forcibly the disadvantages under which the Russians laboured at the outset of the war as compared with their opponents.

The Political and Diplomatic Causes of the War of 1870-71 (Les Origines Diplomatiques de la guerre de 1870-1871. Tome Premier). Paris. Gustave Ficker. 355 pp. 6/3.

This book has been written under the orders of the French Minister of Foreign Affairs, and will contain extracts from the diplomatic records in the Quai D'Orsay which bear on the Franco-German war of 1870. The first of the volumes which have now appeared, deals with the Schleswig Holstein question, which interested not only the German Confederation and Denmark, but also France, England, and Russia. For any student of the history of Europe during this period the book will be most valuable. But the endless despatches and notes make dry reading, and the layman will probably experience a feeling of exasperation at a diplomacy which delighted in long-winded phrases when international peace was at stake. Bismarck alone seemed sure of what he wanted, and how he could obtain it.

The War of 1812 (La Guerre Nationale de 1812). Compiled by the Russian General Staff. 416 pp. 8vo. Paris, 1910. Charles-Lavauzelle. 8/4.

This is a translation under the direction of the French General Staff of Volume VI., of Section 1 of the Russian work. The volume contains 95 letters and reports of prominent Russian officers written in the month of November, 1811. It will only be of interest to readers who propose making a very exhaustive study of the war. There is an excellent index.

A Turning Point in the Indian Mutiny. By I. Giberne Sieveking. 226 pp., with 14 illustrations and index. 8vo. London, 1910. David Nutt. 7/6.

The book may best be described as a history of the siege and relief of Arrah. It contains allusions to the outbreak, progress and eventual suppression of the great Mutiny of 1857, but the famous incident of the defence of the House of Arrah is the centre round which the author has woven his story. The description of the fighting which took place in connection with the first and unsuccessful attempt to relieve the beleaguered garrison is graphic, and at the same time bears the imprint of accuracy. A collection of letters written by John Nicholson are printed at the end of the book, and are of considerable interest.

Napoleon's European Campaigns, 1796-1815. By Captain F. W. O. Maycock, D.S.O., The Suffolk Regiment. 169 pp., 23 maps and plans. 8vo. London, 1910. Gale & Polden, Ltd. 5/- nett.

This book gives in a concise form an outline of the European campaigns in which Napoleon himself took a leading part.

It is clearly illustrated by rough sketch maps of the principal battles, and should prove of service to officers who wish to obtain an idea of the sequence of military events in those days as a preliminary to more detailed study.

The Bosphorus and the Dardanelles (Le Bosphore et les Dardanelles). A historical study, compiled by Serge Goriainow, Director of Archives in St. Petersburg. French edition, with preface, by M. Hanotaux. 392 pp. 8vo. Paris, 1910. Librairie Plon. 8/-.

This book, dealing with the various negotiations which have taken place from time to time on the question of the Dardanelles and Bosphorus Straits, is compiled entirely from the diplomatic correspondence in the archives at St. Petersburg.

As is well known, the question of access to the Black Sea, and the opening or closing of the Straits thereto, has always formed one of the principal points of discussion in any of the various treaties dealing with the Near East. Nowadays, owing to the change in European politics and the regrouping of political interests, the question may perhaps be held to have lost some of that prominence which distinguished it 20 or 30 years ago; but that it is by no means a dead letter is evidenced by the recurrence of the controversy on two occasions in quite recent times, viz., first in connection with the movements of Russian war vessels during the Japanese war, and secondly during the crisis in the Near East in 1908-09. On the latter occasion the Russians, in reply to the annexation of Bosnia and Herzegovina by Austria Hungary, originated some tentative negotiations to reopen the whole question of passage of the Straits.

A succinct official account therefore—such as is contained in the present book—quoting the diplomatic notes of the various Powers from time to time, and showing the reasons which influenced their attitude, may be welcomed as a useful addition to existing references on an important subject.

ORGANISATION AND ADMINISTRATION.

Military Reforms (La réforme militaire). By "P. D." 305 pp. 8vo. Paris, 1910. Chapelot. 3/-.

The author makes a number of suggestions for reforms in the French Army, regarding education and training, organisation of infantry and artillery, reserve and territorial formations, &c. He deals with recent manœuvres in France, camps of instruction, and also with modern inventions, dirigibles, aeroplanes, and

machine guns. There is an interesting chapter on espionage, in which "P.D." refers to German methods in France, and shows the many ways in which spies can be of service to the country in whose employment they are.

In the last few chapters the author discusses the military situation in Europe, with special reference to the position of France, Great Britain, and Germany. He comes to the conclusion that, although the British system is hopelessly antiquated, the Territorial Army constitutes an improvement on the previous organisation. He urges that, in the event of a war between Germany on the one side and France and Great Britain on the other, the Germans could not afford to detach any considerable land forces to act against us, and that therefore the British expeditionary force, or at least four or five divisions, would be free to act without delay on the Continent of Europe, leaving the defence of these islands to the Territorial Army, stiffened by a few regular troops. It would appear that, like General Langlois, the author is anxious to rate the value of our Territorials as high as possible, in order to prove that the Expeditionary Force may with safety be allowed to operate abroad in case of a war in which the main strength of our opponents is already engaged elsewhere.

Black Troops: The Formation and Utilisation by France of Armies of Black Troops from her West African Possessions (La Force Noire). By Lieutenant-Colonel Mangin. 365 pp., with diagrams. 8vo. Paris, 1910. Librairie Hachette and Co 3/-.

The author of this volume has seen a great deal of service in Africa and is an expert on all matters relating to French colonial troops. His object is to demonstrate that France possesses an important asset in the warlike negro races of Senegal and West Africa in general, an asset which may be of inestimable value when the population of Germany has so greatly exceeded that of France as to make it impossible for the latter country to maintain an army as powerful as that of her Eastern neighbour.

The book first deals with the decline of the French birth-rate and the various means of remedying this serious evil. It then gives an outline of the history of the negro warrior races, describing their numerous battles and campaigns, and showing their fine soldierly qualities and military value. Colonel Mangin comes to the conclusion that there is no adequate reason to prevent France from making an extensive use of these black troops, even in European warfare, and goes into details as to their recruitment, and the number of men that are capable of being raised.

The book is well written, and has additional interest from the expert knowledge of the author, who was recently sent to Senegal on a special mission to ascertain the opinions and wishes of the negroes and their chiefs on this important question. His overtures are said to have met with a most favourable reponse.

How Shall We Raise Our Fighting Strength? (Zur Hebung unserer Wehrkraft zu Lande). 153 pp. Berlin, 1910. Vossische Buchhandlung. 3/-.

This book, appearing at the moment when the new quinquennial Army Bill is expected, has aroused great interest in Germany and has been widely read. The author puts forward a series of suggestions with a view to increasing the fighting strength of the Fatherland. These proposals cover what are generally considered the weak points in the education and training of the regimental officers and men of the German Army. Among the measures proposed are: an increase of the period of service, which young men have to perform before promotion to officer, from 18 months to two years; a further educational course after promotion to officer; acceleration of promotion; modification of the system by which men who possess certain educational qualifications may serve as "one year volunteers," with a view to reducing the number of this class; introduction of preparatory military instruction for men after leaving school, and before being called up for service; insistence on the principle that every man fit for service shall serve, if only in the Ersatz Reserve; formation of cadre companies for the Ersatz Reserve; and employment of men unfit for service in the field as military labourers in barracks so as to reduce the number of employed men, and thus increase the facilities for training.

As regards army organisation, the author proposes an increase in the number of higher appointments and in the establishments of companies, squadrons, and of the artillery. The general purpose of these changes is to render available in case of war as large a number as possible of those men who at present slip through the meshes of the law regulating military service.

The name of the author is not given, but it is evident that he is an officer of the army, and that he has made a thorough study of his subject.

(To be continued.)

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" M. R. Walsh, Worcestershire Regiment.
" W. A. I. Kay, King's Royal Rifle Corps.
Capt. E. A. Bradford, King's Royal Rifle Corps.
" R. L. Makin, Wiltshire Regiment.
" G. E. Leman, North Staffordshire Regiment.
" C. M. Gibbon, Royal Irish Fusiliers.
Lieut. Hon. M. A. Wingfield, Rifle Brigade.
Capt. S. F. Muspratt 12th Cavalry (Indian Army).
" V. E. Gwyer, 10th Jats (Indian Army).
" W. S. Leslie, 31st Punjabis (Indian Army).

Nominations:

Capt. A. Hinde, Royal Field Artillery.
" F. M. C. Trench, Royal Field Artillery.
" R. H. Kearsley, 5th Dragoon Guards.
" C. F. Watson, D.S.O., Royal West Surrey Regiment.
" W. Northey, D.S.O., Durham Light Infantry.
Capt. and Brevet Maj. Hon. R. A. Campbell, Cameron Highlanders.
" K. Wigram, 2nd Gurkha Rifles (Indian Army).

STAFF COLLEGE (QUETTA), NOVEMBER, 1909.

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MARCH, 1911. Vol. LV. No. 397.

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OF THE

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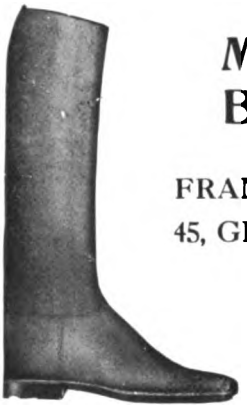
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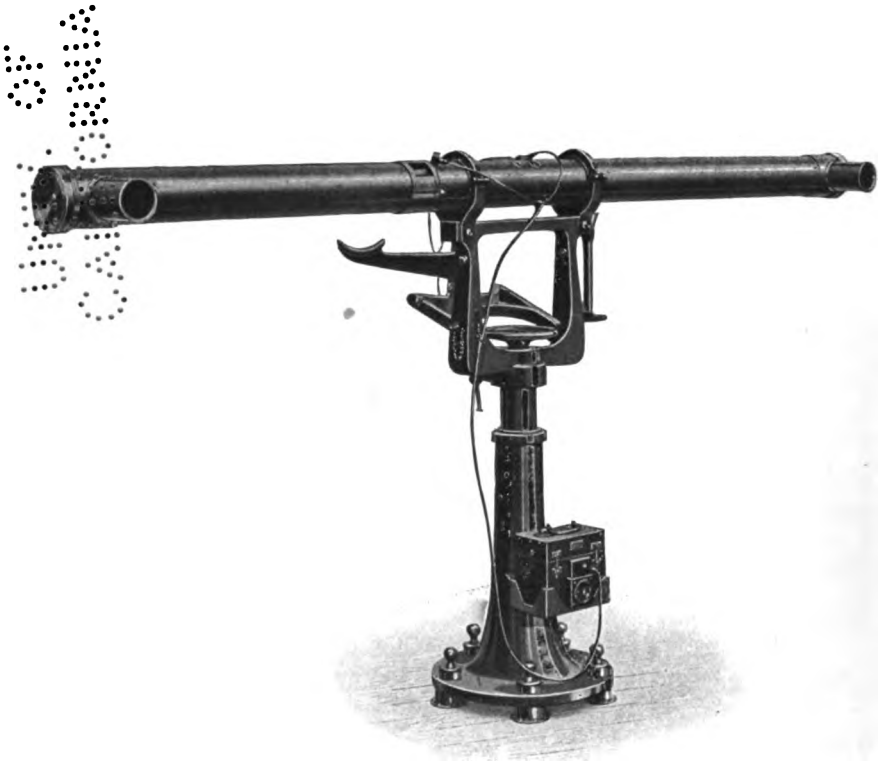
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The "Von der Tann" is the first of the German "Dreadnought" cruisers to be completed, and she is leaving on an extended cruise to the South American Republics, to display the flag and show the great advance that has been made in German Warship construction.

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THE JOURNAL

OF THE

ROYAL UNITED SERVICE INSTITUTION.

VOL. LV. MARCH, 1911. No. 397.

[Authors alone are responsible for the contents of their respective Papers.]

SECRETARY'S NOTES.

I. NEW MEMBERS.

The following Officers joined the Institution during the month of February:—

Lieutenant G. H. Gwyther, Royal Welsh Fusiliers.
Major H. D. Tuson, Duke of Cornwall's Light Infantry.
Lieutenant H. G. Sherbrooke, R.N.
Second-Lieutenant J. D. Bibby, 4th Hussars.
Major J. F. Anderson, 3rd Battalion Highland Light Infantry.
Lieutenant-Colonel R. Holbeche, late Royal Munster Fusiliers.
Captain W. Drysdale, Royal Scots.
Second-Lieutenant W. A. V. Bethell, 2nd Life Guards.
Captain E. P. F. G. Grant, R.N.
Second-Lieutenant V. M. G. Gordon-Ives, Coldstream Guards.
Second-Lieutenant L. M. Gibbs, Coldstream Guards.
Lieutenant-Colonel C. E. Phipps, late Madras Railway Volunteers.
Lieutenant H. B. Robinson, R.N.
Captain B. P. Lefroy, D.S.O., Royal Warwickshire Regiment.
Lieutenant W. J. T. Shorthose, South Staffordshire Regiment.
Captain H. E. Weekes, Indian Army.
Assistant Paymaster D. R. Thurstan, R.N.
Colonel E. P. Mainwaring, Indian Army.
Second Lieutenant G. G. Petherick, 2nd Life Guards.
Captain W. Mc C. Crosbie, Royal Munster Fusiliers.
Lieutenant-Colonel F. H. L. Errington, V.D., Inns of Courts O.T.C.
Captain W. Haire-Forster, Royal Irish Fusiliers.
Captain G. W. Howard, D.S.O., Essex Regiment.
Major-General A. K. Rideout, C.B., late R.A.
Captain E. L. Makin, Wiltshire Regiment.
Colonel S. E. G. Lawless, R.A.
Lieutenant J. K. Gordon, R.H.A.
Second-Lieutenant Hon. W. R. Bailey, Grenadier Guards.
Second-lieutenant G. A. Loyd, Scots Guards.
Captain D. Y. Watt, Leicester Regiment.
Lieutenant-Colonel R. M. Edwards, Indian Army.
Colonel A. Keene, D.S.O., late R.A.
Commander C. R. N. Burne, R.N.

II.—FATHER OF THE INSTITUTION.

Captain W. A. Tollemache, late 2nd Life Guards, died on February 4th, 1911. He was the oldest Member of the Institution, having joined in 1838, and was 93 years of age. He was the youngest son of Admiral Halliday and Lady Elizabeth Stratford, daughter of the last Earl of Aldborough. In 1821 Admiral Halliday took the name of Tollemache, on succeeding through his mother (Lady Jane Tollemache) to the family estates. The record of his life constitutes a link with the past. Born two years after Waterloo, and the son of a distinguished sailor, as a Westminster boy he witnessed the Coronation of William IV., and seven years later, as an officer of the 2nd Life Guards, was present at the midnight funeral of that Sovereign. He assisted in lining the streets when Queen Victoria made her royal progress through London on her Coronation. He was also a spectator of Queen Victoria's funeral, and witnessed the Coronation procession of King Edward VII. Captain Tollemache retired from the Army in 1846, and entered the Diplomatic Service. He was a frequent visitor to the Museum, and contributed several exhibits.

III. COUNCIL.

At the Anniversary Meeting held on Tuesday, March 7th, the following Officers were appointed to the vacancies on the Council :—

Admiral of the Fleet Sir G. H. U. Noel, K.C.B., K.C.M.G.
Vice-Admiral A. M. Field, F.R.S.
Rear-Admiral R. G. O. Tupper, C.V.O.
Lieutenant-General Sir R. S S. Baden-Powell, K.C.B., K.C.V.O.
Lieutenant-General H. D. Hutchinson, C.I.E.
Brigadier-General H. H. Wilson, C.B., D.S.O.
Brigadier-General F. I. Maxse, C.V.O., C.B., D.S.O.
Colonel F. C. Romer, C.B., C.M.G.
Lieutenant-Colonel Hon. T. F. Fremantle.

IV. GOLD MEDAL ESSAY 1910.

The Council has awarded the Gold Medal of the Institution, together with the first Trench-Gascoigne Prize of thirty guineas for the Naval Essay of 1910, to Capt. P. W. Game, R.H.A.

The second Trench-Gascoigne prize of twenty guineas has been given to Lieut.L. H. Hordern, R. N.

The subject of the essay was "How can the Colonies best help in the Naval Defence of the British Empire." The referees were :

Admiral Sir F. G. D. Bedford, G.C.B., G.C.M.G.
Rear-Admiral Cecil Burney.
Rear-Admiral C. G. F. M. Cradock, C.B., M.V.O.

The essays of

Captain A. R. Hulbert, R.N.
Major W. Cyprian Bridge, late South Staffordshire Regt.
Captain T. L. Shelford, R.N
Commander M. H. Cobbe R.N.

were recommended for publication.

V. VICE-PRESIDENTS.

The Council regret to have to announce the death of General Sir F. C. A. Stephenson, G.C.B., a Vice-President of the Institution ; he joined in 1844 became a member of the Council in 1873 and was its Chairman in 1873, 1875, 1877, and 1879.

VI. MILITARY HISTORY LECTURES.

The course of Military History Lectures on "The Franco-German War, 1870, from 15th July to 1st September," the subject for the Army Promotion Examination to be held in May, will take place as usual. The lectures will be delivered by T. Miller Maguire, Esq., LL.D., barrister-at-law The fee for the course of lectures is one guinea for Members of the Institution, and two guineas for non-members. The dates of the lectures will be as follows:—

Friday, April 21st.
Tuesday, April 25th.
Friday, April 28th.
Tuesday, May 2nd.
Friday, May 5th.
Tuesday, May 9th.
Thursday, May 11th.
Friday, May 12th.

The hour of each lecture will be 4 p.m. Application to attend, enclosing the fee, to be made to the Secretary, Royal United Service Institution, Whitehall, S.W.

VII. LETTERS.

Members are reminded that the Council can accept no responsibility in the matter of letters and telegrams addressed to them at the Institution, there being no arrangements for the reception and forwarding of Members' letters.

VIII. LECTURES.

Lieutenant-General Sir H. C. O. Plumer, K.C.B., will preside at the lecture to be delivered by Dr. Miller Maguire. on Wednesday March 22nd, on "Improvised Armies of the Nineteenth Century."

The Right Hon.R.B. Haldane, K.C.,M.P., Secretary of State for War, will preside at the lecture on Wednesday, March 29th, by Lieutenant-General Sir R. S. S. Baden-Powell, K.C.B., K.C.V.O., on "Boy Scouts."

IX. ADDITIONS TO THE MUSEUM.

(6287) Portugese Silver Medal to commemorate the first centenary of the Peninsula War. On the obverse is a Winged Figure of Victory sounding a trumpet, and bearing a Palm-leaf with the Royal Arms of Portugal at the base. On the reverse, an action in the War is represented, and is dominated by a figure of War leading on the allied troops, while the wounded are being succoured and carried from the field, and bearing the inscription in Portuguese: "To the Valour and Patriotism of the Portuguese People and Army 1808-1814."—*Given by General J. C. Rodrigues da Costa, of the Portuguese Ministry of War, and President of the Committee of the Peninsular War Centenary.*

(6288.) French cannon ball fired at the siege of Badajoz, unearthed some 60 years ago 50 yards to the West of the Picurina. The siege of Badajoz lasted from March 17th to April 5th, 1812, on which latter date it was taken by assault by the British. The total British losses during the siege exceeded 5,000.

(6289.) A portrait in oils of his late Majesty King Edward VII., executed in 1905. The picture was submitted to His Majesty, who expressed his approval of the likeness. Painted by Mr. Wilfrid B. Egan.—*Given by the Artist.*

(6290.) A line engraving by M. Vandergucht, from the painting by J. Saylmaker, entitled, "Gloria Brittanica, or the Royal Prince, built by Phin. Pett at Chatham." H.M.S. *Royal Prince* was built at Chatham in 1610, and was then the

(6291.) Coattee, Shako with plate and chain, and buff shoulder belt and plate, of the East Norfolk Militia, 1854.—*Given by Colonel C. Haggard, late Royal Irish Rifles.*

(6294.) An engraving entitled "A View of His Majesty's Royal Ship, *The Sovereign of the Seas,*" Captain Phineas Pett, supervisor, and Peter Pett, his son, master builders; built in 1637.

(6295.) Proof engraving of the arrival at St. Paul's Cathedral of Queen Victoria, on the occasion of her Diamond Jubilee, 1897.

(6296.) A naval officer's Sword, of about 1780.—*Given by Lieut.-Colonel W. H. M. Jackson, late 81st Regiment.*

(6297.) Model of a Venetian galley of the 17th Century period, which originally came from the Giustiniani Palace in Venice.—*Given by R. Howard Krause, Esq.*

(6298.) An infantry officer's sword, with brass hilt of about 1825, bearing the initials of King George IV.—*Given by Lieut.-Colonel W. H. M. Jackson, late 81st Regiment.*

X. CORONATION PROCESSION AND ROYAL PROGRESS.

It having been found impracticable to erect stands in front of the Institution Buildings for the use of Members, as was done on a previous occasion, H.M. Office of Works have consented to place at the disposal of he Council of the Institution, the following number of seats on their stands to be erected elsewhere on the route of both processions.

Coronation Procession on 22nd June, 800 seats.

Royal Progress on 23rd June, 1,500 seats.

The stands will be uncovered, and the exact position is not yet known.

Tickets will be allotted to Members on the following conditions—

1. Price of each ticket is 10s.
2. Members will be limited to the following number of tickets—June 22nd, two seats. June 23rd, three seats.
3. Tickets are not transferable; they may be used by Members and their relations only.
4. Applications for seats must be accompanied by a full remittance of 10s. per seat, and in addition a sum of 1s. application fee, (to cover the cost of printing, postage, and registration), and be addressed to the Secretary, Royal United Service Institution, Whitehall, S.W., endorsed on envelope *"Coronation."*
5. All applications with remittance must be received on or before March 28th.
6. Should the applications exceed the number of seats available, a ballot will take place, and those unsuccessful will have 10s. per seat returned.
7. Officers on the Active Lists must wear Full Dress Uniform, and it is desirable that those in the Retired Lists should do the same
8. Ladies need not be accompanied by a Member.
9. When seats have once been allotted, no refund can be made in consequence of any postponement or abandonment of the Processions.
10. No arrangements will be made to supply refreshments.

Foreign Members.—Owing to the time limit imposed by H.M. Office of Works for the receipt of applications and payment for these seats, the Council regret that it will in most cases be impossible to receive applications from Foreign Members in sufficient time to enable them to be included in the allotment, but it is hoped to secure a further limited number of seats for such Members at a laterdatefrom H.M. Office of Works, when tickets will be issued as far as possible under these conditions.

COLONEL HARWOOD'S ADVICE TO KING CHARLES I. ON THE DEFENCE OF THE COUNTRY

SIR EDWARD HARWOOD, born at Hagbourne in Berkshire, in 1586, was one of the four standing Collonells in the Low Countries, and was shot at the Siege of Maestricht, and was by Command of the Prince of Orange interred at the Hague in 1632.

When in command, it is recorded that "hee watched 30 "whole nights on Horseback, and never in that time came to "bed and by his providence and vigilancy discharged that "great trust and fully secured the countrey."

He having killed a man in a quarrel put a period to all his carnal mirth. Hugh Peeters, in his account of him says:— "Thus much I must say of him: He was true to his Principles "(a rare virtue in his age). Hee was neither above, nor below "his Calling, but very adequate and true unto it; So sad, seri- "ous, and skillful in his way, Hee was a good man, a good "Souldier, a good Christian, and is now wearing his Crown."

The following Report was written by Command of His Majesty King Charles I.:—

COLLONELL HARWOOD'S ADVICE TO KING CHARLES.

Or, A Discourse on the Rumour of the French King's Preparation at Sea.

The particulars of his preparations not being certainely knowne, there is no certain judgement to be made of them; I will therefore only take the case, as I suppose it will be granted. That the French King endeavours to make himself strong at sea, and that by two meanes, one encouraging his subjects to trade at sea, giving his Merchants great priviledges, and immunities, another of his owne proper Cost, buying, and building many great and good ships, and ordaining a yearely brave proportion out of his revenue, for the increasing and maintaining his Navie, as some say 300 thousand l. sterling, others but 300 thousands Crownes, one or other, are considerable, and may prove of danger to this State. For this disposition of his argues, that hee intends either to enter into a new war with his Majestie, or at least, to put himselfe into such a condition, as when he shall think fit, hee may doe so, without his disadvantage. That this his Arming at sea, must be intended, in emulation of His Majesties Lordship of the narrow Seas, to equall, ore-top him at sea is probable. For against whom else: Not against the Hollanders, they are his obsequious friends, desirous of his friendship, fearefull of his displeasure, not against the King of Spain for he can more easily invade him by land, when hee will, as Spain can him; Besides, the French King shewes no disposition to enter into open warre with him, for having taken on him the protection of Mantua, and not well dealt with by him in the last treaty for Italy, making a peace in shew, and yet after taking his advantage, renuing the warre in the Emperour's name, yet doth he not enter into open warre with him, but will only be an assistant, else had it not beene more facile for him to have invaded Flanders or Artois, and so by diversion aided the Duke of Mantua, then by sending an Army into Italy in the winter; therefore this preparation of the French King, for the sea, hath his chiefe ayme, in present, or future at His Majestie. I suppose, not to invade England, or it may be none of His Majesties Ilands, though that is more than we can be assured of; some of his ships of warre were this winter on His Majesties Coast, went from Harbour to Harbour, doubtless to discover them and not for any good to His Majestie: besides, who can tell, since the Ilands of Garnesey and Jersey, are the only remainders of the large Dominions, His Majesties Predecessors formerly have possessed in France, if hee have not an itching to joyne them to France again, or if not them, nor Wight; yet to share the dominion of the narrow Seas with His Majestie, and that is to take it from him, if he can; to which hitherto hee hath not pretended, as not being able to match His Majestie at Sea, but if he continue these His preparations, and that His Majestie out of hand prepare not also against it, hee will in short time, undoubtedly effect it. It will be said (it may be) hee hath no good ports or havens: that is an errour; it is true, he hath not so many good harbours, as His Majestie hath, yet some he hath, not inferiour

to any of His Majesties, it may be also said that his Subjects are not so proper for the Sea, nor so affected to trade, as his Majesties are: it is true, but if he continue to encourage his Merchants, turne Merchant himself, will not his Princes, great Lords and Gentlemen, follow his example: For Saylors, if they give great pay, and pay well, he will not want them of other Nations; nay, if his Majesties owne Subjects have not the like great and good payment, it is to be feared, he may draw many of his, to his service, at first, untill there be open warres twixt the Kingdomes: for doe not, at this present, many hundreds, I might say, thousands of his Majesties Subjects, serve other States at Sea; as the Hollanders, nay, the Turkes, without either leave, or knowledge of his Majestie.

Now, if the French King should come to be as powerfull, or more, then his Majestie at Sea, he will be a more dangerous and fearfull neighbour to England than Spaine, whom hitherto this Kingdom have of latter yeares onely had cause to feare, for that against Spaine, the Low Countries will ever bee a good Bulwarck; who if the King of Spaine at any time, make any great preparations at Sea, will be ever jealous, it is intended against them, and so ever arme against him, and be alwaies ready to joyne with, and to assist his Majestie 'gainst Spaine, which may bee doubted, they will not so readily doe against France, with whom they are in league, and not jealous off. Besides the King of Spaine hath not so populous a Countrey, as hee can easily prepare, either a great Fleet, or Land Army, and much lesse both, without long time, and so his Majestie may have the more warning thereof. Then Spaine is further from England and so the journey is longer, and from thence cannot come any Horse, which are the forces most to be feared in England. Whereas France being so neere us, and so full of Souldiers, both Horse and Foot, if it once come to be able to equall England at Sea, by sudden and quicke preparations, stealing opportunities, he may oretop England at Sea, and then transport such an Army of Horse and Foot, as we might justly be afraid of: For old Souldiers both Horse and Foot, France abounds in, and the French have a virtue proper to them, that not a Gentleman thinkes himself anything, untill he have seene the Warres, learned at least, good and perfect use of his Armes, and naturally they are all good Horsemen; their Land affords Horses fit for service, and every man almost knows to use Pistoll and Carabin: Whereas in England, unlesse those, which have been Souldiers, few or none can use their Armes, and of those which have bin Souldiers, it may be not all, can well use their Armes, especially the Musquet, which is of most offence, which our Nation are not naturally so prompt to learne the use of, as the French are; and for Horse, this Kingdom is so deficient, as it is a question, whether or not, the whole Kingdome could make 2,000 good Horse, that might equall 2,000 French.

To redress these deficiences, in all humility, I here present my poore and slender advice, under correction, and with submission to better judgments.

FIRST, and principally I would advise that his Majestie would arme at Sea, for that is the surest defence, for we can never be hurt by a forraigne enemy, by land, till we be first beaten at Sea, and therein I cannot give better advise, than to do what the French King doth, as to repaire and increase his own Royall Navie, which is the greatest and best assured strength of England, and to that end, to set apart some certain large proportion of his revenue, that His Seamen may have good pay, and well paid, and if there be good and strict courses taken, that there be no abuses in the Musters, victualling, consumption of Ammunition (which without good payment cannot well be executed) His Majesty will be a Gainer thereby, in matter of profit, besides, the reputation and advantage of his service, and it is my opinion, that no Prince nor State, but had better give 40 in the hundred, for monies to pay his Militia well, then not to pay well: Then to encourage his Merchants, and other Subjects to trade, and in making new plantations. For his land-forces, that His Majestie would take order, that the numbers of trayned men were increased, or rather that the whole Kingdome from 18 or 20 to 35 or 40, as many as were able of bodies were armed, one third with pikes and armours, another with muskets, and the third with calivers, that there were powder, bullets, and match through the whole Kingdome, magazines thereof in sundry places of the Kingdome in such a quantity, as if it were invaded in one, or divers parts, there be no want of Ammunition in any place: for it would be then too late to fetch it elsewhere, and much worse, then to make it, or send over Seas for it. That there were Care taken, that these men then armed might be well exercised, and to that end, that there be in every hundreth, or wapentake, some old souldier, Sergeant, or other inferior Officer, had out of the Low Countries well chosen, that might teach men the use of their Armes, and that there be certaine dayes set and appointed, for the shewing of their Armes, and exercising them; and if the Statutes which were formerly for sporting in the long bows were revived, or converted (with deliberation) for the musket and Caliver, to practice by shooting at markes on ordinary Holy-days, and such like times, and at some time some small prize for them, that shoot nearest; under correction, I think it were much for the strength of the Kingdome: Then that there were good choyse made of the Muster-masters, none to be but such as had borne office in some actuall warre of reputation; for better there were none, and their allowances divided into sundry inferior men, then for one to draw a great pay, that either knowes not to doe, or doth not anything for it: and because there is, or may be such as have borne office in the warres, and yet discontinue so long, as they have forgotten their trade, or that the fashion of the Warres and exercising bee

changed, since hee was last a Souldiour, that every Muster-master, shall not only at his first entrance, bee approved by such as are able to judge him, to bee fit for that charge, but to the end he may continue so, hee bee injoyned once, in 4 or 5 years, to goe personally for the Sommer time into some actuall Warre abroad, if any bee, to retaine and renew his knowledge, that the Captains of the Trained bands, bee injoyned themselves to passe the Seas, to learne the duties of their places, or at least, to keepe of his owne charge, one that can discharge his place, and if neither to quite their commands to such, as will doe the one or other.

By this means his Majesty may have an Army of foot on a sodaine in any part of England to answer all occasions, without drawing his forces much farree out of their proper countries; for an Enemy may make shew of landing in one place, and having drawen the greatest strength of the Kingdome thither (windes serving for it) sodainly transport himself to another, before that Army can by land come there.

Now for horse, wherein this Kingdome is more defective, then I think is any other, it were a worke worthy of his Majesty, seriously to take into consideration, how to amend it, and though on a sodaine, it is not to bee hoped to bring the work to any great perfection, yet a good foundation once well layed, in processe of time, it may be effected, and for the present bee much helped; it is so great a worke, and my experience being not so much that way as in foote, I will not take upon me to deliver any certain grounds for it, but will only point at some wayes, whereby I conceive it may bee reformed. The defects consists chiefely in want of fit horses and fit men to bee horse-men, which I take to bee the greater want of the two, and can but wonder, that so great a Kingdome should be so defective in so brave and noble a strength, wherein our nearest neighbours so abound, in ancient times we were not so, it may bee one reason is, that now our Nation is more addicted to running and hunting horses, then in those elder times.

For remedy, under correction, First, that there where care taken, that there were a stronger breed of horses through the Kingdome; then that his Majestie would beginne at his Court and there convert his bands of Pensioners into a brave troupe of Curassers, there horses at least so ready, as to give and change a pistoll on, Sometimes to exercise them, by shooting at a marke on horseback with their pistols, and always to keepe this band so. To admit none to those places, but such as before, were knowen to bee horsemen and could use pistoll on horseback: Then that the Lords, and others of his Majesties great officers, and Councill, did follow this example, and every-one to keep sound great horses, to have Armes, and pistols, and some such Servants as were fit to bee horsemen, and to induce other Lords, and Gentlemen of great estates, to do like, and

incourage them thereto; to reserve all personall honours (except experienced Souldiers that had born good Command) for such Noblemen and Gentlemen as did in this conforme themselves to doe His Majesty and Countrey service, whereby those, which never intend to make the Warres their trade, might bee brought so faree as to be enabled to doe something for the defence of their King and Countrey; if the Noblemen and Gentlemen would take this to heart, as they have done, running on races for bels (which I could wish were converted to shooting at a marke with pistols on horseback for the same bell), they would bee sufficient for Curassiers.

Now, for other kinds of horse, I would that the trained bands were increased and all reformed to Harquebusiers, but whether their Peeces to bee with Firelocks or Snaphaunces, is questionable; the Firelock is more certain for giving fire, the other more facile for use. For the present my opinion is, at first, it were best to take up the Snaphaunce, untill Pistolls be more frequent, which being more difficult to use, are fittest as before fore Gentlemen to begin first to bring into use: When they have once brought them to be ordinary, it will be more facile to bring them into use amongst the inferior sort, and for the present, this Kingdome hath not (except in London and it may bee some few towens besides) Artificers that can make or amend fire locks: Then I would have a mustermaster apart, for the horse, as well as for the foote, well chosen, some old Horseman out of the Low Countries; For that it is scarce possible to find men that are fit and able for both horse and foote: The Kingdome thus armed and exercised an enemy cannot land in any part of it, but, (without unfurnishing the other parts) there will bee a competent Army presently found to make resistance.

It may bee said, these advises will bee found not practiquable, or very difficult, so are all great workes at first, but I conceive, if his Majesty would take it to heart, and give incouragements of honour and preferrements, to such as conformed themselves to his pleasure herein, and make this the way of advancement, it would not bee difficult, but if without this way honour and advancement may bee had; well may they thinke, why should they take such pain, or be at such charge, for that which may more easily bee had: And here I cannot but blame our Nation in the general, (for I believe, the most gloriousest of our neighbours, will grant, it as valiant a Nation as is on the earth) that they should not bee more addicted to Armes, but give themselves for the most, to expensefull pleasures, altogether unserviceable for King and Countrey: whereas there is not a French Gentleman, that so soon as hee begins to write man, but learnes to ride, to use his armes on foot and horseback, and whether younger or elder brother, puts himself into some actual warre for sometime, to learne the trade of a Souldier though he never intend to make it his profession. I would

further advise, that all the principol Harbours and good landing places were so fortified, as farre as is possible, that no Enemies Fleet should anchour in them or much lesse land in them, with out remarkable disadvantage. The Command of which places I would have given to none but experienced souldiers, and such as are found in Religion, and had borne commands in the warres for many yeares, and they to reside in them: not unto noblemen, or gentlemen of great estates, which seldome, or never, come at them, and much lesse to meaner men than are no souldiers: for maintenance whereof the charge once arrested, to repartite them on some revenue neere enjoying, and being well paid, to have strict oversight had, that there bee alwayes such, and so many able Gunners and Souldiers present in them, as his Majesty payes on all occasions to bee used; if lesse will serve then why should his Majesty bee charged to pay more.

To Conclude, if his Majesty would reserve the places properly belonging to the warres, (whereof hee hath the fewest of any great Prince of Christendome) as, the Governments of his Ilands, the keepers of the Forts, and Castles, and places of command in Zeeland, only for souldiers, and worthy souldiers, and men found in Religion. It would be a great encouragement to his Subjects to follow the warres, to enable themselves to do him service, though to their cost and charge, when they have to hope, that though they serve a strange Prince, or State to their no advantage, yet thereby inabling themselves to doe their owne King service, they may in time bee provided for in their owne countrey; whereas if charges and commands, advancements of honour may bee had better cheape, by staying at home and following their pleasures, there will but few ever take the paines and labour, or bee at the charges to inable themselves by following the warres abroad, all men being led, either by honour, or profit, or both.

THE STRATEGICAL ASPECTS OF ENGLISH CASTLES.

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UNTIL within the last few years the whole story of the genesis and purpose of English castles has been in a state of tangle. This was chiefly on account of the confusion that has existed as to the possible dates of the various classes of earth works with which England abounds, and in particular of those which are so often associated with our castles.

But in 1901 an active Committee, appointed by the Congress of Archæological Societies "to prepare a scheme for a systematic record of ancient defensive earthworks and fortified enclosures," set to work, and was able to draw up and publish, for the first time, a reasonable classification of our earthworks that has happily been generally accepted by antiquaries.

It is accordingly now possible to give a fairly definite date to a particular class of earthwork which forms the basis of a very large and important group of English castles.

Such works consist for the most part of a large or fair-sized conical flat-topped mount, surrounded by the ditch out of which it was thrown up, and accompanied by one or sometimes more attached courts or baileys, protected by lines of bank and ditch. The general plan, of course, depends upon the configuration of the site, and it has been not unusual to take advantage of any natural rise or hill in the formation of the mount, or of cliffs, ravines, or steep banks, as defences of the baileys. The average size varies from 3 to 5 acres.

Upon the mount was set a wooden tower or citadel, approached by a flight of steps, and encircled by a defensive platform of timberwork, and the banks were crested by wooden palisades, like walls of railway sleepers, until such time as mount and banks had settled sufficiently to carry walls of unburnable masonry. Graphic pictures of the Norman castles of this type at Dol, Rennes, and Bayeux, are shown in the

Bayeux Stitchwork, and in a fourth example, at Dinan, the inflammable character of the tower is shown by the efforts of men who are trying to fire it.

The only part of the defences which was of stonework was the gatehouse, because it could be built from the first on solid ground, in a gap left for it in the line of earthwork. Good early examples remain at Exeter, Lewes, Tickhill, and Arundel. The palisades right and left of the gatehouse, and those cresting the mounds enclosing the bailey or baileys, were continued across the ditch and up the mount to the tower on top, and so formed with it one continuous ring of defence.

As soon as the earthworks had settled enough to bear their weight, it was usual to replace the lines of palisading by walls of masonry, often with towers at intervals, and the wooden tower on the mount gave place to one of stone. This was generally a ring of walling with interior buildings against it, following the lines of the former wooden defences; but occasionally, Norwich being a notable example, a massive stone tower was raised upon the mount. An excellent illustration, in which the earthworks are strengthened throughout by masonry in place of earlier timber defences, is afforded by Hollar's bird's-eye view of the Royal castle of Windsor.

There was not, of course, from the first, any difficulty in setting up stone buildings within the baileys of these castles, like William FitzOsbern's great hall at Chepstow, or Scolland's hall at Richmond, or the equally early chapels at Oxford and Durham.

In a few cases, when the natural strength of the position rendered earthworks unnecessary, or the castle was founded upon rock, it was walled from the beginning, as at Exeter, Richmond, Corfe, Ludlow, and the Castle of the Peak.

But as a rule the timber defences were general, and in many cases they can be shown to have continued well into the thirteenth century. The lower bailey of the King's own castle of Windsor was not walled until 1227, and yet was able to resist successfuly for three months the siege by the Barons and their French allies in 1215.

The ditches or fosses that surrounded these castles were, of course, of a magnitude corresponding to the banks and mounts that were dug out of them, hence the bigger the mount or bank the deeper the ditch. In some few cases, as at Hedingham, Basing, and Old Sarum, the site of the citadel was so large that the material thrown up sufficed only to form a bank round a raised central area within, in which was later built a tower of masonry. The ditches were, of course, in themselves a material addition to the defences, and were spanned by wooden bridges before the gates, which could be lifted or removed in time of need.

There is no reason for supposing that these ditches were made or meant to hold water. By far the greater number were always dry, and when water was admitted purposely, as in the case of the pool encircling the castle of Berkhamstead, it was only because the natural conditions were favourable. The primary reason for the formation of a ditch was, that it yielded the material for the construction of bank or mount.

It may, perhaps, here be pointed out that it is essential to remember what is meant by the word "castle." This, of course, refers to the entire fortress or stronghold, and not to the chief feature within it, whether mount or tower. People constantly talk of "Rochester Castle" as meaning Archbishop William's great tower, or, with more excuse, of "Colchester Castle," which now consists of the great tower only. Such a mistake is pardonable, perhaps, when the tower, as at London, gives its name to the whole fortress. But on the other hand, Windsor Castle (for example) is always spoken of correctly with reference to the whole, without meaning "the round tower," which is its dominant feature. A castle, then, is the complete fortified enclosure, and it may include a *mota*, "motte," or mount, as at Southampton, Carisbrooke, or Norwich, crowned with a stronghold polygonal or circular in plan, or built tower-wise; or, instead of such a mount, a *turris*, donjon, or great tower, as at Colchester, London, Porchester, Pembroke, etc.

Many a castle, no doubt, originated in the throwing up of the mount, so that it might settle sufficiently to carry its defences, and never got beyond such initial stage. It is possible that some of these incomplete castles, which consist of a mount only, may have been in course of construction when all further castle-building was forbidden by King Stephen.

Castles based on earthworks of the type described, and with existing added defences in masonry, or traces of such, are to be found throughout the length and breadth of England, and there cannot be any reasonable doubt that they were placed where they stand at one particular period, by a single dominant power, and in conformity with a definite and rational plan.

Examples are to be found at Norham on the Tweed, Newcastle on the Tyne, Durham, York (where there are two), Clitheroe, and Penwortham in the north. At Launceston, Okehampton, Exeter, Corfe, Winchester, Carisbrooke, Arundel, Lewes, Tonbridge, Rochester, Canterbury, and Dover in the south. From Lincoln, Cambridge, Castleacre, Norwich, Thetford, Bungay, Colchester, and Rayleigh in the east, to Rhuddlan, Chester, Shrewsbury, Wigmore, Hereford, Clifford, and Cardiff in the west.

Now, at what period in the history of Britain was the whole land from the Tweed to the Solent, and from the North Sea and the Straits of Dover to the marches of Wales in the hands

of one dominant power? No one at any time has claimed as Roman the sites of these castles, and there can, therefore, be but one answer. Not until the great fight in 1066 at the place we call Battle, which made the conquest of England possible to the victorious Norman Duke William. And who but he and his lords and their sub-tenants could have thrown up these castles all over the land?

Both the fact and the purpose can fortunately be proved by historical evidence.

The word "castel" is first mentioned in the Anglo-Saxon Chronicle under the year 1048.

> "Then had the Welshmen wrought a castle in Herefordshire among Earl Swegen's followers, and wrought every harm and insult to the King's men thereabout that they could;"

and the surrender of this castle and of the Frenchmen (or Normans) who were in it was among the things demanded by Earl Godwin in 1052. It will be noticed that both word and thing were new.

On Godwin's return from banishment the same Chronicle states that Archbishop Robert and the Frenchmen who had caused discord between the Earl and the King

> "took their horses and went, some west to Pentecost's Castle, some north to Robert's Castle."

Pentecost's castle in the west was that at Ewias Harold, and probably, therefore, the Herefordshire castle mentioned in 1048. The castle to the north, that is of London, was apparently that of Robert, son of Wimarc, at Clavering, in Essex. These and maybe some few other early examples were in all probability the work of Norman favourites of King Edward the Confessor.

The only other castle mentioned in the Chronicle, the "castel aet Haestinga Port," said to have been wrought by Duke William himself on his landing in England, is actually depicted in course of construction in the Bayeux Stitchwork, with the inscription

ISTE IVSSIT VT FODERETVR CASTELLVM AT HÆSTENGA CEASTRA.

The few castles that had previously been built, such as Ewias Harold and Clavering, were certainly not numerous, for Orderic, in describing the general insurrection of 1068 on the Welsh marches and in Northumbria, says that

> "the fortresses which the French call castles have been very few in the English provinces, and on this account the English, although they were warlike and bold, were notwithstanding too feeble to resist their foes."

William of Jumièges ascribes the establishment of castles as originating with King William himself, who, he says,

> "guided by the prudence which he knew how to be mindful of in everything pertaining to a King, visited with extreme care the least fortified parts of his kingdom, and to repulse the attacks of enemies established very strong castles in suitable positions, which he fortified with the best of his soldiers and plenty of pay."

This systematic building of castles was begun by William directly after his coronation, when, as Orderic tells us, he quitted London for a few days and abode at Barking "while certain strongholds (*quaedam firmamenta*) were being raised within the City of London." These strongholds were clearly the Baynard's Castle and the Tower of London of later days, and were placed one at either end of the City, on the bank of the Thames, "against the movement of a large and fierce people," says Orderic.

Early in 1067 the King made the progress through parts of his kingdom referred to by William of Jumièges. He also built, according to Orderic, "a strong citadel" within the walls of Winchester and committed it to the care of William Fitz-Osbern, whom he had made Earl of Hereford. The castle of Dover was entrusted to the King's half-brother, Odo, Bishop of Bayeux, who was made Earl of Kent.

About the same time King William went oversea to Normandy, and the Chronicle laments how his regents

> "Odo the Bishop and William the Earl remained here behind and wrought castles widely throughout the nation and oppressed poor folk; and ever after that it grew greatly in evil."

These castles, therefore, were new things, and offensive and defensive works distinct from a town; they were also the strongholds of individuals and not of communities.

On William's return from Normandy in 1067 his first act was to march against Exeter, where, having captured the city and suppressed the rebellion there, "he chose a place within the walls for rearing a castle," which is still noteworthy for its early Saxon-looking gatehouse. While the Exeter castle was in building the King continued his march into Cornwall, and so completed the subjugation of the west country. The castles of Launceston, Trematon, and Okehampton probably date from this visit.

Early in 1068, while on his way to York to crush another rising of the English, King William raised castles at Warwick and Nottingham, and following the surrender of York he "built a fortress in the city itself, which he delivered to picked knights to guard." On his way south Orderic says that the King built castles at Lincoln, Huntingdon, and Cambridge.

In 1069 the castle at York being besieged during a second rising, the King promptly marched to its rescue, and having raised the siege, stayed eight days in the city while a second castle was wrought there. The mounts of both castles exist: the one as the base of the later structure known as Clifford's Tower; the other, which faces it across the Ouse, being the lesser known Bail Hill.

Later in the year the English of the North again rose in rebellion, and, aided by the Danes once more attacked York and demolished the castles, probably by burning their wooden defences. King William for the second time relieved the place, and leaving there a strong force to restore the castles, laid waste the whole country from the Humber to the Tweed. Orderic says that "his castles were scattered over a space of 100 miles," from which we may infer that strong fortresses were left to ensure good order for the future.

On his return William set out for Chester to crush another rising, and built a castle in Chester itself and another at Stafford on his way southwards.

The Abingdon Chronicle also states that at the beginning of William's reign castles were built at Wallingford and Oxford and Windsor and other places "for keeping the kingdom."

The historical statements just quoted are fully confirmed by the Domesday Survey, which, although it says nothing about many that were certainly in existence, refers directly or indirectly to some fifty English and Welsh castles, and in many cases in terms that show they were new. Thus houses are noted as having been destroyed for the sites of castles at Wallingford, Cambridge, Gloucester, Huntingdon and Lincoln; in this last case to the large number of 166. And at Stamford and Warwick certain houses had become "waste" on account of the castle.

In the manor of Kingston, County Dorset, the King had a hide of land "on which he built the castle of Warham," better known to us as the mighty stronghold of Corfe; and at Rockingham land worth 26s. was waste "when King William ordered a castle to be built there." At Stafford there was a piece of land in the manor of Chebsey "on which the King ordered a castle to be built, which now has been destroyed," adds the Survey, probably by burning or dismantling its wooden defences, since the mount and its bailey still exist. The castles of Windsor and Carisbrooke are also described in terms that imply they were new.

Of other castles held by the King *in capite*, the Survey says that Earl Roger "constructed the castle called Muntgumeri," and that at Oswestry, under Earl Roger, "Rainald has made there the castle Luvre," that is "the work." At Rhuddlan, in Flintshire, a sub-tenant of Hugh earl of Chester, had "made anew in the manor of Roeland a castle likewise called Roelent." On his manor of Rayleigh, in Essex, "Suen has made his

castle;" and the Suffolk Survey states that William Malet "has made his castle at Eye." On the land of Roger of Poitou, between the Ribble and the Mersey, where King Edward held Penwortham (opposite Preston), "there is now a castle."

With five castles within his own earldom the name of William FitzOsbern is associated, and since he died abroad in 1072 they can be approximately dated. These are Clifford, which Earl William built on waste land; the castle of Estrighoiel or Chepstow; Berkeley, in the manor of Ness; Wigmore, built on waste land called Merestun; and Ewias Harold, which the Survey specially particularizes as having been "rebuilt" by the earl "*qui hoc castellum refirmaverat.*" This probably refers to a renewal of the timber defences which had, perhaps, been burnt by the Welsh.

Lastly, there is a complaint of the English burghers of Shrewsbury that they are still called upon to pay taxes as in King Edward's days, "although the earl's castle has occupied 51 houses and another 50 are waste;" the said houses, having obviously been displaced for the site of the mount and bailey castle which still remains there. This castle of Shrewsbury was in existence as early as 1069, when Orderic calls it *præsidium regis*, or the King's stronghold.

Besides the castles already mentioned by contemporary writers or in the Domesday Survey, there are many more important examples which, from their character and position, must be assigned to the same time and be looked upon as forming part of the same great offensive and defensive scheme.

Many of these are mentioned in the Survey, including the royal castles of Monmouth, Canterbury, and Norwich; Launceston and Trematon, in Cornwall; Okehampton, in Devon; Dunster and Montacute, in Somerset; the castle of the Peak, "Pechesers," in Derbyshire; Rochester, in Kent; Caerleon, in Monmouthshire; Richard's Castle, in Shropshire; Arundel, Hastings, Lewes, and Bramber, all in Sussex; Dudley, in Worcestershire; and the Yorkshire examples of Ilbert's castle at Pontefract, Earl Alan's at Richmond, and Earl Roger's castle at Clitheroe (now in Lancashire). The Survey also mentions the castle of Helgot, an under-tenant of Earl Roger of Montgomery, at Stanton, Salop, now Stanton Holgate, where its mount may still be seen.

There are likewise historical or other reasons for including among the castles raised during the reign of the Conqueror or his successor the royal fortresses of Newcastle-on-the-Tyne, Durham, Worcester, Hereford, Dover, Guildford, Hertford, Southampton, Berkhamstead, Oxford, Old Sarum, and perhaps Bristol; also Devizes, Tickhill, Tamworth, Thetford, Bungay, Clare, Ongar, Pleshy, Hinckley, Belvoir, Leicester, Reigate,

Tonbridge, Sandal, Castleacre, Basing, Norham, Alnwick, Warkworth, Thorold's Mount at Peterborough, and the mighty tower of Colchester.

From a map which I have prepared and is here exhibited it is possible to see how effectually the distribution of these castles all over the country accomplished the conquest of England.

With some few exceptions, a castle was established in every county town, and often supplemented by two or three others in the county itself, where the necessity for them arose. They thus dominate and overawe the towns themselves, while at the same time controlling the roads and waterways. They watch the passes through the hill ranges and mountains, as may be seen by the castles of Lewes and Bramber and Arundel, with their rearguards at Reigate and Guildford and Windsor, and the line along the Welsh border of Rhuddlan, Oswestry, Montgomery, Wigmore, Clifford, Ewias Harold, Caerleon, and Cardiff, with the second line that includes Chester, Shrewsbury, Stanton Holgate, Richard's Castle, Hereford, Monmouth, and Chepstow. They command estuaries and landing-places, and Orderic expressly says that Pevensey and Hastings served at Norman William's first landing as bases for his army and havens for his ships. The turbulent Londoners were kept in check, like the men of York, by the two strongholds within the City, and also by an outlying ring of castles which includes Rochester, Tonbridge, Reigate, Guildford, Windsor, Berkhamstead, Hertford, Ongar, and Rayleigh.

There are, on the other hand, certain districts where these early castles are entirely absent, or but few and far between. None is to be looked for in Cumberland and Westmorland, since these counties then formed part of the Scottish province of Strathclyde. In Lincolnshire, Nottinghamshire, and East Anglia there are very few, apparently because the dense Danish population of those districts was never really subjugated. There is also a curious lack of castles in the district between the Cotswolds and the Chilterns, which is difficult to account for, unless we may suppose it to have been so thinly populated as not to be looked upon as formidable.

After the completion of the Conquest of England and the restoration of order, many castles ceased to be of strategical importance, and were no doubt dismantled and abandoned; while others, which had been planned on a large scale, were reduced in size. Interesting examples of this occur at Carisbrooke and Rockingham, where a large outer bailey has been omitted when the timber defences were replaced by masonry.

The internal troubles of King Henry II.'s reign seem, on the other hand, to have caused a number of castles to be repaired or strengthened, and the Pipe Rolls of the time show that

keeps or great towers were added at Orford (1165-7), Bridgnorth (1168-9), Bowes (1170-3), Chilham (1170-3), Hertford (1170-3), Hastings (1171-4), Richmond (1171-2), and Newcastle-on-Tyne (1171-7), Canterbury (1172-4), Oxford (1172-3), the Castle of the Peak (1175-6), Tickhill (a ten-sided tower on the mount, 1178-80), Northampton (1181-3), and Dover (1181-88). Of these it is interesting to note that Newcastle and Dover were the work of the same architect, as we should call him, who is in the one case called Maurice the mason, and in the other Maurice the *ingeniator* or engineer. Ralph the mason was the builder of Chilham. The huge tower of Norwich is also a work of Henry II.'s reign, and it, and the contemporary tower at Castle Rising, are the work of one architect. The earlier towers of Rochester (which was built between 1123 and 1135) and Hedingham must also have been designed by the same man, and it is interesting to see how in the Kentish example he dealt with Caen stone and Kentish rag, and in the Essex tower with concrete faced with Barnack ashlar. There cannot also be any doubt that the enormous tower of Colchester, built in the closing years of William the Conqueror, was planned by the same engineer who built the Tower of London under Bishop Gundulf for William Rufus. These two great towers, it may be remarked in passing, are the earliest of their types in this country, and it would be interesting to know of any proved older examples in Normandy which could have suggested them.

Time will not permit me to do more than refer briefly to one or two other groups of castles, of more or less local character.

The most noteworthy of these is the fine series, of an entirely new type, which includes Harlech, Carnarvon, Beaumaris, and Conway, Criccieth, Rhuddlan, and Flint, built by King Edward I. to keep in order the Welshmen, whom he had conquered but not subdued.

These are of interest as being almost the last castles proper that were raised in this country; changes in methods of warfare, the introduction of artillery, and last, but not least, the final peaceful settlement of the whole of England and Wales, making it unnecessary to build more.

One other group may also be mentioned, though strictly speaking they are not castles at all, but defensible houses composed of ranges of chambers and towers built about a court-yard, which, therefore, combine the element of the foregoing strongholds. They include Bolton in Wensleydale, one-half of which was contracted for in 1378; Sheriff Hutton (1381) and Wressle, both in Yorks; and Bodiam in Sussex (1385); also Middleham, which encloses a fine Norman great tower; and Lumley, the latest of the series, begun after 1389. These were, of course, private houses and not the property of the King.

Such later attempts as the line of forts built by King Henry VIII., along the south-east coast, from Deal to Hurst Castle, against a threatened French invasion, and the still more recent series of martello towers dotted along much the same line in preparation for Napoleon's boasted visit, can hardly be regarded as England's castles, and are more closely paralleled by the blockhouses devised by Lord Kitchener during the Boer War.

T. Miller Maguire, M.A., L.L.D., Barrister-at-Law (Inner Temple): Sir, it is a pity there should not be any discussion on this interesting paper, from which I have received an enormous amount of instruction in a very short space of time. I will, therefore, endeavour to make a few remarks while the other members of the audience are thinking of what they will say when I have finished. I was glad to find that somebody could keep the Welshmen in order, and that accordingly a very considerable number of castles were constructed with that view. I wish the learned lecturer would tell us whether there is any modern device which will bring about the same noteworthy and highly desirable result! For myself I have recently been spending some time in Yorkshire, and I take it that the strength and importance of the castles there were not merely with the object of keeping in order the Saxon enemy of the Norman. Perhaps the learned lecturer will be able to tell us that they were also designed against the Celtic fringe, which, at the present moment, is very troublesome from the West. Was not York Castle intended to break the waves of the surging northerns in their various excursions southwards? Though it is a mistake to suppose that either the hostile leaders or the fighting men in the numerous Scotch wars from 1290-1556 were Celts, they were of the same breed as the Anglo-Normans of old Northumbria. There is another castle which the lecturer did not mention, which it seemed to me when I was in Yorkshire was extremely interesting. It seemed to be old, although I had not much time to study it. It had a splendid keep, with a most formidable dungeon, and all kinds of apparatus for cooling the ardour of invaders at very great depths—I refer to Skipton Castle. I do not know whether the lecturer knows anything particular about it. With regard to the strategical placing of the castles, it seems very strange how history repeats itself, because there have been divers plans made by ingenious territorial commanders recently with regard to the defence of England at different centres, and these correspond almost exactly with the ideals of the mediaeval and Tudor periods. There has been a notion abroad that the resources of the country might be used by putting our trust in a new type of Martello towers. I do not know whether you, Sir, have much regard for Martello towers. I was brought up as a child in the neighbourhood of several of them, and we used to have the highest possible respect for the chief of the castle, generally a sergeant of the Marine Artillery His proceedings struck awe into our hearts, but we never rgarded him as anything very much in the way of a military hero. My opinion about the Martello towers is that they were the most egregious misconception possible, as are modern ideas about the multiplication of coast defences. I think they were made by an Italian, and I do not think that Napoleon would have attached the slightest importance to them had he stuck to the invasion from

Boulogne, and not turned his Grand Army to the Rhine and Danube against Austria. They cost about two millions of money, and a more useless waste of money could scarcely be conceived. But the curious thing is that the defensive strategists of 1800-1805 were not satisfied with the sea ditch in front of our isle. One would have imagined that the sea was a considerable ditch, and that if Napoleon could have brought his troops across that ditch it would serve little purpose to put another ditch behind the castles! If the learned lecturer in his reply will explain how it was that the Kentish ditch was made behind the Martello towers I would be obliged to him, because I have never been able to understand the use of that canal or ditch. But to revert to the question of the practical repetition of history in regard to the Territorial forces. The idea of some ingenious engineer was that we should again have at places like Hull, a rather important port, a big castle or series of fortifications, and that we should have castles or works at Colchester, at Southend, up the Severn, near Bristol, and so forth, and that then we should connect these castles and works with a lot of castles in the centre of England. Going over these supposed defences, I find that every one of them is the site of one of the castles of either the Conquerer, Henry II. or Edward I., for obvious reasons, just the same, I suppose, that our great modern roads take the route of the Roman roads, and the modern thoroughfares of France are very near the mediaeval ones, notwithstanding the introduction of railways and similar modern devices. I wonder why the learned lecturer in the course of his most interesting and instructive discourse left out one part of the kingdom altogether. He referred, I think, neither directly nor indirectly to any of the castles of Ireland, and yet surely the Irish required castles fully as much as the Welsh, and even now perhaps require castles up to the standard of the Welsh. I think there were some very good castles in Ireland. I know one castle where some of us spent a great deal of our time with much profit—Blarney Castle, just outside Cork. I should be much obliged if the lecturer will tell me the exact cause of the peculiar location of the particular stone in the front of that castle, because I have no doubt its careful study and a visit to the spot would produce a stimulating effect, not only on the soldiers here present, but also on the ladies who accompany them. There is not much more to be said from my point of view on castles, but I see everyone would like to obtain some information with regard to the mystery of the stone on the wall of Blarney Castle. There is a very remarkable book on English Castles which many of us students learned "Mediaeval Military Architecture." I do not know whether the learned Chairman knows it, and I forget its name just now, but it was very much in demand when I was a student, and it is of an instructive and edifyingcharacter, though I fear not up to date from the point of modern research. But for my own part, not being very skilled in archaeology, I can do no more than ask these very moderate and not recondite questions, which I hope the learned gentleman will answer, and congratulate him on his most interesting, instructive, and suggestive lecture on the Keeps wherein brave Knights kept watch and ward of olden time, and gave security and hope to the fair dames and hard toilers of their neighbourhood.

MAJOR C. B. SIMONDS, R.G.A.: I must ask you to forgive me, Sir, if I make a few disjointed remarks on this very interesting subject, but at the present moment it opens up a very absorbing question to officers in my

branch of the service. I have just returned from India. Lord Kitchener's redistribution of troops called for several modifications in what we now call in India the internal defence, and from an Imperial point of view it seems to me the subject wants to be carefully studied in other parts of the Empire than in India alone. In India there are many castles and fortresses which have been built by native chiefs at very important strategical points. I think Dr. Miller Maguire said on one occasion that the laws of strategy are eternal. It seems to me that this really bears out that saying, because these fortresses in India, which are now occupied and kept up, are at very important points. Engineering has done a tremendous amount of work in the way of making railways and canals, which have made almost any threatened area in any part of the country accessible. But the best engineering feat is always liable to be destroyed, whether it is a canal or whether it is a railway, but you cannot blow up a river. A natural feature is a thing which it is not easy to destroy; and in the event of any big disturbance, or even attack from an outside enemy, the question of internal defence seems to run on practically the same old (strategic) lines. As regards the tactical arrangements, of course modifications are required, but the main rivers and big waterways of India fortunately are commanded by fortresses built 300 or 400 years ago by Mogul Emperors, such as Akbar. The question of the defence or the bringing up-to-date of a lot of these defences is a very broad subject to go into. Curiously enough they hardly want altering in position at all. There are other questions besides the actual defence, and the archaeological point of view that seem to me of importance. We have to consider a good deal the question of the religious ideas of the natives. One particular fort I may mention, in India, in connection with that subject is Allahabad. It is a very curious fact that Akbar, a Mussulman, should have guarded the interests of the people to such an extent that he allowed a sacred Hindu shrine to remain in the fort which he built all round it. It is a place which millions of pilgrims visit during the year at big native festivals, and once every twelve years an extra large number visit it. So long as we safeguard the interests of the people in that way, and look after their old fortresses, and also their relics and guard them, it does a great deal towards keeping down any chance of a rising. These are points that are being kept in view in India at the present time. It is a subject very analogous to that which has been dealt with to-day, and in other parts of the Empire we can also very easily draw a line from the paper that has been read to us. I had not the opportunity of seeing a copy of the lecture before it was delivered, otherwise I might have had time to put what I have said to-day into a less scattered form.

The CHAIRMAN (Professor Oman): There are one or two general points that suggest themselves to me. The first is that with regard to English castles at large we must make a division that was suggested by the lecturer although I do not think he put that division into actual words. There is an enormous difference between the meaning and importance of the Royal castles and the meaning and importance of the private castles. The King's castles clearly are for one of two main purposes. Many are purely strategical, that is to say, they are either to guard a great passage of a river (as at Wallingford, or Pontefract, or Newark), or they are to guard an obvious and easy entry into the kingdom by some great seaport, like

the fortresses at Dover or Porchester. That is the purely strategical kind of castle. Or, secondarily, there is the castle which is built to keep a large and turbulent town under subjection, like the Tower of London, the Castle at York, and many other castles dominating big country towns like Colchester or Lincoln. Those two sorts of castles clearly are the classes that the King has to build. But the object of the great private castles differs entirely from this; that is to say, the baronial castles usually have no strategic purpose, because the baron is necessarily a local person. He is interested in the defences of his own estates, and also in the defence of his own person. His estates, according to the great system devised by William the Conqueror, under which he refused to give any of the Norman barons too much land in any one region, were diffused all over England. There was hardly a shire in which there was a complete predominance of one great baronial family, although there were a few like Shropshire and Cheshire. But as a rule the Earl or Baron had his land scattered all over England, and had not one district wholly at his command, so that he does not want what we may call a strategical castle. What he wants is a tactical castle, that is to say, a castle from which he can dominate his surrounding estate, or in which he can shut himself up to resist any assailant, either the forces of his overlord the King, or on other occasions, it may be, the foes of the realm—but generally his overlord. Therefore the main object of the baronial castle will be to seek for pure local strength. We need not expect to find them as a rule on great highways, nor at great ports, nor at the greatest fords, but the baron, as a rule, will look for the strongest position that he can get on his estates, and make there the strongest castle possible for the mere purpose of defence. Many of the greatest and most important castles of England that were baronial, are singularly remote from the highways. For example, Berkeley Castle does not command, as it might have done, the way from Gloucester to Bristol, though it was the one first-class fortress of Gloucestershire. It is put in a corner between the great Roman road from Bath to Gloucester and the sea, where it does not command anything in particular. So, too, with many of the other of the greatest baronial castles. For example, Hedingham, the great stronghold of the De Veres, in north Essex, covers nothing save the surrounding district. Such castles aim at nothing more than local defence, which is a very different thing from the King's wish to dominate a great town, or to protect a port, or to cover a great highway where it crosses a river. There is only one part of the realm in which the baronial castles are in a way strategic, and that is in one part where the barons were formed into a sort of community or organisation, I mean the Marches-Lords of Wales, who stuck together and co-operated against the wild tribes of the "Celtic fringe." The baronial castles of Wales do, of course, support each other. When one man went to cut out for himself a territory from the independent Welsh, he had to base himself on the hold which his predccessors had already made in regions nearer England, and the very elaborate inter-dependence of the castles of Herefordshire and Monmouthshire on the one side, and Glamorganshire and Brecknockshire on the other, does suggest a very deliberate strategical arrangement. But as a rule throughout England you may say that the King's castles may be strategic, and often are, but the baronial castles will not be, because the Barons are seeking the purely personal and local end of defence. That is the first main thesis

that is borne in upon one listening to this very interesting lecture. My second point is mainly one great query for Mr. St. John Hope to answer. Fifteen years ago I thought I knew something about English castles. I had seen a great many of them, and I had digested that excellent book (as we thought it in those days) "Clarke's "Military Architecture of the Middle Ages," which I think was the work of which Dr. Miller Maguire spoke. I have studied a great many of the castles he has alluded to pretty carefuly. But now a new generation has arisen, which knows not Clarke. Within the last few years, as nobody knows better than Mr. St. John Hope, the Society of Antiquaries has been pervaded with a new school, which refuses to acknowledge the simplest of Mr. Clarke's original theories, particularly the theory which is the basis of all his opinions, namely, that the normal Anglo-Saxon fortress was a mount by a river, stockaded round and round by palisading, with more or less outer defences, also surrounded by palisading and ditches; that what the Normans did was to substitute for the palisading and the plain mount "shell-keeps" as they were called and donjon towers—shell-keeps meaning rings of walls put round the mount, and donjon towers meaning square-built blocks like the Tower of London, put either in the middle, or, as a gate tower, at one side of the whole structure. I believe the theory of the difference between the Saxon and the Norman castle is being called entirely into question by a school of Archaeologists of which Mr. Round is the leader. I have not myself had the privilege of being present at the meetings of the Society of Antiquaries when these things were discussed, and I am going to ask Mr. St. John Hope to explain to us what impression was made on his mind by this attack on what we used to consider the Palladium or the Ark of the Covenant of military castle building, viz., the main theory of Clarke's Military Architecture of the Middle Ages. If we refuse Mr. Clarke's theory we are driven to this point. We know that the Anglo-Saxons built, from the most clearly strategical points of view, fortresses all over England; Alfred and his son, Edward the Elder, pushed across from the South and the West towards the North and East of England. They built one after another, row after row of fortresses, by which the captured Danish towns were dominated, and by which whole districts were held down. These strongholds were then called Burhs. Are we to believe no longer that the stockaded mount by the water-side, which we so frequently find, is the remains of the Saxon Burh, and that the masonry building, either of the donjon, or shell-keep style, which we often find superimposed on top of the earlier work, is the Norman improvement on it? Then I should like Mr. Hope to tell us what I forgot to ask him before, what exactly he thinks that the Burh was. I can imagine some people saying that the Saxon fortress was rather a garrison than a stronghold. We are always told in the Anglo-Saxon chronicle that King Edward builds a "burh" and sets "burh-wara" therein, that is to say, a garrison within it, and that they defend themselves. Is it possible that the differentiating thing that made a Saxon Burh was rather its military settlers than the character of its works? Might the fortification differ indefinitely in type between one place and another? Those are the two main points that I have to raise. One of them is a thesis, the other a mere query for information.

There are one or two smaller points that may perhaps be worth mentioning that struck me while I was listening to the lecture. In some of

the castles that Mr. Hope mentioned, where the outer wall or rampart of a Norman castle was incomplete, where only part of the place was defended on account of its largeness, it struck me that the cause might be in some cases simply the character of the soil. Where you have deep earth to dig, it is easy to make big defences, but where you only have four or five inches of soil on the top of rock or chalk, it is clearly more difficult to build outer earthworks than it is in a place where you are dealing with clay or loam. Another point that struck me was the curious fact emphasised by the lecturer of there being some districts of England where there are much fewer castles than one would expect. For example, there are none between Gloucester and Warwick on one side of the triangle, and Oxford and Wallingford on the other two sides of it, and similarly there are very few in certain other parts of England. My own suggestion would be that, as a rule, this want of castles means want of great barons. In the central parts of England the king only required a very limited number of castles; and you know that the different counties of England were differently divided up between the landowners. In some places there were large estates, and in others there were a great number of smaller barons. It is particularly in counties like Oxfordshire and Buckinghamshire, where the barons were small men, there is a want of castles. If you will run through the Black Book of the Exchequer looking for the Knights' Fees of England, and look under counties like Oxfordshire and Buckinghamshire you will find that you do not know the names of one of the barons; they are altogether very small people holding very moderate estates. I should imagine that that is the sort of thing that accounts for the want of castes. Where you have big barons you have big castles; where you have comparatively small barons they could build nothing very important. The Earls of Oxford, by the way, were very great people, but I do not know if any of you are aware that they had practically no connection with Oxfordshire. The Earls of Oxford were the greatest territorial magnates, not of Oxfordshire but of Essex, and their castle of Hedingham was a formidable stronghold in its way. The reason that they got the title of Oxford was this: They *ought* to have been the Earls of Essex, but the title of Essex was already booked for the Mandevilles. When the baronage were doubting between King Stephen and Queen Matilda, and were being conciliated, the De Vere of the day was offered the title of Earl, but he could not have the title of Earl of the county where he was most powerful. He was told that, as he could not be Earl of Essex he might either take the title of Earl of Oxford or of Earl of Cambridge. Thus the Earls of Oxford never had a real territorial connection with Oxfordshire at all. We must, therefore, in thinking of the Middle Ages, always avoid connecting the county title with the idea of dominance of the county. You may find that the Earl of Gloucester's great power is in Glamorgan, or the Earl of Oxford's great power is in Essex, and so forth. On the whole, my own conclusion is that a castleless district means a district where there were many small barons and no sufficiently big ones. There are only one or two more points that I wish to refer to. Mr. St. John Hope has mentioned the question of the shrinkage of castles—castles which had originally been big, and were made much smaller at a later date. The most curious castle of that kind that I know is the Castle of Tretower in Brecknockshire, where the rebuilder of the castle has simply inserted a little donjon in the

middle of the older shell-keep. With regard to the question of Martello towers to which Dr. Miller Maguire referred, they did turn out useless, because Napoleon never invaded England; but the theory of them was this. Martello towers were built simply to prevent a landing taking place on an exposed shore. Two heavy guns, exceedingly well protected, were put in those towers, which were constructed on the beach or shore of the South of shore wherever a landing was easy. On a level beach it is easy to see that they might have done a lot of mischief. I do not know if the origin of Martello towers is known to many here. The fact of the matter is that there was a castle in Corsica (called Mortella rather than Martello) which once kept two British men o' war at bay, and that castle simply consisted of two guns in a strong masonry circle of the smallest size. Two 74's could do nothing against those two guns, and suffered severely. The theory prevalent in 1804 was that there was a limited number of spots along the coast in Sussex and Kent, where armies could come ashore, and that if we placed little forts, with very heavy artillery, which could not possibly be dominated or put down even by a very much superior fleet, on each exposed spot, we could make a landing there extremely difficult and costly. As long as the fire of those little forts could not be subdued by the covering fleet, the landing could be made so doubtful that perhaps the enemy might not even try it. The "Military Canal" which was drawn across Kent was certainly a more doubtful device. The theory of its builders was that if the French did get ashore there should be a definite line of defence before them in the canal. But it was rather cocksure to suppose the French would land in that particular district of Kent, where they must run against the canal, rather than on any other stretch of the South Coast. As Napoleon's army never even got out to sea, we cannot tell how martellos or canal might have served; but they were part of the "insurance fund" against invasion.

Mr. W. H. St. John Hope, in reply, said: I will endeavour to answer the questions which have been asked as shortly as possible. First of all, Dr. Miller Maguire complained that I had omitted to mention the Scotch and Irish castles. I did so of malice aforethought, because it would have taken up too much time to have gone into them, and it also is really unnecessary as a matter of study. One knows that precisely the same conditions apply to the castles in the parts of Scotland that were under Norman influence at the beginning of the 12th century, as to the castles through England, and also apply to that part of Ireland which is known as the English pale. Only lately an Irishman who rose up to curse Mrs. Armitage, who had laid down this theory in black and white, ended in blessing her. Anybody who wants to read the story of the Irish castles can do so in the pages of the *English Historical Review*. My point is that the English castles were raised against the English or Saxons, whichever you choose to call them, and likewise the Danes. They were the people who were prowling up and down the rivers in the 11th Century, and gave a lot of trouble to the Conqueror. You will find that every one of the rivers and estuaries up which the Danes were accustomed to sail is dominated by one of these Norman castles. I have had to omit to refer to quite a number of castles, some of which are in Yorwkshire, that are quite notable. For instance, there is Skipton Castle, which Dr. Miller Maguire mentioned, and Scarborough, and that very remarkable castle at Skipsea right

out in Holderness, and so on. The Chairman has asked two quite important questions, as he himself said. Personally, I have never been able to differentiate between the royal castles and what he calls the baronial ones. I tried to do so, but it seems to me that although the royal castles do, as Professor Oman says, dominate the town or some important point, and have a certain strategical importance, the same argument applies equally to a very large number of the baronial castles. If we only had it on record I think we should find that one of the conditions under which the large tracts of land were given to the barons at the Conquest of England, was that they were to plant a castle on their estates to keep in order the district in which they were situated. It is very curious to see the parallel cases that occur. There are castles at Castleacre and Lewes built by the same man, William of Warren; there are also castles at Shrewsbury and Arundel both the work of Roger of Montgomery; and Tonbridge and Clare are both the work of the man called Gilbert of Clare and Gilbert of Tonbridge, and these are all planted at very important places. One cannot help seeing that Hedingham dominates very largely an important district of Essex, where there were lots of villages, just the same as the Castle of the Peak dominates the whole of the northern part of Derbyshire, and one of the Ferrers had a great castle in the South of Derbyshire at Duffield, which helped to control the passes that ran up the county. There is another point, that some of these castles were built by bishops. Newark was built by a Bishop of Lincoln, and Rochester by an Archbishop of Canterbury; and it is quite certain that many other castles, even in county towns like Shrewsbury, Norwich, and Thetford, were built for the king, so to speak, since there are no entries in the Pipe Rolls referring to their building; whereas in many other cases there is a long series of notices relating to the strengthening of these castles entered on the public records.

Berkeley Castle, by the way, I have always looked upon as one of the castles that controlled the Severn, and I think that is the purpose for which it was built. It is quite obvious on looking at the map that we do get a string of castles defended in rear by another series, as, for example, in Sussex. All these must all have been built for a purpose. The burh theory can, I think, be settled in a comparatively few words. In the first place the word "burh" has nothing to do with a castle; it simply means a fortified town. The first mention of the word which occurs in the English language is in the Anglo-Saxon Chronicle, with reference to Colchester and to London. In neither case is there any burh in Mr. Clarke's sense of the word; that is, the fortified mount of such a castle as I claim as Norman. There is no trace of any mount in either of the London castles or in London at all; and there certainly was never one at Colchester, and yet both are two very important "burhs." Then, again, why do not we find these mounts, if they were Saxon or Danish, where those two nations were prominent. You do not find them in parts of Yorkshire, or in Lincolnshire, or in Nottinghamshire, or in some parts of East Anglia, where there ought to have been a lot of them. Then a very important point is the distribution of these mounts all over the country, from one end to the other, including a large number of districts that were not Saxon or English at all. Therefore they must be the work of one dominant power, and that can only be the Norman, so they must be struck out of any theory that would make them Saxon. Further, if anyone will take the trouble, as I have done in a paper in the *Archaeological Journal*, to connote

all the entries in the Anglo-Saxon Chronicle relating to burhs, or to Saxon and Danish fortresses, will find that not only are their remains insignificant in character, if they exist at all, but in many cases they cannot be identified because all traces of them have disappeared. None of these Danish or Saxon things could therefore have been of any importance strategically. Where, too, you do find a place in the Chronicle where there is a mount, that mount can be proved to be not earlier than the Norman Conquest There is this one important point to remember, that the universal distribution of these things over the whole of England cannot be ascribed to any Saxon or any Dane, because there was no one Saxon kingdom that covered the whole of the country, and there was not any Danish King of England before the days of Cnut, and no one has ventured to assign these fortresses or any of them to his time. The oldest that we can prove the date of, historically, are of the time of Edward the Confessor, and the work of his favourites.

* "THE MATCHLESS SOLDIER MAID, BLESSED JOAN OF ARC,"

By Father BERNARD VAUGHAN, S. J.

Wednesday, 30th November, 1910.

Admiral of the Fleet, SIR GERARD H. U. NOEL, K.C.B., K.C.M,G., in the Chair.

In a day when many people are trying to make politics a substitute for religion and patriotism, it is positively refreshing to lift up the picture of a simple village maiden who became the saviour of her country, because she was drawn by that triple alliance—God, King and Country. Joan of Arc is an object lesson to every man and woman, to every boy and girl, who has the highest interests of fatherland at heart.

At the beginning of the fifteenth century, when she was born, it looked as if France and England were going to be united under one crown. Our fifth Henry crossed in 1415 to France, resolved, seemingly, not to be content till he had won the crown of Clovis for his own brow. His inheritance from his great grandfather, Edward III., he thought, would make a good foundation for further conquests, and these he pushed almost to the furthest point of success. As you know, by the Treaty of Troyes, he was appointed Regent of France during the life-time of his father-in-law, Charles VI., the imbecile, with the right to the crown when Charles should have passed away. As it happened, in 1422 our fifth Henry died, and shortly after him Charles was carried to the grave. You remember the great pomp and circumstance that surrounded the coronation of Henry VI., the child, at Paris, and how the Duke of Bedford, his uncle, was appointed Regent. While our heroine was still a child Bedford thought to win the crown of France completely for his young charge. Orleans was the one place that was needed; it must be stormed, captured, and brought under Anglo-French dominion.

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* This lecture was delivered without notes, and is given from a report taken down at the time by our reporter.

I need not remind you that, if the Salic Law obtained in France, as it did, neither our Henry V. nor our Edward III. had much legitimate claim to the crown of France. Strange to say, before Henry had been in his grave thirty years, all that he had inherited from his forefathers, as well as all his own conquests in France, were lost except what stood behind the walls of Calais; and what England lost she never regained. Finally that "fairest gem that sparkled in her diadem"—Calais—was lost to England and its name was written on the broken-hearted Mary's heart. I want the circumstances of the case put before you, and so I have briefly recapitulated these facts, which I ask you for the moment to bear in mind.

Here let me also remind you that during the fifteenth and sixteenth centuries there was hardly a good word to be said in England for Joan of Arc. In the seventeenth and eighteenth centuries she comes a little more to the front, and in the eighteenth and nineteenth, especially after Quicherat had published the evidence of the trial, she stood full height before my countrymen, while in this twentieth century we have made a splendid act of reparation to her. We thought when we were beaten that we were beaten by a devil-worshipper, by one sent to us by the Evil Spirit. I never could understand that. I think that my countrymen ought never to have paid such a compliment as that to the Devil. I can quite understand even England being beaten when she had to contend with one sent against her by Almighty God, but when sent by the Devil!—I would pay him no such compliment; I would tell him to go to his own place, to hell.

To-day I am going to put before you as briefly as possible an outline story of this matchless soldiermaid. She is simply magnificent, she is inspiring. It would be well for every Englishman to study her character, for he would then be truer to King and Country. Wonderful! that in this age of Democracy we should be able to lift up the portrait of a little village maiden and point a lesson which all of us need so much to-day. I am going with your kind permission to tell the story as simply as she told it herself. I have no sympathy with Anatole France, nor with Jules Blois, who, emulating the so-called art of Renan and Sabatier, have given their interpretations of her life, because her own does not suit their theories of this world. But Anatole France and Jules Blois, with some others, may be just shown the door with Renan and Sabatier, those other two romancers who read their own story, into the lives of our Divine Saviour and St. Francis of Assisi.

In the province of Champagne, in France, near Vaucouleurs there is an unpretending village called Domrémy. Here in a modest homestead, standing near the village church, was born on the Eve of the Epiphany, 1412, Jacques and Isabelle d'Arc's fifth child and second daughter. They christened her

by the name of Jeanne, and she grew up a typical little French Catholic girl, fond of weaving flowers for fairy trees, as I dare-say you and I have done in our childhood; and fonder still of gathering great bouquets of wild flowers to put at the feet of the First Woman of creation—God's Mother. This bright child grew up with her brothers and sisters, lithe and vigorous, with a healthy kind of piety, not goody but thoroughly good; strong, well braced-up and splendidly built, spiritually as well as physically. Nothing very much happened, or nothing that I need tell you, during her earlier childhood days. She was a little girl pure as the waters that danced beside her home, bright as the bloom that decked her garden plot, sweet as the herbs hidden within the woods, and as full of promise of summer as the love songs of the birds that flew from tree to tree. This bright live poem of a girl was, one day in her thirteenth year, working in the garden, helping her father, when suddenly she noticed a great light, and there appeared the form of some sainted creature, who had a message for her. It was St. Michael. He came and he went, and with him came and went two others, St. Margaret and St Catharine. They appeared for two or three successive years, coming and visiting her many times weekly. There was nothing of illusion about this simple healthy girl in her ideas of what she saw, for she saw them and looked at them and felt them and pursued them, and kissed the ground on which they were and tried to hold them from fading away into space. They had a message for her! What was the message? St Michael told her that she was called upon by God to raise the siege of Orleans, and to see her King crowned at Rheims; that she was to go to Robert de Baudricourt, the Governor of Vaucouleurs, and to ask for an escort to Chinon, above the Dinon, a tributary of the Loire, where she should thresh this out with His Majesty the Dauphin.

I must not linger here, but pass on to tell you that in 1428, more than two years after her first vision and the first time she heard the Voices, she found herself face to face at Vaucouleurs with Baudricourt, who scanned her and looked at this little village girl in her teens with her hair down her back, with a white coif about her brow and her little red dress, simple as any child from any simple village. He recommended that she should go back home, and, according to the language and practice of the day, suggested that a little sound whipping might do her good. Whether she got the whipping, I do not know, but she returned very disappointed, but not a bit discouraged. No man or woman has any reason ever to be discouraged, so long as there is the open door beyond.

For a year she tried to get out of this mission, but she was urged to go, and then, at the end of January, 1429, she turned her back upon her home and made her way to Baudricourt, who this time heard the same story; but I suppose he was acted on just as she had been, and instead of recommending that she

should be sent home and be punished, he furnished her with an escort to take her with letters from him to the Dauphin, who was living at his ease in the fortress castle at Chinon. For the first time this child leaps into the saddle, her hair cropped, with doublet and horse and spurred boots. She rides for eleven days and draws rein at length under the archway of the castle, after she had spurred her charger up the hill. Then she waited for her interview with the Prince. La Trémoïlle, the royal adviser, did not like the idea of a village girl coming to dictate a policy and to lead French armies under the French flag to victory. A little jealousy, a little envy, even under the brilliant uniforms of the army!—little object-lessons as we go along. This girl was kept waiting before the Dauphin would see her, and I think it was on the eighth of March she was told she was wanted in the great banqueting-hall. Accoutred as she was, in doublet and hose and spurred boots, she crossed the threshold and met the Dauphin, or rather met his entourage, a blaze of glory and a shimmer of gold and colour, simply and quite at home. Really spiritual people, even taken from the peasantry, are as much at home with the highest as with those of the lowest rank, God's training to courtesy is so sublime. Well, this girl looked round for the Prince. He, partly perhaps through mischief and partly to discover whether her mission was a true one or not, hid himself among his retainers, but she went up to him and told who he was, in spite of his trying to put her off, and said, "May God grant you many years of life." She called him aside, and told him her story, and he believed her, but he could not act. She was submitted to many tests and cross-examinations and—clever girl as she was—she was a match for them. For instance, let me just point out one thing. One, a monk, a provincial man with a provincial accent, put a cross-question to her, "In what language did St Michael speak to you?" She answered, "In better French than yours."

On the 27th of April we find that this girl, who could neither read nor write, who had never sat a horse till she vaulted into the saddle to meet her future King, who had never drawn a sword, is at the head of a great army. With Xaintrailles, La Hire, and the rest she moves from Chinon to Orleans, to fulfil the first purpose of her God-sent mission. After two days in the saddle and two days on the ground in her armour—for she never would unbuckle her armour, except when her own sex were with her—this girl found, rising before her, the city that was loyal to her Sovereign, and as the story of its vicissitudes poured themselves into her poor brain and as she thought of all they had suffered for their flag and for their Sovereign, girl-like she wept her sad bosom empty. But she was not one to dally with tears; she was up and doing. A day or two after, Dunois came forth to meet her and feigned an attack upon the fortress of St Loup, and she with two hundred fighting men passed into the city unhurt and untouched by any javelin from the English

foe. She surprised those well-trained generals, like Dunois, La Hire, D'Alençon, by her marvellous, seemingly miraculous, knowledge of the tactics of war. She reconnoitred the ground, tested the lines of defence, she inspected her troops, she looked to the kit, she found what was wanting, she looked for points of vantage. She seemed to be especially skilled in all matters connected with artillery—this girl who had never discharged an arquebus, who had not learnt to ride or fight, who could neither read nor write. "The weak things of this world hath God chosen to confound the strong, and the foolish to confound the wise." He was doing it now.

On the 4th of May, in the afternoon, the Maid astonished foe as well as friend. She went forth leading an attack on St. Loup. The English were full of expectation of ultimate victory. The battle of the Herrings had seemed to settle the case, in their favour; besides the French were nearly starved into capitulation. Had not Dunois thought of giving up the keys to the Burgundians: only Bedford objecting said, sportsmanlike, "No, those who have beaten the covers must have the birds." And so they had fought on. This afternoon, May 4th, for the first time Joan of Arc saw battle, and the terrors and the horrors of war, than which there can be nothing worse. Again she wept to see how the men were slaughtered about her; but a shout of triumph that came from the French walls of defence proclaimed that for the first time, after months, there was victory for France, that the English had been actually worsted. They seemed to have been almost paralysed by what they thought was a devil-sent girl, a witch, an enchantress. On the 7th of May the Soldier Maid said the siege must be raised, and she drew forth her forces and attacked not St Loup, which had been taken in the first fight, but Les Tourelles, the great fortress which stood on the bridge which with its fifteen arches, spanned the river. Cannon was mounted on the walls and on the forts held by the English. The Maid led forth her forces, her spearmen and her archers, who were to make straight for Les Tourelles, that central fort of the English. And as she stood by—because she never herself drew a sword, she never drew blood—she urged her countrymen to do their work bravely and well. The battle was disputed now by the one side and then by the other, every inch of ground being obstinately fought for. But victory seemed to favour the side of the French, who fighting at the side of the maiden and at the sound of her voice felt that they were called by God to carry out their great mission for their King and Country. While the warrior-maid stood encouraging her fighting men beside the fortress wall, a shaft winged by an English bowman caught her in the neck and she reeled and tottered and fell. This disaster gave the English fresh courage, thinking the enchantress was at last laid low by their countrymen; but soon, with her own hand having drawn out the barb, she was seen again urging on her men, until at

last they flung themselves upon this great bridge and seemed to fill the Tourelles. Presently fires were seen blazing and presently the bridge gave way, and the English, as they tried to make to the mainland, found the bridge was broken down, so that those who were not drowned, and those who were not burned were slaughtered by the maiden's men. She recalled her troops and returned at night after the victory. In the morning some watchmen from the towers, looking over the land in the occupation of the English, found that their tents were struck and that they were nowhere to be seen. After a Mass of thanksgiving, the Maid of Orleans thought only of pressing on to meet her King. She had raised the siege. How it had been achieved, who can tell? One thing is certain, that one of the decisive battles of the world, one which settled our position in France, was won by a village maiden, who could neither read nor write, but who knew she had a mission.

She met the Dauphin, and he gladly recognised her great services to the country, but when she urged him to push forward to Rheims to be crowned, he could not be made to stir. He was a real princeling, an idler. He had splendid work to do; he had all in his hands, and yet with folded arms and crossed legs he lost time, he did nothing, a girl, a village girl, having to do his work for him. She did it far better than he could have done it.

At Jargeau she met the bold, stubborn and dauntless Suffolk, and there she fought him, and he was taken prisoner. At Patay, Talbot, who had known nothing of defeat, had to yield to her forces. She cleared, she swept the valley of the Loire, and to make a long story short, she at last compelled by her achievements the Dauphin to follow her to the gates of Rheims, which on the 16th July were flung open to receive him. There, led by the Maid, the King, amid the pealing of bells, the braying of trumpets, and the shouts of the people, took possession of his royal city. Next day he was seen kneeling in the sanctuary of the cathedral with bishops and abbots and priors and serving-men beside him, the body of the great basilica filled to overflowing with the peers, knights, and generals in his service, and presently the crown of France was lifted above his brow and he took his oath to defend his people and to be their true sovereign. Then it was that the Maid would have liked to have felt her work was done. But never again was she to pace beside that river that made music by her home; never again was she to see the sun setting in glory behind the village green; never again was she to hear the chimes of those bells in the tower of the church which was to her the dearest, holiest spot on earth. Her mission now was to lead her forces to Paris, the capital; but neither 'Alençon, Dunois, nor other generals, not even the maiden herself, could persuade this sluggard prince to come forward and hold his own. They

arrived in August at St. Denis, outside the walls of Paris. Again they petitioned him to come. "Just show yourself, Sire, before the walls of Paris and all will come and offer you allegiance." But the King said, "To-morrow, to-morrow," but that "to-morrow" never came.

On the 8th of September, she gathered her forces about her and led her men to the gate, St Honoré. Banner in hand she leapt through the first moat, plunged through the second, and like an athlete was about to scramble up the slope of the ramparts, urging her men and her archers to storm and take the citadel in the name of their sovereign and country, when again some bowman's arrow plunged into her shoulder, and presently faint with blood she fell into the moat. The men lost heart, and when the sun was down they lifted her up and carried her to a little village between the city and St Denis, and next day, when she hoped to renew the attack she was told by de Gaucourt that the King had sent orders that she must not storm the city, nay, that by his command the bridge over which she would have had to pass to do it was by his orders broken down. She could scarcely believe he had been so ill-advised. She was terribly disappointed, but not at all downcast. She had done her duty, and no one doing duty need or ought to be discouraged.

She went away, as so many had gone before her and so many will go after her, in sorrow to the shrine of God's Mother, where unbuckling some of her armour, she laid it at the feet of Her whom all Christians call the Help of Christians and the Comfort of the Afflicted. She rose up from the shrine and went forth to meet God's will. What a character! One ready not merely to do, but, what is much braver, to bear God's will. So this girl found that her occupation seemed gone. There was so much jealousy, so much ill-feeling about her position. It was so anomalous, it was so seemingly abnormal, that she found it almost impossible to get permission from the King to do the things she knew she ought to do. That long winter gave her an opportunity of moving about, like her Master, doing good. She was claiming a finer victory than she had ever won over others; she was winning it over her own self, and she learned to gain it among the sad, the sick and the suffering. Among the sorrowful she built up a character that defied competition.

Now when the spring came round—because I must hurry on—she found an opportunity of doing something for her sovereign. She thought she must go to the relief of Compiègne, one of the last strongholds, loyal as loyal could be to this poor makeshift of a King, I was going to call him a puppet King; he was not of the stuff that made a St Louis of France. She thought she must go to the relief of Compiègne, for the Burgundians and the English were closing in around it, tightening their grip upon it. So to Compiègne she went, this girl who

was so completely in the hands of her Maker. Do you know, that when she was not in the saddle she seemed to be on her knees—this girl who had no complaint to make of anyone, who was by her character like a tower for all time in the landscape, not merely as a landmark, but as a thing of beauty and of joy to her country for ever. This child managed to make her way into Compiègne, and on the 23rd of May 1430, at sundown, when she thought the Burgundians and the English would be unbuckling their armour and retiring for the night, she swept from under the portcullis over the bridge, deployed her forces, took their positions, and swept with all her force down upon the Burgundians. They, quick as lightning, rallied, mounted their chargers, and, being many hundred times more numerous than the little five hundred of foot and horse under her command, drove her forces back. As they retired and were about to beat a retreat and to get within the citadel, they were intercepted by the English, while she, as she turned her charger's head and was riding over the bridge hoping to find a shelter behind the city walls, saw the drawbridge rise up before her and the city shut out for ever from her sight.

The rest of the story you know. She was captured. You know what Bedford thought of her, how he wrote to her King, saying that she was an ill-conditioned woman, dressed in man's clothes and leading a bad life. They could not believe in this girl; they would bring her to trial. Having bought the girl for a price, Bedford first thought of Paris, but he could manipulate Rouen better, so to Rouen the maid was brought for trial. You know how she was kept in that tower; how she was held by chains within a sort of iron cage, like a wild beast who might not be let loose even behind iron bars; how for months she was under the eyes of rabble soldiers, rude rough men of those times. Think of the exquisite tortures of a pious maiden, not for a moment, not for a second, day or night, to be screened from the rude gaze of men so vile. It was a condition of things worse than any other trial. You know what a relief it was to her when her would-be mock trial at last began in the February of 1431, when she was brought forth to find herself before her judge, Cauchon, Bishop of Beauvais, Jean Lemaitre, the Vice-Inquisitor, and Estivet, the Promoter.

Was there ever such a trial?

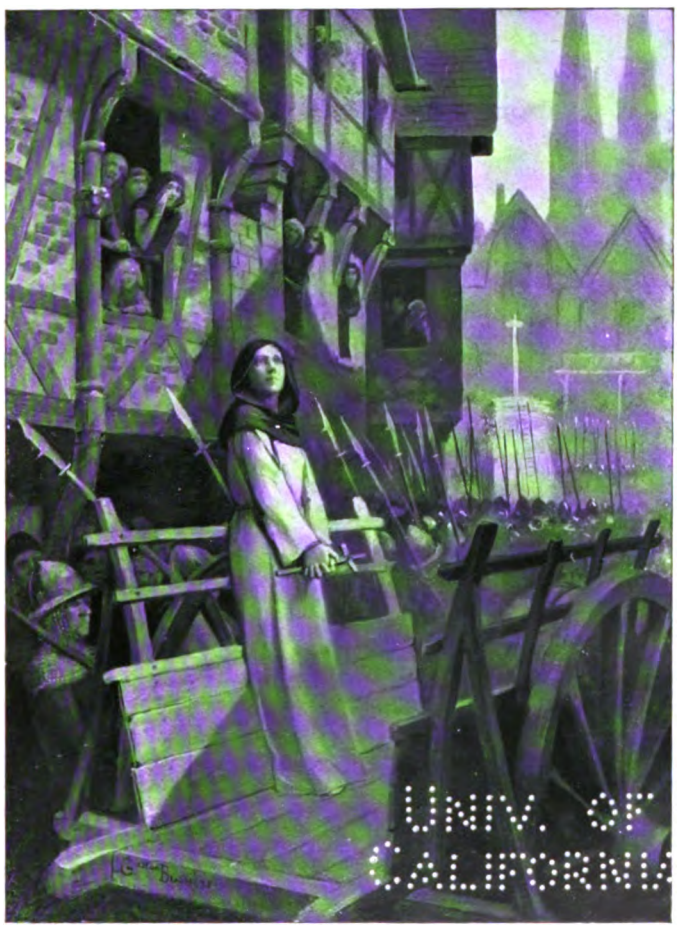
There was once; when her Master was tried, when there was not a voice raised on His behalf. She played a good second. She showed forth His hidden life, His public life. She was going through His Passion-tide, and presently she shall pass into His life triumphant. Marvellous! Wonderful. Some people say, "What a pity she was not called hence before!" No, let the girl win her crown; win her spurs by passing through the valley of the shadow of suffering which alone can build character.

So she passed through this trial. I need not harrow your feelings—indeed there is no time, even if I wished to do so—by telling you the horrors of it. How they tried in every conceivable diabolical way to get her to say what they could against truth and then to make out that she had said what she had not said. You know how the day came when they showed her the torturers and the tortures that were prepared for her as an enchantress, a witch, and a heretic, and how for the moment she seemed to lose her self-confidence, her self-control. But she rallied splendidly, and declared that if they were to tear her limb from limb she would still be true to her Voices and that she had only carried out the mission to which she had been deputed, the work with which she was charged by Him Who is the Master of us all.

At last the fatal day arrived, the 30th of May, when she was told that she must go forth to be burned alive. She was found guilty of being a devil-worshipper, a traitress, and idolator, a suicide, one in despair, a schismatic; and the French University endorsed all that and added "And she is, too, a liar and an enchantress." She heard the verdict; she fortified herself with the Bread of the strong and the Wine that brings forth virgins. She clothed herself in the garments of innocence, like her Master; she mounted the cold grey waggon that was drawn up by her prison door, and she passed slowly over the cobble-stones, amid the gaze of the people who had come forth to see her die. The waggon halted in the great market-place, where there were ten thousand persons waiting to see her burned to death. Presently she mounted the scaffold. Her hands were tied to the stake; she looked up and round, proclaimed that she had been true, and then she saw the great faggots lighted beneath her, and the flames began to toss their heads and to leap around her, swaying about her, licking at her clothes. A cloud of smoke hung like a funeral pall over the fire. Then, above the shouts of the people and the screams of the children, the hissings of the flames, and the noise of all about, piercing this funeral canopy and rising over all, was lifted a voice, and its sound seemed to pentrate right into the land beyond the stars—a pleading, plaintive voice calling out: "Jesu, Marie! Jesu, Marie! Jesu! Jesu! Jesu!"

The Chairman (Admiral of the Fleet, Sir G. H. U. Noel): We have heard a very interesting lecture, one which will I hope teach us a great deal. There are two sides to this question, one a very dark one, the other a very bright one.

The dark one is perhaps typical of what occurred, or what was the custom six hundred years ago. The mere fact of any woman being dubbed a witch was quite sufficient to put all the world against her. And not only six hundred years ago, but even within the last two hundred years witches have been taken to the stake. But the bright side of the question is that this evidently



LOOKING BEYOND WHENCE HELP NEVER FAILS

FROM THE PAINTING BY GASTON BUSSIERE.

From "Life Lessons from Joan of Arc," by permission of the Publishers, George Allen & Sons, Rathbone Place.

simple, lovable young woman from the country should have been entrusted with such an extraordinary mission. (I am only a naval officer and I feel there ought to have been a general in the chair to-day.) I have recently read Andrew Lang's excellent book on this subject, which, from a Scotchman and probably a Presbyterian, would perhaps command a stronger feeling in her favour than even the excellent lecture to which we have been listening. How could that girl have been endowed with the highest gifts of generalship if she had not been inspired? Anyone who has been listening to this lecture cannot be otherwise than convinced that this child was absolutely and directly inspired. What a lesson this is to the women of every country! Here is a girl who has a mission, an inspired mission, to place her King on his throne, next to unite the whole of her country as one, and to expel the enemies of her country from France. But what are ladies doing now? I fear that it is mostly fighting for their own benefit. Would it not be better if some at least were to try to follow the excellent example of Joan of Arc, and to do their best to unite our countrymen, and not only our countrymen, but the people of our Empire, and also to keep the enemy from fooling us? With these few words I am sure I have your instructions to thank Father Bernard Vaughan heartily for his excellent lecture.

ASTRONOMY FOR THE ARMY.

By Lieutenant E. W. COX, R.E., 1st Field Troop, Aldershot.

IT is of no practical use to a soldier to be able to determine his latitude, his longitude, the error of his watch, or the true bearing of any natural feature he can see, with the aid of scientific instruments. On service he will have only his eyes, a compass and a watch to help him, and it is fair to assume that both compass and watch may be lost or broken.

The object of this paper is to show how the sun and stars can be used to replace either a compass or a watch, and, under certain conditions, to replace both.

This practical use of the sun and stars is open to every soldier, however unfamiliar with the science of astronomy he may be. Night operations tend to become more frequent with every campaign, and there is no reason why the stars should not be as helpful to the men of a strategic patrol as they are to the staff officer who directs a large column.

It is possible, with the help of a few simple tables, to calculate on any day, and at any place—

(*a*) The time of sunrise and sunset,

(*b*) The true bearing, and height above the horizon, of the sun at any hour of the day,

(*c*) The true bearing of any bright star at rising and setting, and

(*d*) The number of hours that such a star is above the horizon.

With these facts, and a knowledge of the apparent movements of the sun and stars in the heavens, it is possible, except when clouds entirely obscure the sky, to use the sun and stars instead of landmarks, and after a little practice, instead of watches.

As it is obvious that all the movements of celestial bodies, which are referred to in this paper, are *apparent* movements, the term will not be applied to them again.

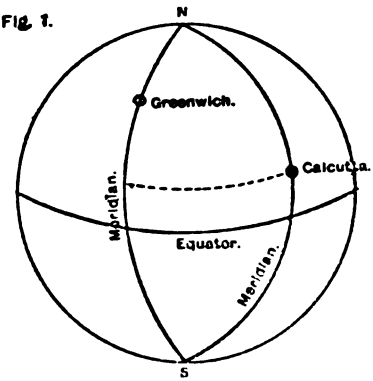
Before any calculations are attempted, a few astronomical terms must be explained.

The *meridian* of a place is an imaginary circle on the surface of the earth, passing through both the North and South poles, and that place. When the sun is due N. or S. of a place it is said to be "on the meridian" of that place.

In Fig. 1 are shown the meridians of Greenwich and Calcutta.

The *latitude* of a place is its distance N. or S. of the equator, measured in degrees. A degree is about 70 land miles, and there are 90 degrees between either pole and the equator. A place which is nearer either pole than the equator is said to be in a "high latitude," while a place which is near the equator is said to be in a "low latitude."

Fig. 1.

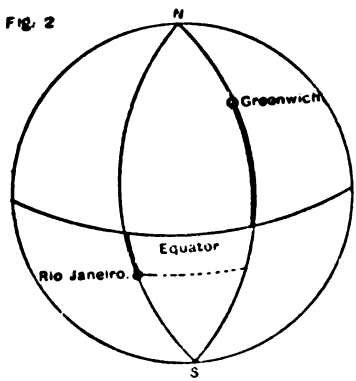


In Fig. 2 the thick lines show the latitudes of Greenwich, 51° N. (high), and of Rio Janeiro, 23° S. (low).

The *longitude* of a place is its distance East or West of the meridian of Greenwich, measured in degrees or hours.

A degree is 4 minutes of time, and, as the earth rotates once in 24 hours, it is clear that there must be 360 degrees of longi-

Fig. 2



tude, 180 East and 180 West of Greenwich. Longitude can be measured from any meridian, and in French maps the meridian of Paris is taken as the "standard meridian."

In all British maps the meridian of Greenwich is the standard.

In Figs. 1 and 2 the dotted lines show the longitudes of Calcutta, 88° E., and of Rio Janeiro, 43° W.

The *celestial sphere* is an imaginary sphere, infinitely large, with the earth as centre.

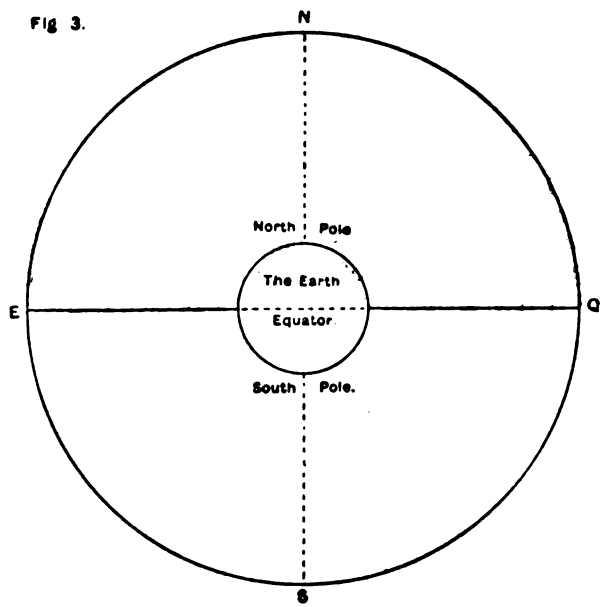
The heavenly bodies appear to move on the surface of this sp. .re.

The *celestial equator* is an imaginary line on the surface of the celestial sphere, marking where the latter is cut by the plane of the equator of the earth.

To an observer standing on the equator the celestial equator divides the heavens into two equal parts, passing vertically over his head, and meeting the horizon at points due E. and W. of him.

To an observer who is not on the equator the celestial equator meets the horizon at points due E. and W. of him, but is tilted towards the N. or S. according as he is South or North of the equator.

Fig 3.

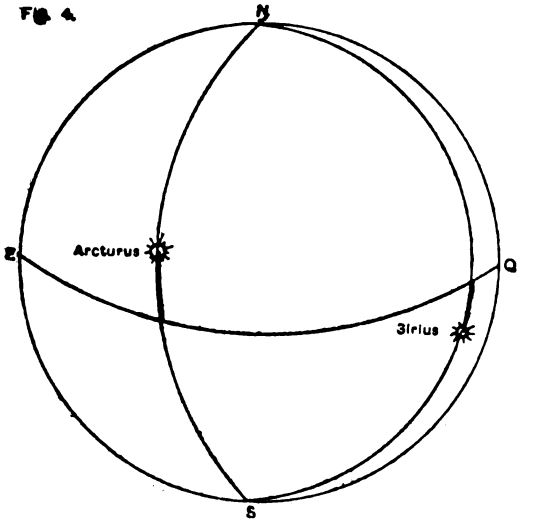


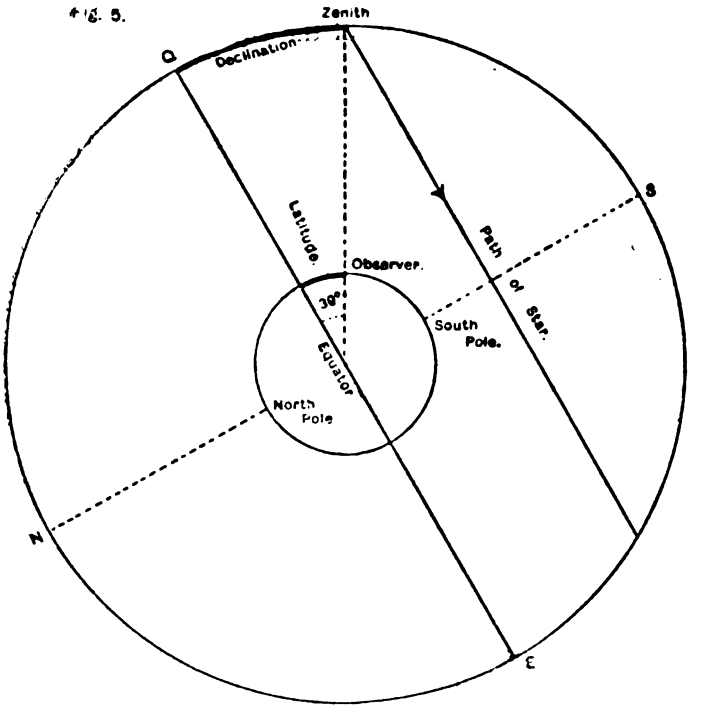
The N. and S. poles of the heavens are two imaginary points on the celestial sphere vertically above the N. and S. poles of the earth. The sphere of the earth is, as it were, enclosed by the celestial sphere, whose N. and S. poles and equator correspond exactly to the poles and equator of the earth.

In Fig. 3 NQSE is the celestial sphere, N and S are the North and South poles of the heavens, and EQ is the celestial equator.

The *declination* of a heavenly body is its distance N. or S. of the celestial equator, measured in degrees.

In Fig. 4 the thick lines show the declinations of Arcturus (Boötis), 20° N. and of Sirius (Canis Majoris), 17° S.





The declination of the sun is constantly changing, but the declinations of the stars are always the same. The stars appear

to revolve round the N. and S. poles of the heavens always at the same distance from the celestial equator.

It is clear from Fig. 5 that a star whose declination is, for example, 30° S. will, at the highest point of its path, pass directly over the head of an observer in latitude 30° S.

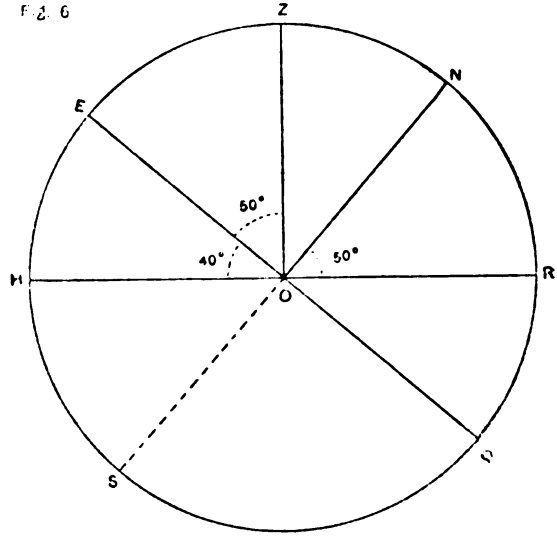
This connection between declination and latitude is useful when the paths of the sun and stars are being traced in the heavens.

An observer who wishes to learn the movements of the sun and stars in the heavens must be able to imagine the correct position of the celestial equator. In order to do this he must know his latitude and the direction of the true North. The latitude of any place in civilised countries can be obtained from maps, and even in uncivilised countries an estimate can rarely be 5 degrees wrong.

Methods of finding latitude and the direction of true North, where neither a map nor a compass is available, are given below in "Bearings by Stars." An observer, knowing his North point, can imagine the points, due E. and W. of him, where the celestial equator meets the horizon. Subtracting his latitude from 90° he obtains the height above the horizon of the highest point of the celestial equator. This point will be on his meridian, that is due S. of him if he is N. of the equator, and due N. of him if he is S. of the equator.

Fig. 6 explains this.

Fig. 6



O is a place on the earth's surface whose latitude is 50° N. (*e.g.*, Dinant, in Belgium). ZNRQSHE is the celestial sphere. Z is the imaginary point vertically over O, called the zenith, N is the North pole of the heavens, EQ is the celestial equator, and HR is the horizon.

The latitude of O is 50° N., that is, the angle EOZ is 50° As the angle ZOH is 90°, the angle EOH must be 40°, or, in other words, E, the highest point of the celestial equator, is 90° minus 50° (the latitude) above the horizon.

E is also on the line NZS, that is, on the meridian of O, and therefore, as O is North of the equator, E is due South of O.

To an observer who remains in the same latitude the path of a star through the heavens is always the same, from the time it rises above the horizon to the time of its setting, although it does not pass across the heavens at the same time every night.

If the observer moves to a place in a different latitude he will notice that the star, though rising and setting at approximately the same points as before, swings up to a different height on the meridian, because the celestial equator is tilted up at a different angle.

An observer who knows the declination of a star and his own latitude can, at any moment when the star is above the horizon, trace the rest of its path through the heavens. He knows the correct position of the celestial equator, and he knows that the star always keeps at the same distance from the celestial equator.

Summing up the above points, an observer who knows his latitude and the direction of true North can at any moment trace the path of any star he can see, provided he has some table giving that star's declination.

Table IV., at the end of this paper, gives the declinations of all the principal stars.

It is not quite so easy to trace the path of the sun in the heavens, because the sun's declination changes every day, or, in other words, the sun does not always keep the same distance from the celestial equator.

Whereas an observer at Greenwich, latitude 51° N., will see Sirius night after night during the month of January rise about S.E. by E., swing up to a height of 22° on the meridian, and then sink down to its setting about S.W. by W., he will find that the sun rises every day at a slightly different point in the East, swings up to a slightly different height on the meridian, and sets at a correspondingly different point in the West. If, however, he has a table, such as Table II., giving the declination of the sun for every month of the year, he will be able, provided he knows the date in addition to his latitude and the direction of true North, to trace the sun's path in the heavens on any day of the year.

Rule I.

A rule can be given for predicting the height of the sun at noon (its greatest height during the day) at any place on any day.

Find the latitude of the place, and the declination of the sun (from Table II.).

If both are N., or both are S., subtract the smaller from the greater, and subtract the remainder from 90°.

If one is N., and the other S., add them together, and subtract the sum from 90°.

EXAMPLE I.

Required the height of the sun at noon :—

(*a*) At Aldershot on 9th May.
(*b*) At Bulawayo on 22nd December.
(*c*) At Dinant (Belgium) on 30th October, and
(*d*) At Melbourne on 22nd June.

(*a*) Latitude 51° N. (from map).
Declination 17° N. (from Table II).

Subtract 34° from 90°.
Required height is 56°.

(*b*) Latitude 20° S. (from map).
Declination 23½° S. (from Table II).

Subtract 43½° from 90°.
Required height is 86½°.

(*c*) Latitude 50° N. (from map).
Declination 13½° S. (from Table II).

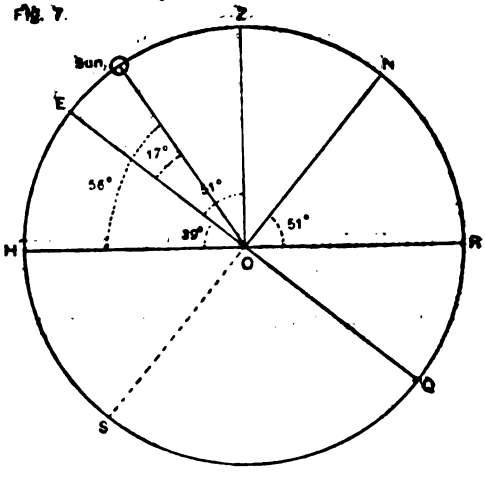
Subtract 63½° from 90°.
Required height is 26½°.

(*d*) Latitude 38° S. (from map).
Declination 23½° N. (from Table II).

Subtract 61½° from 90°.
Required height is 28½°.

Figs. 7, 8, 9 and 10 explain the above examples. There is no necessity to draw a figure unless Rule I. has been forgotten.

Fig. 7.

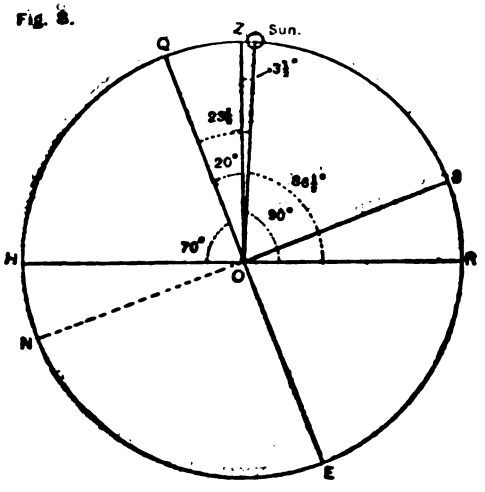


(a) ALDERSHOT, May 9th.

ZOE (latitude) = 51°
∴ EOH (tilt of celestial equator) = 39°.
Sun OE (declination) = 17°
Sun OH (height of sun) =
Sun OE + EOH = 17° + 39
= 56°.

It is evident from Table II., in conjunction with Rule I., that an observer at, for example, Aldershot, between 22nd December of one year and 22nd June of the next, will see the

Fig. 8.



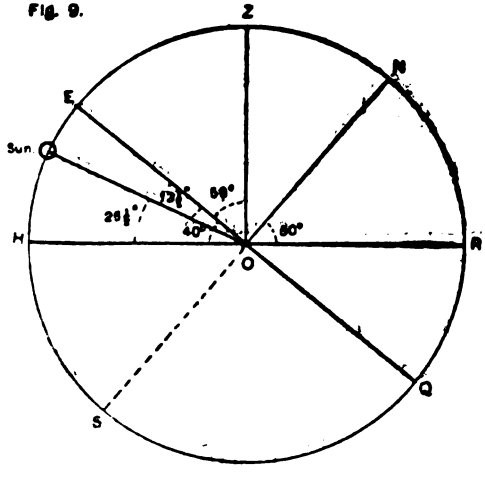
(6) BULAWAYO, Dec. 22nd.

ZOQ (latitude) = 20°.
Sun OQ (declination) = 23½°
∴ Sun OZ = 3½°.
ZOR = 90°.
Sun OR (height of sun)
= ZOR − Sun OZ
= 90° − 3½° = 86½°.

sun swing up higher every day at noon, till on 21st March it follows the celestial equator throughout its path across the heavens, and therefore reaches a height of 39° at noon.

From 21st March onwards the sun is North of the celestial equator, and swings up still higher day by day until on 22nd June it reaches its greatest height of 62½°. After 22nd June

Fig. 9.



(c) DINANT, Oct. 30th.

ZOE (latitude) = 50°.
∴ EOH (tilt of celestial equator) = 40°.
Sun OE (declination) = 13½°.
Sun OH (height of sun)
= EOH − Sun OE
= 40° − 13½°
= 26½°.

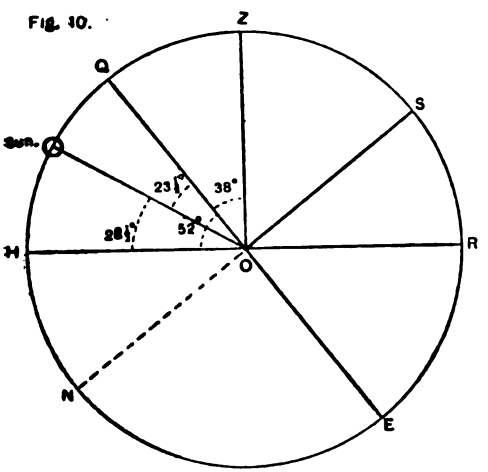
the sun gets lower every day, until on 23rd September it is on the celestial equator again. Finally, on 22nd December, it only swings up to a height of 15½°, its lowest height of the year.

This annual variation is the same in extent to observers all over the surface of the earth. Its cause is explained in an Appendix.

In the tropics, that is between the latitudes of $23\frac{1}{2}°$ N. and $23\frac{1}{2}°$ S. (between Assouan and the Northern Transvaal in Africa, and anywhere S. of Calcutta in India) an observer must remember that during certain months of the year the sun will be due N. of him at noon, and for the rest of the year due S. of him at noon.

The two days of the year on which the sun at noon will be vertically over his head will be the days on which the sun's declination is the same as his latitude.

Fig. 10.



(d) MELBCURNE, June 22nd.

ZOQ (latitude) = 38°.
∴ QOH (tilt of celestial equator) = 52°.
Sun OQ (declination) = $23\frac{1}{2}°$.
Sun OH (height of sun)
= QOH − Sun OQ
= 52° − $23\frac{1}{2}°$
= $28\frac{1}{2}°$.

Anywhere outside the tropics an observer knows that the sun at noon is always S. of him if he is in northern latitudes, and always N. of him if he is in southern latitudes.

Rule I. also applies if it is required to find the height of a star on the meridian (its greatest height during the night).

The date does not matter, as the declination of a star is the same all the year round.

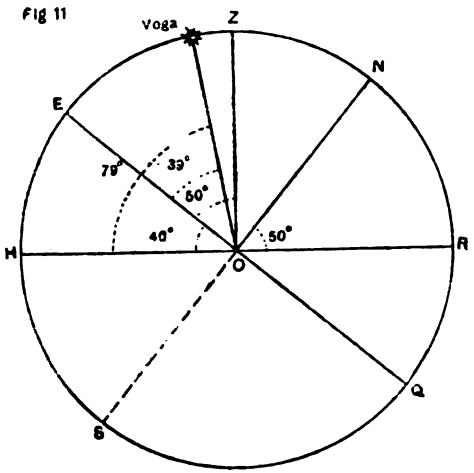
Example II.

Required the height of Vega (α Lyrae) on the meridian of Dinant, on any date in the year.

Latitude 50° N. (from map).
Declination 39° N. (from Table IV).

Subtract 11° from 90°.
Required height is 79°.

Fig. 11 explains this.



VEGA AT DINANT.

ZOE (latitude) = 50°.
∴ EOH (tilt of celestial equator) = 40°.
Vega OE (declination) = 39°.
Vega OH (height of star)
= Vega OE + EOH
= 39° + 40°
= 79°.

When it is remembered that stars rise 4 minutes earlier every night it will be evident that in every month some stars will not be above the horizon during the night. They will rise and set during the day.

The question of the selection of suitable stars will be dealt with later.

The necessity of fixing in the imagination the tilt of the celestial equator cannot be too strongly urged upon any who would make an intelligent use of the sun and stars.

A sound knowledge of the movements of the sun and stars, and the changes to which those of the sun are liable, is essential before any practical use can be made of them, and it is only by means of the celestial equator that the paths of the sun and stars can be traced.

An observer who has gained this knowledge may reasonably consider the question of using the heavenly bodies for time and bearings.

Time by the Sun.

The first point to be remembered is that the time of sunrise and sunset varies in different latitudes. On only two days in the year, 21st March and 23rd September, does the sun rise at 6 a.m. and set at 6 p.m. all the world over.

Example III.

Required the time of sunrise and sunset on 9th May at Dinant.

The latitude of Dinant is 50° N. (from map). 9th May is nearer the longest day than the shortest day.

From Table I., for latitude 50°, the sun rises at 3.55 a.m. on the longest day, when its declination is 23½°

But it is known that the sun rises at 6 a.m. when its declination is 0.

Therefore the sun rises 125 minutes (6-3.55) before 6 a.m. for a change in declination of $23\frac{1}{2}°$.

From Table II., on 9th May, the sun's declination is 17° N.

Therefore, by proportion, the sun rises $\frac{125 \times 17}{23\frac{1}{2}}$ (or 90) minutes before 6 a.m. for a change in declination of 17°.

That is, the sun rises at 4.30 a.m. and sets at 7.30 p.m. on 9th May at Dinant.

This can be done for any day at any place, as only the sun's declination, and the latitude of the place, are required for the calculation.

Knowing the times of sunrise and sunset, and the sun's height at noon (by Rule I.), an observer can obtain the sun's height at any hour of the day.

Example IV.

Required the height of the sun at every hour between sunrise and sunset on 30th October at Maritzburg (Natal).

Latitude is 30° S., and 30th October is nearer the longest day.

From Table I., for latitude 30°, the sun rises at 5.2 a.m. on the longest day, when its declination is $23\frac{1}{2}°$.

But the sun rises at 6 a.m. when its declination is 0. Therefore sunrise is 58 minutes before 6 a.m. for a change in declination of $23\frac{1}{2}°$.

From Table II., on 30th October, the sun's declination is $13\frac{1}{2}°$ S.

Therefore sunrise is $\frac{58 \times 13\frac{1}{2}}{23\frac{1}{2}}$ minutes before 6 a.m. for a change in declination of $13\frac{1}{2}°$.

That is, the sun rises at 5.27 a.m., and sets at 6.33 p.m. on 30th October at Maritzburg.

By Rule I. the sun's height at noon is $73\frac{1}{2}°$.

A table of times and heights can now be made.

At	5.27	a.m.	and	6.33	p.m.	the	sun's	height	is 0.
,,	6	a.m.	,,	6	p.m.	,,	,,	,,	,, 6°.
,,	7	a.m.	,,	5	p.m.	,,	,,	,,	,, 17°.
,,	8	a.m.	,,	4	p.m.	,,	,,	,,	,, $28\frac{1}{2}°$.
,,	9	a.m.	,,	3	p.m.	,,	,,	,,	,, 40°.
,,	10	a.m.	,,	2	p.m.	,,	,,	,,	,, 51°.
,,	11	a.m.	,,	1	p.m.	,,	,,	,,	,, 62°.
,,	noon					,,	,,	,,	,, $73\frac{1}{2}°$.

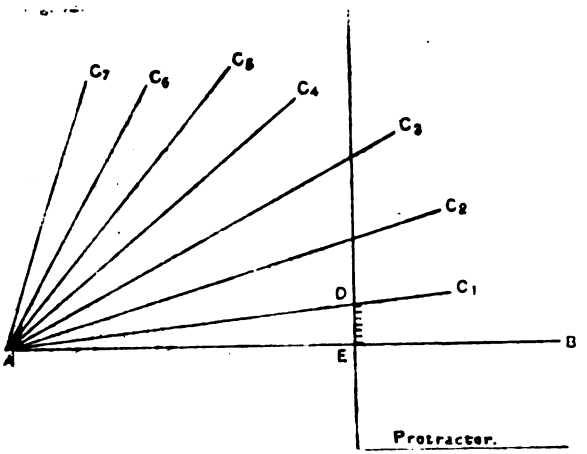
If an observer possesses any rough means of measuring the height of the sun, for example, the clinometer on a cavalry sketching board, he can obtain his time from the above table.

In order to be independent of a clinometer an observer should be able to measure the height of a heavenly body by the palm of his hand held at arm's length.

The number of degrees that the palm measures can be obtained at any time by taking the height of a roof, church spire, or any natural feature, and measuring the height with the palm of the hand.

A more convenient method in low latitudes, where the sun is high in the heavens between the hours of 9 a.m. and 3 p.m., is for an observer to obtain the time by the length of his shadow.

This necessitates the use of a protractor. Each angle in the above table of times and heights is plotted with a protractor off a line AB (Fig. 12), for example AC_1, AC_2, AC_3, etc. A con-



venient number of divisions along any edge of the protractor are taken to represent the observer's height, DE, and this edge of the protractor is moved along at right angles to AB, until DE just fits in between AB and AC_1, AB and AC_2, and all the remaining angles in turn.

Then AE, measured by the same divisions as were used to measure DE, is the length of the observer's shadow at the hours corresponding to the angles BAC_1, BAC_2, etc.

The shadow-lengths can be added to the tables of times and heights given above.

For the sake of this example the observer's height is assumed to be 6 feet.

Hour.	Height of Sun.	Length of Shadows.
5.27 a.m. and 6.33 p.m....	0	—
6 a.m. ,, 6 p.m....	6°	Too long to be of use.
7 a.m. ,, 5 p.m....	17°	20 feet.
8 a.m. ,, 4 p.m....	28½°	11 ,,
9 a.m. ,, 3 p.m....	40°	7 ,,
10 a.m. ,, 2 p.m.	51°	5 ,,
11 a.m. ,, 1 p.m....	62°	3 ,,
Noon	73½°	1 foot 6 inches.

After a little practice, shadow-lengths can be accurately judged while on the march, and the inconvenience of halting and looking into the glare of the sun is avoided.

Bearings by the Sun.

When the sun is on the meridian of a place the time is said to be apparent noon at that place. It must be remembered that only in April, June, the last week in August, the first in September, and the last week in December, is apparent noon the same as mean noon (12 o'clock). For the rest of the year apparent noon may be either before or after 12 o'clock, and may differ by as much as 16 minutes. It is evident that the sun at 12 o'clock may be some degrees from the meridian.

For this reason the sun at 12 noon must never be used for determining the magnetic variation of a compass, although the shadows it throws may well be used as aids to marching on a compass bearing.

Rule II.

A rough rule, which can only be used in high latitudes, where the sun does not rise to a great height in the heavens, is given for finding the direction of true N. and S. with a watch. In N. latitudes point the hour hand to the sun, and the direction of true S. will lie midway between the hour hand and 12. In S. latitudes point 12 to the sun, and the direction of true N. will lie midway between 12 and the hour hand.

The declination of the sun on 21st March and 23rd September is 0. In other words, on those two days, and only on those two days, the sun is on the celestial equator, and will therefore, all the world over, rise due E., follow the celestial equator through the heavens, and set due W.

On every other day the sun rises N. of E. or S. of E., according to the time of year, the amount of its departure from true E. varying with the latitude of the observer.

Table III. gives the departures (from true E. and W.) of the sun at sunrise and sunset on the longest and shortest days of the year, for different latitudes.

Example V.

Required the bearings of the sun at different times of the day on 30th October at Maritzburg.

The latitude is 30° S., the sun's declination $13\frac{1}{2}°$ S.

From Table III. the greatest departure for latitude 30° is 27°.

That is, the departure is 27° for a declination of $23\frac{1}{2}°$.

Therefore the departure is $\frac{27 \times 13\frac{1}{2}°}{23\frac{1}{2}}$ for a declination of $13\frac{1}{2}°$.

That is, the departure is 15°.

The sun's declination is S., therefore the departure is S.

The sun, from Example IV., rises at 5.27 a.m. and sets at 6.33 p.m. It is due N. at noon.

A table of times and bearings can now be made.

Time.	*True bearing of sun.*
5.27 a.m. (sunrise)	105°
6 a.m.	96°
7 a.m.	80°
8 a.m.	64°
9 a.m.	48°
10 a.m.	32°
11 a.m.	16°
Noon	360°
1 p.m.	344°
2 p.m.	328°
3 p.m.	312°
4 p.m.	296°
5 p.m.	280°
6 p.m.	264°
6.33 p.m. (sunset)	255°

From this table it is clear that if an observer has a watch he can obtain bearings at any hour, or if he has a compass he can obtain time. If he has neither watch nor compass he must combine the table of times, heights of sun, and shadow-lengths with the table of times and bearings.

Measuring either the height of the sun or the length of his shadow he will then be able to obtain both time and bearings.

Time by Stars.

Every star is moving in space, some towards the sun, others away from it, but the stars are so far removed from the earth that the fastest moving star will not alter its relative position to the naked eye in less than 25 years.

The principal constellations must be learnt by heart. This is only a question of practice on clear nights with a reading lamp and a good star-chart.

When the constellations have been learnt it is easy to master their movements in the heavens, as their distances from each other and from the celestial equator are always the same.

It has already been mentioned that stars rise 4 minutes earlier every day.

If the time of rising of a star has been recorded on any particular date, and some weeks later the observer's watch is broken, he can obtain his time by the rising of that star.

RULE III.

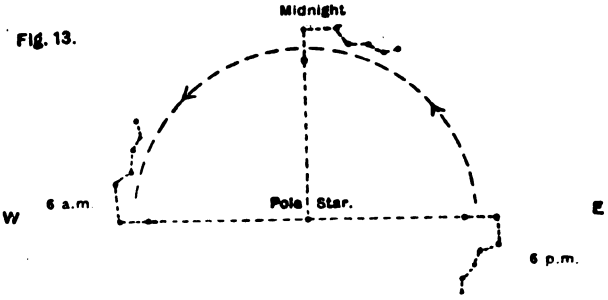
About the end of February the pointers of the Plough are horizontal at 6 p.m., upright at midnight, and horizontal again at 6 a.m. Fig. 13 explains this.

The rule for any date on which the Plough is visible is, Note the angle which the pointers make with a vertical straight edge (such as a stick or pencil) at sunset. When the pointers have swung round 90° six hours will have elapsed.

After a little practice 3 hour intervals (45°) can be estimated, and finally single hour intervals (15°).

Fig. 13 illustrates two 6 hour intervals.

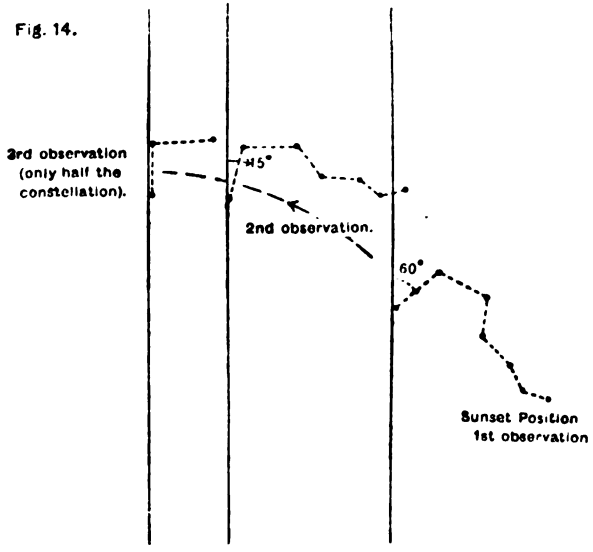
Fig. 13.



Positions of the Plough towards the end of February.

In Fig. 14 the inclination of the pointers at sunset was observed to be 60° to the vertical. When the pointers were

Fig. 14.



At sunset the inclination was estimated to be 60° to the vertical.

At the 2nd observation the inclination was estimated to be 15° to the vertical. Therefore interval was $\frac{60-15}{15}$ (or 3) hours after sunset.

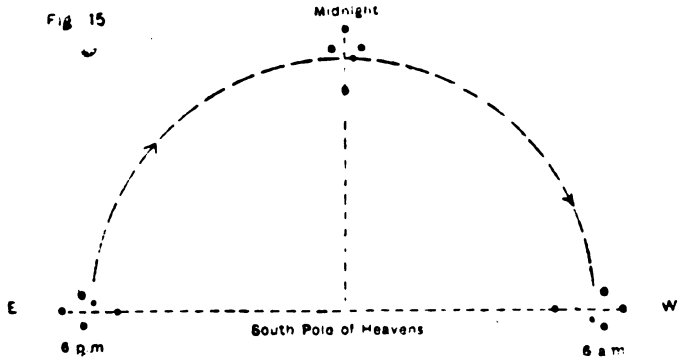
At the 3rd observation the inclination was estimated to be 0. Therefore the interval was $\frac{60}{15}$ (or 4) hours after sunset.

observed again, their inclination was 15° to the vertical. Therefore the time was 3 hours after sunset.

The pointers were again observed some time afterwards, and were found to be upright. The time was therefore 4 hours after sunset.

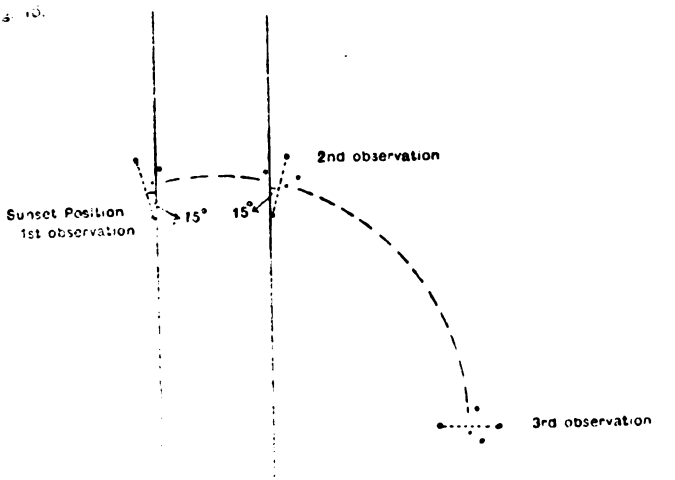
In S. latitudes the Southern Cross can be used in a similar manner.

At the end of March the Cross is on its side at 6 p.m., upright at midnight, and on its side again at 6 a.m. (Fig. 15.)



Positions of the Cross at the end of March.

Rule III. applies again for any date on which the Cross is visible. Fig. 16 illustrates this. The constellation of Orion is very useful to an observer on the equator, as it rises due E.



At sunset the inclination was estimated to be 15° to the vertical.

At the 2nd observation the inclination was estimated to be 15° to the vertical

Therefore the interval was $\frac{15+15}{15}$ (or 2) hours after sunset.

At the 3rd observation the inclination was estimated to be 90° to the vertica

Therefore the interval was $\frac{15+90}{15}$ (or 7) hours after sunset.

of him, passes vertically over his head, and sets due W. of him, every hour producing a change of 15° in height.

Stars on or near the celestial equator are 12 hours above the horizon all the world over.

A star that is N. of the celestial equator is more than 12 hours above the horizon to an observer who is N. of the equator, and less than 12 hours above the horizon to an observer who is S. of the equator. For example, an observer at Dinant (Latitude 50° N.) will notice that α Arietis (Declination 23° N.) is practically the same length of time above the horizon as the sun on 22nd June, namely, about 16 hours.

EXAMPLE VI.

Required the number of hours that (*a*) Pollux and (*b*) Antares are above the horizon at Dinant.

(*a*) The latitude is 50° N., the declination 28° N.

The number of hours will be greater than 12.

From Table I., for latitude 50°, the sun rises at 3.55 a.m., when its declination is $23\frac{1}{2}°$.

(The time of sunrise on the longest day is taken, as the required number of hours will be greater than 12.)

It is known that the sun rises at 6 a.m. when its declination is 0.

Therefore the sun rises 125 minutes before 6 a.m. for a change in declination of $23\frac{1}{2}°$.

Therefore by proportion the sun would rise $\frac{125 \times 28}{23\frac{1}{2}}$ (or 149) minutes before 6 a.m. if it had a declination of 28° (the declination of Pollux).

That is, the sun would rise at 3.31 a.m. and set at 8.29 p.m., being 16 hours 58 minutes above the horizon.

Therefore Pollux is 16 hours 58 minutes above the horizon.

(*b*) The latitude is 50° N., the declination 26° S.

The number of hours will be less than 12.

From Table I., for latitude 50°, the sun rises at 8.5 a.m., when its declination is $23\frac{1}{2}°$.

(The time of sunrise on the shortest day is taken, as the required number of hours will be less than 12.)

By proportion, as above, the sun would rise $\frac{125 \times 26}{23\frac{1}{2}}$ (or 138) minutes after 6 a.m. if it had a declination of 26° (the declination of Antares).

That is, the sun would rise at 8.18 a.m. and set at 3.42 p.m., being 7 hours 24 minutes above the horizon.

Therefore Antares is 7 hours 24 minutes above the horizon.

The number of hours that a star is above the horizon may be a useful thing to know if the time of the star's rising is noted, as midway between its rising and its setting the star will be on the meridian.

Bearings by Stars.

The Pole Star, or Polaris (α Ursae Minoris), is only $1\frac{1}{4}^\circ$ away from the N. pole of the heavens, so that, at any time when it is visible, it may be used to give the direction of true North. It can also be used if a rough test of the magnetic variation of a compass is required, though for an accurate determination of magnetic variation a more complicated observation is necessary.

It is obvious from Figs. 6, 7, 9, and 11 that the height of the Pole Star above the horizon is the latitude of the observer, since in each case the angle N O R is equal to the angle Z O E.

This fact may be useful, when the pointers of the Plough are obscured by clouds, for finding the Pole Star.

Rule IV.

The pointers of the Plough can be used to obtain the direction of true North when the Pole Star is obscured by clouds or below the horizon. When the pointers are upright they are on the meridian. When they are in any other position the N. point can be obtained by spacing 5 times the distance between them in the direction in which they point. This can be seen from Fig. 13. The belt of Orion rises due E. and sets due W. in all latitudes so that if it is observed at rising or setting the true E. and W. line can be obtained.

The Pole Star is invisible anywhere south of latitude 10° N., while the Southern Cross comes into sight in latitude 20° N.

Rule V.

When the Southern Cross is upright it is on the meridian. When it is in any other position the S. point can be obtained by spacing $3\frac{1}{2}$ times its height in the direction of its length. This can be seen from Fig. 15.

Rule VI.

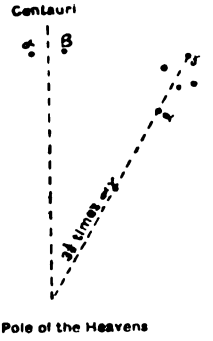
When α and β Centauri, the two pointers to the Southern Cross, are horizontal, the direction of true S. lies midway between them. Fig. 17 illustrates this.

The above are rough rules which are extremely useful. But an observer must not be restricted to a few constellations. He should be able to make use of any bright star in the heavens.

To an observer on the equator all stars rise North or South of true E. the exact amount of their declinations. Capella, for example, rises N.E. and sets N.W.

Roughly, the same rule holds good for any place in the tropics, but to obtain greater accuracy Table V. is given.

Fig. 17



Example VII.

Required the bearings of Arcturus (α Boötis on a night that it is visible at Dinant. The latitude is 50° N., the declination (from Table IV.) is 20° N. The sum is less than 80°.

From Table V. 14° must be added.

Therefore Arcturus rises 34° N. of E., and sets 34° N. of W.

Its height on the meridian (by Rule I.) is 60°.

Example VIII.

Required some stars that might be useful for rough bearings in Maritzburg.

The latitude is 30° S.

From Table V. 2° must be added for every 10° of a star's declination.

Therefore Vega will rise roughly N.E. and set N.W.

Arcturus will rise roughly E.N.E. and set W.N.W.

Sirius will rise roughly E.S.E. and set W.S.W.

and so on.

If the number of hours that each of these stars is above the horizon is calculated, an observer can determine at what length of time after rising each star will be on the meridian.

Example IX.

It is required to march W.S.W. at Fashoda. What stars may be useful?

The latitude is 10° N.

From Tables IV. and V. Sirius sets at 18° S. of W., β′ Scorpii at 21° S. of W., and Antares at 27° S. of W.

If none of these are in the W. at the time of marching, some known star that is setting must be taken, its bearing calculated, and the march made at the necessary angle to it.

As regards the selection of useful stars on any night of the year, an observer should note at sunset any known star that is near the meridian. From Table VI. he can then see which of the principal stars will be visible during the night.

Time by the Moon.

The moon rises roughly 50 minutes later each day.
The first quarter rises at noon and sets at midnight.
Full moon rises at sunset and sets at sunrise.
The last quarter rises at midnight and sets at noon.
The movement of the moon is too irregular for it to be used for bearings.

Table I.

Times of Sunrise and Sunset on the longest and shortest days of the year for different latitudes.

—	Sunrise.	Sunset.
	a.m.	p.m.
Equator	5.58	6.2
	6.2	5.58
Latitude, 10°	5.42	6.18
	6.18	5.42
,, 20°	5.24	6.36
	6.36	5.24
30°	5.2	6.58
	6.58	5.2
,, 40°	4.35	7.25
	7.25	4.35
,, 50°	3.55	8.5
	8.5	3.55
,, 60°	2.45	9.15
	9.15	2.45

The declination of the Sun on these days is $23\frac{1}{2}°$.

In N. latitudes the longest day is 22nd June, the shortest 22nd December.

In S. latitudes the longest day is 22nd December, the shortest 22nd June.

In obtaining the time of Sunrise on any particular day use the earlier time in the above table if the day in question is nearer the longest day of the year, and the later time if the day is nearer the shortest day.

In obtaining the number of hours that a star is above the horizon use the earlier time if the number will be greater than 12, the later if the number will be less than 12.

TABLE II.

Approximate declination of the Sun on the 1st day of each month :—

—	N.	S.
1st January	—	23°
1st February	—	17°
1st March	—	8°
1st April	4°	—
1st May	15°	—
1st June	22°	—
1st July	23°	—
1st August	18°	—
1st September	9°	—
1st October	—	3°
1st November	—	14°
1st December	—	22°

The Sun's declination is 0 on 21st March and 23rd September, and is $23\frac{1}{2}°$ N. on 22nd June and $23\frac{1}{2}°$ S. on 22nd December.

The declination of the Sun on any day other than the 1st of a month must be obtained by interpolation in the above table.

Example. Required the declination of the sun on (*a*) 9th May and (*b*) 25th September.

(*a*) Declination on 1st May is 15° N., and on 1st June is 22° N.

The change in declination is + 7° in 31 days.

Therefore the change in 8 days will be + 2°, and the Sun's declination on 9th May will be 17° N.

(*b*) Declination on 1st September is 9° N., and on 1st October is 3° S.

The change is − 12° in 30 days.

Therefore the change will be − 10° in 24 days, and the Sun's declination on 25th September will be 1° S.

TABLE III.

Departures of the Sun at Sunrise and Sunset on the longest and shortest days of the year for different latitudes :—

Equator	23°	North of E. and W. on June 22nd.
Latitude 10°	24°	
,, 20°	25°	
,, 30°	27°	
,, 40°	31°	South of E. and W. on December 22nd.
,, 50°	38°	
,, 60°	53°	

The declination of the Sun on these days is $23\frac{1}{2}°$.

TABLE IV.

Declinations of the Principal Stars.

This table is only to be used if the sum of the latitude and declination is less than 80°.

α Ursæ Majoris (Dubhe)	62° N.	β Orionis (Rigel)	8° S.
δ Ursæ Majoris	54° N.	α Virginis (Spica)	11° S.
α Persei	50° N.	α Canis Majoris (Sirius)	17° S.
η Ursæ Majoris	50° N.	β^1 Scorpii	20° S.
α Aurigæ (Capella)	46° N.	δ Canis Majoris	26° S.
α Cygni (Deneb)	45° N.	α Scorpii (Antares)	26° S.
β Persei (Algol)	41° N.	ε Canis Majoris	29° S.
α^2Lyræ (Vega)	39° N.	α Piscis Australis (Fomalhaut)	30° S.
α Geminorum (Castor)	32° N.	α Columbæ	34° S.
β Tauri	29° N.	ζ Argûs	40° S.
β Geminorum (Pollux)	28° N.	α Phœnicis	43° S.
The Pleiades	24° N.	α Gruis	47° S.
α Arietis	23° N.	α Argûs (Canopus)	53° S.
α Boötis (Arcturus)	20° N.	β Aræ	55° S.
α Tauri (Aldebaran)	16° N.	δ Crucis	57° S.
δ Pegasi (Algenib)	15° N.	α Pavonis	57° S.
α Pegasi (Markab)	15° N.	δ Crucis	58° S.
β Leonis (Denebola)	15° N.	α Eridani (Achernar)	58° S.
α Leonis (Regulus)	12° N.	β Crucis	59° S.
α Aquilæ (Altair)	9° N.	η Argûs	59° S.
α Orionis (Betelgueux)	7° N.	α^2 Centauri	60° S.
γ Orionis (Bellatrix)	6° N.	β Centauri	60° S.
α Canis Minoris (Procyon)	5° N.	α^1 Crucis	63° S.
δ Orionis	Equator.	α Trianguli Australis	69° S.

FOR DEPARTURES. TABLE V.

In Latitude 10° add 1° for every 20° of star's declination.
" 20° add 1° " 10° " "
" 30° add 2° " 10° " "
" 40° add 4° " 10° " "
" 50° add 7° " 10° " "
" 60° double the declination for stars close to celestial equator.

TABLE VI.

Intervals between Rigel and each of the principal stars on any meridian.

—	Hrs.	Mins.	—	Hrs.	Mins.
β Orionis (Rigel) ...	0	0	η Ursæ Majoris ...	8	34
γ Orionis (Bellatrix) ...	0	10	β Centauri	8	47
β Tauri	0	10	α Boötis (Arcturus) ...	9	1
δ Orionis...	0	17	α^2 Centauri	9	23
αColumbæ	0	26	β^1 Scorpii	10	50
α Orionis (Betelgueux)	0	40	α Scorpii (Antares) ...	11	14
α Argûs (Canopus) ...	1	12	α Trianguli Australis ...	11	29
α Canis Majoris (Sirius)	1	31	β Aræ	12	8
ϵ_2Canis Majoris... ...	1	45	α Lyræ (Vega)	13	24
δ Canis Majoris ...	1	55	α Aquilæ (Altair) ..	14	36
α Geminorum (Castor)	2	19	α Pavonis	15	8
α Canis Minoris... ... (Procyon)	2	24	α Cygni (Deneb) ...	15	28
β Geminorum (Pollux)	2	30	α Gruis	16	52
ζ Argûs	2	50	α Piscis Australis ... (Fomalhaut)	17	42
α Leonis (Regulus) ...	4	53	α Pegasi (Markab) ...	17	50
η Argûs	5	31	β Pegasi (Algenib) ...	18	58
α Ursæ Majoris (Dubhe)	5	48	α Phœnicis	19	12
βLeonis Denebola) ...	6	34	α Eridani (Achernar) ...	20	24
γ Ursæ Majoris... ...	6	39	α Arietis	20	52
δ Crucis	7	0	β Persei (Algol) ...	21	52
α Crucis...	7	11	α Persei	22	8
γ Crucis	7	16	The Pleiades	22	30
β Crucis	7	32	α Tauri (Aldebaran) ...	23	21
α Virginis (Spica) ...	8	10	α Aurigæ (Capella) ...	24	0

It is clear from the above table that Sirius will cross the meridian 1½ hours after Rigel, and the Pleiades 1½ hours before Rigel.

Books of Reference:—

"The People's Atlas of the Stars," by Rev. James Gall (*Gall and Inglis*).

"The Story of the Heavens," by Sir Robert Ball (*Cassell and Co.*).

"Astronomy of To-day," by C. C. Dolmage (*Seeley and Co.*).

"Sidelights on Astronomy," by Simon Newcomb (Harpers).

"Scouting and Reconnaissance in Savage Countries," by Captain C. H. Stigand (*Hugh Rees*).

"Hints to Travellers," Royal Geographical Society.

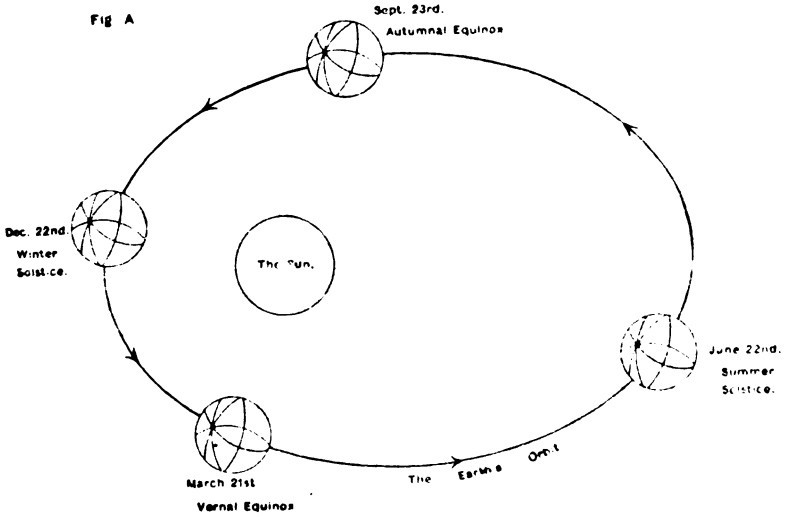
APPENDIX.

THE CAUSE OF THE SUN'S APPARENT ANNUAL SWING.

The sun is the centre of the solar system, and the earth is one of 8 planets that are known to be revolving round it.

The earth revolves once round the sun in 365.256 days, and the orbit of this revolution is not a circle, but an ellipse (Fig. A).

Fig A



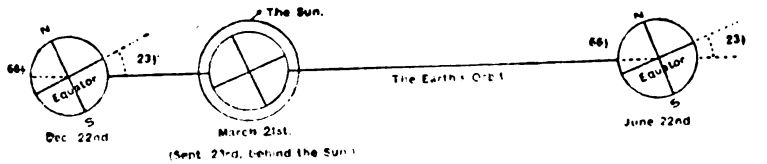
The earth's distance from the sun is constantly changing, but the incidence of the seasons is not due to this change. It is due to the fact that the axis of the earth, round which the earth rotates, is inclined at an angle of $66\frac{1}{2}°$ to the plane of the earth's orbit, or, in other words, that the equator of the earth is inclined at an angle of $23\frac{1}{2}°$ to the plane of the earth's orbit.

Summer in Europe is when the earth is farthest from the sun, because in that position the sun's rays on Europe are nearer the vertical than in any other position of the earth.

Fig. A represents the orbit of the earth round the sun seen from above.

Fig. B represents the same orbit seen from the side.

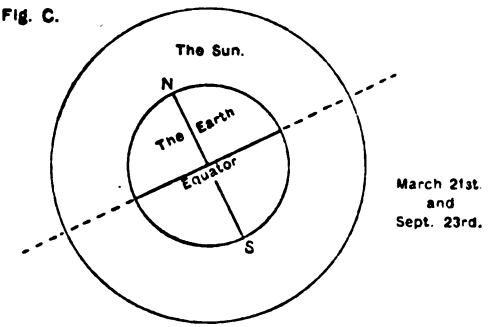
Fig. B.



It is clear from Fig. C (an enlargement of the vernal equinox of Fig. B) that on 21st March the sun is bisected by

the plane of the equator of the earth, and therefore will appear to be vertically over the equator during one rotation of the

Fig. C.

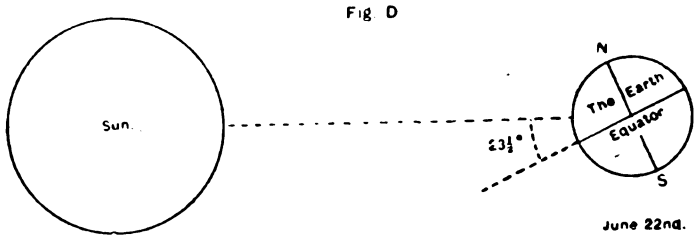


earth (24 hours). That is, the sun will appear to move along the celestial equator on 21st March.

The same is obviously true of 23rd September.

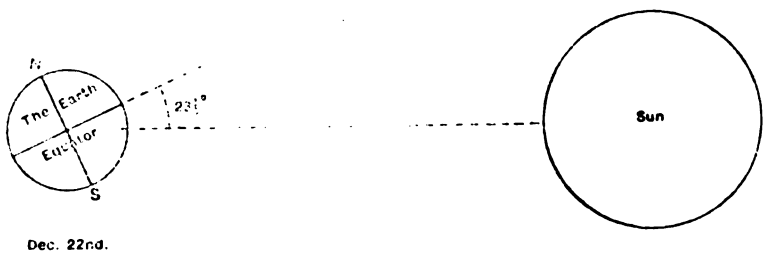
It is also clear from Fig. D that on 22nd June the sun will appear to be vertically over latitude $23\frac{1}{2}°$ N., that is, it will

Fig D



appear to move across the heavens at a distance of $23\frac{1}{2}°$ N. from the celestial equator.

Similarly, as shown in Fig. E, on 22nd December the sun will appear to be vertically over latitude $23\frac{1}{2}°$ S.



22nd June and 22nd December are the northern and southern limits of the swing, 21st March and 23rd September the middle points of it.

In any intermediate position of the earth the sun will appear to be between 0 and $23\frac{1}{2}°$ N. or S. of the celestial equator according as the earth is nearer the June or December position.

MILITARY RELICS AND TROPHIES IN THE MUSEUMS OF ITALY.

By Lieut.-General F. H. TYRRELL, Colonel 74th Punjabis.

TURIN is the military capital of Italy. Its military history goes back to a very early date, for it owes its foundation to a Roman camp planted there as a convenient strategic position for observing the outlets of the passes over the Alps and for furnishing garrisons and patrols for keeping the communications open along the routes which crossed them. The Emperor Augustus converted the standing camp into one of those military colonies of veteran soldiers by which Rome maintained the Imperial supremacy throughout the provinces of the Empire, and gave it the name of Augusta Taurinorum.

The quadrangular plan of the old Roman cantonment has been preserved in the modern city, the long straight streets of which intersect each other at right angles, presenting vistas of the open country beyond and the encircling mountains to the gaze of the spectator as through the tube of a telescope. One of its old Roman gateways, and fragments of its towers and walls, are still standing, and are now carefully preserved. After passing successively under the domination of Lombards and Franks, it became in the Middle Ages the capital of the Duchy of Piedmont, and in the fifteenth century came into the hands of the Grand Dukes of Savoy, whose ancient and noble house has contributed so many illustrious captains and so many gallant feats of arms to the military annals of Europe, and has finally raised its chief to the throne of a United Italy. Like the House of Hohenzollern in Germany, the House of Savoy in Italy has, by its prowess in arms, no less than by its political foresight, attained first to Royal rank and then to the throne of a great and united people.

The electors of Brandenburgh have become successively Kings of Prussia and German Emperors; the Grand Dukes of Savoy first assumed the title of Kings of Sardinia, and have now seated themselves upon the throne of Imperial Rome.

The Palace in Turin, which was so long their home, now stands empty, but it is still one of the most splendid of the many royal palaces of Italy. The name of its entrance hall,

still called the "Salles des Suisses," recalls the old days when its royal owners, like most of the rulers of European States, entrusted their personal safety to the guardianship of the mercenary soldiers from the free land of the mountains, whose bravery and fidelity might always be relied on. Shakespeare makes the King of Denmark exclaim: "Where are my Switzers? Let them guard the door!" But he had no authentic historical warrant for the presence of Swiss Guards at the Court of Elsinore, though Swiss sentinels mounted guard at the Tuileries and at the Hague, at the Escorial, as at the Vatican. The Grand Dukes of Savoy had early gained dear-bought experience of the soldierly qualities of the Swiss, and having proved them as enemies, they preferred to have them as auxiliaries, and from the sixteenth century onward they largely employed Swiss mercenaries in their incessant wars.

During the war of the Spanish Succession, our good Queen Anne paid the expenses of a Swiss regiment in the Grand Duke's service, which, accordingly, went by the name of the Queen's Regiment.

The scarlet-clad company of Swiss Halberdiers, which guarded the doors of the Royal Palace at Turin, was raised by the Grand Duke Charles Emmanuel in 1593, and was dissolved just two centuries later when the French Republican armies overran Piedmont and forced the King to seek a refuge in the island of Sardinia. The French General converted this company of Palace Guards into a company of Gendarmerie, for the preservation of good order in the city, and its members continued to perform this useful service in their ornamental livery of scarlet and silver until the company was finally disbanded in 1802. The halberts used by it, with the staves covered with blue velvet, and the crests and monograms of its Grand Ducal and Royal Masters interwoven in the ornamental steel-work of the axe-heads, are preserved in the Royal Armoury, which occupies one wing of the Palace at Turin, and which possesses one of the finest collections of mediæval arms and armour in Europe, collected by successive Princes of the House of Savoy. Its long gallery is tenanted by some twenty equestrian figures in armour ranged along its sides. The horses are extremely well modelled, and are covered with real skins, to procure which the lives of some fine animals were sacrificed by order of the King Victor Emmanuel II., so that their appearance and attitudes are quite lifelike and give the impression of reality. The suits of armour worn by the riders are, in many instances, the work of the famous armourers of Milan, whose skill in the fashioning and embellishing of the harness of war was renowned throughout Europe. One of the most richly-adorned suits of armour here is also one of the most modern, having been made for Don Diego Filippo Guzman, Spanish Viceroy of Milan, in 1635. The steel jambières and sollerets of the previous century are here replaced by long boots of Spanish leather. The figure

of the Cardinal Sforza-Visconti, also of Milan, is a century earlier in date; the rider is armed *cap-a-pie* with closed vizor, and the horse is barded from counter to tail; the armour is finely fashioned and elegantly ornamental, the patterns of the horse-armour being different on the two sides. Several of the figures are arrayed in suits of armour belonging to the famous fighting family of Martinengo, one suit of black armour having been worn by a champion of that family at the siege of Famagosta in Cyprus by the Turks in 1571.

There is a suit of armour, ornamented with engraved fleur-de-lys, conjectured to have belonged to a follower of the Bourbons; and another manufactured by the famous brothers Negroli, of Milan, armourers to the Emperor Charles V., for Captain Valerio Zacchei. The letter accompanying the bill for this suit of armour is extant, dated 1572; it informs the Captain that the helmet and cuirass have been proved with three musket-balls, discharged point blank, and which produced no effect upon them.

One of the most interesting figures is a portrait-figure of Prince Eugene of Savoy in the dress and arms which he wore at the battle of Turin in 1706. He is represented with out-stretched right arm as if pointing the way to victory, wearing a plain three-cornered beaver hat without plume and a steel cuirass over a yellow coat trimmed and ornamented with broad black braid, said to be the uniform coat of an Austrian Field-Marshal of the period, red breeches and high jack-boots. The cuirass has the figure of the Virgin and Child engraved on the left side of the breast, and in several places shews the dents made by musket-balls. The Prince's long black hair flows dishevelled over his shoulders; he rides a white charger, and embroidered flounces cover the long holster-pipes which hold the pistols which Eugene had to defend his life with at least on one occasion in the close combats to which his ardour impelled him. His Field-Marshal's baton, spurs, pistols, and other articles and insignia belonging to him are preserved in a case near by along with arms and weapons of various kinds which have belonged to Princes of the House of Savoy. Among them is an iron mace which belonged to Charles Emmanuel I., and which tradition says was used by the Chevalier Bayard at the famous tournament at Carignan in 1499. Another historical relic is a suit of black armour, found in the hospital at Vercelli, and of which the tradition is that it was worn by a man-at-arms who was wounded in the battle of Pavia in 1525, and was brought from the field of battle to the hospital, where he died.

Opposite to the figure of Prince Eugene is an equestrian figure in a suit of Oriental armour of singular fashion. The tradition that it belonged to the Sultan Muhammad II., the conqueror of Constantinople, seems to have no foundation: the

armour was purchased by the King Charles Albert from a private collector. The armament is much more complete than is usual among Oriental warriors, whose defensive armour generally consists, or consisted, of a helmet and a shirt of chain-mail, sometimes fortified by plates of steel, and steel brassarts. This figure wears the ordinary Oriental form of domed and spiked helmet,[1] but instead of the usual curtain of chain-mail at the back to defend the nape of the neck, the back part of the helmet is prolonged downwards in a steel curtain. The body is protected by a hauberk of chain-mail, fortified by steel plates; the arms, legs, and feet are entirely covered with laminated armour composed of small rectangular plates or bands of steel overlapping each other, and the heels are garnished with spurs consisting of a single spike of steel. The use of spurs is uncommon among Orientals, as their horsemen use instead the sharp inner angle of their shovel-stirrup: spurs are, however, known to them, for Persian historians describing a defeat say that the fugitives "sharpened the spurs of flight."[2]

The horse has a steel chafron, and the high cantle of the saddle and the shovel-stirrups are of steel, and the neck and body of the horse are completely protected with laminated armour of the same pattern as that on the limbs of the rider. The sabre has a Mameluke steel hilt, and a leather scabbard with steel mountings, and is suspended by a red silk cord sword-belt and slings, such as were commonly used by the Turks.[3]

The horseman carries in his right hand a standard of crimson taffety with a broad yellow border much the worse for wear and with verses from the Koran worked upon it: this standard has no connection with the armour of its bearer; it was purchased from the custodian of a Mosque in Constantinople and was probably a Turkish military standard at one time. Another arbitrary addition to the equipment of the rider is a bunch of curly ostrich feathers, dyed red, in the plume-case

[1] The spike was used instead of a crest on the helmets worn by the Persians and other Oriental nations from the earliest times. Its use in Europe only dates from some seventy years back, when the spiked helmet replaced the shako as the head-dress of the Prussian infantry. The Russians soon after adopted it, and other nations have followed suit.

[2] "Mahmez-i gurez tez sachtand." The Persian word for spurs, "mahmez," is used in India for a spur, but is miscalled "momrez" by Anglo-Indians, just as the Persian word "namda," for a felt lining under the saddle, is mis-spelt and mis-pronounced "numnah."

[3] The Turks and Egyptians always used sword-belts of silk cord before the introduction of European fashions into their military equipments. Silk cord sword-belts were worn by officers of the Madras Army with their blue frock-coats prior to the change in uniform in 1856; the cord belts were red for General and Staff Officers, black for Regimental Officers. They were waist-belts with slings, fastened with gilt olivets and gilt swivels.

at the side of his helmet. Orientals never wore curling or drooping feathers for ornament, but only aigrettes or stiff upright plumes; while the opposite fashion prevailed among European nations, who never used the stiff upright plume till it was introduced by the Turks into Hungary, and thence made its way into more western countries.

There are also two figures of men-at-arms on foot in armour described as Saracenic, which have some peculiar features. One of the helmets has a visor, a most uncommon feature in Eastern headgear; the helmet of the other has the usual nasal or nose-guard widened at the lower extremity into a laterally expanding plate to protect the mouth and teeth. On one side of this steel plate is engraved the representation of a musket with a stock of European pattern; on the other side a flower, apparently a thistle. The thistle design is repeated on the plates of steel which reinforce the chain-mail hauberk, and they have also Arabic letters engraved on them. It is difficult to account for this mixture of European and Asiatic emblems: the suits of armour may have been "faked," different pieces being taken from different sets, or they may have belonged to the Turcopoli, soldiers employed under the Knights of Malta who were equipped and armed in the Oriental fashion. There is also a good collection of Oriental armour and weapons of familiar type; Turkish Yataghans, Persian Khanjars (spelt "Kandscher" in the catalogue), Malay Krises, Achinese Klavongs, and Indian swords and daggers in great variety. Among them is one scimitar described as belonging to Tippu Sahib, Sultan of Mysore, which one would hardly expect to find in an Italian armoury; but it was given by the Sultan as a present to General de Boigne, a Savoyard soldier of fortune, who commanded the regular troops in the Maharajah Scindia's army, and who, after his return to his native country, presented the sword to his sovereign, King Charles Albert, who placed it in his royal armoury. It is a finely shaped scimitar blade, with a gold hilt of the ordinary Indian tulwar pattern, round gripe and slender finger-guard; the scabbard is of crimson velvet with gold mountings.

There are two dismounted figures accoutred as a cuirassier and a musketeer of the time of the Thirty-Years' War. The former is an officer with a plume of feathers in his helmet and a lace collar over his cuirass; his doublet is striped red and yellow. The musketeer's is in black and yellow; he also wears a cuirass, and has a black horse-hair plume in his morion. He is equipped with bandoliers, ball-bag, and priming-horn, and holds his clumsy matchlock musket in his right hand, and in his left the staff of his wooden musket-rest, shod and capped with steel.

Another remarkable equestrian figure is that of Duke Emmanuel Philibert of Savoy, General of the armies of the Emperor Charles V., and of his son, Philip II. of Spain,

famous for his great victory at St. Quentin over the French in 1557. The splendid panoply in which he is clad was made by the brothers Negroli of Milan in 1561. Over his armour he wears the blue silk sash which has always been a distinguishing badge of the House of Savoy, which was worn by officers of all arms and all ranks in the Piedmontese Army, and is still similarly worn in the Italian Army on all guard duties and full-dress parades. The old Piedmontese Army, the first formations of which were almost contemporaneous with those of our oldest British regiments at the Restoration of King Charles II., was incorporated in the National Army of the newly-constituted kingdom of Italy in 1861, furnishing the first four cavalry and the first sixteen infantry regiments of the present Italian Army. A coloured print in this Gallery shews the uniforms of the old Piedmontese regiments—blue coatees with facings and lapels of red or yellow. Here also are preserved its trophies—a French standard captured at the Battle of Turin; Spanish colours taken in Italian wars; Austrian flags and the lances of Hulans with black and yellow pennons captured in the wars of 1848 and 1859.

A detailed account of the treasures of this Armoury would easily fill volumes. Here are many examples of the exquisite work of Italian artists of the Renaissance in the decoration of the stocks of arblasts and arquebuses, the blades of swords and daggers, the orbs of bucklers, the panels of powder flasks, and the plates of armour with representations of scenes of war and of the chase, illustrations of stories from Grecian mythology or Old Testament history, or with devices of their own imagination. A bronze buckler with sculptured representations of scenes from the war of the Roman Marius with the Numidian Jugurtha is attributed by tradition to Benvenuto Cellini, but it is not to be found in any of the published lists of his works.

The arms and hunting equipments and many relics of the late Kings Victor Emmanuel II. and Humbert I. are also preserved here, and specimens of weapons and military paraphernalia from all quarters of the globe.

The Maschio della Citadella, an old Reduit, and the only part of the citadel of Turin now left standing, contains the Museo Nazionale d'Artigleria, a collection of cannons and firearms of all descriptions, from the 14th century down to the present time. Here are stone cannon shot fired from Turkish guns at the siege of Otranto; a revolving pistol, which belonged to the Emperor Charles V.; the beak of a Roman galley in the shape of a boar's head, fished up in the harbour of Genoa; British field guns presented to our Sardinian allies in the Crimea; and specimens of all the types of firearms and *armes blanches* used in the Piedmontese Army since its first formation.

"All the warlike gear of old
Mixed with what we now behold."

Outside of this building stands the marble effigy of Pietro Micca, the heroic corporal of Sappers, who on the 30th August, 1706, saved Turin from capture by the French by jumping into the unfinished mine with a match and firing it, blowing himself up along with twelve hundred French Grenadiers of the storming column, which was mounting the breach, "carried, Elijah-like, fire-winged to Heaven."

"The match is flung, the mine is sprung, with one dread thunder roar;
He and twelve hundred foemen shall fight again no more."

An instance of devotion to king and country, not to be surpassed by any Spartan hero of antiquity. The French leaders, Marshal Marsin and the Duc d'Orleans, were so staggered by the catastrophe of the loss of so many of their best men (for the Grenadier companies were at that time composed of the picked men of every battalion) that they hesitated to renew the assault; and in a few days Prince Eugene arrived at the head of an Imperial army to raise the siege, totally defeated the French in a great battle under the walls of Turin, and drove them headlong from the country.

There are other notable statues of a military character adorning the streets and squares of Turin: one by Marochetti in bronze of Duke Emmanuel Philibert, the conqueror of St. Quentin, who is represented in full armour on horseback in the act of sheathing his sword, to signify the accomplishment of peace by his victory. On the sides of the pedestal are sculptures in relief representing the battle of St. Quentin and the ensuing Peace of Cateau-Cambrésis.

Another statue by Marochetti is a bronze one of King Charles Albert, in the Piazza Carlo Alberto, while in the Piazza Solferino is a marble statue of his brother, Duke Ferdinand of Genoa, who is represented as at the battle of Novara, with his horse mortally wounded falling under him.

The picture gallery or Pinacoteca of Turin contains a full length portrait of King Charles Albert in uniform by the much over-rated French military painter, Horace Vernet.

In the same room is a fine canvas by Von Schuppen, representing Prince Eugene on a prancing charger riding over the bodies of slain Turks, whose hoof-beaten bosoms are trod to the plain, their cloven turbans unrolled from their shaven heads, their hands still grasping in death buckler and scimitar. Another room in the gallery is entirely devoted to the battle scenes of Eugene's victories; Hochstett (Blenheim), Ramillies, Turin, and Malplaquet over the French; Zenta, Peterwarudin, and Belgrade over the Turks. The pictures are obscured by age, and many of them are hung in a bad light, so the details are not easily made out. Camels figure prominently in the Turkish battle-scenes, and lines and masses of white turbans mark out the positions of the infidels.

The Museum of the Arsenal at Venice has among its trophies Turkish horsetail standards captured in the wars between the Republic of St. Mark and the great military Musalman Empire on its borders. Against the wall, under a glass case, is displayed the flag of Ali, the brave but unfortunate Capitan Pasha, who commanded the Turkish fleet at Lepanto, and who perished in the wreck of the lost battle. It is a large pennon-shaped flag of red damask, embroidered in gold, with texts from the Koran and with figures of stars, crescents, and the two-bladed sword of the ill-fated Admiral's namesake, Ali, the son-in-law of the Prophet. This famous sword was entitled Zu'l'fikar (Lord of the Cleavings), and as represented in Moslem heraldry, is a quite impossible and amorphous weapon.

The flag looks as good as on the day it was first unfurled, three hundred and forty years ago, and its state is a great contrast to the tattered and faded condition of most of the old standards and colours kept as trophies or relics in European museums and churches; but this memorable Venetian trophy has been kept under glass, which accounts for its satisfactory state of preservation. Charles Dickens mentions it as "a fierce standard, taken from the Turks, drooping in the dull air of its cage."

The Town Museum at Perugia has among its relics of antiquity a Grenadier cap of the seventeenth century. It has a mitre-shaped front of black varnished leather, ornamented with a brass badge of a Dragon, the emblem of Perugia, and a scarlet cloth hood hanging from the back and ending in a tassel. The Grenadier cap was originally an imitation of a Janissary head-dress, and the hood was probably intended to represent the strip of felt which hung down from the back of the Janissary's cap. Tradition accounts for this strip of felt as a remembrance of the sleeve of the Saint Haji Bektash, who stretched out his arm over the heads of the front rank to bless the newly-raised corps on its institution; probably the real *raison d'être* of the strip of felt was to save the back of the wearer's neck from a sabre cut.

The façade of the Royal Palace at Naples is adorned with eight marble statues, representing the eight different dynasties that have ruled over the country since the fall of the Roman Empire; the Norman, the Swabian, the Angevin, the Arragonese, the Spanish, the Spanish-Bourbon, the French, and the Piedmontese. The latter is the only Italian family among the eight, all the other seven commemorate the foreign domination under which Italy lay for a thousand years. These statues are interesting, both from their artistic merit, for they are the work of the best sculptors of modern Italy, and from their historical association; but chiefly from their accurate representation of the military costume of the different ages to which they belong. Roger the Crusading Norman, who conquered Sicily from the Arabs and added Naples to his dominions about the

same time that his brethren conquered the Saxon kingdom of England, is shown in his flat-topped helmet and shirt of mail, grasping his long two-handed sword. Frederick of Hohenstaufen, who succeeded by marriage to the inheritance of the Normans, wears a helmet surmounted by an eagle with outstretched wings, like that of the German Kaiser's Bodyguard at the present day. Charles of Anjou, who extirpated the Germans and reigned in their stead, wears a long surcoat over his mail; the Neapolitans were always ready to welcome a change of rulers, but they only changed an old tyranny for a new and more galling yoke; and the Sicilian vespers, which put an end to the French rule, brought in the Spaniards in their stead.

Alfonso of Arragon wears plate-armour with pauldrons and brassarts of steel; his dominions passed by marriage to the crown of Spain, and the next figure is that of the Emperor Charles V. in the complete panoply of the tournament, save that his head is bare, and he grasps a truncheon in his hand. Naples and Sicily were ruled for two centuries by Spanish Viceroys, till in the division of spoils after the war of the Spanish Succession, they fell to the share of Austria; but Charles of Bourbon reconquered them while the Austrians were engaged with the French upon the Rhine, and made himself King of the two Sicilies. By his time the steel armour has been molten to silken embroidery; but he still wears a cuirass girt with a broad sash under his wide-skirted coat, and the universal three-cornered hat and high jack boots of the military costume of his time. His successors were expelled from Naples by the French Republicans, but maintained their state and authority in Sicily under the protection of a British fleet and army.

The innkeeper's son and dashing cavalry leader, who replaced them on the throne of Naples under the title of Gioacchino Napoleone (Joachim Napoleon), is shown in a theatrical attitude (his subjects called him the Re di Scena, or Stage King), dressed in a General's uniform, his cocked hat surmounted with the famous snow-white plume, his martial cloak thrown over one shoulder, and his cavalry sabre at his side. The last of the series is Victor Emmanuel II., of the conquering House of Savoy, il Re Galantuomo, dressed in the baggy garments of French military fashions under the second Empire, and raising his eyes and his sword to Heaven, as if appealing to the fortune that favours the brave. Under his shadow the Italian Bersaglieri stand sentinel at the gateway once guarded by the Bourbon monarch's Swiss Grenadiers.

The Spolia Opima of the dispossessed dynasty are preserved in the modern Museum of San Martino, under the wing of the old Spanish fortress of St. Elmo, which looks down from its commanding height upon the city of Naples spread out below. The pious brethren who made the adornment and embellishment of their glorious church a labour of love for so

many centuries have been banished like the dynasty which cherished them; their beautiful church is preserved as a national monument for the gratification of the lust of the eye of the spectator and the tourist, and the spacious buildings of the cloistered monastery that was their home are converted to the uses of a National Museum. One of its rooms contains models of the defences of Gaeta and of other fortresses of the Kingdom, and on the walls of another room are a series of plates showing the uniforms of all the regiments of the newly-raised Neapolitan army of King Charles III.,[1] the founder of the Spanish Bourbon dynasty of Naples. The soldiers wear the comfortable and serviceable dress of the first half of the eighteenth century: three-cocked hats, roomy and wide-skirted coats, and long flapped waistcoats with plenty of pockets (not sewn up to prevent their use, as has been done in more recent times by a modern War Office), and long spatterdashes covering the knee and gartered below it. A broad shoulder belt supports the pouch, and a waistbelt carries the sword and bayonet-scabbard. A second series of coloured plates of more artistic merit represents the dress and equipment of the same regiments in the reign of Ferdinand IV., fifty years later in tight coatees, cross-belts, short waistcoats and short black gaiters. Only one regiment of horse is depicted, and sixteen regiments of foot, of which four are Swiss, one Walloon, one Macedonian, and the rest native Neapolitan. The Swiss wear red coats, the Neapolitan Guards and Royal Regiments blue, the Regiments of the Line white uniforms. The Macedonian regiment has a semi-Oriental dress of loose coat and knickerbockers, and a sheepskin busby. This regiment was recruited from Albanian refugees in Italy and from other races of the Christian population on the neighbouring coasts of the Turkish Empire.

This royal Neapolitan Army was dissolved on the occupation of the country by the French Revolutionary Army, and the proclamation of the Parthenopean Republic. When Joachim Murat was made King of Naples by Napoleon he introduced the French system of conscription into his kingdom, and laboured hard to create an efficient National Army; but with the old King and his allies close at hand in Sicily it was not thought safe to rely solely on the services of native troops, and a considerable French force always remained to garrison the country. The pictures of the uniforms of the regiments of Murat's army occupy the wall opposite to those of King Ferdinand. Bearskin caps and broad-topped shakos have replaced the cocked hats; the coats and jackets are white, with facings of various colours; the pattern and details of dress follow closely those of the French Army. The Royal Guards wear the same uniform as the Grenadiers of the Imperial Old Guard, but with the

[1] This Prince, who was a son of the King of Spain and first King of Naples, called himself the Third, because he reckoned the Kings of Spain as having been also Kings of Naples before him.

colours reversed, white coats with blue lapels instead of blue coats with white lapels. Murat's army was also naturally strong in cavalry regiments of cuirassiers, lancers and hussars in brilliant uniforms, in some of which he is himself dressed in the portraits here preserved, with many other relics of himself and of the Bonaparte family, in this Museum. There are two huge canvasses which were painted to his order to commemorate the capture of Capri from the English.

The so-called impregnable island had been captured from the French by Sir Sidney Smith in 1806, and the British hoped to make it into a second Gibraltar. Joseph Bonaparte had been braved in his palace at Naples by the sight of the British flag flying over Capri, but Murat was a man of different metal. As soon as he had come to the throne in 1809 he made preparations for re-capturing Capri. He collected flotillas of galleys and feluccas to convey his troops at Pozzuoli, north of Naples, and at Castellamare and Salerno south of it; and by a false report that these preparations were intended for an attack on the islands of Ponza, he succeeded in luring away the English ships from their station before Capri.

No sooner were they out of sight than he embarked his troops; the divisions from Castellamare and Salerno made false attacks on the Grande and the Piccola Marina, the two harbours of the island, while the main attack from Pozzuoli was directed to a solitary and precipitous point of the coast on Anacapri at the northern end of the island. There were no British troops in Capri. The Governor was Sir Hudson Lowe, and the garrison consisted of two foreign regiments, the Corsican Rangers and the Maltese Infantry; the former were good troops, but the latter were of doubtful quality. The British authorities probably did not care to risk any of their own soldiers in such an exposed situation; and, like the Blue-water school in England to-day, they trusted to the Navy for the security of the island.

The French effected a landing by means of ladders planted from the boats against the cliffs: a battalion of Maltese which was hurried to the spot to oppose their landing was surrounded and made prisoners to the number of 800 men; but two companies of the Corsican Rangers who were in Anacapri managed to conceal themselves until nightfall, and then cleverly effected their escape. The rocky stairway which was the only communication between the two parts of the island was already in possession of the French, but Captain Church[1] and his men

[1] By a coincidence a Corsican regiment in the service of France formed part of the invading force. Captain (afterwards Sir Richard) Church took service with King Ferdinand after the peace of 1815, and became a General in the Neapolitan Army. He subsequently commanded a Greek Army against the Turks in the War of Liberation, and on its termination continued to reside in Greece, where he died at a good old age full of years and honours.

aided by their dark rifle uniforms and their knowledge of the French language, managed to pass through the French lines, and making their perilous way over the precipitous face of the cliffs, rejoined their comrades in Capri with the loss of only one man, who missed his footing in the descent and was dashed to pieces by his fall.

The French force besieged Sir Hudson Lowe in the town of Capri. Murat threw reinforcements and a siege-train into the island, and the French were preparing to storm when the Governor, seeing no hope of a successful resistance with his diminished force, hung out the white flag, and obtained an honourable capitulation. The ink of his signature to it was scarcely dry when the British fleet re-appeared off the island, but Sir Hudson Lowe decided that military honour constrained him to fulfil the engagements which he had entered into, and the garrison, with arms, stores and baggage, was embarked on board the British ships for Sicily, while the French took possession of the island.

The first of the two large oil-paintings which commemorate this triumph of the French arms shews Murat superintending the despatch of the expedition: he and his staff occupy the foreground of the picture; below them the French troops are seen embarking in the boats.

Murat is represented pointing out to them the isle of Capri in the distance; he wears a scarlet square Polish cap or czapka with a tall white ostrich-plume; his long black hair falls in ringlets over his shoulders; he is clad in a long purple tunic like an ancient Roman's, with white pantaloons and yellow knee-boots. His staff wear high-crowned cocked hats and blue uniforms with gold oak-leaf embroidery, and a cherubic aide-de-camp is arrayed in a hussar uniform of white and crimson.[1]

The second canvas shows the French soldiers climbing the cliffs of Anacapri from the ladders planted in the boats: on the heights above are seen the red coats of the Maltese infantry.

The capture of Capri was a solitary triumph of the French over the British arms; the luck that had attended the enterprise deserted Murat in his attempt upon Sicily. The silver streak between Reggio and Messina proved an insurmountable obstacle to the French arms. Once, taking advantage of a temporary absence of the British fleet, a Division of French troops was ferried across the straits; two battalions had already been disembarked on the Sicilian shore when some British ships hove in sight; the French ships immediately cut their cables and made the best of their way back to the shelter of the Italian coast, leaving the two battalions to their fate, and they were

[1] Napoleon's Marshals were accustomed to dress the officers of their personal staffs in brilliant uniforms of their own devising. Berthier and Murat in particular excelled in their inventions in the matter of military millinery and martial finery.

made prisoners by the English without resistance. The attempt was never renewed.

An oil painting in the Museo Gaetano Filangieri at Naples depicts King Joachim Murat rescuing the Neapolitan General Filangieri, who has been struck down wounded in an encounter with the Austrians. The King has dismounted from his white charger to succour the fallen General, who is supported in the arms of the Royal Grenadiers. Murat is dressed in the blue uniform of a General Officer with the famous snow-white plume in his cocked hat, and the same white pantaloons and yellow boots. This museum also contains a very fine collection of foreign and mediæval arms and armour made by the Filangieri family, whose name is well known in the military and political history of Naples, and bequeathed by them to their native city.

Among the military pictures in the museum of San Martino is an oil painting depicting the closing scene of the three days' Battle of the Nations at Leipzig in 1813. Prince Schwarzenberg, Generalissimo of the Allied Armies, is presenting to the allied Sovereigns the French standards and colours captured in the battle. The three monarchs are on foot, the Emperor Francis of Austria in the centre with the Czar Alexander of Russia on his right and King Frederick of Prussia on his left hand. All three wear the huge cocked hats in vogue at the time. The Czar wears a green uniform with white leather breeches and jack-boots; the Emperor of Austria a white coat and red trousers; the King of Prussia is in blue, with the grey overalls buttoning down the outer seams at that time worn by the Prussian cavalry. Prince Schwarzenberg, in the white and scarlet uniform of an Austrian Field-Marshal, rides up on his black charger and salutes the sovereigns with his sword, while the captured tricolour flags are borne behind him by their captors. The picture is probably a copy painted from the original for the King of Naples. The British Army was represented at the Battle of the Nations by a rocket-troop of the Royal Horse Artillery.

This Museum also contains arms, equipments and accoutrements of the Neapolitan at various periods, and among these is the modern costume of a Knight of Malta, a scarlet coatee with gold lace and buttons, white cashmere trousers with a gold lace stripe, and a blue scarf with the emblems of our Lord's Passion embroidered on it in gold. There are also many modern pictures of scenes in the "Risorgimento" or Resurrection of Italy, and paintings depicting the combats and battles in the wars of Liberation in 1848-49 and 1859-61.

THE FIGHTING VALUE OF MODERN CAVALRY.

By C. VON HUTIER.

(Translated from the *Militär Wochenblatt* (II) 1909).

Contributed by the General Staff.

THE weapons of a field army are infantry, artillery and cavalry. They must be so fashioned in peace time that they can perform the tasks required of them in war, and thus prove themselves serviceable weapons in the hands of the commander.

In great battles, when both sides are struggling for existence, each will endeavour to destroy the opposing infantry, for it is on the infantry that the destiny of the army depends. The task of overpowering the infantry falls naturally to the infantry, which must assume the offensive to achieve its object. Great as is the power which modern fire-arms confer on their defensive, it is not sufficient by itself to crush the opposing infantry; the artillery and cavalry must therefore support their own infantry to the utmost of their ability; this is the highest duty of these two arms—in fact it is the guiding principle of their action in the attack. In the defence, the infantry does not require their support to the same extent, for it is capable, by its own efforts, of keeping the attacking infantry at arms length. The chief duty of the artillery and cavalry in the defence is, therefore, to restrict the offensive power of the enemy's artillery and cavalry as much as possible.

I discussed the fighting value of infantry and artillery in Nos. 68 and 131, 1909, of the *Militär Wochenblatt*. I will now make a few remarks on the value of modern cavalry in battle.

I will first ask you to look back to the days long gone by —when firearms had not yet begun to restrict the action of cavalry, so that horsemen were in a position to win the highest honours. In those days, when firearms were still primitive, when ranges were short and aim uncertain; when loading was a tedious operation, and battlefields were veiled in smoke; when appliances for observing movements at a distance were few and imperfect; when campaigns were only carried on in the temperate seasons; when horses could be fed from the resources of the country. In those days cavalry was indeed a marvellous weapon of offence, capable of successfully engaging troops no matter of what arm—a weapon that could be used everywhere,

even against the enemy's front. Masses of cavalry could halt or manœuvre close in front of the hostile line, undisturbed by fire, and, when the right moment had come, hurl themselves on the enemy with their horses still comparatively fresh.

Owing to the small size of battlefields, and the primitive nature of firearms, only a few hundred yards had to be traversed at the highest speed during the charge, and the horses were therefore still fit for further enterprises. Again, the absence of good telescopes enabled cavalry to appear unexpectedly and effect surprises. If two hostile bodies of cavalry encountered each other, the weaker was bound to give way—assuming the conditions of ground and efficiency equal for both sides—as there were then no firearms to compensate for numerical inferiority.

The cavalry of Frederick the Great was thus a powerful weapon of offence, although it entered the lists armed only with the *arme blanche*. Every Prussian cavalry soldier was aware of his power, and this assurance formed an incentive to action. This striving for achievement, combined with energy and speed in manœuvre, were the characteristic features of the cavalry of the period of the Great King. Since that day the offensive power and fighting value of cavalry have materially diminished.

A bold cavalry spirit has indeed descended to our present cavalry, but now that the infantry soldier can fire at least six times as many well-aimed shots as formerly, without any tedious adjustment of the sights; now that the range of a rifle bullet runs into thousands of yards, and no smoke obscures the battlefield, the cavalry will not find it so easy to get at the infantry with the *arme blanche*.

The chance of success in attacking the enemy's fire positions is extremely small, while the employment of cavalry against the front of the hostile firing line is practically impossible. The result is that the field of action for modern cavalry now lies rather towards the flanks and rear of the enemy than in his front. But even here there is little opportunity for the use of the *arme blanche;* for there are abundant means for discovering, observing, and frustrating the enterprises of hostile cavalry. Surprise attacks are almost out of the question. They may sometimes succeed, in small operations, under exceptionally favourable conditions of ground and situation, but even so they will contribute little to the fate of the battle: the successes gained will be of a temporary nature. Large masses of cavalry capable of seriously damaging portions of the enemy's forces, can scarcely ever expect to approach the enemy without giving warning; all that such masses can nowadays do is to keep well out of range of the enemy's fire positions; when on the move they must either make considerable detours, or else—if they have to cross the hostile fire zone—increase their pace in a way that must tell on their horses. If they attack, the charge has to be commenced many hundred yards from the objective; and even when they are moving at their highest speed a hail of

bullets will thin their ranks, for—as mentioned above—modern firearms allow of a rapid, well-aimed fire, and there is no smoke to obscure the battlefield. Finally, any cavalry which succeeds in riding its exhausted horses into the enemy's ranks will fail to achieve anything, beside being rendered useless for subsequent enterprises.

It is only when the hostile infantry is either weaker in numbers, or else absolutely demoralized, that cavalry will still be able to reap successes with the *arme blanche*, *i.e.*, by charging. In the former case it is an open question whether the losses which cavalry will incur in attacking even a weak enemy are sufficient compensation for the success gained. A cavalry soldier is a more expensive item than an infantryman, and even if the infantry is completely annihilated, the losses of the victorious cavalry will always be higher than those of the enemy, provided that the latter, though weaker in numbers, is composed of good troops. The sacrifices entailed by charging infantry—however inferior in numbers to the cavalry—require, therefore, to be carefully weighed. Nevertheless, a cavalry charge is always justifiable, no matter what sacrifices are entailed, provided that it affords the best means of attaining the object in view.

Now modern cavalry should not be content with merely gathering the blood-stained laurels when the enemy's strength has been shaken by the infantry and artillery. The cavalry must be able to pluck the laurels while they are still green; in other words, it must be able to defeat the enemy unaided. But for this its present armament is inadequate. Neither the *arme blanche* nor the carbine are a fitting match for the infantry weapons. In fact, the continued development of firearms has so greatly diminished the fighting value of cavalry that it now requires the support of artillery or machine guns for any enterprises which offer a real prospect of success.

Now this allotment of artillery and machine guns to cavalry usually takes place at the expense of the troops in the main front of the battle. This sacrifice is especially costly to the attacker, for every gun withdrawn from the attack diminishes the possibility of breaking the resistance of the enemy's infantry, since the entire strength of the attacker's artillery will rarely be sufficient by itself to shake the whole front even of a numerically weaker opponent.

If one knew *for certain* that the batteries detached with the cavalry would contribute to shaking the enemy, one would gladly spare them, or even a larger number of guns. Operations of this sort with cavalry and artillery are, however, usually directed against the enemy's flanks and rear; these outflanking manœuvres are doubtful enterprises, depending largely on the ground and the action of the enemy. Thus it happens that the guns allotted to the cavalry are sacrificed for a remote chance, when they could have been made use of for a definite purpose on the field of battle. This does not apply to machine guns, which can be more easily spared by the attacker, because their

fire cannot reach the enemy's reserves, while they are only of use against visible targets, and are bound to expose themselves to the direct fire of the enemy.

For the defender both weapons are of equal value. He requires his guns to weaken the attacker's artillery—which is usually the stronger—so that the enemy may have as few guns as possible available at the end of the artillery duel, to shake his infantry. The defender will not, therefore, willingly detach guns with his cavalry; nor can he easily spare machine guns, which offer an excellent means of strengthening his flanks and the weak points in his front.

The experiment has already been made of attaching infantry cyclists to cavalry so as to increase its fighting strength. This plan was found to be impracticable because the cyclists could not follow the cavalry everywhere. In the French manœuvres this year (1909) infantry were even attached to the cavalry, a striking proof how little reliance can be placed on cavalry unassisted by any other arm. Heavily laden infantry were thus expected at the end of a long day's march to assist the action of the less severely tried cavalry.

In order to compensate for the diminution of fighting power which the cavalry has suffered by the development of the infantry rifle, the carbine has been greatly improved, and the new pattern is an efficient weapon. Still even with this weapon—which is excellent in itself—the fighting power of cavalry cannot be considered satisfactory. For when acting on the offensive against infantry—whose destruction is after all the principal object of the battle—the cavalry can only expect to achieve anything with the carbine when it can open fire by surprise. How seldom will such opportunities occur!

The carbine can only come into play against artillery when the protection of this arm has been neglected. The latest pattern carbines are almost equal in capacity to the infantry rifle. Given equal conditions of tactical and musketry training, cavalry should, therefore, be able to fight infantry almost on even terms. But this is not enough. Even if the carbine were equal to the rifle I would still consider it an unsuitable weapon for cavalry.

In my opinion the cavalry should have a weapon superior both to the infantry rifle and the machine gun. Otherwise it will only become mounted infantry; and modern cavalry must be something more.

Such a cavalry rifle would need in the first place to have a longer range than the infantry rifle; it would, of course, be heavier than the rifle, which weighs some eight pounds; that would not matter, for—even if the cavalry rifle weighed two pounds more—it would still be lighter than the old needle rifle, which weighed eleven pounds. And yet that weapon used to be handled with ease, even when the soldier's movements were hampered by his knapsack. The cavalry soldier would feel the extra weight less than the infantry soldier, since the former is carried, together with his kit, by his horse; and when he dis-

mounts to fight he has only the weight of his rifle and ammunition; otherwise he is unencumbered. Hence the cavalry soldier goes into action fresher, and with greater freedom of action than the infantry soldier. Why then, with all this in his favour, should he not make full use of a firearm weighing some ten pounds?

If the cavalry had a firearm superior to the infantry rifle it would gain enormously in offensive power. Its fighting value would not be dependent on the artillery, etc., attached to it. It could be used in any part of the battlefield, and would be able to shake the enemy's infantry by its own unaided fire—an important consideration. Surely this is really the chief task for any arm! All arms are only means to an end on the battlefield, but the field of action of the artillery lies chiefly in the front of the main action, that of the cavalry on the flanks and rear of the enemy; and the cavalry would be able to reach this field of action all the quicker if it did not have a train of artillery and machine guns dragging behind it.

If the cavalry had a long range rifle it could shake the enemy's reserves by fire from a distance, without itself being exposed to the enemy's fire; or, if required, it could carry out a regular offensive attack, unaided, with a good prospect of success in the fire fight.

Again, in all cases where cavalry finds itself compelled to avoid a decision, *e.g.*, when opposed to stronger bodies of cavalry, when covering a retreat, etc., a long range rifle would be of far more use than the present carbine. This would be the case even against artillery. Cavalry would be a useful means for destroying machine guns, thanks to the long range of its rifle.

Finally, in winter, when snow, ice, and frozen soil restrict the action of cavalry, and render it incapable of reaching its field of action, *i.e.*, the flanks and rear of the enemy; when, with its present inadequate firearm, it can only be used on the defensive; when the endurance of the horses is weakened by want of good food and stabling, cavalry is—with its present armament—likely to become a drag on the offensive. No one is particularly anxious to have it. But if we were armed with a rifle superior to the infantry weapon it would be welcomed as a valuable acquisition by everybody, even in winter.

I must not omit to mention that an increased offensive power would be of great assistance when reconnoitring.

With a long range rifle cavalry would regain the power of independent and energetic action.

The cavalry spirit would not suffer by attaching greater importnce to the firearm than to the *arme blanche*, and as a matter of principle, it can make no difference with which arm the cavalry achieves its triumphs. It is only the result that matters.[1]

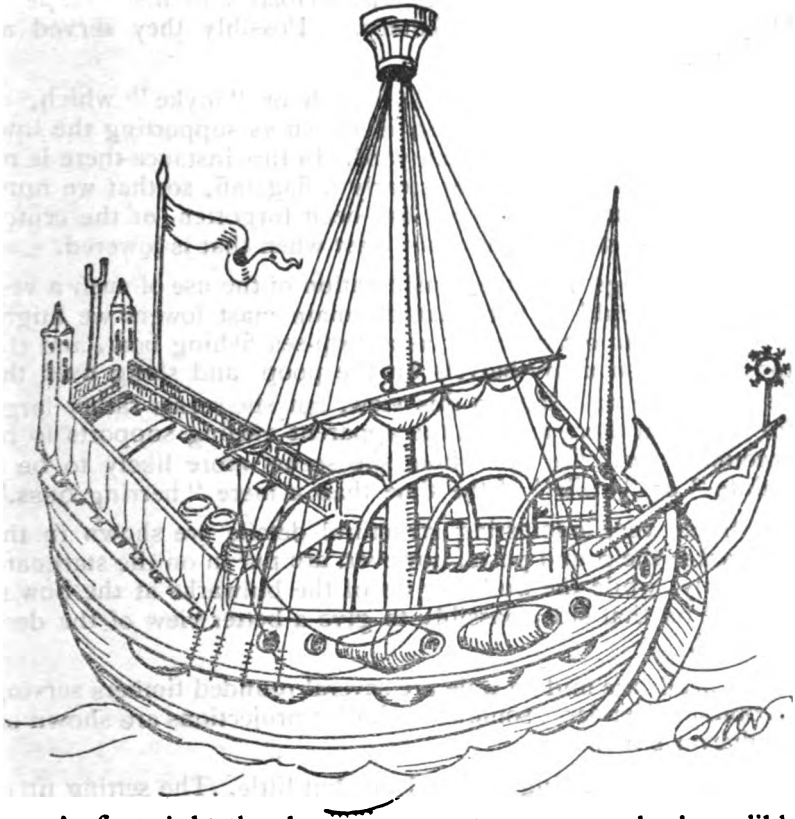
[1] The views of the author will probably evoke much opposition; nevertheless, they may be of interest to our readers.—*Editors, "Militär Wochenblatt."*

The following articles are, by agreement with the Society for Nautical Research, reproduced from the current number of "The Mariner's Mirror."

A FIFTEENTH CENTURY TRADER

By R. Morton Nance.

THE FACT that an artist, working during the last quarter of the fifteenth century, held ships to be in themselves subjects worthy of his skill, would give all his ship pictures an unusual interest. Such an artist was the Fleming who is known to us only by his signature "W.A.," and among his productions is the curious print of which a rough copy is here given. A copy of this print is in the nautical collection at South Kensington; but, as it is skied ina dark and inaccessible corner, and is not catalogued, it can hardly be said to be exhibited.



At first sight the ship seems so strange as to be incredible but on further examination one is disposed to take her as a serious attempt to show the distinctive features of some actual vessel.

Perhaps the first thing to strike us will be the absence of a forecastle, which allows us to see the bowsprit stepped into a chock on deck, beside a very strongly curving stem-head, much as we find these features in the hoys and other small craft of a later date. The bowsprit is decorated above with a foreshadowing of the spritsail topmast, here serving only to raise the hoop adorned with fleurs-de-lis, which may have been a mark to distinguish the service of the vessel, as were the armillary spheres, borne in the same place by East India ships of the following century. The fitting beneath the bowsprit, if not mere ornament, may have served as a lead for the fore-tacks, as did the comb beneath the beak in ships of a later date.

The poop is raised above the stern by stanchions, leaving a free passage for air and light between them, a feature more clearly shown in other contemporary drawings. Turrets such as thos e shown may be seen also in other fifteenth century ships, and notably in that painted by Benozzo Gozzoli in his "Rape of Helen," in the National Gallery. Possibly they served as lanterns.

Between these turrets is a crutch or "myke" which, in other prints by the same artist, is shown as supporting the lowered peak of the lateen mizzen yard. In this instance there is no mizzen, the little spar being clearly a flagstaff, so that we must take it that either the mizzen has been forgotten, or the crutch is intended to support the main mast when that is lowered.

This brings us to the consideration of the use of such a vessel. If we could be sure that the main mast lowers we might feel disposed to consider her as a deep-sea fishing boat, and the presence of so many barrels on the poop and slung over the side, would lend colour to this view, but she seems rather large for this, and there are still the apparent awning supports to be accounted for. On the whole she seems more likely to be a "flute" or "hulk" of the time than a mere "herring buss."

Some very interesting structural details are shown in the bulwarks; the round ports, however, are put in on the starboard side only, while the building up of the bulwarks at the bow is left out on that side, possibly to give a better view of the deck forward.

Beneath the middle wale are several rounded timbers serving no doubt as fenders; somewhat similar projections are shown on mediæval seals.

From the rigging we can learn but little. The setting up of the shrouds is difficult to understand, and although things are not glaringly wrong in the rig all is sketchy. This is the more remarkable, inasmuch as the plate that "W.A." has left us of a "Kraek" or carrack is the most complete and convincing record

of the rigging of his time to be found. In other respects also this carrack is very different, being engraved probably, from a drawing by a different hand from that responsible for the present print.

It is to be hoped that it will prove possible to give reproductions of all these designs in some future number, but meanwhile those whose interest is aroused in this nameless Flemish artist will find the print here illustrated framed and hung on the wall in the ship model department of the Victoria and Albert Museum. Another may be seen in the print-room at the British Museum, and two more are reproduced, from originals in the Bibliothéque Nationale at Paris, by De la Ronciere in his "Histore de la Marine Française." It would be interesting to know of any other existing work of this old-time ship lover.

DECAEN AND LINOIS.

By JOHN LEYLAND.

ARCHÆOLOGY, being the handmaid of History, may reasonably take account of minor circumstances which illustrate the flow of the historical stream. From this point of view the present article is written. Readers of naval history are aware of the unsatisfactory relations that existed between Rooke and Marlborough, Byng and Blakeney, Vernon and Wentworth, and other naval and military commanders, and they know how fruitful of good results was the better understanding of Boscawen with Amherst and Wolfe, and of St. Vincent with Monckton and Grey. Here it is intended to throw some light upon the relations between the French naval and military services in the time of the First Consul, by describing certain incidents arising from the passage of General Decaen to Pondicherry and the Ile de France in 1803.

In the previous year, when Decaen was an inspecting general of infantry, he proceeded to Toulon, where he had a heated discussion with Rear-Admiral Emmeriau, on the subject of the arrogant attitude which, he said, naval officers adopted in their dealings with officers of the army. On this subject he communicated with the Minister of War, and being dissatisfied with the results of a decision arrived at between the latter and Decrès, Minister of Marine, he reserved to himself the opportunity of discussing the matter with the First Consul on returning to Paris. He appears to have been refused admission to the arsenal at Toulon, and Decrès, who received him very coldly, said he had not presented himself in uniform. This he had denied, declaring that it was not his custom to lie. The treaty of Amiens had been signed, and Decaen was appointed Captain-General of the French establishments in India, and was directed to proceed with an expeditionary force to Pondicherry, to take over the possessions which were to be given up by the British under the terms of the Treaty. Decaen's own account of the proceedings will be found set forth in detail in the second volume of Lieut.-Colonel Ernest Picard's "Mémoires et Journaux du Général Decaen" (Plon-Nourrit, 1911).

The expedition was to consist of the *Marengo*, 74, bearing the flag of Rear-Admiral Linois, the frigates *Belle Poule*, *Atalante*, and *Sémillante*, with the flûte *Nécessité*, and some transports, but Decrès substituted for the flûte a cramped merchantman named the *Côte-d'Or*. This circumstance led to an altercation with the Minister, and an appeal to Bonaparte. The troops, with functionaries, women, children, and others, ga a total of 1,400 persons, but a battalion of 600 blacks and mul os was added, to be formed at Brest out of a body of some 1,500

sent by Richepanse from Guadeloupe. When Decaen met Linois at Brest, antipathy, and even hostility, was soon revealed between the two officers. We know from Colonel Picard's book what the General thought of the Admiral, but not what the Admiral thought of the General. Decrès had indicated a niggardly course of action to Linois. He was not to allow to Decaen the accommodation which had been provided for other captains-general, and especially to Leclerc. Too much money had been expended in luxury. This arrangement profoundly dissatisfied the General, who had with him his wife and one of her sisters, besides a brother and brother-in-law. He was obliged to buy at Brest bedding, furniture, linen, and table requisites and utensils.

At a meeting at the naval prefecture, Decaen told Caffarelli, the prefect, that rather than occupy the unworthy accommodation offered in the *Marengo*, he would go with his family on board the despised *Côte-d'Or*. Linois, who was present, said the regulations provided that in a flagship, the captain must give up his own cabin, which was the first on the starboard side, and must accupy the first cabin on the larboard side, giving the place of honour to the Admiral. To which Decaen replied that, as he had himself some pretension to the most important position on board, they could not well contest his right to be second. "However, I have decided," he said, "to embark in the *Côte d'Or*, and leave you to the plenitude of your regulations and your vessel!" This proposal horrified Caffarelli, who said it could not possibly be permitted, and it was finally decided that the General should have the Captain's cabin on the larboard, and such other cabins as he required on the same side, and as to the great cabin, if he was not prepared to share it with the Admiral, a partition could be placed down the middle. This latter arrangement was evidently not carried out.

Finally, the squadron put to sea on the 5th March, 1803, in a lively breeze, and Decaen says that most of the naval officers, and the greater part of the crew, were sea-sick, and that Linois and Captain Larue could not leave their beds for twenty-four hours. Decaen curiously attributes his own immunity to the care he bestowed on his wife, his lively occupation of fixing in their places things that were liable to roll about, and the fact that he frequently went on deck to see what was going forward. He derides Linois as "our *chef de pension*," who provided a miserable table through extreme avarice, though he had received a considerable allowance. A thin little Breton cow and some infirm poultry had not survived their first experience of the sea, to which circumstance the Admiral attributed the famine that stared them in the face from the beginning. It gave Linois pleasure to accustom his guests to salt beef and pork, beans, and haricots, and almost to the food of the crew. He consoled them with the thought that plentiful provisions would be pro-

curable at the Cape of Good Hope. His wine was of poor quality. He personally supervised the arrangement of the table, setting out plates and chairs, and re-arranging them several times, and finally gave the carpenter instructions to make a table providing space for 17 persons only. Decaen's brother and brother-in-law were excluded from this first table because they were not superior officers.

Arrived at Simon's Bay Linois found provisions too dear, but he provided a few radishes and a couple of eggs for each of his guests. According to Decaen the *Marengo* nearly ran ashore owing to the ignorance of Linois and his officers. At this place there was an embittered altercation between the Admiral and General, because the former allowed seamen to land, while he denied the privilege to soldiers, of whom some had been guilty of disorderly conduct on arrival. Ultimately he gave way. Captain Larue appears to have been a cautious seaman, afraid of the consequence for his masts and yards of carrying too much sail, and on this subject Decaen ridicules him, saying he was laughed at both by sailors and soldiers. Linois announced that he had made great purchases of provisions, but they appeared to consist merely of some poultry in cages, a few bushels of onions, and some mushrooms which hung in a net outside his stern-walk. Linois had orders not to stop at the Ile de France, and he would not exercise any discretionary power, whereby he might have taken in provisions, though his passengers besought him to do so.

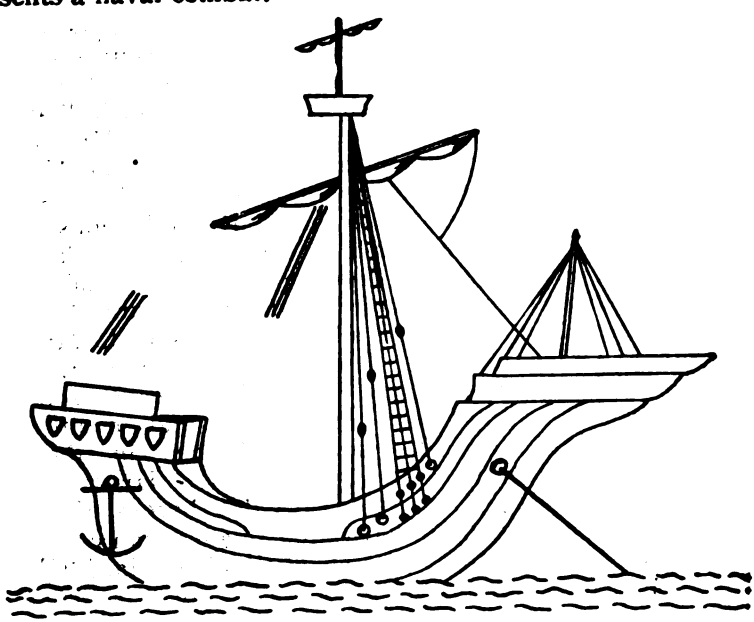
The squadron had separated during the passage, but the *Marengo* arrived at Pondicherry on the 11th July, there to find the squadron of Commodore Rainier, and the *Belle Poule* lying between two British vessels. War had already broken out afresh, but news of the rupture of the peace of Amiens had not reached the East. Everything, however, tended to show that hostilities were imminent, and almost immediately the *Bélier* brig arrived with despatches from the first Consul, written in March, reporting a great British armament to be in preparation, and ordering Linois to proceed to the Ile de France.

The object of this article is not to recount the course of events then or subsequently. The sole purpose has been to illustrate the relations which existed between French soldiers and sailors at the time, and some of the conditions of life in the French ships. Not everything was unsatisfactory. Decaen himself, speaks of a comedy enacted on board, of amusements in the fine weather, and of music nightly in the great cabin of the *Marengo* during the long passage. But of hearty co-operation between himself and Linois there was no trace, and their personal differences and quarrels were not without influence upon the greater events of the time.

MEDIÆVAL SHIPS IN PAINTED GLASS AND ON SEALS.
No. II.

By H. H. Brindley.

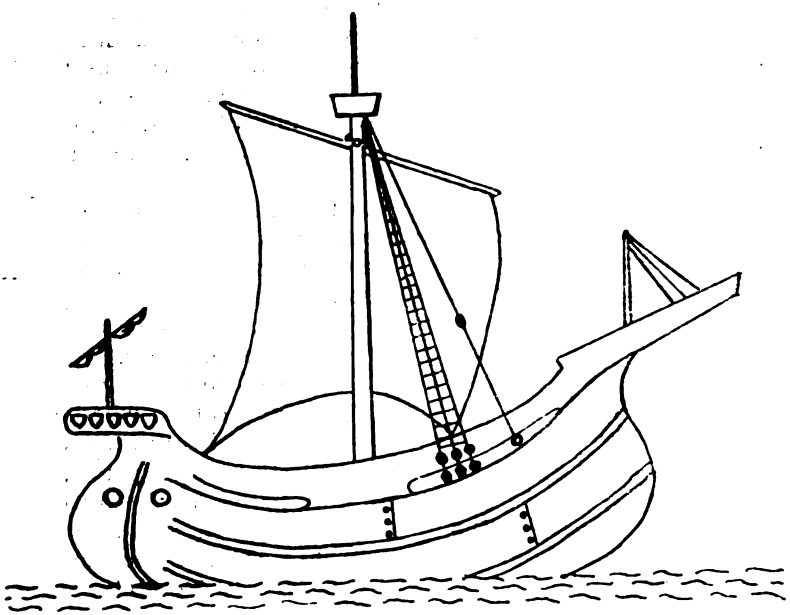
VILLEQUIER is a large village on the east bank of the Seine, two and a half miles below Caudebec-en-Caux. Like Vatteville opposite to it, and Jumièges several miles further up the river, in the sixteenth and seventeenth centuries ships sailed from its quays in the Newfoundland trade, and it furnished seamen for the naval wars of those times. Several of the windows of the parish church, which is dedicated to St. Martin, are beautiful examples of glass painting. Portions of the church date from the twelfth century, while most of it was completed early in the sixteenth, at which time the glass of both aisles was also put in. Remembering the maritime importance of Villequier in that age, it is not surprising to see pictures of ships in some of the windows. The window depicting scenes from the life of St. Jean Baptiste contains two vessels, and another window, an *ex voto* given by mariners of the families Busquet, Renault, and Breton, represents a naval combat.



The St. Jean Baptiste window is in the south aisle, second from the choir. The dedication bears the date 1518. The two ships are in the upper part of the window. They are painted with some care in yellow, which was the colour usually adopted for ships on glass of the time. On the poop of each stands a figure in bishop's mitre and robes, which is gigantic compared with the vessel, a not uncommon mode of representing the patron saint. One of the ships, painted ten years later, in the neighbouring church of Vatteville similarly carries a bishop, probably St. Clement, patron of Vatteville mariners, of vast stature on her poop. One of the Villequier ships lies at anchor with furled sails, while the other is under way. The Abbé Cochet ("Les Eglises de l'Arrondissement d' Yvetot," éd. 2, Paris, 1853, i. p. 118) identifies the two saints as St. Nicholas and St. Clement, patrons of seamen, the former being on board the anchored ship. The general features of the two vessels are illustrated by the sketches, in which the two saints and the members of the crews in the pictures have been omitted. In both cases the rigging is shown as in the windows, no portion of it has been extended where it might be supposed to be seen by the omission of the figures. Both vessels are three-masted, though in the anchored ship the saint regarded as St. Nicholas obscures the mizzen mast, which is suggested only by portions of three shrouds. The hulls resemble those we see in other pictures and certain seals of the period. That of the vessel under way, on whose deck St. Clement stands, is in form and general proportions probably a more truthful representation of the hull of the time than the other, in which the shortness, extreme sheer, fore-stage and poop remind us of the conventional ship of many seals. It is uncertain what such craft should be called. In general features, and in the relative sizes of the masts they much resemble a Flemish "barge reproduced by M. de la Roncière ("Histoire de la Marine Francaise," ii. 1900, p. 244), from an engraving by the Master of unknown name who worked about 1485, and who has left us six other remarkable pictures of ships. Reproductions of these will be found in the monograph on this Master's work by Max Lehrs (Leipzig, 1895). The drawings are very valuable to the nautical archaeologist in their detail and accuracy; but the authority for calling the vessel a barge is not stated. Mr. Julian Corbett ("Drake and the Tudor Navy," 1898, i. p. 18) considers the term "barge" usually meant something larger than a ship's boat or tender, and mentions 60 to 80 tons as the usual size of barges in the early part of the fifteenth century. Nicolas ("History of the Royal Navy," 1847, ii. p. 159), says that barges of the later fourteenth century seem to have been smaller than cogs, which were probably the first-class vessels of the time. Jal ("Glossaire Nautique," 1848), suggests a considerable range of tonnage for

the "barge." What a barge really was, both as regards size and rig, is still obscure. Perhaps the shields which adorn the poops of the Villequier ships suggest that the artist had in his mind a larger vessel than what was known as a barge.

Beside St. Clement, the only figure in his ship is a man on the look-out in the top, but in the ship of St. Nicholas three small men are in a row on the poop, apparently receiving his benediction, while at the break of the poop is a much taller sailor giving orders. The chief points of interest in the ships are, I think, as follow. In both the uppermost "waling" or "rubbing streak" (only one waling is seen in St. Nicholas' ship) is not continued along the waist. It is usually complete in pictures of the time. The shrouds are made fast to the fore part of the waling, as they are, though without dead-eyes, in the Flemish "barge" mentioned above. Possibly at this time a true "chain-wale" was not employed in small craft, if, indeed, it was at all a common fitting, when the shrouds had only just come to be set up outboard. In the very detailed and careful



engraving of a Flemish "carrack," evidently a much larger vessel than the "barge," reproduced by M. de la Roncière (*op. cit.* p. 220) from another picture by the Master mentioned above, the dead eyes of the ten aftermost shrouds are made fast to a wide chain-wale just above the uppermost waing, while the four shrouds forward of these have their dead eyes on the waling itself. Early methods of making the

shrouds fast have been discussed briefly by Mr. Alan Moore and myself in "Proceedings of the Cambridge Antiquarian Society," xiv. No. 1, 1909, p. 87. In both ships a rope with a block on it, suggesting that a purchase was in the artist's mind, leads from under the top to a hole above or in the uppermost waling, and in St. Nicholas' ship two similar ropes lead down abaft the shrouds, also through holes in the waling. Perhaps the artist had halliards in his mind, and drew them outboard in some confusion with shrouds; but more probably the "tackles," the exact use of which is undiscovered, were intended. The blocks are but a slight guide as to what ropes were intended. It is not uncommon to find what seem to be blocks on single ropes in pictures by mediæval artists, though now and again they evidently belong to purchase tackles drawn incompletely.

In St. Clement's ship the topmast is stepped exactly above the lower mast, but distinctly abaft it in the other. In view of the obvious imperfections of the pictures from a technical standpoint we cannot accept the stepping of the topmasts without reserve; but, as there is considerable doubt as to whether the practice of the early sixteenth century was to step the topmasts before or abaft the lower masts, the Villequier ships are of some assistance to us. A topsail is carried only in St. Nicholas' ship; topsails were common by 1518 in ships of fair size.

It is common knowledge that most of the ship pictures and seals to the close of the fifteenth century are the work of artists largely ignorant of shipping. Essential and, to an untechnical but intelligent observer, conspicuous portions of the rigging, are frequently omitted; but an examination of a series of early pictures shows that three different portions of the rigging are represented with great constancy. Two of these are the forestay and the braces. They are conspicuous ropes, whether the ship is at anchor or under way, so it is natural that they should be inserted. The forestay especially usually has full justice, being sometimes as thick as the mast, and pains are bestowed on its strands. Curiously the other fitment is a small one, the parrell. Somehow this seems to have caught the fancy of artists, and is usually drawn with care. In respect of these three portions of gear the ships of St. Clement and St. Nicholas at Villequier are exceptional, as will be seen from the sketches. We might wonder a little that these ships were allowed to stand as they are in so maritime a place as Villequier was in the fifteenth century, but when we remember other *ex votos* of mariners and the seals of admirals of the age, it is evident that, unfortunately for the nautical archaeologist, the criticisms which seaman would apply to actual vessels were remitted in the case of pictures.

NAVAL NOTES.

Home. The following are the principal appointments which have been made:—

Admirals—Sir A. W. Moore, K.C.B., K.C.V.O., C.M.G., to be Commander-in-Chief at Portsmouth; Sir W H. May, G.C.V.O., K.C.B., to be Commander-in-Chief at Plymouth. Vice-Admirals.—Sir F. C. B. Bridgeman, K.C.B., K.C.V.O., to be Commander-in-Chief Home Fleet; Sir G. L. C. Egerton, K.C.B., to be Second Sea Lord; Sir F. W. Fisher, K.C.V.O., to be President of the Royal Naval College, Greenwich. Captains—W. O. Boothby, M.V.O., to *Neptune* as Captain of the Fleet and Commodore 1st Class. C. R. de C. Foot to *Irresistible;* J. M. de Robeck to *Impregnable* and as Inspecting Captain of Boys' Training Establishments; G. F. Charlton to Admiralty and as Assist.-Director of Torpedoes; C. Nicholson to *Russell;* J. D. Dick to *Highflyer;* as flag-captain; A. R. Hulbert to *Hyacinth;* R. P. Purefoy, M.V.O., to *Invincible*; M. E. Kerr, M.V.O., as Assistant to Admiral Commanding Reserves. Commanders.—E. C. Carver to *Torch;* H. F. Talbot to *Attentive.*

Admiral Sir A. W. Moore, K.C.B., K.C.V.O., C.M.G., succeeds to the Command at Portsmouth, rendered vacant by the death of the late Admiral the Hon. Sir A. Curzon Howe; Admiral Sir W. H. May, G.C.V.O., K.C.B., vacates the Command of the Home Fleet on the 25th inst., and will succeed Admiral Sir W. H. Fawkes, K.C.B., K.C.V.O, in command at Plymouth next month; he is succeeded in Command of the Home Fleet by Vice-Admiral Sir F. C. B. Bridgeman, K.C.B., K.C.V.O., who will hoist his flag upon the new first-class battleship *Neptune;* Vice Admiral Sir F. Bridgeman was selected to command the Home Fleet, when it was first organised, hoisting his flag in the *Dreadnought* when that ship was first commissioned. Vice-Admiral Sir K. Le C. Egerton becomes Second Sea Lord in Sir F. Bridgeman's place and Vice-Admiral Sir F. W. Fisher, K.C.V.O., succeeds Admiral Sir G. Durnford, K.C.B., D.S.O., as President of the Naval College at Greenwich.

Rear-Admiral C. Burney hoisted his flag on board the first-class armoured cruiser *Good Hope* on the 16th ult., in command of the Fifth Cruiser Squadron, in succession to Rear-Admiral F. T. Hamilton, C.V.O., whose flag was struck on board the *Drake* the same evening, which ship is now relieved as flagship of the Squadron by her sister-ship the *Good Hope.* Rear-Admiral L. Bayly, C.V.O., hoisted his flag at Chatham on the 24th inst. on board the *Indomitable,* in command of the First Cruiser Squadron in succession to Rear-Admiral the Hon. S. C. J. Colville, C.V.O., C.B.

The second-class cruiser *Highflyer* completed to full complement at Sheerness on the 21st ult., and left Sheerness on the 26th ult. for Bombay, where she will relieve the *Hyacinth* as flagship of Rear-Admiral Sir E. F. Slade, K.C.I.E., M.V.O., Commander-in-Chief in the East Indies, which ship will return to England on the transfer of the flag. The second-class cruiser *Diana* left Plymouth on her return to the Mediterranean on the 10th ult., escorting, with the *Bonaventure,* the

Home.

three Submarines C36., C37., and C38 to Malta en route to China. The three submarines in question arrived safely with their escort at Malta on the 1st inst., and left again on the 7th inst. for Suez in tow of the *Diana, Pelorus and Barham;* from Suez the submarines will be in tow of the *Highflyer, Edgar and Pelorus.*

The new first-class armoured cruiser *Indefatigable* was commissioned at Devonport on the 24th inst., for service in the First Cruiser Squadron, which is attached to the First Division of the Home Fleet. Her joining the squadron will make it an homogeneous one of four vessels of this type, for although in many respects a better and more powerful ship than the three *Indomitables*, she is practically of the same class. The dimensions of the *Indefatigable* and the *Indomitable* and her two sisters, as compared with the new German cruiser *Von der Tann*, are as follows:—

	Indefatigable.	*Indomitable.*	*Von der Tann.*
Length ...	555ft. 0in.	530ft. 0in.	560ft
Beam ...	80ft. 0in.	78ft. 6in.	85ft.
Draught ...	26ft. 6in.	26ft. 0in.	27ft.
Displacement	18,750 tons.	17,250 tons.	19,000 tons.
I.H.P. ...	43,000	41,000	44,000 I.S.P.
Speed (Legend)	25 knots.	25 knots	27 knots.
Guns ...	eight 12in (50 cal.) sixteen 4in	eight 12in. (45 cal.) sixteen 4in.	eight 11in,(45 cal.) ten 5·9 in. sixteen 3·4 inch.
Launched ...	1907.	1909.	1909.
Cost ...	£1,547,426	£1,761,080	not known.

Doubt attaches to some of the details in regard to the *Von der Tann*, as they are not official. The broadside fire of the *Indefatigable* from the heavy guns is 6,800 lbs., as compared with 6,084 of the German ship. In speed there is probably not much difference; the *Von der Tann* was built as a 26-knot ship, but it is claimed for her that on a six hours' run she averaged 27.4 knots, with a maximum of 28 knots. The *Indefatigable* and the three *Indomitables* were built as 25-knot ships but the three older ships all much exceeded this speed, and like the *Von der Tann* have all reached 28 knots. In the case of the *Indefatigable* her trials were carried out in very rough weather, but even under unfavourable circumstances on her 30 hours' trial she made an average of 24 knots, and when doing her best at three-quarters power she reached 27 knots. At the full power 6-hours' trial, in spite of its blowing half a gale and a heavy sea running, she averaged over 26 knots; there is, therefore, every reason to believe that under more favourable circumstances she will easily reach or exceed 28 knots.

The increased length and displacement of the *Indefatigable* have been devoted, not to adding to the armament, but to increasing the arcs through which the guns can be trained. In all of these ships the turrets are placed one forward and one aft on the centre line, the remaining two being echeloned amidships. In the three earlier ships the midships turrets are so close together that the angle of fire of the offside pair of heavy guns is relatively small, so small, in fact, that for a considerable part of the 90deg. which represents a half right-angle before and abaft the beam these ships would in effect be able to bring only six of their eight 12-in. guns to bear. This objection is in great measure removed in the new ship, whose offside turret, thanks to her greater length, has a considerably wider effective angle of training.

On paper the power of the *Indefatigable* is no greater than that of her predecessors of the cruiser-battleship type—that is to say, she has the same number of guns in her battery, which comprises eight 12-inch and sixteen 4-inch. The 12-inch guns, however, are of the new 50-calibre type, having a muzzle energy of 47,700 foot-tons.

The new ship holds the record for cheapness of construction. Hitherto this position has been held by the contract-built battleship *Vanguard*, which cost £1,607,781 for her 19,250 tons, or a rate of £83.52 per ton. The *Vanguard's* speed is only 21 knots, and the fact that the 27-knot *Indefatigable* has been built for £1,547,426—£82.53 for each of her 18,750 tons,—is a remarkable testimony to the efficiency of the dockyard at Devonport, where she was built.

The *Indefatigable* is the last of the large armoured cruisers to be armed with 12-inch guns. The Colonial cruisers *Australia* and *New Zealand* will have eight of these guns, but the *Lion* and *Princess Royal*, now under construction under the 1909-10 Estimates, will carry the new 13.5-inch guns.

Result of Gunlayers' Test, 1910.—The Admiralty issued last month the result of the test of Gunlayers with heavy guns in the Fleet during 1910 (Admiralty, Gunnery, Branch, No. 484).

Their Lordships in a note to the document express their satisfaction that the standard of shooting which was attained in 1909 has been maintained.

The abstract of the firing for 1910, which appears on the second page of the Return, shows the China Squadron for the fourth year running first in order of merit, with the *Bedford* as the best ship of the squadron. The second place in the list is taken by the Home Fleet, Second Division and Second Cruiser Squadron, with the first-class armoured cruiser *Natal* as the best ship, with the remarkable score of 90.48 points to her credit. The third place in order of merit is taken by the Cape of Good Hope Squadron, with the flagship *Hermes* as best ship. The other fleets or squadrons stand as follows:—Home Fleet best ship. The other fleets or squadrons stand as follows:—Home Fleet, Cruiser Squadron; Fourth Cruiser Squadron; Atlantic Fleet and Fifth Cruiser Squadron; East India Squadron; Mediterranean Fleet and Sixth Cruiser Squadron, and Australian Squadron.

In the table which gives the firing by the different descriptions of guns the *Temeraire* stands first in order of merit with the 12-inch gun; the *Lord Nelson* comes next, and the *Africa* third; the first two of these ships belong to the Home Fleet, First Division, and the third to the Second Division of the same Fleet. The table, which gives the Fleet classified in order of merit of ships competing, places the *Natal* for the second year running first ship, with a score of 40.48 a slight increase over last year, when she headed the list with a score of 89.44; the *Temeraire* second with a score of 81.91; and the Hermes third with 75.66, the *Britannia* following close with 74.38. The best shots in these ships in the order named being Petty Officers 1st Class A. Murrin and J. Scott, Bombardier, R.M.A., H. Oliver and 1st Class Petty Officer F. Lacy. Altogether 117 ships took part in the test.

The award of the medal will be promulgated in due course.

—	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Number of ships that fired ...	127	139	134	108	100	89	121	117	116	117
Number of guns or turrets ...	1,137	1,241	1,296	1,171	1,096	1,073	1,365	1,277	1,312	1,318
Number of hits ... 1906 target	3,562	4,789	5,996	5,748	4,374	5,733	7,547			
Number of hits ... 1907 „							4,073	4,826	5,108	3,250
Number of hits ... Ricochet										436
Number of misses 1906 target	6,244	6,863	7,028	7,664	8,357	2,328	1,991			
Number of misses 1907 „							5,465	4,183	4,330	3,523
Excess of hits over misses 1906 „	Nil	N i	Nil	Nil	1,017	3,405	5,556			
Excess of hits over misses 1907 „							Nil	643	778	703
Excess of misses over hits 1906 „	2,682	2,074	1,032	1,916	Nil	Nil	Nil			
Excess of misses over hits 1907 „							1,392	Nil	Nil	Nil
Percentage of hits to rounds fired 1906 „	36·3	41·1	46·04	42·86	56·58	71·12	79·13			
Percentage of hits to rounds fired 1907 „							42·70	53·57	54·12	51·85 *†
Hits per gun per minute:—										
12-inch and 10-inch ... 1906 target	·33	·38	·53	·47	·58	·81	·61			
12-inch and 10-inch ... 1907 „							·40	·56	·63	·70*
9·2-inch ... 1906 „	·31	·35	·70	·73	1·40	2·84	3·25			
9·2-inch ... 1907 „							2·01	2·20	1·94	2·01*
7·5-inch ... 1906 „							3·48			
7·5-inch ... 1907 „							1·58	2·51	2·47	2·61*
6-inch B.L. and Q.F. ... 1906 „	1·81	2·41	2·63	2·63	4·14	5·68	5·93			
6-inch B.L. and Q.F. ... 1907 „							3·32	3·98	4·03	3·69*
4·7-inch Q.F. and 4-inch B.L. and Q.F. 1906 „	1·93	2·02	2·47	2·28	3·73	4·96	5·73			
4·7-inch Q.F. and 4-inch B.L. and Q.F. 1907 „							2·38	3·32	4·06	3·84*
Number of ships from whom no returns were received.	47	19	30	43	Nil	Nil	3	8	10	12

* Ricochet hits counting half a hit. Not directly comparable with previous years.
† The figures for 1910, counting ricochet hits as a whole hit, as in previous years, would be 54·86

Abstract, 1909.

Order of Merit.	Fleet or Squadron.	No. of Ships.	No. of Men Firing	Points per Gun or Turret.	First Ship in Fleet.	Scores
1	China	6	70	56·628	*Bedford* ...	67·81
2	Home Fleet, Second Division and Second Cruiser Squadron	16	226	47·567	*NATAL* ...	90·48
3	Cape of Good Hope	3	29	46·930	*Hermes*... ...	75·66
4	Home Fleet, Third Division and Cruisers	27	304	46·195	*Mars* ...	72·62
5	Home Fleet, First Division and First Cruiser Squadron.	15	156	45·798	*Temeraire* ...	81·91
6	Fourth Cruiser Squadron	3	24	41·888	*Brilliant* ...	52·52
7	Atlantic Fleet and Fifth Cruiser Squadron.	11	167	41·303	*Drake* ...	67·27
8	East Indies	1	11	40·09	*Hyacinth* ...	40·09
9	Mediterranean Fleet and Sixth Cruiser Squadron.	13	170	37·641	*Exmouth* ...	51·57
10	Australia	8	82	35·455	*Powerful* ...	55·65
11	Special Service Tenders	14	79	29·650	*Cornwall* ...	71·42
	Total, 1910 Test	117	1,318	42·649		
	Total, 1909 Test	116	1,312	46·098		
	Difference	+1	+6	−3·449		

Note.—The 4-inch guns of *Bellerophon* and *Invincible* classes are not included in this abstract

Home.

Beri-Beri in the "Sphinx."—The following Remarks as to the outbreak of Beri-Beri in the *Sphinx*, by Staff-Surgeon A. J. Laurie, with a suggestion as to a possible cause, may be of interest:—

While up the Gulf, surrounded by cases of beri-beri, and doing my best to find a possible explanation of its causation, it occurred to me from one or two symptoms I had noticed in a good proportion of my cases, that possibly the disease was due to some form of gastric irritant poison. I then proceeded to carefully examine the rice, fish, ghee, &c., constituting the daily diet of the lascars. There was nothing noticeably wrong with the rice. It certainly did not smell mouldy, and in appearance was quite good. Being able to speak Hindustani almost as well as I can English, the lascars are quite open and outspoken to me when I happen to ask them anything. They, I am sure, would not hesitate to tell me if anything was wrong about their diet. On several occasions they brought me their dried fish, complaining that it was mouldy. When this was found to be the case I condemned it. Also they complained of their ghee. The rice, however, was never complained of, but to make sure that it was in every way satisfactory to the lascars I spoke to the head sahrangs. They said it was perfectly good. Eating the quantities they do, I take it, they must know a great deal more about the appearance, taste, &c., of a good rice than we English are likely to from a first or second examination, though we may have read and digested many leading articles written by medical men on the appearance of good cured and uncured rice. Theory is essential, no doubt, but a little experience (and practical at that) is worth a ton of theory.

I therefore have suggested that the men should be allowed to select a good cured grain themselves, and, if passed by the authorities, this one should be supplied.

Nothing being found wrong so far as the rations were concerned, I next proceeded to go into the question of the cooking utensils. These articles, as is well known, are all made of copper and are then "tinned" or "calayed" (native term) inside. Re-tinning is carried out at least monthly ashore, the poorest being particular about this. To my astonishment, I found this re-tinning was never carried out in our ships up the Gulf. That is to say, for from 8 to 10 months each year this important point has always been overlooked. It then occurred to me that possibly this may have something to do with our beri-beri. Being such a revolutionary idea I have not been very eager to bring it forward, but since my return to Bombay, I see that Lieut.-Colonel McGill, at the Indian Medical Congress last winter, showed that what was undoubtedly an epidemic of beri-beri he had charge of, was in his opinion, caused by excess of beer (the epidemic occurred in a British regiment in India). Perhaps it was alcoholic neuritis, but the symptoms were those of beri-beri. If it was the beer, no doubt it was due to chronic arsenical poisoning, the arsenic entering the beer in the cheap sugar used in its manufacture. Lead again is a well-known cause of neuritis, and both of these cause gastric symptoms, the former with diarrhœa and the latter with constipation. Arsenic causes ulceration of mouth and arms. Lead affects the gums—blue line. As Lieut.-Colonel McGill, R.A.M.C., I find has already suggested arsenic as a cause, I feel justified in bringing forward copper, which I hope to show is not at all unworthy of consideration.

Home.

Reasons why chronic copper poisoning may be a cause of beri-beri:—

1. Source of copper. The dishes used being of copper and not retinned for 8 to 10 months on end, all the dishes were found to be devoid of any tin inside. The natives of India find that if this tinning is allowed to wear off they suffer from gastritis and diarrhœa.

2. How taken up into the food. It has been found that certain foods and condiments are more liable to act on copper cooking utensils than others. Fats easily decompose and their acids and also vegetable acids contained in some fruits quickly attack copper ("Forensic Medicine and Toxicology," J. Dixon Mann). Applying this to our lascar's case, I saw that everything was present to favour copper poisoning as a possible cause of our troubles. If there is one thing the Indian native loves in his food it is fat—everything he eats is greasy. Then again the ghee (clarified butter) is often rancid, and up the Gulf it is not easy to get good ghee at all times. Some that was being used created such an odour that those officers using the bridge had to complain and eventually my attention was drawn to this; the article was surveyed and condemned.

3. Symptoms of chronic copper poisoning. These will be found to be not at all unlike those of beri-beri. Epigastric pain and vomiting, diarrhœa, a greenish line along margin of gums, ulceration of some. This ulceration leads to extensive destruction of the gums, and the pus is of a greenish colour. I tested this pus for copper and obtained a faint copper reaction. It was, however, not well marked enough to satisfy me that copper was certainly present, only on comparison could one see a difference. An important sympton common to both conditions is neuritis. This may affect any nerve, and, therefore, the heart may be involved in copper cases, as in beri-beri. Further on a few notes on ulcerative gingivitis with increased pulse rate will be found; these I maintain are due to copper poisoning. Up to the present time gingivitis has not been described as a sign of beri-beri, but in the 16 cases I had on board it was present in seven and had been noted in two men previous to their coming sick with beri-beri. At Muscat I examined the gums of Captain Scott's servants. They all showed signs of old gingivitis, but no active disease was present. These men were now cooking all their food in aluminium dishes, which accounts for absence of active disease.

France. The following are the principal promotions and appointments which have been made:—Rear Admirals—F. P. Arago to Vice-Admiral; E. J. Perrin to be Director of the Superior Naval War-School; E. E. Nicol to command of Reserve Division of 1st Squadron, Capitaines de Vaisseau—E. E. Nicol to Rear-Admiral; A. A. Lefèvre to *Diderot;* J. V. Pradier to *Marceau;* F. G. Pigeon de Saint Pair to *Vérité;* M. H. Mercier de Lostende to *Suffren;* E. J. Aubry to *Gaulois*, Capitaines de Frégate—E. A. Vergos, J. P. Delage, C. L. Mornet, M. I. Grandclément to Capitaines de Vaisseau; P. Garnault to command of Madagascar Naval Division; D. M. de Champeaux La Boulaye to *Marigot* and command of the Senegal Naval Station—*Journal Official de la Republique Française.*

Vice-Admiral Caillard, on his retirement for age on the 12th ult., has been awarded the *Médaille Militaire.* He entered the Navy in 1860 and he has a total service of 48 years 5 months, out of which 26 years 10 months were spent at sea. His war services include Mexico and the Siege of Paris 1870-71. He commanded the Northern Squadron July 1903—

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September 1905, was Inspector General of the Fleet and President of the *Conseil Superieur de la Marine*, October 1909, and received the Grand Cross of the Legion of Honour, August, 1910.

Duties of the 2nd Commander in the new battleships.—A Ministerial decree has been issued modifying that of the 13th May last determining the duties of the 2nd Commander (Capitaine de Frégate) appointed to ships of 18,000 tons and upwards.

Under the orders of the Senior Commander he will have special charge of all guns, torpedoes and electrical fittings, and be responsible for drawing up the programmes of exercises and drills, superintending all practices, and submitting proposals to increase the fighting power of the ship.

Changes in Uniform.—Some change has been recently made in the uniform of the French bluejacket; the general effect will be that of making the uniform a little less showy (*plus sombre*), the blue collar is to be retained but will not be attached to the white frock as before, and a navy blue jersey is substituted for the familiar blue and white striped jersey hitherto worn, the jumper is a little longer and rather tighter, the trousers straighter and not so full; the cap retains the red pompon but is rigid in form.

Reorganization of the Light Divisions.—In accordance with a decision of the Minister of Marine, as soon as the first-class armoured cruisers *Edgar-Quinet* and *Waldeck-Rousseau* which are about to be commissioned, are ready for sea, the composition of the Light Divisions will be as follows:

Light Division of the 1st Squadron.

First-class Armoured Cruisers.—*Jules-Ferry, Victor Hugo* (to be relieved by the *Waldeck-Rosseau* and *Edgar-Quinet*), *Ernest-Renan, Léon-Gambetta.*

Light Division of the 2nd Squadron.

First-class Armoured Cruisers.—*Marseillaise, Gloire, Amiral-Aube, Condé.*

Formation of Reserve Divisions.—The Minister of Marine has decided to form at Brest and Toulon Reserve Divisions of ships of the 1st line.

In accordance with this new arrangement the Toulon Division will consist of the following vessels:

First-class Armoured Cruisers.—*Jules-Michelet, Victor-Hugo, Jules-Ferry.*

First-class Cruisers.—*Choteaurenault, Jurien-de-la-Gravière, Foudre.*

Third-class Cruisers.—*Casablanca, La Hire.*

The Division stationed at Brest will consist of:

Armoured Cruisers.—*Dupetit-Thouars, Amiral-Gueydon, Montcalm, Jeanne-d'Arc, Kléber.*

First-class Cruiser.—*Guichen.*

Third-class Cruiser.—*Cassini.*

These first-line reserve divisions will only include ships completely fit for service and ready to proceed to sea at the short notice prescribed by the regulations. Consequently the ships will only join the above-mentioned divisions after the necessary repairs in course of being carried out upon them have been completed. When attached to their divisions ordinary repairs will be effected by their own artificers, with the help of the repair-ship, recourse being had to the dockyard only when absolutely required. When such important repairs have to be undertaken, they must be authorised by the Minister of Marine, and the ship for the time being will be classed as unfit for service.

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The ships of these reserve divisions will have a normal reserve crew of officers and men, who will have to serve on board them for at least a year.

The reserve divisions will be under the orders of a Rear-Admiral, who will command them in case of mobilisation for war or for manœuvres. The Rear-Admirals commanding the reserve divisions at Toulon and Brest will report to the Commanders-in-Chief of the 1st and 2nd Squadrons, respectively, and they will be responsible for keeping their divisions in a state of efficiency and readiness for sea. Service in command of these divisions will not count as sea-service.—*La Vie Maritime.*

Second-Line Units.—The Minister of Marine has decided to distribute between the ports of Lorient and Rochefort all the second-line units as follows, with the exception of those specially attached to the port of Toulon:—

Rochefort.—Third-class Cruisers.—*Lavoisier*, on its return in the autumn from the Iceland fisheries protection duty; *D'Estrées*, on being relieved at Bizerta; *Forbin*, *Surcouf*, *Cosmao*. First-class Gunboat.—*Surprise*, detached from Toulon.

Lorient.—Second-class Cruisers.—*Du Chayla*, *Descartes*, *Cassard*, *Friant*, *D'Entrecasteaux*.

Toulon.—Armoured Cruisers.—*Amiral-Charner*, *Bruix*, *Latouche-Treville*, *Pothuau*. Transport-Avisos.—*Bien-Hoa*, *Vinh-Long*.

This new distribution will be carried out as rapidly as possible. The *Surcouf*, now at Lorient, will be commissioned immediately and proceed to Rochefort; the *Surprise* will be kept at Toulon for completion of repairs and will then be directed to Rochefort; the *Descartes*, which has been commissioned for trials after repairs at Toulon will on their completion proceed to Lorient; the *D'Entrecasteaux* similarly after completion of her repairs at Toulon will proceed to Lorient, as will also the *Cassard* from Cherbourg.

As regards the second-class cruisers *Isly* and *Alger*, at present lying at Lorient and Rochefort respectively, they will remain at those ports until a decision has been taken as to whether they shall be taken in hand for repair or be condemned as unfit for further service.

The ports of Rochefort, Lorient and Toulon will, from this time on, from the point of view of *Matériel* and Administration, be the centres of the second-line ships attached to them. These ships will be kept in a state ready for sea at the usual short notice, and will be in the normal reserve; the other vessels will be placed in the special reserve.—*La Vie Maritime.*

The New Battleships.—Sanction has been given for estimates to be prepared for two new battleships of the *Jean Bart* class. The *Temps* says if the proposed building programme is to be completed greater use must be made of private yards. In 1910 England launched 43 units of 133,025 tons, Germany 21 of 49,024 tons, the United States 13 of 30,287 tons, but France only 12 of 24,063 tons, which latter total is 13,000 tons less than the mean of the last ten years. On the other hand, while since January 1906 England has built only 35 per cent. of her new tonnage in Government yards and Germany and the United States but 20 per cent., France has built 54 per cent. of the total tonnage of her large ships in her

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dockyards, and more than 40 per cent. of her torpedo craft in the government arsenals, though as regards this latter class it is the custom in other countries to entrust the whole of their construction to private firms. However, as matters stand there is now not much choice, and if the new battleships are to be built in France they will have to be given out to contract.

It is stated that the *Compagnie des Forges et Aciéries de la Marine et d'Homicourt*, by improving its means of production, is now in a position to supply the French Navy every 12 months with the complete armament of a *Dreadnought* battleship, namely six turrets with machinery and their complement of 12 heavy guns and the necessary munitions, besides fulfilling its orders from foreign governments.—*Le Temps*.

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Steam Engineering Competition.—The economy steaming competitions have effected a saving of large sums of money to the government in coal bills in the last year. During the first half of the fiscal year 1910 the vessels of the navy used 350,296 tons of coal. Compared with the previous year this represents a saving of 56,578 tons. Since December the average coal consumption of all vessels of the navy per knot run at a given speed has further decreased 5 per cent., and the average mileage per gallon of lubricating oil has increased 8 per cent. On the U. S. S. *Kansas* there has been a continuous improvement, aggregating 12 per cent., and the *Kansas* now leads the battleships in economy of coal consumption. The port coal consumption of the three scouts has decreased 11 per cent. The most notable improvement on any vessel in the fleet was in the *Missouri*, where the amount of coal per knot under way was decreased 25 per cent., and the amount of coal used daily in port was decreased 35 per cent. On the return trip of the fleet from Guantanamo the speed was 12.4 knots, as against 11.5 going down, and, although the ships had been several months longer out of dock, the increased speed returning was maintained for about 150 tons less coal daily than was consumed going down. The saving in the first half of the year was partly due to a decrease in the amount of cruising, although the latter was to a great extent counterbalanced by a considerable increase in the average speed. The U.S.S. *New Hampshire* uses the least lubricating oil in port, while the *Montana* has used the least make-up feed water.—*Army and Navy Journal*.

Bureau of Construction and Repair.—The charge so often made that the United States is behind other large nations in the time required for building battleships, is refuted in the annual report of Chief Constructor Washington L. Capps, U.S.N., until recently chief of the Bureau of Construction and Repair. Erroneous impressions as to the rapidity with which our ships have been built have grown out of the difference in dates chosen for making the comparisons. In some instances the date of authorisation was taken, or the date of signing the contract or the date of laying the keel. Similarly was there a difference as to the date of completion. Some would count the day of the contract

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trial for speed, others would take the date of actual delivery, while again the day of going into commission would be chosen. Comparisons for each set of dates is made, and this is the conclusion: "With the system and methods of warship construction now in vogue in the United States, it is believed to be feasible for the United States to build first-class battleships in as short a time as any other shipbuilding country, and actual experience seems to demonstrate that the rapidity of construction in the United States is greater than the average rate of construction in the principal foreign shipbuilding countries. It is also worthy of note that this decreased time of construction has been obtained concurrently with a decrease in the unit cost of construction. In fact, the total cost, per ton of displacement, of battleships built by contract for the United States Navy within the past few years, has been less than the total cost, per ton of displacement, of similar vessels built in foreign countries, and this in spite of the higher rates of wages paid to workmen in United States shipyards."

From a tabular comparison of speed in building, from keel laying to commissioning, we have made this summary: In building the *new Hampshire, South Carolina, Michigan, Delaware,* and *North Dakota,* five ships, the total average time was two years and nine months. Great Britain beat this by only two months, counting the time spent in building the *Lord Nelson, Bellerophon, Temeraire* and *Superb,* which averaged two years and seven months. The time of the *Dreadnought* is not counted in our average because she was not completed when commissioned. Germany's average was one month longer than ours. Taking the *Pommern, Hannover, Schleswig-Holstein, Schlesien, Nassau, Westfalen, and Rheinland,* we find that the average there was two years and ten months. Japan's average for two battleships was four years and six months, and Italy consumed five years and five months on an average in constructing three ships.

The date of the completion of the *Florida* and *Utah* will be delayed because of changes approved subsequently to the laying of the keel. While every effort has been made to eliminate such changes, Mr. Capps points out that the improvements in naval *matériel* make it almost impossible entirely to eliminate these changes. From tables showing the number and displacement of various classes of vessels from 1st January, 1904, to 30th September, 1910, it appears that the total battleship displacement available for service has increased in a little less than seven years from 118,732 tons to 412,461 tons. The total battleship displacement available for service, under construction and authorised, has increased from 324,461 tons to 562,111 tons, and the total displacement of what might be called "military vessels" has, including those under construction and authorised, increased from 651,266 tons on 1st January, 1904, to 940,112 tons on 30th September, 1910. In a finely phrased tribute to the loyal and conscientious assistance of his subordinates in his seven-year incumbency, we are told that no "public official could possibly have had more devoted, intelligent and efficient assistants," and that such success as has been achieved by the Bureau has been in the highest degree the result of the "earnest and effective co-operation" of the officers and civil employees associated with him.—*Army and Navy Journal.*

MILITARY NOTES.

THE KING.

It is officially announced that the King has been pleased to approve the appointment of Field-Marshal Viscount Kitchener of Khartoum, G.C.B., O.M., G.C.S.I., G.C.M.G., G.C.I.E., to command the troops assembled in London on the occasion of their Majesties' Coronation.

The following General Officers will, by His Majesty's command, act under his Lordship's orders in the capacities stated:

CHIEF STAFF OFFICER.

Major-General A. E. Codrington, C.V.O., C.B. (General Officer Commanding London District).

COMMANDERS OF SECTIONS OF THE ROUTES OF THE PROCESSIONS.

General Sir Charles Douglas, K.C.B. (General Officer Commanding-in-Chief Southern Command).

Lieutenant-General Sir Horace Smith-Dorrien, K.C.B., D.S.O., A.D.C. (General Officer Commanding-in-Chief Aldershot Command).

Lieutenant-General Sir Arthur Paget, K.C.B., K.C.V.O., A.D.C. (General Officer Commanding-in-Chief Eastern Command).

Home. The following are the principal appointments which have been made:—

Major-General.—Frederick T. Clayton to be Major-General in charge of Administration, Irish Command; Colonels.— Stanley B. Von Donop to be Director of Artillery at the War Office, with temporary rank as Brigadier-General; John P. Du Cane to command the Artillery, 3rd Division (Southern Command), with temporary rank as Brigadier-General; Thomas F. Bushe, C.M.G., to command of Ordnance College; Walter G. Crole Wyndham, C.B., to be Colonel in Charge of Cavalry Records (Canterbury); Edgar F. Nelson to be an Assistant Director of Artillery at the War Office; William G. B. Western, C.B., to command No. 8 District (Southern Command). Lieutenant-Colonel.—John Vaughan, D.S.O., to command of Cavalry School, Netheravon.

Territorial Force.—Major-General.—Colin G. Donald, C.B., to command Wessex Division (Southern Command).

Indian Army—Major-General C. J. Bloomfield, C.B., D.S.O., to command a Division. Colonels.—Hugh O'Donnell, D.S.O., to command Bannu Brigade (Northern Army); Hew D. Fanshawe, C.B., to command Presidency Brigade (Northern Army); F. C. Beatson, C.B., to be Brigadier-General General Staff (Southern Army).

Austria-Hungary. *Numbers of General Officers on Active List.*—According to the Army list for 1911, the number of General Officers on the active list in the Austro-Hungarian Army, exclusive of the Arch-Dukes, is 334, of whom 36 are Generals of Army Corps, 102, Generals of Division, and 196, Generals of Brigade.

(*a*) *Present Employment*:

Per cent.		Generals of Army Corps	Generals of Division	Generals of Brigade	*Total.*
5.0	Are at Court	8	6	3	17
25.0	At the Ministries of War or employed away from the Army	9	37	39	85
66.0	Serving with the Army ...	18	57	144	219
4.0	Unemployed	1	2	10	13
	Total	36	102	196	334

(*b*) *Branch of Service*:

22.1	are from the	Infantry	...	,,	5	72	77
12.0	,, ,, ,,	Cavalry	...	5	14	21	40
6.0	,, ,, ,,	Artillery	...	1	7	13	21
8.0	,, ,, ,,	Engineers	...	,,	10	17	27
1.0	,, ,, ,,	Pioneers	...	,,	1	3	4
0.9	,, ,, ,,	Engineer Corps		,,	,,	3	3
50.0	,, ,, ,,	General Staff		30	65	67	162
	Total	... ...		36	102	196	334

From this distribution it appears that it is extremely difficult for a regimental officer to reach the rank of General Officer and that it is specially accessible to an officer of the General Staff, since 83 per cent. of the Generals of Army Corps, 63 per cent. of the Generals of Division and 34 per cent. of the Generals of Brigade—in all 162 Generals—come from the General Staff Corps.

These 162 Generals belong:

Per cent.		Generals of Army Corps	Generals of Division	Generals of Brigade	*Total.*
69.0	to the Infantry	19	37	56	112
14.0	,, Cavalry	4	13	5	22
14.0	,, Artillery	6	12	4	22
2.0	,, Engineers	,,	3	1	4
1.0	,, Pioneers	1	,,	1	2
	Total	30	65	67	162

Revue Militaire des Armées Etrangères.

Budget for the Austrian Landwehr for 1910.—The estimates for the Austrian *Landwehr* for 1910 were discussed and voted by the Austrian Chamber last August. The total expenditure allowed for amounted to £4,112,555, showing an increase of £474,865 over 1909. If from this total is deducted the expenditure upon the Gendarmery and Military Police

there remains, as purely military expenditure, a sum of £2,934,686, showing an increase of £332,581 over the previous year.

The effective maintained is as follows:—

	1910	*In comparison with* 1909
Officers	3,474	+ 215
Officials	962	+ 42
Subaltern Employees	211	+ 24
Probationary Officers	252	+ 18
Re-engaged Non-Commissioned Officers...	4,768	+ 63
Men (less the Re-engaged Non-Commissioned Officers...	39,538	+ 2,769
Pupils of the Schools	489	+ 1
Horses belonging to the Government	5,985	+ 870
„ „ Officers...	1,872	+ 6

This very appreciable increase in the effectives is the result of the different additions which have been indicated in the Ordinary Budget.

The figures relating to the calling out of the Reservists and Ersatz-Reservists differ but little from those of 1909:

14,000 Ersatz-Reservists have been called out for the first time for eight weeks. 93,349 Infantry, 4,664 Cavalry and 672 Artillery have carried out a period of training of 28 days. It has to be noticed that this is the first time that Artillery-Reservists have been called out.

1.—*Ordinary Budget*: The increase in expenditure principally affects the Ordinary Budget, and is caused as follows:—

(*A*) *Infantry*:

1. The organisation of 104 machine-gun detachments of 2 guns each (raising to 107 the numbers of these detachments);
2. The creation of seven field-officers' appointments, starting from the 1st of last May, to superintend the regimental musketry instruction;
3. The creation of 10 new appointments for subaltern officers (1 sub-lieutenant, 9 lieutenants) starting from the 1st November, 1910. This is the continuation of a measure commenced in 1909, and is intended to provide by degrees 3 officers for every company;
4. The creation, starting from the 1st October, 1910, of 121 appointments of hospital non-commissioned officers for regimental duty, with an equal deduction from the effective of the privates of the hospital service.

(*B*) *Mountain Troops*:

1. The creation of a Regimental Staff, of two Battalion Staffs, of nine Companies, and of a Depot battalion cadre.
2. The constitution of two 4-gun machine-gun detachments, raising the number of these detachments to 13;
3. The creation of four appointments for captains, starting from the 1st November, 1910. This step, which follows on the lines pursued in previous years, is intended to ensure progressively the command on mobilisation of frontier covering companies (*Grenz-Schutzkompagnien*), formed from the *Landsturm*, by captains of the active *Landwehr*.

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(*C*) *Artillery*:

1. The transformation of the eight two-battery divisions of guns into divisions of howitzer-batteries;
2. An innovation in one of the drill periods for the Artillery Reservists;
3. A demand for a supplementary grant of £9,792 for the firing schools.

(*D*) *Diverse*:

1. Purchase of 250 pack-animals to be handed over on the regulation conditions, after four months' training, to the charge of private owners;
2. The expenses of maintenance of four automobiles with their chauffeurs for the mountain troops.

To all these increases in expenditure must be added £19,491 to raise the infantry and artillery munition supplies and £11,385 necessitated to provide against the increased cost of provisions.

II.—*Extraordinary Budget*: The Extraordinary Budget amounted to £165,128, an increase of £56,066 over 1909. It is intended for:

1. The equipment of bât animals for the machine-guns; the purchase of repeating pistols and carbines; and the completion of the provision of the troops with field-glasses, range-finders, telephones, etc.;
2. The reconstruction of Rifle Ranges;
3. The supply of the grey field-uniform.

Revue Militaire des Armées Etrangères.

A Year's Progress.—The Austro-Hungarian Army has, since the annexation of Bosnia-Herzegovina two years ago, undergone a material and astonishing reorganisation. It has been thoroughly brought up to date and strengthened, and has once more taken its proper place among the Armies of the Great Powers; another not less noteworthy result of the crisis is to show that the necessity of completing as soon as possible the country's defence works is recognised. All parties have joined in insisting on the importance to the State, and the different nationalities composing it, of having an Army ready at all points to take the field.

This rapid progress to effectiveness has not passed unnoticed abroad, and the high opinion held of the Austro-Hungarian military organisation is shown by the large number of foreign officers who now come to complete their military instruction with the Army. Last July a special course of instruction for foreign officers was formed at the Musketry School at Brück, which was largely attended by Turkish officers, while officers from the Roumanian, Bulgarian, Chilian, Danish, Dutch and Swedish armies are attached to different arms of the service, or are attending courses at the special schools.

Unfortunately the progress made could not be put to the test last year by the Grand Manœuvres, as, owing to the presence of contagious diseases among the horses, the Imperial Manœuvres, which were to have taken place on a larger theatre of operation than the preceding year, viz., in the mountainous and extremely wooded region of the Beskides and the Carpathians had to be cancelled.

The rejuvenation of the superior cadres of the Army made, during 1910, considerable progress, although the amelioration in the conditions

Austria-Hungary.

of promotion in the lower grades has not as yet had much effect. The time of service in the rank of captain and as subaltern officer is still extremely long, as promotion to major under normal circumstances to-day cannot be obtained until after 25 to 30 years' service as an officer.

Among other important changes has been the removal of the headquarters of the XVIth Corps from Zara to Ragusa: and the organisation into Independent Divisions of the Divisions of the territorially broken up (the annexed territory and Dalmatia) XVth and XVIth Corps, which will be kept up to strength, however, by new recruiting arrangements that have been made, a periodical change of battalions and their officers, and by certain administrative measures.

The infantry is suffering somewhat from the effectives being still rather below strength, and except for a new distribution of the non-commissioned officers, has undergone no material change since last year. On the other hand, the Austrian *Landwehr* has continued its development; the 27th *Landwehr* Infantry regiment has been transformed into a mountain regiment at the same time as the 2nd battalion of the *Landwehr* Regiment No. 4 (Goerz) has been incorporated with it. The up-to-date equipment of the *Landwehr* infantry has been completed by supplying to the smaller units, along with the existing waggons, bât animals for the transport of munitions.

In the Cavalry, with the exception of the creation of a new division, there has been no change in the organisation. The addition of Cyclist sub-divisions to the Cavalry divisions, and the substitution of telegraph columns for the telegraph patrols is in contemplation. On the other hand, preliminary investigations for the re-equipment of the Cavalry have been completed. This will be on the lines of a further adaptation of the field uniform to the necessities of the battlefield (without, however, a change of colours), comfort and hygiene, diminution of the weight on the horse, an increase in the number of cartridges for the rifle, simplification of the equipment, and suppression of everything bright.

The rearmament of the field-artillery has been carried on, firing trials and marching tests on a considerable scale with the Marks 8 and 9 mountain guns have been carried out, as well as with the new 10 cm. (4-inch) mountain howitzer on recoil carriage. These guns are now being issued to the XVth and XVIth Corps.

The Artillery School of Firing has been reorganised and divided into two; one for field and fortress artillery at Hagueastier (near Vezprim in Hungary), the other for Mountain Artillery is to be established at some place not yet determined upon by the Minister of War. The experiments in connection with the transporting of heavy guns, which were carried on all last year, have been completed, and, according to the *Vedette*, it has been found possible to transport a heavy 24-cm. (9.4-inch) siege mortar on a 6-cylinder 100-H.P. Daimler Automobile at a speed of 9 and 1-3 miles an hour, a result which makes this gun, relatively speaking, a mobile weapon.

An important modification has been made in the organisation of the Train; there will be for the future six Train-Inspectorates, and the three regiments will be replaced by 16 Train-Divisions, each of which will be composed of a Divisional Staff, a certain number of Train Squadrons, with Depôt and Park Cadres.

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There has been considerable development in the technical branches. The sub-divisions of fortress and field balloonists have been strengthened, and the establishment of stations at Wiener-Neustadt and Fischamend has given a great impulse to Military Aerostation. It is announced that three Aeroplanes are to be acquired for the Army, which will be required to fulfil the following conditions:

1. Execute a flight between two fixed points at a mean speed of 43½ miles;
2. To be able to carry two people, the pilot and one passenger, weighing at least 151 lbs. all together, with 154 lbs. of excess weight;
3. The machine to be able to be taken to pieces in an hour so that it can be carried on an automobile, while its putting together again is not to take more than two hours.

After a trial flight at high altitudes and a six hours' flight, the Dirigible balloon "Lebaudy," supplied by the Society of Dirigible Balloons, has passed definitely into the hands of the Army and is to be known as "Army Dirigible No. II." The lifting capacity of this balloon is, however, to be increased to 400 cubic metres, so that it can be fitted with wireless telegraphy apparatus. A third Dirigible, constructed for the Army by Rörring at Vienna, arrived at Fischamend for its trials at the end of November, and the flying ground there has been supplied with a vast hangar and all the necessary apparatus for the production of hydrogen gas for inflating the balloons. If Aerial navigation has not made as much progress in the Austrian Army, as in some others, the period of uncertainty is now passed and its development is at last proceeding steadily. The flying ground and establishment at Wiener-Neustadt is also becoming more and more important; its excellent situation and the complete way it has been fitted up have decided the Minister of War to make it the principal military aviation practice ground; several officers have already acquired their certificates as pilots there, and many more are under training. In this new branch of military science the Army is now quite independent of foreign assistance, both as regards the training of officers and in the matter of the construction of aeroplanes. Last year marked the formation of both Hungarian and Austrian Societies whose special object it will be to study all questions connected with Aviation, and to undertake the construction of flying machines capable of satisfying all military requirements.

In the technical domain it may also be mentioned that wireless telegraphy stations have been installed at many of the fortresses, while detachments of automobiles to carry search-lights have also been formed.

In accordance with a recent order the Military Engineer Constructors have been constituted into a Corps of Officer-Engineers, whose duty will be in time of peace, as in war, to undertake all military construction work other than that of fortification.

Important modifications have also been made in the medical branch, by the organisation of a hospital service to be attached to each infantry division, by the increase of the medical staff attached to the Cavalry, by the increase of the medical reserves, due to the breaking up of those of the *Landsturm*, and by the organisation of two squadrons of mounted stretcher parties also in the Cavalry.—*Revue Militaire Suisse.*

Germany. *The Sanitary Report on the Horses in the Prussian, Saxon and Wurtemberg Armies in* 1909.—The following information is taken from the *Statistischer Veterinär Sanitäts Bericht* for 1909. The statistics refer to the whole German Army with the exception of the three Bavarian Army Corps.

The total number of horses on service on 31st December, 1909, was 109,384. In the course of the year, 53,513 horses were under treatment, to which must be added 1,198 horses remaining under treatment from the previous year on 1st January, 1909, making a total of 54,711 sick.

The proportion works out, therefore, at 50.01 per cent. as regards the real effective (*Iststärke*) mentioned above, and of 53.93 with the Budgetary effective (*Sollstärke*) which was, according to the *Friedens-Besoldungsetat*, 101,637 horses.

This last proportion is an increase over the preceding year, when it stood at 53.02 per cent., and it has been increasing since 1898. There were 6,389 more cases in 1909 than in 1908, which corresponds to a percentage of 6.29 of the Budgetary effective and to 5.82 per cent. of the real effective. One of the reasons for this increase is that, for the first time this year, there have been included in the statistics, the two Saxon Army Corps (XIIth and XIXth) which have supplied, for their part, 4,775 sick horses.

The increase is mainly due to an important recrudescence of some epidemic maladies, especially influenza and erysipelas; diseases of the genital and urinary organs, of the skin and epidermis, and of the hoofs have also increased; the other groups of diseases have, on the other hand, decreased in comparison with 1908.

The cases of illness are divided as follows over the four quarters of the year:

1st Quarter	11,128
2nd ,, ...	12,792
3rd ,, ...	21,585
4th ,, ...	11,544

As is always the case, it is the third quarter, during which the manœuvres take place, which furnishes the greatest number of cases.

From the point of view of the absolute number of horses under treatment, the highest place is taken by the XIVth Corps with 3,989 cases, and the lowest by the XIth Corps with 1,613; the mean being 2,704 cases per Army Corps.

If one takes count of the Budgetary effective, the classification of the Corps and Establishments is as follows:—

	Percentage
Institute of Military Equitation	73.26
XIIIth Corps	70.24
IVth ,, ...	64.70
XIVth ,, ...	64.14
XVth ,, ...	61.17
VIth ,, ...	57.76
VIIth ,, ...	55.62
XIIth ,, ...	54.76

Germany—continued.

	Per-centage.
XVIth Corps	51.81
IInd „	50.88
Vth „	49.23
VIIIth „	47.01
Xth „	46.88
XVIIth „	46.73
XIXth „	46.31
IXth „	45.33
Guard	45.32
XVIIIth „	41.88
IIIrd „	38.47
XIth „	37.93
Ist „	37.75
Field Artillery School of Firing	28.83

The 54,771 cases are distributed as follows under the different Arms of the service.

	Cases.	Per-centage.
Cavalry	34,275	60.69
Field-Artillery (including School of Firing) ...	15,508	42.47
Train	2,295	47.28
Groups of Draught Teams of Foot—		
Artillery (including School of Firing)	988	67.81
Machine-gun Detachments	393	43.57
Other Horses	1,252	40.34

It is interesting to note the considerable differences existing in the different branches of the Cavalry, which show as follows:

	Horses.	Cases.	Per-centage.
Cuirassiers	8,351	3,809	45.61
Uhlans	16,903	9,774	57.82
Mounted Jägers...	3,539	1,836	51.87
Dragoons	13 663	11,123	81.41
Hussars	14.029	7,733	55.12

Of the 54,711 horses under treatment in 1909 there were:

	Horses.	Per-centage.
Completely cured...	50,512	92.32
Rendered fit for service	951	1.73
Cast	365	0.66
Died	1,349	2.46
Killed	420	0.76

While 1,114 horses still remained under treatment on 31st December.

The largest proportion of the diseases was due to injuries of the limbs, then to diseases of the epidermis and skin, next those of the digestive organs then of the hoofs and finally contagious diseases.

Revue Militaire des Armées Etrangères.

Germany.

Recruiting Statistics of the German Army in 1909.—The Recruiting Report for 1909, issued on the 10th October last, gives the following results:—

The number of young men who came before the Boards of Revision (*Conseils de Revision*) in 1909, was 1,226,730[1] made up as follows:—

	1909	*Increase as compared with* 1908
Young men of 20 examined for the first time ...	534,310	+ 7,030
Young men of 21	361,759	+ 4,636
„ „ „ 22	283,674	+ 14,242
„ „ above	46,987	+ 2,633
Total	1,226,730	+ 25,541

The classification of the young men, inscribed on the recruiting lists in 1909, was as follows:

	1909	*Increase or diminution as compared with* 1908
Excluded from Service	856	+ 20
Unfit for Service	34,890	+ 757
Put back	703,164	+ 18,967
Young Men of 20 or over, who have engaged as Volunteers before the date of their formal calling up	37,253	+ 1,015
Young Men Enrolled in the *Landsturm* (1st Ban) ...	138,364	+ 9,476
Young Men Enrolled in the Ersatz-Reserve of the Active Army	93,662	+ 1,017
Young Men Enrolled in the Active Army	218,541	+ 3,314
Total	1,226,730	

(A) Enrolled in the *Landsturm* (1st Ban.):—

1. On account of their civil station	460	138,364
2. Supernumerary (*Uberzählige*)[2]	92	
3. For divers reasons, principally for deficient physique	137,812	

(B) Enrolled in the Ersatz-Reserve of the Army:—

1. On account of their civil station	7,420	91,123
2. Supernumerary (*Uberzählige*)	4,115	
3. For divers reasons, and Medium constitution ...	79,597	

[1] In this number are not included the *insoumis* (the young men who fail to join at the proper time), and those who cannot be found, of which the number is no longer given in the official documents. The last time these men figured in the Official Return was in 1902, when they were shown as 130,000.

[2] The young men classed in this category are those who have been passed as fit for service in the active Army and are liable to be called to the Colours in case of an unforeseen deficit in the men drawn for the active Army.

Germany.

(c) **Enrolled in the Ersatz-Reserve of the Navy:**

1. On account of their civil station	65	2,530	
2. Supernumerary (*Überzählige*)	5		
3. For divers reasons, and a mediocre constitution ...	2,460		

(d) Enrolled in the Active Army:

1. Active Army — Incorporated for 1 year (Train)	2,138	218,541	
„ „ 2 „	190,588		
„ „ 3 „	12,306		
2. Non-Combatants	2,730		
3. In the Navy	10,779		

From the point of view of age, the young men incorporated in the Army and Navy, are classed as follows:

The numbers of Volunteers who engaged in 1909 were:

Young men of 20 years of age ...	100,721
„ „ 21 „ „ ...	54,078
„ „ 22 „ „ ...	61,734
„ „ over 22 „ „ ...	2,008
Total	**218,541**

59,521 in the Army;
4,192 „ „ Navy.

These Volunteers were classed as follows:

1. One Year Volunteer s(*Einjährige*):

Under 20 years of age	1,515	12,383
Of „ „ „	10,868	

2. Teachers and Candidates for the duties of public instruction not included in the preceding category:

Under 20 years	6	1,024
Of „ „	1,018	

3. Other categories (two and three-year Volunteers):

Under 20 years	22,790	46,114
Of „ „	23,324	
Total		59,521

The number of One-Year Volunteers enlisted in the Navy was 930, other categories, 3562,

Making a Total of 4,492

The total number of young men entered in the Active Army and Navy is then:

Land Forces.

	1909.	*Increase or decrease as compared with* 1908.
Men incorporated	207,762	267,283 – 302
Men of 20 years or over who have engaged as Volunteers before date of formal calling up	35,210	
Engaged Volunteers under 20	24,311	
Navy.		
Men Incorporated	10,779	15,271 – 521
Engaged Volunteers	4,492	
Total ...		282,554 – 823

Germany.

The Comparative examination of the Official Recruiting Returns for 1909 and preceding years, gives the following results:

1. The number of young men inscribed on the Recruiting lists increases regularly; it has grown from 10,105,816 in 1905 to 1,226,730 in 1909, showing an increase of 120,914 in four years;

2. The number of young men incorporated annually in the Active Army has remained stationary since 1893, that is to say, since the Two-years service in the German Army came into force. It follows that the annual numbers of the incorporations not having followed the regular movemnt of increase in the population of the Empire, the peace effective of the Army does not represent more than 0.93 per 100 of the total population, whilst the Law of the Constitution of the Empire of 16th April, 1871, fixed it in the proportion of 1 per 100. The Military press therefore is constantly quoting their discrepancy as an argument for obtaining in the approaching Quinquennial a considerable increase in the Budgetary effective;

3. The number of young men put back increases rapidly each year;

4. The number of Volunteers who have engaged increases regularly. The total was 51,547 in 1905, which shows an increase of nearly 8,000 during the past four years. The number of One-Year Volunteers has increased from 10,464 in 1905 to 12,383 in 1909.

Physical Value of the German Contingents.—For some years, public opinion in Germany has been showing considerable apprehension at the way in which the population of the Empire is gravitating towards the great industrial centres and at the rapid increase of the urban as compared with the country population.

By order of the Chancellor an Appendix has been attached to the official recruiting returns since 1903, in which details are given separately of the results obtained by the two sources of recruiting, viz., the urban centres with over 2,000 inhabitants, on the one part, and the country on the other. The total number of young men examined by the Recruiting Boards (*abgefertigte*), exclusive of those put back, has grown, as regards the town-bred young men, from 194,710 in 1903 to 231,924 in 1909, an increase of about 19 per cent., whilst the corresponding number of youths from the country, during the same period, has increased from 298,785 to 318,402, an increase of only 6 per cent.

But the recruiting and value from these two sources are very different.

For the year 1909, while the comparison of the number of young men passed as fit for the Active Army (*Taugliche*), with the number of young men examined and not put back (*Abgefertigte*), is 57 per cent. for the recruits coming from the country and only 49 per cent. for recruits coming from the urban centres.

Moreover, from the statistics given below, it is seen that the number of men discharged from the active service—after incorporation—for weakness or infirmities, is increasing regularly.

Out of 100 men of the incorporated effective, there have had to be discharged:

	Unfit for Service.	*Invalided.*	*Total.*
1883—1888	2.1	1.0	3.1
1888—1893	2.1	1.4	3.5
1893—1898	2.4	1.7	4.1
1898—1903	2.4	1.8	4.2
1903—1908	2.6	1.9	4.5

Germany.

Without wishing to draw hasty conclusions from the above statistics, it yet would seem that the rapid increase of the population of the large German towns, is having its influence on the quality of the annual contingents and may, in the long run, diminish their military value.

This is the reason why the German Government attaches such great importance to the protection of the rural populations and the solicitude for this protection often explains the internal policy of the Empire.

Revue Militaire des Armées Etrangères.

Mexico.

*Military Schools*H *The Military College at Chapultepec.*—On the nearest hill to the capital (Mexico), on the same spot where formerly stood the Palace of the Aztec Emperors now stand the buildings of the Military College of Chapultepec adjoining the summer residence of the President of the Republic. Here 285 pupils receive their military education, which, judging from the time taken to acquire it, ought to be of a very thorough character.

The entry to this College at Chapultepec is by competition at the age of 16, the sons of old soldiers being allowed to join a year younger.

Every year 80 pupils join the College after signing an agreement to serve in the Mexican Army when they leave the school, for four years if they join the Infantry or Cavalry, for seven years if appointed to the Engineers, the Staff or the Artillery.

The number of officers gazetted as the result of the passing out examinations is about 60 per annum. Of this number, about 35 have completed three years of study and are appointed to the Infantry or Cavalry; the remainder, some 25 in number, complete seven years of study and are then appointed to the Staff, Engineers or Artillery.

The education is free, but in case of dismissal during the course, as the result of misconduct or incapacity, the two persons of position, who have before the admission of the pupil guaranteed his intelligence and character, have to pay the expense of an education which, being incomplete, is of no benefit to the State.

At the head of the College is placed a General of Brigade, the post being filled at present by Major-General Beltran, with Colonel Rocha as his second in Command.

The Staff of the School consists of 75 officers or civil professors, who have charge of the classes, the lectures and the theoretical and practical courses of instruction.

The terms commence on the 8th January, finishing on 22nd September. During the School year, the pupils are placed in small classes (always with less than 25 scholars), and grouped as far as possible so that youths of the same mental capacity may be together.

To obtain an idea of the methods of instruction and the results obtained, it is necessary to distinguish between the two very different categories of courses, viz., those pursued by all the pupils during the first three years and those reserved for the pupils intended to go through the special courses.

Mexico.

During the four extra years at the College, numerous opportunities are the mind of the young officer. Although physical exercises, equitation, gymnastics, swimming, fencing and sword exercise occupy a prominent place in the instruction given at Chapultepec, the pupils nevertheless have to undergo heavy brain work.

The young sub-lieutenant leaving Chapultepec will have acquired during his three years of study a theoretical instruction almost equivalent to that of our Bachelor of Arts and a practical knowledge equal to that of a good French non-commissioned officer of Artillery.

Very different is the instruction given to the future officers of the special corps.

During the four extra years at the Colleg, numerous opportunities are given them of executing personal studies, and practical exercises occupy a large place in the employment of their time. Finally, during the year which elapses after they leave the College before joining one of the special Corps, they are detached on different services, where they complete their special instruction. Thus, the officers of the staff, to quote only those, are attached during January, February and March of the year after they leave Chapultepec, to the "Geographical Commission of Mexico; during April, May and June to the Geodetic Commission; during July, August and September they make under a professor a tour of geographical and military survey. The month of October is left to themselves to enable them to work out some theme dealing with a plan of operations affecting the Mexican Army.

Thus although coming from the same school, the officers of the Mexican Army had, even before theSchoolfor"Aspirants" was created, a double origin: those who remained three years at Chapultepec and those who had followed for 8 years their studies in that establishment with the view of joining one of the special Corps.

A complaint has often been made that the first-named continue their careers without enthusiasm and sometimes merely for the pay, and that the second do not sufficiently interest themselves in military questions and that they leave the Army as soon as their 7-years term of engagement is over, in order to profitably employ in civil enterprises the education they have received at the Military College. Finally the objection is made with regard to the last mentioned class that they remain eight years at the Military School without being brought into any touch with the Army.

The Military School for Aspirants at Tlalpam.—This School, which was only formed in 1905, is intended to train subaltern officers for the infantry and cavalry. At its head has been placed a colonel of cavalry, Colonel Miguel Ruelas, an officer of distinction, to whom is due, if not the idea of creating the School, at least all the details of its organisation.

The number of the pupils at the School is 210; they enter at the age of from 17 to 21, and the length of the course is 2 years. There are actually at Tlalpam three classes of pupils: first, those who, after passing an examination, enter the school directly from civil life; secondly, officers who have joined the active Army, having also been promoted directly from being civilians; and, finally, non-commissioned officers from the Army, who complete their training at Tlalpam before promotion to the rank of sub-lieutenant.

Mexico.

The Staff of the School consists of 37 officers. One of these is a French officer from the Cavalry School at Saumur, who resigned and now performs the duties of Instructor in Equitation at the School.

Fencing, swimming, equitation, manœuvres, field works, fortification and musketry occupy the greater part of the time at the Tlalpam School.

The question is asked what influence will it have on the recruiting of the Mexican Officers Corps. It may be noted that the School is held in high esteem by the heads of the Army and that the commanders of regiments have expressed themselves quite satisfied with the first sub-lieutenants who have joined from Tlalpam.

No regulation at present permits the selection of officers from the School of "Aspirants" for entry to the Military College at Chapultepec to follow the extra four years' course for the special corps, but the Minister of War's attention has been drawn to this omission and as the Commander-in-Chief of the Army is in favour of a modification in this direction of the rules which govern the College and the Military School, it is probable that the necessary change will be made in the near future.

Revue Militaire des Armées Etrangères.

Russia.

The following interesting translation from the *Tver Gazette* has been kindly forwarded to us by Captain G. A. West, late R.F.A., His Britannic Majesty's Vice-Consul at Archangel.

The original article is headed:—

IN MEMORY OF AN UNNOTICED RUSSIAN HERO.

(On the occasion of the transfer of Private Riaboff's remains to his native land.)

Translated from *Tver Gazette* of October 20th—Nov. 2nd, 1909.

On the 7th October, 1904, one of our advanced Cossack patrols, whilst reconnoitring the enemy's movements, noticed in a conspicuous place under a stone by the side of the road, a piece of paper in which was wrapped an ordinary envelope addressed in Russian handwriting: "To the Russian Army Operating in Manchuria, from the apanese General Staff."

The envelope was opened in the Staff of the Manchurian Army, and inside was found the following letter, also in quite grammatical Russian:—

"The reservist, Basil Riaboff, age 33, of the volunteer detachment
"of the 284th (Chembarsk) infantry regiment, a native of Lebedeff
"In the province of Penzensky, was taken prisoner by our soldiers
"on the 27th September last within our advanced lines in the disguise
"of a Chinese peasant. According to his own statements, it appeared
"that he had been sent at his request to spy on the position and
"movements of our army, and that he came within our lines on
"27th September by the station of Pantai going in a S.E. direction.
"After the matter had been investigated, Riaboff was sentenced to be
"shot. The sentence was carried out on 30th September.

Russia.

"In bringing this incident to the knowledge of the Russian "Army, our army cannot refrain from expressing its sincerest wish "that the latter respected Army brought up more warriors of so really "fine a stamp and so worthy of all respect as the above-mentioned "Riaboff. On being asked if he had anything to say before he died, "he answered: 'I am ready to die for my faith, my Czar and my "country.' When we expressed to him. 'We quite enter into your "situation and promise to try and convey to your parents, wife and "children how you so bravely and resolutely went on a death-errand "for Czar and country, and if there is anything that we can tell "them from you, it will be said,' he answered, unable to restrain his "tears: 'Many thanks, tell them what happened.' Then crossing "himself, he prayed long, kneeling to the four corners of the earth, "and was quite firm in his bearing to the last.

"Those who witnessed the scene could not prevent hot tears from "falling. Sympathy for this genuinely brave and exemplary soldier, "whose mind was entirely filled with a feeling of his duty, exceeded "all bounds."

The Russian newspaper goes on: "What further commentary is needed to this testimony of the greatness of the Russian soul, given by the enemy himself. Yea, let us always remember the exploit of this simple Russian peasant, making himself known to us quite by chance, thanks only to the impression he made on our foes. . . . . Ah! and how many such deeds passed unnoticed."

Turkey.

Staff School of Yldiz (Erken Harb Mekter).—This school is both a Staff School and a school for the higher branches of military studies. All the officers who pass out of it do not re-enter the cadres of the General Staff; some among them, considered unfit for this service, rejoin their regiments.

The school is placed under the command of a Lieutenant-Colonel of the General Staff, who is charged with all the details of instruction and administration, and who reports directly to the Grand General Staff, for whose approval he submits all his proposals, &c.

The length of the course is for three years. The students of each year form a division.

The students are admitted to the school (since 1909) as the result of an examination, principally in tactics and French. In 1910 fifty-five candidates presented themselves, twenty-six of whom were received. Before the institution of the entry examination, there were forty of the senior pupils of the Military School at Pancaldi, who, when they left, entered the Staff School.

For the future there will be admitted to compete, only officers who have passed at least two years in regimental duty and not above the rank of captain. From one year to another a selection is made for return to regimental duty, as also on leaving the school.

The examinations at the end of the year, followed each time by a classification, commence at the end of June and finish towards the middle of July; they are not followed by any vacations.

Turkey

The students of the first and second divisions are sent to the 1st October (the date of their return) to a regiment of an arm differing from their own, where they do not exercise a command, but are placed as assistants to the commander of a unit or to a lieutenant; they take part in the Autumn Manœuvres.

The students of the third year carry out a staff ride, under the leadership of the commandant of the school, with the assistance of their professors. This trip lasts fifteen days.

The following is the course of studies pursued:—Tactics and staff work, military history, siege war, fortification, science of arms, strategical geography, topography and geodesy, naval war, political history, international law, living languages (French, German, Russian). — *Revue Militaire des Armées Etrangères.*

Reserve Officers.—A new law affecting officers of the Reserve was promulgated in July last (the year of the Hegira, 1326). Its carrying into effect opens a new era for the Ottoman Army.

Up to the present all the cadres of the Reserve formations have been constituted with officers of the active Army. They were grouped in regiments stationed in the centre of their mobilisation district. This organisation had the advantage of facilitating the placing on a war footing; it had, on the other hand, the inconvenience of being onerous, since it entailed the maintenance of 42,000 officers in time of peace; and, in addition, nearly half of this considerable cadre lost much of their power to handle troops by their forced inactivity.

For the future, the officers of the Reserve will take up some of the duties of their rank in the mobilised formations of the Reserve. Their presence will render disposable a certain number of officers of the active Army, which will allow of the relief of the cadres, and of the increase (projected) of the active Army.

There is nothing particularly original in the provisions of the law voted by the Ottoman Parliament. They are very similar to those to be found in other armies.

The officers of the Reserve will be drawn from the following sources: 1. Officers of the different branches of the Army who retire. 2. Men who during their period of service have received a special course of instruction and education. These are:—

1. Officers who have served at least ten years in the active Army and passed an examination of fitness;
2. Old pupils of the higher schools who have completed a year of service, during which they shall have received a special training;
3. Old pupils of the *Lycées* and Colleges (*idhadies*) and of the primary higher schools (*ruchdiés*), who have completed in the first case two years, and in the second three years of service and received a special training.

Turkey.

Reserve officers coming from the officers of the active Army who have distinguished themselves in time of war can, if they demand it, be reinstated in the active Army, under the condition that the age regulations will be respected and on the recommendation of a special commission composed of their commanders.

Officers of the Reserve coming from the active Army may be employed in time of peace in certain duties at the Ministry of War in the offices, depots, military schools, &c., exclusive of the post of commandant.

No non-commissioned officer or man can be promoted to be officer of the Reserve unless he has obtained a certificate stating that he possesses the qualities demanded of an officer, given by the officers of the regiment in which he has served.—*Revue Militaire des Armées Etrangères.*

United States.

Annual Report of the Chief Staff. Though it covers a period during which he was not in command, the annual report of the Chief of Staff is signed by Major-General Wood, in accordance with the custom established in the past of having the report signed by the officer performing the duties of Chief of Staff at the date on which the report is submitted. The report states that the appropriations have not been sufficient to permit much new construction or to continue construction already begun. For the insular possessions the appropriations were sufficient to make good progress toward the completion of fortifications. The satisfactory progress toward the completion of the fortification of home ports has been impracticable. The number of guns and emplacements in our fortified harbours at home is ample, if not more than ample, for the defence of those harbours, but fortifications are required at such an important point as the entrance to Chesapeake Bay, now wholly undefended.

One of the most serious matters confronting the War Department at this time is the question of reserve ammunition and supplies. We have accumulated a considerable supply of small arms and small-arms ammunition, but we are sadly deficient in the reserve supply of field artillery and field artillery ammunition and of reserve seacoast ammunition. The existing want of field artillery guns, carriages and ammunition constitutes a grave menace to the public safety in case of war.

Not only is the actual shortage of officers greatly felt, but due to the constant detachment of officers from their commands it is necessary to continually shift the duties of those remaining, and this tends to still further demoralise the discipline and instruction of the troops. Every effort has been made to reduce the number of officers on detached service, and no active officer is detailed before a careful study has been made of all available retired officers. Permanent relief can be afforded only by the enactment of a law authorising an increase of officers. The bill now pending before Congress for raising a Volunteer Army in time of war is believed to be as nearly perfect as can reasonably be expected. If the bill becomes a law it will be possible to make detailed plans for carrying it into execution in the event of war, which is impossible at present.

United States.

The strength of the Organised Militia is 119,660 officers and men, an increase of 734. Under the operation of the new Militia law military efficiency has continued to improve. There is great variation in the matter of instruction and training. The short school of instruction is an excellent means to prepare the company officers, but it does not reach the higher officers, and must be supplemented by field work requiring mobilization and manœuvres. No satisfactory progress can be had in the instruction of the Organised Militia until some provision is made by Congress for placing an adequate number of officers and non-commissioned officers of the Regular Army on duty with them. There should be one senior officer on duty at each state headquarters, and there should be at least one commissioned officer of junior rank to each regiment of Infantry, each squadron of Cavalry, and each battalion of Artillery, assisted by one non-commissioned officer of the Regular Establishment for each company, troop and battery of the Militia. It is intended to carry the organisation of a joint Regular and Militia force for national defence one step further by the actual mobilisation of at least one division of the 1st Field Army. This is a Field Army only in name, as supply of war material is so deficient that its complete organisation and equipment is, under present conditions, impossible without great delay. Because of the lack of suitable armoury equipment for the instruction of Coast Artillery reserves, enthusiasm is falling off, the movement to provide the United States with an adequate coast defence reserve from the Organised Militia is being checked and much of the ground gained is being lost. Suitable armouries are essential to the efficient training of the Militia. One of the most flagrant deficiencies in this matter of armouries is to be found in the District of Columbia. In the Cavalry and Field Artillery the difficulty of providing horses renders satisfactory training next to impossible, and the United States should furnish forage for horses that the states provide strictly for military purposes. The approximate annual cost of such a plan would be 400,000 dollars. The Field Artillery is specially in need of this assistance from the National Government. Because of the absence of this assistance the instruction of this arm is far from satisfactory. Indeed, with the exception of a few batteries, it is wholly unprepared for service. The gravity of this situation becomes evident when it is remembered that in both the Regular Army and the Militia the Field Artillery falls far below its proper proportion with respect to the other arms. The report of the target season of 1909 shows great improvement, but there is still too much time and money expended in qualifying marksmen for higher classification to the neglect of the larger part not yet qualified as marksmen. The present Militia law contains a number of defects, bearing principally upon the manner in which the Militia shall be brought into the service of the United States at the outbreak of war, and it is deemed to be of the greatest importance that it should be so clearly drafted that it will be thoroughly understood by all. Thus the Department will be able to know in advance exactly what Militia and the character of the Militia it can depend upon in the event of war. Nothing should be left for the last minute, and everything possible should be done in advance to expedite the action of the War Department at the proper time if the stress of war should come.

United States.

Mobile Army.

The Infantry is already severely taxed by its present duties, and in order to furnish the Infantry troops needed for the small garrisons at present maintained in our insular possessions and Alaska, it has been necessary in some instances to diminish the Infantry garrisons and in others to abandon posts. The increased demands which will be thrown upon the Army incident to providing an adequate garrison for the Hawaiian Islands and the Canal Zone, in addition to maintaining a reasonable force of Infantry in the United States, will render a very considerable increase in the Infantry arm necessary.

Reorganisation of the Cavalry is a matter which demands attention, with a view to securing a regiment which is tactically better suited to the conditions of modern war than is our present regiment.

The existing deficiency in the Field Artillery constitutes one of the greatest menaces to our country in case of war. If the present Regular Army and Organised Militia, at war strength, were called to arms to-day, there would be a shortage of over fifty per cent. in the field artillery necessary to equip them. As this force would only represent a portion of the force called to arms in case of war with a first-class Power, the gravity of the situation becomes at once apparent. Our reserve of field artillery is insignificant in comparison with the demands which would be made upon it in case of war, and at the present rate of progress it will be over fifty years before an adequate reserve supply of field artillery of all kinds is accumulated.

Conditions in the Coast Artillery Corps in all which concerns personnel are very satisfactory, and steady progress has been made in theoretical and practical work. The instruction of the Coast Artillery of the Organised Militia is progressing with a fair degree of rapidity in the North Atlantic seaboard districts, and will be much accelerated when proper armoury equipment has been furnished. The great reduction in appropriations has delayed the completion of important sea coast defences and the installation of very necessary equipment, especially searchlights and fire-control systems.

It is imperatively necessary that steps should be taken to organise a proper reserve. Steps should be taken looking to the organisation into a reserve of men who are discharged from the Regular Army and the Organised Militia. These men should receive a small monthly pay, and in return should keep the War Department informed of their address, and should be required to attend the annual manœuvres, receiving while on this duty full pay. This would result in, within ten years, a reserve consisting of not less than 300,000 men who have served in the Regular Army or Militia.

General Remarks.

Attention is invited to the urgent necessity for greater concentration in post and barrack construction. The present comparatively small garrisons are scattered over large areas, involving the care of large extents of ground and the upkeep of roads, walks, sewers, &c., all of which have tended greatly to increase the cost of the maintenance of troops.

United States.

The present remount system is proving very satisfactory. The quality of mounts has greatly improved, and it is believed that the system as at present used should be continued, as it ensures, within a very few years, a most excellent mount for the entire Service.

The necessity for a General Service Corps has been emphasised in the annual reports of division and department commanders and staff officers for years. Its establishment is to be desired, from the standpoint of economy, efficiency, and discipline.

It is the concensus of opinion in the Army that the canteen should be re-established. This opinion is concurred in by the Chief of Staff.

It is believed that inspections by division and department commanders should be more frequent and extensive than heretofore and that they should involve a thorough trying out of the troops in practical problems and practical field work, and that officers' rating as to fitness for promotion should rest largely upon the efficiency of their commands as shown by these inspections and those made by the officers of the General Staff and the Inspector-General's Department.

In view of the very rapid advance made in aeronautics in the last few years and the imperative necessity for aeroplanes and dirigibles in war it is important that adequate appropriations should be made available in order that the Signal Corps may be provided with a reasonable number of the better type of machines for instruction purposes and field work. The Signal Corps is, as now organised, insufficient to properly perform its present duties, and as the development of aeronautics will undoubtedly throw added work on this corps, attention is invited to the necessity for its increase.—*Army and Navy Journal.*

NAVAL AND MILITARY CALENDAR.

FEBRUARY, 1911.

1st (Wed.) Launch of H.M.S. *Thunderer* from the Thames Shipbuilding Co's. Yard, Blackwall.

2nd (Thurs.) Arrival of 1st Bn. Yorkshire Regiment at Khartoum.

3rd (Fri.) H.M.S. *Diana* paid off at Devonport.

4th (Sat.) H.M.S. *Diana* recommissioned at Devonport for Mediterranean.

5th (Sun.) 1st Bn. King's Own Scottish Borderers embarked at Port Soudan for Bombay, per *Dongola.*

9th (Thurs.) 1st Bn. South Staffordshire Regiment embarked at Devonport for Gibraltar per *Plassy.*

10th (Fri.) H.M.S. *Diana* left Plymouth for Mediterranean.

13th (Mon.) Fiftieth Anniversary of the capture of Gaeta by General Cialdini and the surrender of King Francis II. of Naples and his family.

" " 1st Bn. King's Own Scottish Borderers arrived at Bombay.

" " 1st Bn. South Staffordshire Regiment arrived at Gibraltar.

14th (Tues.) Launch of H.M.S. *Dartmouth* from Vickers and Co.'s Yard at Barrow.

" " 2nd Bn. Norfolk Regiment embarked at Gibraltar for Bombay per *Plassy.*

15th (Wed.) 2nd Bn. South Staffordshire Regiment arrived at Southampton from Durban per *Soudan.*

24th (Fri.) H.M.S. *Indefatigable* commissioned at Devonport for First Cruiser Squadron.

25th (Sat.) 1st Bn. Scots Guards embarked at Southampton for Egypt per *Soudan.*

27th (Mon.) 1st Bn. Northamptonshire Regiment embarked at Aden for Devonport per *Dongola.*

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Revista Cientifco y Biblotera Militar. Barcelona: 1st December, 1910.—"Lessons of the Riff War" (*continued*). "The Army and Public Instruction." "Our Programme for 1911." 15th December.—"Lessons of the Riff War" (*continued*). "Recollections of the Italian Army." "Machine-guns in the English Army." "Military Statistics." January, 1911.—Not been received. 10th February, 1911.—"Command of Machine-guns." "Recollections of the Italian Army" (*concluded*). "The Career of the Officer of the German General Staff." 25th February.—"The Napoleonic Poetical and Real Methods." "Appreciation of Distances." "The Employment of Armies in War according to Italian Principles." "Seniority of Officers in the Italian Army."

Revista de Caballeria. Madrid: February, 1911.—Has not yet been received.

SWITZERLAND.—*Revue Militaire Suisse.* Lausanne: February, 1911. —"Instruction of a Cyclist Company." "History of the Regiment of Swiss Guards in France." "Aviation." "A further Opinion of the Krupp Shrapnel-shell against the High-Explosive Ehrhardt-van Essen Shell."

UNITED STATES.—*Journal of the United States Artillery.* Fort Monroe, Virginia. January—February, 1911.—"The Selection and Defence of Naval Bases." "Investigation of Gasoline Engines with a view of determining their Suitability as a Source of Power for Coast Defence Installations." "Range Corrections from Observation of Fire."

NOTICES OF BOOKS.

The Life of Sir William Howard Russell, C.V.O., LL.D. The first special correspondent. **By JOHN BLACK ATKINS, London. John Murray, 1911. 2 Volumes.**

The British Army has had no better friend than the cheery Irishman whom thousands who never knew him called "Billy Russell," and his most interesting and amusing life should, and doubtless will, find a home in most military libraries.

Born near Dublin (a self-evident fact) on March 20th, 1820, the son of a Protestant father and a Roman Catholic mother, Russell had his own way to make in the world, and aided by a ready tongue, quick wits, a brain of no ordinary quality, a bold spirit, a warm and generous heart, and a keen sense of humour, the young Irishman gallantly and quickly struggled up the stony path that leads from poverty to success. Nothing indeed could have been much less promising than Russell's start in life. Shortly after his birth his father failed in business, and an expected legacy, poor Billy's first hope, failed to materialise "My Aunt Stanistreet," he writes in his inimitable way, "left me a sum of money in her will, but it could never be found anywhere else." The man who could be amusing on so tragic a subject was bound to succeed.

It was at the early age of sixteen that young Russell "commenced author." One day he saw a lark of unusual pattern. The poor bird had a tuft on its head, so Billy shot it, drew it, described it, and finally ate it. The drawing and description appeared in due course in the *Dublin Penny Journal*, and, funnily enough, initiated a discussion which has lasted to this day. No other crested lark has ever been seen in Ireland, and, as one of Russell's aunts unkindly remarked, "I dare say it was Jenny Osborne's parrot. It escaped last week."

In spite of all adverse circumstances Russell somehow picked up a good education, and his quick wits and a stroke of luck did the rest. The stroke of luck came just when it was wanted. Russell was twenty-one, without either money or profession, when a cousin came to Ireland to represent the *Times* at the Irish elections of 1841. This cousin, Robert Russell, wanted a staff of young fellows competent to write plain, trustworthy accounts of what they saw. He came to Russell. "You will have a pleasant time of it," he said, "if you will do the work, one guinea a day and your hotel expenses. Will you start next week?" So Russell started next week on the career that he made his own and pursued with a success that soon made him one of the best known men of his day.

Russell's letters from Ireland and the precocious knowledge of the world and descriptive power shown in them by the raw young Irishman gave him an assured position with the *Times*, but it was, of course, his brilliant services to the nation, as well as to his employers, in the Crimean War that made him famous. With no recognised position, and regarded with undisguised hostility by almost every officer of the expeditionary force, Russell's letters from the Crimea *not* only saved the situation and rescued the remnants of the Army from imminent destruction, but they so struck

the conscience of the nation that our soldiers who perished in their thousands before Sebastopol in the winter of 1854 were the last sent out by England to die in her service for the want of transport and supplies. That service alone shouldhave earned the undying gratitude of the Army to Sir William Russell.

Russell's Crimean experience naturally marked him out as the representative of the *Times* in the Indian Mutiny, but he arrived in India rather late in the day. The fierce struggle for existence of the first few months of the Mutiny was over. Lucknow was still besieged, but Delhi had been re-captured, and the Punjab was safe. All that remained was to stamp out the embers of rebellion and so to punish the guilty that the memory of the punishment should long remain. The chief danger was that severity might degenerate into indiscriminate cruelty, and it is to the credit of our national character that despite the terrible provocation this was rarely the case. Here again Russell did good service, recording the valiant deeds of our soldiers and supporting every suggestion of clemency. He was indeed a true Irishman, and perhaps a little too ready to sympathise with rebellion, as an Irishman is apt to be; but in all his writings Russell shows himself generous and fair-minded in intention, even when impulse occasionally led him to unjust judgments. Sir William Russell's later achievements as a war correspondent were in connection with the American civil war of 1861-62, where his truthfulness gave considerable offence; the Austro-Russian war of 1866; the Franco-German war of 1870-71; and the Zulu War of 1879. In this last campaign Russell's underlying prejudice against England made him perhaps a little too ready to believe stories to the prejudice of the British troops, but any error of this nature sinks into insignificance in comparison with his invaluable services to the Army. Sir William Russell, who received the well earned honour of Knighthood in 1895, lived to the age of eighty-six; his long and distinguished public services being fully recognised on his memorial tablet in St. Paul's Cathedral, whereon he is justly described as "the first and greatest of war correspondents." From humble beginnings Russell achieved by sheer force of character and ability a quite exceptional position in life. It is not too much to say that he was the best known and most popular man of his day, and that this celebrity and this popularity were worthily won. The life of Russell, which is a rich mine of instructive and amusing matter, has been edited with much skill, sympathy, and discretion by Mr. J. B. Atkins, himself already favourably known as a brilliant war correspondent and an essayist of great charm.

PRINCIPAL ADDITIONS TO LIBRARY, FEBRUARY, 1911.

Catalogue of the Pictures, Portraits, Engravings and Busts in the United Service Club, Pall Mall. Crown 8vo. (Presented.) (Thomas & Sons, Ltd.) London, 1911.

The Story of Majorca and Minorca. By Sir Clements R. Markham. 8vo. 7s. 6d. (Smith, Elder & Co.) London 1908.

Military Japan—The Japanese Army and Navy in 1910. By J. C. Balet. Translated from the French by C. A. Parry. Crown 8vo. 4s. (Kelly & Walsh, Ltd.) Yokohama, 1910.

The Life of Sir William Howard Russell, C.V.O., LL.D. The First Special Correspondent. By John Black Atkins. 2 Vols. 8vo. 30s. (John Murray.) London, 1911.

La Guerre Napoléonienne. By Lt.-Colonel Camon. 3 Vols. 8vo. 16s. 6d. (R. Chapelot et Cie.) Paris, 1903-07.

Quebec Under Two Flags. By A. G. Doughty & N. E. Dionne. Crown 8vo. 4s. (*Quebec News Coy.*) Quebec, 1903.

Pacific Blockade. By Albert E. Hogan. 8vo. 6s. (Clarendon Press.) Oxford, 1908.

The Evolution of Modern Germany. By W. H. Dawson. 8vo. 21s. (T. Fisher Unwin.) London, 1909.

Battle Honours of the British Army. By C. B. Norman. 8vo. 15s. (Presented.) (John Murray.) London, 1911.

Der grosse Krieg de Jetztzeit. Eine Studie über Bewegung und Kampf der Massenderre des 20 Fahrhunderts. By General Freiherr von Falkenhausen. 8vo. 8s. 6d. (E. S. Mittler und Sohn.) Berlin, 1911.

Etudes sur la Guerre. By Lt.-Colonel Montaigne. 8vo. (Presented.) Berger-Levrault.) Paris 1910.

Les Luttes Maritimes prochaines—Etats-Unis et Japan, Angleterre et Allemagne. By A. M. Laubeuf. 8vo. 1s. 3d. (A. Challamel.) Paris, 1908.

Memoires du Général Griois, 1792-1822. 2 Vols. 8vo. 11s. 3d. (Plon-Nourrit et Cie.) Paris, 1909.

Péril National. By Admiral Bienaimé and Lt. P. Collard. 8vo. 2s. (Librarie Universelle). Paris, 1905.

Le Haut Commandement dans les Principales Armées Européennes depuis les origines jusqu 'a nos jours. By Gaston Bodart. 8vo. (Presented.) Berger Levrault.) Paris 1910.

Organization—How Armies are formed for War. By Colonel Hubert Foster, R.E. 8vo. 3s. 6d. (Presented.) (Hugh Rees, Ltd.) London, 1911.

The India of the Future and its Defence. By Col. L. J. H. Grey, C.S.I. Crown 8vo. (Presented.) (William Clowes & Sons, Ltd.) London, 1911.

Three Rivers, the James, the Potomac and the Hudson—A retrospect of Peace and War. By General F. P. Farley, U.S.A. 8vo. 8s. (Presented.) (Neale Publishing Co.) New York, 1910.

Rear Admirals Schley, Sampson and Cervera—A review of the Naval Campaign of 1898, *in pursuit and destruction of the Spanish Fleet Commanded by Rear Admiral Pascual Cervera.* By Captain James Parker, U.S.A. 8vo. 12s. (Presented.) (Neale Publishing Co.) New York, 1910.

Travels from India to England; comprehending a visit to the Burman Empire and a journey through Persia, Asia Minor, European Turkey, etc., in the years 1825-26. By Major-General Sir James Edward Alexander. 4to. (Presented.) (Parbury, Allen & Co.) London, 1827.

The History of Prussia from the earliest times to the present day. Tracing the origin and development of her Military Organization. By Captain W. J. Wyatt. 2 Vols. 8vo. 9s. (Longmans, Green & Co.) London, 1876.

Handbooks of the Indian Army—Compiled under the orders of the Government of India—Pathans. By Major R. T. I. Ridgway, 40th Pathans. 8vo. 4s. 6d. (Presented.) Calcutta, 1910.

Famous Sea Flights from Salamis to Tsu-Shima. By John Richard Hale. Crown 8vo. 6s. (Presented.) (Methuen & Co., Ltd.) London, 1911.

The Danger Zone of Europe. By H. Charles Woods. 8vo. 10s. 6d. (Presented.) (T. Fisher Unwin.) London, 1911.

British Rights at Sea under the Declaration of London. By F. E. Bray. Crown 8vo. 1s. (Presented.) (P. S. King and Son.) London 1911.

Capture in War on land and sea. By Dr. James Wehberg. Crown 8vo. 5s. (Presented.) (P. S. King & Son.) London, 1911.

Sir William Butler. An Autobiography. By Lieut.-General the Rt. Hon. Sir C. T. Butler, G.C.B. 8vo. 16s. (Constable & Co., Ltd.) London, 1911.

The Outlines of Military Geography. By Colonel A. C. Macdonnell, R.E. 2 Vols. 8vo. 12s. 6d. (Presented.) (Hugh Rees, Ltd.) London, 1911.

RECENT PUBLICATIONS OF MILITARY INTEREST.

COMPILED BY THE GENERAL STAFF WAR OFFICE.

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PREFATORY NOTE.

This Pamphlet will be issued quarterly, in April, July, October and January. Its purpose is to draw the attention of Officers to British and Foreign publications of Military interest which are likely to assist them in their professional work. Copies o the pamphlet will be distributed to the Headquarters of Commande, Educationa Establishments, Units and Reference Libraries.

PART II.[1]

SECTION I.

NOTE 1. *When the Price is not given in Part II., Section I., it is not known.*

2. *In Part II., Section I., books whose titles are given in foreign languages as well as in English are published in those languages, and are not translated.*

AERIAL NAVIGATION.

The Defenders of Sevastopol [Севастопольцы]. By General P. F. Rerberg. Vols. I, II, III. 418 pp. Profusely illustrated. Oblong 8vo. St. Petersburg, 1903, 1904, 1907. Golke and Vilborg.

In 1901, General Rerberg, of the Imperial Russian Engineers, a veteran of the Crimean War, announced his intention of compiling a representative collection of portraits of officers and men of all ranks who took part in the defence of Sevastopol. The collection is now completed and is dedicated to the defenders of Sevastopol. The three albums contain altogether 1,332 portraits, accompanied in most cases by a short biography of the individual; a number of these portraits date from the period of the Crimean War.

The collection includes photographs of Sevastopol taken at the time of the Siege, and some interesting groups taken in 1905 of veteran survivors of the campaign.

General Rerberg has forwarded a presentation copy of his work to the Imperial General Staff.

Recollections of the Russo-Japanese War (Воспоминания о японской войнѣ). By **Colonel E. I. Martinov. 8vo. 402 pp. Maps. Plotak Government Press, 1910. 5/8.**

Colonel Martinov was appointed to the 143rd Zaraiski Regiment on the outbreak of the war, and commanded it throughout the operations of 1904. In this book he relates at length the part played by the Zaraiski Regiment in the great actions, and in the various minor operations of the campaign. The Zaraiski Regiment at first comes under the orders of General Stakelberg, and receives its baptism of fire at Tel-li-ssu. Later, it is transferred to the IVth Siberian Corps, with General Dobrjinski as divisional commander. The last-named officer created an unfortunate impression on meeting the regiment, fresh from its honourable action at Tel-li-ssu, by haranguing it on his own experience gained in peace manœuvres at Kasan. This general cuts a very sorry figure throughout the book. The Zaraiski Regiment plays an important part in the operations against Kuroki on the Tai-tsu-River (25th-29th August) where it particularly distinguishes itself in covering the Russian retreat, and Colonel Martinov is awarded the Georgian Cross. Colonel Martinov testifies to the benefit of offensive action in raising the moral of the soldier. On the 26th August the Zaraiski Regiment counter-attacked and drove in Asada's grenadiers, losing three officers and 130 other ranks; the success inspired the men with the spirit of the offensive, and the desire to attack was preserved in the regiment through the rest of the campaign. The most brilliant exploit of the regiment was, however, the successful recapture of the village of Endouniulu by a night attack (Shi-li-ho 12th October, 1904). The success of this operation was largely due to the careful preliminary reconnaissance of the ground. The men left their kits behind, they wore their overcoats to distinguish them from their opponents, the approach was effected in complete silence, and the attack delivered with the bayonet alone. The final action described is the Sha Ho. Colonel Martinov was entrusted with a section of defence at Lamutun on the right of the Xth Corps. Great importance was attached to the village above mentioned but eventually Colonel Martinov received written orders which directed him to withdraw if the Xth Corps fell back. Shortly afterwards the adjacent troops of this Corps began to retire, and the Zaraiski Regiment accordingly withdrew from Lamutun. Later on it was discovered that the movement of the Xth Corps was unintentionally started by the withdrawal of a unit from the front to its place in the reserve without previous notice having been given to the neighbouring units. Plans for the recapture of Lamutun were prepared, but the task was not attempted. The book throws a very interesting sidelight on the interior economy of a Russian unit in the field. The Zaraiski Regiment, had, apparently, a considerable regimental fund. The foresight of the commanding officer added to the regimental transport by local purchase, furnished the men with garments of Chinese linen for the summer, and with fur-lined jackets for the winter, with extra boots and with a cobbler's depot in Mukden for their repair. When the divisional intendance reduced the meat ration, the Zaraiski Regiment made up the deficiency from their own store beasts; and when the divisional general showed a weakness for utilising too often the mounted section of regimental scouts on detached duty, Colonel Martinov solved the difficulty by forming a duplicate scout section for his own use. The field kitchens were always on the spot when needed, and when the situation did not admit of their being sent up to the front line, the men received their cooked rations in haversacks. Any lull in the fighting was taken advantage of to issue a meal, or to order the men to sleep, and finally when the regiment went into winter quarters on an entrenched position they built themselves baths and a laundry. Such details scattered throughout the book, in spite of its modest tone, reveal the fact that the Zaraiski Regiment was fortunate in its commanding officer, whom it lost when he was appointed chief staff officer to the IIIrd Siberian Army Corps.

The book is interesting, and is written in simple style and in very easy Russian. The student of this language will find it valuable for the introduction it gives to military life, and also for the many military terms which it contains. The print is very good and the sketch maps are clear.

***Russo-Japanese War*, 1904-05 (Русско-Японская война, 1904-1905). By the Russian Military Historical Committee. St. Petersburg, 1910. 4to. 2/1/8.**

The Russian History of the War in the Far East has been compiled by a committee of three major-generals, six colonels, and one lieutenant-colonel, under the direction of Major-General Gourko.

The volumes so far issued are:

Vol. I.—Events leading up to the war. pp. 857 with three maps.

Vol. II.—First period of the war.

Part I. From the commencement of hostilities to the battle of Te-li-ssu. pp. 581.

Part II. Te-li-ssu to Ta-shih-chiao. pp. 695. Portfolio containing 35 maps.

Vol. III.—Liao-yang.

Part I. Events in July, 1904. The period of the rains.

Part II. Re-opening of hostilities on the 23rd August till the concentration of the Russian army in the Liao-yang position on the 29th August 1904.

Parts I. and II. pp. 768.

Part III. The battle of Liao-yang and the retreat to Mukden. pp. 445.

Portfolio containing 55 maps.

Vol. IV.—Sha-Ha and San-te-pu.

Part I. The battle of the Sha-Ho. pp. 507.

Part II. The winter of 1904-05 and the battle of San te-pu. pp. 536.

Supplement to Part II. The raid on Newchwang. pp. 122.

Portfolio containing 75 maps.

Vol. V.—Mukden.

Part I. The preceding events and the battle of Mukden till the issue of Kuropatkin's order for the retreat of the 1st and 3rd Armies to the Hun-Ho. pp. 686.

Part II. From the retreat to the Hun-Ho to the concentration of the Russian army on the position of Chi ping-Kai. pp. 406.

Portfolio containing 55 maps.

Vol. VI.—Chi-ping-Kai. pp. 664.

Vol. VII.—The services in rear of the army.

Part I. The organisation and command of the army in the field. pp. 571.

Part II. The lines of communication. Transport and communication. pp. 525.

Portfolio containing 64 maps.

Vol. VIII.—The defence of Port Arthur.

Part I. From the commencement of the war till the close investment of the fortress.

Portfolio containing 26 maps.

Volume VIII. has yet to be completed. The size of the whole work may be gathered from the fact that a special staff circular lays down the cost of carriage by rail in the event of the weight exceeding 120 lbs.

Credit must be accorded the committee for the rapidity of its work when it is recalled that the German Official History of the Franco-German War required nine years to write, and that the Russian Official History of the Russo-Turkish War of 1877-1878 has not yet been completed.

The work will be reviewed as it appears in the French translation.

Military Japan (Le Japon militaire). The Japanese Army and Navy in 1910. By J. C. Balet. 233 pp., including preface, and table of contents at the end. 12mo. Yokohama: Kelly and Walsh. Paris: E. Leroux, Rue Bonaparte. 2/11.

This is an interesting work. The military portion, to which this review is limited, comprises 158 pages and ten chapters dealing respectively with:—discipline, caste spirit, and defence budgets; recruiting and terms of service; territorial organisation, distribution of troops and organisation of units; higher commands, administration and education; conditions of services of officers and non-commissioned officers; reserves and manœuvres; peace and war establishments and armament numbers available, mobilisation, railways telegraphs, sea transport; uniforms, decorations, and pensions; regimental life, national qualities and defects. Numerous and generally accurate statistics are given; the data about colonial garrisons are, however, not up-to-date. There are some clerical errors: on page 46 it is stated that the 3rd Division was with General Nogi in front of Port Arthur, this should read "7th." On p. 50 the number of one of the cavalry regiments at Toyohashi is given as 52nd; it should be 25th: there are only 37 cavalry regiments in the Japanese army.

The most interesting chapters in the book are the first and the tenth. In the former the author speaks of an increase of insubordination and socialistic tendencies; he alleges that discontent exists on account of the favouritism which, according to his statements, is shown to men from certain provinces in allotting high posts. He declares that attempts to evade military service are numerous.

In Chapter X he discusses the Japanese character. Many of his remarks are true, although some will disagree with him when he says that lack of fixity of purpose is a Japanese national characteristic. He ascribes the great military achievements of the Japanese to a spirit of self-abnegation which, he says, must decrease with the spread of western individualistic theories. Whilst admitting that at present the Japanese army has no superior, he is evidently doubtful whether it will retain its present virtues and efficiency.

POLITICAL.

The French Colonies (Notre oeuvre coloniale). By Monsieur A. Messimy. 420 pp., with numerous tables and diagrams. 8vo. Paris, 1910. Emile Larose. 4/-.

The author of this work is a French deputy with considerable experience of Colonial affairs, a man who thoroughly believes in Colonial expansion, and has implicit faith in the future of the French colonies. The book is well worth reading by all those interested in Colonial matters, whether social, military, or administrative. It gives a good description of the most important political and economic questions affecting the various French colonies, and deals with their financial affairs an general administration. Few Englishmen realise the enormous progress made by the French colonies in the last 20 years, a result due to sound methods of administration and to an energetic forward policy. We are justly proud of our own system and of the many successes of our Colonial policy; but we are not altogether perfect, and may perhaps have a good deal to learn in some respects from our French friends.

Peace or War East of Baikal? By E. J. Harrison. 545 pp., 3 maps and numerous illustrations. 8vo. Yokohama. Kelly and Walsh, Ltd. 21/-.

The author, a journalist who has resided many years in Japan, has given a singularly impartial account of the conditions in the Far East consequent on the Russo-Japanese war, and the recent Agreements and Conventions affecting the political situation in that part of the world.

The question asked in the title is answered in the first chapter, where the writer gives it as his opinion that peace is likely to last for a decade at least, but that the final struggle for hegemony is inevitable. According to him Japan has no intention of provoking a conflict. On p. 14 he says:—

> "I cannot share the Russian belief that these preparations for war in Korea and Manchuria necessarily imply a resolve to force a conflict upon Russia on some entirely frivolous pretext. Japan on her side has an equal right to assert that the construction of the Amur railway is but preliminary to a war of revenge on the part of Russia against Japan."

The subjects dealt with in the book are:—

Chapters II. and III.—The Russian advance eastwards and the events leading up to it, the net result of which is that "a second Russian armed frontier in the remote east of Siberia from Baikal to the Pacific Ocean in spite of the economic weakness of that country, has become an inevitable necessity."

Chapters IV. to IX.—East Siberia and a voyage down the Amur river. Vladivostok, the writer says, has improved beyond recognition since the war. It suggests a "live" city more than any other port in the Far East; but, quoting the opinion of Mr. Panoff, a Vladivostok journalist with a life-long experience of the Far East; he points out the precarious position in which that city would find itself, should the network of railways now being constructed by Japan be completed before the Amur railway. He adds that the Amur railway alone will be insufficient to guarantee Russia against attack. A Japanese advance from Kirin, a town which will soon be connected by rail with Ch'ang-ch'un on the west, and with the Korean port of Chong-jin on the east, in conjunction with a descent upon the Maritime Province, would squeeze Vladivostok in a vice. A fleet strong enough to resist attack from the sea is therefore a vital necessity.

Chapters X. to XIII. deal with Russia in North Manchuria;

Chapters XIV. to XVIII. with Japan in South Manchuria. The writer considers that the enormous vested interests that Japan is building up in Dairen (Dalny) will make it impossible for China to buy her out at the expiration of the lease.

In Chapter XVIII. is discussed the Knox proposal of January 1910, to neutralise the Manchurian railways. This seems to have left a bad impression on the public mind in Japan. He shows that with a growing population expansion has become a necessity for her, and that, like every other Power, she will expand along the line of least resistance, *i.e.*, Korea and Manchuria. America has always closed her doors to Japanese immigration on the Pacific Coast, and it is not surprising that a proposal from this quarter, which would have the effect of placing her influence in Manchuria on an equal footing with that of any of the six Powers, should have excited bitter feelings in Japan.

Chapters XIX to XVI.—The Japanese in Korea. Railway projects in Korea are clearly described: the following are likely to be commenced at an early date:—

(1) Mokpo to Koang-ju, in south-west Korea, ultimately to be linked up with the Seoul-Fusan line at Taiden.

(2) Seoul to Gensan. Chong-jin, on the north-east coast, to Hoiryong; thence to be connected with Ch'ang-ch'un by the Kirin-Ch'ang-ch'un railway, now under construction, thus constituting a third line of advance from the sea into the centre of Manchuria.

Texts of recent Treaties, Agreements, and Conventions relating to the Far East are given in appendices.

There is a good map of Korea and Manchuria. In the railway map of the Far East the portion showing railways in China is misleading. Railways are shown as completed from Tsi-nan Fu and Kiao-chow to Hi-chan Fu (Yi-chou Fu?). This is incorrect. That from Kiao-chow to Yi-chou Fu is projected only, while that from Tsi-nan Fu to Yi-chou Fu is a portion of the Tientsin-Pu K'ou railway, which is now under construction.

The Persian Revolution, 1905-09. By E. G. Browne. 350 pp. with numerous illustrations, two appendices and an index. 4to. Cambridge University Press, 1910. 10/-.

The author of this work is a Professor of Arabic and a Fellow of Pembroke College in the University of Cambridge. His knowledge of Persia generally, and his personal friendship with many leading men of the country, as also his own earnest study of Persian affairs, makes him peculiarly qualified to write on this subject. A steadfast champion of the Persian Constitutionalists and their cause, and a firm believer in their power to put affairs in Persia straight, and then to govern the country on progressive lines, without any interference from the outside world, Professor Browne has endeavoured to place this point of view before the public. In his preface he states that the book is intended to be a history, and, to quote his own words, "he has endeavoured to collect, co-ordinate, and weigh all available information, and then to present as faithful a summary of the conclusions as he has been able to frame."

With such beliefs as he holds it is natural that the author should say that no amount of railways, mines, gaols, gas, or drainage can compensate the world, spiritually and intellectually, for the loss of Persia, which would be the inevitable outcome of the occupation and administration of Persia by foreigners.

Studies of Indian Life and Sentiment. By Sir Bampfylde Fuller, K.C.S.I., C.I.E. 360 pp., with map and index. 8vo. London, 1910. John Murray. 6/-.

Sir Bampfylde Fuller's work is one which should be read by all who take an interest in and are willing to try and understand the real India. Almost every phase of Indian life is touched upon; Indian problems are discussed and explained in a manner which cannot fail to be understood even by those who have not had the opportunity of visiting the country; whilst at the same time the wealth of detail and accurate description contained within the covers of the book, are never redundant. The great lesson which Sir Bampfylde seems to convey in this work is that India is not a country inhabited by a nation, homogeneous, compact, and self-contained, but a vast sub-continent wherein dwell multitudes of races, differing from each other in every way that it is feasible for human beings to vary from each other. This book possesses the rare merit of accuracy. The reader cannot fail to be impressed with the feeling that he has presented before him the results of a wide experience, close observation and deep study.

Canada and Canadian Defence. By Major-General C. W. Robinson, C.B. 186 pp., including index. 3 maps. 8vo. London, 1910. Hugh Rees. 6/-.

General Robinson's able book will perform good service if it tends to the diffusion throughout the Empire of reasoned information about one of its most important components. One of the principal factors making for closer union of our world-wide Empire is the spread of knowledge of and added interest in the aims, hopes, and aspirations of its several parts. In a series of addresses during his visit to Canada in the fall of 1908, Iord Milner pointed out how inadequate human imagination was to enable the separated parts of the Empire to feel acutely the more immediate needs of each other. If there were more books of the nature of *Canada and Canadian Defence* this inadequacy would be lessened, and it would not then be Utopian to hope for a common public opinion upon one at least of our joint problems—the military needs of the Empire.

Unthinkable as is war with the United States, General Robinson points out that Canada must pay a proper regard to the fact that for practically 4,000 miles her frontier marches with that of a powerful nation. His views upon the present needs for the protection of that frontier are based upon the lessons of the war of 1812-14, and he brings in support the opinion of the Duke of Wellington, an opinion which he rightly avers is not greatly affected by the scientific and military advance of 100 years. The outlines of the campaign referred to are set forth in brief and lucid form, lessons are deduced therefrom, and the changes since 1814 affecting these deductions are all carefully considered in the work. In the consideration of these changes and the manner in which they affect Canada's position to-day, much useful information regarding canal and railway construction and general progress in the Dominion is given in enlightening form.

The book contains three useful maps illustrating the events of the war of 1812-14 and the character of a most important part of the Canadian frontier; while Appendix III contains useful information regarding the harbours and ports of the great Dominion.

The Navies of the World and Naval Supremacy (La Marine de Guerre). By A. Sauvaire Jourdin. Illustrated by D'Albert Sebille. 372 pp. Paris. Librairie Vuibert. 8/4.

This is a well-illustrated book which deals with naval matters generally, although most of the sketches and much of the text are concerned with the French Navy in particular. The most important part of the book, however, to English readers will probably be the brief but striking preface of Admiral Fournier, who, in pleading for harmony and unity of view in the French Navy, points out that the future is full of menace. He foresees an alliance of the Pan-Germans and Pan-Islams, and is afraid that such an alliance will provoke a general conflagration unless Great Britain takes the only sure step to prevent it, namely, the creation of a powerful National army. Can and will England, he asks, save herself by merely piling up Dreadnoughts?

The book itself contains the following headings: "Naval History," "The Modern Ship of War," "Naval Artillery," "Personnel," "Navigation," "Evolutions and Tactics," "The Submarine," "The French Navy and Sailors."

A Critical Study of Tactics and of the New German Regulations (Etude critique de la tactique et des nouveaux règlements allemands). By Commandant de Pardieu. 145 pp. Paris, 1910. Charles Lavauzelle. 2/-

This book will be found useful by those who wish to gain a rapid insight into the spirit and teaching of the German training manuals. It consists of two parts. Part I. is a short critical summary of the German regulations for infantry, cavalry, and artillery; Part II. deals with the tactics of the three arms. In a short introduction (p. 55) to this part the author discusses what he considers the four main characteristics brought out in the German Regulations, viz., the spirit of the offensive, the development of initiative, the necessity for intercommunication, and the attack with large masses. The latter principle, in Commandant de Pardieu's opinion, pervades all the German Regulations. Following on this introduction comes a discussion of the offensive, which occupies the greater part of the book. The author contrasts the views on the tactics of advanced guards in France and Germany. The German advanced guard is, he says, a shield not a weapon of offence. Under the heading of the "Approach March" (p. 71) he explains the successive stages of deployment by which the German divisions pass from their columns of march to their fighting formations; the tendency to deploy at once in certain cases without waiting to form up in position of assembly, is noted with approval.

In the chapter devoted to battles of encounter the author calls especial attention to the forward position of the guns in the columns of march, and to the simultaneous opening of fire by the whole mass of the artillery. With regard to the latter point he remarks (p. 78):—

> "But against what will the mass of the artillery open fire? In case of a war between the French and Germans the latter will only have as targets a few of the French advanced guard batteries. If the Germans open fire with all their guns the French artillery will thereby gain definite information as to their number and positions."

As regards the infantry advance, Commandant de Pardieu notes (p. 85) the tendency of the Germans to seize and endeavour to maintain superiority of fire from the moment that fire is opened. He points out a certain want of clearness which, he says, may be intentional in the wording of the Regulations for the assault. There is, he observes (p. 90) no "decisive attack" in Germany as in France. The decision is sought for on the flanks, the flank attack being carried out in the same method as the attack on the front, but with more energy and persistence.

With regard to the attack on an entrenched position, Colonel Pardieu criticises the assumption, which the German Regulations appear to make, that the attackers will be able to gain fairly exact information as to the dispositions of the defence by means of a thorough and elaborate reconnaissance of the position.

Such information, he considers, can only be gained by attacking. "If the Germans put these principles into practice," he remarks, "they risk making a blow in the air; a false front or a line of advanced posts will suffice to mislead them."

The defence is dealt with in a much smaller space. The author appears in accord with the general principles laid down by the German Regulations. He criticises, however, the fixing of the infantry position about 600 metres in front of the artillery" as too rigid, and expresses his surprise at the comparative silence of the Regulations on the subject of counter attacks, and as to the counter offensive in general. In spite of the above criticisms and of some others which cannot be mentioned for want of space, Commandant de Pardieu appears to be in accord with the governing principles of German strategy and tactics.

Instructions for the Conduct of the Battle by Infantry (*Provisional*) (Наставление для ведения боя Пѣхотою). 72 pp. 12mo. St. Petersburg, 1910. Berzovski. 5/-

A new edition of the *Russian Infantry Training* was published in 1908, but the present pamphlet is the first work issued by Army Headquarters on the subject of infantry battle tactics since 1900, the Russian infantry having been trained during the last six years in accordance with instructions issued from time to time by the commanders of the twelve military districts.

The pamphlet has been subjected to a scathing criticism in the *Russki Invalid** of the 29th October. The writer points out that the compilers have not confined themselves to infantry tactics, but have wandered into discussions on combined training, that instead of encouraging individuality and self-reliance by inculcating general principles, a model form of attack is described, that, so far from profiting by the experience of the war in the Far East, the pamphlet is actually less up-to-date than the Instructions of 1900, that the essential features of modern infantry battle tactics are not set forth, such as the power and range of modern firearms, the depth of the battle field, the wide extensions, the length of the combat, and the slowness of the attack.

The advance into action.—A few points may be noticed:—

A force advancing will generally march in parallel columns, each of a strength of one brigade and each column will be covered by an advanced guard. Artillery positions will be chosen under cover of the advanced guard. The larger the unit, the sooner must its definite task in the attack be assigned—the army corps and the division should be launched while still outside the zone of hostile artillery fire, while the company's task is defined after the zone of rifle fire has been reached, and that of the section just before the assault.

The unit which will, it is thought, encounter most difficulty in its advance should be detailed to direct. The halt at the first fire position should be utilised to make systematic arrangements for the further advance. As the advance continues, each unit will press forward trying by its fire to relieve pressure on neighbouring units.

On arrival at the zone of distant artillery fire (7,000 to 6,000 yards) the regiment will break up into battalions, and every effort will be made to advance concealed from the fire and the view of the enemy.

The zone of effective artillery fire (6,000 to 2,400 yards), will be passed in company formation, and fire-swept areas by sections. The experience of the war in the Far East taught that artillery-fire cannot stop an infantry advance in extended order, and therefore doubling, and man by man advances need not generally be resorted to. During this period the artillery of the attack will concentrate its fire on the artillery of the defence with a view to its weakening before the arrival of the attacking infantry at the first rifle-fire position

In the zone of distant artillery fire deep and narrow-fronted formations are recommended, such as line of sections in file; under rifle fire, formations should be wide and shallow.

Dispositions in attack.—In a decisive attack a regiment of four battalions is given a frontage of 1,200 to 1,500 paces. The regiment then assigns one to two battalions to the fighting line, and these in turn detail a certain number of companies, which advance with intervals followed by their own supports. The fighting line is fed in the intervals as required by companies from the battalions in reserve, and reaches its full strength at the first rifle-fire position. The distance between successive lines in the advance, including that between the firing line and supports, will be about 600 paces.

The strength assigned to a holding attack will be less, but the difference should be rather in the reserve than in the fighting line.

Zone of distant artillery fire.—The firing line is formed at 3,000 paces, and at first consists of a single section from each company. Halts to fire up to 1,500-1,800 paces will be exceptional, and will only be made to deal with large targets. Fire will be opened at 1,500 paces, and from this range sections will support each other's advance by their fire. In order to avoid loss from distant artillery fire, the first rifle-fire position should be occupied and fortified, if possible, under cover of darkness; but such movement must be preceded in daylight by a careful reconnaissance of the approaches and their marking by recognisable signs, or better still by the occupation of the position itself during dusk by patrols.

At the first rifle-fire position a pause will probably occur to take the range to the enemy's position, to arrange for the further advance, and to enable the attacking batteries to make an impression on the hostile infantry. At the same time it is probable that part of the artillery will come up with a view to affording closer support to the further advance.

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* Army handbooks are issued by the Training Branch of the General Staff. The Russki Invalid, like the Voenni Sbornik, is edited by a Lieut.-General who is immediately responsible to the Chief of the General Staff, but prints articles from contributors of various views.

Movement in the zone of effective rifle fire.—In reinforcing, sections and squads should be kept intact as long as possible, but the intermingling of units is unavoidable as the enemy's position is approached and must be prepared for.

The choice of further fire positions will depend on the ground, the position of neighbouring units, and the enemy's fire; it must, however, be remembered that differences of less than one-third of the whole distance to the enemy's position will afford little advantage from a musketry point of view. The second fire position will therefore be, as a general rule, from 500 to 600 paces in advance of the first—say 1,000 paces from the enemy's trenches, and the fire from it, being noticeably more effective than from the first position, will have a powerful moral effect on the enemy by bringing home to him the approach of the attacking force. From position to position the advance will be by rushes, the men halting to rest and not to fire. As a rule the company commander will select the next fire position with the help of the map, and each squad will be supported in its rushes forward by the fire of the remaining squads from the first fire position. The section will not open fire from the new position till all the men have come up, in order to produce a moral effect on the defenders by a simultaneous group of hits.

As the enemy's position is approached and his fire becomes more effective, the rushes will be made by smaller units, squads, groups, and man by man, and will be for a shorter distance—say 15 to 20 paces.

In advances within point blank range each individual will construct what cover he can at each intermediate halt for the use of his comrades who follow in rear.*

The final fire preparation of the assault will be commenced when the attacker arrives at a point from which he can distinguish the heads of the defending riflemen as they raise themselves to fire. A continuous fire must be poured on the enemy's trenches.

Communication with the artillery.—Each section of the attack must be connected by telephone and by signallers with the artillery in order that the guns, being warned of a commander's intention to advance, may be enabled to overwhelm the defenders' trenches opposite that section with a rapid fire.

...The assault.—The attacker must entrench at the final fire position. The signal for the assault may be given by a junior officer and he must be supported by the simultaneous advance or by the fire of his neighbours.

Fire direction.—Fire direction finds its expression in the choice of targets and of the class of fire. In selecting a target, its tactical importance and the probability of hitting it must be taken into consideration.

The company commander is empowered to direct fire on objects behind which an enmy may be concentrated. Distances must be ascertained by the use of the range-finder, from the artillery, from the map, and only—if no other means is available—must they be estimated by eye. Under favourable conditions fire may be opened on a battery or a section from a range of 2,100 yards, upon groups or a firing line in movement at 1,250 yards, upon individuals advancing or a firing line lying down at 850 yards.

Volleys, being less than half as effective as individual fire should only be rarely employed.

The Defence.—A force, by assuming the defensive, may cause the attacker great loss while suffring few casualties, but decisive results can only be obtained by moving forward to the attack, and the continued uncertainty regarding the attacker's plans though the prolonged strain of the modern battle wears the defender out.

The streagth of the defence lies in its fire and in the manœuving power of the reserve. The usual position will be a long, irregular weakly held, frontal line with fire swept intervals. econd line and supporting positions will be held in rear and the flanks will be thrown back to avoid envelopment.

Fortifications and trenches must be mutually supporting. The experience of the war proved that trenches on the crest line are inadvisable. Every trench should afford protection from shrapnel, *i.e.*, should have a depth of 6 or 7 feet, or should be provided with loopholes. Communication trenches are almost as important as fire trenches. The infantry must be independent of engineer assistance in the fortification of a position.

The position for the batteries will be selected by the senior artillery officer in the section. It will be found necessary to move batteries during action, and firing over the head of the infantry is permitted:—

(a) On level ground, when the guns are firing at a range of 2,100 yards and over, and the infantry are at least 700 yards in front.

(b) When the guns fire from a position 35 feet above that of the infantry, the interval need only be 230 yards.

(c) If the infantry are provided with cover in rear, the interval may be less than 230 yards, but the trajectory must pass at least 35 feet above the ground they occupy.

The object of advanced posts is, by impeding the hostile reconnaissance, to mislead the attacker regarding the dispositions of the defence, and to force him to disclose his strength. The garrison of these posts will be found by the outpost troops, the positions being previously prepared either on the picquet line or in the neighbourhood of the outpost reserve. No artillery will be detailed, as

* The critic in the *Russki Invalid* remarks, "An impossible demand from even the best infantry."

the posts will be within range of the guns of the main position. The garrison will not be reinforced from the main position to which it must eventually retire.*

The distance to conspicuous objects must be measured beforehand, and a table of the ranges affixed to a board should be hung up in the trenches of the firing line.

Fire may be opened at the same range as recommended in the attack. The local reserves are designed for replacing casualties in the firing line and to assist in repelling the final assault.

The general reserve is kept for the decisive counterstroke, which will be directed as a rule against the enemy's flank. The more obscure the situation, the stronger the reserve should be. It should be placed on the most important or most threatened flank, and at a much greater distance in rear than has hitherto been the custom, with the two-fold object of avoiding useless participation in the nerve strain of the combat and of enabling its units on deployment to strike the flanks of the enemy's outflanking columns.

Communication.—Communication will be maintained by:—

(*a*) Orderlies.
(*b*) A chain of orderlies.
(*c*) Flag and lamp signalling.
(*d*) Telephones and telegraphs.
(*e*) Attaching officers or selected men to neighbouring units.

Flag and lamp signalling must be used by company, battalion, and regiment commanders to supplement orderlies and telephones. The use of a chain of orderlies is recommended as being more reliable than the dispatch of single messengers. The responsibility of organising communication by chain of orderlies or flag with his superior commander rests in each case with the commander of lower rank.

Communication by telephone is arranged by the senior to the junior commander. Thus the regimental commander with five telephones and 5 and 1-3rd miles of wire must arrange communication with battalion commanders, with the artillery, and with detachment units of his command, the divisional commander with his brigadier, etc.

In an attack, the divisional central telephone station will be near the artillery and 2 to 3 miles from the enemy's position, that of the regiment about 1,500 yards from the enemy and near the first rifle-fire position.

Communication with neighbouring units will be maintained through the central station, i.e., regiments will communicate through the divisional central station, and a line may sometimes be laid between the regiments of different divisions or corps.

In the defence, telephonic communication will be arranged with advanced posts.

Officers and men detached to neighbouring units for communication purposes will remain near the commander of that unit, and despatch reports to their own unit as required.

An officer in each battalion will be detailed to superintend the service of communication.

Reconnaissance.—The duty of reconnaissance by infantry is treated in two chapters:—before and during the battle.

The reconnaissance before action will be carried out by:—

(*a*) Officers preferably alone but sometimes accompanied by small patrols. The battalion adjutants who are mounted are specially indicated for this duty.
(b) The regimental scouts (four men per company, or 64 per regiment), who will work up to a distance not exceeding half a march in advance of the advance guards. They will maintain communication with the advance guards by means of the mounted orderlies (of whom there are 13 in each regiment), supplemented, if necessary, by men from the corps or divisional cavalry.
(*c*) Commanders down to company leaders, of the ground upon which their units will probably be called upon to manœuvre.

During the battle the duty will be carried out by:—

(*a*) Unit commanders who will occasionally move forward for the purpose.
(*b*) Specially trained observers. These will be prepared in each company in addition to the scouts (*razvyedchiki*) who will be usually at the disposal of the regimental commander in action.

Protection of the flanks.—Outflanking movements have become the normal rule and are equally effective in attack and defence. The immediate protection of the flanks cannot be entrusted to the cavalry, but in forces of a strength of more than a battalion should devolve on scouts supported by picquets, strengthened at night by stronger parties detailed from the local reserves.

Machine guns.—The chief opportunity for the use of machine guns lies in the final assault, after the volume of artillery fire has dwindled owing to the danger of striking its own infantry (750 to 650 yards and under). At longer ranges machine gun fire will be used only for sweeping areas. The guns will be advantageously employed by advanced and rear guards, in advanced posts, and to accompany small parties of infantry in outflanking movements, as well as to sweep with their fire important lines of hostile approach and defiles.

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* The critic in the *Russki Invalid* is of opinion that advanced posts played too important a role in the last campaign for their garrison to be limited to the outpost troops, who would be altogether too weak to achieve the ends desired

In the attack, machine guns will be at first with the battalion and regimental reserves. They will be moved forward into the firing line at effective rifle range or even at the final fire position.

Machine guns in the defence must be carefully protected from artillery fire. They should be used boldly to repel the final assault, and to increase their effectiveness should be provided with two or three alternative emplacements with covered communication trenches.

Cavalry Taught by Experience. By "Notrofe." 64 pp., with map. 8vo. London, 1910. Hugh Rees. 2/6.

This little book is recommended as an interesting study of an imaginary reconnaissance by a British cavalry brigade, commanded by Major-General A.

The study is based on an imaginary campaign in an imaginary country. The problem is a simple piece of reconnaissance, and is dealt with in three attempts in the style of Duffers Drift. The first two attempts are failures, the third a success. In the latter the dispositions of his enemy rather play into the hand of Major-General A. and may be looked on as somewhat Utopian. Certain of the arrangements made, such as the placing of the whole of a rearguard in motor cars (p. 52), and the reconnoitring of an enemy's lines by pairs of scouts (p. 49) instead of by patrols, may be open to question, but on the whole the book furnishes valuable lessons besides being very readable.

The summing up on p. 64 is excellent.

Infantry Tactical Problems (Thèmes tactiques d'Infanterie). By Major Savatier. 248 pp. Paris. Lavauzelle. 3/4.

This is a useful book which should prove of assistance to officers studying the tactics of the principle arm. The author takes a simple scheme, and works out the movements of a battalion or company in advanced, rear and flank guards, outposts, attack and defence of positions. The solutions are based entirely on the French official regulations. There is no map with the book, but all the operations take place on the $\frac{}{50.000}$ map of Metz.

Between the Adda and the Isonzo: the Defence of Italy's Eastern Frontier (Fra Adda e Isonzo: Difesa del confine orientale). By Colonel T. Nagliati. 208 pp. 8vo. Rome, 1910. Voghera. 8/4.

Colonel Nagliati's book is divided into three parts. In the first he deals with and criticises the accepted principles of modern fortification, particular mention being made of the effects of the indirect laying of artillery and of aerial reconnaissance. In the second, the author makes a close analysis of the strategical and topographical situation on the Austro-Italian frontier. In the third part suggestions are made as to best manner of defending that frontier by land and sea, with an estimate of the probable cost of the measures suggested.

Spanish Cavalry Training. Vol. IV. (Reglamento provisional para la Instruction tactica de las Tropas de Caballeria.) Spanish General Staff. 131 pp. 12mo. Madrid, 1910. 1/2.

Volume IV. of the new *Spanish Cavalry Training* deals with "Combats and Manœuvres"; it supersedes a similar handbook published in 1901.

The strategic handling of cavalry does not come within the scope of the book, which deals exclusively with the tractical handling of the arm.

The dominant feature is insistence on the value of the spirit of the offensive as exemplified in phrases such as "inaction is the only unpardonable sin." About 20 pages out of 131 are devoted to dismounted action, it being stated that mounted action is the rule, dismounted action the exception.

The following are some of the points dealt with:—

Cavalry v. Cavalry.—The approach march is to be conducted in successive "bounds" covered by protective bodies, composed of sections or squadrons. The actual conduct of the fight must depend on the attendant circumstances, but the following principles should be adhered to:—

(a) A definite plan of attack should be formed best suited to the ground, the forces available and the enemy's dispositions.

(b) The force should be divided into different groups of combat, each with a distinct mission.

(c) Unanimity of action must exist between the various groups. It may be necessary to keep connection between them for this purpose, but such connection is not to interfere with the carrying out of the mission assigned to each group.

(d) The troops should be disposed in depth.

Cavalry v. Infantry.—The elements of a successful attack on infantry are as follows:—(1) Surprise; (2) The enemy's physical exhaustion; (3) Weakness of the enemy's fighting power owing to a weak firing line, shortage of ammunition, change of position, &c.

It would be most foolish to launch cavalry against unshaken infantry without fire preparation. But cavalry, with its attendant horse artillery and machine guns, now possesses such increased fire power that it is by no means impossible that it may defeat hostile infantry without assistance.

Dismounted action.—This increased fire power must not, however, be abused; it has not altered the fundamental principle of cavalry employment, which is offensive action. Fire should be used to develop that principle, not as a substitute for it.

In the attack the employment of dismounted cavalry is not altogether dissimilar to that of infantry. They should advance in skirmishing order and will occupy successive fire positions. The method of advance should usually be by section rushes. Supports should not usually be employed, but a mounted reserve should be kept in hand to be used either mounted or dismounted, as circumstances may direct.

In the defence the firing line should usually occupy the crest line, unless there is much dead ground when it should be advanced along the forward slope.

Pitched battle.—The efficiency of cavalry action depends on the position of the cavalry during the different phases of action. During the preliminary reconnaissance cavalry take a leading part in the reconnaissance work, after which they should be withdrawn to the line of the reserve. During the decisive attack cavalry must be energetically employed in co-operating with the other arms to force a decision.

Spanish Musketry Regulations (Raglamento Provisional para la Instruction de Tiro de las Tropas de Infanteria). Spanish General Staff. 193 pp., with numerous plates. 12mo. Madrid, 1910. 2/-.

These Regulations supersede those issued in 1907, and presumably embody the lessons learnt by the Spanish troops during the Melilla campaign.

The book is divided into two parts, the first dealing with musketry instruction and practices, the second with materiel and ranges.

Instruction.—Great latitude is given to the company commander. The Regulations lay down the general lines on which the preliminary training and instructional practices are to be conducted, but although the manner of carrying out the annual course is suggested, it is explicitly stated that company officers need not strictly adhere to the suggested course. The number of rounds to be expended annually are fixed by the Officer Commanding the regiment, and will usually be from 100 to 160 per trained soldier and 200 rounds per recruit.

Classification.—The ring targets are marked into ellipses for first, second, and third third class shots. First class shots score two points in each practice, second class one point. At the conclusion of the course an average of 1.33 points qualifies for a first class shot, .66 points for a second class. The ellipses are of generous size, that of first class shots being 8½ by 7 inches at 50 yards lying, and 48½ by 42½ inches at 400 yards. Two-thirds of hits within the first class ellipse qualifies the firer as a first-class shot for that practice. In practice 9.57 per cent. of hits qualifies for first class shot, 39 per cent. for second.

Education.—Progressive courses of instruction in musketry will be carried out by all officers and non-commissioned officers. These will include judging distance, range finding with telemeters, designation of targets, studies of ground from the point of fire effect and small tactical instructional days.

Across Abyssinia (Quer durch Abessinien.) By Dr. Jacques Faïtlovich. 188 pp. 1 map. M. Poppelauer. Berlin, 1910. 8vo. 6/-.

Although this book is called *Across Abyssinia*, the journey undertaken was as a matter of fact confined to the country between the northern boundary and Addis Abbaba. It is the second time that Dr. Faitlovich has travelled in Abyssinia, the previous occasion being in 1904-05, but on both occasions his main objects were to traverse the country inhabited by that portion of the Abyssinian race who still profess the Semitic faith.

It will be recollected that in early days the Hebrews are said to have had considerable intercourse with the ancient Ethiopia, and according to the Abyssinians, the present dynasty is descended from Solomon himself. However, there are but few Abyssinians nowadays who are Jews by religion and those that remain are known as "Falashes," located in the northern districts.

Dr. Faitlovich's route lay from Eritrea down through Gondar to Lake Tsana; and around this locality as far as Debra-Tabor the Falashes were chiefly encountered. From Debra-Tabor, the route to Addis Abbaba was taken, and thence a return route direct through Ankober to Massowah.

In Debra Tagor, a visit was paid to Ras Guksa, the nephew of the Empress, and in Addis Abbaba, Dr. Faitlovich had an audience of the Emperor Menelek himself. The chapter describing his stay in the capital is interesting, and there is a good deal of useful information contained in the book.

Mission Niger-Tchad, 1906-09 (Documents Scientifiques de la Mission Tilho, 1906-09). 412 pp., with numerous illustrations and 3 maps in separate case. Paris. Imprimerie Nationale, 1910. 20/-.

The above deals with the observations made by Captain Tilho's expedition to Lake Chad and the country round it. The observations are dealt with under five headings.

(1) Geographical.
(2) Astronomical.
(3) Meteorological.
(4) Altitudes.
(5) Magnetic.

The geographical observations are subdivided into three chapters dealing with:—

(*a*) Former explorations of Lake Chad.
(*b*) The work of this expedition.
(*c*) Conclusions arrived at concerning the normal level of the lake and the extent of the islands in it.

The astronomical observations are in two chapters, dealing with:

(*a*) Observations for longitude by means of chronometers; these were carried out with great care by making observations at the various points of closed polygons, thus furnishing a check on the rates of the various chronometers used.

(*b*) Observations for obtaining the longitudes of 70 places by means of occultations of stars by the moon.

The meteorological observations are in four chapters dealing with:

(*a*) Observations made in 1907 under nine separate headings.
(*b*) Similar observations made in 1908.
(*c*) General remarks on the climatic conditions of the country round Lake Chad.
(*d*) The steps to be taken by the permanent officials stationed in those districts to continue the observations systematically.

Altitude observations were made at all the places visited, by means of barometers and hypsometers, both sets of instruments being compared with standard ones in Paris before and afer their use in Africa.

Magnetic observations were made at 38 stations.

With the exception of the chapters devoted to former expeditions to the Lake, and to the description of the country, the book is chiefly of scientific interest, and it appears to contain the best and most complete information of this part of Africa that has yet been published.

Map to Illustrate the Indian Mutiny, 1857, *with Notes and References*. London, 1910. Foster Groom. 2/6.

This publication is one of the "Whitehall Series of Military Maps," specially produced for Military History Examinations. It consists of a folding map of India, showing the communications and garrisons as they were in 1857, with an inset showing the present Indian railway systems. Three pages of notes on the Mutiny, giving a general *resume* of the whole situation, are attached to the inside of the cover. The notes include a few observations on the lessons to be drawn from the operations. Small flags to assist the student to mark the dispositions of the forces during the campaign are contained in an envelope enclosed with the map.

The work will be of assistance to the student of Military History.

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,, A. E. McNamara, Royal West Surrey Regiment.
,, E. Hewlett, Devonshire Regment.
,, H. C. Maitland Makgill Crichton, Royal Scots Fusiliers.
,, G. M. Shipway, Gloucestershire Regiment.
,, R. N. Dick, Royal Sussex Regiment.
,, R. G. B. M. Hyslop, Dorsetshire Regiment.
,, A. R. M. Roe, Dorsetshire Regiment.
Lieut. J. M. Blair, Royal Highlanders.
Capt. R. J. Collins, Royal Berkshire Regiment.
,, R. M. G. Tulloch, Royal West Kent Regiment.
Capt. J. E. Munby, Yorkshire Light Infantry.
,, F. H. Dorling, Manchester Regiment.
,, T. H. C. Frankland, Royal Dublin Fusiliers.
,, P. B. Maxwell, 35th Sikhs (Indian Army).
Lieut. C. W. G. Walker, 37th Dogras (Indian Army)
Capt. E. R. Hayes Sadler, 8th Gurkha Rifles (Indian Army).

Nominations:

Capt. G. A. Weir, 3rd Dragoon Guards.
Capt. & Brevet Maj. Buchanan Dunlop, Royal Horse Artillery.
Capt. G. E. Bolster, Royal Artillery.
,, J. S. FitzGerald, Royal Irish Regiment.
,, O. H. Delano-Osborne, Royal Scots Fusiliers.
,, G. H. N. Jackson, D.S.O., Border Regiment.
,, C. H. Lyon, North Staffordshire Regiment.
,, W. W. Pitt-Taylor, D.S.O., Rifle Brigade.
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JOURNAL

OF THE

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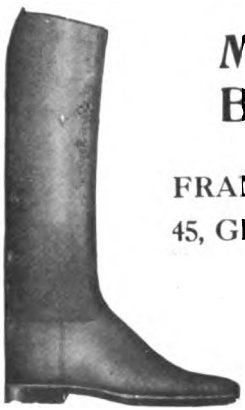
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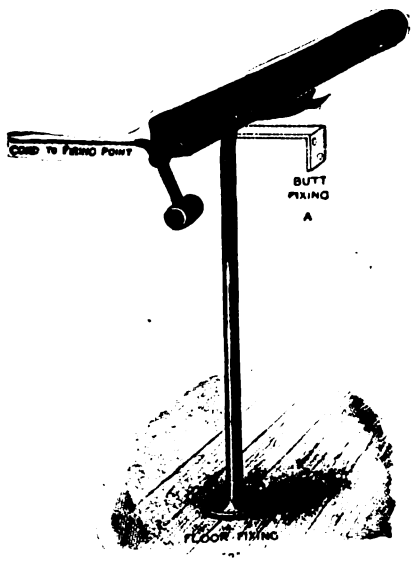
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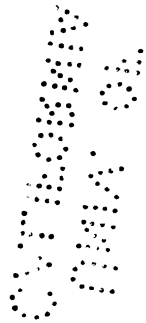
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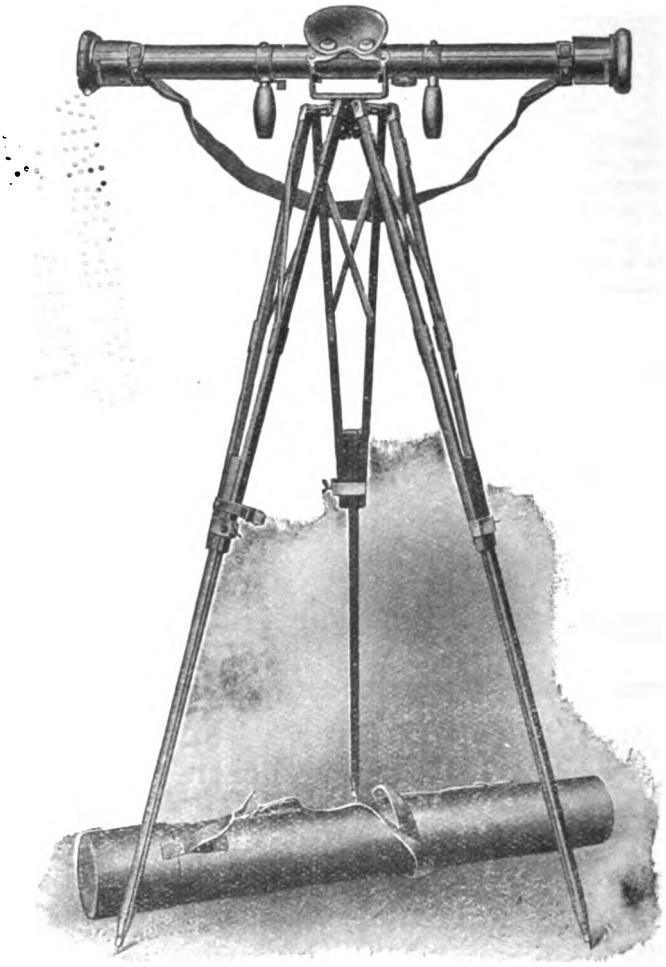
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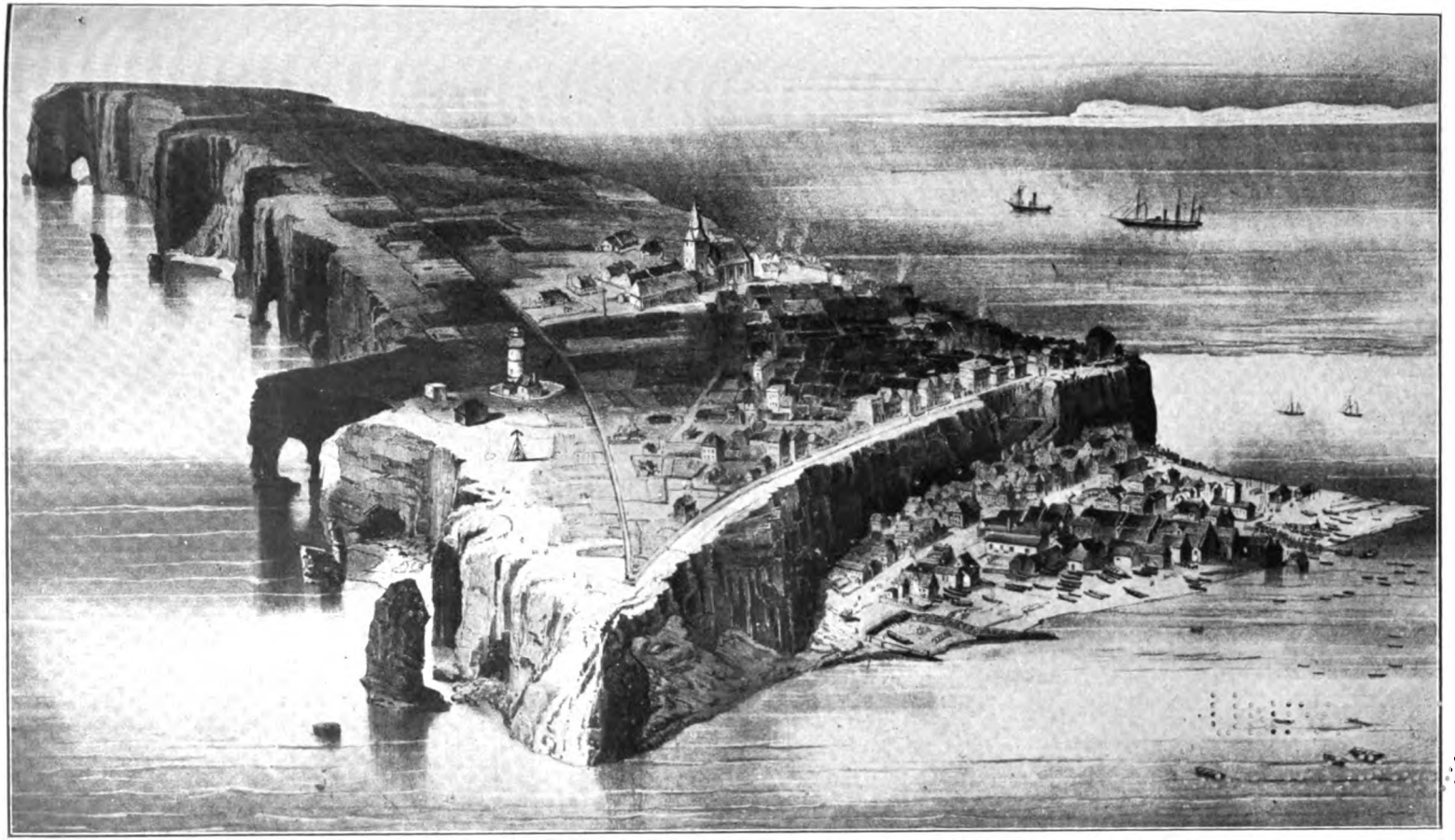
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THE ISLAND OF HELGOLAND. *From a drawing dated 1855.*

The island of Helgoland was ceded to Germany by Great Britain in 1890. The first contingent of conscripts drawn from the island [illegible] undergoing their first year's training. The Kaiser inspected the new harbour works and fortifications early in March 1914.

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THE JOURNAL

OF THE

ROYAL UNITED SERVICE INSTITUTION.

VOL. LV. APRIL, 1911. No. 898.

[Authors alone are responsible for the contents of their respective Papers.]

SECRETARY'S NOTES.

I.—COUNCIL: Vice-President.

General Lord Methuen, G.C.B., K.C.V.O., C.M.G., Colonel Scots Guards, has been appointed a Vice-President of the Institution.

Brigadier-General H. H. Wilson, C.B., D.S.O., Director of Military Operations at the War Office has been elected Chairman of the Council of the Royal United Service Institution, Whitehall, for 1911-12.

Vice-Admiral A. M. Field, F.R.S., has been elected Vice-Chairman.

II.—OFFICERS JOINED.

The following officers joined the Institution during the month of March:—

Colonel S. S. Long, Assistant Director of Supplies
Captain J. O. Hara Moore, R.E.
Lieutenant H. B. Pilcher, R.N.
Captain D. C. Faichnie, Leicestershire Regiment.
Captain R. J. Cox, A.S.C. (T.F.)
Colonel J. L. H. Neilson, late Canadian Forces.
Second-Lieutenant C. W. Mason-Macfarlane, 7th Hussars.
Second-Lieutenant F. N. Mason-Macfarlane, R.F.A.
Lieutenant J. L. Forbes, R.A
Lieutenant S. C. Lyttleton. R.N.
Lieutenant-Colonel The Right Hon. Sir H. Mortimer Durand, G.C.M.G., K.C.S.I., K.C.I.E., late Indian Volunteers,
Colonel L. Dorling, D.S.O., A.P.D.
Second-Lieutenant R. Wolridge-Gordon, Grenadier Guards.
Second-Lieutenant C. Cottrell-Dormer, Scots Guards
Captain N. Mc. N. Gray, R.A.
Lieutenant-Colonel J. B. G. Tottie, 4th Bn. West Yorkshire Regiment.
Colonel F. H. Crampton, R.G.A.
Captain E. J. Skinner, R. A.
Colonel G. C. G. Blunt, A.S.C.
Captain P. C. Cooper, Hon. Artillery Company.
Major P. B. Strafford, West Riding Regiment.
Captain N. Macleod, Indian Army.
Lieutenant E. C. Dimsdale, Rifle Brigade.
Major R. M. Poore, D.S.O., 7th Hussars.
Captain R. E. Cecil, 21st Lancers.
Major H. P. Burn, late Rifle Brigade.
Second-Lieutenant H. C. H. Hudson, 11th Hussars.
Captain E. J. F. Johnson, 3rd Bn. Royal Scots.
Captain D. C. Crombie, Indian Army.
Lieutenant K. Parbury, R.F.A.

Major R. G. T. Bright, C.M.G., Rifle Brigade.
Lieutenant V. E. Inglefield, East Yorkshire Regiment.
Colonel E. L. Street (late Staff).
Captain F. B. Young, Cheshire Regiment.
Captain R. M. Burgoyne, Royal Scots Fusiliers.
Major C. E. Liles, late 26th Middlestx (Cyclists) Vol. Rifle Corps.
Lieutenant H. S. Marshall, R.G.A.

III.—CORONATION SEATS.

The list of applications for seats for the Coronation Procession and Royal Progress closed on March 28th. 2533 seats have been applied for for June 22nd and 2,353 seats for June 23rd.

Applications can still be received from Members serving in India and the Colonies, as it is hoped that H.M. Office of Works will place a further number of seats at the disposal of the Council of the Institution, and in that event they will be reserved for such officers.

The Secretary regrets that there has been some delay in sending out the receipts to the various applicants, but the work has been so great that it has been impossible to do so more expeditiously.. The ballot will be held at an early date, when the result will be made known as soon as possible to both successful and unsuccessful Members who have applied for seats. Ten shillings per seat applied for will be returned (as per circular of March 11th, 1911) to those unsuccessful, and cheques will be prepared with all possible despatch, but there must necessarily be some delay, as there is so large a number to be dealt with.

IV.—THE CHESNEY MEDAL.

The Council has awarded "The Chesney Gold Medal" to Professor C. W. C. Oman, M.A., F.S.A., Chichele Professor of Modern History, Oxford University, in consideration of his valuable military work "A History of the Peninsula War."

V.—ADDITIONS TO THE MUSEUM.

(6299). Uniform of the Cinque Ports Vounteers of 1803, consisting of coattee. trousers, silk sash, gorget, white buff shoulder belt and badge, and one epaulette, which formerly belonged to Lieutenant J. B. Sladen (J.P. and D.L., of Ripple Court, Kent). Mr. William Pitt was the Colonel of this corps.—*Given by Douglas Sladen, Esq.*

(6306). A Russian Helmet Plate of the 94th Regiment and a manuscript Document in Russian, picked up on the taking of Sevastopol, in 1856, by Lieutenant E. J. Hughes Preston, of the Naval Transport Service.—*Given by Colonel B. Hughes Preston, M.S.C.*

(6307). Flags of the Transvaal Republic and the Orange Free State, found in the Public Offices at Bloemfontein, on the occupation of that place in 1900.—*Given by Major-General Sir George Prettyman, K.C.M.G., C.B., who was Military Governor of that place, at the time of Field-Marshal Earl Roberts' occupation.*

(6309) An Engraving, entitled "A View of the Volunteer Army of Great Britain in the Year 1806," designed to commemorate the great and united spirit of the British People. Below is a list of each Volunteer Corps in the United Kingdom, their numbers, name of the commanding officer. There is also a diagram, divided into sections, descriptive of the uniform worn by each unit.

(6310). A Five Pointed Silver Star, bearing the initials R.G.S. and the inscription "Emin Relief Expedition, 1887-9." This expedition was commanded by Mr. H. M. Stanley.

to whom the Royal Geographical Society presented a Special Gold Medal, bronze copies of which being given to the European Officers. To the coloured followers was presented a Silver Star, of which this exhibit is one.—*Given by Captain J. de M. Hutchinson, C.V.O., C.M.G., R.N.*

(6311). An Abyssinian Key or Priest's Badge of Office, which was obtained by the late Colonel E. J. Lugard, 4th King's Own Royal Lancaster Regiment. from a priest at the Farewell Conference, held with the Abyssinian Chief, by Sir Robert Napier, at Senafé, at the conclusion of the Abyssinian War in 1868. It is of wrought iron, the Maltese Cross at the end being of fine workmanship.—*Bequeathed by the late Colonel E. J. Lugard.*

(6312). Piece of the Victory's Jack used at the Battle of Trafalgar. —*Given by C. Dack, Esq., Curator, Peterboro' Museum.*

(6313). Piece of a Colour carried at the Battle of Waterloo. —*Given by C. Dack, Esq., Curator, Peterboro' Museum.*

VI.—IMPORTANT "NEW STANDING ORDER."

The Council have recently passed the following standing order: "A Member in arrear with his Annual Subscription after March 31st of each year, shall not be entitled to use the Institution Buildings, receive the Journal, or participate in any of the privileges accorded to members."

VII.—MILITARY HISTORY LECTURES.

The course of Military History Lectures on "The Franco-German War, 1870, from 15th July to 1st September," the subject for the Army Promotion Examination to be held in May, will take place as usual. The lectures will be delivered by T. Miller Maguire, Esq., LL.D., barrister-at-law. The fee for the course of lectures is one guinea for Members of the Institution, and two guineas for non-members. The dates of the lectures will be as follows:—

Friday, April 21st.	Friday, May 5th.
Tuesday, April 25th.	Tuesday, May 9th.
Friday, April 28th.	Thursday, May 11th.
Tuesday, May 2nd.	Friday, May 12th.

The hour of each lecture will be 4 p.m. Application to attend, enclosing the fee, to be made to the Secretary, Royal United Service Institution, Whitehall, S.W.

VIII.—MEMBERS ADDRESSES.

The Council beg to draw the attention of members who do not have the Journal sent to them, and have not registered an address with the Secretary, to the fact, that they (the Council) cannot be held responsible if such members do not receive any notices that may from time to time be sent out.

PRINCIPAL ADDITIONS TO LIBRARY DURING MARCH, 1911.

Horse-Mastership. By Fred F. MacCabe, M.B., etc. Crown 8vo. 1s. 6d. (Presented.) (Bailcière, Tindall and Cox.) London, 1911.

The Principles of Aeroplane Construction. By Rankin Kennedy, C.E. Crown 8vo. 5s. (Presented.) (J. and A. Churchill.) London, 1911.

Initiative and the Power of Manœuvre. By Brigadier-General H. H. Wilson, C.B., D.S.O., Director of Military Operations. (Aldershot Military Society.) Crown 8vo. 6d. (Presented.) (Hugh Rees, Ltd). London, 1910.

Memoirs of the Most Material Transactions in England for the last hundred years preceding the Revolution in 1688. By James Welwood, M.D. 6th Edition. Crown 8vo. 1s. 6d. London, 1718.

The Growth of Napoleon. By Norwood Young. 8vo. 12s. (John Murray.) London, 1910.

From Peking to Mandalay. By R. F. Johnston. 8vo. 15s. (John Murray.) London, 1908.

The Mahratta and Pindari War. Compiled for the General Staff, India, by Lt.-Col. R. G. Burton. Imp. 8vo. (Presented.) (Government Monotype Press.) Simla, 1910.

French Views on the tactical employment of Field Artillery. By Major-General F. J. Aylmer, V.C., C.B. (Aldershot Military Society.) Crown 8vo. 6d. (Presented.) (Hugh Rees, Ltd.) London, 1911.

Notes on the War in the Peninsula, 1808-10. *Including the Giron Diaries.* By Lieut.-Col. D. Juan Arzadun y Zabala, Spanish Artillery. Translated by Major-General J. C. Dalton, R.A. 8vo. (Presented.) (Royal Artillery Institution.) Woolwich, 1911.

Tactical organization and uses of Machine Guns in the Field. By 1st. Lieutenant J. H. Parker, U.S.A. Crown 8vo. 6s. (Hudson-Kimberly Publishing Co.) Kansas, 1899.

The Queen's Jubilee Procession London, June, 21st, 1887. (Photographs.) Oblong fo (Presented.) n.p., n.d.

German Influence on British Cavalry. By Erskine Childers. Crown 8vo. 3s. 6d. (Presented.) (Edward Arnold.) London, 1911.

The Life of Field-Marshal Sir Frederick Paul Haines. By Robert S. Raitt. 8vo. 10s. 6d. (Constable and Co. Ltd.) London, 1911.

My Life among the Blue-Jackets. By Agnes Weston. 8vo. 6s. (Presented.) (James Nisbet and Co., Ltd.) London, 1910.

A Study of the Development of Infantry Tactics. By Colonel Brea. Translated by Capt. A. F. Custance. Crown 8vo. (Presented.) (Swan Sonnenschein and Co., Ltd.) London, 1911.

Modern Artillery in the Field. By Colonel H. A. Bethell. (Military Text Books) 8vo. 7s. 6d. (Macmillan and Co., Ltd. London, 1911.

Fallacies and Facts—An Answer to Compulsory Service. By Field-Marshal Earl Roberts. Crown 8vo. 2s. 6d. (Presented.) (John Murray.) London, 1911.

GOLD MEDAL PRIZE ESSAY FOR 1910.

Subject

"HOW CAN THE COLONIES BEST HELP IN THE DEFENCE OF THE EMPIRE ?"

By Captain P. W. GAME, p.s.c., Royal Horse Artillery.

Motto

"What is true is not new, what is new is not true."

INTRODUCTION.

PART I. THE MILITARY PROBLEM OF OUR EMPIRE. The Solution of the Problem heretofore. *Ascendancy of Spain. Ascendancy of Holland. Ascendancy of France under Louis XIV. Temporary alliance with France. The Austrian Succession. Revolt of the American Colonies. The Napoleonic Peril. Principles Deduced.* Present Day Conditions. (1) *General Conditions.* (2) *Naval Conditions.* (3) *Military Conditions.* Our Probable Rivals to-day ..

PART II. THE RÔLE OF THE NAVY

PART III. MEANS BY WHICH THE COLONIES CAN BEST ASSIST THE NAVY TO FULFIL ITS RÔLE ... ... *Considerations of Sentiment. Material Resources. The present position. Colonial Navies, Maintenance of Fixed Defences. Direct Contribution. The Creation of Efficient Land Forces.*

PART IV. SUMMARY AND CONCLUSION ... ...

INTRODUCTION.

Mr. Julian Corbett, in a lecture delivered at the Royal United Service Institution some few years ago, attributed to the Anglo-Saxon race the national failing of almost always approaching a discussion without having first stated as clearly as possible the proposition that is going to be discussed.

At first sight the question, which forms the subject of this essay, appears simple and direct, and to require no further elucidation. A little consideration, however, bearing in mind Mr. Corbett's warning, will show that before discussing how the Colonies can best help in the naval defence of the Empire, it is very necessary to have a clear definition as to what exactly the two words "Naval Defence" imply.

The word "Defence," then, in this paper, will be used in its widest sense, not merely in that of defence against actual aggression, but in that of the defence of the interests of the Empire, by any action, offensive or defensive, which circumstances may dictate.

Further, it is contended that "Naval Defence" cannot be considered by itself, as a thing apart, but must be treated as part of the military problem of the Empire, using the word *military* to include everything appertaining to the application of force, whether by land or sea.

It is proposed, therefore, to divide the subject into what appear to be its component parts, and to discuss it under the following three headings:—

(1) What is the military problem of the Empire?

(2) What must be the rôle of the Navy in the solution of this problem?

(3) How best can the Colonies assist the Navy to fulfil its rôle?

PART I.

THE MILITARY PROBLEM OF OUR EMPIRE.

The military problem, which confronts our Empire, cannot of itself be rigidly determined, since it depends on our ideal of Empire, and the particular ideal entertained by any individual or body of individuals may range from the 'cut-the-painter' teaching of the old Manchester School to the advanced theories and practice of the late Cecil Rhodes.

Any particular ideal must have its moral as well as its material aspects, but, for the purposes of this essay, the material side only will be considered, and it will be taken for granted that the end in view is the preservation of the Empire territorially, as it exists to day, and the retention of the sinews of Empire, namely our oversea trade.

The conditions under which these aims have to be pursued are continually changing, and are not the same to day as they have been at any particular period in the past. Nevertheless, the lessons of the past should be capable of application, even under very altered conditions, provided the fact of such alteration is always borne in mind. Let us then very briefly consider the history of the defence of our Empire from its inception about the middle of the 16th Century up till the present time.

THE SOLUTION OF THE PROBLEM HERETOFORE.

Ascendancy of Spain.

The first rival we encountered, or rather, one might say, the primary cause of the formation of our Empire was Spain. Spaniards were the pioneers of the discoveries in the New World, and the imagination, not to say the greed, of England was excited by the spectacle of Spain becoming rich and powerful by means of her possessions upon, and trade with, these newly found lands.

Spain however had no claims, at that time, which conflicted with our interests in Europe, and consequently our rivalry with her was confined to the sea, and to the destruction of her fleets and to the capture of her trade and her trading posts.

Ascendancy of Holland.

Our next opponent was Holland and, in this case too, the genesis of the rivalry was entirely the question of commerce. Holland, a small country with a comparatively long coastline and an intimate connection with the sea, had confided its destiny to that element, and had acquired a preponderating share of the carrying trade of the world. As long as Spain was strong it was to the interest of England that Holland, in juxtaposition to the Spanish Netherlands, should be the same. But, the power of Spain being moribund, a natural desire on the part of England, a country similarly situated, to share in the benefits which accrued to Holland from the sea, led, as it was bound to do, to a duel between the two for sea supremacy.

The immediate acts which led to war were, firstly, the seizure in the Channel, during hostilities with France, of Dutch ships carrying French goods, the Dutch protesting that the flag covered the cargo; and, secondly, the imposition by England of the Navigation Acts, which practically forbade importation into England in any but English ships.

Three wars resulted, and all contained lessons which are particularly applicable to us in the position in which we find ourselves to-day.

At the period of the first war the Dutch Navy was suffering from a reaction due to the relaxation of the pressure brought to bear on it for so long by the power of Spain, now rapidly decaying.

The English Navy had been re-organized after the troublous times of the civil war, and was happy in the possession of

commanders who recognized the true principles of its employment. Holland owed her wealth and strength to the sea, and a great step towards her downfall would be secured by interference with her trade. But Blake and Monk saw clearly that no mere preying upon her commerce could ever bring Holland to her knees, as long as her fleets remained powerful, and insisted that an essential preliminary to the destruction of her trade was the defeat of those fleets. They recognised, too, the point where the acquisition of local supremacy on the sea would be decisive, namely in the narrow waters of the enemy's coasts where all her trade must converge, and did not hesitate to oppose the detachment of any part of their fleets to uphold English interests in the Mediterranean or elsewhere.

Their wise counsel was at first overruled, and the result was the defeat of Blake off Dungeness. Thenceforward the Mediterranean was abandoned, and the English fleets were concentrated in the Channel and the North Sea. The remaining three battles were all favourable to England, and when peace was made, in 1654, the Dutch agreed to recognise the British flag as supreme in British seas, and the Navigation Acts remained in force.

The rivalry still continued, however, and eleven years later war broke out again. The Dutch fleet had by now recovered some of its former strength, and was most ably commanded by De Ruyter. England was stronger in the Mediterranean, owing to the acquisition of Tangiers, and could afford to concentrate her naval strength in home waters, and adopt a like strategy to that pursued in the first war. French assistance given to Holland, and fire, pestilence, and financial stress at home led, however, in 1667, to the abandonment of the policy of Monk and Blake, to the laying up of a large number of ships, and to the adoption of a system of preying upon commerce as the sole means of carrying on the war. The almost immediate result was De Ruyter's raid up the Thames, and the burning of English shipping within view of London itself.

But now the inherent weakness of what Mahan calls a commercial Government made itself felt, and the Dutch, weary of the war and the damage to their trade which resulted from it, committed the mistake of making peace just when fortune was smiling. The chief advantages gained by England were the cession of the Dutch Settlements of New York and New Jersey.

Both the above wars were entirely maritime and consequently indecisive. Commercial rivalry still went on, and in 1672 the

war commenced afresh. But now a new factor was introduced by the entry of France into the arena. Louis XIV, allowing his greed of territorial expansion eastward to blind him to the wise counsels of Leibnitz, entered into an unnatural alliance with England, the hereditary enemy of France, against Holland, her long standing friend. Certainly the alliance did not last long, but it sufficed to settle in our favour the duel for sea supremacy with the Dutch, and to transfer much of the latter's trade into our hands. Such, at least, was the ultimate, though not the immediate result. The Dutch navy had at this time fully regained its strength and efficiency, and the result of the naval struggle was entirely in favour of Holland. So much was this the case indeed, that the French invading armies were forced to fall back when almost on the point of victory. The Dutch emerged victorious and retained their independence, but the strain of maintaining the struggle, both by land and sea, was too great for a country comparatively small in extent and population, and the disappearance of Holland from among the ranks of the great powers dates from this war.

Ascendancy of France under Louis XIV.

Our great rival, France, against whom we had twice, at least, to put forward all our strength, next comes on the scene. Our struggles with the French, although our trade benefited to a very large extent in the result, were not directly due, as in the case of our rivalries with Spain and Holland, to economic causes. Indirectly they were so.

France aimed at territorial aggrandisement in Europe, and it was the fear of losing our position in the world and, consequently our trade, should France become overwhelmingly strong, which induced us to combat the aggressive policy of Louis XIV to the utmost of our power. Economic causes, in fact, forced us to adopt the policy of the preservation of the Balance of Power in Europe. It was recognised that the material resources of any country which should become the arbiter of Europe, would render the subjection of England only a matter of time, and the policy then enunciated has been our ruling motive since, and must remain identically the same to-day.

Our wars with France continued intermittently from 1692 till 1815. During all these years the varying fortunes of the maritime warfare had their effect on the situation, but the issue could not be, and was not, decided on the sea. Mahan has shown conclusively how important a factor was sea power in bringing about the ultimate result, by furnishing, through commerce, the neces-

sary funds to enable us to carry on the struggle. No succession of naval victories, however, could, of themselves, have baulked either Louis or Napoleon of the realization of their ambitions. To do this the war must be waged on land, and, in all our struggles with France, we find that such was the case, and that English troops and English money were freely expended on the Continent.

For ten years after the peace of Nimeguen which ended the third Dutch war, Louis XIV gave full rein to his ambition for expansion, at the expense of his neighbours. The result was a European coalition against France, which we joined, in pursuance of our policy of the preservation of the Balance of Power.

In this war, known as that of the League of Augsberg, and in that which shortly followed it to decide the question of the Spanish Succession, English troops and English subsidies were both freely employed to prevent the territorial aggrandisement of France. Though fought with like objects and similar in essentials, these two conflicts differed, however, in the fashion of their waging by our enemy.

In the first case the war was conducted offensively by the French both on land and sea. The French fleets, thanks to the reorganization undertaken by Colbert, and to the parsimonious treatment of our Navy, were so superior in the Channel as to admit of the landing of French troops in Ireland, and of their retention there over a period of fifteen months; while our merchant ships encountered enormous losses at the hands of the French privateers, which enjoyed great liberty of action, owing to the supremacy of their fleets.

During the second period, however, namely, the decade commencing in 1702, the navy of France, having no secure basis, as had that of England, on an extensive mercantile marine, no longer enjoyed the superiority it had possessed ten years earlier. The policy of Colbert was therefore abandoned, and the French, practically withdrawing their fleets from the sea, confined themselves to the destruction of English commerce by means of a *guerre de course*, carried on by single cruisers and privateers.

The contrast between the results to be obtained by the two methods is most striking.

At the peace of Ryswick, in 1697, though England secured certain commercial advantages, she could boast the gain of no oversea possessions. By the peace of Utrecht, in 1713, on the other hand, England acquired Gibraltar, Minorca, Nova Scotia,

and Newfoundland, in addition to other advantages, such as the dismantling of Dunkirk. In the second war, also, the individual losses to English merchantmen were very large, but any temporary setback to our trade caused thereby, could have no comparison in importance with the lasting advantages which we reaped.

Temporary Alliance with France.

Shortly after the peace of Utrecht, Louis XIV having died in 1715, England entered into an alliance with France which lasted some twenty years. During this period Spain, under the able administration of Alberoni, had achieved a temporary respite from her rapid decline. Alberoni's schemes were far-reaching, and included the formation of a Northern Alliance against England, with whom trade rivalry in the West Indies was still acute.

The French alliance had, however, allowed England, freed from the incubus of the continental war, to devote her resources to the maintenance of the efficiency of her sea power, and Alberoni's aggressive policy in the Mediterranean was brought to nought by the destruction of the Spanish fleet by the English off Cape Passaro.

In Northern Europe the quarrels of England with Sweden over the Duchies of Bremen and Verden, and the determination of Peter the Great to make Russia mistress of the Baltic, led to an alliance between these two powers against Great Britain, and to a projected invasion. The death of Charles XII. of Sweden saved England from attack, and her ministers seized the opportunity to support his successor against Russia, the combined fleets successfully keeping open the Baltic to European commerce.

Though France at this time, under the administration of the aged Fleuri, had entered on a period of peace and recuperation, yet the old policy of continental expansion, dormant for the time, was not forgotten. The war of the Polish succession saw France supporting a family claimant against the nominee of Austria, and once more allying herself with Spain to gain her ends. England for once held aloof, her destinies at that time being in the hands of the peace-loving Walpole.

The Austrian Succession.

A few years afterwards, war was once more formally declared between England and Spain, France supported the latter in practice, though in theory maintaining peace with England. Three years later commenced the general scramble for the

Austrian throne on the death of the Emperor Charles VI. England, her pledges coinciding with her interests, supported his daughter, Maria Theresa. France, having nothing to gain by her accession, favoured both the other applicants. A general war resulted, and France showed her real aims by once more turning her arms against the Austrian Netherlands. The acquisiton of Antwerp and the Scheldt by France would enormously increase her portential naval strength in the North Sea and Channel. England retaliated by driving the French fleets from the sea and by sending troops to Flanders

A peace, more or less restoring the *status quo ante*, was patched up in 1748, but the rivalry of France and England now extended over a world wide field. Hostilities in India and North America practically never ceased, though formal war did not commence for some years.

In 1757 France was once more, by the same bait of the promised transference to her of part of the Austrian Netherlands, drawn into a European coalition against Prussia. England, true to her policy, opposed France on every sea and in her colonies on land, besides supporting her enemies in Europe with both men and money. The result of this policy was seen in the Treaty of Paris in 1763, by which England gained Canada, and the Ohio Valley, four West Indian Islands, and Minorca, and retained her conquests in India.

Revolt of the American Colonies.

The next serious menace to our Empire arose a few years later, when France and Spain, profiting by the revolt of our American Colonies, entered the lists against us once more. And now the problem proved too much for us, in so far that we lost the Colonies, to retain our hold of which we had taken up arms.

The first and foremost cause of their loss was the superiority of our enemies' fleets. France and Spain had once more built up their sea power and we had failed to keep pace.

The avowed objects of the continental nations, as expressed in the French manifesto, were "to put an end to that tyrannical Empire which England has usurped, and claims to maintain, upon the sea." *

Luckily for us our enemies, as Napoleon said of the continental generals of his time, saw too many things at once. The East Indies, the West Indies and North America, the Mediterranean,

* Mahan's "Influence of Sea Power," p.510.

and the Channel all offered tempting baits, and our opponents, instead of concentrating an overwhelming strength, wherewith to decide the main issue, succumbed to the temptation of trying to be strong everywhere.

Unfortunately England failed to profit by the mistakes of her enemies. To quote Mahan once more " The key of the situation was in Europe and in Europe were the hostile dockyards. If England were unable, as she proved to be, to raise up a continental war against France, then her one hope was to find and strike down the enemy's navy."*

England's numerical inferiority in ships precluded her being superior at all points, and the policy pursued resulted in her being superior at none. More or less of equality in foreign waters, with inferiority at home, led to indecisive actions and a protracted struggle. We won our Indian Empire but lost our American Colonies. The decisive defeat of the French fleet in home waters must have crippled her offensive power abroad, depending altogether as the latter did on supplies from the home country. With a free hand in the East and West Indies there can be little doubt that, while we should equally have acquired our Indian Empire, we should, in addition, have been able to wear down the opposition of our Colonies in America. Whether, the feeling of antagonism having been once aroused, we could have successfully reinstated them as a willing member of our Empire, is another question.

The Napoleonic Peril.

Our last struggle with revolutionary France, under the great Napoleon, was similar in essentials to that against the power of Louis XIV.

Undertaken with the same object, namely the preservation of the Balance of Power in Europe, it was prosecuted by every means we could devise, by a continued offensive on the sea and on the Continent, by the fomenting of European opposition to the schemes of Napoleon, and by the payment of enormous bounties to keep such opposition active.

Two points are particularly noticeable in their bearing on the present discussion; the first, that the acquisition of supremacy at sea did not, of itself, secure the object for which we fought; the second, following on the first, that that active offensive on land, which eventually terminated the struggle, was

* See footnote on last page.

not undertaken until, by the crushing of the enemy's sea power, we had removed all fear of an invasion of our shores and rendered safe the conveyance of our troops to the continent.

Principles Deduced.

Now two principles in the foregoing narrative stand out as having applied in all our successful struggles in the defence of our Empire in the past. They are:—

(1.) That the defence of our Empire must be conducted offensively; or, as has been said, that British war is the prosecution of war in foreign countries, and therefore cannot be brought to a successful conclusion by naval power alone.

(2.) That the best means of defending our trade is by destroying the hostile fleets. In all our wars there is not one single instance of either belligerent having been brought to its knees by commerce destruction alone. Naval victories have been an essential preliminary of ultimate success.

The deduction seems warranted that these are strategical truths which have stood the test of time, and that, consequently, they are independent of changing conditions and must hold good with equal force to-day.

PRESENT DAY CONDITIONS.

The solution of the military problem of our Empire depends however, not only on the deduction of correct strategical principles from the past, but also on a recognition of the conditions affecting the application of those principles at the present time. We may glance at these under the headings of:—

(1.) General conditions

(2.) Naval conditions

(3.) Military conditions

(1) *General Conditions.*

(*a*) *Comparative Wealth*:—During our former wars in defence of our Empire our wealth was increasing with greater rapidity, comparatively, than that of our opponents, and our resources were, in consequence, better able than were theirs to bear the burden of a long drawn out struggle. To-day it is not so. The trade and, consequently, the wealth of several other nations is now increasing at a greater rate than is our own. Still, if they are in a better position, we are in no worse a one,

and there is a little likelihood that history would ascribe the downfall of our Empire, should such a catastrophe occur in the near future, to lack of wealth.

Further, the growth of international trade, and of the mutual dependence of nations upon each other, will probably have the effect, in future wars, of shortening the duration of hostilities. The complex international relations of the present day will be so thrown out of gear by the existence of a state of war between two or more of the great Powers, that every effort will be made to reach an early decision, and the protracted warfare of the past seems unlikely to recur.

(*b*) *Food Supplies*:—Equally with our opponents we were in the wars passed under review, self supporting as regards the necessaries of life, whereas while other nations are still so to a great extent and, in any case, have many alternative channels of supply, the United Kingdom owes four-fifths of its essential foodstuffs to importation oversea.

(2) *Naval Conditions.*

(*a*) *Foreign Navies*:— Even in its broad outline our naval position to-day bears no close resemblance to that in which we found ourselves during any period of our history, save only at the time of the Dutch wars. Throughout our struggles with France, though, as has been seen, our opponent had, at times, a predominance of actual strength, yet his navy was always what Mahan calls a military navy, created for the special purpose of neutralizing our seapower and ruining our trade. In Holland on the other hand, we had an antagonist whose naval forces owed their existence to a great maritime commerce, and were manned by a seagoing population. Consequently her powers of construction and the seamanship of her officers and sailors were equal to our own.

To-day, in the ranks of our possible rivals, there are at least three such nations: Germany, Japan, and the United States are all nations possessing a large and growing overseas trade, and are rapidly evolving, not military, but sea-fed navies, if one may use the expression, wherewith to further and protect their interests.

Again, they are, all of them, great industrial nations containing within themselves all the necessary resources for shipbulting, both *matériel* and *personnel*. The powers of construc-

tion of one of them, indeed, already equal if not surpass our own.

(*b*) *The Securing of Safe Passage* :—Since the introduction of steam the question of securing safe passage for our armies, even across the narrow waters of the North Sea or Channel, has been greatly complicated.

In the days of sailing ships, their comparatively short radius of action and dependence on favourable winds rendered the seizure of an opportunity, when the conditions favoured us and militated against the enemy, a tolerably simple task. Nowadays, when one hostile destroyer could, if it eluded the escorting cruisers by night, work havoc among the transport fleet, the need of local sea supremacy is greatly accentuated.

(*c*) *Oversea Bases* :— As regards maritime bases in other than home waters, the conditions are not so different, but what change there has been is not in our favour. While we are in much the same state, in this respect, as we were during our later French wars, other nations, though they have of course nothing like the advantage we enjoy, have, to a certain extent, pursued our policy.

(*d*) *Improvement in Method of Communication* :—The wonderful improvements in the means of communication must have their effects on the naval strategy of the future and, though the development will, no doubt, cut both ways, the fact that our Empire fastens its tentacles in so many and dispersed portions of the globe must tend to give us the advantage in the all important matter of the acquisition of intelligence.

(*e*) *International Law* :—There is a fear in some quarters that recent endeavours to expand and codify International Law may rob us of some of the most potent weapons we employed in the past. This appears doubtful, however. International Law, flawless and perfect though it may be in theory, is liable to be disregarded in practice, when it becomes a question of might being right. Against this principle the argument is often advanced that a too rigorous application of it will have the effect of driving neutral nations into the field against us. We, however, owing to the volume of our imports and our free trade policy, are among the best of their customers to most of the producing nations, and the competition for our markets is severe. Neutrals, therefore, though they would most certainly protest and claim compensation for any breach of International Law, are unlikely to embrace an actively hostile rôle against us with undue haste.

In any case this question of International Law appears rather to affect subordinate issues and can have little or nothing to do with the main decision between the belligerent fleets.

(3) *Military Conditions.*

Perhaps the greatest change of all between the conditions under which we defended our Empire in the past, and those obtaining to-day, is due to the introduction of conscription on the Continent.

This is of course a purely military question, but if the arguments so far advanced—and they are very old ones—have any weight, it will be allowed that any discussion concerning the naval defence of the Empire must be barren, if this condition be disregarded.

In all our former struggles, even in that against the power of Napoleon, the armies we were able to throw on to the Continent of Europe, were, though by no means numerically equal to those of our enemies, at least commensurable with them, and able to turn the balance one way or the other. Can we say the same now? This paper does not invite a discussion as to the advisability or otherwise of the introduction of universal service in the United Kingdom, but the fact that the defence of our Empire may necessitate the conveyance to Europe of, say, half a million men or so is distinctly germane to the point at issue, since it makes more than ever necessary the control of home waters.

The factor of time, too, has, from the same cause, become of greatly increased importance. Conscription has enabled continental nations to bring to such a state of perfection their means of mobilization that, once war is inevitable, it can only be a question of days before the first conflicts occur. If, then, we are to throw our weight on one side or the other, obeying the dictates of our historical policy, our fleets must be in a condition to secure us safe passage for the army immediately hostilities are assured.

OUR PROBABLE RIVALS TO-DAY.

So much for our policy and the conditions affecting the attainment of our goal. To realize fully, however, the problem of Empire as it confronts us in our own times, it is impossible to avoid the consideration of what nations constitute our most probable antagonists, as far as can be foreseen to-day. Nor does it appear necessary to apologise for naming any particular friendly nation in this connection. Mr. Homer Lea, in a very able discussion

on the root causes of war, claims that all history shows that war is the result of the convergence of national lines of advance towards identical or kindred objects, and that the disputes which arise between the future belligerents, prior to the outbreak of a national struggle, are not, in themselves, the causes of war, but merely signs that the convergent lines of advance are rapidly nearing their meeting point.* If this be so, the recognition that the chosen path of progress of any particular people is likely to coincide with that marked out by ourselves cannot increase the likelihood of a conflict already inevitable, and may, on the contrary, by inducing us to exert every effort to keep ahead in the race, cause the issue to be decided without bloodshed.

Which, then, are the nations to-day, whose path of progress is most likely to result in the convergence of their interests with our own? They appear to the writer to be Germany, Japan, and to a lesser extent, the United States.

As regards Germany, the state of affairs to-day bears a close resemblance to the case of England and Holland at the commencement of the Anglo-Dutch wars, the British Empire now being in the place of the Holland of those days. We, thanks to the weapon of our sea power forged during the seventeenth and eighteenth centuries and brought to its finished state at the Nile and Trafalgar, have acquired wealth and power by means of our oversea commerce and by becoming the world's emporium, just as did Holland at her zenith. Germany, welded into a homogeneous nation by the genius of Bismarck, and thereby endowed with a national ambition, seeks inevitably, as England did in the middle of the seventeenth century, to redress the balance.

Here, plainly, are convergent interests, and the angle of convergence is acute. The conflict, whether it be decided by the victories of peace or war, is inevitable.

So far the resemblance is clear enough, but there exists to-day a further cause tending to increase the angle of convergence, which had no existence at the period of Anglo-Dutch rivalry. At that time neither nation experienced any difficulty in accommodating and providing for its population, and, even had it done so, there was any amount of potentially rich but unoccupied territory to be had for the taking. Now the situation is very different. Both the United Kingdom and Germany have become too crowded to be entirely self-supporting and, in Germany

* "Valour of Ignorance," p. 82.

especially, the population is rapidly increasing. But while the United Kingdom is the centre of the British Empire and has a practically unlimited outlet for its surplus workers in its sparsely populated sister States, the German Empire has but few oversea possessions, and these situated in by no means the most favoured portions of the globe. Large numbers of Germans can and do, of course, leave the Fatherland to make their homes in the wide territories of Greater Britain and the United States, and, as experience has shown, make good and contented colonists. But no country, least of all one with the feeling of nationality as strongly developed as it is in Germany, will rest content with seeing a continual outflow of some of its most enterprising sons and daughters to build up the strength and resources of a rival State.

In Europe, too, Germany, now that she has become one of the greatest industrial nations of the world, naturally chafes at the fact that her biggest river, one of the main arteries of her trade, empties itself into the sea in a foreign State. The economic and other forces tending towards the absorption of Holland and Belgium by Germany are indeed far more potent than those which induced Louis XIV to make his repeated attempts on the Netherlands. The reasons which, as we have seen, caused us more than once to take up arms to prevent the realization of his ambition apply, even more forcibly, in the case of Germany to-day.

Hence an inevitable desire for expansion, both at home and abroad, on the part of Germany, may tend towards a still further convergence of interests.

The case of Japan is very similar indeed to that of Germany. While the latter was becoming one united empire in the West, Japan was, with equal rapidity evolving herself into a world Power in the East. Equally with Germany, Japan has a growing trade, and a navy whose strength keeps pace with it. Japan, too, has a rapidly increasing population and a deep-seated national ambition, but has no oversea possessions save a few islands and the recently annexed Korea.

The same conditions, all tending towards convergence of interests, are then present in the case of both these countries, the only difference being in the locality of the danger point. While German hostility, as a result of her geographical position would directly threaten the heart of our Empire, any Japanese attack is, for the same reason, likely to be aimed at one of the limbs.

The United States was mentioned above as a possible opponent, because a growing trade and expanding interests have forced that country to abandon gradually the policy of aloofness enunciated by the Monroe Doctrine. Oversea possessions and a navy have brought her into the arena of world politics, and, with the opening of the Panama Canal in the near future, she seems likely to become one of the principle performers.

The line along which the British Empire is advancing is not, however, at present, converging with anything like the same rapidity towards that marked out by the United States, as in the case of Germany and Japan. Hence the problem of Empire concerns itself to-day chiefly with those two countries. The Empire is indeed threatened with a death blow at the heart, and with the loss of a limb which it might or might not survive, and the problem before us is its defence against either one of these misfortunes singly or against both in conjunction.

PART II.

THE RÔLE OF THE NAVY.

Among the conclusions it was sought to establish in Part I. were the following :—

(1) That British war is the prosecution of war in foreign countries.

(2) That, under present day conditions, local sea supremacy at least is an essential antecedent to a successful offensive overseas.

The second of these conclusions must now be examined more closely. Sea supremacy is a wide and indefinite term, and command of the sea is little better, and both are capable of many definitions. 'Quot homines tot sententiae,' but the most comprehensive definition of sea command, as it applies to us, which the writer has come across, is that put forward by Lieutenant Fisher, R.N., namely :—

"The bringing about of such a state of affairs on the sea as will allow of one belligerent developing its full national power towards the attainment of the object for which the war is waged."*

* R.U.S.I. Journal, July, 1909, page 847.

This definition goes to the root of the matter and brings out the necessity for co-ordination of effort. War, as Clausewitz says, is an act of policy; therefore the application of the various instruments of force should be directed, one and all, towards the attainment of that policy. The policy of the British Empire has been, and still should be, the preservation of the Balance of Power in Europe and the world. Our full national power towards the attainment of this policy can only be applied offensively, that is overseas, against whosoever threatens the balance.

The rôle of the Navy, then, in any national struggle, must be to bring about such a state of affairs on the sea as will allow of the development of our full national power.

How is the Navy to fulfil this rôle under the modern conditions discussed above?

The teachings of history and the maxims of the great masters of war agree in pointing out the way. Napoleon's method, the efficacy of which he proved by sad experience to all the European States in turn, was to concentrate all his resources for the attainment of his main objective, confident, as he often said, that a favourable issue at the decisive point would speedily bring in its train all the minor successes required to make his victory complete. Nelson, when he abandoned his station in the Mediterranean to chase Villeneuve across the Atlantic and back, made no attempt to fulfil two rôles. Recognizing the destruction of the Toulon fleet to be his real objective, he did not hesitate to denude the highway to Egypt and the East, concentrating his entire strength where he knew that decisive victory could be obtained.

The history of our war with our American Colonies teaches the same lesson, and the writings of Mahan have been quoted above in support of the contention that the loss of those Colonies was due to the failure to recognize where the decisive field of action lay, and to concentrate there sufficient strength to ensure success.

Concentration at the decisive point is, in fact, an immutable principle of strategy: 'per mare per terram' it is the same, and all history proves that he who disregards it and, trying to be strong everwhere, pursues too many objects, is lost.

If we turn again, however, to the writings of Napoleon, we find that, while enjoining concentration, he bids us at the same time to nowhere, by our weakness, invite attack. "To keep

one's forces together, to bear speedily on any point, to be nowhere vulnerable, such are the principles that assure victory[1]. The two ideas are indeed interdependent. It is the knowledge of weak spots that leads to dispersion, while, on the contrary, confidence that we are nowhere vulnerable admits of concentration without anxiety.

Paradoxical though it may sound, the strength and, at the same time, the weakness, of the British Empire lies in its geographical situation and extent. The fact that the sun never sets upon our dominions is a source of military strength, in that it provides us, all over the world, with dockyards, coaling stations and harbours, which are at the same time bases for offensive action at sea, and ports of refuge for our trading vessels. It is the very abundance of these places and the fact that our thousands of miles of coastline afford an almost infinite number of points for attack, which constitutes our military weakness.

In the case of a single enemy, the concentration of our naval strength against his fleet, while ensuring superiority at the decisive point, would, at the same time, render us nowhere vulnerable to any extent. Concentration would be practically forced upon our enemy, and, should he disregard the teachings of history and disperse his forces, his attack on any particular part of our Empire could hardly be overwhelming, and his eventual defeat would only be rendered more certain.

The difficulties of our situation are really seen when we turn to the case of the defence of the Empire against a European and a non-European nation in alliance.

Broadly speaking there are two ways in which such nations might carry out their attack. They might either:—

(1) Attempt to concentrate a joint fleet, superior to our own, with the object of destroying the latter, and thereby preventing us from acquiring even a local sea supremacy.

or (2) They might aim simultaneous blows at the heart and at an outlying portion of our Empire, in the hopes of inducing dispersion of our forces.

The first of the above plans, though attractive in theory, would be exceedingly difficult of execution. For two allies to appear in great numerical superiority and compass an enemy's destruction is a simple and straight forward form of strategy, once concentration is obtained: but, until then, considerations of time and space are all in favour of the enemy.

[1] Napoleon's War Maxims, No. 77.

The voyage of the Russian Baltic fleet to the Sea of Japan showed clearly the disabilities under which the fleet of a Power, possessing but few or no coaling stations on the route, labours when it seeks to operate far from home waters.

Even in peace time the American fleet, of sixteen battleships, in its journey round Cape Horn, could not move without a convoy of twenty eight other vessels.[1]

The pace of such a voyage must necessarily be a slow one, and, during its continuance, either of the fleets which seek to effect a junction is open to attack singly.

It might be argued that in the case of a European Power seeking to pursue such a plan of campaign with a foreign ally, her fleet could remain in port until such time as that of her ally reached the sphere of operations. But would not such a procedure defeat its own ends by giving us, temporarily at least, that freedom to develop our full national power, which, it has been argued above, it is the rôle of our navy to obtain for us?

All things considered it would be a very bold, and, at the same time, self-effacing ally, who would agree to such a mode of operations.

On the other hand we have it on the authority of von Moltke that the strongest form of alliance is one under which operations are carried on independently, but simultaneously, upon separate theatres of war, by each party in its own interests.

The second plan of campaign outlined above would fulfil all these conditions. There would be no difficulty in making the attacks simultaneous; and contiguous to both those Powers with whom, as we have seen, our interests may conflict and who are, therefore, the most probable allies of an European nation against us, lie portions of the British Empire in attacking which they would be directly furthering their own interests.

Our fleet, under modern conditions, is unlikely to be able to deal with both attacks at once and must, therefore, be concentrated against the one or the other. The bulk of our population and of the power of our Empire for offence is centred in the United Kingdom, and it follows, in consequence, that the first consideration must be to obtain sea supremacy in home waters.

To sum up then, the decisive issue for our Navy, in the defence of our Empire, is—to repeat our definition once more—the bringing about of such a state of affairs on the sea as will allow of the development of our full national power. There is

[1] The Valour of Ignorance, p. 231.

but one way, and one only, to do this, namely to defeat and destroy the enemy's fleets, thereby allowing us to bring to bear our other weapon, our land forces, when and where we will. All other objectives—the protection of our food supply, the keeping open of our trade routes and of our lines of communication with Greater Britain—whatever their importance may be, are, for the moment, secondary and subsidiary as compared with the main issue.

One often sees in print, and hears in conversation, gloomy forebodings of bread riots and all kinds of internal disorders due to interference with our food supply in time of war; but it would be the height of folly were we divert any portion of our naval expenditure towards the provision of ships designed to prevent such interference, until the decision of the main issue has been placed beyond any reasonable doubt.

The conclusion reached by the Royal Commission, after taking a mass of evidence, was that no interference sufficient to produce real shortage could occur. Prices would, of course, rise and there would be hard times for many, but if the virility of the nation is at such a low ebb, as some seem to suppose, that there is any likelihood of a disastrous peace being forced upon the Government by the clamourings of the mob, then we may as well throw up the sponge at once, our fate being sealed and our doom sure.

As regards the keeping open of our trade routes, it is necessary, even at the risk of repetition, to be quite clear.

The protection of our commerce, by means of which we acquired and keep our position in the world, is the primary cause of the upkeep of our armaments. As has been pointed out above, it is to the necessity for ensuring that no other European nation shall enjoy resources largely in excess of our own that our policy of preserving the Balance of Power is due. It is not, then, for one moment suggested that commerce protection is a subsidiary object of our policy. On the other hand, material though it may be, it is, and must always remain the main object. But because it is the goal of our policy, and therefore the goal of any war waged in pursuance of that policy, it by no means necessarily follows that it should form part of the means employed in the conduct of hostilities. The writer's contention is that the shortest route is the most direct, and that, once we are involved in hostilities, the shortest route to the protection of our commerce is by the destruction of the enemy's fleets.

Other nations cannot afford, any more than ourselves, to disregard the principle of concentration, hence it seems unlikely that any nation which really wishes to deny us sea supremacy will direct more than a small portion of its annual naval outlay towards making provision for the attack of our trading vessels. Should it do so, all the better for us.

Further, in the matter of commerce protection or destruction, we have a decided advantage. Our trade is so world wide, and the routes it follows so diverse, that it would be impossible to attempt to patrol the latter throughout their length. But our advantage lies in the number of our stopping places, since we are, with our possessions scattered all over the globe, in a far better position than any other nation as regards harbours of refuge. These, in addition to giving shelter to our merchant vessels, provide subsidiary bases, close to their fields of action, for any cruisers we may be able to spare to protect our commerce or to deal with that of an enemy, and render their task easier than that of hostile cruisers, whatever their nationality.

PART III.

MEANS BY WHICH THE COLONIES CAN BEST ASSIST THE NAVY TO FULFIL ITS RÔLE.

We are now in a position to discuss how best the Colonies can assist in the naval defence of the Empire, with a more or less definite idea of the main principles upon which that defence must be conducted.

If the deductions so far drawn are erroneous, then we are working on false premises, and our principles are false ones. If, on the other hand, they are sound, then it is clear that the assistance we derive from our Colonies must be applied in accordance with the same principles.

These are, very shortly, as they effect the Navy:—

(1) The concentration of our offensive strength, namely our battle fleets.

(2) A sufficient measure of defence throughout the Empire, so that the first condition may be fulfilled, and that we may not anywhere, by our weakness, invite attack.

Now in discussing the share which our sister States can take in the defence of the Empire, in accordance with these principles, there are two considerations which must always be borne in

mind, namely the sentiment and the materiai resources of those States. The first, from the nature of things, must always play its part in human affairs, and it is fatal to disregard it. As for the second, the old adage, that the coat must be cut according to the cloth, must needs apply.

CONSIDERATIONS OF SENTIMENT.

The question of sentiment, one might almost call it sensitiveness, has always bulked somewhat large in our dealings with our oversea Dominions. We, on our side, have never entirely got rid of a kind of paternal feeling that we must know better than our children, while they, though quite prepared to acknowledge, in theory, that they must look to us for protection, have always, to a certain extent, chafed at the measure of dependence that this necessity entails upon them.

The fact that they are of our own race, and, indeed, among the sturdiest and most enterprising members of it, has led to the development among them, to the utmost, of the Briton's desire for freedom and independence. Hence the long standing wish of Australia to possess a navy of her own, and her recent determination to reorganize, and make efficient for war, her land forces.

But, along with the Briton's love of independence, there has been developed, to a like extent, the common sense and adaptability which we claim as equally strong national traits.

There seems every reason to hope, then, provided we, on our side, entirely drop the paternal attitude, and meet our oversea Dominions with a scheme for the defence of the Empire based on logical principles, and framed to meet existing conditions, that their common sense and innate capacity for apportioning the means to the end will triumph, and that their natural aspirations will, of themselves, be guided into the right channel.

MATERIAL RESOURCES.

Material resources are, to a large extent, a question of population. As against the forty odd millions of the United Kingdom, Canada has some six millions, Australia some four and a quarter, New Zealand one, and the South African Union little more than one.

But the comparison by numbers alone is not a fair one. The full development of the United Kingdom by its inhabitants may be said to be almost an accomplished fact, but the case is

very different in our oversea Dominions, where vast extents of territory, at present little or quite untouched, remain to be opened up. The position was put very clearly by Sir. J. Ward at the Colonial Conference of 1907. He said:—

> "We have before the people in New Zealand still the work of the interior development of a country, which, in years to come, will be capable of carrying 20,000,000 people without any difficulty. We have under a million of population at the moment. We have all the ramifications of the development of great public works, so essential as a provision for the future to enable people to settle in the interior of our country. We have still before us the making of the railways throughout our country; though we have between two and three thousand miles of railway open to-day, that is, comparatively speaking, but the fringe of what the future will need, in order to meet the requirements of the people."[1]

There can, indeed, be no question that this work of interior development is, far and away, the most important issue before our sister States, and that it will require all the available energies of their populations for many years to come. National or Imperial Defence is a means to this end and not an end in itself. It is in the nature of an insurance against the work being interrupted, and is, to that extent, a necessity; but only so much, and no more, of the national energy should be diverted into this channel as will suffice to make the insurance a real one.

The burden thrown on the United Kingdom by the upkeep of armaments is a heavy one financially, but the proportion of workers absorbed by this non-productive work is not large, and their withdrawal from the ranks of labour, even for the longish period rendered necessary by the upkeep of our garrisons overseas, is hardly felt economically.

In the Dominions it would be otherwise. Willing though they may be to incur a proportionately equal financial burden, the removal of workers from the ranks of productive labour must directly hinder the business of their internal development, and would be, consequently, a much more serious sacrifice in their case than it is in ours.

Keeping these considerations always in mind, let us examine the present position as regards the participation of the Dominions in Imperial Defence.

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[1] Brassey's Naval Annual, p. 186

THE PRESENT POSITION.

At a conference held in 1881[1], the Premiers of the Australian Colonies put forward, for the first time, a definite doctrine of their mutual responsibilities towards the Empire. The whole naval defence, they said, should rest with the Imperial Government, while the military defence of the land, including the forts for harbour protection, should rest with Australia.[1] So far this doctrine was clearly in accordance with our arguments above; but the Premiers went on to demand that a squadron of Imperial ships should be set apart for the defence of their coasts, a departure from our principle of concentration.

For nearly thirty years this point has continued to be, if not a bone of contention, at any rate a stumbling block in the way of any settlement, in accordance with the strategic needs of the situation, of the responsibilities of the component parts of the Empire for its defence. The postponement of any definite settlement was, no doubt, chiefly due to the fact that, until the early years of the present century, the situation never became acute. From 1805 until within the last decade, Britain was really mistress of the seas, no other nation being in a position to challenge her supremacy thereon. Even when divided her fleets were able to be strong everywhere, and concentration was not necessary.

The last few years have, however, seen conditions change, with an astonishing rapidity, and in the spring of 1909 the question of Imperial Defence was raised in acute form by statements as to the naval strength of other Powers, in the debates in Parliament on the Naval Estimates for that year. This led to an Imperial Conference, in August, attended by the defence ministers of the Dominions and the South African Colonies.

At the conference many of the old difficulties were overcome, but not all, and the result was a compromise summed up as follows by Mr. Asquith in the House of Commons:—

> "A remodelling of the squadrons maintained in Far Eastern waters was considered, on the basis of establishing a Pacific Fleet, to consist of three units in the East Indies, Australia and China Seas, each comprising, with some variations, a large armoured cruiser of the Indomitable type, three second class cruisers of the Bristol type, six destroyers of the "river" class, and three submarines of "C" class."[2]

[1] Blue Book Cd. 4325, p. 11.
[2] Brassey's Naval Annual, p. 163.

This arrangement more or less met the wishes of the different Dominions. Australia, in fulfilment of her long cherished desire to have a navy of her own, agreed to provide and maintain, with some temporary assistance from Imperial funds, the Australian unit, and eventually to undertake the responsibility for the maintenance of the dockyard at Sydney.

New Zealand, too, was able to adhere to the policy laid down by her Prime Minister, eighteen months earlier, that "the truest interests of her people would be served by having a powerful navy under the independent control of those responsible for directing it in peace and war," by promising the continuance of her annual contribution, which, it was arranged, should be applied towards the upkeep of the China unit of the Pacific Fleet.

Canada was to make no direct contribution to the Imperial Navy, but to start the nucleus of a navy of her own by the construction of a squadron of four second class and one third class cruisers and six destroyers, to be distributed between her two coasts; she was also, in accordance with existing arrangements, to maintain the dockyards at Esquimault and Halifax.

No further agreement was arrived at with the South African Colonies, pending the election of the first Union Parliament.

The first point that strikes one, on reading Mr. Asquith's pronouncement, is that apparently the views of the Dominions as to the solution of the question of Imperial Defence are, in no two cases, exactly simliar. Some are akin, some totally divergent.

Now in the case of individuals, or, for that matter, of nations separately pursuing a common aim, it is quite within the bounds of possibility that there may be two or even more equally good ways of attaining the end desired. But when those individuals or nations have to co-operate, in order to achieve their object, one cannot help thinking that the best result will be obtained by their first mutually deciding on the means to be employed, each participant subsequently working on the lines laid down. Only in this way can unity of effort be secured.

Since it can hardly be claimed that this result has been attained by the present arrangement, it will be best to examine the various courses which it lies open to the Dominions to pursue in this question of Imperial Defence, with a view to discovering which of them best accord with our principles, while at the same time, they neither cause too great a drain on the material resources of the Colonies, nor are in opposition to the feelings and aspirations of their peoples.

The possible means by which the Dominions can assist appear to be four in number:—

(i.) By fostering the creation of Colonial Navies.

(ii.) By direct contribution to the Imperial Navy.

(iii.) By the upkeep of naval bases, dockyards, and coaling stations, and by the provision of efficient defence for such.

(iv.) By the creation of efficient land forces.

Or by a combination of some or any of the above.

COLONIAL NAVIES.

As a question of practical policy the creation of Colonial Navies appears to the writer to have little in its favour. Present conditions, both strategical and financial, are all against it.

Strategically it means the division of forces, and cannot be sound unless we are absolutely certain of maintaining our offensive force, that is, the Imperial Navy, at such a strength as to be, humanly speaking, sure of defeating any possible combination.

Financially, it does not lessen by one iota the burden imposed on the United Kingdom by the upkeep of the Imperial Navy at this necessary strength, while it saddles the Dominions with a large annual expenditure, which, as we in the home country have found, is likely to develop a snowball growth. The writer has not the means of making any exact calculation of the cost involved, but roughly it seems that an initial expenditure of 3½ millions, and an annual outlay of one million, on upkeep, pay, and stores alone, is a moderate estimate of what Australia would have to spend on the provision and maintenance of her unit of the Pacific fleet, as outlined in Mr. Asquith's statement.

Then, again, there are the difficult questions of control and composition. The very idea of the Dominions acquiring navies of their own presupposes the political control of its own navy by each Dominion. The Premiers of Canada and Australia have both recognized the necessity for single control in time of war, and, by the Canadian Defence Bill, the Government can place the Canadian Navy at the disposal of the Admiralty in time of emergency, emergency being interpreted by Sir Wilfrid Laurier as "war anywhere, if Great Britain is at war, then Canada is liable to invasion, and Canada is at war."[1] Similarly the Australian unit would pass under the command of the Commander-in-Chief of the Pacific Fleet, once it had been despatched to join that unit.

[1] Brassey's Naval Annual, p. 12.

It is just this liability of the Dominions to invasion, however, when Great Britain is at war, that may cause a departure, in time of danger, from the principles laid down in peace. In the war with Spain it was anxiety for their coast towns which induced the American Government to divide its fleet, sending a portion only, instead of the whole, against Cuba.* High though the average level of intelligence among the people of the Dominions undoubtedly is, can we always rely on their strategical insight triumphing over their natural anxiety, to such an extent as to induce them to cheerfully acquiesce in the withdrawal from their coasts, in times of stress, of a squadron created and maintained by themselves alone, to serve elsewhere? Even granted that we can do so, and that the problem of concentration has been successfully solved, can full value be expected at once from these separate squadrons, similar though they be in organization and training, thus suddenly brought together into one fleet?

Putting all these difficulties on one side, there remains that of composition. What is to be the rôle of the Pacific fleet when formed? Is it to be an offensive weapon, designed to seek out and destroy any hostile fleet in Far Eastern waters? Is it to remain on the defensive, ready to deal with any attempt at raid or invasion; or is its rôle to be commerce protection in the narrow sense?

The probable strength of the fleet, as foreshadowed by Mr. Asquith, would be:—

Three 1st-class armoured cruisers.

Nine 2nd-class cruisers.

Eighteen destroyers.

Nine submarines.

But no certain clue to its projected employment is thereby given.

It is obviously too weak to rank as a battle fleet, nor does it appear sufficiently strong to deal with invasion on any scale. It might certainly prove a match for a raid, provided it arrived at the threatened point in time to prevent the intended damage, but since there can be no security that it will always do so, and in view of the large expenditure which its upkeep must entail, would not the provision of such a fleet for that purpose alone be a case of over-insurance?

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[1] Mahan. Lessons of the War with Spain. p. 55.

Again, if it is intended to use this fleet for the protection of merchant vessels, or to supplement the fixed defence of dockyards and important harbours, large armoured cruisers, costly both to build and to man and maintain, seem out of place in it. If, as is contended, the downfall of our Empire cannot be brought about by commerce destruction alone, the collapse of our naval power being an essential preliminary, then concentration is forced on the fleets of our enemy as well as on our own, and such vessels, able to take their place in the line of battle, are unlikely to be detached to harry our merchantmen till the issue has been decided.

One cannot avoid the suspicion that the arguments governing the proposed composition of this fleet must have been based on other considerations besides that of its rôle in war; unless, indeed, it is to be regarded as only the nucleus of larger fleets to come. If that is so, then the Dominions are embarking upon an expenditure, which, by its rapid growth, will choke their internal development, and prevent a corresponding increase of their material resources.

DIRECT CONTRIBUTION.

Theoretically, there can be little doubt that "a single Imperial fleet under one control, towards the maintenance of which all parts of the Empire contribute," is the ideal as well as the most efficient plan of defending the Empire at sea.

The one practical objection is that, under the present constitution of the Empire, the Dominions can have no control over our foreign policy, and that, consequently, their contribution may be expended on the furtherance of a policy with which they have no sympathy. The system has indeed been likened to taxation without representation—anathema to the British mind.

Is not this, however, a narrow view to take of the question, and is not the attitude of New Zealand the broad-minded one?

The ideal solution, for which all parts of the Empire should work, appears to the writer to be a remodelling of the Constitution, so as to allow the Dominions a voice in Imperial affairs, including foreign policy. Until the desired end has been attained, is it not wiser to face the situation as it exists? The words of Sir Wilfrid Laurier, quoted above, "If Great Britain is at war, Canada is at war," apply to all the Dominions. They cannot, under present conditions, hold aloof from any struggle in which the United Kingdom may become engaged, however

much any of them may disapprove of the foreign policy which preceded hostilities. Therefore, since they must become involved, is it not to their interest that the efficient defence of the Empire shall be the first consideration, and that no sentiment or spirit of independence, however justifiable it may be, shall mar that efficiency?

THE MAINTENANCE OF FIXED DEFENCES.

As we have seen, one of the chief elements of strength, which we owe to the geographical distribution of our Empire, is due to the facilities thereby obtained for the creation of naval bases, dockyards, and coaling stations in every ocean.

The maintenance of a sufficiency of these by each Dominion in its own territory, together with the provision of the necessary defences and of garrisons for the same, appears, from every point of view, a natural and suitable way in which the Colonies can assist in the naval defence of the Empire.

If Great Britain is to provide the active defence in the shape of the fleet, as large a proportion as possible of her annual naval expenditure should be set apart for that purpose; anything, therefore, which tends to lessen her outlay on immobile defence must be a direct gain.

Economically, also, the upkeep of such stations by the Dominions concerned must result in a direct saving of expense. A good deal of the necessary plant, such as the guns themselves, could, no doubt, be imported from the United Kingdom more cheaply than it could be made in the Dominions, but much might be obtained locally, the cost of transit being thus saved. This would also apply to the garrisons, whose freight backwards and forwards is no mean item.

One has no means of calculating the expenditure which would be thrown on the Dominions, but it could hardly be prohibitive, since Canada has already assumed the responsibility for the maintenance of Halifax and Esquimault. In any case, the annual outlay would be tolerably constant, and not liable to rapid and unforeseen growth, such as will almost inevitably result, if the policy of creating Colonial navies is once embarked upon.

THE CREATION OF EFFICIENT LAND FORCES.

The creation of an efficient land force may seem, at first sight, but an indirect way of assisting in the naval defence of the Empire; but, examined in the light of the principles at which we have arrived, it does not appear to be so in reality. If

each Dominion possessed an army, organized and trained for war, and of such a size as to compel any enemy attempting invasion to do so on a large scale, the necessary concentration of our naval strength would meet with more cheerful acquiescence on all sides. Even were an invader to make a successful inroad into the territory of one of the Dominions, his progress, in face of an efficient armed force, must necessarily be slow, and, long before he could achieve any decisive success, our naval forces should be free to interfere with his communications, and to guarantee the safety of any reinforcements despatched oversea.

Financially, the burden would not, it seems, be prohibitive. Lord Kitchener's estimate, in his Memorandum on the Defence of Australia, of the cost to that country of organizing and training its land forces on a sound basis, worked out at considerably less than two millions annually. In this case again the figure would be a fairly constant one.[2]

From the economical and social point of view, the arguments that have been advanced for and against any system of universal service are manifold. As compared with naval service, however, military service, of the nature suggested, would, it is contended, entail a less serious burden on a country requiring all its available workers for the business of internal development. A navy must be recruited on a long service system, and the sailor must give up the best years of his life to his calling as such. His training must begin early, and the boy, in all probability, goes to sea before he has learnt even the rudiments of any trade, or much concerning the various branches of the farming industry. Though there can be no doubt that the naval training turns him out a handy man, all the same, he is not a skilled workman from the civil point of view.

The requisite military training, on the other hand, even were it found necessary to increase the period suggested by Lord Kitchener, would remove the man for but comparatively short spells from his civil avocation. Many more men, of course, would be effected, but that is only in accordance with the social sense of the present day, which is beginning to recognize that the burden of defence should be universal, and not confined to the few.

Again, an army recruited on a basis of universal service, is, in many ways, a fitter outlet for national aspiration than is a navy. When all its manhood serves, the nation takes part as

[2] Memorandum on the Defence of Australia, p. 21

a whole and thus becomes familiar with the problems that confront it, whereas, in the case of naval forces, the man in the street is apt to bother himself little concerning the national outlook, relying on the fleet, for which he pays, to look after his interests.

Australia and New Zealand seem in a fair way to adopt this method of assisting in Imperial Defence, but one may perhaps —in no spirit of criticism, be it understood—be allowed to press the point that half measures are useless, and that the forces so raised must be organized, efficient, and ready for war, in every detail, if they are to fulfil their rôle.

SUMMARY AND CONCLUSION.

A short recapitulation of the arguments put forward should now enable us to deduce which one or more of the above means of assisting in the defence of the Empire are best suited to the strategical needs of the case, and to the material and moral conditions in the Dominions.

The defence of the Empire entails the preservation of the Balance of Power in Europe, and the world. It must therefore be conducted offensively, that is, overseas.

The rôle of our Navy, in Imperial Defence, is to bring about such a state of affairs on the sea, as will admit of our putting forward our full national strength.

The greater part of our national offensive strength is situated within the United Kingdom, and, therefore, sea supremacy in home waters is essential before it can be used.

The above conditions, and the fact that our national interests are convergent towards those of a powerful neighbour across the North Sea, necessitate the concentration of practically the whole of our naval strength in home waters.

This necessary concentration can only be carried out with full confidence, provided our Empire does not, by its weakness at any point, invite attack.

The best assistance the Dominions can give us is, then, first and foremost, to make themselves strong against attack, and, secondly, should their resources admit of anything more, to assist in perfecting our naval offensive strength.

The best means of attaining these ends are governed by present-day conditions in the Dominions, and the short discussion of these, above, leads to the conclusion that the Colonies can best help in the naval defence of the Empire:—

Firstly.—By raising their land forces on a basis of universal service, and giving them a thoroughly efficient organization and training for war.

Secondly.—By taking over from the mother country the burden of the maintenance of, and provision of garrisons for, naval bases, dockyards, and coaling stations, in their respective Dominions, including such floating defence as may be considered necessary for these places.

Thirdly.—Should their resources admit of anything more, by direct monetary contributions, free of conditions, towards the Imperial Fleet.

In addition to such material help, the Dominions can also afford us much moral assistance by the education of their citizens. This is a subject which needs attention throughout the Empire, and perhaps most of all at its centre. We live in an age which is witnessing a gradual fusion of the classes, and the rapid spread of the doctrine of equal rights and equal opportunity for all, but the corresponding idea of equal duties for all is by no means so generally recognized. Competition becomes daily more severe, and, in the admittedly hard struggle for material success, the fact that the welfare of the individual is bound up with and dependent upon the welfare of the nation is apt to be lost sight of.

The history of how our Empire has been won, and, so far, preserved, should have an honoured place in their curriculum throughout its schools. It is the nature of youth, of whatever nationality, to delight in deeds of daring and in stories of human interest, and none can say that our history, properly propounded, is deficient in either of these particulars.

The knowledge of how much of our present power and prosperity we owe to the sacrifices given, and hard knocks received, for their country by our forebears, cannot fail to awaken the feeling that the responsibility is ours to hand on our fair inheritance, in no way diminished, to those who come after us.

WITH THE ANGLO-FRENCH NIGER-CHAD BOUNDARY COMMISSION

By Major C. B. SIMONDS, R.G.A.

On Wednesday, 15th February, 1911, at 3 p.m.,
Commander W. F. CABORNE, C.B., R.N.R.
in the Chair.

I

INTRODUCTORY.

THERE are many points connected with the work of a boundary commission of a practical nature which cannot fail to interest officers of both Army and Navy who take their profession seriously; it is not proposed, however, to treat on the subject of such commissions, but, speaking before this audience, suffice it to remark that the education of officers would be none the less complete were they to take advantage of any opportunity of attending commissions of this sort whenever an opportunity might present itself.[1]

The variety of circumstances under which the successful accomplishment of work connected with frontier delimitation has to be carried out, calls for abilities in individuals and exercise of adaptability to surroundings, self-reliance, tact, self-restraint, physical as well as mental fatigue, mastership of detail, which affords a very thorough practical schooling for service officers; they get an insight into civil administration, and learn when to lay aside the sword and see for themselves the effects of

(1) *Note by the Lecturer*:—At the time of writing this paper the British report and maps are not yet accessible generally; but the French Commission have published their first volume and maps connected therewith, and a very excellent account, compiled by Captain Tilho and read by Lieutenant Mercardier before the Royal Geographical Society in February last, dealing with the environment of Lake Chad, appeared in the Journal of that Society in their September number. It is proposed to avoid mention of any highly technical work, or in any way promote any form of discussion of the French account, with which the writer so entirely agrees.

using the more gentle methods while, at the same time, employing that crisp firmness of honest straight authority not likely to be misunderstood. Here the principle

> "Your gentleness shall force
> More than your force move us to gentleness"

must constantly be borne in mind and acted upon.

II

HISTORY OF PREVIOUS EXPLORATION.

Before proceeding to our own experiences a few remarks on the previous history of this part of the world may not be out of place.

The early history of the country is meagre; it covers, however, a civilization of nomadic tribes extending certainly as far back as the middle of the 8th century of our era, since the enthusiasm of the first wave of Mahomedanism reached these regions little more than a century after the Hegira (A.D. 621), with broken intervals caused by the destruction of records by conquests and disturbances. To go back only a century from the present date and find the number of well known explorers who have visited and written about this country and its approaches at once gives it an interest apart from its present day condition, and one feels obliged just to summarise briefly the names and work done by the men who first explored here.

Mungo Park, who discovered the Niger, came eastward from Gambia from 1795 to 1797, and visited Timbuctoo. In 1805 he made his second expedition, accompanied by Anderson and Scott, and the balance of evidence goes rather to show that he was drowned in the Boussa Rapids in 1806. His theory was that the Niger flowed into the Congo.

In 1816 an expedition by Peddie, which went on the track of Park and Tuckey via the Congo, with the object of discovering the course of the Niger, ended in failure.

In 1820-21 Dr. Oudeney, Clapperton, R.N., and Denham went via Tripoli to Lake Chad, following the regular trade route. Denham was well received at Kukawa by the Shehu of Bornu through an introduction from the Bashi of Tripoli; he fortified Kukawa and explored Lake Chad; while here he heard from a Fullah from Timbuctoo of the fate of Park and his party in the Boussa Rapids; he accompanied the Shehu on a filibustering expedition to the Mandara and Manga country, and with Toole explored the Shari. Oudeney died at Katagum.

By the end of 1824 Denham and Tyrwhitt had explored the eastern shore of Lake Chad, Clapperton in the interim, accompanied by Hillman, having traversed the country from

Lake Chad to the middle Niger via Kano and Sokoto. At Sokoto Sultan Bello treated them with every kindness, and proposed that an English consul and physician should reside there. On their return from Kukawa Tyrwhitt died, but the other three returned home via Tripoli.

In 1825 Clapperton, Dr. Dickson, Pearce, Morrison and Lander proceeded to the Bight of Benin, where at Wyndah they had arranged to meet a party sent by Sultan Bello, but, this party having failed them, they split up. Clapperton, with Lander, his personal attendant, reached Boussa in April, 1826, across country, crossed the Niger, and arrived at Kano in July via Nupe, Yauri, and Zaria, where trade was stagnant owing to war between Bello and the Shehu of Bornu; they reached Coonia, the capital of Gober, in October to find Bello in camp and about to attack that place, which action Clapperton describes at some length; the attack was driven off. Clapperton died at Sokoto in April, 1827, and Lander succeeded in getting to Badagri, and eventually reached England with Clapperton's papers in April, 1828. About this time Laing, who had made the journey from Tripoli to Timbuctoo, was murdered on the return journey. The connection between Boussa and the Niger mouth by water was still a mystery, though the Delta had been open to European slave traders for many years. Opinions were still divided as to the course of Park's river. Eastwards to Lake Chad? to the Congo? or to the Nile? Lander and his brother reached Badagri in March, 1830; Boussa in July; and Lokoja in October (where they found the Niger Benue junction); and proceeded to Brass at the Niger mouth, whence they returned home.

In 1832-34, working from a base at Fernando Po, the Landers, Laird, Allen, and Dr. Oldfield, explored the middle Niger to Rabba, and part of the Benue, as well as some of the Niger Delta creeks. In 1834 R. Lander was mortally wounded, and died on reaching Fernando Po; Denham died when Governor, in 1830. Clapperton's other fellow explorer was also buried there.

The year 1841 saw the foundation of the "model farm" strip of land on which Lokoja, at junction of Niger and Benue, now stands, ceded by the Attah of Iddah to his "sister the Queen of England."

Judging from the death-roll of early explorers, the Niger Valley and the Delta have certainly gained for themselves an unhealthy reputation.

With the year 1850 we come to the expedition of Richardson, Barth, and Overweg, who were directed to follow Clapperton's route, but, on arrival at Murzuk, traversed a more western route to the neighbourhood of Zinder, which they reached in 1851, traversing a country infested by Tuareg robber bands.

On reaching Tagelel this party split up, deeming it safer to travel separately, and planned to meet at Kukawa. Richardson took the direct route, but died on the way. The two Germans travelled to Tassawa together, and eventually, after separating, reached Kukawa in 1851; Barth visiting Katsena and Kano, reached Kukawa in a somewhat pitiable condition, but was kindly treated by the Sultan; he visited Lake Chad, and had seen a great deal of the country before he was joined by Overweg, who, going more towards Sokoto, had witnessed fighting between the pagans of Gober and Maradi and the Mahomedan Fullahs.

In 1851 Overweg proceeded via Zinder, termed by Barth the Gate of the Soudan, direct to Kukawa, Overweg remaining, with his portable boat, to explore Lake Chad. Barth proceeded to Adamawa, "a Mohamedan kingdom engrafted upon a mixed stock of Pagan tribes." It is odd to notice Barth the traveller's enthusiasm at becoming Barth the explorer, "opening up new ground" where no white man had been before. To Barth has rightly been granted the credit of having contributed by far the most valuable works on African travel and exploration; he seems to have extracted a vast amount of information from local natives in the history of his travels, and mentions having visited on his way to Kukawa, the Ghabaru ruins, which town was destroyed by the Jemaa Fulbe or Felleta, Hj. 1224, or 1809 of our era. He does not, however, mention on what authority he bases this statement, or how this date is arrived at. Barth concluded his travels in 1855, was made a C.B., and received the patron's medal of the Royal Geographical Society.

From 1852 to 1855 Baikie (assisted by the energies of Laird, who had previously explored much of the Lower Niger), in the steamboat Pleiad, pushed the exploration of the Benue beyond Dagbo, which had been reached in 1833; with the help of canoes he passed Lan and Djin, and reached Dulti, thus charting 250 miles of unknown river, though not joining up with Barth's exploration. Later Baikie became the founder of Lokoja, and was known to its natives as "King." He eventually died on the voyage home in 1864.

This brief account must suffice of the work done by Britain's explorers and British enterprise, and will enable those interested in the country to search for themselves into further details connected therewith; also to show that the country is not altogether without interest to the traveller, to whom it is still fresh, and from whose position I will write upon it.

I would here like to mention that within the last 10 or 15 years French travellers have done more to supply details and fill in the rough skeleton maps of the first explorers than the travellers of any other country; and it was to be our good fortune to have some of those most recently connected with the work as our colleagues.

Again, another matter of interest which, I think, animated all concerned with the work, throughout, to bring it to an early and successful conclusion, was the fact that the ratification of this Boundary Commission would be the final stitch to the several items which went to make up that Anglo-French Agreement originating in the "Entente Cordiale."

III

THE WORK OF THE COMMISSION.

On 13th October, 1906, the members of our commission sailed from Liverpool. We reached Las Palmas on 18th, Teneriffe 19th, passed Cape Verde 22nd, Sierra Leone 24th, where we saw by cables that Mr. Hanns Vischer, then acting resident of North Bornu, had reached Northern Nigeria *via* Tripoli after a fight with some of the natives. On 25th we stopped at Monrovia, Liberia, to pick up Kru boys to work cargo. On 26th we were coasting along the Ivory Coast, where we came in for frequent heavy tropical showers. On 27th we stopped at Axim and Secondi. On 28th Cape Coast and Accra. On 29th Lagos, and on the 30th we were in Forcados Roads at 8 a.m., but had to wait till 2.30 p.m. to cross the bar on account of the tide, and got to Forcados at 4 p.m., where we transhipped from the Elder Dempster *Burutu* to a river stern-wheeler, which took us up to Burutu, where we moored for the night. Between Forcados and Burutu we had fitted ourselves out with cooks and servants for the whole party, and having done our business with the Marine Superintendent, who had already sent some of our supplies and baggage up river, we started off early the next (31st) morning for Lokoja. All that day we were steaming up the Niger Delta, and it was not until late at night that we got into the main river; the moon being favourable, the pilot had no difficulty in steaming on right through the night, the river, too, being in full flood, assisted to facilitate navigation. On the night of 1st-2nd November we anchored off Onitsha, and passed Idah, the Northern and Southern Nigeria Boundary, on 2nd about 5.30 p.m. Lokoja was reached at 6 a.m. on the morning of the 3rd November. Having made arrangements for the forwarding of our mails and stowing baggage not actually required up country, we were off again without having to tranship. At 7 a.m. on the morning of 4th we reached Baro, already spoken of as the starting point of the Baro-Kano Railway, where the telegraph crossed the river; at 9 p.m. the same night we reached the hulk *Africa* at Mareji. She was a depôt ship, and a good deal of building material had to be off loaded here, so it was not until 1 p.m. on 5th that we started up the Kaduna River to drop a party of officers and a motor (the first in the

country) destined for Zungeru; that night we were back again at Mareji, and on the morning of the 8th we disembarked at Jebba, whence we had to proceed to our destination in smaller craft, and our first river difficulties were to commence. The 9th was mostly employed in sorting and checking baggage and stores, the first opportunity we had had, and during the afternoon the assistant resident accompanied Hearson and myself to the summit of the Juju Rock in the middle of the Niger main stream, which here breaks into several branches as it eats its way through a rocky reef.

If the theory that the Niger once flowed via Lake Chad to by lessons from fossils, etc., it is probable that this reef was the Nile, or even terminated at Lake Chad, is ever established the watershed between the head Niger and the Binue Niger as it now exists.

The natives are very superstitious about this Juju or Monkey Rock, as it is sometimes called, and declare it to be inaccessible; none of them will climb it; we had to find our way up for ourselves: we got to the top in time to take one or two fair photographs, though daylight was waning, and a mist was getting up; in clear weather one could have got a magnificent view down stream to south and east and west. Jebba had formerly been the Northern Nigeria Headquarters, and an ample store was available for sorting our various impedimenta and equipment. On the 10th our advanced party got to Bajibo oppisite Fort Goldie (now non-existing). This portion was negotiated in a steam barge. Here we assembled canoes, and had several of the larger ones covered with thatch for the accommodation of all Europeans of our party. The local assistant resident had been most energetic in collecting river craft for us, but taxation of boats (now abolished) had discouraged a large number of natives from keeping up that mode of river transport, and many had begun to fall into disrepair.

At Bajibo I gained my first experience of tropical virgin forest travelling, as, in company with a sapper corporal and a couple of guides, being in advance of our party, I sampled the land route we might have to take, in the event of ways and means by water breaking down.

On the 19th we reached Bussa, the official headquarters of Borgu Province (the King's capital being at Kaiama), where we were most hospitably treated by Major and Mrs. Larymore, the resident and his wife. We happened to arrive on the native Christmas Day (so to speak) or its pagan parallel, and were shown two most interesting drums said to have been brought from the very far east by one Kisra(?) some 1,000 years before. We were fortunate to be able to see these drums, as they are kept closely guarded and only exposed to view for two days in the year at this particular festival. One of the oldest people of the village remembered hearing first hand

of the death of Mungo Park, and offered to show us the rock on which his boat was wrecked in the rapids just below the village; his arguments were fairly convincing that the Borgu people only offered him salutation, which was mistaken by his boatmen for a hostile demonstration; they were consequently afraid to land or go along shore, and would take no heed of the dangers they were drifting to in the rapids.

We halted here on the 20th, in order to let everything come up, as from Bajibo we had frequently to let the canoes go up the rapids empty, and carrier labour and bush paths had to be made use of. During this portion of the journey we had a catastrophe, 34 loads being wrecked, of which we recovered about one-third more or less damaged. We had also made the acquaintance of the Tstetse fly, of which I had collected a few specimens, and other blood-sucking flies which I sent to the Natural History Museum.

Our hasty journey up river had given us no opportunity of studying the interesting pagan Yoruba people, who in their time governed their kingdom in a very creditable and civilized way, considering their surroundings; we had little chance, too, of seeing anything of the Borgu or Nupe tribes, between whom this portion of the Niger flows.

Continuing our journey on 21st November, the Mahomedan Ramadan clashing with this pagan "Christmas," our canoemen gave us some little trouble at starting; we soon got settled down, however, and reached Yelwa, a postal and telegraph station, on 24th—a neighbourhood of marsh lands and many islands—a well populated district peopled by the Yahuri tribe who claim to have come many years before from Katsena. Here we learnt that the French Commission had been obliged to change their plans, and instead of meeting us at Ilo on 6th December, the date appointed, via Dahomey, they were following in our wake, and hoped to arrive on Christmas Day; we decided, however, not to delay. On 26th we passed a table rock, Duchi Maori, and through many islands and lovely scenery, where the Niger divides the Bussa and Kontagora Provinces.

On 30th we reached Doli, where we were met by the police officer from Ilo, and disembarked all our supplies, etc., on the left bank, at a spot where the local Seriki (or King of the village) had nicely cleared a place in the bush for our camp. Here we were to say good-bye to the Niger till our work was concluded and we were on the way home.

A letter containing very detailed instructions from the local resident advised our making our stay at Doli as short as possible on account of unhealthy conditions for both man and beast. December 1st was spent in unpacking saddlery and arranging and checking loads; big cases had to be broken up so as to be suitable for carrier transport. By dark everything was ready to

push on to Tunuga. At daybreak on the following day 632 loads and, what was of greater importance, the carriers, were assembled on the spot ready for work.

We had done the quickest passage on record, from the mouth of the Niger to Ilo, by some three days. I mention this because the credit was far less due to ourselves than to all concerned with our move up country; every branch, civil, military and police, had done all they could to assist our progress in every way, and here we were at Tunuga our starting point (as arranged with the French Commission before leaving home) almost a week before our time.

We spent the inside of a week at Tunuga checking survey instruments, standardizing "perambulators" and arranging details as to our methods of procedure. We found plenty to do during that week. In spite of obstacles, which we had been warned about, we had made up our minds to carry a theodolite traverse as nearly as we could along the frontier, and thus connect up the Dahomey N.E. corner pillar, at Ilo, and Station Jackson, at Kukawa just S.W. of Lake Chad, with rigid work, and, as opportunity might occur, with chief towns such as Sokoto, Katsena, Kano, etc. This we eventually accomplished with what the proper authorities considered creditable accuracy; without entering into technical details, there were in all some 1,300 miles of it. Lateral work was accomplished with compass and wheel ("perambulator"), and compass and running chain. The French employed entirely different means, and it was interesting to see how our work compared with theirs, drawn from entirely independent sources.

Whilst at Tunuga the resident came from Argungu and arranged an *indaba* or durbar, and we had present the Serikis of Argungu, Beibei, Chibiri and Kangakoi, or their representatives; fifteen camels also turned up, and presents were exchanged.

Before leaving Tunuga we had several important matters to settle, the upset caused by the French party's arrival three weeks behind time affected our plans very considerably. Considering matters on ahead, the poverty of the country we had to work through in parts, between here and Konni, disposed of the question of either pushing on or waiting for our colleagues, so necessity had to give way to politeness, and the 9th December found us at Bengu, where our theodolite traverse commenced from a point already connected with Ilo. On the 14th we picked up our escort at Yellu, and purchased ponies sufficient for our immediate requirements; hitherto we had been dependent on ponies lent by native chiefs.

We spent Christmas at Eliassu, "all present," after which we were to be split up for the remainder of our tour. From here Major O'Shee returned to our starting point to meet the French Commission and put up beacons, whilst the remainder went on with the mapping of the frontier.

On 30th we were nearly burnt out by a bush fire, and only saved ourselves by counter-burning.

On 4th January, 1907, we reached Beibei, where the old Seriki came out to visit us—a very old man. We were now in Arewa country.

On 13th we had to face our first water difficulties; and others, connected with unruly carriers, rendered progress a little slower than we could have wished, but we reached Budu Hill quite as soon as we expected. Hitherto we had been moving almost North, we were now to change our direction East and negotiate some 50 to 70 miles of waterless bush. This was about the toughest nut we had to crack, but careful attention to many details helped us through. Whilst at Kowrah[1] on 22nd, the Seriki of a large party of Cow Fulani voluntarily came into our camp to pay his respects; this was a most unheard of thing in those parts, and our escort officer was much surprised, since these people are very shy, and have a great dread of the white man. It augured well for the future, and was a distinct compliment to the growing confidence of the natives in British rule. These Cow Fulani are an interesting type of herdsmen, and their origin is a mystery, and has been much debated; it has been said that the Fulani, Fullahs proper and other branches, are descendants of the Shepherd Kings who ruled in Egypt from about 2400 to 1800 B.C., just before the Pharaohs [Haydn]. Joseph's arrival has been put down as 1750 B.C. They are intensely proud, and highly intelligent; their record shows great aptitude for rule; as compared with most native races they are disinclined to intermarry with the negro, but where they have done so they have exerted a civilizing influence, and every negro, who can claim it, is proud of his Fulani descent.

On 31st, on arrival at Goordam, our water difficulties were over for the time being, and we had left the inhospitable Arewa country for the more civilized Hausaland, where much had been done by the Fulani. On 4th February we reached the walled village of Sokoi, and on 8th we concentrated. Our work and want of supplies necessitated scattering after leaving Budu Hill.

We halted at Konni a few days to bring our work quite up-to-date and supply our chief commissioner with material for placing his beacons up to as far as we had got; we had intended making a prolonged halt here in order to give the French party a chance of catching us up and drawing up and completing this first section of the *procès verbal*, but we soon found it to be an unhealthy fever-stricken spot, and utterly unsuited for the concentration of a large party, so we decided to continue to work on for the present.

Thus the 13th February saw us scattering again. Having to return some way to verify an error, I took the opportunity of joining up with the main party again via Godabawa, a large and flourishing town, and centre of a big horse breeding district; the chief, the Marafa as he is called, occupies very much the position of "Prince of Wales" to the Chief of Sokoto, in that he is the recognised successor to the Seriki-n-Mussulmin, as the latter is entitled. As a landowner the Chief of Sokoto holds a comparatively small area, and it is doubtful how far he exercises suzerainty over several other influential chiefs, but it is claimed for him that he is the Khalifa of the whole Negro Mahomedan world, and so, from a religious point of view, he is said to exercise supervision over some 40 millions of people. Reference will be made to this man's personality later on.

While at Godabawa the Marafa came from Sokoto, where he usually stayed, to see me, and I was rather struck by his remark that the British are always safe in the Sokoto district, as they trust the people and do not frighten them by going about armed and always accompanied by an armed party. I paid a flying visit to Wurnu, a flourishing trading centre, which had now drawn very nearly all the trade from Sokoto, and rejoined the main party on 24th February at Kaffé. We halted here 3 or 4 days to bring work up-to-date, send back material to the beaconing party, and await a few stores and some bullion from Sokoto. Here we got the best duck shooting we had this side of Lake Chad.

On restarting we got the first taste of the *harmattan*, a prevailing wind that sweeps the Southern Sahara from the East from dawn till sundown. In spite of its interference with our work to some extent we reached Sabon Birni on 14th March quite up to time, passing through Adamawa, a partially ruined village, of which more later on. As the beacon party had had some doubtful points to clear up, and were now a long way behind, we decided to join up Sokoto with our main traverse, and I reached there on 26th. Mr. Temple, the Resident, had placed two "houses" at the disposal of our party, as it was not unlikely that some of us were to make a prolonged stay here. Our work kept me at Sokoto till 15th May off and on, and I have many pleasant recollections of my stay with the small community of British officers there—civil, military, and police. While there I had interviews with the Seriki-n-Mussulmin on more than one occasion, and was struck by his quiet manner and mode of dress; he disliked show of any sort, and though he gave permission through us to certain chiefs to accept umbrellas and presents of cloths and embroideries of gay colours, he himself preferred rolls of cloth of good texture and subdued colouring.

While on a tour from Sokoto to place two beacons, I met the Seriki of Binji, a chief of Fulani blood, a striking individual, who wore a very handsome sword when he came out to meet

me on approaching Binji. On my remarking on this weapon he gave me the history of it; it had been captured by his grandfather at Adamawa (near Sabon Birni) from the Seriki of Adamawa, nearly 100 years before. The old man drew a plan of the place on the ground, and so completely did it coincide with the ruins as I had seen them, that I asked when he had last been there; he had never been there himself, he told me, but only remembered about it from the description told to him by his father and other relatives. While at Sokoto I made acquaintance with several members of the French Commission, and excellent fellows I found them to be, and as we were putting the final stitch to the "Entente Cordiale," that big agreement drawn up with a view to settling so many questions all over the world between England and France, we quite made up our minds to work in the friendliest of spirits, which certainly we did till our work was accomplished at Lake Chad.

Leaving Sokoto on 15th May, I rejoined the main traverse at Zurmi, moving south of the Gundumi Forest. While half our party had been at work fairly continuously at Sokoto, the mapping and traverse work had also been carried on from Sabon Birni through Sansan Aisa towards Katsena. I would have liked to have made a sketch of the track running through the Gundumi Forest as well as the regular trade route along which we went, but the rains had held off late that year, the upland was barren, waterless and uninhabited; plans had to be laid ahead, and though almost daily tornadoes and dust storms worried us at Sokoto, indicating the approach of the wet season, we left that track alone; it is not likely to be used except by Fulani herdsmen, and then only in very wet seasons. Until a railway in the vicinity contradicts my statement, traversing this forest which extends east and west for 50 miles along the flat without water, it is likely to remain a barren patch.

Our march from Sokoto to Zurmi was a very interesting one; there were practically no side roads to survey or sketch, so while one or two were employed on a compass sketch of the road, another could help on the carriers, go ahead with an interpreter, and arrange at some half-way town or village for water to be laid out along the road, so that two, if not three, were able to reap information about the surrounding country for drawing up a report under many headings.

For the first half of this journey the road went through much the same character of villages as in the neighbourhood of Sokoto; only the bigger and more important ones showed signs of outer walls, being designed for stubborn defence; the surrounding hamlets had walls merely for the inkeep of domestic, or outkeep of wild cattle and herds; but as we got south and east of the Gundumi Forest we found big stoutly-walled towns of large perimeter, with space for internal cultivation as well as dwelling plots and small gardens, while outlying

hamlets disappeared, though we were still well inside Hausaland proper; this is explained by the fact that the Emirs of Chibiri and Maradi were constantly at war with those acknowledging the suzerainty of Sokoto, and the area Aisa, Zurmi, Kowrah, Boku, and even as far north as Sabon Birni and Adamawa formed the theatre of constant guerilla warfare.

Some ten miles west of Boku there is a spur of huge granite rocks, in some places piled in twos and threes one upon the other (reminding one of Stonehenge), surrounded by a considerable forest of *kuka* trees. Hitherto we had only found the *kuka* sparsely scattered among other forest trees, or planted in lines in the country north of Sokoto as landmarks, to indicate direct routes between the market towns, as they existed from time to time. A casual panoramic view of a piece of country does not bring home to the observer the existence of straight lines of trees of similar sizes and species, when planted at irregular intervals, but survey work sometimes does. Some day, when we know more about the history of Northern Nigeria, (which doubtless geologists and archæologists will be able to work out for us) these rows of trees may afford valuable clues as to the sites of townships and trade routes now obliterated by sand and lost, through neglect on the part of recent Nomadic peoples to keep them up.

Water difficulties, and the thickness of the forest, necessitated the theodolite traverse being carried wide of the frontier between Sabon Birni and Katsena, and on this curve our work became troublesome and somewhat slow. Practically nothing was known of the area between these places and Chibiri and Maradi, so a certain amount of exploring attended our work.

We reached Zurmi via Kowrah on 23rd, and on the night of 25th May the rains broke, and very soon after the whole aspect of the country was changed. We concentrated here for a short time. Within a week we had our main supplies at Katsena and scattered again. During June we worked up to Katsena, which was joined up to our traverse by 4th July. In the meantime I had visited Aisa and Sabon Birni again, in search of a route between Aisa and Chibiri, and had come across a very interesting individual in one Kowrah Hassan, then shifting the site of his own village, Yelwa. This old man had handed over most of his larger villages to his sons, and married his daughters to more or less influential Emirs, and claimed for himself the title of Sultan of Maradi. He made me a comfortable camp, on the opposite side of the river to his temporary Yelwa, which I occupied for two days to rest myself after the only severe attack of fever I had while in the country, and I felt myself much indebted to him for his many kindnesses; he struck me as being a very civilised and much enlightened man, as also was his eldest son, the *Galadima*, who always accompanied him on his visits and in his movements; everything seemed flourish-

ing in his surroundings, and his people were happy, peaceful, law-abiding, and good husbandmen. In complimenting him on this I asked why the walls of the few walled or stockaded villages presented such a neglected appearance while everything else was clean and trim. His reason was somewhat remarkable: that now, as it seemed the white man had come to stay, there was no necessity for their upkeep; there would be no more fighting and unrest, as the white man always put things right! Two days after leaving Yelwa I reached Ruma, where several of our party were concentrated, as well as one of the French Commission and a member of our (Colonial) Civil Veterinary Department (who was collecting blood-sucking flies and investigating animal diseases), so we sat down a large party at dinner, just for one evening.

The 4th of July saw most of us at Katsena, where we enjoyed the luxury of a house again. The Emir of Katsena had soon developed a taste for trade, and showed his enterprise by opening up trade in skins and leather with the Coast, *via* Lokoja. A halt of 3 days at Katsena was necessary to bring things up-to-date, as since the commencement of the rains little map work could be done, and the beacon party had caught us up. We had now covered half our distance, but information led us to believe we were coming to somewhat more open work, especially towards North Bornu, where the country was very thinly covered and traverse work would be far more rapid.

The 19th July found us at Yankeisga, where an important trade route crosses the frontier, and on the 31st we were at Zango A good deal of work had to be done round Zango, Kano being joined up from here by branch traverse. We, shortly after leaving Zango, found ourselves in a very thickly populated area, small villages, hamlets, and high crops. Work became slow and trying; we had expected to find this almost barren waste land. August and the first week of September found us in high crops, but at Galadi we got into more open country, and as traversing now became more easy and rapid, we could afford to scatter further afield. I worked down an important trade route to Kano, and from now worked through North Bornu, taking latitudes of chief towns East of Kano and connecting them up by running tape and compass work. The 16th September found me at Kano. On the 10th I stopped at Gummel, a large walled town; the Seriki and people seemed to be an unenterprising lot; though harvest prospects were excellent and crops good, large open spaces of good land were lying fallow, and when I asked him the reason he replied that his people had not recovered from the effects of famine caused by the siege when Damagara had raided and laid waste the country six years before!

On the 20th September I left Kano, and found the country mostly under water; on the 25th I passed Lake Ajula—very pretty—reached Miga on the 27th, where I observed a latitude, and crossed the Kano-Hadeija border the following day.

On the 30th I reached Hadeija and received a hearty welcome from the people. As I arrived on the left bank of the river, they carried me, calabash raft and all, up the steep bank and nearly rolled me off, as I had seated myself on my saddle, whilst crossing the river, to avoid a wetting. I was disappointed at having missed Colonel Festing, the resident at Kano, by one day, he had left only the previous afternoon on his return journey *via* the river.

Two days afterwards I was at Katagum, where I halted a day, and on the 4th of October I was back at Hadeija again, where I had left most of my heavy kit and those carriers who required resting.

The 8th found me at N'Galleewa, the then new *Kachellari*[1]; I was now in North Bornu, and since leaving Hadeija had passed through a donkey breeding tract of country. From here I was able to accurately locate the junction of the Hadeija and Katagum Rivers, hitherto a much debated point; this junction is a very characteristic one—the meeting of a clear stream with a muddy one, similar to the White and Blue Nile junction, the Niger-Benue junction at Lokoja, or the Ganges-Jumna junction at Allahabad in India. This contrast is caused by the nature of the country through which the rivers happen to flow; one, flowing through a flat country and marshlands, leaves its fertilising qualities behind, and soon clears, while the other, running unchecked, carries its alluvial deposits with it.

From here I went on to Gorgarum, the chief town of the Beddi country; here I observed a latitude, and on 17th October I was back in N'Galleewa. My week's absence from there had been a trying one; I had had to cross both Hadeija and Katagum Rivers twice, and without Kiari, (the heir presumptive to the Maisali of Beddi, who accompanied me on this trip, arranged for calabash rafts, etc.) to negotiate river crossings, I doubt if I should have got over the country at all. The whole country was under water, and insects at dusk and during the first 2 or 3 hours of darkness were simply terrible; latitude observations under such conditions were distinctly trying; the usual methods would have been well nigh impossible, but during the latter half of our tour we had adopted a method, longer possibly from point of time, but just as accurate, and more agreeable when all the conditions are considered, Time and space here, however, do not allow of explanation of technical work which, at the outset, I remarked on as forbidden ground.

I have just mentioned the Maisali of Beddi, Sali by name. His father El Haji, was a Mussulman, though his grandfather, Barbuzi, a pure Beddi man, was a pagan. El Haji fought

[1] *Kachellari* was rather a general term, meaning headquarters of a *Kachella* (the vassal of a ruling Chief) who was awarded a position of trust for good services rendered.

with the Shehu of Bukar, then King of Kukawa, at Dogona, some 15 miles north-west of Gorgarum. Honours were divided; half of the Shehu's people ran and scattered over East Bornu, though the Shehu took many slaves with him from Dogona. The Maisali El Haji retired to Gorgarum, where he defied the Fulani, who had overrun the Hadeija district. The Fulani retired from Beddi; this was the eastern extremity of their invasion, and it so happens that there are now no Hausa or Fulani people in Beddi. The present Maisali is a very enlightened ruler, and partly through his own hold over his people and aided by an energetic assistant resident, he was opening up good communications. His market places were well appointed, and there was an air of life and prosperity throughout the district, at the time I visited it, in spite of the unfavourable climatic conditions then prevailing; no one seemed to be idle, for though the country was mostly under water and agricultural operations were suspended, the rainy season was about over, and repairs and improvements were going on apace.

I have mentioned this little district and its people rather at length because it affords an interesting link between pure paganism and Mahomedanism. It has had little or none of the advantages of the civilising influences of Christianity, and, from what I can gather, its present state of law and order has existed for quite a century; I was surprised, too, at the number, and efficient state of the mounted escort who attended the chief when he toured the country with the assistant resident.

On 24th October I reached Mugni (or Mugini), where I found a very obliging *Kachella,* or appointed chief, a freed slave of the Shehu of Bornu, who rewarded him for some favour by making him chief of this village and a few surrounding hamlets.

On the 27th I reached Dumjerri, where I found Mr. Hanns Vischer, then resident of North Bornu; he gave me an account of his journey across the desert from Tripoli and a good deal of information about Bornu, from which I could arrange my future plans. I had a good deal of work to bring up to date, and though I halted there three days, the cloudy nights prevented my getting satisfactory latitude observations; but, as I intended returning, I started from Maifoni via Bishugua, whose chief, Abba Isu, claimed to be a brother of the Shehu, and after meeting me accompanied me with his troop of retainers to Maiduguri, the present capital (Maifoni being the British quarter) of the Shehu. At the time of my visit Maiduguri was still being laid out as a township, the Shehu having been persuaded to leave Kukawa, which was an unhealthy spot most of the year; besides, Maiduguri was better suited in every way to be the chief town of Bornu. I got to Maifoni on 6th November, and here arranged all my plans for a prolonged tour in the environment of Lake Chad. A heavy mail bag awaited me

here, and, among other things, I got the *Geographical Journal* containing Boyd-Alexander's lecture, and this brought me thoroughly up to date in recent events connected with the locality.

I was fortunate in being at Maifoni just then, as the Shehu had assembled all his feudal chiefs and their mounted men to celebrate the close of the Ramadan, and I witnessed a review of some 1,200 of his troops in their divers equipments. Of the Shehu I shall have more to say later on.

I wished to strike Lake Chad at its southern extremity, and, *en route*, to investigate the course of the *Kommadagga* (smal river), draining the Maifoni neighbourhood,[1] which later on is known to the natives as the Gada River. This river I found empties itself into a marshy depression, and its waters certainly do not reach the lake above ground. With these objects in view I did not proceed by the main road to Mongano and Kukawa, but by a less frequented one near the Cameroon boundary. Since taking leave of the people of Beddi, I had come among the Kanuri or Beri-Beri, the chief inhabitants of Bornu proper. Here similar distinctions held, as in Hausaland, between herdsmen and husbandmen; from Maifoni, however, towards Chad, though this distinction still held, the character and habits of the herdsmen changed, the Shewers, as they are called, living in villages closely adjoining those of the Kanuri, and with few exceptions bearing the same name. Thus there are double villages, and as the Shewers are in the habit of living and bedding down with their cattle, they require large capacious huts; their dwellings, therefore, and surroundings are simply filthy. The dry season drives them out into the bush, where they live the lives of the Cow Fulani, and during that portion of the year their villages are entirely deserted. When selecting a camp, or even on the march, it is well to avoid and keep well to windward of a Shewer village.

IV.

Lake Chad.

Reaching Lake Chad on the 15th of November at its southern extremity, my work was chiefly confined, till the 21st, in investigating its approaches, at intervals where elephant and herdsmen's tracks allowed one, marking the water's edge, and finding out how the mapping of the lakeside could best be effected. I soon found that it would be a mere waste of time to do more than this at this time of the year, so decided on sketching my way via Mongano to Kukawa, taking latitudes at these places.

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[1] Not to be confounded with the *Kommadagga* Yobe or Wobi on the North Bornu Boundary.

Mongano is a flourishing town and big trade centre, and has probably increased in importance since the Shehu left Kukawa, which I found a veritable city of the dead.

On 29th I visited Seyrum (called by the French Seyrum Bagha), a potash depôt on the lakeside, one of the few places where a fair view of the lake can be got from the shore at this time of year. I marked the lake edge, noting height of water, &c., and set up a temporary beacon; I was satisfied now to leave the lake for two months, and returned to Dumjerri, via Kukawa and then westward.

From what I had seen I was satisfied that the lake had a very distinct western and southern shore, and February would be the best time to survey it. This would well fit in with our boundary work, as I was due to return to the frontier by Christmas, when we hoped to be concentrated on the *Kommadagga* Wobe to finish up the *procés verbal* up to Lake Chad.

The 8th of December found me at Dumjerri, which was now to change its name to Lariba Geidam, halting a day to observe latitude, &c. I visited the last beacon (147) of our frontier near Kanema, where it joins the Wobe or Yobe River (*Kommadagga*), which then becomes the frontier on to Lake Chad. My object in doing this was to connect my work up to our rigid traverse. The 14th of December found me at Duchi (Dutsi), where our party were concentrating, as were also the French Commission, to wind up affairs to date.

Between Geidam and this place are situated the ruins of Gamburu, the only brick town in Central Africa, mentioned by Barth as having been destroyed in 1807. I am not able to say how he arrives at this date. Mr. Hanns Vischer, who is well versed in the history of this part of the world, could tell me little about the history of Gamburu, but thought it could not be of ancient origin. Its chief interest lies in the fact of the existence of a brick-built city in the greater part of a continent of purely Nomadic aborigines and invaders. Christmas was spent at Dutsi, where we had the good fortune of the cheerful company of Mr. Hanns Vischer, who was kind enough to bring his gramophone.

On 4th January, 1908, we broke camp for Yo; the river and roads were surveyed; this necessitated scattering again, but we were concentrated at Yo on 14th with the French Commission hard by. We made our final arrangements with them for tackling Lake Chad in order to get some idea of its capricious behaviour. Our difficulty was that we were in possession of such masses and varieties of opinions of short visits of individuals, but really not much fact.

The 27th of January found me on the lake side almost east of Yo, the coldest early morning and most biting wind I had

yet experienced in tropical Africa. Starting as early as daylight permitted my reading a compass bearing. I reached the Lake side about 9 a.m., and noted the water's edge and its level, took notes of surroundings generally, built up a distinctive mark on to which one of our N.C.O.'s, who had been instructed to sketch from Yo down to the estuary of the river, could connect his work, then down the lake shore to this point. My investigations took me some 4 hours. Before leaving at 1 p.m. I found that the Lake had risen and fallen an inch; this was recorded on my marking stick, and also borne out by the aspect of the grass along the shore. I mention these details here because they were not neglected at any of my lakeside camps, and it is on these facts that I base my opinions later. From this point I camped practically on the lakeside every night till I reached Seyrum Bagha again on 1st February, where I found that the lake had fallen 13¼ inches since my previous visit on the 29th November—9 weeks before. I could recognise the marks I had put up, which fortunately had been left undisturbed.

Trade seemed to be fairly brisk at the little potash depôt, where donkeys were being loaded up for road transport down country *via* Kaoa (Kawa); this potash is brought from markets on the N.E. shores of the Lake, by water, in the rush built boats of the Buduma, the floating population of the lake, who are generally reported on as being a shy and timid people; they trade with the Kanembu, the lake side land people, in potash and fish, also conducting the water transport of the Lake. The Kanembu in their turn exchange these and water fruits and vegetables with the Kanuris (Beri-beris). The Kanembus seem to mix a good deal with the Buduma and Kanuri races, and appear to be on very friendly terms with both. It is hard to define the Kanuri-Kanembu limits, the latter are to be found as far S.W. as Mongano.

From Seyrum I was able to communicate with the Commission now concentrating at Kukawa, and went in there myself *via* Kawa and Bre on the 6th February. Arrangements had to be settled with the French party as to how we could best investigate the matter of the islands and their connection with the boundary. We had now sufficient data to go on to make very definite plans, and on 13th February I was back at Seyrum again (Seyrum Bagha); Hearson came with me this time. As we wished to establish the latitude and longitude of the nearest island off the N.E. shore of the Lake to our side, we had had a steel canoe placed at our disposal by the French party, and this was done on the night of 16th February, at the same point that the French had done a day or two before. This satisfied us that the Lake Islands lay well within the French side of the geographical boundary. On 17th I was able to continue my lakeside work towards the southern extremity, and managed to observe a latitude every evening. On 26th February I left the

lake side for good. After traversing the roads and locating Ngurnu, a prosperous market village,and Kawa, taking Maduari *en route* (where Overweg's remains have recently been discovered), I rejoined the Commission at Mongano, our field work being now complete, to start for Maifoni and home. I had tried to find Overweg's boat, from Alexander's description of where he had found, and had to leave it for want of transport. Had I been able to discover it I could have managed to get it to one of the villages with my own carriers.

Now, as to whether Lake Chad is actually drying up, it is almost impossible at present to say; that it is fast changing its shape and shifting its position are certainties. It is more than likely that at no very distant date there will be two distinct lakes, the northern or smaller one being fed by the valley of the Yobe River, and the southern by the Shari, a really magnificent river, feeding the lake through a very considerable delta. I am of opinion that the parting of the lake is being steadily brought about by a combination of natural causes, the chief of which is the *harmattan* blowing daily from almost sunrise to sunset, during a large portion of the year, across the lake from north-east to south-west, not only bringing desert sand with it, but creating a surface current as well as a daily tide on the lake; secondly the two rivers create currents on the lake. Whether these meet in direct opposition on the north-east shore and become diverted into conjunction by the influence of the *harmattan* or in direct opposition in the centre of the lake is immaterial, since in either case there would be an inclination to produce a banking up of the bottom of the lake at the line of meeting of the waters.

I am of opinion that the influence of the *harmattan* on the rivers is to fork the currents of both, and this has produced the Seyrum (Bagha) Peninsula on the south-west shore and a bar running north-east across the lake, whilst the same combination of natural forces has been responsible for the innumerable small islands into which the north-east shore has been broken up.

Irrigation and other engineering enterprises are likely to divert large volumes of water from the two chief rivers, and so threaten the very existence of the lake, but left to nature the volume of water is not likely to undergo much change, though the surface appearance may change very considerably.

After my return home I had the good fortune to meet Boyd-Alexander before he started out this last time; we were in agreement about Lake Chad and its waters, and he, I think, favoured the idea that the Niger once ran into Lake Chad, and, at some earlier date still, joined the Nile; he based his conclusion on the existence of certain birds and fishes common to those three waters, and was inclined to regard the Benue (Binue)-Niger below the junction at Lokoja as a separate river;

he was, I know, very anxious to explore a now dry river bed, the Dalal Mauri, connecting with Lake Chad from the eastward. Geologists and archæologists need not despair of some day arriving at definite conclusions on these points through the aid of fossils and other buried matter.

Sandy terraced formations exist at fairly regular intervals, keeping roughly parallel with the lakeside, and a very decided ridge runs some six to eight miles from it, extending from Yo almost to Kukawa, but I am disinclined to believe that the waters of the lake itself ever reached to the walls of Kukawa. "Home keeping folk have ever homely wits," and this applies very much to the Kanuri and Kanembu, who are never disposed to travel during the rainy season; when the country round Kukawa is under water the general appearance is that of an uninterrupted sheet, whereas it should really be a series of terraced lakes divided by narrow *bunds* or ridges.

I think that on the lake there is a diurnal tide during the time that the *harmattan* blows; this wind banks up the water on the west and south shore, perhaps very considerably; it may or may not resume its proper level during the night; this would depend very much on the force of the wind and the thickness of the *maria* and water grasses through which the water would have to filter back. The *maria* grows usually in a belt along the water's edge, and, like the mangrove, flourishes best where the water is brackish. Decayed and decaying vegetation cause a peat formation along the water's edge, extending some way into the lake in places; this tightens up with the incoming tide, and opens out again with the ebb to such an extent that, when the water is at its highest, it would bear the weight of a man running quickly over the top, (which the Buduma are skilful at doing), whereas at low tide any such attempt would end in failure; this fact bears out the truth of what some might consider a fairy tale remark, which Boyd-Alexander notes in his account of those people in his Niger to Nile record.

From Mongano we simply travelled to Maifoni, which we reached on the 2nd March. We rested here three days, and exchanged compliments with the Shehu, who came out to meet us with much ceremony, and here I would like to pay a tribute to Colonel McClintock, whom I was glad to meet again after an interval of four months; he was still resident of Bornu, and had done much to assist us in very many ways. While here we had to exchange many of our carriers; nearly all my personal carriers elected to stay on till we got down to Yola, where we took boat down the Benue River to Lokoja, and thence by the Niger again to the sea. I had had nearly all my carriers since leaving Kano, some even much longer; they had got into wonderful condition for travelling, and seldom gave me any trouble. I seldom let

them enter villages except to purchase material for clothing and ornaments. I insisted on the headmen of villages bringing their food to camp ready prepared, and paid for the food in a lump, instead of giving the carriers the food allowance. I invariably sent on a messenger overnight from each village to my next halting place, after he had seen me pay the headmen of villages for goods received. This went a long way towards promoting a proper understanding with the inhabitants of the country; it is so often due to a most trivial misunderstanding that regrettable incidents occur, sometimes causing delay, or even failure, in many of the not unimportant undertakings of the work of a Boundary Commission. Even when everything seems plain sailing one has to be on a constant look-out to forestall a possible hitch. Servants and interpreters have their own interests to serve, however well paid and well provided for they may be, and native personal servants must to a certain extent be good interpreters; they can help or hinder equally well; it is so easy to spoil them, yet any show of mistrust is equally fatal.

On 8th of March we had left the Kanuri-Shewer country behind, and at Gumsuri entered a Pagan district in South Bornu, a mountainous region, and a great relief after the dull monotony of the plains we had travelled over.

On the 12th we crossed the Bornu-Yola border, and on 13th arrived at Womdiu, where the natives turned out in force and gave us a war dance, in which cowhide shields took a prominent part. On the 14th we crossed into the Benue River basin, and on the 15th entered Fulani country at Pella. Yola was reached on the 20th; here we found two steel barges ready to take us round to Lokoja. One day was spent in selling our horses, paying off carriers, many of whom were really sorry to leave us; we allowed a few to work their way down to Lokoja, as extra hands might be wanted, (the river was then rapidly falling, and it was already reported abnormally shallow in places). Heavy tornadoes occasionally necessitated our tying up to the river bank. On 7th April we reached Ibi, one of the Niger Company's earliest stations in Nigeria, and eventually got to Lokoja on 18th. On the night of 27th we were on board the *Mendi* at Forcados and homeward bound—all present, as we had started.

We had not had much sport; up to Lake Chad little sport was to be got, and we had not had time for it; our trophies were few.

DR. T. MILLER MAGUIRE, M.A., LL.D., Barrister-at-law (Inner Temple), who opened the discussion, said that he did not think it would be at all fair to the gallant officer who has gone through such an extraordinary experience in the service of his country if some person, greatly daring, did not start a debate. Certainly a more wonderful and interesting series of experiences than the lecturer's narrative could scarcely be

conceived, even leaving out of consideration the practical application which the lecturer had made towards the end of his lecture with regard to the serious question of food supply. It was something to hear that from the recesses of the darkest part of Northern Africa we might look for sustenance for our people in the event of the Mediterranean and those more ancient sources of supply, or even the Western sources of supply such as Canada and the United States, being closed to us in the event of war, as each additional avenue of food supply gave us enhanced security. That, in itself, was worthy of the attention of the public and of the Press of this country, and would justify the lecture, even if there had been nothing else in it. Another very singular feature of the lecture was that they had seen before them in the photographs that had been shown the very places that Mungo Park visited, and he had been a favourite hero of their youth. The chiefs, whose photographs they had seen seemed to be very fine men, and the lecturer's personal escort had consisted of splendid types of humanity. He would like to ask the lecturer whether they are really typical, as a whole, of the natives he had met?

MAJOR SIMONDS replied that he thought they were.

DR. MILLER MAGUIRE said that, in that case, they were a great deal better men physically than the Boers, and than most of our factory folk, and he hoped that the motor and other devices of civilisation which they had seen had been introduced into their country, would not have the effect of bringing about a deterioration of the physique of the natives. There was another very significant fact to which the gallant lecturer had referred, and to which he would like to direct their earnest attention. The lecturer had dwelt upon the great progress that had recently been made by Mahommedanism. He had been discussing those questions with some Turks recently, and they were of the opinion that they were going to start again, and Islam was to be revived. There was certainly a revival in the Mahommedan world, and, moreover, a very successful propaganda; and this was borne out by the information brought to their knowledge by the lecturer that afternoon; in fact, they were almost about to rival the extraordinary progress made after the year 622, to which the lecturer had referred. He would like to ask the lecturer whether Senussi, from near Lake Chad, who threatened to rival the Madhi some decades ago, was still going. Had he been eliminated, or was he still alive? At any rate, he understood that the lecturer had not come across him, though he had said that he believed about twenty years ago some such chief had great influence in that district. It was very marvellous to hear how Mahommedanism was prevailing throughout the whole Sudan from east to west. He knew that a hundred years after the date of the Hegira, to which the lecturer had referred, the Arabs and Moors, who then represented the Mahommedan world, not only went as far as Tripoli, but also crossed the Mediterranean, and went into Spain; and they were only beaten at Tours in the year 732 A.D., by Charles Martel, their victorious career being stopped in the heart of France. This had, he thought, been an admirable and very useful lecture by an officer whom he would call one of their heroes. It was a matter for hearty congratulation that the nation was able to produce, in this degenerate age, a man who was willing, in the interests of science, to penetrate boldly into the heart of the darkness of the Sudan, and to describe the mysteries of native life in realms hitherto to them unknown.

MR. W. E. STANLEY THOMSON said that Dr. Miller Maguire had made the remark, in the course of his interesting speech, that it seemed only fair to the lecturer that some observations should be made with reference to what he had described to them that afternoon. Now, there was one thing that had struck him as being very peculiar, and

that was the contrast that there was, and must naturally be in the minds of those who had studied the travels of African explorers, between the experience of explorers in the present and the experience of explorers in the past. There were two difficulties that had to be dealt with in the past. There was, first, the difficulty of climate, and the risks of fever while travelling through great tracts of swampy country; and there was the further risk of meeting with natives with whom, in all probability, complications might ensue. He thought it probable that many of those present had read Miss Kingsley's book. Major Simonds had been round that part of the country in which she had travelled. Now, by way of preliminary, Miss Kingsley told them that, previously to going there, she wrote to friends, who had had experience in the country, to ascertain what sort of preparation she ought to make for the journey. One of them told her: "If you have made up your mind to go to the Gold Coast, you had better unmake it as soon as possible. If you cannot do so, you should stay on the coast for a fortnight, and take an ounce of quinine every day, and then make the best of your way to the nearest missionary station, as that is the only place where they have a hearse with plumes!" Major Simonds had apparently taken no medical preparations before going up country, and fortunately had no occasion to make for the nearest missionary station; at all events, he had been able to come home without their assistance. He would like, however, to bear in mind for a moment the wonderful facilities that now existed for travelling in Africa. Let them think for a moment of Livingstone's experience. He had been reading that morning the account of his early experiences, and of the astonishingly small outfit that was made to serve on his long expeditions. Five tin boxes, each only fifteen inches square, sufficed for his stores of things with which to barter with the natives for the food and lodgings and canoeing of his whole party. What a contrast to what Stanley needed. Livingstone, however, had had some experience in the country and Stanley had not, nevertheless Stanley, in his circumstances, was working upon perhaps more practical lines when he took with him large quantities of cloth, and beads and wire, for the purpose of paying his way, so as to travel with the least possible expenditure of time. Major Simonds' party apparently had plans made for them in advance. He did not know how many hundred miles of travelling he had in contemplation, but anyway he personally did not seem to have thought it necessary to make any great preparations beforehand. Then let them consider the facilities he had for travelling upon those useful little steamers. Stanley, Livingstone, and other travellers had none of those advantages, and consequently Major Simonds had been able to travel in comparative luxury, and without in any way, fortunately, coming into conflict with the natives. He thought that of itself showed how wonderfully the facilities for travelling in Africa had improved, and how useful these facilities were, not only for the purpose of geographical discovery or for making boundary lines, but for the purposes of commerce and civilisation. The lecture that they had listened to had unquestionably been extremely interesting and instructive; moreover, the views which had been thrown on the screen had brought home to them vividly the splendid physique of the natives.

He would not say anything more except that he thought the lecture, when it appeared in the Journal, would afford extremely good reading, and for his own part he heartily thanked the Major for the interesting particulars he had given them.

Lieutenant J. Dare, S. Nigeria Regiment, West African Frontier force, said that the lecturer had remarked that he had not had time to visit the Yoruba country. His own knowledge of the Yoruba country was certainly of no account as the only portion of it he had touched was Lagos itself. Among the soldiers of the Southern Nigeria Regiment, however, they certainly had more than 50 per cent. of Yorubas. The

companies were generally composed of two Yoruba sections and two Hausa sections, and sometimes there was only one Hausa section in a company. He had always found that the Yoruba was a most excellent soldier. With regard to the religion which the soldiers professed, he would say that, as a rule, the good-class Yoruba was just as much a Mahommedan as the Hausa. Major Simonds, in the course of his lecture, had said that there was some other religion in the Yoruba country, but made no mention, as far as he could recollect, of Mahommedanism. Paganism certainly did still exist to a great extent. He had not time to study the subject deeply, but when the men are actually with the corps they are treated as Mahommedans. They were, as a rule, sworn in on the Koran by the same priest as the Hausa; they worshipped in the same Mosque; they observed the same holidays. The Yoruba was, in his opinion, just as good a soldier as a Hausa, and was a very good man, both in barracks and in the field. The lecturer had pointed out man, both in barracks and in the bush. The lecturer had pointed out owing to the *Harmattan* and the thickness of the atmosphere. They had had difficulty in reading a helio over five miles. But directly the rains come, and the *Harmattan* ceased to blow, the atmosphere became clearer, and it was easy to see hills with great distinctness at a distance of forty or fifty miles. The lecturer had given them an interesting description of the physical action exerted by this wind on the waters of Lake Chad, but had, he thought, omitted to say, for lack of time, that it also brought with it small particles of dust from the Sahara, which, floating in the air, produced the effect of a slight fog. There was one question he would like to ask the lecturer, namely, whether he had arrived at any conclusion as to how the Fulani came into the country. They seemed to have split up into small groups and to have spread along the entire coast. They were fairer in complexion than the Hausa or the Yoruba or any of the remote tribes inhabiting the coast. From whence they came was a question which did not seem to have been quite cleared up, and it would be interesting to know whether, in the course of his journeyings, the lecturer had arrived at any definite theory as to their origin.

MAJOR C. B. SIMONDS: As regards the question of railways, the railway development is being pushed forward. If you will read the Statesmen's Year Book, 1910, you will find all the particulars which are at present available with regard to the railways of the country. There is a light railway from Zungaru to Bari-Jukow, 22 miles towards Kano, but it passes within easy distance of Bida on to Zungaru, and it is being continued towards Kano. The gauge is 3 ft. 6 in. I understand some 400 miles has already been laid from Baro, the navigation head for the larger river steamboats. There is also a narrow gauge railway being built about the country, but there is a good deal of discussion as to whether it shall not be made of a standard gauge all the way through. When Sir Percy Girouard went out, I believe great railway developments were arranged for, and they are now being pushed on; but I can only give you the information from the Statesmen's Year Book, which is a document compiled by the Secretary of the Geographical Society. It is a book to which the public has access. As regards the other developments to which reference has been made, there are certain official documents, the contents of which I am not quite sure that I may mention, and it is difficult, at a moment like this, not to disclose official matter if I make any further remarks on the subject. I will therefore not say anything further on the matter.

Dr. Miller Maguire referred to the question of the physique of the natives. The doctor who went with us was very anxious to look out for cases of imbecility among the natives, for purposes of his own study, and we only came across one case of imbecility

in the whole country, and that was on the way down the Benue on our way home. The previous history of the country makes it look rather an unhealthy part of the world for Europeans; but, as a matter of fact, we started as a party of eight, and we all came back none the worse. As regards the medical arrangements, our doctor did his duty in keeping us fit, and, after all, that is the great point. I think I can put a great deal of our disappointing the doctor, so to speak, down to the fact that we were pretty well equipped with almost every sort of luxury that we wanted. If anybody really wishes to know the contents of our various commissariat departments they have only to go to the Army and Navy Stores, and they can see the details connected with everything. They have been preserved at the Army and Navy Stores by the person who made the arrangements for us. I think they were very complete considering the way they were arranged. I remember, whilst watching the unloading of our stores at Burutu, a missionary standing by me saw several cases of medical comforts labelled "extra sec." He said, "Hullo, what's this?" I said, "Well, we are going to do some very dry work." He said, with a good-humoured smile, "I must report this to Exeter Hall." I said, "All right. I will report none labelled 'Bibles' among your baggage"; so we both decided to cry "quits." Probably nobody was better equipped on reaching Lake Chad than I was, and every possible precaution was taken so far as the use of disinfectants, etc., were concerned. After a hard day's work a calabash of water was sunk in the ground, and the disinfectant poured in, and all the carriers used to dip their feet and hands in it, and wash themselves, and I think that kept off the blood-sucking flies and their ill-effects. I think that went a great way towards immunity from sickness. I suppose that during the whole tour some thirty horses passed through our hands, and I do not think he had a single case of trypanosome among the lot. I put that down to the fact, whenever we came across a tsetse fly belt, we hurried our horses over as quickly as we could. The horses were ordered never to be taken down to water at the lake side or to any water at all. Water was brought to them in calabashes. If you are only fifty yards away from the water, the tsetse fly will not tackle even that dry distance, to get on to a domestic animal.

With regard to the way in which I took my latitude observations, instead of taking the observations in the usual way: In the discussion following the French Commissioner's (Captain Tilho's) paper, read by Lieutenant Mercardier at the Royal Geographical Society, Mr. Talbot contended that it was almost impossible to make observations in the usual way, by circummeridian altitudes. We employed a different method. I used to sit down and eat my evening meal, with the nautical almanack in front of me. I knew when a star would cross the meridian: the theodolite was all ready, and it only wanted the final adjustment. It was just like playing a game of patience, and just as amusing. The method we employed was most simple, did not require any tiresome computations, and our latitudes certainly agreed very well with the French. I will not say anything more wth regard to the technical details, because that is rather outside the subject. Lieutenant Dare asked a question about the Fulani people. The Fulani are a very interesting people, and are to be found all over the country. They are supposed to be descended from the shepherd kings who ruled in Egypt before the time of the Pharaohs (Ptolemies). The time of Joseph was 1850 B.C., and the shepherd kings ruled in Egypt before the Ptolemies. Other theories as to their origin have been advanced, but in the short time at my disposal I have not been able to go much into the various points. With regard to the question of the physique and intelligence of the natives which Dr. Maguire mentioned I think a lot of the natives have learnt a great deal from the Moors, because to take a point from contemporary history, Tim-

buctoo was being bombarded with powder and shot at the same time that our fleets under Queen Elizabeth were fighting the Armada that was attacking our shores. Possibly the Moors also managed to terrorise the natives, and put a little intelligence into them. As regards Mahommedanism, the question of Turkish or Persian does not trouble them at all; it does not show itself amongst the people. They have adopted Mahommedanism as a principle. In the Courts in most parts of Northern Nigeria, and I daresay among the Yorubas too, the gamblers' oath will not hold good. It has been difficult to reply to each question separately in detail in the short time at disposal, and as I am afraid I have exhausted your patience already, I will not say any more.

THE CHAIRMAN (Commander W. F. Caborne, C.B., R.N.R.): I think the lecturer is to be congratulated upon having been privileged to take part in such an important undertaking as was the Anglo-French Niger-Chad Boundary Commission. It is almost needless to say that an undelimited frontier may at any time be the cause of complications arising between two neighbouring powers, and anything that will obviate such a danger is of the greatest value. It is also a matter for congratulation that the British and French sections of the Commission worked together in such a harmonious manner.

I was much struck by the statement as to the capability of Nigeria to furnish Great Britain with all the corn that might be required in time of war. That is, indeed, a very important point, for the maintenance of our food supply is one of the chief difficulties with which we shall have to contend with in the event of hostilities with any great naval Power. If Nigeria can so materially assist us with grain, then it is to be hoped that this portion of the British Dominions will be speedily developed to its utmost extent.

With regard to the Mahommedan activity mentioned by Dr. Miller Maguire, there is little doubt but that the faith of the Prophet is making considerable headway in Africa; and it would be a great mistake to look upon the Mahommedan religion throughout the world as a dying one, as some good people would have us to believe. When I was in Egypt some years ago, the Senussites (a sect founded by Mahommed-es-Senussi, who died near Sewa in 1860) were a powerful body, alike, austere, very fanatical, and extremely energetic. I understand that their influence in North Africa has not waned, and I have asked the lecturer privately, but he has been unable to tell me, whether such influence has as yet penetrated to Nigeria.

We have had some very excellent screen pictures shown us, and I am only sorry that the exigencies of time did not permit of the whole of the text of the lecture being read. However, when it appears in the JOURNAL, I think you will find it to be of considerable interest.

In conclusion, I will ask you to allow me, on your behalf, to thank Major Simonds very heartily for his lecture.*

* The lecture was illustrated by a series of lantern slides.



MILITARY EDUCATION.

Notes by the Editor.

EXAMINATIONS FOR PROMOTION, DECEMBER, 1910. *

The Report on the Examinations for Promotion, held in December, 1910, for the undermentioned ranks, were published on 22nd March.

(1) Lieutenants and Captains of the Regular Army and of the Australian, Canadian, and New Zealand Permanent Military Forces in Subjects (*d*), (*e*), (*g*), (*h*) (lieutenants), (*i*) (lieutenants), and (j) for Promotion.

(2) Majors (other than R.A.M.C. and A.V.C.) in "Tactical Fitness for Command," Part I., Appendix XII., King's Regulations.

(3) Majors of the Royal Army Medical Corps (Regular Army) in "Technical Subjects" for Promotion, Part I., Appendix XIV., King's Regulations.

(4) Lieutenants, Captains and Majors of the Territorial Force in B, C (A.S.C. only) and D, respectively for Promotion.

(5) Officers of the Special Reserve of Officers and the Territorial Force (Voluntary), for the Symbol "Q" or "q."

The General Report on the whole examinations by the Director of Military Training is as follows:—

REPORT.

"1. The general result of the examination in Subject (*d*), Regular Army, shows a decided improvement on the standard previously attained.

"2. The percentage of failures among officers who took up all the subheads of Suject (d) at this and previous examinations is as follows:—

November, 1908	18.46
May, 1909	17.31
December, 1909	17.47
May, 1910	17.46
December, 1910	14.00

"There was an improvement in the percentage of officers who gained .75 or over of the total marks: this percentage was 11.28 as compared with 10.61 in May, 1910.

"Taking subject (*d*) as a whole, the best examinations were passed by Captains R. Q. Froufurd, Royal Scots Fusiliers (Home),and J. L. Buxton, Rifle Brigade (Abroad), who obtained 1,353 and 1,285 marks, respectively, out of a possible 1,600. Of the lieutenants, the best examinatinons were passed by Lieutenants R. Archer-Houblon, Royal Field Artillery (Home),

* Passages quoted from the Report are reproduced by permission of the Controller of H.M. Stationery Office.

and J. N. Horlick, Coldstream Guards (Abroad), who obtained 1,261 and 1,224 marks respectively. Three officers of the Special Reserve of Officers and eight of the Territorial Force took up all the subheads of subject (*d*); the best papers were submitted by Captain H. N. Bridgwater, 5th Bn. Norfolk Regiment, who gained 1,256 marks.

"3. It is satisfactory to note the great improvement in the knowledge of the Russo-Turkish campaign displayed by the candidates. This is largely due to the study of this campaign in the various commands during winter training and to the fact that officers have approached the subject more intelligently and drawn useful deductions instead of committing a quantity of facts to memory.

"It is hoped that the officers will realize that such study is consequently of much greater value to themselves.

"4. Attention is drawn to the fact that, in accordance with paragraph 854 (*a*), King's Regulations, it has been necessary in some cases to deduct marks for bad spelling, handwriting and the insertion of irrevelant matter. Candidates are advised to pay more attention to these points in future.

"5. The first paper under the new rules for the examination of Majors in Part I., Appendix XII., King's Regulations, for "Tactical Fitness for Command," was set at this examination. The result was very satisfactory and it is hoped that this mode of examination will ensure a greater uniformity of standard being obtained. Although the new rules were only made applicable to officers serving in the United Kingdom, yet an offer was made to extend the system as regards the written papers to officers serving abroad and to the Overseas Dominions. This offer was well responded to; 38 officers serving at home were examined and 11 serving abroad. One officer of the Territorial Force took this examination under Territorial Force Regulations, paragraph 302.

"6. At this examination, 352 officers took up the written examinations B, C (Army Service Corps only) and D for officers of the Territorial Force. The results were less satisfactory than in May, 1910.

"The percentage of failures in examination B was 36.67 as compared with 32.35 in May 1910. The best set of papers were submitted by Captain L. N. G. Filon, University of London Contingent, Officers Training Corps, who obtained 675 marks out of a total of 800.

"7. The examination papers set on this occasion with remarks and suggestions for the guidance of candidates and their Commanding Officers are reproduced as an appendix to this report."

(Signed) A. J. MURRAY,
Director of Military Training.

MILITARY ENGINEERING, TACTICS, MAP READING, ETC. (CAPTAINS).

The first of the two papers consisted of a General and a Special Idea, a contoured map at 6 inches to a mile, and a sketch map of 4 miles to 1 inch.

Four exercises were set on this paper. The first dealt with the composition and disposition of the advanced guard of a small column (2 battalions, 1 field battery, 1 squadron cavalry, besides engineers, supply, and medical troops.);—the second with the making of arrangements for a halt of the column for the night; the third with the disposition of the outposts for the night; and the fourth with the selection of a signal station to communicate with another station, on the 6 inch map.

The following remarks by the examiner are quoted from the Report:

Remarks on the Candidates' Work.

"*General Remarks.*—The general character of the work was satisfactory. The great majority of the candidates showed that they can appreciate a military situation correctly and make suitable proposals for action. The failures occured chiefly in the application of principles to the given situation. A considerable number of officers adopted methods on paper which they would probably not adopt in the field.

"Generally speaking, officers would find the result more satisfactory to themselves if they tried to avoid thinking of what the examiner wanted, and put simply and clearly on paper what they would do themselves.

Remarks on the First Paper.

"*Protective troops.*—There appeared to be a tendency, especially amongst artillery and infantry officers, to keep their protective troops too close to the main body.

"*Exercise I.*—In many cases the advance guard had its main guard too close to the main body. In such circumstances the advanced guard cannot fulfil its rôle of preventing the march of the main body from being delayed. The same fault was noticeable in the outpost disposition. The cavalry officers as a rule avoided this error.

"*Exercise II., Orders and Instructions.*—There was a tendency to write formal operation orders for every possible occasion. An operation order is required normally whenever a number of units are to take part in a combined operation, but a commander in the position of the commander of the column in this case would rarely issue such an order, and he would certainly not go into the details of billeting his force in a village which had not yet been reconnoitred. The situation called for a written message to the advanced guard commander, and verbal or written instructions to the party which was to go ahead and make the arrangements for quartering.

"*Exercise III.*—A number of officers did not seem to understand the principle enunciated in Field Service Regulations, Part I., Section 76, 1*

* The passage referred to reads as follows.—

"When there is any possibility of a force coming in conflict with an enemy, its commander should, when halting for the night *first decide on his dispositions in case of an attack, and then arrange the quartering of his command and the disposition of his outposts accordingly.*"

Ed. R.U.S.I.

"A common failure in the answers to the solutions to this exercise was the neglect to inform the outpost commander of the general position to be occupied by the outposts and of the action of the main body if attacked.

"*Exercise IV.*—This exercise was mainly set to test the candidates' knowledge of map reading. Too much attention cannot be given to this important subject, and it is necessary for officers to constantly study maps and attempt to picture the actual ground."

Second Paper.

The second paper consisted of a General and a Special Idea, the latter comprising and being in continuation of the Special Idea in Paper I. Four exercises were set. The first demanded an appreciation of the situation from a commander wnose column has been alarmed in billets by the approach of hostile troops to his outpost line. The second involved the writing of orders for an attack by the above-mentioned column on the position held by the enemy's mounted troops, and an explanation of the reasons for the course of action adopted. The third exercise dealt with the arrangements for the defence of a village on the lines of communication by a small force of all arms; and the fourth with the siting of trenches, and distribution of tools and working parties, in connection with the third exercise.

The following remarks by the examiner are quoted from the Report:—

"*Exercise I.*—A tendency to pedantry was noticeable with regard to the appreciation of the situation. A number of the answers attempted to deal with the majority of the headings contained in Training and Manœuvre Regulations, Section 13, 4. The officers who wrote these answers appeared to have overlooked paragraph 5 of the same section* There is a considerable difference between the complete appreciation of the situation, which a commander would prepare at the outset of a campaign or of a considerable operation, and the brief review of the essential factors which would pass through his mind during the course of an operation as the situation changes.

"*Exercise II* : *The Attack.*—The chief failure in the second paper was in the solutions to this exercise. A surprisingly large number or officers did not seem to have grasped the principles of Field Service Regulations, Part I., Chapter VII. The attacking force was frequently divided into a holding or containing attack, a decisive attack and a general reserve. The so called holding and decisive attacks were often disconnected, while the rôle of the general reserve appeared to be to look on while the fight was lost or won. The principle of applying a part of the attacking force

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* Section 13, paragraph 5, reads as follows.—

"As regards the committal to writing of an appreciation, the object to be aimed at is to convey the necessary arguments and the plan finally recommended for adoption as concisely, clearly, and logically as possible to the brain of the superior. The manner in which the appreciation is drawn up is a question of judgment, not of form, and must vary with the nature of the problem and the style of the writer. It can only be acquired by practice. Care must be taken to omit all factors which are not considered as influencing the issue. Of those which it is decided to include, some will require to be emphasized, others should only be referred to in order to show that the validity of the arguments is not impaired by them. . . . ."

Ed. R.U.S.I....

to develop the attack, wear down the enemy's power of resistance, and discover the point for the decisive blow, if this cannot be determined beforehand, while the remainder of the force strikes home at the right time and place, should be familiar to every captain.

"A number of cavalry and infantry officers did not seem to understand the powers and limitations of artillery. The battery was often split up unnecessarily, both on the march and in action. Guns were also sent into action within close rifle range of woods held by the enemy, when perfectly safe and more suitable positions were available in rear. There seemed to be a belief amongst the other arms that the closer field guns are to the enemy, when first opening fire, the more effective will be their fire, which is not the case, provided the facilities for observation at the longer ranges are equally good.

"This paper appeared to be longer than it really was. It was necessary to reprint the General and Special Ideas from the first paper with which the candidates were already familiar.

"Few candidates appeared to have any difficulty in completing the paper.

"*Special Reserve and Territorial Force.*—The remarks made on the work of the captains of the Regular Forces are also generally applicable to the work of the field officers and captains of the Special Reserve. None of the candidates gave a really satisfactory answer to Exercise II. of the Second Paper. As in the case of the Regular Forces, the candidates did not appear to appreciate the rôles of the various parts of an attacking force. In addition, it is necessary to draw attention to Field Service Regulations, Part I., Section 104, 2* Definite objectives or tasks were not allotted, nor were limits of frontage specified, while in many cases the orders of the commander detailed the work to be performed by companies, ignoring the battalion commander."

MILITARY ENGINEERING, TACTICS, MAP READING, ETC. (LIEUTENANTS).

(*All branches except R.A.M.C. and A.V.C.*)

First Paper.

The first of the two papers consisted of a General and a Special idea, with the same maps as in the papers for Captains. Three exercises were set; the first and second of these dealt with the dispositions to be made by the commander of an advanced guard of all arms (1 brigade infantry, 1 brigade R.F.A., 2 squadrons cavalry), which has come in contact with a stronger hostile force. The third required an explanation, illustrated on the map, of how an attack would be carried out, by the same force as above, in co-operation with, and on the flank of its main body.

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* The paragraph referred to lays down that the framing of orders for an attack should be based on the following principles.—

"(i) A definite objective or task should be assigned to each body of troops, the actual limits of frontage being specified as far as possible.

(ii) The direction of the attack to be made by each body of troops should be distinctly stated.

(iii) Most careful arrangements should be made to ensure that attacks intended to be simultaneous should be so in reality.

(iv) The choice of the manner in which the task assigned to each body of troops is to be performed should be left to its commander."

Ed. R.U.S.I.

The following remarks, made by the examiners, are quoted from the Report:—

Remarks on the Candidates' Work.

"*General remarks.*—It appeared that officers had not had sufficient practice in the field, in the solution of tactical problems, to enable them to give really good answers to these papers.

As regards Regular officers, with their almost continuous opportunities, this should not be the case.

"The following remarks apply to many of the answers. —

"*Remarks on the First Paper.*—In the attack, deployments were often made too close to the enemy's position, showing that the effect of modern rifle fire is not sufficiently appreciated.

"A tendency to break up units unnecessarily, such as sending 1½ squadrons or 1½ companies to do certain work which might equally well be performed by 1 squadron or 1 company.

"In many cases officers appeared unable to write an ordinary field message conveying an order. They appeared to think that there is no mean between a verbal message and elaborate "Operation Orders." In most cases the employment of the cavalry left much to be desired. In the answer to the third question, the cavalry might well have been used to operate against the enemy's left flank. It is necessary for all officers to study Cavalry Training, Chapter 7.*

Second Paper.

The second paper consisted of a General and a Special Idea, with the same maps as for the first paper.

Three exercises were set on this paper. The first and second exercises involved writing outpost orders for a force, of the same composition as in the last paper, halted for the night during a retirement after an unsuccessful action, showing the disposition of the outposts on the map. The third exercise was on entrenching, and detailing working parties.

The following remarks made by the examiner are quoted from the Report:—

Remarks on the Candidates' Work.

"The employment of the outpost mounted troops proved, in most cases, a stumbling block. Field Service Regulations, Part I., paragraph 77‡, is quite clear as to their employment.

"The majority of officers wrote good orders for the outposts and understood how to sub-divide the outpost line, but there were many instances of unsound dispositions due to want of practice in the field. Important roads were sometimes left unguarded.

"All officers should have been able to answer the third question without any difficulty, but, on the contrary, very few managed to do so. The answers given tended to show that the majority of officers have never

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* Chapter 7 deals with the employment of Cavalry in the Field.

‡ The paragraph in question contains the following passage:—

"Outpost mounted troops . . . . may be attached to sections of the outposts, or to outpost companies for reconnoitring purposes, and to keep touch with the protective cavalry by day; but economy must be exercised in employing mounted troops for outpost duties."

Ed. R.U.S.I.

entrenched a piquet or thought out how it should be done. Most officers entrenched positions (some of them very extended) at a distance from their piquets, the positions of the piquets themselves being left undefended. Scarcely any officers thought of improving communications between their piquets and supports."

MILITARY HISTORY. (*d*) (*iv.*) CAPTAINS AND LIEUTENANTS, ALL BRANCHES (EXCEPT R.A.M.C., A.V.C., and A.O.D.)

Campaign set for a second time.

First Paper.

"The Operations in the Eastern Theatre of the American War of Secession, from the Commencement of Hostilities to the 5th May, 1863, inclusive." The paper, which consisted of the 4 questions below, was accompanied by a skeleton map of the theatre of war, at 15 miles to the inch.

The following remarks were made by the examiner and are quoted from the Report. The questions are also given for reference.

General Remarks.—The work submitted was of an uneven nature. It would seem that, if some of the candidates would expend a part of the time which they now devote to the mastering of details of facts to practising putting their ideas on paper clearly and concisely, they would not only pass better examinations, but would also become more efficient officers. During the examination also, their methods might frequently be improved. Many appear to put down their first idea on the subject of the question, and then to write on from that without any definite purpose. If, before starting to write they would think out the framework of their answer, or even jot down the headings on a blank page, and then proceed on the lines which they had laid down, there can be little doubt that there would be considerably less discursive writing that at present. Most candidates apparently found the second paper considerably easier than the first.

Remarks on the First Paper.

Question 1.—*Explain the system on which the Northern Government replenished and reinforced its armies in the field as regards non-regular corps.*

What general principle as to the method of replenishing armies in the field (confirmed by our own recent war experiences) can be deduced from the experience of the Federals?

Few officers had noticed the fact that the Federal Government, in place of filling up with drafts the gaps caused by war in the ranks of their irregular corps, replaced them from time to time with fresh corps. This fact is particularly interesting to us, because forty years afterwards we adopted the same procedure in South Africa, with equally unsatisfactory results.

No officer gave the principle which may be deduced from the above, viz., that the size of units used to replenish an army in the field should depend on the degree of training of the reinforcements. Fully trained troops can be utilized in the largest formations in which they are organized. As the training gets less, the units in which troops should be sent to the front should become smaller, and it is advisable to be content with battalions or even companies or drafts of individuals.

Question 2.—*State, and examine critically in the light of after-knowledge, McClellan's plan for the capture of Richmond in March, 1862.*

This question was, on the whole, well answered. In some cases officers, in place of criticising McClellan's plan, simply gave a description of his advance up the Peninsula. This was not asked for.

Question 3.—*Write a short appreciation from the Confederate point of view of the situation at the beginning of September, 1862. (At this time Pope's army had just retired behind the fortifications of Alexandria, after the second battle of Bull Run.)*

Few officers gave an *appreciation of the situation.* Some gave the arguments for or against an invasion of Maryland. Scarcely any gave a definite opinion as to which course open to the Confederates appeared to them best, as is required in an appreciation.

A certain number contented themselves with narrating the events leading up to the battle of the Antietam, which was quite useless and outside the question.

Question 4.—*It has been said that the greatest general is he who induces his enemy to make the most mistakes. There are several notable instances of this in the campaign which is the subject of this examination. Explain the methods by which Jackson and Lee accomplished this result, and illustrate your reply from the campaign in the syllabus.*

This question was not well answered. The majority of answers were simply a string of instances, rather than an explanation of the methods of Lee and Jackson.

Speaking broadly these methods appear to have consisted in :—

(*a.*) "Mystifying and misleading" the enemy, usually under cover of a screen of cavalry.

(*b.*) A careful study and subsequent utilization of any weak spots either in the character of the opposing leaders, or in the general situation of the enemy. With this is closely connected the skilful employment of detachments.

Few officers gave these, or any other, explanations of their methods of inducing the enemy to make mistakes.

Second Paper.

The Subject for the Second paper (Special Period), was :—

"The Shenandoah Valley Campaign from April, 1861, to June, 1862, inclusive."

The paper was accompanied by the same sketch map as given with the first paper.

The following remarks made by the examiner are quoted from the Report. The questions are also given for reference.—

Question 1.—*Discuss the general principles on which the Confederates employed their Cavalry in the Valley Campaign (both strategically and tactically), and compare them with the principles laid down for the employment of Cavalry in Field Service Regulations, Part I., 1909. Comment on any points of difference which you may have noticed.*

This question was not well answered. Most of the answers were badly arranged and illogical. The comparison between the principles on which the Confederates employed their Cavalry and those laid down in Field Service Regulations, Part I., was generally very incomplete.

For instance, many officers failed to notice that whilst we employ our cavalry in three bodies—Independent, Protective and Divisional—the Confederates merged their Independent and Protective cavalry into one. In some cases these omissions appeared to be due to a want of knowledge of our own regulations. There can be little doubt that officers who study the tactics of past campaigns without a knowledge of our own practice in similar situations must lose a great deal of the value of their reading.

(To be continued.)

MILITARY HISTORY EXAMINATION, 1912.

Official Correction. It is announced in *Army Orders* of 1st April that the subject for the first paper on the campaign set for the first time in the examination for May, 1912 (at Home and in the Colonies), October, 1912 (in India), should read as follows:—

"*First Paper*—The operations in the Eastern Theatre of the American War of Secession from 11th June, 1862, to 5th May, 1863, inclusive."

(In the original announcement the words "the operations in the Eastern Theatre of" had been inadvertently omitted).

REGULATIONS FOR PROMOTION EXAMINATIONS.

Some far-reaching amendments to King's Regulations dealing with examinations for promotion were issued with *Army Orders* of the 1st of April, and will come into force on the 1st June, 1911. The amendments consist of a complete revise of paragraphs 851 to 880 and of appendices X. to XV. The following points appear worthy of special attention.

Paragraph 856 now shows more clearly the subjects of examination for promotion up to the rank of major. They are as follows:—

(1.) (i.) *Warrant officer or N.C.O., for promotion to the rank of second lieutenant.*

(ii.) *Quartermaster or riding master before being granted a commission as lieutenant.*

(iii.) *Second lieutenant for promotion to the rank of lieutenant* (all branches except *R.A.M.C.* and *A.V.C.*), unless he has already passed the examination under (i.) in the branch of the service in which he is serving

} Subjects (a

(iv.) *Lieutenants, R.A.M.C., on probation, for confirmation of commission.*

} Subjects (a) and (h

(2.) *Lieutenants for promotion to the rank of captain.*

Cavalry.....Subjects (*c.*), (*d.*), and (*j.*)
R.A..... ,, (*c.*), (*d.*), (*e.*), and (*j.*)
R.E..... ,, (*c.*), (*d.*), (*f.*), and (*j.*)
Infantry..... ,, (*c.*), (*d.*), and (*j.*)
A.S.C..... ,, (*c.*), (*d.*), (*g.*), and (*j.*)

R.A.M.C., subject (*c.*) (ii), subheads (*d.*), (ii.) and (*d.*) (iii.), and subject (*h*). These examinations cannot be taken before completing 12 months' service.

A.V.C., sub-head (*d.*) (ii.) and subject (*i*). The examination in subject (*i.*) cannot be taken before the completion of three years' service.

(3.) *Captain for promotion to the rank of Major.*

Cavalry.....Subjects (*c.*), and (*d.*)
R.E..... ,, (*c.*) and (*d.*)
R.A..... ,. (*c.*) and (*d.*)
Infantry..... ,, (*c.*) and (*d.*)
A.S.C..... ,, (*c.*), (*d.*), and (*g.*)
R.A.M.C., subject (*b.*), subject (*c.*) (ii.), sub-heads (*d.*) (ii.), and (*d.*) iii.), and subject (*h*). These examinations cannot take place before the completion of five years' service.
A.V.C., sub-head (*d.*) (ii.) and subject (*i.*). The examination in subject (*i.*) cannot take place before the completion of twelve years' service.

An important innovation (para. 855 B) is that the Field Service Pocket Book will in future be allowed for use at all examinations, *written and practical*, but not for answering oral questions.

This amendment carries a step further the principles already embodied in the instructions for the examinations in Military History (2nd paper), in which it is stated that the object of the paper is to elicit from candidates their knowledge of tactical principles and to test their power of applying those principles; and that candidates should not commit to memory a number of dates and the exact strength and composition of the forces. The use of the Field Service Pocket Book will assist in making the solution of all examination problems approximate to service conditions. Candidates will no longer burden their memories with details and statistics which, on service, they would obtain from the book. It is the ability to apply the principles of the training manuals to the solution of problems which will make for success.

In para. 876 (Tactical fitness to command) it is to be noted that candidates in the United Kingdom are now in all cases examined in Part II. with troops, not by a staff ride. Officers serving in commands where troops are not available are to be sent to other commands for examination, as follows:—

Officers serving in the Scottish Command to the Irish Command.
Officers serving in the Northern Command to the Eastern Command.
Officers serving in the Western Command to the Southern Command.
Officers serving in the Channel Islands to the Southern Command.
Officers serving in the London District to the Aldershot Command.
Officers of Regular of Colonial Military Forces on leave from abroad as a rule, to the Aldershot Command.

Para. 879 contains instructions for the medical staff tour, which first came into force in January 1911 as Part II. of the examination of Majors of the R.A.M.C. for promotion.

New also are the instructions for an examination in technical subjects for Majors of the Army Veterinary Corps. This corps now comes into line, in this respect, with other branches of the Army as regards examinations.

Appendix XI., which contains the syllabus for promotion up to the rank of Major, is now brought up to date. Points to be noted are: (a) (ii) syllabus for musketry for officers of infantry, cavalry, R.E., and A.S.C., which has been revised; the range-taking test, which has now been introduced for officers of the artillery; the (c) examination for lieutenants and captains, which is entirely remodelled; and the instructions for the guidance of (c) examining boards, which are quite new. It will be seen that the (c) examination now takes the form of a regimental tour, and combines instruction and examination. Instruction is provided for by the board pointing out to the candidates the general lines on which they themselves would have dealt with the problem. In the examination special prominence is given to the study of tactics, while field engineering and field sketching are only tested in their relation to the tactical scheme. Candidates are required to make a rapid enlargement from a small scale map, and to show on it only sufficient relevant detail to furnish necessary tactical information, or to illustrate their reports.

This appears a great improvement on the former test, in which a whole day was spent making a sketch that bore little relation to tactics. The suggestions for carrying out the map-reading test, which are also quite new, lay stress on "speed," and on candidates being able to read maps at sight.

The instructions for the (f) examination, for engineer lieutenants, were introduced late in 1910; it will be seen that the field engineering test is on more practical lines than formerly, and that speed plays an important part.

The (a), (b), and (h) examinations for R.A.M.C., and the (i) examination for the Army Veterinary Corps have been considerably altered, and a new appendix, XV., has been added, giving the technical subjects for the examination of majors of the latter corps.

A greater degree of uniformity in the matter of military education throughout the British Empire may be expected in future. The military authorities in India have decided to adopt from the 1st August, 1911, the provisions for examinations, as now laid down in the King's Regulations, practically *en bloc*, with certain modifications to meet the conditions of service in India; they will, however, set their own papers half-yearly. Canada has for some years adopted the British Regular Army examinations, with the exception of Organization, for her permanent forces, and Australia has done so since December 1909. New Zealand will, it is to be hoped, follow suit in May 1911.

Except in India, the papers for the May and December examinations are set on the same days throughout the Empire.

The following Regulations regarding admission to the Royal Military Academy and Royal Military College, and appointments to commissions in the Regular Army, were issued in March 1911 :—

A.

1. LIMITS OF AGE FOR ENTRANCE TO THE ROYAL MILITARY ACADEMY.

The lower limit of age at which candidates are permitted to compete for admissio to the Royal Military Academy will be reduced to 16½ years, commencing with the competitive examination to be held in November-December 1911. The extension of the course at the Royal Military Academy from three terms to four terms will first apply to a portion of the successful candidates at the competitive examination to be held in November—December, 1911.

The upper limit of age at which candidates are permitted to compete for admission to the Royal Military Academy will remain at 19½ years, as at present. It will be reduced to 19 years eventually, but due notice will be given as to the date from which the reduction will take effect.

2. LIMITS OF AGE FOR ENTRANCE TO THE ROYAL MILITARY COLLEGE.

The lower limit of age at which candidates are permitted to compete for admission to the Royal Military College will be reduced from 17½ to 17 years, commencing with the competitive examination to be held in June—July, 1812. The extension of the course at the Royal Military College from two terms to three terms will first apply to a portion of the successful candidates at the competitive examination to be held in June—July, 1912.

The upper limit of age at which candidates are permitted to compete for admission to the Royal Military College, will remain at 19½ years, as at present. It will be reduced to 19 years eventually, but due notice will be given as to the date from which the reduction will take effect.

3. AGE FOR ADMISSION TO ARMY QUALIFYING EXAMINATIONS.

The age for admission to the Army Qualifying examinations is reduced from 17 years to 16 years for the examinations to be held in September, 1911, and March, 1912, after which no further examinations will be held by the Army Qualifying Board (*see* paragraph 6 *(f)*).

4. CONDITIONS FOR ISSUE OF LEAVING CERTIFICATE (FOR ARMY PURPOSES).

The definition of a Leaving Certificate (for Army purposes) hitherto given in the regulations for admission to the Royal Military Academy and the Royal Military College, and in the regulations under which commissions in the Regular Army may be obtained through other channels of entry, is cancelled, and the following definition is substituted :—

"A Leaving Certificate for Army purposes is a certificate which testifies to a certain standard of proficiency in the subjects stated in these regulations, and which is granted by certain bodies to candidates *not less than 16 years of age who have attended a course of study at a school approved by the Army Council.*"

5. ANTEDATING OF COMMISSIONS GRANTED TO CANDIDATES NOMINATED BY THE UNIVERSITIES.

The question of the antedating of commissions granted to candidates nominated by the Universities is at present receiving the consideration of the Army Council, and a decision will shortly be published.

6. ARMY ENTRANCE EXAMINATIONS FROM 1ST APRIL, 1912.

The various regulations under which commissions may now be obtained in the Regular Army will, subject to the above-mentioned changes, continue in force until the 31st March, 1912.

New Regulations to give effect to the following decisions, which concern only the literary examinations for entrance to the Regular Army, will shortly be issued, and will come into force from 1st April, 1912:—

(*a.*) The possession of a Leaving certificate, or of a certificate of having passed the Army Qualifying Examination, will not be included in the qualifications required for admission to a competitive examination for the Royal Military Academy or the Royal Military College. The possession of such a certificate will not exempt a competitor at an *examination held after 31st March*, 1912, from the necessity of qualifying in certain obligatory subjects (*see* paragraph 6 (*c*)).

These certificates will, however, retain their value as qualifications in other respects (*see* sub-paragraph 6 (*e*)).

(*b.*) The examinations for admission to the Royal Military Academy and Royal Military College to be held in the summer of 1912, and each half-year subsequently, will be conducted as heretofore by the Civil Service Commissioners, and will be named "Army Entrance Examinations." These examinations will combine the functions of the present examinations for Leaving Certificates (for Army purposes), the present Army Qualifying examinations and the present competitive examinations for admission to the Royal Military Academy and Royal Military College.

(*c*). A candidate for admission to the Royal Military Academy or Royal Military College by competition will, in order to be eligible to be included in the list of successful competitors at an Army Entrance Examination, be required to qualify, *at that examination*, in each of the obligatory subjects* for admission to the Royal Military Academy or Royal Military College, respectively.

The aggregate of the marks in the obligatory and optional subjects* obtained *by a candidate who qualifies in the obligatory subjects* will decide his place on the competitive list.

The qualification gained by a candidate at an Army Entrance Examination will not exempt him from the necessity of qualifying *for competitive purposes* at any subsequent Army Entrance Examination.

(*d.*) Candidates for commissions in the Regular Army, other than candidates for admission to the Royal Military Academy or Royal Military College *by competition*, and those admitted to the Royal Military college on the nomination of the Army Council (*see* Memorandum B), viz.:—

(1.) Candidates for admission to the Royal Military College as King's Cadets, Honorary King's Cadets, King's Indian Cadets, Honorary King's Indian Cadets and Pages of Honour;

(2.) Officers of the Special Reserve, the Malta, the Bermuda, and the Channel Islands Militia, and officers of the Territorial Force;

(3.) Officers of the Colonial Military Forces;

* For table of subjects, *see* sub-paragraph 6 (*g*) of this memorandum

who, under the present regulations, are only required to obtain a Leaving certificate or an Army Qualifying certificate as their *literary* qualification will, *after 31st March*, 1912, be required instead to qualify at an Army Entrance Examination (*see* sub-paragraph 6 (*b*)) as follows:—

(i.) A candidate for a commission in the Royal Artillery will be required to qualify in each of the obligatory subjects* of the examination for entrance to the Royal Military Academy.

He will be permitted to take up this examination in two parts, the one part consisting of sub-heads (i.) to (iv.) inclusive, the other part sub-heads (v.) and (vi.).

Either part may be taken up first, or the two parts may be taken up at the same examination.

In order to qualify in either part a candidate must qualify in each subject of that part at one and the same examination.

(ii.) A King's Cadet, Honorary King's Cadet, King's Indian Cadet, Honorary King's Indian Cadet, Page of Honour, and a candidate for a commission in the Cavalry, Guards, Infantry, or Army Service Corps, will be required to qualify in each of the obligatory subjects* of the examination for entrance to the Royal Military College.†

(iii.) To be eligible to attend an Army Entrance Examination a candidate must have attained the age of 16½ years on the 1st June for a Summer examination, and on the 1st December for a Winter examination.

(*e.*) A Leaving certificate or an Army Qualifying certificate obtained under the present regulations by a candidate mentioned in paragraph 6 (*d*), (1), (2), and (3), will count as a qualification (except in the case of certain candidates for the Royal Artillery mentioned below) after the introduction of the new regulations on 1st April, 1912.

A candidate mentioned in paragraph 6 (*d*) (2) and (3), whose Leaving certificate or Army Qualifying certificate, obtained under the present regulations, does not include both Mathematics I., and Science, will be required, in order to become eligible after the 31st March, 1912, for a commission in the Royal Artillery, to qualify in "Mathematics B," or Science, or both these subjects, as the case may be, at one and the same Army Entrance Examination.

A candidate who under the present regulations requires, in order to complete his Leaving certificate for Army purposes, to qualify in Practical Measurements, or Geometrical Drawing, or both these subjects, will, after 31st March, 1912, be permitted to complete his qualification by qualifying in "Mathematics A (Elementary)" at an Army Entrance Examination.

A candidate mentioned in paragraph 6 (*d*), (2) and (3), in possession of qualifications which under the present regulations exempt him from obtaining a Leaving certificate or an Army Qualifying certificate will, after 31st March, 1912, be exempt from qualifying at an Army Entrance Examination. In order, however, to be considered qualified for the

* For table of subjects, *see* sub-paragraph 6 (*g*) of this memorandum.

† In the case of candidates for commissions in the Regular Army through the Special Reserve, Territorial Force, etc., and the Colonial Military Forces, certain literary qualifications will, as hitherto, be accepted in lieu of qualification at an Army Entrance Examination.

Royal Artillery he will be required to produce evidence that he has attained the standard in the subjects of "Mathematics B" *and Science* required for qualification at the Army Entrance Examination.

(*f.*) The last examination in England and Wales for the Leaving certificate (for Army purposes) will be held in the Michaelmas Term, 1911, and the last Army Qualifying Examination in March, 1912.‡

The programme of all literary examinations to be held up to the Summer of 1913, inclusive, is given in paragraph 7 of this memorandum.

(*g.*) The obligatory and optional subjects at the Army Entrance Examination for admission to the Royal Military Academy and Royal Military College, respectively, will be as follows:—

ROYAL MILITARY ACADEMY.

Class I.—Obligatory.

	Marks
(i.) English	2,000
(ii.) English History and Geography	2,000
(iii.) Mathematics A (Elementary)	2,000
(iv.) French or German	2,000
(v.) Mathematics B	2,000
(vi.) Science (Physics and Chemistry)	2,000

All the subjects in Class I. must be taken up, and a qualifying minimum of 33 per cent. of the total marks must be gained in each of the above six subjects.

Class II.—Optional.

One only of the following subjects may be taken up:—

	Marks
(vii.) (*a.*) German or French	2,000
(*b.*) Latin	2,000
(*c.*) Greek	2,000
(*d.*) Mathematics C (Higher)	2,000

In addition to his optional subject in Class II. a candidate may take up Freehand Drawing, for which 400 marks will be allotted. From the marks for Freehand Drawing such proportional deduction will be made as will prevent indifferent draughtsmanship from receiving any credit.

A candidate cannot take up the same modern language both as an obligatory and as an optional subject.

If a candidate takes up both French and German, the language for which he obtains the *higher* marks will be reckoned as his *obligatory* language.

The optional subjects in Class II. have no counting minimum of marks.

ROYAL MILITARY COLLEGE.

Class I.—Obligatory.

	Marks
(i.) English	2,000
(ii.) English History and Geography	2,000
(iii.) Mathematics A (Elementary)	2,000
(iv.) French or German	2,000

‡ These two examinations will be held to suit the convenience of the candidates mentioned in paragraph 6 (*d*). Candidates for admission to the R.M. Academy and R.M. College *by competition* should not attend these examinations, as certificates thus gained would carry no exemption in their case.

All the subjects in Class I. must be taken up, and a qualifying minimum of 33 per cent. of the total marks must be gained in each of the above four subjects.

Class II.—Optional.

Not more than *two* of the following subjects may be taken up:—(v.) and (vi.)—

	Marks
(*a.*) German or French	2,000
(*b.*) Latin	2,000
(*c.*) Greek	2,000
(*d.*) Science (Physics and Chemistry)	2,000
(*e.*) Mathematics B	2,000
(*f.*) Mathematics C (Higher)	2,000

In addition to his two optional subjects in Class II., a candidate may take up Freehand Drawing, for which 400 marks will be allotted. From the marks for Freehand Drawing such proportional deduction will be made as will prevent indifferent draughtsmanship from receiving any credit.

A candidate cannot take up the same modern language both as an obligatory and as an optional subject.

If a candidate takes up both French and German, the language for which he obtains the *higher* marks will be reckoned as his *obligatory* language.

The optional subjects in Class II. have no counting minimum of marks.

A candidate (other than a candidate for a Cavalry cadetship, a Guards cadetship, or for the West India Regiment) may present himself for admission to the Royal Military Academy or Royal Military College at the same examination, expressing a preference for one or the other institution. A candidate who so presents himself will count for the Royal Military College his marks in the obligatory subjects for the Royal Military College and *the best two* of his remaining subjects.

Attention is drawn to the following points in the above tables of subjects:—

(i.) The subjects "Elementary Mathematics," "Mathematics I." and "Mathematics II." in the present Army Qualifying or Competitive examinations are re-named "Mathematics A (Elementary)," "Mathematics B,' and "Mathematics C (Higher)," respectively.

(ii.) One modern language (French or German) is an obligatory subject for either the Royal Military Academy or Royal Military College.

(iii.) In addition to "Mathematics B," *Science* is included in the *obligatory* subjects for the Royal Military Academy, and is an optional subject for the Royal Military College.

(iv.) The obligatory subjects for the Royal Military Academy and Royal Military College are six and four in number respectively. Candidates can exercise no option in the obligatory subjects to be taken up, except in the case of the one modern language, for which they can select either French or German.

(v.) Latin and Greek are each given an independent status as *optional* subjects only.

Both can therefore be taken up by a candidate who competes for admission to the Royal Military College. As, however, only *one* optional subject is allowed for the Royal Military Academy, a candidate for that institution cannot take up both Latin and Greek.

(vi.) The subject "History" (*not* "English History" and "Geography"), at present an optional subject in the competitive examination only, ceases to be a subject for either the Royal Military Academy or Royal Military College.

(vii.) The qualifying minimum for obligatory subjects is 33 per cent.

(viii.) The total marks allotted to each subject, except Freehand Drawing, remain unaltered at 2,000.

The total marks allotted to Freehand Drawing are raised from 250 to 400 (a deduction will be made to prevent indifferent draughtsmanship receiving any credit).

(ix.) A candidate in possession of "Certificate A," obtained in the Officers' Training Corps will continue to be entitled to add 200 marks to his aggregate.

(x.) The syllabuses of the various subjects will be slightly modified to meet the new conditions under which the Army Entrance Examination is to be held.

The revised syllabuses, which will be issued shortly, will be embodied in the regulations which will come into force from 1st April, 1912.

(xi.) Applications to attend an Army Entrance Examination, either as a competitor for admission to the Royal Military Academy or Royal Military College (*see* sub-paragraph 6 (*c*) above), or for the purpose of qualifying only (*see* sub-paragraph 6 (*d*) above), will be made to the Secretary, Civil Service Commission, under conditions similar to those under which applications for admission to the competitive examinations are now made.

B.

A scheme under which a certain number of cadetships at the Royal Military College will be reserved for candidates who will be nominated by the Army Council from schools to be specially recognized for that purpose.

1. The Army Council have decided that a certain number of cadetships at the Royal Military College will in future be reserved each half-year for the nomination by the Army Council of suitable candidates at schools recognised by the Army Council for that purpose.

To be recognized by the Army Council, a school must—

(a.) Be inspected at least once in every five years by one of the educational bodies mentioned in paragraph 2, and reported as fulfilling the necessary educational requirements.

(b.) Maintain a contingent of the Officers' Training Corps.*

2. The following is a list of the educational bodies referred to in paragraph 1:—

For schools in Scotland.

(1.) The Scotch Education Department.

For schools in Wales.

(2.) The Central Welsh Board for Intermediate Education.

For schools in England and Ireland.

(3.) Board of Education.
(4.) The Oxford and Cambridge Schools Examination Board.
(5.) The University of London.
(6.) The University of Birmingham.
(7.) The Oxford Local Examination Delegacy.
(8.) The Cambridge Local Examination Syndicate.

3. A school which desires to be recognized by the Army Council for the purpose of recommending candidates for nomination should, unless it already complies with the conditions in paragraph 1—

*This condition is subject to relaxation up to January, 1912, inclusive. After that date no school which does not maintain a contingent of the Officers' training Corps will be "recognised" by the Army Council.

(a.) Apply to one of the bodies named in paragraph 2 to be inspected.

To fulfil the educational requirements mentioned above, a school must have a 3 years' curriculum, and must show that at least 50 per cent. of the pupils remain 3 years at the school.

No school will be recognized unless its curriculum in all the subjects (obligatory or optional) of the competitive examination for entrance to the Royal Military College is satisfactorily reported on by the inspecting body.

(b.) Apply to the Secretary, War Office, to form a contingent of the Officers' Training Corps in accordance with Appendix I., Officers' Training Corps Regulations, 1909, which can be purchased through any bookseller, price 2d.

4. To be eligible for nomination by the Army Council to a cadetship at the Royal Military College, a candidate will be required—

(a.) To be recommended by the headmaster of his school as suitable in all respects for admission to the Royal Military College, with a view to his obtaining eventually a commission in the Regular Army.

(b.) To have attended continuously for at least 3 years at one or more recognized schools.

(c.) To have been in residence at his school to the end of the school term immediately preceding his nomination.

(d.) To be an "efficient" member of the school contingent of the Officers' Training Corps.†

(e.) To be within the limits of age laid down for admission to the Royal Military College by competition.

(f.) To fulfil the general conditions for admission to the Royal Military College as laid down in the regulations.

5. Nominations will be made by the Army Council in January and August for admission to the Royal Military College at the commencement of the following spring and autumn terms, respectively.

The number of candidates to be nominated from any one school will be determined on each occasion by the Army Council.

6. Headmasters of recognized schools will be required to submit to the Secretary, War Office, on or before the 1st January and 1st August each year—

(a.) A provisional list of candidates (on M.T. Form 291) who will, subject to their fulfilling the necessary conditions, be recommended for nomination by the Army Council to cadetships at the Royal Military College at the following *autumn* and *spring* terms, respectively.

(b.) A revised and final list of candidates, in order of merit (on M.T. Form 292), who are recommended for nomination by the Army Council to cadetships at the Royal Military College at the commencement of the following *spring* and *autumn* terms, respectively.

The following documents for each candidate will accompany the final list:—

(i.) Form of particulars signed by the candidate and his parent or guardian and containing a certificate of "efficiency" in the Officers' Training Corps (M.T. Form 293).* with a birth certificate attached.

(ii.) Recommendation of the headmaster (M.T. Form 294).

7. A Candidate recommended for nomination will be required to present himself at the War Office, for interview by the Army Council and medical examination, on a date of which he will receive notification.

8. A candidate who is not nominated by the Army Council on one occasion may be recommended for nomination on a subsequent occasion, provided that he fulfils the necessary conditions (*see* paragraph 4).

9. As regards appointment to a particular branch of the Service, and to a particular regiment, on passing out of the Royal Military College, cadets who have gained admission by nomination will be subject to the same conditions as cadets who have entered by competition. (*See* the Regulations respecting admission to the Royal Military College.)

C.

A scheme under which a certain number of Prize Cadetships at the Royal Military Academy and Royal Military College will be given to candidates for commissions in the British Army.

1. The Army Council have decided that, with a view to encouraging a higher standard of education among candidates for commissions in the British Army in connection with the course of instruction at the Cadet Colleges, and to reducing in the case of the better qualified candidates the expenses incurred by their parents or guardians during the college course and on first appointment, a certain number of prize

†This qualification will not be considered essential up to and including the nominations made in January, 1912. After that date no candidate without this qualification will be eligible for nomination.

* This certificate of "efficiency" will not be considered essential up to and including the nominations made in January, 1912 (*vide* footnote to paragraph 4 (*d*)).

cadetships shall be awarded to successful competitors at each half-yearly examination for admission to the Royal Military Academy and Royal Military College, commencing with the examination to be held in November, 1911. Under this scheme the holder of a prize cadetship will not be eligible for a commission in the Indian Army.

2. The Council wish it to be understood, however, that, in the event of the scheme failing to secure the objects they have in view, it may be abandoned, and the continuance of the offer of these prize cadetships is therefore not guaranteed. In any case, the conditions may be altered from time to time.

3. The following pecuniary advantages will be attached to a prize cadetship:—

(*a*) A reduction at the rate of £35 per term of the contribution payable on behalf of a cadet at the Royal Military Academy or Royal Military College in cases only where such contribution is fixed by the Royal Warrant at £150 per annum.

(*b*) The remission of the sums usually paid for uniform, books, library, etc., viz., £35 on the cadet first joining the Royal Military Academy or Royal Military College, and £15 at the commencement of a second year's residence.

(*c*) An Outfit grant of £65 on the cadet being appointed to a Commission after passing the final examination at the Royal Military Academy or Royal Military College.

4. The number of prize cadetships to be awarded will be announced each half-year, about three months prior to the date fixed for the commencement of a competitive examination. Subject to the provisions of paragraph 6, about one-fourth of the prize cadetships available will be awarded to candidates highest in order of merit on the Royal Military Academy list, and the remainder to those highest in order of merit on the Royal Military College list. At the examination to be held in November, 1911, not more than five will be awarded to the former and not more than fifteen to the latter.

5. While no enquiry will be made into the means of the parents of candidates, the scheme is essentially designed to give assistance to those who stand in need of it; and provision will be made for inviting those who are in a position to resign the emoluments of a prize cadetship to do so, while retaining the titular distinction. The emoluments so resigned will be given to a candidate less fortunately circumstanced.

6. The following classes of candidates will not be eligible to receive prize cadetships:—

(*a*) Candidates for appointment to commissions in the West India Regiment who are above the ordinary upper limit of age for admission to the Royal Military College.

(*b*) King's Cadets and King's India Cadets. The outfit grant at present given to King's Cadets will be raised on the initiation of this scheme to £65.

7. A prize cadetship, and all future pecuniary advantages attached thereto, will be forfeited by a cadet who, owing to failure at an examination, incapacity or misconduct, drops into a class lower than that with which he originally entered the Royal Military Academy or Royal Military College.

NAVAL NOTES.

Home. The following are the principal Appointments which have been made:—

Rear-Admiral—C. H. Coke to be Senior Officer on the Coast of Ireland. Captains—A. C. Leveson to *Indefatigable;* E. H. Smith to *Bulwark;* W. G. Ruck-Keene, M.V.O., to *Enchantress;* L. Halsey to *Donegal;* A. L. Cay to *Impregnable* and as Flag-Captain to Admiral Sir W. H. May, G.C.V.O., K.C.B., Commander-in-Chief at Plymouth; S. Nicholson, M.V.O., to *Exmouth* and as Chief of Staff to Admiral Sir E. Poë, K.C.B., Commander-in-Chief in the Mediterranean; P. Nelson-Ward, M.V.O., to *Formidable;* G. W. Smith to *Russell;* S. A. Hickley to *Encounter;* A. H. Williamson, M.V.O., to *Africa,* and as Flag-Captain to Vice-Admiral H.S.H. Prince Louis of Battenberg, G.C.B., G.C.V.O.; E. C. Villiers to *Roxburgh;* Hon. Stanhope Hawke to *Achilles;* H. G. Sandeman to *Hampshire;* E. S. Alexander-Sinclair, M.V.O., to *Victory* and as Flag-Captain to Sir A. Moore, K.C.B., G.C.V.O., C.M.G., Commander-in-Chief at Portsmouth; C. Vaughan-Lee to *Warrior.*

Vice-Admiral H.S.H. Prince Louis of Battenberg, G.C.B., G.C.V.O., K.C.M.G., hoisted his flag at Sheerness, on the 24th ult., on board the *Cæsar* as Vice-Admiral Commanding Third and Fourth Divisions, Home Fleet, in succession to Vice-Admiral Sir G. Neville, K.C.B., C.V.O., whose flag was struck on board the *Bulwark* the same evening at sunset. Prince Louis's flag was then shifted to the *Bulwark* and will be transferred to the first-class battleship *Africa,* on that ship completing her refit at Chatham.

Vice-Admiral (Acting-Admiral) Sir F. C. B. Bridgeman, K.C.B., K.C.V.O., hoisted his flag on board the *Bellerophon* (temporarily) at Portsmouth on the 25th ult., on assuming command of the Home Fleet in succession to Admiral Sir W. H. May, G.C.V.O., K.C.B., whose flag was struck at sunset the same evening on board the *Dreadnought.* Admiral Sir F. Bridgeman's flag will be transferred to the *Neptune,* as soon as that ship is ready.

Rear-Admiral C. H. Coke has been appointed Senior Officer on the Coast of Ireland in succession to Rear-Admiral Sir A. W. Paget, K.C.M.G.

The first-class battleship *Dreadnought* was paid off at Portsmouth on the 27th ult., and has been reduced to nucleus crew while undergoing refit.

The first-class armoured cruiser *Aboukir* arrived at Devonport on the 25th ult. from the Mediterranean; she paid off on the 2nd inst., and recommissioned on the following day for a further term of service with the Sixth Cruiser Squadron in the Mediterranean.

The first Lord's Explanatory Statement.—The following are the principal items in the First Lord's Explanatory Statement of Work:—

The Estimates for 1911-12 amount to £44,392,500, as compared with £40,603,700 for the current year.

The principal increases occur under the heads of Pay of Personnel (Vote I.), Victualling and Clothing (Vote II.), Shipbuilding (Vote VIII.), and Naval Armaments (Vote IX.).

The numbers required for manning the Fleet are 3,000 more than were asked for in the Estimates for the current year. This increase is due mainly to the requirements of new ships now being placed in commission and under construction.

Home.

The shipbuilding and armament votes (VIII. and IX.) together show a very large total, caused mainly by the amount required to complete the old programmes already approved by Parliament. The increase over last year is three and a quarter millions.

Vote X. shows an increase of £70,000. The important new works at Rosyth and Portsmouth have reached a stage of development at which the contractors must earn larger sums if they are to complete them within the contract time. No new works of great magnitude are proposed for the coming year, but a second dock has been ordered at Rosyth

Shipbuilding.

New construction will cost £15,063,877, as against £13,279,830 for 1910-11. Of this amount £13,325,232 will be spent on the continuation of work on the ships already under construction, and £1,738,645 for beginning work on ships of the new programme, which is composed as follows:—

5 large armoured ships,
3 protected cruisers,
1 unarmoured cruiser,
20 destroyers,
6 submarines,
2 river gunboats,
a Depôt ship for destroyers, and a Hospital ship.

Between the 1st April, 1910, and the 31st March, 1911, the following ships will have been completed and become available for service:—

1 battleship	*Neptune.*
5 protected cruisers	*Indefatigable.*
1 armoured cruiser	*Bristol.*
	Glasgow.
	Gloucester.
	Liverpool.
	Newcastle.
1 unarmoured cruiser	*Blanche.*

28 torpedo boat destroyers—

Viking.	*Rattlesnake.*
Beagle.	*Scourge.*
Bulldog.	*Acorn.*
Foxhound.	*Cameleon*
Grasshopper.	*Lyra.*
Mosquito.	*Redpole.*
Scorpion.	*Larne.*
Renard.	*Comet.*
Wolverine.	*Goldfinch.*
Racoon.	*Alarm.*
Harpy.	*Rifleman.*
Basilisk.	*Hope.*
Savage.	*Nemesis.*
Pincher.	*Martin.*

3 submarines—
C. 33, C. 34, D. 2.

Home.

On the 1st of April, 1911, there will be under construction:—

10 battleships.
3 armoured cruisers.
7 protected cruisers.
3 unarmoured cruisers.
32 torpedo boat destroyers.
12 submarines.

Of these, the following are expected to be completed by the end of the financial year 1911-12:—.

6 battleships.
2 armoured cruisers.
4 protected cruisers.
2 unarmoured cruisers.
29 destroyers, and
6 submarines.

The two floating docks for Portsmouth and the Medway, ordered from Messrs. Cammell, Laird and Co., and Messrs. Swan, Hunter and Co., respectively, will also be complete by the end of the financial year 1911-12.

In addition there will be under construction on the 1st April, 1911, for Dominion governments 2 armoured cruisers, 2 protected cruisers, and 2 submarines.

The labour troubles which occurred in 1910 delayed to some extent the progress of many of the ships building, but it is expected that nearly all the vessels affected will be completed by their contract dates.

As a result of the consideration of the workmen's petitions for 1910, increased rates of pay have been granted to skilled labourers and wood caulkers in the dockyards.

Works.

During the last year the main works of Simon's Bay Dockyard have been completed, and were formally opened by His Royal Highness the Duke of Connaught during his recent visit to South Africa.

At Plymouth the whole of the works in connection with the Keyham Dockyard extension are practically finished, whilst at Portsmouth the new lock and dock are progressing satisfactorily.

Good progress is also being made with the naval base at Rosyth.

Royal Fleet Reserve.

The total numbers of the Royal Fleet Reserve have increased from 20,813 to 21,943, the distribution of these numbers on the 31st December, 1910, being as follows:—

——	Class A.	Class B.	Total.
Seamen and Naval Police	3,488	8,023	11,511
Stokers	1,664	3,706	5,370
Marines	1,738	3,324	5,062
	6,890	15,053	21,943

The minimum period of service qualifying men in the Royal Navy or Royal Marines for enrolment in the Royal Fleet Reserve has been raised from four to five years.

Home.

Royal Marines.

The numbers borne on 31st March, 1911, will be about 15,800. There will also be about 1,300 band ranks afloat and under training.

The number of re-engaged men now serving to complete time for pension is 4,115, as compared with 3,792 last year.

The numbers of Royal Marines qualified in the higher gunnery ratings are as follows:—

Gunlayers, 1st class	75
Gunlayers, 2nd class	353
Gunlayers, 3rd class	496

A new warrant rank for the Royal Marines has been created with the title of Gunnery Sergeant Major, R.M. Twenty of these Warrant Officers will be created, and candidates for the rank have been selected, and are at present undergoing a qualifying course. These officers will serve mainly afloat, and their duties will be analogous to those of Gunners, R.N., with whom they will rank; they will also receive the same pay.

Coast Guard.

The numbers borne on 1st January, 1911, were:—

District Captains, District Paymasters and Staff	35
Divisional Officers	78
Chief Officers and Men	2,921
	3,034

Royal Naval Reserve.

The strength of the Royal Naval Reserve (Home) on 1st January, 1911, was:—

Executive Officers	1,319
Commissioned Engineer Officers	221
Warrant Engineers	120
Engine-room Artificers	515
Seaman ratings	11,008
Stoker ratings	5,377

Of the above Executive Officers 548 have undergone 12 months' training in the fleet, and are in receipt of training fees. In addition to these, 65 are now undergoing this training.

The following numbers have performed courses of instruction, drill, and training during the 12 months ended 31st December, 1910:—

	Short Courses.		New System.		Old System.
	Gunnery and Torpedo.	Signal.	Three Months' Training Afloat	Annual or Biennial Training.	Drill.
Executive Officers	140	16	—	213	291
Warrant Engineers	—	—	24	—	—
Engine-room Artificers.	—	—	172	—	—
Seaman Ratings ..	—	—	910	3,391	2,026
Stoker Ratings ..	—	—	569	2,226	150

Considerable progress has been made with the organisation of the trawler section of the Royal Naval Reserve. Regulations for the entry, training, pay, and employment of officers and men have been printed and issued, and preparations have been made for the entry and training of the numbers authorised for the current financial year.

Home.

Royal Naval Volunteer Reserve.

The strength of the Force is now six divisions, comprising 43 companies, the actual numbers being:—

Royal Naval Volunteers.	Establishment.	Strength, 1st January, 1911.
Officers	190	160
Honorary Officers	—	20
Petty Officers and Men	4,220	3,848
Permanent Staff:—		
Officers	7	7
Petty Officers and men	69	69

During the current financial year the following numbers have embarked for training afloat for 14 or 28 days in fully manned ships of the Home Fleet:—

Officers 42
Petty Officers and Men 1,111

The reports on officers and men embarked or under instruction in the schools have been most satisfactory.

The attention paid to the instruction of the Royal Naval Volunteer Reserve in signalling has had satisfactory results, and there are now 212 signal ratings.

NEW CONSTRUCTION.

The Battleship *Orion*, which was laid down at Portsmouth on 29th November, 1909, was launched on the 20th August, 1910, and the armoured cruiser *Lion*, laid down at Devonport on 29th November, 1909, was launched on 6th August, 1910. Substantial progress has been made during the current year on both ships, and it is expected that they will be completed within a period of two years from the date of laying down. Good progress is also being made with the four contingent ships of the 1909-10 programme, the *Conqueror*, *Monarch*, *Thunderer*, and *Princess Royal*.

The protected cruisers *Falmouth*, *Weymouth*, and *Dartmouth* were launched on 20th September, 1910, 18th November, 1910, and 14th February, 1911, respectively, and good progress is being made on them, as well as on the sister ship *Yarmouth*.

The armoured cruiser *Blanche*, laid down at Pembroke on the 12th April, 1909, has satisfactorily carried out all her steam trials, and is now in commission. The sister ship *Blonde*, laid down on the 6th December, 1909, and launched on the 22nd July, 1910, is now at the steam trial stage.

Several of the 20 destroyers of the *Acorn* class ordered in 1909-10 have been delivered.

Four submarine boats of the "D" class, Nos. 3, 4, 5, and 6, being built by contract, are well advanced.

Submarine boats C. 33 and C. 34, which were built and engined by Chatham Yard, were completed on the 13th August, 1910, and 17th September, 1910, respectively, and have joined the submarine flotilla. The two submarine boats of "D" type under construction at Chatham will, it is anticipated, be completed in the early months of 1911-12.

The following fighting vessels were provided for in the programme for the present financial year, and orders have been placed for the whole of them.

Home.

Battleships (4).

King George V.	*Centurion.*
Ajax.	*Audacious.*

Armoured Cruiser (1).

(Name not yet given.)

Protected Cruisers (3).

Chatham.	*Dublin.*
Southampton.	

Unarmoured Cruisers (2).

Active.	*Amphion.*

Torpedo Boat Destroyers (23).

Acheron.	*Goshawk.*
Archer.	*Hind.*
Ariel.	*Hornet.*
Attack.	*Hydra.*
Badger.	*Jackal.*
Beaver.	*Lapwing.*
Defender.	*Lizard.*
Druid.	*Sandfly.*
Ferret.	*Phœnix.*
Forester.	*Tigress.*

and three others not yet named.

Submarines (6).

Of the foregoing vessels, the battleships *King George V.* and *Centurion* were laid down at Portsmouth and Devonport respectively on the 16th January, 1811, the *Ajax* was laid down at Messrs. Scott's works at Greenock on the 27th February, 1911, and preparations for building the sister ship *Audacious* are well advanced at Messrs. Cammell, Laird's yard at Birkenhead. The order for the armoured cruiser has been placed provisionally with Messrs. Palmer's Shipbuilding Company.

The two armoured cruisers *Australia* and *New Zealand*, for the governments of the Commonwealth of Australia and New Zealand are well advanced at the works of Messrs. John Brown and the Fairfield Company respectively, and are to be completed in September, 1912.

The protected cruiser *Chatham* was laid down at Chatham Yard on the 3rd January, 1911, and her sister vessels *Dublin* and *Southampton* have been ordered from Messrs. Beardmore and Messrs. John Brown respectively. Two more ships of this class have been ordered from Messrs Cammell, Laird and the London and Glasgow Company for the Commonwealth of Australia, and named *Melbourne* and *Sydney* respectively. Drawings and specifications have been supplied to the Canadian Government for use in calling for tenders for four vessels of this class.

The *Active*, unarmoured cruiser of the improved *Boadicea* type, which was laid down at Pembroke in July, 1910, will be launched on the 14th March, 1911, and will be followed on the same slip by the sister ship *Amphion*.

The 20 vessels of the new *Acorn* class have been ordered by contract, and good progress is being made with them. The additional vessels included in the 1910-11 estimates have recently been ordered.

Two submarines were laid down at Chatham Dockyard on the 14th February, and an order for four more has been placed with Messrs. Vickers. Two similar boats have also been provisionally ordered for the Australian Commonwealth.

France. The following are the principal appointments which have been made.—Capitaines de Vaisseau.—J. G. Jaime to *Dunois*, and command of the Dunkirk Torpedo and Submarine Flotillas; P. L. Simon to *Bouvines*, and command of the Cherbourg Torpedo and Submarine Flotillas, and of the fixed defences; O. P. Lauwick to *Admiral Tréhouart* and command of the Toulon Torpedo and Submarine Flotillas and of the fixed defences. Capitaines de Frégate —J. Boissière to *Lavoisier;* J. L. Bonnet to *Vinh-Long.*

Journal Officiel de la République Française.

The Naval Impotence of France.—The French Fleet has fallen from its position as the second strongest in the world, which it held without question up to 1890, to that of fourth, being a position it holds with difficulty, and which Japan is striving to take from her. There is general astonishment in France, and nowhere is the astonishment greater than in Parliament, although this decadence is the result of ten years' disregard of great national interests, and of Parliamentary suspicion in regard to matters concerning the fleet, and, it is necessary also to say it, of the indifference shown by the country to everything relating to its maritime interests.

At the time when France has created a marvellous Colonial Empire, she repeats the mistake committed in the eighteenth century of allowing herself to fall into such a position that she is not able to defend it, and makes the loss of all (or a part), through a Treaty of Utrecht or Paris, a certainty, and that much sooner perhaps than anyone believes. After the Seven Years' War, France feverishly set to work to reconstitute her navy, but it was too late! We should be to-day in a similar position, if war broke out to-morrow with either Great Britain or Germany. If with Germany, we should see, 48 hours after it was declared at the latest, a squadron of 16 battleships, of which the oldest was launched in 1906, and the latest in 1908, scouring the North Sea and Channel with an advance guard of four splendid armoured cruisers (of which the *Von der Tann*, of 19,000 tons, is the most imposing model), of nine small cruisers and a hundred destroyers of from 600 to 1,500 tons, all new. The swarm of German destroyers would quickly annihilate the action of our own torpedo and submarine flotillas, which are inferior both in numbers and from the fighting point of view, and the German Squadron, mistress of the Channel, would be able easily to blockade our Second Squadron in Brest, or at the very least force it to action.

And this second Squadron, which we should have to oppose to the German, if unfortunately it had not time to effect a junction with the first in the Mediterranean, is composed of six battleships, which we count arbitrarily and compulsorily as ships of the first line, but which to-day are of no fighting value. It is as well to mention them: they are the *St. Louis*, *Gaulois*, *Charlemagne*, *Bouvet*, *Jauréguiberry*, and *Carnot*, ships already out of date at the time of their launching (1894-96), and which are as weak as the eight German battleships launched between 1896-1900, but these last have been withdrawn from the "Active German Fleet," and are now in the reserve.

COMPARATIVE TABLE OF SHIPS OF THE SECOND LINE OF FRANCE AND GERMANY.

France.

FRANCE.

Names	Date of Launch.	Displacement.	Speed	No. of Guns Heavy	Medium	Cost in Millions (Francs.)	Attached to
St. Louis....	1896 ..	11,284 ..	17.8 ...	4 ..	10 ..	26 ..	2nd Squadron.
Gaulois	1896 ..	11,268 ...	18.0 ..	4 ...	10 ..	24 ..	,,
Charlemagne	1895 ..	11,267 ..	18.1 ..	4 ...	10 ..	24 ..	,,
Bouvet.....	1896 ..	12 034 ..	18.1 ..	4 ..	8 ..	28 ..	,,
Jauréguiberry	1898 ..	11,880 ..	17.67 ..	4 ..	8 ..	28 ..	,,
Carnot.....	1894 ..	12,146 ..	17.86 ..	4 ..	8 ..	26 ..	,,
Suffren.....	1899 ..	12,728 ..	17 91 ..	4 ..	10 ..	28 ..	In Reserve
Brennus	1891 ..	11,370 ..	17.10 ..	3 ..	10 ..	25	Torpedo School Ship
Massena....	1895 ..	12,346 ...	17.07 ..	4 ..	8 ..	26	Gunnery School Ship
Charles Martel	1893 .	11,881 ..	18.12 ..	4 ..	8 ..	25 ..	In Reserve
10 Ships.....		118,174		39	90	260	

GERMANY.

Names	Date of Launch	Displacement	Speed	No. of Guns. Heavy	Medium	Cost in Millions	
Brandenburgh.....	1891 ...	10,100 ..	16 ..	6 ..	,, ..	15	All these ships are in Reserve, some completely dismantled.
Wörth	1892-02 ..	10,100 ..	16 ..	6 ..	,, ..	15	
Kaiser Friedrich III	1896-08 ..	11,200	18 ..	4 ..	14 ..	18	
,, *Wilhelm II*	1897-09 ..	11,200 ..	18 ..	4 ..	14 ..	18	
, *Wilhelm der Grosse*	1899-09 ..	11,200 ..	18 ..	4 ..	14 ..	18	
,, *Karl der Grosse*	1899 09 ...	11,200 ..	18 ..	4 ..	14 ..	18	
Barbarossa	1900-07 ..	11,200 ..	18 ..	4 ..	14 ..	18	
Wittelsbach	1900 ...	1 ,800 ..	18 ..	4 ..	18 ..	20	
Zähringen.....	1901 ...	11,800 ..	18 ..	4 ..	18 ..	20	
Schwaben	1901 ...	11,800 ..	18 ..	4 ..	18 ..	20	
10 Ships.....		111,600 Tons.....		42.....	124.....	180 ..	

If France did not keep these six obsolete ships in commission as the Second Squadron—fit at the most to figure in the second line, and which delude the country and Parliament into the belief that they constitute a first line force—which would only prove slaughter-houses for their crews, she would proclaim publicly to all the world her naval impotence, since the nucleus of her real force is reduced to the six following ships, which are alone capable qualitatively of meeting the 16 battleships which form the German first line, their so-called "High Sea Fleet." These ships are:—

Names.	Date of Launch.	Displacement.	Speed.	No. of Guns. Heavy.	Medium.	Cost.
Patrie	1903	14,865	19	4	18	About
Justice	1904	14,865	19	4	10	37
Vérité	1907	14,865	19	4	10	million
Démocratie	1904	14,965	19	4	10	francs
Liberté	1905	14,865	19	4	10	each
République	1902	14,865	19	4	18	ship.
Total	.....	88,190...		24	7	222

France.

If these six ships were in the North Sea at the moment of the Declaration of War—fortunately they are in the Mediterranean!—they would have to encounter from the 16 German battleships of the "High Sea Fleet" the fire of 96 heavy and 224 medium guns as against their own 24 and 76. Our real fleet, which is numerically three-eighths of that of Germany, represents, from the point of view of the offensive, only a third of the total number of guns mounted by our neighbours across the Rhine, and exactly one-fourth only of the number of guns of heavy calibre.

In these conditions it would seem certain that France is not in a position to take the offensive in the North Sea, and in time of war will be obliged to abandon it, and remain strictly on the defensive, qualified by that consolatory term, the "Defensive-Offensive."

Germany would gain the power to take effective possession of the approaches to Brest, of protecting her merchant ships, and of entirely cutting off our trade. Our naval policy has been founded on successive and often contrary impulses of Parliament, which the Ministry of Marine has had to accept, with the result that our ships have been constructed on no co-ordinated or reasoned plan. The absurdity of this is shown, when we see that to scout for a fleet of six battleships, we have simultaneously constructed a fleet of 15 armoured cruisers, which are without the necessary speed or heavy guns and insufficiently protected.

GERMAN HIGH SEA FLEET.

	Names	Date of Launch	Displacement	Speed	No. of Guns Heavy	No. of Guns Medium	Cost in Millions of Francs
Dreadnought Type.	*Nassau*	1908	18,500	20	12	12	46
	Westfalen	1908	18,500	20	12	12	46
	Rheinland	1908	18,500	20	12	12	46
	Posen	1908	18,500	20	12	12	43
Deutschland Type.	*Deutschland*	1904	13,300	19	4	14	30
	Pommern	1905	13,300	19	4	14	30
	Hannover	1905	13,300	19	4	14	30
	Schleswig Holstein	1906	13,300	19	4	14	30
	Schlesien	1906	13,300	19	4	14	30
Braunschweig Type.	*Braunschweig*	1902	13,200	18.5	4	14	30
	Elsass	1903	13,200	18.5	4	14	30
	Hessen	1903	13,200	18.5	4	14	30
	Preussen	1904	13,200	18.5	4	14	30
	Lothringen	1904	13,200	18.5	4	14	30
	Mecklenburg	1901	11,800	18	4	18	20
	Wettin	1901	11,800	18	4	18	20
	Total, 16 battleships		203,600 tons		96	224	524

The following comparison will better show the position of the question. The German armoured cruiser *Von der Tann* completed her trials last year at the same time as did the *Edgar Quinet*.

France.

The *Von der Tann* was launched in 1909, has a displacement of 19,000 tons, a speed of 28 knots, carries eight 11-inch and ten 6-inch guns, with four torpedo-tubes, and cost £1,840,000.

The *Edgar Quinet*, on the other hand, was launched in 1907, has a displacement of only 14,000 tons, a speed of 23.4 knots, and is armed with fourteen 7.6-inch Q.F. guns, and two torpedo-tubes, and cost £1,360,000.

The above details speak for themselves, and the question may well be asked how a nation, without an effective battle force, can sanction the creation of a type of second-rate ship, costing £1,360,000 which, owing to its weak armament, cannot be put in the fighting line, and which possesses a speed three or four knots below cruisers built in other countries.

Germany, much better inspired, has, during the last ten years, been building a fleet of small cruisers, costing from £320,000 to £400,000 each, with a speed of from 25 to 27 knots, which will not alone scout for the main body of the fleet, supported by the armoured cruisers, but will seek out the hostile flotillas, and bring their destroyers to action. . . . France, on the other hand, possesses no scouts worthy of the name, nor are we building any. The force of circumstances would at the outbreak of war compel us to fall back on the Mediterranean, where we might for a short time intercept German commerce, until their "High Sea Fleet," reinforced by the ten reserve battleships, and preceded by their scouts, enters that sea to seek out and destroy our much inferior force. In the meantime, thanks to our want of foresight, our coasts from Dunkirk to Bayonne, and all our colonies, would have been at the mercy of the enemy. Germany, moreover, would still have at her disposal some twenty small cruisers, with which to protect her own commerce, and destroy ours. Matters would be still worse if we were embroiled with England, who, at the very beginning of a war, would annihilate our fleets, both in the North Sea and the Mediterranean, and cut off all communication with our colonies.

It is time to pull ourselves together, and make a great effort, if we wish to protect Algeria and our Colonial Empire, on which greedy, covetous eyes are set, and keep our place among nations.

The navy of the Third Republic has had, alas! its Pontchartrain; it is now waiting for its Choiseul.

—*La Vie Maritime.*

United States.

The Lake Submarine.—Three submarines of the Lake type will soon be added to our Navy. The first of these, the *Seal*, was launched from the yard of the Newport News Shipbuilding and Drydock Company on the afternoon of February 8th. Another Lake boat, the Tuna, is under way at the same yard, and the third, the Turbot, is being constructed at the yard of the Lake Company, at Bridgeport, Conn. The contract calls for her delivery in twenty months.

The *Seal*, when completed, will be the largest and most powerful submarine in the U.S. Service, with general dimensions and chief characteristics as follows: Length over all, 161 feet; extreme beam, 13 feet; submerged displacement, about 525 tons; armament, six torpedo tubes, with stowage for ten torpedoes; the contract calls for 14 knots surface speed, but 16 knots are expected; submerged speed called for is 9½ knots; the cruising radius at economical speed on surface will be over 2,500 knots. She is designed for long ocean cruises in rough weather and without being accompanied by a tender. It is expected that she will be ready for her builders' trials by the beginning of April, and for the official trials about May 1st.

The following distinctive features are characteristic of the Lake type of submarines, and are embodied in the *Seal*: Bottom wheels, diving compartment, hydroplanes, drop keels, anchor weights. The bottom wheels are used in shallow waters. In moving on the bottom a cyclometer gives a fairly accurate record of the distance travelled and the gauges give an absolute record of changing depths. The diving compartment provides an exit for a diver sent for investigation or for making repairs to the vessel, and it furnishes a safety chamber for the escape of the crew in case of accident. By the use of the hydroplanes the boat can be kept at a uniform depth. The drop keel permits the release of several tons of weight and a corresponding increase in buoyancy. It also increases the longitudinal stability of the boat. The anchoring weights are designed to secure immobility at any desired depth, and the vessel can be drawn to the bottom by winding in their cables. The weights can be operated without the exposure of any of the crew on deck, and, if necessary, can be cast loose instantly to increase the buoyancy of the vessel. A special form of storage cells and connections is used in the batteries of the Lake boats.

Army and Navy Journal.

MILITARY NOTES.

THE BRITISH ARMY IN 1911-12.

Home.

Expenditure.

The estimates show that a sum of £27,690,000 will be required for 1911-12, a reduction of £70,000 from the figures for 1910-11.

Home.

The following are some of the most important figures in the Abstract of Expenditure which appears on page 9 of the Estimates.

	Net E-timate	Net Estimate.	Increase on Net Estimates.	Decrease on Net Estimates.
	1911-12.	1910-11.		
EFFECTIVE SERVICES.	£	£	£	£
Pay, &c., of the Army ..	8,648,000	8,733,000	—	85,000
Medical Establishment: Pay, &c.	437,000	452,000	—	15,000
Special Reserve	742,000	833,000	—	91,000
Territorial Forces	2,766,000	2,660,000	106,000	—
Establishments for Military Education	147,000	147,000	—	—
Quartering, Transport, and Remounts	1,641 000	1,589,000	52,000	—
Supplies and Clothing ...	4,295 000	4,397,000	—	102,000
Ordnance Department Establishments and General Stores	581,000	533,000	48,000	—
Armaments and Engineer Stores	1,472,000	1,482,000	—	10.000
Works and Buildings ...	2,591,000	2,598,000	—	7,000
Miscellaneous Effective Services	73.000	74,000	—	1,000
War Office	436,000	429,000	7,000	—
Total Effective Services ...	23,828.000	23,927,000	213,000	311,000
NON-EFFECTIVE SERVICES. Total ...	3,861,000	3,833,000	29,000	1,000
Total Effective and Non-Effective Services ...	27,690,000	27,760 000	242,000	312.000
		Net Decrease	£70,000	

Strength of the Army.

The strength of all ranks on the 1st January, 1911, was 731,739, made up as follows.—

Regular Forces (Regimental), Home and Colonial	166,331
Colonial and Native Indian Corps	8,353
Army Reserve...	136,337
Special Reserves (excluding regulars)	63,758
Militia, United Kingdom and Militia Reserve Division ...	3,239
Militia, Channel Islands, including Permanent Staff ...	3,108*
Militia, Malta, Bermuda, and Bermuda Volunteers, including Permanent Staff	2,699
Territorial Force, including Permanent Staff	269,334
Isle of Man Volunteers...	118
Officers Training Corps (Officers and Permanent Staff) ...	658
Total Home and Colonial Establishments	653,935
Regular Forces (Regimental), on Indian Establishment ...	77,804

The total number of men in the Home and Colonial Establishments was 186,400, a net increase of 2,200 on the figures for 1910-11.

The following information is epitomized from the Memorandum on the Estimates, which was issued as a Parliamentary Paper in February 1911; and from official statements made by the Secretary of State for War during the debates, or in answer to questions in Parliament during March 1911, as reported in the *Times*.

THE REGULAR ARMY.

Establishments.—The increase of 2,200 in the numbers on the Home and Colonial Establishment is due mainly to the addition of 1,850 men to the "additional numbers," which are provided outside the establishments of regiments to meet occasional excesses. The object of the increase is to meet the exceptional conditions which will affect recruiting for the cavalry and infantry of the line in the next few years, owing to the changes made in the terms of enlistment during the years following the South African War. Though the activity of trade has checked recruiting in some quarters, it was anticipated that the establishment of the Army as a whole, including British troops in India, would be complete on March 31st. In reply to a question, it was stated that 29,263 men of under 20 years of age were shown as effective on the 1st February, 1911.

The Expeditionary Force.—The whole of the fighting personnel of the Expeditionary Forces, the equipment and the stores are in existence. The Army Service Corps is to a certain extent in a transitional state, but the principle is being adopted of taking cavalry men a little time away from the cavalry and using them, as they are used in Germany and France, for the work of the Army Service Corps. There are still deficiencies on the medical side, but the authorities are now in a position to make that up, so far as it is deficient, out of the partially trained men; but even as regards the medical service, the six Divisions could be mobilized.

Supply of Regular Officers.—As a result of enquiries it has become evident that the lack of candidates for commissions has been due rather to conditions of age, and of the examination, than to the unpopularity of the Army as a profession. The minimum age for candidates is now to be lowered,* and other alterations made in the conditions.

Pay of Officers.—Speaking on the subject of the pay of officers, the Secretary of State said "I find that to bring the pay of the officer up to the level of the engineer officers would add a million to the Estimates, and still it would not give the equivalent of what represents the rise in civil life. An enormous number of new appointments with increased pay have been created in recent years, and these have gone some way to soften the difficulty, but sooner or later we shall have to face the question of officers' pay, and see what should be done."

As regards the supply of officers on mobilization the Secretary of State made the following announcement: "Supposing you mobilize the six Divisions and the Cavalry Division, you could mobilize between 2,000 and 3,000 officers only. There would be no difficulty about the mobilization of the Expeditionary Force as far as officers are concerned, but you would deplete the depôts to a considerable extent. That difficulty we have had in view. . . . We are going to allow the officers of the Training Corps from the Universities to join the Supplementary List, that is to say, instead of joining the list of a Special Reserve Battalion . . . they will join the general list, the supplementary list of their regiments, so as to enable them to take their training when they can, say, in August, September, or Oct-

* For new regulations see p. 492.

ober, with a Regular regiment, and then their places will be taken here by Regular officers glad to exchange with them for the time. That suggestion has been worked out by the Adjutant-General, and the result is that the Special Reserve officers from the Universities are now coming in much better than before. I think that 115 have already taken on in anticipation of this arrangement, and a good many more have intimated their willingness to join."

The Army Reserve. The Army Reserve, which numbered 137,712 on 1st October, 1910, will fall in 1913-14 to about 106,000. The Reserve is sufficient to mobilize the battalions as a whole.

Out of 27,116 men who went to the Reserve in 1910, 10,797 are known to have found employment through organizations connected with the Army or otherwise; admirable work has been done in Scotland both in looking after recruits, and in finding work for discharged soldiers, not only those with the best certificates of character, but also men who have lapsed once or twice. It is proposed to make a beginning in extending this system to England.

Royal Artillery.—The figures for the strength of the Royal Artillery on the 1st January, 1911, were.—

	Home and Field Artillery.	*Garrison Artillery*
Serving at home	16,644	7,947
In the Colonies	1,587	5,201
In India	11,167	4,144
Regular Reserve	16,969	8,286
Special Reserve	6,325	849
Total	52,683	26,427

Royal Engineers. The Royal Engineers were, in March 348 short of their establishment; it is becoming more and more difficult to get men possessing the necessary qualification for this corps. As regards their organization, the Secretary of State said.—

"A long time has passed since the Engineers have had their mode of organization reviewed, and there are new questions arising relating to railway organization, and so on, which show that the time has come for a review of the modes of specialization of the Engineer Corps with a view to making them the force which the Army in its new organization requires. I am glad to say in regard to the improvement of this corps, that a member of the Defence Committee, Lord Kitchener of Khartoum, is likely to undertake the investigation with a very expert committee. I have no doubt that his past experience in the Colonies will enable the Committee to come to the best conclusions on the subject."

In the course of some further remarks on the subject of Railway Troops, the Secretary of State spoke as follows.—

"We have been hitherto more in doubt about railways than about horses. A loose notion existed that when war broke out the true railway battalion might be of some use, but it can only be available for home defence. Experts have been considering the question, and the opinion is that the best way to deal with it is by the railway companies themselves.

As regards the Expeditionary Force going abroad we are very short. We have not got anything worth calling a railway corps from the point of view of the standard of the General Staff, and consequently we propose two things—first, to organise a construction corps of railway engineers for construction and repair, and also a traffic corps of 1,200 men for handling the railways. The first would be Regulars on short enlistment, and they would go into the Reserve; and the other would be Special Reserve men, whom we would draw from the companies themselves. . . . . There are two excellent companies connected with Monmouth and Anglesey which are on a Militia basis, but unfortunately neither of the corps comes up to the requirements of the General Staff for railway work.'

Special Reserve.

The establishments assigned in 1908 to the 74 "Reserve" Battalions corresponding to the 74 pairs of line battalions, and to the 27 "Extra Reserve" battalions destined in case of need to replace Regular battalions in oversea stations, or to join the Expeditionary Force for duty on the lines of communication, were practically the same. It is now intended to raise the establishment of the "Extra Reserve" battalions to 750, in order to enable them to embark at an adequate strength for their duties in war. But as the "Extra Reserve" battalions do not have to train recruits for the line battalions their establishment is to be diminished by 4 Regular officers per battalion.

The terms of enlistment in the Special Reserve are to be modified so as to admit of the entry of men between 36 and 42 years of age who have left the Regular Army, but who are at present debarred by the age limit from enlisting. It is proposed to give 200 of these men to each of the 27 "Extra Reserve" battalions, and to allow 10 per cent. of the other battalions to be made up from the same source.

The annual period for field training and musketry combined is to be extended from 21 to 27 days, and the period of recruit drill is to be decreased from 6 months to 5, in the case of the 74 "Reserve" battalions. In the case of "Extra Reserve" battalions, in view of the stiffening of ex-Regulars which it is intended to introduce, the period of recruit drill will be decreased to 3 months.

With a view to securing men who cannot make the present terms of service fit the conditions of their civilian occupations, certain battalions will be permitted to enlist men to do a "refresher" course of 14 days at the depôt or with the home battalion, at such time of the year as they may be able to arrange instead of at the time fixed for battalion training

Steps are under consideration to reduce the drain of recruits from the Special Reserve to the Line.

In the hope of meeting the large deficiency of subalterns it has been decided to reduce the probationary training period of 12 months, now required from candidates for commissions who do not hold certificates from the Officers Training Corps, to 6 months, in the case of infantry officers, with reductions for holders of certificates, and to open a Supplementary List of infantry officers who will not be borne on the establishments of Special Reserve battalions, but will be attached *à la suite* of line regiments and will do their annual training with the home battalions at times convenient to themselves.

Territorial Force.

Establishments and Strength.—The only change of importance in the Establishments is the addition of 3 more cyclist battalions, one of which is not to be raised at present. The Memorandum gives the strength on 1st January, 1911, as 9,696 officers, and 257,156 other ranks, a total of 266,852 out of a maximum establishment of 311,000.

During the Parliamentary debate in March it was announced that the total strength had increased by 5,400 in the first two months of the year, thus bringing the total up to over 272,000. The number of officers was given as 10,766.

In reply to a question (27th February), the Secretary of State said that the number of officers deficient in the Territorial Force on January 1 last was 828 (Yeomanry 149 and Infantry 679). The deficiency of non-commissioned officers and men was 31,918 (Yeomanry, 1311 and Infantry 30,607).

Liability for Foreign Service.—The number of men who have accepted liability to Foreign Service is given in the Memorandum as 1,055 officers, and 17,189 men, including the whole of King Edward's Horse and of the 7th Battalion Middlesex Regiment.

Staffs.—It is announced in the Memorandum that important changes have been introduced with regard to the commands and staffs of the force. Although Territorial Officers and Regular Officers on retired pay will be eligible on the same terms as at present, Commanders of Mounted and Infantry Brigades and of Divisional Artillery will, as a rule, henceforward be Regular officers of the rank of Colonel or Lieutenant-Colonel, appointed from the half-pay list after the termination of their command of their regular units.

In a certain number of cases the post of Brigade-Major and the post of Staff Captain of Divisional Artillery are being filled by Regular officers on the active list. Considerable improvement has been made in the position of Adjutants of Territorial units. A system of appointing sergeant-instructors for a tour of service with the Territorial Force, after which they will return to their regiments, has been approved. The average age of these men will be somewhat less than that of the present instructors.

During the Debate, the Secretary of State said that success in commanding a Territorial Brigade or unit of any kind had been made a recommendation for a further Regular appointment afterwards.

It was also announced that the staffs and commands now include 14 major-generals, commanding divisions, 59 brigade commanders, 14 commanders of Royal Artillery, and 115 staff, officers of various degrees, all of whom have had full Regular experience.

Cadet Corps.—Since 21st May, 1910, 51 units, consisting of 122 companies of Cadets, have been recognised, and many others were awaiting recognition.

Voluntary Aid Detachments. The Secretary of State mentioned, in the course of the Debate, that no less than 407 Voluntary Aid Detachments had been raised in various parts of the Kingdom. Of these 330 were raised under the Red Cross Society. The *personnel* of 99 of the detachments was composed of men; that of the remaining 308 of women.

Training.—The Memorandum describes the exercises carried out during the camps of 1910 as being on a considerably more important scale than anything that had hitherto been attempted. It adds that the reports of General Officers Commanding-in-Chief and of Divisional and other Commanders, showed that the progress made had been satisfactory. The figures for attendance at Camp are given as follows.—For 8 days and less than fifteen, 1,146 officers, 73,577 other ranks; For 15 days and over, 7,102 officers and 161,073 other ranks.

Artillery.—In the course of the Debate, it was announced that in future the Territorial Force Artillery will undergo biennial practice, which will alternate with tactical training; General Officers Commanding-in-Chief will have discretion to arrange for artillery practice on local hired ranges, either annually or biennially.

Associations are now encouraged to purchase a nucleus of horses for drill purposes, and are receiving a moderate advance of money for the purpose. The arming of horse artillery batteries with the Ehrhardt gun has been completed, and metal dial sights will have been issued to all batteries by March, 1912.

With regard to the question of ranges, the Secretary of State said that serious difficulty had been found in getting extended accommodation, but that several contracts had been entered into and that no doubt, in the course of time, they would be able to compass this difficulty. He added "Where Territorial battalions did not shoot their musketry courses it has almost invariably been because there was no accommodation for them. In the case of the Artillery we have now the Salisbury Plain range in sight of complete acquisition, and I hope that it will be open this summer. There is an even finer range for which we have bought £87,000 worth of land in the past year and have taken a further Estimate for £67,000 this year, which will complete the range."

Finance.—The Memorandum states that very general complaints were received during 1910 of the insufficiency of grants made to Associations. An analysis of the financial statements of Associations for 1909-10, showed that difficulties had arisen, especially as regards expenses of men travelling to drill halls and to musketry, and allowances for hire of horses for riding and driving drill. In most cases an unfavourable financial position was traceable to failure on the part of the Association to exercise the necessary control over the expenditure conducted regimentally.

The Estimates for 1911-12 make provision for increased grants for establishment, travelling, and horses, for an increase of boot money, and for an addition to the funds available for the training of the Force outside the period of annual camp.

The extra grants under this head amount to £156,000, but owing to reductions on other heads, the net increase on the Territorial vote is £106,000.

Special grants will, it is stated, be given during the current financial year, from funds already available, to supplement the income of the Associations as from 1st April, 1910.

The regulation of the salaries paid to Secretaries of County Associations has given rise to much difficulty, partly owing to differences in the views of the Associations, and the amount of the work, and to the fact that there had not been as much shrinkage in the volume of work after the

first two years as was anticipated. The salaries originally fixed have proved to be too low. Under these conditions, while a general increase has been justified, it has been necessary to uphold the regulation requiring the salaries of secretaries to be approved by the War Office. But, in order to leave to the Associations as much initative as possible, a scale was drawn up, giving for each Association a *maximum* salary, based on the strength, composition, and distribution of the Force in the country. Within this *maximum* the Association has full power; but no higher salary may be paid without special War Office approval. This scale has been accepted by the Council of County Associations and put in force.

In the course of the Debate, the Secretary of State added the following remarks.—"The County Associations on the whole have not been very badly off. They will have on March 31st, 1911, £250,000 balance in hand but some are very badly off, and as new services were required we decides after a very careful survey, to increase their establishment grants. We have done that by giving them money as from April 1, 1910, which will get them out of debt and put them on their legs, so that for the future they will be very comfortably off indeed. With regard to finance. . . . . increases amounting to £131,000 are to be paid to the permanent income of the Associations from April 1, 1911. The establishment grant which was last year £252,000 is raised to £320,000. About a third of this has been allocated to the general purposes grant. Grants for the travelling of Infantry have been raised from £27,000 to £45,000, but it has not been found necessary to make any concession under the head of travelling expenses to camp, as last year's grants were more than sufficient. Grants for the provision of horses have been increased by £30,000. Grants for upkeep of clothing and equipment have been raised from 23s. to 24s. per man, involving an increased expenditure of £15,000, besides £50,000 which has been distributed in the form of arrears grant. The total increase made in April, 1911, is:—Establishment grant, £68,000; horses, £30,000; clothing, £15,000; travelling, £18,000; total, £131,000, besides a further £30,000 that General Officers Commanding receive for training, bringing the figure up to £161,000. The upkeep of rifle ranges has been provided for in another sum of £50,000."

Horse Supply.

Progress has been made with the scheme for "boarding out" trained Cavalry horses with suitable persons, on condition that they are available when required for manœuvres or mobilization, and some 700 horses (50 for each Cavalry regiment at home) will have been provided on this basis by the end of the financial year (1910-11). In the estimates for 1911-12 provision is made for some 320 more horses on this basis, as well as for an addition of five to the establishment of each Cavalry regiment. This latter increase will enable the horses for the regimental machine guns to be found independently of the squadrons.

The results of the Police Census of horses in this country have been received and tabulated, and the quotas to be found by the several counties on mobilisation have been worked out and allotted. The further progress made in different parts of the county has been uneven. While some of the County Associations have the work of classification and organization for collecting the horses when required well in hand, others have found various difficulties interfere with progress. It may well be that different methods will be found to suit the conditions existing in different districts.

In the course of the Debate, the Secretary of State said that he con-

sidered the horse question the weakest part of our Army organisation. There was a sufficient reserve of horses in the country to mobilise the Cavalry, but the question of how to ensure that the horses which came in for the purpose should be of sufficient strength to do their work, had been neglected. A committee of experts had been assembled to work out the question of horses. The Secretary of State observed on this subject.—

"Out of 1,600,000 horses in this country it is estimated that 500,000 would be fit for our purposes. We require 128,000 for the Regulars and Territorials—86,000 for the Territorial Forces and 42,000 for the Regular Army. . . . . Now, we have so to organize that we may be sure on mobilization that the Cavalry, Artillery, and other arms will be supplied with their horses. To draw on the large reserve available we must have a thorough sifting and classification. There are 12 County Associations at work experimentally. . . . . We propose to put at the disposition of the Associations a large staff of expert officers. . . . We also propose to strengthen the Remount Department in the commands. It is intended to work out the different schemes, acting in association with General Officers Commanding, the general officers supplying the staff necessary for this purpose. The Regular horses would be picked out and looked after particularly by the Remount Department.

Mechanical Transport and Supply

Motors for Administrative Transport.—It is intended to convert the greater part of the administrative transport of the Expeditionary Force, both for supplies and for ammunition, into mechanical transport, effecting at the same time a radical simplification in the organisation of these services in the field. This substitution of motor vehicles for horsed transport on a large scale will involve considerable changes in Army establishments, which have not yet been worked out in full detail. It will also entail a scheme for the registration of civilian motor transport, which is being taken actively in hand, and should result in mutual benefit to the War Department and the owners of vehicles. In compensation, it will tend to relax the strain caused by the difficulties of horse supply, and reduce the number of transport drivers required on mobilization.

Details of New Proposals.—The new proposals are as follows:—

(1). All fighting units to carry a reserve ration (iron-ration) on the man or horse (in addition to the present emergency ration).

(2). Regimental transport to consist of the present first line transport, *plus* water tank carts and travelling kitchens.

(3). All other regimental transport to be grouped by divisions, &c. and to form units of the Army Service Corps. These Army Service Corps units to be capable of division for brigades, etc. The supply wagons will, as now, carry one complete day's supplies and forage, *plus* an extra grocery ration.

(4). The supply wagons of the above Army Service Corps units to be replenished daily from the railway by mechanical transport convoys of fast motor lorries. The carrying capacity of motor lorries for the cavalry and Army troops to be 30cwt. and for all other formations three tons.

(5). The motor lorries and light tractors required to complete numbers necessary for mobilization to be obtained by means of a subsidising scheme,

(6). Special motor lorries and horse-drawn vehicles to be built for the conveyance of fresh meat, which will be carried in quarters suspended from the roof of the vehicles.

(7). The driving and slaughtering of cattle and sheep to be removed from the vicinity of the troops.

(8). Field bakeries and field butcheries to be established on the railway line, each capable of turning out daily 22,500 rations of fresh bread or fresh meat.

9. All other supplies to be sent by rail from a main supply depôt to the regulating railway station, whence they will be forwarded daily to the railway refilling point, to which point the fresh bread and fresh meat will also be sent.

(10). Separate supply columns and ammunition parks to be made for the Cavalry Division and for Army troops.

(11). Exploiting detachments have been added to the "train" of brigades and other formations. These consist of one officer and six to eight other ranks, mounted on bicycles, whose duty it will be to proceed, whenever practicable, with the advance guard and obtain such supplies as hay, fuel, wood, fresh vegetables, etc. They are also available for general requisitioning duties.

12. Six reserve convoys (horsed), capable of carrying two days' preserved rations for the whole force, to move in rear of the fighting troops, at least 30 miles behind, and in such a position as not to interfere with the free passage of the mechanical transport. These reserve convoys are considered necessary in the event of railways or mechanical transport not being available from unforeseen causes, such as abnormal weather, heavy floods, or snow. This horse transport will also furnish immediate replacement of heavy horse transport casualties at the front when time does not admit of replacement from the transport depôts.

Advantage has been taken of the change of system to convert the whole of the divisional ammunition columns into mechanical transport ammunition parks.

Advantages of the Reorganization.—The principle advantages claimed for the reorganisation are as follows:—

(1). Increased mobility of the Expeditionary Force generally.

(2). Clearance of roads in the rear of the fighting troops.

(3). Regimental transport officers, brigade transport officers, and divisional baggage masters no longer required from the establishment of fighting units.

(4). Substitution of fast-moving motor lorries, carrying one day's supplies only for the present slow and cumbersome transport and supply parks carrying three days' supplies, and the abolition of the present transport and supply columns (horsed) carrying one day's supplies.

(5). Proper organisations for exploiting local resources.

(6). Reduction of Royal Artillery and Army Service Corps *personnel* required on mobilisation.

(7). Reduction of horses required for transport in the field.

(8). Provision of good and regular facilities for evacuating the sick and wounded.

(9). Driving and slaughtering of cattle removed from the vicinity of the troops.

(10). Reduction of Army Service Corps peace *cadres*.

It is proposed to obtain the additional number of mechanical transport vehicles required on mobilisation by means of a subsidy scheme on somewhat similar lines to those in operation in neighbouring European countries, and the War Office is now entering into negotiations with the principal manufacturers in Great Britain to that effect. The object is to standardize, as far as practicable, at a reasonable cost, a sufficient number of commercial vehicles and to ensure by regular inspection that the vehicles are kept in a thoroughly efficient condition ready for immediate military service. It is hoped that a grant of a fair subsidy will result in mutual benefit to the motor trade and the War Department.

Reductions Effected.—The approximate effect of the reorganisation as regards war requirements is as follows.—

Army Service Corps, net reduction in *personnel* 4,795; in horses, 2,686; and in vehicles, 1,908.

Royal Artillery, net reduction in *personnel*, 4,770; and in horses, 5,934.

The actual effect on the peace requirements of the Army Service Corps will be the reduction of 20 horse companies, no longer required, and their replacement by 12 mechanical transport *cadres* to be maintained on the lower establishment—that is, a reduction, on the whole, of eight Army Service Corps units.

It is estimated that the proposed reorganisation will take two years to complete. Provision has only been made in the Estimates for that portion which it is proposed to carry out during 1911-12. This provision includes the purchase of a proportion of the new mechanical transport vehicles and funds for subsidising the necessary commercial vehicles.

Aeronautics.

Dirigibles.—The British Army possesses the following dirigibles.—There is the *Beta*, which has been improved recently, and the speed of which has been increased. It is a useful vessel for instruction and experiments, and carries three people. Then there is the *Gamma*, which was originally fitted with one engine; but two new engines have now been fitted, giving increased power. The gas balloon which was purchased from France contained 70,000 cubic feet, but it has been lengthened. The stabilising gear has been altered and increased power has been given, and the propellers have been made to swivel.

Another dirigible, the *Delta*, has been under construction during the present financial year, and will be completed by the end of April 1911. The design was prepared in the balloon factory after considerable research and experiment to fulfil the tests laid down for the *Lebaudy* dirigible ordered by the *Morning Post*. The materials are all of British manufacture. The capacity of the gas-bag is 140,000 cubic feet, sufficient to carry five persons, in addition to wireless equipment. The gas-bag is stiffened by an external arrangement which is covered by an outer envelope to minimise skin friction. All the important parts of the car are of steel. Two engines, each of 120 h.p., are provided for driving the propellers, either or both of which can be used at will, so that if one breaks down the other will be available. The speed is about 42 miles an hour. An independent engine is provided for actuating the wireless equipment. The *Delta* can be taken to pieces and packed on wagons.

The *Lebaudy* ordered by the *Morning Post* has been repaired and is now ready for inflation and trials.

The *Clément-Bayard* requires a new gas-bag, which will be put in hand as soon as shed accommodation is available. The Army has as many dirigibles as it can work at present, but the number will be increased. As soon as the dirigible *Delta* is completed and tested, a new dirigible will be put in hand embodying any improvements it is found desirable to make. Meanwhile the collection of engines and materials will be proceeded with. It is hoped to build two new dirigibles in the next financial year.

New Airship Sheds. The Balloon Factory at Farnborough has been reorganized and enlarged, and by the end of the financial year will be in a position to deal with the large airships of the present day. A new full-sized shed will be constructed at Farnborough. A design for a portable shed for a dirigible has been prepared, and construction of such a shed for trial will be commenced as soon as possible; and two portable sheds have been constructed and found to be satisfactory. Further portable sheds will be put in hand as required.

The installation for the production of hydrogen at Farnborough has been brought up to date, with the result that the output of gas will be increased threefold, at a diminished cost of production.

Aeroplanes.—There were, in February 1911, five aeroplanes available for Army work, of the Wright, Farman, Paulhan, Blériot, and Havilland types, respectively. Four more bi-planes have been ordered from the British and Colonial Aeroplane Company, of Bristol, and three aeroplane sheds have been constructed on Salisbury Plain.

Valuable assistance has been obtained from the Advisory Committee under Lord Rayleigh, as well as from the Parliamentary Aerial Defence Committee, and from the proprietors of the *Morning Post* and the *Daily Mail*.

Air Troops.—The Balloon School is being reorganized and will be transformed into an Air Battalion, the officers of which will not be drawn exclusively from the Royal Engineers, but will be appointed for four years from any arm of the Service, provided they possess the necessary aptitude.

In addition to the Regular corps, a technical and a Territorial section is being formed. There are many men in the Territorial Force with technical skill, and it is proposed to put a dirigible at their disposal.

Expenditure.—In the Estimates £85,000 has been provided for new dirigibles and aeroplanes and for the staff and other expenses of the factory; and £28,000 for the construction of a large new shed at Farnborough and the improvement of that at Wormwood Scrubbs.

In addition to the above expenditure of £133,000, £20,000 was voted for the Air Battalion, besides the money spent on the Technical Committee.

Armament and Equipment.

The New Rifle and Bullet.—The Memorandum states that a new pattern of small-arm ammunition, with a pointed bullet of 174 grains, has been adopted after full trial, and is being manufactured. Arrangements are being made to take in hand the necessary resighting of rifles during the coming year.

In the course of the Debate it was stated that the trajectory of the new bullet, thouh not so good as that of the German bullet, was quite as good as that of the French, and better than the trajectory of our

present bullet. The difficulty of resighting the rifles had been solved by sighting rifles as they were taken out of reserve, and passing them to the troops in exchange for the rifles they had in use. In answer to a question, the Secretary of State said there was no reason to suppose that the new bullet had less stopping power than those of foreign countries.

No experiments with automatic rifles, have, so far, proved satisfactory.

Guns and Howitzers.—In February the rearmament of the field howitzer batteries with the new quick-firing howitzer was proceeding rapidly, and it was anticipated that the howitzer brigades would all practice with the new weapon this year.

In March 1911, 2 brigades had got 12 howitzers each; 4 brigades 8 each, and it was expected that all 6 brigades would have 6 howitzers each by the end of June 1911.

The pattern of the new mountain gun had also been decided upon.

Cavalry Sword.—The Memorandum states that the rearmament of the Cavalry with a new pattern sword is proceeding and will be completed during the year.

In answer to a question as to the arming of the Yeomanry with the sword, it was stated that the General Staff considered that the time of training for the Yeomanry was not long enough to instruct them in the use of two weapons.

British Garrisons Abroad.

In the course of the Debate, the Secretary of State made the following pronouncement on the rôle of British Garrisons abroad.—

"The garrison which we have in South Africa is one which we are under obligation to maintain, at any rate until the new South African Government has organized its forces. That is a process which must take several years, and that in itself makes it extremely inexpedient for us at this moment to take away the garrison. That garrison might well be wanted. Suppose there was a native rising? It is very much better that we should retain things in our own hands with organized troops and under conditions which we could ascertain and define than that we should be extricated by improvised troops. But it is not only for the sake of South Africa that the garrison is there. It should be distinctly understood that what mainly determines the size of the British Army at home is the requirements in the way of garrisons over-seas. There is the great garrison of India, and no wise person, certainly not the Government of India, could diminish that garrison. It is none too large and we might have to reinforce it at any time. There are situations, such as that which arose in China at the time of the Boxer rebellion, when we had to send an expeditionary Force to protect British interests there. Supposing there was another rising in the Sudan; we should have to reinforce largely the garrison in Egypt, and there are other contingencies to which we need not allude, which would involve the use of nearly all the strength we have there. The garrison in South Africa is organised for these, among other purposes.

BRITISH EMPIRE

Home.

Anniversary of Barrosa.—The 5th of March was the anniversary of the battle of Barrosa, where Sir Thomas Graham (Lord Lynedoch) defeated the French Marshal Victor in 1811. "Barrosa" is on the colours of the Grenadier Guards, Coldstream Guards,

Scots Guards, 1st Gloucester Regiment (28th Foot), 2nd Hampshire Regiment (67th Foot), 1st Royal Irish Fusiliers (87th Foot) and the Rifle Brigade.

South Africa. General Smuts outlined the policy of the Union as regards defence. The main points of the scheme which, he said, was not yet definitely formulated, were as follows:—A police force capable of being converted into a military force in time of war; Durban and Table Bay to be fortified, the Union paying for the services of some regular garrison artillery; mobile columns to be employed in conjunction with coast garrisons; annual training for men between 18 and 25, as in Lord Kitchener's Australian scheme; permanent officers to be South Africans; formation of a military training college, and of a veteran reserve from members of the rifle clubs.

East African Protectorate The Colonial Office has decided to disband the 2nd (Central African) Battalion, King's African Rifles, and to increase the 3rd Battalion from 6 to 8 companies. These changes will be effected in April or May, 1911.

Southern Nigeria. The two infantry battalions of the Southern Nigeria Regiment have been amalgamated into one battalion of 18 companies.

FOREIGN POWERS.

General. April being the month of Army Estimates, it is interesting to compare the expenditure of the principal foreign Powers and the forces maintained by them during the past year. In the following tables the totals for peace strengths are taken chiefly from the Budgets for 1910-11; the totals for war strength are, of course, only an estimate. The totals of expenditure cannot be regarded as a satisfactory basis for comparison with the figures for Great Britain, which are given above, because, in various countries the services for which money is provided in the Army estimates differ very considerably.

Military Expenditure, Peace and War Strengths During 1910.

	Military expenditure, 1910. £	Peace Establishment.	Approximate War Strength.
Austria-Hungary	31,108,100	425,365	2,265,000
Belgium	2,397,000	43,126	171,000
Bulgaria	1,592,318	56,606	400,000
*China	11,698,433	224,630	302,030
Denmark	1,245,000	16,300	111,000
France	34,886,019	608,000	3,869,000
Germany	47,128,971	622,520	4,146,000
Greece	926,000	23,224	90,000
Holland	2,495,000	33,172	176,500
Italy	14,916,589	242,375	1,214,000
Japan	8,900,995	225,500	1,005,000
Norway	766,000	12,680	149,000
Portugal	1,997,947	31,550	279,000
Rumania	2,352,369	85,310	500,000
Russia	55,891,194	1,209,686	5,530,000
Servia	1,041,735	37,261	340,000
Spain	5,712,945	115,692	538,000
United States	25,359,814	81,361	218,000
Turkey	11,604,187	231,000	1,175,000

*This is the estimate for both land and sea forces; separate Army Estimates are not published.

France. The following information is epitomised from the debate on the French Army Estimates:—

Strength and Establishments.—On the 1st January, 1911, there were 559,000 men of all arms with the colours, not including 55,000 men of the so-called Auxiliary Services, and Colonial Troops in home garrisons. The number of recruits enrolled in October, 1910, was 224,000 instead of 202,000 as had been estimated on the basis of the birth statistics. The discrepancy was due to the fact that the survivals to the military age have risen from 67 per cent. to 70 per cent. of the males born. The total enrolled is, however, 5,850 less than in the previous year. This is owing to the decline of the birth-rate, which has fallen since 1905 from 850,000 to 700,000; 393,000 of the latter number being males.

Owing to stricter enforcement of the medical regulations, 2,400 more conscripts were rejected in 1910 than in 1909; the medical boards are still, however, inclined to pass recruits who are not physically fit.

The experiment of drafting Senegalese and other black regiments to Algeria promises to be successful, and it may ultimately become possible to release the Algerian troops for service in Europe.

As regards mobilization, the position is satisfactory, at present. By mobilising 11 classes of the reserve and the two classes of the active forces a first line army of 2,500,000 men can be placed in the field, which is equivalent to the German Army with its two active classes, its reservists of from 22 to 28 years of age, and its *Landwehr* of from 28 to 32 years.

Armament.—The task of manufacturing a stock of ammunition representing the indispensable number of rounds for each gun was completed in 1909. The subsequent increase in the number of guns has reduced the proportion of rounds available, but it has not fallen below the level at which the stock of ammunition stood before 1905. It is proposed in next year's Budget to make such provision as will enable the Artillery to count upon such a number of rounds for each gun as is "expedient and desirable."

Automatic Rifle.—There is no intention, at present, of introducing an automatic rifle, not only on account of the expense, which would not be less than £20,000,000, but also owing to the unsuitability of such a weapon for the rough usage of field service. If, however, any great military Power were to introduce an automatic rifle, the French army would follow suit.

Morocco.—The French Government have decided to reinforce their troops in the Shawia Province by 1 battalion of coloured infantry, 1 battalion of tirailleurs and 2 sections of Q.F. (65-mm.) guns, a total of about 2,000 men.

Germany. *The 1911 Army Bill.*—The new quinquennial Army Bill passed its third reading in the *Reichstag*, and became law on the 1st April.

In accordance with the last quinquennial Bill the peace strength had to be raised to 505,889 rank and file, by 1910; this total is now to be increased gradually to 515,321 by 1915, and is then to remain at that figure until the expiration of the term of five years at the end of March, 1916.

The Bill provides for the formation of 10 new machine gun companies, 18 field batteries, 4 battalions and 7 companies foot artillery, 2 new airship battalions, and a battalion of motor transport troops, besides minor increases in other arms.

The establishment of horses is to be raised by more than 4,000, i.e., from 114,162 to 118,246. Of this increase 2,376 are required for the machine-gun companies, and 1,715 for the field artillery.

A sum of £150,000 is allotted towards the strengthening of the fortress of Königsberg, on the Russian frontier, and £800,015 towards the improvement of land fortifications, and £134,455 towards fortress construction at Cologne.

Espionage.—Instructions for the prevention of espionage have been issued as a supplement to the semi-official handbooks for the rank and file of the army. The instructions deal with the objects and methods of foreign spies, the precautions which soldiers, especially reservists, should take to avoid falling into their snares; and the duty of all soldiers to arrest persons whose conduct appears to them suspicious.

The War Minister stated in the *Reichstag* that the total cost of clothing a German soldier was £3 11s. a year, and that this included the maintenance of all clothing needed for mobilization.

The German Emperor inspected the new fortifications in the island of Helgoland early in March.

Engineering.—New regulations for demolitions have been issued under the title of *Sprengvorschrift*. Important innovations are, that all pioneers are now required to have a knowledge of hand grenades, and that only pioneer battalions provided with a pioneer siege train are to be specially trained in mining operations. In other battalions a portion only of the men will be trained in these duties.

Instructions for Field Artillery Fire.—The long expected revise of the instructions for field artillery has now been issued. A revision of the old Instructions had become inevitable, owing to the growing tendency to range with time shrapnel, and to the absence of any provision in the old instructions for firing against fleeting targets. With regard to the latter point, the new Instructions lay down a procedure not unlike that formerly prescribed for firing at staffs, but better suited to a quick-firing equipment. Another innovation is a procedure for firing against dirigibles.

Veterans' Associations.—In view of the recent formation of veteran reserves in this country, the following notes with regard to the veterans' associations (*Krieger-vereine*) in Germany are of interest.

These associations were originally founded during the War of Liberation, with the object of ensuring military honours to fallen comrades. Membership is open to all ranks of ex-officers, soldiers, and sailors; an entrance fee is, apparently, required; a soldier may become a member on transfer to the Reserve.

Since 1842 the Prussian associations have been allowed to wear a special uniform, to carry arms on ceremonial occasions, and to fire volleys over the graves of members.

The veterans' associations increased so largely during the wars of 1864, 1866, and 1870 that a comprehensive organization became necessary. After several experiments the Prussian associations were organized in 1892 on a territorial basis, which was intended to enable all the German associations to become members of one great union. Associations affiliated to this union may not belong to any other organization than the Territorial Veterans' Association of their own State.

The main object of the veterans' associations in Germany is to encourage a spirit of patriotism and comradeship; they found burying clubs, and orphanages, and undertake voluntary aid. In 1900 they

provided 528 war ambulance corps with a strength of 12,332. In 1907, 18,601 associations had in all 1,602,785 members, of whom 248,724 were veterans; nearly £25,000 was spent during this year in relief and support work; the burying club and insurance funds were placed under the control of a trained director; insurance was extended to the wives and children of members. There were 90,774 insurances, and the insurance funds amounted to over one million sterling.

Members of these associations who cannot be employed as soldiers are prepared to undertake any duty which may be required of them on an emergency. As the associations are under the Home Office, the military authorities have no voice in their affairs, and no official connection with them, but do much to encourage them by taking a personal, active interest in them, and urging all officers to do the same.

Further information regarding these associations is to be found in the following works:—

Handbuch für Krieger-Vereine des Preussischen Landes-Krieger-Verbandes (by Dr. Westphal).

Frobenius Militär-Lexicon (1901). *Militär-Wochenblatt*, 1908. No. 109,120.

Holland. The army estimates, which were passed on the 11th February, amounted to £2,434,289.

The new Militia Law was presented to the Second Chamber. The chief modification of the existing law is the introduction of a term of six years' service for an annual contingent of 23,000 conscripts, instead of eight years' service for 17,000, as formerly.

Russia. General Gerngross has been relieved of his functions as Chief of the General Staff, owing to illness, and has been succeeded by General Jilinski, Commander of the Xth Corps.

The Southern Siberian Railway is to run via Orenburg, Akmolinsk and Semipalatinsk.

The Samarkand-Termez Railway, including the Gusai-Karshi branch, is now completed.

Coast Defences.—The *Militär Wochenblatt*, 10th March, reports that provision will be made in the 1911 naval estimates for the commencement of two coast fortresses in the Gulf of Finland, which it is intended to render inaccessible to hostile warships. The most southerly of these two fortresses will be on a peninsula to the east of Reval, and will be armed with twenty 30.5-cm. and forty 25-cm. guns, forty 20-cm. howitzers, and 70 small quick-firing guns. Some of the largest guns will be mounted in turrets. The northern works, which will be somewhat weaker, will probably be on the island of Sveaborg, near Helsingfors. The Gulf of Finland narrows about this point to such an extent that long range guns can range practically right across it.

Switzerland The Lötschberg tunnel, which affords communication between the valleys of the Aar and the Rhone, pasing through the Bernese Alps, was pierced on the 31st March. The new tunnel will, when complete, afford the most direct railway communication between London and Italy.

Turkey. Serious fighting has taken place in Albania. According to the *Times* of the 30th March, the insurgents, who were reported to be 10,000 strong, including some 2,000 Montenegrins, had gained a preliminary success.

Some 14,000 troops were recently despatched to the Yemen theatre of operations, bringing the total of reinforcements up to 24,000. A contract has been signed with Messrs. Krupp for 22 more batteries of Q.F. field guns.

United States.

Coast Defence Projects.—Strong coast defence works are to be constructed at Corregidor, in the Philippine Islands, commanding the approaches to the Bay of Manilla, and at Pearl Harbour, of Hawaii, which is to become an important naval station.

A sum of £600,000 has been voted for the fortification of the Panama Canal; the total cost will amount to about 2½ millions sterling. It is proposed to station at Culebra a mobile force, consisting of 4 regiments of infantry, 1 squadron of cavalry, and 3 batteries of field artillery. In addition 12 companies of coast artillery will be required.

Concentration of Troops.—In consequence of the revolution in Mexico a concentration (ostensibly for the purpose of manœuvres) of troops of the United States Army was ordered on March 7th, as follows:—One "division" and one cavalry brigade at San Antonio, Texas; one infantry brigade (3 provisional regiments) at Galveston, Texas; and one infantry brigade (2 regiments and 1 provisional regiment) at San Diego, California. Major-General W. H. Carter was appointed General in Chief Command.

The division referred to above was composed of 2 regiments field artillery; 1 battalion engineers; 2 signal companies; 4 ambulance companies (improvised), and 4 field hospitals (improvised). The provisional regiments referred to above were formed from 48 companies of Coast Artillery, organized as infantry, in regiments of 3 battalions. In addition, 2,100 marines were ordered to concentrate at Guantanamo, and 500 at San Diego.

According to accounts in the American Press, about 20,000 men, *i.e.*, about one-third of the whole regular army serving in the United States, had been assembled by the end of March; the majority came from the Central-West and Western districts, and were transported by rail, the greater part of the troops being entrained within about 15 hours of the receipt of the order; the Marines and Coast Artillery were taken from the Atlantic coast, and were moved by sea.

NAVAL AND MILITARY CALENDAR.

MARCH, 1911.

7th (T.) Anniversary Meeting of the Royal United Service Institution.
9th (Th.) 1st Battalion Scots Guards arrived in Egypt.
14th (T.) Launch of H.M.S. *Active* from Pembroke Dockyard.
22nd (W.) Launch of the First-class Battleship *Kaiser*, the ninth of the German Dreadnoughts from the Imperial Dockyard at Kiel.
25th (Sat.) H.M.S. *Aboukir* arrived at Devonport from the Mediterranean.
27th (M.) H.M.S. *Dreadnought* paid off at Portsmouth.
,, ,, Fiftieth Anniversary of Italian Independence.
28th (T.) Launch of First-class Armoured Cruiser *Goeben* from the yard of Blohm and Voss, Hamburg, for the German Navy.
30th (Th.) Launch of H.M.S. *Monarch* from the Elswick Yard, Newcastle-on-Tyne.

FOREIGN PERIODICALS.

NAVAL.

Argentine Republic.

BOLETIN DEL CENTRO NAVAL, Buenos Aires: *January, 1911.*—Modern apparatus for the study of explosives. The general characteristics of periscopes. The mechanism of modern naval constructions. Tests with mineral oil in the internal combustion Diesel motor.

Austria-Hungary.

MITTHEILUNGEN AUS DEM GEBIETE DES SEEWESENS, Pola: *March, 1911.*—Artificial silk. The double 120-ton crane at Pola. The trials of the United States vessel *Salmon*. The naval estimates of Germany. The sinking of the German submarine *U3*. The Division composed of two ships and the 13.4-inch gun. *April, 1911.*—Progress in artillery 1909-1910. The naval manœuvres in 1910. The French Naval programme. The battle practice of the French squadrons in 1910. The Dutch naval programme. The experiments with high explosives against the *Puritan* in the United States. Experimental firing against armour-plates in the United States. The operations of the battle squadron during the return of the Atlantic Fleet from Great Britain to Guantánamo.

Brazil.

REVISTA MARITIMA BRAZILEIRA: *December, 1910.*—Heroes of duty. A memorable speech. Navigation in sight of land. A naval general staff. Erosion in the bore of guns. The grand manœuvres of the British Fleet. Naval hygiene. Naval wars of Brazil. The Russians and the Japanese. *January, 1911.*—Nitro-cellulose powders in the Navy. The future of the Russian Navy. Fishing and oceanography. The Navy of Brazil. The Navy of Japan. The interstellar spaces.

Chili.

REVISTA DE MARINA, Valparaiso: *January, 1910.*—not yet received

France.

REVUE MARITIME, Paris: *February, 1911.*—The French Navy in Crete. Some traces of Suffren's achievements. Official history of the Russo-Japanese Naval War published by the Japanese Naval General Staff (continued). The ephemerides of naval history. Practical treatise on the principles to be followed in expropriating property for the public service, from an administrative, judicial, and financial point of view.

LA MARINE FRANCAISE, Paris: *March, 1911.*—The law affecting the recruitment of the naval contingent. M. Laubœuf on torpedo boats. Our battleships. Programmes of national defence and social reform. Naval engineers and the Legion of Honour. The State as a banker.

LA VIE MARITIME, Paris:—*10th March, 1911.*—The present and former Ministers of Marine. The new Minister of Marine: M. Delcassé. Notes from foreign navies. Our remaining admirals. Events of the fortnight in England and Germany. The Gunnery School of the 1st Squadron. The two new capital ships and the debate on the Budget. The naval debate. Notes on foreign navies. The action between the *Mars* and the *Northumberland*. Anomalies of naval promotion. Notes from 1st and 2nd Squadrons. The superior Naval School. Naval policy in the United States.

France.

LE YACHT, Paris *4th March, 1911.*—Rescuing the crews of submarines. Communications from nautical societies. Notes of a cruise in Equatorial Africa. Foreign navies in 1910 (continued). *11th March.*—Wireless telegraphy and continuous waves. The offensive power of the main artillery armament of the *Dreadnought*. Motor fishing vessels in Great Britain. A cruise in Equatorial Africa. The launching of the *Prochambeau*. Table of French war vessels and their stations 1st March, 1911. *18th March.*—The battleships of 1911 in the Chambers. Navies of foreign countries. Coal and petrol furnaces. *25th March.*—Landing at Brest in foggy weather, and Hersian waves. Yachting notes. Notes of a cruise in Equatorial Africa.

LE MONITEUR DE LA FLOTTE, Paris: *4th March, 1911.*—Training in evolutions. The Navy in Parliament. Foreign navies. *10th March.*—The British Naval Estimates. The Navy in Parliament. Foreign Navies. *11th March.*—The new Government. Turbines. The Navy in Parliament. Foreign Navies. *25th March.*—The distribution of naval forces. The accident to the submarine *Loutre*. The Navy in Parliament. Foreign Navies. Submarine mines.

Italy.

RIVISTA MARITIMA, Rome:—*January, 1911.*—The industry of naval construction in Italy (1861-1911). The navy of the near future. The high administrative councils of the principal foreign navies. Pressure in the bore. Signals made by vessels in misty weather. *February, 1911.*—Mechanical methods of fishing in foreign countries. The moral education of the sailor. Garibaldi, in his autobiographical poems. Internal navigation. The naval construction industry in Italy. *March, 1911.*—International politics and existing armaments. Mechanical fishing in Italy. The feeding of the officer on board ship. The gyroscopic compass of Dr. Anschütz-Kaempfe.

Portugal.

ANNAES DO CLUB MILITAR NAVAL, Lisbon: *January, 1911.*—A new method of controlling fire. Voyage round the world of the cruiser *Sao Gabriel*. The personal factor. Messrs. Yarrow and Co., Limited.

Spain.

REVISTA GENERAL DE MARINA, Madrid: *February, 1911.*—Memorandum on the International Congress on the use of explosion motors and internal combustion engines in the Navy (continued). The increase of efficiency of naval artillery among the principal naval powers; from Nauticus (continued). Lines of electric mines. Sterilisation of water, for drinking on board ship. Specialists in the Navy. The construction, handling, and employment of war vessels (continued). The official history of the Russo-Japanese Naval War.

MILITARY.

Austria-Hungary.

DANZER'S ARMEE-ZEITUNG, Vienna: *2nd March, 1911.*—The disputes of the delegations about contracts, and the interests of National Defence. The Dreadnought question from the point of view of an expert critic. War and its requirements. The History of the War of Liberation. *9th March.*—von Schonaich's speech. What is the object of the Irridenta? The Army and the social democracy in Germany. The Field Artillery School of Gunnery in Italy compared with our own. *16th March.*—What our real need is. A timely warning. Notes from our military history. *23rd March.*—Some military types. Wellington's views on the subject of the fortification of the Netherlands. The new Turkey and her

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defensive resources. *30th March.*—The psychology of the pacificists. The new German Army Bill. The development of corps officers' schools. Our fortress artillery. The chapter on duties on guard. Captain Semenoff's three books. Old and new fortification programmes in Russia. The improvement of our *personnel.*

STREFFLEURS MILITARISCHE, ZEITSCHRIFT, Vienna: *March, 1911.*—The Battle of Kolin on 10th June, 1757 (continued). The manœuvres of the Swiss IInd. Army Corps in 1910. Means of illuminating the foreground of defensive works at close and long ranges. Progress in Foreign Armies. (a) France; (b) Italy. The lines of Communication Service of the Russian Army in 1904-05; (II). The supply of *personnel* to the field army (with a sketch). Communications from the School of Musketry; automatic rifles. Information regarding Foreign Armies: the Balkan States, France, Great Britain, Russia. Naval Notes: the past and future development of Submarines: Great Britain. Technical Notes: Military Flying Machines; Military Pilots in France; Transmission of power to transport trains by electrical and mechanical means; Multiple Telephones; Signalling.

KAVALLERISTISCHE MONATSHEFTE, Vienna: *February, 1911.*—The psychology of cavalry attacks. Dismounting quickly in action. The remount farm at Gabrielenhof. Long distance rides. *March 1911.*—The Wallmoden Cuirassiers. The 8th Dragoons at Nachod. The lance in dismounted fighting. Carbines and Pistols. Greetings from an old cavalry soldier. Mounted orderlies. Suggestions for the Training Manual for Horse Artillery Brigades. The purchase of Officers Horses. Dead heats in classic races in Great Britain. The horses of the Netherlands Army.

Belgium.

BULLETIN DE LA PRESSE ET DE LA BIBLIOGRAPHIE MILITAIRES, Brussels: *15th February, 1911.*—A new Wörth (the picture of a battlefield of to-morrow). The cavalry divisions at the German Imperial Manœuvres in 1909 (continued). Remarks on the Organization of the United States Army. Reflections on offensive-defensive positions.

20th February, 1911.—How to fire at our aerial enemies. A new Wörth (the picture of a battlefield of to-morrow) (continued). The cavalry divisions at the German Imperial Manœuvres in 1909 (continued). Foreign Military Notes.

France.

JOURNAL DES SCIENCES, MILITAIRES, Paris: *1st March, 1911.*—The freedom of action of supreme commanders (continued). Means of Communication (a study of article 249 of the Regulations for Infantry manœuvres, 1904. How to improve the lightness, mobility, and capacity for rapid intervention of the engineers of the field army. Small arms of armies of the present day and their ammunition. The organization of infantry in view of war, and the new law of cadres. *15 March, 1911.*—The organization of the infantry in view of war, and the new law of cadres (concluded). How to improve the lightness, mobility, and capacity for rapid intervention in action for the engineers of the field army (continued). Small arms of armies of the present day and their ammunition. How to instruct a company in service in the field Germany, shortage of officers. Solution of tactical problem No. 15.

France.

REVUE D' INFANTERIE, Paris: *15th February, 1911.*—The right wing of the Prussian Army at Resonville (continued). The Roumanian Army: new musketry regulations. The operations of the Xth Corps against Tours: the engagement at Monnaie. British views on the employment of aeroplanes and dirigibles in field warfare. *15th March, 1911.* Mounted scouts for infantry. The right wing of the Prussian Army at Resonville (continued). The state of Sao-Paulo (Brazil). The operations of the Xth Corps against Tours: the engagement at Monnaie (concluded).

REVUE DE CAVALERIE, Paris: *March, 1911.*—Two letters from cavalry officers under the Consulate. Opinions: to be or not to be. Soldiers who have been members of the Academy (to be continued). Treatise on dismounted fighting. Opinions: A leader!

REVUE D' ARTILLERIE, Paris, *March, 1911.*—The stabilization of aeroplanes by means of the gyroscope. Investigation on the hardness and brittleness of different kinds of steel (concluded). Pointed bullets in the Spanish Army.

REVUE MILITAIRE GENERALE, Paris: *March, 1911.*—Reflections on the manœuvres in Picardy in 1910 (by General Langlois). The doctrine of national defence. Tactics (letters to a young officer). The fear of losses and the offensive spirit. Cyclist units in the cavalry manœuvres on the Aube in 1909. Two studies of the campaign of 1812. Bibliography.

REVUE D'HISTOIRE, Paris *March, 1911.*—The campaign of 1908-1909 in Shawia (to be continued). Zürich (concluded). The manœuvre of Poltusk. Napoleon and the German fortresses (to be continued). The war of 1870-1871—The first army of the Loire.

REVUE MILITAIRE DES ARMEES ETRANGERES: *March, 1911.*—The manœuvres of the German Army in 1910. The German "Instructions for Fortress Warfare." The reorganization of the higher staff and central administration of the Russian Army.

LE SPECTATEUR MILITAIRE, Paris: *1st March, 1911.* A year of tactical instruction in a demi-regiment of cavalry. The employment of the higher formations (to be continued). The Turkish manœuvres in 1910 (to be (continued). A corner of the battlefield of Héricourt. *15th March, 1911.*—A year of tactical instruction of the cadres in a demi-regiment of cavalry (continued). On the employment of the higher formations (continued). The Turkish manœuvres of 1910 (concluded). A corner of the battlefield of Héricourt (continued). The Germans in the Gâtinais.

Germany.

MILITAR WOCHENBLATT, Berlin: *2nd March, 1911.*—Military training for boys. Fights with the insurgents in the Balkans. A protest against a "normal position" for the head and neck of the troop horse. News from the French Army *4th March.*—Firing over the heads of our own infantry (by General Rohne). Lance and Sword. Military training for boys (concluded). *7th March.* The composition of advanced guards The association of retired officers of the German Army and Navy. Russian views on the organization of cadet corps. The origin of practice at "turksheads" in the cavalry. *9th March.*—The 90th birthday of H.R.H. Prince Regent Leopold of Bavaria. The Battle of Barossa, 5th March, 1811. The Italian Military Budget *11th March.*—The infantry attack: a comparison between the teaching of the German, French, and Russian infan-

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try regulations" (by Major Immanuel). Sport for the rank and file. Calculations of probability *v.* common sense in artillery ranging. *14th March.*—The attack on fortified positions (continued). The development of the Colonial possessions on Lake Chad. The infantry attack; a comparison between the teaching of the German, French, and Russian infantry regulations. 16th March.—The attack on fortified positions (continued). Preparatory military education? The infantry attack; a comparison between the teaching of the German, French, and Russian infantry regulations. *18th March.*—Divining the enemy's intentions. Russian coast defence projects. Evening lectures in garrisons. *20th March.* How ought infantry to pass through a line of guns in action? More about the French Army. The Boer War and its tactical lessons; German and British views (continued). *21st March.*—The Berlin Military Society. The first Emperor's birthday in the enemy's country. News from the British Army. Divining the enemy's intentions (concluded). Progress in aeronautics. News from the British Army. The 55th year of the Russian *Voienny Sbornik.* Modern methods of searching a battlefield for the wounded. The Boer War. The tactical lessons of the Boer War; a comparison between German and British views. The equipment of rank and file with compasses. *30th March.*—Moltke in August, 1870. The participation of field artillery in wood fighting. News from the French Army (concluded).

JAHRBUCHER FUR DIE DEUTSCHE ARMEE UND MARINE, Berlin: *March, 1911.*—Prince Regent Leopold, of Bavaria, on his 90th birthday. Some fresh light on the strategy of Field Marshal Benedek. Physiological notes on fortress warfare. To my son on his promotion to regimental commander. Stratagems in the Russian Army. Prince Frederick Charles, of Prussia.

ARTILLERISTISCHE MONATSHEFTE, Berlin: *February, 1911.*—A new study of shrapnel fire (continued). Various views as to the support of infantry by artillery during the attack. Changing opinions. More about concealed positions. Experimental driving tests for artillery *matériel. March, 1911.*—A new study of shrapnel fire (concluded). The economy of fighting resources during the battle, according to the French "provisional regulations for the employment of artillery in the field." The training of officers as commanders of ammunition columns. Laying on auxiliary marks. Means of increasing the effect of common shell upon concealed targets, protected by overhead cover. Further remarks on the Russian artillery in the War in the Far East. Methods of measuring ground for artillery purposes.

Italy.

RIVISTA DI ARTIGLIERIA E DI GENIO, Rome: *January, 1911.*—Gun carriages, without brakes or running-up apparatus. How to direct siege manœuvres on the map. Geodetic problems, and the measurement of gravity. Colonel Allessandro Begani, of the Neapolitan Artillery.

RIVISTA MILITARE ITALIANA, Rome: *February, 1911.*—The building up of Italian citizenship. Defence against the offensive action of aircraft. Notes on the composition and employment of infantry machine gun sections. The dream of Lieutenant Orsenti. The Battle of Francaville (1719). Conversations of Frederick the Great. The report on the

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United States Army. The Artillery School of Gunnery. Some ideas of the recruiting, organisation, and employment of cyclist troops. Lantern lectures for troops. Signalling in the field. *March, 1911.*—The building up of Italian citizenship. Some ideas on the recruiting, organization, and employment of cyclist troops. A defence of the 1898 instructions for infantry fire and small arms, Vol.II. The critical period when the strength of the army is at its lowest. On surprise in war. Tactical instruction of infantry. Conversations of Frederick the Great. Methods of fencing. A foreign opinion on Italian tactical doctrines.

Russia.

VOIENNY SBORNIK, St. Petersburg: *January, 1911.*—From the Editor. N. N. Obrieietschew (with portrait). Foundations of contemporary strategy and tactics. Training and choice of commanders. Theory and practice in the work of scouting squadrons. Psychology of combatants during action. Two doctrines of education of troops. Night practice in the cavalry. Is field artillery needed? Preparation of young men to military service. Our boy-soldiers. At New Year. A learned critic (reply to P. A. Geisman). Second international aeronautical exhibition in Paris (illustrated). A victim of aviation. The Land of the Rising Sun. Travelling notes (illustrated). Montenegro. *February, 1911.* Tactical exercises with officers. Tactical training of infantry. The cavalry in the Russo-Japanese War. Letters on artillery. Experience of loading artillery on raft of Polansky's small-floats (illustrated). Former and modern attestation of officers. The Divisional Intendant. Military preparations in civil schools. Boy-Scouts in England. What can our army expect from the Bohemians? A hero of patience. French Alpine manœuvres in 1909 (illustrated). The progress of aviation in 1910. On surveying. Sport (illustrated ....*March, 1911.*—The interior economy of troops in time of peace. Tactical preparation of infantry. About revision of the firing instructions. The Kosak "Lava," Night shooting of field-artillery. The origin of the boy-soldiers. Attestation. Suggested changes in cavalry tactics. The Japanese Army in 1911. Review of the principal foundations of night-training. In the past. Sport (illustrated).

Spain.

REVISTA CIENTIFICO Y BIBLIOTECA MILITAR, Barcelona: *10th March, 1911.*—Some words about rewards for active service. The defensive organization of Japan. Warfare by mines, according to the lessons of Port Arthur. Aviation in the French Army. The French field-artillery in the last manœuvres. *28th March.*—Uniformity in musketry for infantry. An introduction to the study of war. The fortifications of Flushing. The efficiency of the British Navy in gunnery.

REVISTA TECNICA DE INFANTERIA Y CABALLERIA, Madrid: *15th February, 1911.*—An appreciation of the organisation of the Spanish Army, by a Prussian. The evolution of military law among modern nations (continued). The relations between Spain and Morocco. *Moral* in war. *1st March.*—The evolution of military law among modern nations (continued). Relations between Spain and Morocco. The soldier in retirement. The educators of our army. *15th March.*—An appreciation of the Spansh Army, by a Prussian (continued). The evolution of military law among modern nations (continued). The relations

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between Spain and Morocco (continued). The educators of our Army.

REVISTA DE CABALLERIA, Madrid: *February, 1911.*—(Not received). *March, 1911.*—The cavalry renaissance. The State and the production of horses. Should cavalry make use of fire action? Indications, modes of procedure, but no uniform method of equitation. A study of the Battle of Wa-Fan-Kou. Observations on the improvement of the breed of horses (continued). A note on the special musketry course (concluded).

Switzerland.

REVUE MILITAIRE SUISSE, Lausanne: *March, 1911.*—History of the Swiss Regiment of Guards in the French Service. Reflections on the necessity of revising the regulations fixing the conditions of recruitment for military service in Switzerland. The manœuvres of the St. Maurice Garrison in 1910. Military aviation in Switzerland. Swiss military notes. German military notes. French military notes. Bibliography.

NOTICES OF BOOKS.

The Principles of Aeroplane Construction. By RANKIN KENNEDY, C.E., London, S. and A. Churchill.

This book will be found useful for those who wish to obtain, in a concise form, an insight into the theory of flight, and the broad principles underlying the construction of flying machines.

The book commences with an elementary treatise on mechanics, inclined planes, and the weight and density of the atmosphere. The application of these principles to the design of an aeroplane is then discussed, and some examples of calculations of dimensions and lift of aeroplanes are worked out. The steering and elevating of machines, as at present practised, is, in the author's opinion, very primitive, and some more positive and certain method of control appears to him desirable.

There is a useful table (p. 90-93), reproduced from *Flight*, giving details in tabular form, of the machines exhibited at the Olympia, in 1910.

The concluding chapters of the book deal with the method of calculating the thrust of a propeller; the helicoptere; the wing propeller; and the Gnome engine, which, in the author's opinion, represents the best type of engine for aeroplanes in their present stage of development.

Summing up his review of the present day machines Mr. Kennedy considers that they are all deficient in what engineers term "the margin of safety," and that there is a tendency to reduce weight to such an extent that the strength is insufficient. Automatic balancing, he observes, must, and will eventually be attained. The improvement of the flying machine is, to quote Mr. Kennedy "the supreme problem of to-day."

The Campaign of Chancellorsville. By Major JOHN BIGELOW, U.S. Army. The University Presses of Yale and Oxford.

It is open to question whether any great war has attracted to itself in recent times a larger share of attention than has the struggle known impartially as the War of Secession and the War of the Rebellion; while it is perhaps still more doubtful whether any phase of any campaign, ancient or modern, has ever been subjected to so closely reasoned a strategical and tactical study as that which Major John Bigelow, late of the United States Army, has given to this "Campaign of Chancellorsville." The author was especially well equipped for the important task which he had set himself. As Professor of Military Science and Tactics at the Massachusetts Institute, it fell to him to select a particular campaign as the theme of a course of lectures, and he chose that of Chancellorsville—not merely by reason of the varied character of the problems and experiences it offers, or because it contains more almost than any other a wealth of critical situations, but rather because this particular campaign has suffered in regard to the value of the lessons it contains from being imperfectly understood, and from having too often been inadequately described. The author has divided his work into two parts: Part I. which he calls "the period of preparation," covers the time from the appointment of Hooker to succeed Burnside as the Commander of the Army of the Potomac, in the early days of 1863, to the final issue of the orders for the movement of the Army; it treats of the preliminary reorganisation of the Army, of the affairs conducted by Mosby and Fitzhugh Lee, and includes the Battle of Kelley's Ford and other minor

engagements. The story therefore commences when the war had already lasted more than twenty months, and when the successes of the Federals in the west were more than counterbalanced in the east by the check sustained by the Army of the Potomac at the hands of the Army of Northern Virginia. Part II., "the period of operation," describes the march to Chancellorsville; the operations in the wilderness; Sedgwick's attempt to march to Chancellorsville, with the battles of Marye's Heights and Salem Church; and the raids by Stoneman against Lee's communications, and by Jones and Imboden against the Baltimore and Ohio Railroad. Major Bigelow tells us in his book not only what was done but how it was accomplished, and he has throughout tried to keep the reader informed as to the actual amount of knowledge possessed by each commander of the situation as it existed at the time. Moreover, the use of the words written or spoken by the leaders, and which, wherever possible, are here reproduced, materially assists in conveying a truthful impression of the working of men's minds under the changing conditions of the campaign. The student will find that the events of this brief phase of the war are described with an altogether unusual minuteness—from day to day, and almost from hour to hour—and with an accuracy ensured by reference to all available records, private and official. The same care has been given to the maps, which illustrate the constantly changing fortunes of the struggle; the occasional "comments" are very much to the point; while in the "appendices" will be found an immense amount and variety of information not generally obtainable. It only remains to express regret that the expense of producing so monumental a work has necessitated its publication at a price which, to the ordinary military student, must prove to be practically prohibitive.

RECENT PUBLICATIONS OF MILITARY INTEREST.

COMPILED BY THE GENERAL STAFF, WAR OFFICE.

APRIL, 1911. PUBLISHED QUARTERLY.

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AERIAL NAVIGATION.

Part II. Section I.*

The Construction of Airship Sheds. (*Luftschiffhallenbau*), By Haenig. 170 pp. with numerous diagrams. 8vo. Rostock, 1910. Volckmann. 6/6.

This book, which is written by an engineer, discusses in detail the various systems of construction of airship sheds.

Means of Communication in War. (Die Verkehrsmittel im Kriege). By Schmiedecke. 363 pp. with numerous maps and diagrams. 8vo. Berlin, 1911. Mittler. 7/6.

This is the second edition of a book originally published in 1905. It has been brought up to date, and a special chapter has been devoted to airships.

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* The titles of all books are given in English; this does not indicate that the books have been translated. The original title in the language in which a work is written, if not in English, is given in brackets.

ARTILLERY.

The Technique of Artillery Command (Führungs-Technik der Artillerie). By Major-General Hoehn. 100 pp. 8vo. Munich. Theodor Riedel, 1910. 1/10.

This is a detailed study of the duties of the staffs of field and heavy artillery during all the phases of an engagement. Of special interest is the portion dealing with the duties of the staffs during the period of the deployment of the artillery. A translation of the greater part of the book appeared in the Journal of the Royal Artillery, December, 1910, and January, 1911.

French Artillery Training Manual (*Provisional*). (Règlement Provisoire de Manœuvre de l'Artillerie de Campagne, 8th September, 1910.) By French Ministry of War. 4 vols. 584 pp. 8vo. Paris, 1910. Lavauzelle 4/-

This new manual differs in form from the previous one (published in 1903, with a new edition in 1907) in so far that there are now four volumes instead of two, and there has been a redistribution of the sections into which it is divided.

In the former edition most of the sections were divided into two portions, one part being in the first volume and the other in the second volume; in the present edition the sections are kept intact, but most of them have several appendices.

The sections as they now stand are as follows:—

Section I.—General principles of instruction.
Section II.—Training for dismounted work.
Section III.—Training for mounted work.
Section IV.—Training for technical artillery work.
Section V.*—Artillery in battle.
Section VI.—Drill and manœuvre.
Section VII.—Artillery in the field (complementary to V.).

The present Volume I. commences with a prefatory note giving the reasons for the production of a new manual; amongst these are the passing of the two years service law of 21st March, 1905, and the Law on the Organization of the Army of 24th July, 1909, also the fact that new considerations in connection with artillery fire and artillery action generally have arisen, based on a better knowledge of the Q.F. gun, now in use in other countries beside France, and on the experiences gained from the study of a great war.

The writing of the manual was entrusted to a committee composed of artillery officers and staff officers of the various arms.

This committee was given a free hand, but was recommended:—

To avoid journalism.
To keep in harmony with the ideas obtaining in the other arms.
To bring out prominently the image of war.
To treat artillery from the point of view of its place as part of the larger mixed units.
To seek for simplicity in procedure and methods of fire.

The considerations which guided the committee in their arrangement of the text and the order of the sections are then referred to, after which an outline is given of the modifications made in each section.

Section I.—The subjects dealt with in this section and its appendices are of a similar character to those which find a place in the introduction and Chapter I. of our Field Artillery Training, 1908.

The principles laid down are generally the same as those of earlier manuals, but an endeavour has been made to bring out more prominently the end to be aimed at in all training, viz.—fitness for war.

Instructions have been added regarding the special training of that portion of the establishment of active batteries which will in time of war go to form the nuclei of what are called "batteries de renforcement," *i.e.*, batteries formed on mobilization, with a personnel composed chiefly of reservists.

The battery is the "training" unit and the responsibility of the battery commander in this connection has been emphasized: the brigade commander supervises and inspects only: drivers are instructed in the duties of ammunition and loading numbers: the use of the whistle has been introduced, and most of the field trumpet calls have been done away with.

In Appendix II, the organization of the artillery of the French Army has been brought up to date. Appendix III is devoted to Inspections and Ceremonial.

Section II.—*Training in dismounted work.*—Physical training is no longer included in this section, a special manual on the subject applicable to all arms having been issued in January, 1910.

An additional paragraph has been added indicating the circumstances in which artillery personnel should make use of their small arms, viz., when they can no longer protect themselves by their guns and are without assistance from the other arms. Firing from the kneeling position has been re-introduced: for the sword the point only is taught and not the cut.

Foot-drill is the same as for the infantry. The two appendices to this section are:—

I.—Description and care of small arms.
II.—The musketry instruction to be given to gunners.

---

* Translated in Part I.

Section III.—*Training in mounted work.*—The changes introduced in this section are in matters of detail only, and aim at rendering the methods of training simpler and more practical.

The appendices to the section deal with the anatomy of the horse, stable management, breaking in of horses, harness, vehicles, various methods of driving, driving competitions, &c.

Section IV.—*Training in technical artillery work.*—This section has been re-written in a new form. As pointed out in the prefatory note, the original regulations were framed mainly for positions in the open or only partially covered positions, where section commanders, if not the Nos. 1, could see the target; but as the tendency to increase the cover and place batteries further from the crest has developed, new methods of obtaining the lines of fire for guns (aiming points, auxiliary marks, reference points, &c.) have from time to time been adopted, and have formed the subject of so many amendments to the original regulations that it was thought that the time had arrived to re-write this section completely.

In doing so the committee kept two main objects in view, viz., to make as few alterations as possible in drill and the service of the gun (on account of the reservists), and to keep quite distinct from each other the work of the subordinate personnel of a battery and that of the battery commander. It is pointed out that it is to be expected that in most cases the subordinate personnel will be called on simply to execute the orders received, without any knowledge of their aim or the results obtained from them. Instructions for the subordinate personnel must be of a definite nature, while those for the battery commander should be of a more general nature, and more in the form of advice and hints as to what his action should be in any particular case.

Such alterations as there are in battery drill are mainly with a view to making it easier for the battery commander to work his battery from a position at some distance from it. The two methods of fire given for general use are "rafales" at one elevation or "le tir progressif" both with or without sweeping.

The idea, sometimes prevalent, that when a battery is under fire the detachments should seek cover and cease firing is discouraged; this should only be done by order of the battery commander, and for a special purpose.

The instructions for the duty of the battery commander are designed with a view to guiding him in the solution of the various problems that will be presented to him; they contain little in the nature of definite rules. The duties of the battery commander are dealt with in the order in which he carries them out, commencing with reconnaissance of the position.

Questions incident to fire from under cover in connection with the clearing of the crest are fully gone into.

An endeavour has been made in dealing with matters like parallelism, displacement, &c., to avoid theory as much as possible, and to give the information which officers and non-commissioned officers must have on these points in as practical and easy a form as possible. Mention is made in the prefatory note that one of the points which gave rise to most discussion was the searching of dead ground by raising the height of the bursts in the trajectory. This method is found to be rather less satisfactory in practice than in theory, and it has its limits.

In "tir progressif" when rapidity of fire is the main essential (a fleeting target of comparatively little depth), the bracket to be obtained has been increased from 200 to 400 metres.

Examples of ranging and the method of firing a series are no longer given, since doing so encouraged a tendency to follow too closely, in every case that presented itself, one of the examples given.

On the other hand, each nature of artillery target is dealt with separately, and general indications given of the nature and method of fire most suitable for engaging each of them. The special characteristics of high explosive shell have been taken into account.

These indications emphasize the general principle that the comparative importance of accuracy and rapidity of fire depends on the nature of the target, the effect desired to be obtained, and whether the opportunity is a fleeting one or not.

The general trend of the alterations in this section indicates a more extended use of fully covered positions. The prefatory note dealing with this section and the section itself will be of considerable interest to artillery officers.

Section V.*—*Artillery in Battle.*—This is a new section, dealing with subjects which were chiefly included in the section headed "Service de l'Artillerie en campagne" in the previous edition.

Mention is made in the prefatory note that the principles for the employment of artillery in the fight have not changed generally, but that it has been thought desirable to bring out more clearly how they are arrived at, and specially to emphasize some of them, fixed and rigid rules being as far as possible avoided.

Section VI.—*Drill and Manœuvre.*—An endeavour has been made to simplify all drill, and to eliminate movements which would serve no useful purpose in war. Certain instructions which were considered of rather too precise and rigid a nature have been omitted, but it is pointed out that there is no intention to reduce the importance of correct drill and good discipline. The training of batteries must on no account be confined to the drill ground, but must be carried out in the open country as much as possible.

Of the methods of coming into action "Action right (or left)" is given precedence as that most usually to be employed, especially in concealed or partially concealed positions. "Action Front (or Rear)" is considered more suitable for positions in the open.

* Translated in Part I.

A battery is organized in three lines, the first line called "La Batterie de Tir" consists of 4 guns and 6 wagons, the second line called the "Echelon de Combat" consists of 6 wagons, the third line, called the "train regimentaire" consists of baggage and supply wagons. The first two lines together make up the "Batterie de Combat." Although the instructions for the actual movements of batteries are less full than before, they have been amplified as regards various matters connected with the bringing of batteries into action, such as reconnaissance of positions, transmission of orders, &c. Units larger than a brigade are dealt with in a general manner only, because, once brigades have received their orders, they must necessarily act more or less independently, but at the same time brigade commanders are to remember that in future when they become engaged they will generally do so in accordance with the orders received from the officer commanding the larger unit of which their brigades form part, and not on their own initiative.

Section VII.—*Service of Artillery in the Field.*—This section deals with orders, marches, camps, bivouacs, sanitary services in the field, and the system of supply and replenishment of ammunition in the field. There is nothing new in it of particular importance.

Returns and reports, flags and lanterns, shelters, field kitchens, &c., are dealt with in the three appendices to the section.

Details of Various Systems of Artillery. (Monographies de Systèmes d'artillerie.) By Captain Pétry. 70 pp. 8vo. Brussels, 1910. Polenius. 1/8.

This book contains useful data regarding the types of guns belonging to certain Powers, with some notes as to the effect of the various kinds of projectiles. The author deals with Belgian, French and German field artillery and light howitzers; with the heavy field and siege artillery of France and Germany; with Belgian fortress artillery, both light and heavy; with British naval guns and Belgian coast defence artillery. The information is arranged in tabular form, giving the details of the different guns in parallel columns, thus greatly facilitating comparison between them. Explanatory notes are also provided to amplify this information.

Mountain Artillery. (Gebirgs und Kolonialartillerie). By General R. Wille. 161 pp. with numerous illustrations. 8vo. Berlin, 1910. Eisenschmidt. 15/-.

In this technical work mountain artillery equipments constructed by Germany and other nations are fully described.

BOOKS OF REFERENCE.

Book of Reference on Military Literature. (Quellenkunde der Kriegswissenschaften). By Captain v. Scharfenort, Professor and Librarian at the War Academy. 4to. Berlin, 1910. Mittler. 35/-.

This encyclopedia enables the reader to see at a glance what works have been published, and what articles have been written on any military subject.

The subjects are not arranged in alphabetical order, but are grouped under certain general headings which are again subdivided into minor headings.

The chief headings are :—

I.—Warfare. The command of an army and of troops.
II.—The history of the armies of certain countries.
III.—Biographies and memoirs.
IV.—Military history.

In addition there is a table of contents of the articles which have appeared in the Militär-Wochenblatt and in the German G.S. Quarterly.

This book appears useful for purposes of research.

CAVALRY.

"Riding Instructions." (Reitunterricht). By General v. Gersdorff. 69 pp. 8vo. Berlin, 1911. Vossische Buchhandlung. -/10.

The author states in the preface that this book has been written with the assistance of skilled instructors of the Military Riding School at Hanover.

Its purpose is to teach young officers how to impart instruction in riding and to be of assistance to non-commissioned officers when breaking in young remounts.

Cavalry Reconnaissance. By Colonel W. W. Norman, 22nd Cavalry, Indian Army. 210pp. 12mo. London, 1911. Hugh Rees. 3/6.

This is an excellent little work that should prove of use to any officer. The author deals with reconnaissance in war on broad lines, based on the principles laid down in Cavalry Training, 1907.

Except for an example of an instructive scouting scheme, peace training in reconnaissance duties is not dealt with. The book is particularly interesting in view of the large number of historical examples and anecdotes which the author aptly quotes. In addition to reconnaissance a chapter is included on advanced, flank, and rear guards, and outposts.

Part I. Cavalry Tactics as illustrated by the War of the Rebellion, By Captain Alonzo Gray, 14th U.S. Cavalry. 187 pp. 8vo. Fort Leavenworth, Kansas, 1910. U.S. Cavalry Association. 5/9.

At first sight this book may appear dry reading—comprising as it does a number of tabulated extracts from official reports and despatches with marginal notes. When gone into, however, it is most interesting. The author has collected a large number of examples from the American Civil War to illustrate various points connected with

the armament, leading tactics, equipment, &c., of cavalry in the field. Each point is dealt with separately, and at the end of the extracts he has collected the author gives his own comments.

The book is worth study by officers of mounted corps.

FORTIFICATION AND MILITARY ENGINEERING.

Instructions for the Attack and Defence of Fortresses. (Anleitung für den Kamp um Festungen). Official. 95 pp. with two sketches. 12mo. Berlin, 1910. Mittler. 10d.

These instructions have been issued to enable officers to study the principles of fortress warfare, and to ensure that the troops are thoroughly trained in peace in the duties required of them in war in the attack and defence of fortresses.

In the short introduction to the book, it is stated that commanders must always bear in mind that a spirit of bold offensive is the best guarantee for success, not only in the attack, but also in the defence.

The first portion of the "Instructions" deals with the attack of the fortress. Here the absolute necessity for the most intimate co-operation of all arms is mentioned again and again. It is pointed out that the infantry is incapable of making any progress or of reaching the final stages of the attack without the closest support of the artillery, and that, in the final stages, the assistance of the engineers alone will render it possible for the infantry to gain a footing in the enemy's final position.

As regards the artillery, care is to be taken that the guns of the attack do not engage in battle unless they are superior in number and calibre to those of the enemy and have sufficient ammunition to carry on the contest.

In the second portion of the book, which deals with the defence of fortresses the "Instructions" show how advanced positions are likely to play a more important rôle than hitherto. The increased range of modern guns will enable the defender to offer a more protracted resistance in his advanced positions, provided the latter are situated within effective range of his main position.

The final decision, according to the "Instructions" is to be sought for in the defender's main position, in contra-distinction to the French "Instructions" which state that, in the final stages, the troops should retire from their main position, and should await the assault in a position still further back called *la position de soutien.*

Both in the attack and in the defence the German "Instructions" deal fully with the latest developments of technique likely to be of special importance in fortress warfare, such as wireless telegraphy, airships, aeroplanes, motors, &c.

The Amsterdam Position. (De Stelling van Amsterdam). By Van Dam van Isselt. 220 pp. with one map. 8vo. Utrecht, 1910. Bruna and Zoon. 4/-.

This is the 2nd edition of a work which deals with the defences of Amsterdam. Chapter V is new. In this chapter are discussed the best methods of defending Amsterdam, and also the preparations for defence which should be carried out in peace.

Siege Warfare. (La Guerra d'Assedio). By Lieut.-Col. Sachero. 162 pp. 8vo. Turin, 1909. Olivero. 4/-.

This study of siege warfare is an epitome of the lectures delivered by Colonel Sachero on this subject at the Italian Staff College. The book is divided into three parts. Part I is historical, and traces the development of all classes of fortification from the beginning of the century to the siege of Port Arthur. In Part II the offensive and defensive weapons used in siege warfare are discussed from a technical point of view. In Part III the systematic progress of a siege is discussed clearly and in considerable detail. An appendix contains a useful list of the latest works on the subject in French, German, and Italian.

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* Part II., Section II. (Notices of Magazine Articles) is not reproduced in the Journal, as the Articles have already appeared in "Contents of Foreign Periodicals."

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" C. E. Lea, Worcestershire Regiment.
" M. R. Walsh, Worcestershire Regiment.
" W. A. I. Kay, King's Royal Rifle Corps.
Capt. E. A. Bradford, King's Royal Rifle Corps.
" E. L. Makin, Wiltshire Regiment.
" G. R. Leman, North Staffordshire Regiment.
" C. M. Gibbon, Royal Irish Fusiliers.
Lieut. Hon. M. A. Wingfield, Rifle Brigade.
Capt. S. F. Muspratt 12th Cavalry (Indian Army).
" V. E. Gwyer, 10th Jats (Indian Army).
" W. S. Leslie, 31st Punjabis (Indian Army).

Nominations:

Capt. A. Hinde, Royal Field Artillery.
" F. M. C. Trench, Royal Field Artillery.
" R. H. Kearsley, 5th Dragoon Guards.
" C. F. Watson, D.S.O., Royal West Surrey Regiment.
" W. Northey, D.S.O., Durham Light Infantry.
Capt. and Brevet Maj. Hon. R. A. Campbell, Cameron Highlanders.
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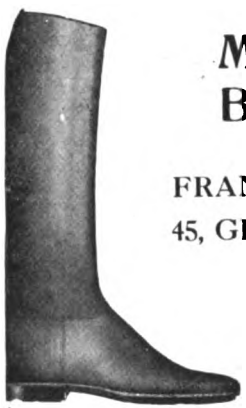
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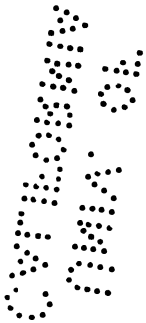
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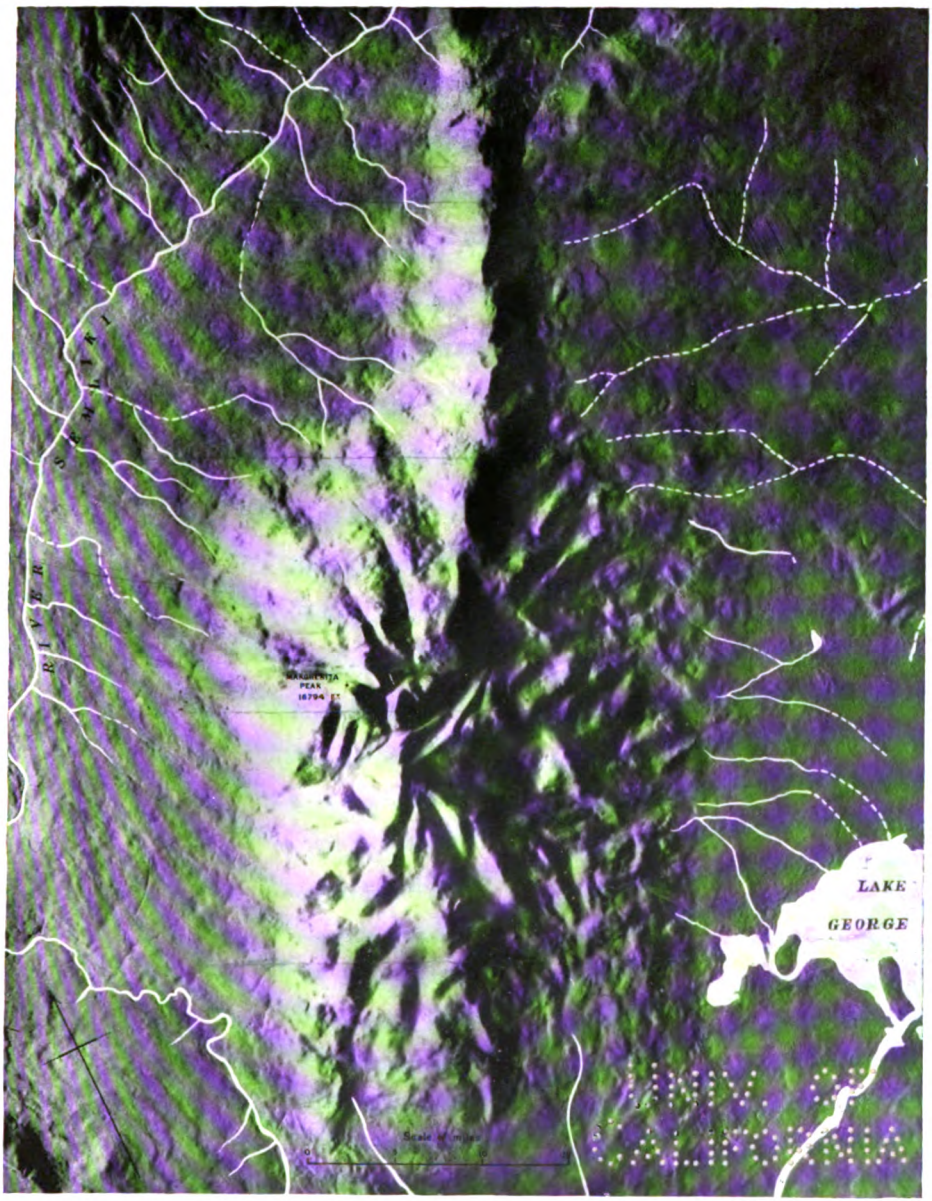
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OF THE

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VOL. LV. MAY, 1911. No. 899.

[Authors alone are responsible for the contents of their respective Papers.]

SECRETARY'S NOTES.

I. NEW MEMBERS.

The following Officers joined the Institution during the month of April:—

Captain R. J. Armes, North Staffordshire Regiment.
Lieutenant T. H. P. Morris, Rifle Brigade.
Lieutenant N. R. Fergusson, R.N.
Second-Lieutenant P. W. W. Foster, 1st Life Guards.
Second-Lieutenant T. L. C. Curtis, Coldstream Guards.
Captain G. C. Darwall, 3rd Bn. Northamptonshire Regiment.
Captain G. L. Raikes, R.M.A.
Lieutenant-Colonel F. F. W. Daniell, York and Lancaster Regiment.
Lieutenant H. H. Wright, A.S.C.
Major W. B. Emery, R.F.A.
Surgeon Major-General H. J. Paterson, late A.M.S.
Captain T. T. C. Purland, Cape Colonial Forces.
Commander G. Trewby, R.N.
Lieutenant-Colonel D. J. M. Fasson, R.F.A.
Lieutenant W. Cadman, R.N.
Paymaster E. G. Mardon, R.N.V.R.
Lieutenant J. M. Blair, Royal Highlanders.
Captain E. C. de R. Martin, Indian Army.
Major T. S. H. Wade, Lancashire Fusiliers.
Lieutenant R. A. Scott, West Riding Regiment.
Captain H. S. Montgomerie, 9th Bn. Middlesex Regiment.
Second-Lieutenant H. V. Leigh, 5th Bn. Welsh Regiment.

II.—ADDITIONS TO THE MUSEUM.

(6315) Frame containing 48 caricatures in colours executed in France about 1858 of the various Uniforms of the Armies of the World.—*Given by Lieut.-Colonel W. H. M. Jackson, late 81st Regiment.*

(6316) Embroidered Collar, Cuffs and tail pieces of Coatee of the Royal Westminster Regiment of Middlesex Militia, 1853.—*Given by Colonel C. Haggard, late Royal Irish Rifles.*

(6317) A French Heavy Cavalry Sword with straight blade and brass hilt, marked "Imperial du Klingenthal, Novembre, 1811," length 44 inches. Klingenthal (Valley of Sword Blades) is in Saxony, Napoleon I. obtained swords from this district.—*Given by Lieut.-Colonel W. H. M. Jackson, late 81st Regiment.*

(6318) Four prints in colours from pictures painted by Major T. St. Clair and engraved by C. Turner, published in 1812 by Colnaghi, entitled:—

(1) The fording of the River Mondego by the Allied Army on September 21st, 1810.
(2) Badajoz during the siege of 1811.
(3) The Serro de Busacco, September 27th, 1810, showing the 88th British and 8th Portuguese Regiments engaging the French.
(4) Serro de Estrello on de Neve, the march of the baggage following the Army, May 16th, 1811.

(6322) Piece of a Timber of S.S. Beaver, the first Steamer to double Cape Horn and ply the waters of the Pacific. Built at Blackwall, 1834, wrecked off Thurlow Island, British Columbia, 1888.—*Given by Mrs. Mellon of Vancouver, B.C.*

(6323) Marble Inkstand of early 19th Century make, the centre glass bears the name "Nelson" with the date of his birth and death, and the Admiralty badge; on one ink bottle is engraved the Arms of the City of London with the word "Egypt"; on the other, a crest (unknown) and the word "Trafalgar."—*Given by Royle F. Bristowe, Esq.*

(6324) Officer's belt plate of the 81st Regiment of about 1840-50.—*Given by Mrs. D. E. Browne.*

III.—LECTURES.

Members desiring to deliver lectures in the Theatre or contribute papers in the Journal are requested to submit them for the perusal of the Council, through the Secretary. The Council specially hope that they may receive the offer of lectures on Naval Subjects.

IV.—GOLD MEDAL ESSAY: Subject.

The Council invite suggestions from members for the subject of the 1912 Naval Essay. They should be submitted before October, since the Council will decide on the subject in that month.

V.—CORONATION SEATS.

No further applications can be received for the Coronation and Royal Progress Seats, or for the exchange of same, after May 31st next. The tickets will be sent to the successful Members as soon as possible after they are received from H.M. Office of Works.

VI—CORONATION—TIME OF OPENING.

The Institution will be open to Members only on June 22nd at 7.30 a.m.

On June 23rd to Members only at 9 a.m.

The entrance on both days will be at the back of the Theatre in Whitehall Gardens

PRINCIPAL ADDITIONS TO LIBRARY DURING APRIL, 1911.

Militär-geographische Skizzen von den Kriegsschau-plätzen Europas. By W. STAVENHAGEN. 8vo. 3s. 3d. (Hermann Peters.) Berlin, 1898.

Petites opérations de la Guerre d'après l'expérience des Campagnes d'un Siècle. By Capt. C. BRIDE. 8vo. 4s. 10d. (R. Chapelot et Cie.) Paris, 1899.

Royal Naval Officers Manual, 1910. By Lieut. H. D. CAPPER, R.N. 8vo. 1s. (Presented.) Portsmouth, 1910.

Colonel Henry Bouquet, 60th Royal Americans, 1756-1763. By Lt.-Genl. Sir E. T. H. HUTTON. 8vo. (Presented.) (Warren and Son, Ltd.) Winchester, 1911.

Changes in Training and Infantry Formations. By Captain Sir T. A. A. M. CUNINGHAME, Bt, D.S.O., Rifle Brigade. (Military Society of Ireland.) Crown 8vo. 6d. 1911.

William Pitt and National Revival. By J. HOLLAND ROSE. 8vo. 16s. (G. Bell and Sons, Ltd.) London, 1911.

Somaliland. By ANGUS HAMILTON. 8vo. 12s. 6d. (Hutchinson and Co.) London, 1911.

A brief History of the 13th Regiment (P.A.L.I.), in South Africa during the Transvaal and Zulu Difficulties, 1877-8-9. By EDWARD D. MCTOY, Crown 8vo. 7s. 6d. (A. H. Swiss.) Devonport, 1880.

English-Turkish and Turkish-English Dictionary. By J. W. REDHOUSE. 8vo. (Presented). (Bernard Quaritch.) London, 1880.

Tactics. By Colonel BALCK. Translated by 1st Lt. W. Krueger, U.S.A. 8vo. 12s. 6d. (Presented.) (U. S. Cavalry Assn.) Fort Leavenworth. Kansas, 1911.

XIII. Hussars. South African War, October, 1899—October, 1903. Crown 8vo. (Presented.) (May and Co.) Aldershot, n.d.

The Clipper Ship Era, 1843-1869. By ARTHUR H. CLARK. 8vo. 7s. 6d. (G. P. Putnam's Sons.) New York, 1911.

Burmese Self-taught. By R. F. St. A. St. JOHN. Crown 8vo. 6s. (Presented.) (E. Marlborough and Co.) London, 1911.

Tropics and Snows—A Record of Travel and Adventure. By Captain R. G. BURTON. 8vo. 12s. (Edward Arnold.) London, 1898.

Sketches in the Crimea, taken during the late War. By Major C. H. OWEN, R.A. Oblong folio. (Presented.) (Paul and Dominic Colnaghi.) London, 1856.

Operation Orders—A Technical Study. By Captain HANS VON KIESLING. Translated by the General Staff, War Office. 8vo. 1s. 6d. (Harrison and Sons.) London, 1910.

Artillery in Co-operation with other Arms. By Major C. E. D. BUDWORTH, M.V.O., R.H.A. (Aldershot Military Society.) Crown 8vo. 6d. (Hugh Rees, Ltd.) London, 1910.

Royal Engineers in Co-operation with other Arms. By Brig.-Genl. F. C. HEATH, C.B. (Aldershot Military Society.) Crown 8vo. 6d. (Hugh Rees, Ltd.) London, 1911.

Mounted Troops in Co-operation with other Arms. By Colonel H. de B. DE LISLE, C.B., D.S.O. (Aldershot Military Society.) Crown 8vo. 6d. (Hugh Rees, Ltd.) London, 1911.

Fire Action. By Lieut.-Colonel J. CAMPBELL, D.S.O. (Aldershot Military Society.) Crown 8vo. 6d. (Hugh Rees, Ltd.) London, 1911.

Almanach der Militär-Literatur. By Oberlieutenant OTTO LIMAN. 2 vols. Crown 8vo. 7s. 3d. (F. Englemann.) Leipzig, 1909-10.

D Problems in Military Engineering, Tactics, Map-Reading, Field Sketching and Reconnaissance. Set at recent Examinations for Lieutenants and Captains with Original Solutions, Notes and Examiners' Remarks. Edited by Major G. W. REDWAY. 4to. (Presented.) (Samuel Sidders and Co.) London, 1911.

Gambetta par Gambetta—Lettres intimes et Souvenirs de famille. Publiés par P. B. GHENSI. Crown 8vo. 2s. 8d. (Paul Ollendorff.) Paris, 1909.

Handbuch für Heer und Flotte. By Lieut-Genl. G. VON ALTEN. 3 vols. 8vo. 69s. 9d. (Boreg and Co.) Berlin, 1909-11.

The Croker Papers—The Correspondence and Diaries of the late Rt. Hon. John Wilson Croker, LL.D., F.R.S., Secretary to the Admiralty from 1809 to 1830. Edited by LOUIS J. JENNINGS. 3 vols. 8vo. (Presented.) (John Murray.) London, 1874.

The Greville Memoirs—A Journal of the Reigns of King George IV. and King William IV. By the late CHARLES C. F. GREVILLE. Edited by HENRY REEVE. 3 vols. 8vo. (Presented.) (Longmans, Green and Co.) London, 1874.

Story of the Russo-Turkish War (In Europe) 1877-78. By Lieut.-Col. H. M. E. BRUNKER. 8vo. (Presented.) (Forster, Groom and Co., Ltd.) London, 1911.

Speeches on the Operations of the French War to the Peace of Amiens. By the Rt. Hon. WILLIAM PITT. Crown 8vo. 1s. (J. M. Dent and Co.) London, n.d.

SECOND PRIZE ESSAY.

Subject:

"HOW CAN THE COLONIES BEST HELP IN THE NAVAL DEFENCE OF THE BRITISH EMPIRE?"

By Lieutenant L. H. HORDERN, R.N. (Retired).
Gold Medallist, Royal United Service Institution, 1901.

Motto:—"DIVIDE ET IMPERA."

SYNOPSIS.

I. The Problem.
(a) *General Considerations.* (b) *Dual Aspect.* (c) *The Admiralty Memorandum.* (d) *Its Result.* (e) *The Need for Reconsideration.*

II. The Alternatives.
(f) *Centrifugal Tendencies.* (g) *Five Separate Navies.* (h) *A Joint Navy with some Separate Fleets.* (j) *Need for An Imperial Fleet.*

III. The Solution.
(k) *Decentralisation.* (l) *Application to Existing Conditions.* (m) *Constitution of Central and Local Authorities.* (n) *Division of Duties.* (o) *The System at Work.* (p) *Summary.*

I. THE PROBLEM

(A) GENERAL CONSIDERATIONS

The word "Colonies" in the heading is presumably used in its older sense, and is intended to exclude India and the various dependencies, but to include all the self-governing portions of the Empire which are now officially known as Dominions, but which form in reality separate portions of the Empire, and may be called, perhaps with greater truth, nations. Kipling's term, "The Five Nations," more correctly expresses the relation between the British Islands, Canada, Australia, New Zealand, and South Africa, than any other, and if we would devise a scheme by which these parts of the Empire may best help in its defence by sea, it is necessary to keep this relationship in mind. Much of the difficulty which has been experienced in devising any practical scheme hitherto, much of the failure to obtain any effective help from the other parts of the Empire has been due, in fact, to the use, in word or thought, of the term "Colonies." Round it centres the idea of what has been called the "hen and chicken" policy, by which the mother country stands apart,

and settles the external affairs of "her colonies," defends them against outside dangers, and expects them to trust her implicitly to do the right thing at all times.

Probably the last stronghold of this old idea will be found in the Navy, and this is not surprising. A profession which claims so much of the time and thought of its officers, which has for so long held the premier position amongst the sea forces of the world, and which has no concern with party, is scarcely so open to new political ideas as others which have not so great a tradition. For many hundreds of years the British Navy has been able to obtain command of the sea in nearly every struggle in which the country has been engaged, while even the loss of such command locally has scarcely ever been more than temporary, and has seldom affected the issue of the war, though it may be noted that the loss of the American Colonies was directly attributable to this cause. In such circumstances there would naturally be a feeling of self-reliance, almost of self-sufficingness, or conviction that no other help was needed, an idea that, if the British Navy was not strong enough to do the work alone, other parts desiring to help could best do so by paying something to increase its strength. On every principle of strategy this conviction is right. It is impossible to contend that as good a result can be obtained by separate navies under the direction of five separate and distinct Admiralties as by a single Navy under one control.

But although the principle of a single Navy is correct, the "hen and chicken" policy is doomed, and unless this is recognized in the Navy, the inefficient system of separate fleets is unavoidable. How to reconcile these two conflicting views is the problem on the solution of which, it is not too much to say, depends the continuance of the British Empire, and therefore no greater subject could be set for the Naval Prize Essay. nor one more peculiarly adapted to the position which is held by the Royal United Service Institution, or to the circumstances of the time.

(B) DUAL ASPECT

From the above, it will be realized at once that the question has two sides, the political and the technical, and that neither can be isolated from the other if a true solution is to be found. It will be advisable therefore to consider the subject in some detail from these two points of view, and as the political side is that which has necessarily received less attention from the Admiralty, it will be well to commence with it.

The common notion, which looks upon the four self-governing Dominions as children, is only true in the sense in which every mother considers her son a child as long as she lives. Their actual position is much more that of sons at the universities as compared with their parent. Canada would be repre-

sented by one who is on the point of leaving, Australia as having been up for two years or so, South Africa as having lately joined, and New Zealand as having just left the public school. In the same way as in a family the temperaments of the sons differ, so it would not be difficult to give their different characteristics to each of the Dominions. This, however, is unnecessary, the essential point to bear in mind being that the young nations differ between themselves, and from the mother country quite as much as their prototypes. This rough simile may be carried yet a little further, for each of these young men has a separate income, and is quite as well off as the parent, considering that the latter has a much larger establishment to maintain. Now, politically, the problem is whether, as the sons leave the University, they will set up for themselves independently of their parent altogether, or whether, notwithstanding that they have separate incomes, and intend to maintain separate establishments, they will take part in the family business. Clearly, the attitude adopted by the parent will influence the position to a very considerable extent. If he merely tenders his sons advice on business methods, or suggests giving them subordinate positions, purposing to retain indefinitely the sole direction in his own hands, he is not likely to obtain their help for longer than it takes them to find something better. If, on the other hand, he offers them a share in the management, and thus gives them a definite position, he is likely to keep them in the business. But he cannot do this without giving up something of his old status. He cannot continue to have entirely his own way. New methods will be introduced into the old business, which will cause him some uneasiness, and perhaps dismay, and he must face this or see new firms set up, which, though friendly, will not strengthen his or the family's position amongst competitors.

Leaving our parable, it seems unreasonable to expect that the Dominions, whose population, in little more than a generation, will collectively equal that of the United Kingdom, will be content to be ignored in the policy of the Empire or in the administration of any common defensive force. If we fail to realize this, it is inevitable that their dissatisfaction will take the form of framing their own policies and instituting their own independent forces. Indeed, this has already begun. The argument that Canada, for instance, cannot have a foreign policy of her own, without a sufficient force to protect herself will not hold water. If she gets into conflict with some other Power in consequence of taking a line of her own, and we refuse our aid, we settle the political problem we have been considering, in a way adverse to our wishes. If we join her in the struggle, we also settle it by admitting not merely that Canada has a voice in the policy of the Empire, but the controlling voice. It is not suggested here that Canada or any

other Dominion would act in this way, but the unexpected has an unfortunate habit of happening, and it is not advisable to leave matters in such a state that we may be taken by surprise. There is no question of the loyalty of the Dominions to the Empire, but we must not conclude from this that they consider the United Kingdom as the Empire. It is the whole of us collectively to whom alone the title can properly be applied, and therefore, when it comes to questions of policy or the provision and administration of defence, it is the Empire collectively which is concerned, and not the United Kingdom alone.

Politically we are not organized as an Empire, and there is no precedent on which we can so organize ourselves, but one thing is absolutely certain—we shall never achieve unity along the lines of the old Empires; we shall never form a British Empire based on the supremacy of the United Kingdom. There is no basis on which we can all hold together except that of equality, and the longer we blind ourselves by imagining other possibilities, the further off do we place our goal. Indeed, the word "Empire" is as mistaken as the word "Colonies." What we may come to is much more in the nature of a Commonwealth than an Empire, but a Commonwealth with a king as its central point. We have, then, to form our own precedent, and may do so in regard to defence as well as in any other way. Thus, if we could solve the question of organization in regard to Naval Defence, it might form a precedent, and indicate the lines on which it may be possible to build up a political organization in the future. The subject is, therefore, well worth the attention not merely of Naval Officers or of a subsidiary conference, but of statesmen of the highest rank, if any can be found able to detach themselves from party politics for a sufficient period to study the subject. Indeed, it is much more a question for statesmen than for others.

Assuming that Naval Officers were able, in connection with those in the Dominions who are anxious to have some share in the Naval Defence of the Empire, to devise a scheme whereby all parts had a fair and reasonable voice in the control of a common Navy, the question would still be unsolved. There would still remain the question of when that Navy should be used. That is to say, it would still be necessary to provide that the other parts of the Empire had an equally fair and reasonable method of expressing their opinion as to its foreign policy. This is required, whether there be a single Navy or five, and it is independent of the technical side of Naval Defence because of this. So far, indeed, is it independent that we must assume it to be outside the scope of our enquiry, and as merely to be mentioned as the boundary on one side of it. An "Imperial Committee of Foreign Affairs," has been suggested, an Imperial Council has been in the air for some time, and lately there has been a good deal of talk of a Federal Parliament.

We have, then, merely to deal on the political side with the administration and control of a single navy, or, if that should prove impracticable, with some scheme for co-ordinating the administration and control of five separate navies, making provision for their effective co-operation in the event of war. If there is to be a single Navy, it must somehow be jointly administered, but this problem is simplified if there are five, for there would necessarily be five separate admiralties. But we shall see presently that this simplification on the administrative side means both political and technical complication, and we shall have to ascertain what is the line of least resistance before we can devise a working scheme.

(c) THE ADMIRALTY MEMORANDUM

At the subsidiary conference on Defence, held in July and August, 1909, the Admiralty suggested that a Dominion which wished to assist in the Naval defence of the Empire should form a "Fleet Unit," the composition of which they laid down, and they assumed that in the event of war these "units" would be placed under the general direction of the Admiralty. The alternative suggested was a contribution in money or *matériel* to the British Navy. Only one of the four Dominions, Australia, fell in, even partially, with the first suggestion. New Zealand elected to continue to contribute to the British Navy, Canada to start a Navy of her own on different lines from those suggested, and South Africa to wait until after the Union of her Colonies was completed. It can hardly be said, therefore, that the Admiralty scheme was quite successful, and it may help us in our enquiry to consider why this was so.

In the first place, the Admiralty memorandum was not sent to the Governments of the Dominions beforehand, and therefore the delegates could have had no instructions with regard to it. In other words, the political difficulty of the question was ignored. The first meeting of the Conference was held on 28th July. The date of the Admiralty memorandum was 20th July, and it recites that statements having been made in Parliament on 16th March, and offers of assistance having been received from the Dominions between 22nd March and 15th April, the Government, on 30th April, invited the various Ministers of Defence to a conference. It seems a pity that the Admiralty memorandum was not prepared and telegraphed in full to each Dominion at the same time as the invitation to attend the Conference. Secondly, it should be noted that there was no offer to make the British Navy into an Imperial Navy by giving the Dominions some share in its administration and control. It was still to remain British, and solely under British control. If the Dominions wished to help, they were only given the choice of forming their own separate fleets or of paying towards the

upkeep of the British Navy. The Admiralty, therefore, was not prepared to act as we expected the parent to do in our parable. The result of this attitude has been as there stated. Whether the position can be retrieved remains to be seen, but undoubtedly the chance of obtaining the best strategical system has been made more difficult. Lastly, the Admiralty assumed that the Dominions would build, man, and train their fleet units exactly as they (the Admiralty) wished, and would place them under their (the Admiralty's) control in war. It is comparatively easy to solve a problem if you assume the difficulty to have been surmounted; unfortunately, however, in this case, the assumptions on which the whole scheme was built have given way.

(D) THE RESULT TO-DAY

The position to-day is, therefore, that there are to be at least three separate fleets under separate control in peace and war, and that whatever the composition, training or administration of these fleets may be, there is no system organized or even proposed by which the needs of the Empire as a whole can be dealt with in regard to Naval Defence, either on the political or the technical side. If there had been, the question we are considering would not have needed an answer.

The method of giving the Dominions a voice in foreign policy has been shown to be outside the scope of our enquiry, and we have, therefore, no need to consider whether or not some or all of them are parties to any war in which the United Kingdom may be engaged. But, on the technical side, we have to deal with the present position, which is that the administration or control of the fleets is settled by each fleet being completely independent of the others, while on the political side some arrangement will have to be come to, if these conditions continue, as to the flag which the fleets of the Dominion are to fly, and in what respect the wishes of the Foreign Office are to be complied with. It is obvious that the presence or absence of a fleet, or even of a single ship at a critical juncture may be either of great use, or extremely inconvenient when conducting negotiations with a foreign Power, provided the Senior Naval officer is under the orders of the nation of which the Foreign Secretary is acting. But it is not easy to see how the officer commanding a fleet or ship belonging to one of the Dominions, whose allegiance is to another Government, which may or may not be in accord with the British Government on this particular issue, is to act or receive instructions. It will be still more difficult for other nations to draw a distinction between the action of the Foreign Minister and that of a captain of a ship of war, which, though belonging to one of the component parts of the Empire, has no official position as regards the Foreign Secretary.

What we have primarily to devise, however, is some system for controlling, during war, such of the fleets as decide to work together, both as regards their responsibilities, the purpose for which they are to be used, the part of the world in which they may be employed, the period for which they are to be so used or employed, and who is to pay for their maintenance, damages, etc. Questions of relative rank and command, discipline, courts martial, pay, prize courts, and generally the applicability of the King's Regulations to the composite force, will also have to be settled beforehand.

On the technical side, we find that each fleet is to train its own officers and men. The services of a certain number of British Naval officers have been engaged by the Dominions to start with, but as time goes on, it is more than probable that their places will be gradually filled by officers from their own navies, and thus the training will by degrees differ. Also it is inevitable that the higher ranks in the local navies will first be filled with British Naval officers, but that there will be a tendency to promote local officers to fill their places as early as possible. Schemes for the interchange of officers between the British and the local navies have been talked of, but, though this may be possible in the junior ranks, it will not be easy to arrange for it in the senior. The wider training possible in the British Navy, and the relative ages of the senior officers, would probably prevent it being carried out. The British Admiralty are hardly likely to accept the decision of Canada or Australia as to the fitness of an officer to command a ship in the British Navy, and to put a younger officer from a Dominion Navy with less training—and that to a large extent of a different character—over the heads of British Naval officers, would undoubtedly cause friction, while it would equally cause dissatisfaction in the officers of the local navies to hold a junior rank in the British Fleet.

Interchange of ships has been suggested as an alternative. This might give the senior naval officers in the Dominions' navies some experience of fleet work, but it would not necessarily qualify them for higher positions in the British Navy, and there is, therefore, likely to be a congestion in the higher ranks in the local navies, with no means of giving employment at sea. However, this difficulty will not occur yet, because for some years to come there will be a dearth of such officers in the local fleets.

Again, when British and Dominion ships are together, the latter containing some seconded British officers, they may, in pursuance of orders from the Dominion Government, have to act in a way to which the Foreign office or the British senior officer may object. These officers will be in a somewhat difficult position, as they will sooner or later have to return to their rank in the British Navy, and they will have to decide, perhaps with-

out instructions, or even with contradictory orders before them, whether to act for the good of the Empire or that of their temporary employers.

It will also be necessary to arrange what ships of the British Navy are to be kept in the various stations. If, for instance, the Admiralty consider six cruisers necessary in Australian waters, for the proper defence of the Empire, and Australia thinks five is sufficient for her to provide, is the British Admiralty to send out one more or six? Without any power to dispose of Australia's five to suit the needs of the Empire as a whole, the Admiralty must either be relieved of all responsibility so far as the Naval Defence of Australia is concerned, or ignore the Australian fleet.

To withdraw the British squadrons from the waters of the Dominions and thus localize the Naval Defence of the Empire, is about the worst possible strategy which could be adopted. It would lead to an enormous waste of money, because it would not enable the British Government to reduce the Navy by a single ship, and a system of separate fleets, each responsible for the defence of a definite part of the Empire would be practically unworkable. A French fleet at Madagascar, for instance, would be a potential threat to Australia, South Africa, New Zealand and eastern waters generally. If each of these portions of the Empire are to be responsible for its own Naval Defence, each would need a Fleet competent to repel such an attack. If the United Kingdom undertakes the responsibility of preventing a hostile French fleet from getting so far it undertakes the whole responsibility of protecting simultaneously Australia, South Africa and the Pacific, and the local navies would never be called upon to act. If, on the other hand, this country does not accept the responsibility and the French Fleet were to get so far, its subsequent proceedings would be of the peculiar province of that part of the Empire which was selected for attack, and as the responsibility for defence would be localized no other part would be in a position to assist. But none of the Dominions are in a position to maintain a naval establishment sufficient to deal with the fleet of a first class Power and therefore it must still devolve upon the United Kingdom to maintain a navy capable of preventing an attack in force upon any part of the Empire.

The same applies to an attack on commerce. The British Navy must be strong enough to protect all the trade routes which are not allocated to the Dominions. No one can tell which part of any trade route an enemy may choose for attack, and, therefore, there must be sufficient cruisers in the British Navy to protect all but those parts which are in Dominion waters. It will need just as many British cruisers to do this and to drive the enemy over the boundary line, as it would to follow them up afterwards, but under a scheme of localization

the enemy having crossed this line would be then taken over by another set of cruisers, and probably lost sight of in the process.

From the technical point of view localization is quite impracticable, and to adopt such a system is to court disaster. The probability is that to make such a system as effective as that of a single navy under one control at least twice as many ships would be needed. In view of the growing cost of armaments and the increasing objection of a considerable portion of the electorate to the expenditure involved, it seems as certain as anything can be that, instead of this, the number of ships would be cut down. It would be argued in the strongest possible terms by such men in each part of the Empire that, as they could rely upon the other parts, it was unnecesssary to have so huge a fleet themselves. To get people holding these views to see the technical side and the strategical weakness of separate fleets would be practically impossible, and they would be the very people to insist most strongly upon tying each separate fleet to its own locality.

The strength at which each fleet should be kept on such a basis is a problem which will be extremely difficult to solve—if it is solvable. The truth is, that there can be no fixed proportion between the number of ships which it is necessary to keep in each part of the world if the command of the sea is to be obtained in war. It is impossible to say whom we shall have to meet, and peace dispositions are altered from time to time to enable the fleet most quickly to get into the proper position for war with the most likely set of possible enemies. It is therefore necessary at one time to have a large force in one part of the world, while a few years hence, in consequence of some turn of the political kaleidoscope, the fleet may be considerably reduced in that part, and strengthened elsewhere. Not long ago we kept our main battle fleet in the Mediterranean, and a strong fleet on the China Station, as well as a good many ships in the East Indies, Pacific, and on the South African and North and South American Stations. Now the main fleet is concentrated in home waters, and the outlying stations have been very much reduced. The political situation having altered, the strategical distribution has had to follow suit. With localized fleets this would be practically impossible. A Dominion might allow some of its ships to be detached in peace, but the outcry which would occur at their absence on the declaration of war would practically oblige their Governments to recall them until the people felt safe from attack, however improbable such an event might be. Thus, at the critical moment, the strategical distribution of the fleet would be liable to be upset. A weak local fleet would impose an added obligation on the British Fleet, for it would be necessary to prevent any stronger enemy attacking it (otherwise the Admiralty would

be accused of not doing its duty), while a strong local fleet might be wasted by being tied to a position when its services were urgently required elsewhere.

(E) THE NEED FOR RECONSIDERATION

Hitherto the British Government have accepted the responsibility for preventing anything but raids on the coasts of the Dominions, and presumably, therefore, we should have had to recoup the Dominions in the event of loss which occurred in consequence of any more serious naval attack. How far this position is altered by the new arrangement of separate fleets is uncertain, but obviously some readjustment will be necessary. If each part of the Empire which owns a fleet accepts responsibility for its own naval defence, it will, as shown above, impose too great a burden on the Dominions, and, therefore, most of the responsibility must still remain in the Admiralty, although the Admiralty will be weakened by a divided control over the ships available.

Canada is anxious to keep out of any possible war with an European country, but she has two other possible enemies, the United States and Japan. The fleet of the United States must inevitably be stronger than any Canada can afford, but, even if this were not the case, the United States holds the interior position, and, when the Panama Canal is available, will be able to concentrate her fleet either in the Pacific or the Atlantic in as many days as it would take Canada months without this facility. Canada, as opposed to the United States, would, therefore, need a fleet more than twice as strong as her enemy. As regards Japan, it would be easier to strengthen Canada's Pacific fleet from the English Channel than from Halifax. Canada's naval position is, therefore, untenable by herself.

Neither can Australia defend herself alone. Her position, as against China or Japan, would require her to have a fleet as large as either of them, and it will be at least a century before she can do this. Her argument has been that her interstate trade being mainly by sea, she needs a fleet to protect it, whereas better railway facilities would be probably more valuable for the purpose. Both Canada and Australia, therefore, so far as regards their naval defence, are absolutely dependent upon the Mother Country, and will remain so, even if they spend ten times as much as they are prepared to do on their navies.

But if it is certain that the United Kingdom will have to take part in any naval war in which any one of the Dominions may be engaged, it by no means follows that the other Dominions with separate fleets will likewise feel obliged to join. Canada may consider that such questions as "White Australia," or some friction between South Africa and Germany over a boundary, do not affect her. Australia may equally be of opinion that a difficulty about the ownership of an island

or a quarrel over killing seals between Canada and the United States are matters of no concern to her. Each of the Dominions concerned will, however, naturally attribute supreme importance to a question which affects itself directly, and may be able so to compromise us as to force us to go to war. Our foreign policy is therefore very seriously affected by the new political situation.

But although both from the political and the technical aspects separate fleets cannot be otherwise than an impossible solution of the difficulty, it must not be taken that the Dominions should take no part in the Naval defence of the Empire nor that their present efforts are to be deprecated. On the contrary, they deserve every encouragement in their awakening to the danger of the naval position. Anyone roused from sleep in a strange room may be pardoned for not realizing quite where he is and for seizing the first weapon to his hand when he thinks a burglar is trying to get in. This is somewhat the present position.

The announcement of the Prime Minister and the Foreign Secretary came as a thunder clap to the Oversea Dominions. They realized all at once that some duty devolved upon them and that some immediate effort was required. We can but admire the promptness with which they acted. The mistake was not theirs, but ours. We had no scheme ready and could only suggest that they should build navies themselves which they should hand over to us in war, or that they should subscribe to our Navy. We had undertaken to defend them, we told them we were beginning to doubt our ability to do so and we have no right to be surprised at the result. Had we said to them—" The Empire needs a larger fleet but we recognise that if you take part in the responsibility you must have a share in the control and we are willing to give it you," there can be little or no doubt that some much more efficient scheme could have been devised. If we were not willing to do this we should not have spoken. Unfortunately, the Admiralty were not prepared to give up anything and without this a more efficient scheme was impossible. So long as we accepted the sole responsibility for the Naval Defence of the Empire at our own expense the Dominions had no claim, though they may have had a moral right, to a voice in the control of naval affairs. But immediately we accepted their offer to join in providing for the need to which we had called attention and so admitted them to a share of the responsibility, from that moment they were fully entitled to take their place in our counsels.

It may be argued that the share the Dominions were prepared to take bore no reasonable proportion to their ability, that their population in the aggregate is about one third of ours, and on the average is as well off. That, as our expenditure on Naval Defence is about forty millions, the Dominions

should have been willing to contribute about thirteen millions per annum between them if they wished to have a voice, and that without this they could not be entitled to it. This argument appears to be going too far. We have to make a commencement in giving them a voice, just as they have to make a beginning in finding the money and sharing in the responsibility, and the fact remains that so far as they are concerned they have made a start while we for our part have made none.

Clearly it was our duty to make the first move as regards giving the Dominions a voice in the control of the Navy, if we wished for a single fleet instead of several. It is for us, and not for them, to make some proposition that will enable them to feel that we do not look upon them as merely a collection of subordinate nations having some common ideal, but that our hope is we may all be bound together as the British Empire, in which all parts are as much concerned in the control of its defence as in the expense of providing it. We cannot do this without making some sacrifice, any more than they can build and man ships without finding the money. If we wish to form the scattered units, of which we are the leader, into an organic whole we shall have to give up the notion that we represent the whole. We have no more right to expect the oversea Dominions to tax themselves to find money for the common defence, without any voice in the policy which calls for it or in the way that money should be spent, than England would have to expect Scotland, Ireland and Wales to contribute to the cost of the Navy without being represented in Parliament. In the latter case no one would propose that a Navy which is responsible for the defence of the British Islands and possessions should be supported by all without such representation.

Nor again can we attribute all the blame for the present position to the Admiralty. They were given a problem to deal with departmentally. No doubt they recognized that no mere share in departmental control would be really sufficient, but it was not their business to do the politicians' work. They had a certain position to deal with and they made their proposal. That this proposal did not recognize a new political situation was not their fault because it was not their business, but that of the politicians who had told the representatives of the United Kingdom assembled in Parliament that a further effort must be made, and had received assurances from the Dominions that they were ready and willing to share in that effort. Instead of realizing that the acceptance of these offers created a new political situation and one which, wisely handled, might have done much to bind the Empire together, the politicians left the solution of the question to a Department which had no possible power to deal with it effectively. We cannot be surprised in the circumstances that the Department followed the lead it had been given and ignored the difficulty.

But whether the Admiralty recognized the position or whether they did not, the fact remains that they made no proposal to meet it, even departmentally, and that in consequence the situation has now become more difficult. To go back to our parable, the parent having failed to offer his sons any position either at headquarters or in the branches of his business which were already established in the suburbs where they lived, two of them have started similar businesses of their own and, these being insufficient to supply the needs of the neighbourhood, it will be necessary for some time to come that they shall exist side by side with the old established branches. This system it is clear cannot continue indefinitely without friction and is already leading to waste of effort, which must at all costs be avoided if the competition of other firms is to be met. The alternatives before the family are now either to close the old branches as soon as the new businesses are in working order, or to amalgamate. It has been shown that the adoption of the first alternative, localization, may prove, both on political and on technical grounds, inconsistent with the maintenance of the Empire as a unit, and therefore that the best system will be amalgamation if this should prove practicable.

We are therefore compelled by our argument to endeavour to discover some method by which the separate fleets of the Empire may be welded into a single Navy, in the working and control of which all contributing portions shall have a voice both in peace and war. We are in either case compelled to leave it to the politicians to discover and arrange that the question of peace or war in any crisis shall be settled on each occasion in conformity with the wishes of all the partners. We can only hope they will achieve this organization and in the meantime assume they have done so.

II. THE ALTERNATIVES.

(F) CENTRIFUGAL TENDENCIES

In conducting an enquiry into the possibility of amalgamating the separate fleets of the Empire into a single fleet under joint control, we have to realize it is most unlikely that those parts of the Empire which have just started new organizations will be willing to give up the experiment for some time to come. We must realize also that we have no power to compel, nor right to ask them to do so. Whatever is done in this direction must be with their willing assent. There must be some offer put before them, some scheme devised which can be grafted on to their new systems, at present in embryo, and will thus enable them, if they wish, to join us in an Imperial Navy, while the offer must also be open to those Dominions which have not yet followed them. Indeed it is possible that the fact of there being these others may prove the

salvation of the Empire and if so it will be New Zealand we have to thank. For, with every inducement to take what we have argued are wrong lines, New Zealand has remained true to her instinct that the maintenance of the Empire depends on the retention of a single Navy. South Africa will soon have to choose which line she will adopt. Should she follow Canada —and in many ways the national characteristics of the two are similar, both being dual in national origin—it will be extremely difficult to return to a single Navy. Much, then, depends on South Africa, and it is imperative that some scheme should be officially put forward which may appeal to her before she has to make the choice.

Before we can hope to make any progress in this direction, we must enquire what are the underlying motives which have impelled Australia and Canada to establish separate fleets, when to do so is so dangerous to the unity of the Empire. There can be no possible doubt of the loyalty of either of them, indeed in this respect they have set us many an example which we should do well to follow. It may be said that personal influences have had much weight, but it may fairly be replied that however strong these may have been, however ably the case may have been stated, and however hard individuals may have worked to carry through schemes which no doubt they honestly believed to be the best for their countries, they could not possibly have succeeded unless they had been able to understand and to take advantage of the forces at work around them.

There is one word which in a great measure sums up these forces, "Autonomy." It is a word which bears a somewhat elastic interpretation, because self-law or self-rule may entirely ignore the existence of friends or relations. In the sphere of government, it may connote anything between independence in local affairs and complete sovereignty. There is no doubt that its use conveys different meanings to different minds and it is therefore frequently on the lips of those who desire to be all things to all men. A single fleet may be said to be inconsistent with the "autonomy" of a Dominion by those who wish to establish separate fleets; but, if the wider definition is attached to it without any qualification, so would be any connection with the Empire. For instance, even if each of the five nations had an equal voice in any common matter, any one of them would be liable to be outvoted and in that sense would not be "autonomous." "Autonomy," in this sense is clearly inconsistent with the maintenance of the Empire, and its use would therefore appeal to the few who desire separation. In its application to the self-governing portions of the Empire it has been generally understood as referring to independence in local government, and when a separate fleet is advocated as the only course consistent with "autonomy" a vague fear

is set up in the minds of those who attach this meaning to the word that, somehow or another such a course would enable them to keep clear of quarrels in which they have no voice, or that perhaps, it is necessary to avoid interference in their local affairs and, possibly, some form of taxation by outsiders. The word could be used, therefore, with advantage by those who desired separate fleets in order to influence in favour of their scheme persons who held all sorts of views as to its signification.

Those who really desire separation, even at a future time, are in a minority in any Dominion, but those who fear interference with their right to manage their own affairs either directly or indirectly, form a very large number. Unconsciously they desire to remain in the Empire and outside it at the same time, and this applies quite as much to the United Kingdom as to any of the Dominions. There are many in these Islands —possibly the majority—who fear that, by giving the other parts of the Empire a voice in its conduct, we shall lose the control of foreign policy and shall introduce a disturbing element into our relations with India and the Dependencies. We cannot, therefore, blame those in the Dominions who fear they may become involved in a heavy expenditure on warlike preparations if they join in any common system of defence. They see how very large a proportion of our revenue is expended in this way and they are not prepared to follow. Far Eastern or Near Eastern questions or the balance of power in Europe do not appeal to them, and they do not want to have anything to do with them. They look upon these questions as outside their sphere, and as purely a matter which concerns the United Kingdom.

There are also in the Dominions, as well as in the United Kingdom, those who, looking upon warfare as wrong and unnecessary, consider that preparation for defence incites to war. The curious thing about these people is that they should have so much confidence in the goodwill of foreigners when they are so little prepared to trust their own countrymen that they willingly maintain a police force. If the constabulary are necessary to guard their homes against the enterprising burglar of their own nationality it is difficult to see why they should imagine that a navy adequate to cope with the foreign housebreaker is not required. The only possible answer to this is that they consider the Government which is elected by their own countrymen to direct their foreign policy is burglariously inclined. Yet these are the very people who urge that drastic measures should be taken whenever their sympathies are aroused on behalf of some section of a foreign community! Clearly therefore any suggestions which involve a policy of common defence must not only be such as to reassure the other parts of the Empire with regard to their expenditure but must include pro-

vision for a common foreign policy. It must be made quite clear to them that their expenditure is, and will, remain under their own control and that our foreign policy is peaceful. At the same time they must realise that as they enjoy the advantage of belonging to the Empire, they have certain duties and certain obligations, one of which, at all events, is to join in protecting not merely their own country but the Empire as a whole from outside aggression. We have to assure them that any suggested combined action is defensive and not aggressive, and the assurances must be so plain that there can be no mistaking them. It is a defensive and not an offensive scheme that we have to work out.

(G) FIVE SEPARATE NAVIES

It will be seen that local fleets under separate political control fit in with this theory to the extent that their aid may be refused in case of a war of which any Dominion may disapprove, but that they go beyond it by imposing no obligation on any Dominion to join in a defensive war. Naturally therefore, the first thought which will occur to anyone is that it might be possible to enter into a defensive alliance with those parts of the Empire which have separate fleets. This is a solution which, in consequence, cannot be lightly dismissed, and we are bound to give it careful consideration. On the assumption that such a scheme was feasible, it would seem that the first step to be taken on the political side, after providing some means whereby the Dominions have a voice in Foreign Policy, is to come to an agreement that in the event of any attack on the Empire or any part of it, the whole of its forces shall be available, but that if hostilities are undertaken by any part on its own account, each other part shall be free to join or not as it likes. In other words, that we should draw a distinction between a war of aggression and one of defence, and induce those Dominions which are organizing separate fleets to alter their defence acts to the extent of coming under an obligation to join in a defensive war.

Such an arrangement would necessarily have to apply to the United Kingdom just as fully as to any Dominion. We could no more allow ourselves to be dragged into war by a Dominion than they would allow themselves to be brought in simply because we may choose to attack a foreign power. Whether it provides a solution or not, this scheme could do no one any harm. We in the United Kingdom have too much to lose by war to wish for it and we shall certainly not enter upon one unless it is forced upon us or unless it is necessary in order to protect some part of the Empire. At the same time each Dominion could then feel it retained the right to keep out of our quarrels so long as they are of our own seeking, and that it was only bound to act on the defensive. The Do-

minions would also feel that if, for their part, they wanted to fight someone, they could not count on our aid, or that of any other part of the Empire, and must therefore accept the full responsibility for their own action.

The effect, it will be seen, is to make each part of the Empire responsible for its own defence, and to oblige the Dominions to go in for an extensive naval programme, a programme far larger than would be needed under a scheme providing for a single fleet, and leading again to localization of defence, which we have already found to be unworkable on technical grounds.

Again, unless the Dominions were given a voice in foreign policy, this would lead inevitably to separation; for each part would merely consider its own interests and if it did not want to join in a defensive war, would accuse us or some other Dominion of having provoked it, and claim that in consequence it was freed from its obligations with regard to defence. Moreover, we shall see as we come to work it out, that this arrangement does not get rid of the dangers of disruption, inherent in any scheme of separately controlled fleets even in the case of a war of aggression. It will be noted that each of us would have to give up something under such arrangements. The United Kingdom would be obliged to forego its present exclusive right to settle the Empire's Foreign Policy. Each Dominion would have to give up its claim that the United Kingdom is responsible for the whole cost of any war, and would have to admit that the Defence of the Empire is a common and not a separate obligation. That is to say, we are brought back on the political side to exactly the same conclusion as on the technical, *i.e.*, that such a scheme is only possible so long as we hold together, and that, in consequence, the naval defence of the Empire must be a common and not a separate obligation.

(H) A JOINT NAVY WITH SOME SEPARATE FLEETS

How would such a scheme work both with regard to those Dominions which chose to have separate fleets, and for those which decided to join in a single Navy, supposing the technical difficulties could be overcome in each case? And how would it be possible for one system to pass into the other, supposing there was a desire to do so? This must be our next stage, for unless it would be reasonably probable that this solution of the political difficulties would be effective, it is of no use to elaborate it on the technical side.

Taking first those Dominions which decide on separate fleets and assuming that they have been given a voice in some way in Foreign policy, it will be evident that the war will not come upon them altogether unexpectedly. The attack or declaration of war will probably do so, but the warning will have

been given beforehand, and the preparations made to meet it will also be known. Their fleets and ours will be presumably in the proper strategical position to meet it, if the war is one of defence; their governments will be in possession of the necessary information, and there can be no reason for hesitation. If, on the other hand, either we or they propose to embark on a war of aggression, they will equally be aware of it and, presumably, also, the fleets will be distributed accordingly, or at all events be within striking distance. Both we and they will also know whether the attacking party will get assistance from the rest of the Empire. There is then no reason why the various governments should not agree that the separate fleets should pass, automatically, under a single technical control in any war of defence, provided that the cost of the operations was equitably adjusted between the partners. With regard to this, probably the best arrangement would be, that each part should share in the cost of the war according to its population or its revenue. In a war of aggression, only those parts of the Empire which joined would share the expense.

The arrangements with regard to those Dominions which joined with us in a common fleet would have to be different. Obviously they would be obliged to join in either class of war, because it would be impossible to separate their share in the common fleet from ours. But we are most unlikely to wish to indulge in a war of aggression, and as they would have a share in the policy which led to the war, they would scarcely be prejudiced by this in practice. Perhaps the simplest way to deal with the cost of the war would be that we should jointly guarantee the loan required to meet it; each of us bearing our share of the interest and sinking fund in proportion to our population or revenue. But war loans raised by the United Kingdom and those parts which were associated with her in a common fleet, would be raised under better conditions than those raised by a Dominion, which had its own fleet. They would be part of the debt of the Empire, and not of one Dominion, and such a scheme as this would almost certainly lead to the adoption of a proposal which has been made before on its own merits; the pooling of the national debts of those parts which elected to be tied together. The condition would probably be that there should be some relation between population or income and debt in each state. In this way the parts of the Empire which decided to hold together in all circumstances would be bound together financially also, and would have the benefit of combined credit; while those parts which decided to have a freer hand in the sense that they were able at one time to be within, and at another time to stand outside, the Empire, would have only their own credit to rely upon.

If a Dominion which had a fleet of its own desired to throw in its lot permanently with the Empire, and was willing

to give up its claim to separate action, it would be able, on doing so, to pool its debt in the same way under conditions to be then agreed, while a Dominion which had at first joined in a common fleet, and desired greater independence, would have to take on its own shoulders its own share of the debt, and raise any further sums it required in the future on its own credit. It may be noted that sums raised on the credit of a Dominion are at present available as trustee securities. But it is not improbable that trustees would hesitate to invest in these loans, unless specially authorised to do so by the terms of the trust, in the case of Dominions who claim to decide independently whether or not they shall stand aloof, for it is clear that the result of a war might be their permanent separation from the Empire. A Dominion which decided to remain at peace while the rest of the Empire was at war might say that this arrangement suited it so well that it had decided to withdraw altogether, and it would then be in the position of a foreign government so far as investors are concerned. It seems, therefore not unlikely that, apart from any Government action, Dominions with separate fleets would find it more difficult to raise loans in the future out of trust funds under these conditions, and so have to pay a higher rate of interest than those joining in a common fleet.

But it is clear that there are many other ways in which those parts of the Empire which decided frankly and fully to throw in their lot together could help each other, and there is little doubt they would draw closer together. Systems of emigration, shipping facilities, trade, etc., can all be brought into play, and it would become apparent to all parts that they had everything to gain and nothing to lose by joining in a common navy.

In a purely defensive war, in which we have assumed those Dominions having separate fleets would be willing to join in automatically, the only provision we should have to make would be for the technical conduct of the naval side of the war. As we have assumed each Dominion to have a voice in the Foreign Policy of the Empire, we should merely require some central technical authority having the confidence of all parts. We have provided that the losses of all shall be pooled, and therefore the best advantage of the whole will be the first consideration of all the parts. The great difficulty in finding the central technical authority which we require would naturally be in the fact that we could not know beforehand which parts of the Empire would be engaged. Hostilities may break out, and one or more of the Dominions having separate fleets may consider it to be a war of aggression, in which they are relieved from joining. Clearly, it will be the enemy's interest to persuade them this is the case, and the stronger the fleet which can be so detached from the Empire, the more willing will be

the enemy to respect their neutrality. The case we have to meet is, therefore, that of the sudden withdrawal of most or all of the ships in one station, although most of the trade on that station is British and therefore liable to be attacked, the possible withdrawal of certain ships and the necessity for replacing a number of officers on other ships in various other stations.

With such risks as these to consider and provide for, it is probable that outside the station which includes the particular Dominion, it would only be possible to utilize their ships or officers where they can be immediately replaced, i.e., in the Home Fleets, while as near as possible to that station will have to be a dockyard in which may be kept a reserve of ships with the necessary crews ready to take over the defence of commerce from those ships which the Dominion has withdrawn. The Dominion itself would become a neutral, and its dockyards closed to us, but we should be relieved of all fear that it might suffer damage. Our sole concern would be to protect as far as possible our trade in its waters. Practically, the greater portion of our trade would be diverted from our own ships to neutrals because we could not immediately replace the cruisers, and it is probable that we should have to acquiesce in this. The Empire would, in fact, suffer, but the Dominion would save itself.

It is to be feared that there would be so much ill-feeling engendered by any such action, that any return to *ante bellum* conditions would be impossible. The Dominion and the rest of the Empire would become estranged and the temporary separation become permanent. Practically, therefore, we have to admit that our scheme will only work so long as the separate fleets act as one, and that directly they act separately, the Empire begins to break up. On the technical side the scheme is only workable so long as the Empire is bound together politically. A mere defensive alliance will not save us, and unless it be agreed that in any and every war each part will help the rest, the Empire must fall to pieces sooner or later. The scheme, therefore, does not seem workable, even if the Dominions having separate fleets have a voice in the Empire's Foreign Policy, which is the most favourable condition possible. We need not in consequence consider the much more probable case, that with separate fleets there will be separate foreign policies, nor the difficulties in forming a single technical body to direct the war—a body which could not come into existence before war was declared, because until then it would not be known which parts would join in it.

(J) NEED FOR AN IMPERIAL NAVY

It may be said, that the view taken above as to the difficulty of working separate fleets and their liability to bring about disintegration are exaggerated. Those in favour of this view

will say that to establish them was the only means by which it was possible to induce continental areas such as Australia and Canada to take any interest in naval defence, that the more the people in these dominions realize how much the command of the sea in war means to them, the more they will wish to combine in obtaining it. And that as to disintegration, the loyalty of both Canada and Australia to the Empire is strong, enthusiastic, and growing, and therefore it is impossible to suggest that their action tends to separation. The fact, however, remains, that in adopting separate fleets, both of these Dominions have done so with the object, primarily, of providing for their own defence. They have adopted a proposal made by the Admiralty to build ships and train officers and men, whilst refusing to accept the foundation on which the Admiralty proposal was constructed. They have, by treating their own defence as a local matter, separated their own interests from those of the Empire, and have decided that these fleets shall not be available for the common defence unless they approve of the war. While, therefore, we can fully admit that separate fleets have been established with the intention of assisting in the defence of the Empire, we may still retain our belief as to the consequences likely to ensue. It is not argued that Canada and Australia were wrong, in the circumstances, in establishing fleets of their own, but that we were wrong in not giving them any reasonable alternative which they could have adopted if they wished to take a definite and distinctive share in the defence of the Empire, and that unless this error on our part is repaired, it will lead to the break-up of the Empire.

III. THE SOLUTION

(K) DECENTRALIZATION

There is no doubt that the question of a common organization for defence is bound up with the larger question of partnership or federation, or whatever principle may be adopted as the basis of Imperial unity. No mere departmental combination will suffice. But, on the other hand, it is this departmental action with which we are here primarily concerned, and, therefore, however incomplete our scheme may be from this cause, an attempt must be made to approach it from the technical side.

From what has been said earlier, it will be gathered that we have to evolve some scheme which will provide for central control in war, and will yet permit of each Dominion having some distinctive share in the defence of the Empire. Our scheme must provide also, in consequence of the fact that separate fleets are actually being established, that by evolution, and not by a reversal of policy, they may eventually be merged

in a common fleet. It is suggested that the only plan which will enable this to be done is some system of decentralization which shall be as wide as possible consistent with central direction, but which in any case shall stop short of localization of defence.

To begin with a central authority. The British Admiralty consists of naval officers, and civilians who are politicians. It is concerned with administration and the preparation for and the conduct of war, as well as the provision of material and personnel. Formerly, these duties were discharged by separate boards, and even at present, although the administration is centralised so far as general principles are concerned, a great deal is left to the care of the Naval Commanders-in-Chief on the various stations, *e.g.*, the scale of food is fixed at the Admiralty, but it is the Commander-in-Chief's duty to provide it. The tendency is for centralization to increase during peace; this tendency is increased by the improved means of communication, and it is an undoubted fact that there is far more centralization now than was the case in the wars of the French Revolution, when the fleet was in a high state of efficiency, and when, their minds being freed from excessive attention to material, "The Art of Naval Warfare" was almost a second nature to naval officers. The writings of Sir Cyprian Bridge and Mr. Julian Corbett are particularly instructive on this point.

Many things which are now almost completely centralized might therefore be decentralized, and the powers of local administrators might be largely increased without injury to the well-being of the fleet. The entry of men was a local matter until late years, and to some extent the entry and even the promotion of officers to fill vacancies was left largely to the Admiral commanding in the old days. This was inevitable, seeing that it would often have taken months to refer to the Admiralty. But even now, the captain of a ship in the Tropics takes on natives for temporary service, and fills petty officers' ratings on his own ship, while an Admiral appoints officers to fill vacancies on his station, and gives them, temporarily, higher rank when necessary. With better means of communication, centralization has become easier, nevertheless there is still a good deal of decentralization in manning ships even in the home ports. Each big depôt, Portsmouth, Plymouth, or Chatham, has its own list of men, and the ships commissioned at each are manned from these lists, so that we have Portsmouth or Plymouth or Chatham ships. There would seem to be no reason, therefore, why we should not have Australian or Canadian or New Zealand ships manned in the same way. On a ship paying off, a man is allowed to put his name down for any depôt he likes, and he chooses naturally that nearest his home. Depôts might be established in just the same way in each Dominion, and ships be commissioned at the local dock-

yards. Opportunities could be given men from time to time to transfer their names to other depôts, and when any list was too much depleted, other men could be transferred there. Gunnery, torpedo, and other training schools are likewise now established at the principal home ports, and it would therefore merely be an extension of the system to establish them also in the Dominions. Dockyards, including establishments for the building and the repairs of ships could be treated in the same way, and, indeed, already exist, while provisions, and, to some extent, coal is also obtained locally. The allocation of ships to any station is a matter for the central authority, but the distribution of those ships on the station during peace is a local matter which is left to the Commander-in-Chief, subject to the general approval of the Admiralty.

There seems, therefore, to be every prospect that it would be feasible to evolve a scheme for amalgamation on the technical side, and that there could be sufficient decentralization to give every Dominion a distinctive share in the administration and control of a single navy.

Indeed, with the exception of the allocation of ships to particular stations, which is a matter to be dealt with at somewhat long intervals, except in case of war, and which depends principally upon the political situation, there is no reason why decentralization should not be carried to considerable lengths.

(L) APPLICATION TO EXISTING CONDITIONS

The main difficulty occurs with the training, promotion and appointment of the officers, for if they are to work together, whether in the same ship or the same fleet, it is necessary that their promotion from rank to rank should be governed by similar rules and qualifications, that they should, in fact, form one body of officers and not several. But even here there is room for some decentralization. Considering the complete change in the system of entry and training of cadets recently adopted in the British Navy, it cannot be contended that a uniform system is absolutely necessary. Moreover, the reduction of the age of entry has made it extremely difficult for boys from the Dominions to join the British Navy at all. The establishment of training schools for cadets in the Dominions is a reasonable proposition, and there could be no real objection to each Dominion deciding for itself what should be the system of selection, provided, of course, that there was some limit to the numbers, for these should naturally have some connection with the number of ships provided, or the contribution paid to a common navy.

When the cadets have completed their training, and have been sent to sea, the difficulty will commence, because it is necessary they should serve in big ships, and there are not likely to be a sufficient number of such ships in the Dominion

navies for some time to come, certainly not by the time the cadets now entering are ready to join them. They will therefore, as midshipmen, have to serve with midshipmen from the British Navy in ships belonging to that Navy. Possibly, those Dominions which intend to maintain separate fleets will want these youngsters earmarked so as to commence a navy list of their own, and they may consider that three years instead of four is quite long enough to serve in that rank. If they leave their training establishments a year older than the British midshipman, this would not much matter, but if at the same age, it would not be very fair to the latter to have their juniors appointed acting sub-lieutenants over their heads. This is only brought forward to illustrate the difficulties of having separate lists of officers, to show how necessary it is to avoid it if possible, and to emphasize the need for arriving at some scheme which shall apply to all parts of the Empire. Obviously, the difficulties which may occur in the case of midshipmen must increase with the higher ranks, and it would not be easy for the Admiralty to find a position in which to put a young commander from the Dominion Navy, who had perhaps less sea-service and was a younger man than most senior British lieutenants. It may be said that this occurs now in the Navy through the selection for promotion of junior lieutenants; but at all events, they are promoted from the same service for the good of the service as a whole, and all belong to it. It would be a very different thing to be put in such a position by another authority altogether.

A difficulty such as this can, however, be avoided by providing that the qualifications for a commission shall be the same in each navy, and that after arriving at commissioned rank, there shall be one list only, promotion being afterwards made by a central Board. To this Board might also be assigned the duties of appointing officers to sea-going ships. In this case, the whole of the officers would come under the same rules as regards promotion and appointment from the time they received their commission, and it would be easy to arrange that, consistent with gaining adequate experience, they should serve as much as possible in their own waters. Unless it can be arranged that all have equal training and experience for equal rank, it is inevitable either that there will be no exchange of officers, or that a system of dual ranks will grow up which will cause as much dissatisfaction to one set of officers as different systems of promotion would to the other.

The allocation of ships to stations is another matter which should be under central control, but this should be comparatively an easy matter if the question of the appointment and promotion of officers is dealt with, as above suggested. For instance, at each Imperial Conference, the Premiers could settle, on the advice of the Admiralty, the distribution of the Fleet so

far as regarded numbers and sizes of ships in each station for the next four years. Or there could be a conference of ministers of defence with the Admiralty before any change was made, the Admiralty undertaking to make up deficiencies, and the Dominions to allow any surplus ships to be stationed elsewhere.

Again, it seems clear that dockyards could be entirely administered locally. Where there are separate fleets, the Dominion would undertake the building and repairs of its own ships, and would be paid for similar work undertaken by them for other fleets. Dockyards in those parts of the Empire which had a common fleet would also be locally administered and be paid in a similar manner for doing any work for other fleets. The same system would obtain with regard to provisions, stores, coal, etc.

The entry of men would be a local matter also. Where there are separate fleets, the Dominion would make its own rules as to age of entry, length of service, pay, etc. For the main fleet, such rules would be drawn up in consultation, and would not necessarily be the same in each part of the Empire, because due regard would have to be given to local conditions. The number of men in different ratings would necessarily depend upon the ships to be manned in each dockyard. At first, perhaps, only one vessel could be manned, or even partially manned, from a Dominion, but by degrees the numbers of men would be increased until all the ships serving on that station could be so manned, and probably others also. When that time arrived, some of these ships would be serving elsewhere, just as Chatham or Portsmouth manned ships serve together in other parts of the world. Each Dominion having a separate fleet, would of course pay its own men, and those who joined in the main fleet would likewise provide the pay and cost of maintaining theirs.

As regards training before going to sea, each Dominion would also see to that required for its own men, providing the necessary ships, barracks, etc. The gunnery and torpedo schools and engineering workshops would be dealt with in the same way. They would be provided and paid for locally, and be under local control. But we here begin to find that naval officers are required to direct, and these officers will have to be provided from the list of the Imperial Navy, though paid and appointed by the Dominion. There will not be enough naval officers who were born in any Dominion to fill these posts at first, but gradually this would be possible.

It is therefore now necessary to consider more fully the question of officers. We have already shown that if we are to work together, there should be only one list of officers, and that their promotion should be controlled by some sort of joint Board, but that as regards entry and early training, there is

room for localization. There must, again, be some proportion between the men which each part of the Empire provides and the officers from that part, and there should also be a fair proportion between one branch and another. Probably the best system would be for vacancies in each branch to be allotted to each part of the Empire in the same proportion that the men they provided bears to the total, leaving it to the Dominions to make the selection. The same rule might equally perhaps apply to vacancies in the civil service at the Admiralty.

Australia and Canada have decided to train their own cadets. South Africa and New Zealand should be given the choice as to whether they prefer to follow this example or train them with the cadets from the United Kingdom or one of the other Dominions. As a third course, it is possible they might like to give them what corresponds to the Osborne training locally, and send them to England to go to Dartmouth. There can be no reasonable objection to whichever of these three systems they select.

It is only on going to sea that the difficulties of training begin, and that the need for a single list becomes of importance. On leaving Dartmouth, cadets take rank according to the result of their examinations. In what position are the Dominion cadets to be placed on the list? It might be possible to send out the same examination papers to all, and if this were agreed to, there would be no difficulty. On the other hand, the course of instruction might differ, and the examination papers prepared for a Dartmouth course be inapplicable to cadets trained in other parts. If this should be so, it would be possible perhaps to put the cadets into classes in each establishment, and to put them all alphabetically in each class. The actual position in any batch of cadets passing out and qualified for the rank of midshipman at the same time, is not a matter of great importance, and no doubt a fair system could be arrived at whereby they arrived at commissioned rank at about the same age. On passing for acting sub-lieutenant all officers should go to Greenwich, and thenceforth their promotion would be governed by the same rules and be controlled by some central authority or joint board. Appointments to sea-going ships would be made by the same authority, who would have regard (1) to the need for affording each officer the requisite experience, (2) to the desirability of appointing him to one of the ships manned by his own part of the Empire.

(M) THE CONSTITUTION OF CENTRAL AND LOCAL AUTHORITIES

The possibility of working such a system as this depends upon the authority set up to control it. This will now be considered. It is the most difficult part of our enquiry, and a solution which may appear to be the simplest is not necessarily the most practicable. On the one hand, we have to consider

precedent, and on the other, prejudice. The conservative feeling that things are working well under present conditions, and that change would therefore probably be injurious, and the radical feeling that new conditions require new machinery.

Now, the Admiralty at present is responsible for everything appertaining to the Navy, and the basis of the system we are considering is decentralization. We have proposed to decentralize by placing the administration of dockyards and generally, the provision of matériel, the entry and training of men and the entry and elementary training of officers under local control. This implies a division of the work now done by the Admiralty, and the creation of a Department in each Dominion charged with this local administration. To complete the organization, a Department with similar duties would be required in the United Kingdom. These departments, which for convenience and following the old nomenclature we may call Navy Boards, would each be independent of the other, and under their own government. They would need a responsible minister at the head of each, and in the United Kingdom this position would be taken by the First Lord of the Admiralty, assisted by the Civil Lord. A very large proportion of their duties would be financial, but they would need technical assistance, and the Navy Boards would therefore probably consist of a minister in charge, an expert in construction and dockyard work, a naval officer for dealing with the entering and training of men and officers, and, as secretary, a member of the Civil Service for work in connection with contracts. It is probable a second naval officer would be required as assistant to the minister, to deal with the technical side of the work of the civilian members. This would make a Board of five, and would probably be sufficient, but of course the constitution of these Boards would be purely a matter for the various governments themselves, though there would be some convenience in organizing them into departments which undertook corresponding duties in each. By such a system the Admiralty would be relieved of all duties with regard to the supply and maintenance of material and the provision of officers and men, and we should revert to something very like the old system in vogue say, a hundred years ago. There would be left to the Admiralty the whole working of the sea-going Imperial fleet as an engine of war, including the promotion and appointment of officers in that fleet.

On the technical side we require, therefore, at the Admiralty, a body of naval officers as at present, but as it is necessary that each part of the Empire should be represented, it would be advisable that each part should have the right to nominate from the senior officers on the Imperial Navy list one member of the Board. In some cases it would at first be necessary for a Dominion to nominate a British-born naval

officer as its representative, but by degrees there would be sufficient senior officers from each part of the Empire to allow of a choice being made from that part. The technical side would then consist of five Admirals or Captains as at present, the United Kingdom, as the senior partner, appointing the first Sea Lord. A rearrangement of duties would be required because the members would have to act more as a Board than as heads of departments, but they would be able to devote more time to the perfecting of the Fleet for its war duties than is possible at present. The civilian side would be formed by the Ministers of the five Navy Boards (in the case of the United Kingdom the First Lord), who would be ex-officio members of the Board of Admiralty. It is clear that all the civilian members would only be present at intervals, but they would be able to attend whenever they were in England, and as the Admiralty would have much less to do with the spending of money than at present, and their work would be of a technical nature, the regular presence of the full civilian element would not be necessary. Moreover, their absence would not deprive the Dominions of representation, for their nominated naval officer would naturally be in touch with the Minister in charge of their Navy Board, and would keep him fully informed of the proceedings, so that he would know when it was desirable he should come over. The payment of the travelling expenses of the civilian members of the Board might well be charged to the general expenses of the Navy. The full Board of Admiralty would thus consist of ten members, but there would seldom be more than six or seven present on ordinary occasions, and probably once or twice a year would be sufficient for the full Board to meet for the discussion of questions such as the preparation of estimates and changes in the distribution of the fleet.

It may be objected that, while contributing so small a proportion to the total cost of the Navy, it would be unreasonable that the Dominions should each have an equal voice with us in the Imperial Admiralty. The reply is: (1) that the control of a single fleet which constitutes their primary defence is as important to them as it is to us. (2) That the technical direction of the fleet as a defensive force for the whole Empire would be in the hands of naval officers who had been trained to look at the question from the Imperial, and not merely from the local, point of view. (3) That the Sea Lords of the Admiralty would all be chosen from the Imperial Navy List, and so be qualified for their task; and (4) that we have had before, and doubtless shall have again, Sea Lords at the Admiralty who were born in other parts of the Empire.

It will be noted that this system is applicable equally to those parts of the Empire which combine in a common Navy, and to those which have decided on separate fleets so far as they

have gone at present. No reversal of policy is proposed. All that Canada and Australia would have to do in order to fall in with this scheme would be to agree to place their fleets when built at the disposal of the Empire, and their officers when commissioned on a common list. The only point remaining to be considered is the provision of the ships themselves. A Dominion which provides its own ships may say that, as it pays the piper, it will call its own tune, and therefore if, for instance, it decides to build destroyers instead of cruisers, or submarines instead of battleships, it must be allowed a free hand to do so.

(N) DIVISION OF DUTIES

This is a claim which can be admitted without injury, because the building of unsuitable ships would not be likely to occur in practice to any appreciable extent, though some money might be wasted, and because as there would be consultation at the Admiralty of all parts of the Empire, it would be easy to arrange that each part should build the vessels it desired. But what is necessary is that there shall be a proper proportion between the men provided for the Navy and the sum spent on the construction and maintenance of matériel, whether that sum be spent independently or jointly, or in other words, between the sum spent by the Admiralty, and that spent by the Navy Boards in providing matériel, training, etc., and in the Navy Boards between the sum spent in training and reserves and that spent on matériel.

Taking the average of the last ten years, the cost per 100 men, (including officers) has been as follows. The table shows the proposed division of expense under the above headings.

TABLE I. AVERAGE COST PER 100 OFFICERS AND MEN UNDER VOTE A DURING THE LAST 10 YEARS.

Vote.	Imperial Admiralty.	National Navy Boards.	
		Personnel.	Matériel.
Wages	£5,364	—	—
Victualling and Clothing	—	—	1,744
Medical Establishment	—	201	—
Martial Law	11	—	—
Educational Services	—	109	—
Scientific Services	52	—	—
Reserves—	—	266	—
(1) Personnel	—	2,300	—
(2) Matériel	—	—	3,490
(3) Contract Work	—	—	6,867
Naval Armaments	—	—	2,268
Works	—	—	1,513
Miscellaneous	358	—	—
Admiralty Office (Split)	100	—	169
Half Pay	—	662	—
Naval Pensions	—	1,006	—
Civil Pensions (Split)	100	195	—
	£5,985	£4,739	£16,051
		£20,790	

In round figures for each 100 officers and men in the sea-going fleet under the Imperial Admiralty, there would have to be paid £6,000 to the Admiralty by the part of the Empire providing them, while the same part of the Empire would have to spend through its Navy Board about £5,000 in personnel, and £16,000 in matériel. Each Dominion would be entitled, therefore, to supply 100 officers and men to the Imperial Navy for each £27,000 it was willing to spend on Naval Defence.

The annual expenditure on Naval Defence agreed to at the Subsidiary Conference in August, 1909, and the corresponding number of officers and men which could be supplied under the above arrangement are shown below.

TABLE II.

Dominion.	Annual Contribution to Naval Defence.	Approx. number of officers and men for Imperial Fleet.
Australia	£750,000	2,800
*New Zealand (including ship presented)	£200,000	750
Canada	£400,000	1,500

Under such a scheme, each Dominion would settle entirely its own contribution, this being governed by the number of officers and men it was willing to supply for the Naval Defence of the Empire. It would have the sole control over about 77½ per cent. of the money it provided, and a joint control in the spending of the remaining 22½ per cent.

Of the officers and men under vote A. approximately 5¼ per cent. entered as officers, divided as follows:—Executive 3 per cent.; Engineers and Marines, 1 per cent., or a total of 4 per cent. as executive officers under the new system of entry, the remaining 1¼ per cent. include Surgeons, Accountants, Chaplains, and Naval Instructors.

The number of officers in the contingents from each Dominion would be, therefore, approximately as follows:—

TABLE III.

Dominion.	Executive, including Engineers and Marines.	Non-Executive.	Total.
Australia	112	25	147
New Zealand	30	10	40
Canada	60	19	79

* The figures given for New Zealand are arrived at by allowing 20 years' life to the £2,000,000 Dreadnought, and adding the £100,000 annual contribution. It would be a graceful act on the part of the Admiralty to accept payment in this way, and would relieve New Zealand from paying interest and Sinking Fund on so large a sum.

The above figures include Cadets under training and officers employed in the various subsidiary services, all of whom would come under the Navy Boards under the scheme proposed, as would also the officers on half and retired pay, and those in the reserve. It is not possible to give figures for the reserves which would be of any value, for each Dominion would have its own system. About three-fourths of the numbers given above would come under the Imperial Admiralty, and, allowing for reserves and half-pay officers, not included in the above, there would probably be as many under the Navy Boards as under the Imperial Admiralty. The former would have, therefore, a great many appointments for their own officers under their own control. The proportion of Cadets under training to the total executive officers is 11½ per cent., so that Australia would have 13, New Zealand 3 or 4, and Canada 7 under training, numbers which seem too small to make it possible at present to maintain separate establishments for the purpose. It would be hardly fair that the proportion of officers to expenditure on Naval Defence should differ to any appreciable extent in the various parts of the Empire, but as the number of officers from the Dominions is at present far below their quota as given above, it would be possible for entries, and consequently for the number under training, to be considerably increased for some years to come. Moreover, as time goes on, it is practically certain that the expenditure of each of these Dominions will exceed the figures given at the Conference. They are certain to take an increasing interest in a true Imperial Navy, and there will be a good deal of subsidiary expenditure on Dockyards, etc., which would give them a larger personnel than shown above, so that there need be no hesitation in allowing the number of Cadets entering to be considerably exceeded for some years to come.

One thing is, however, clear from the figures, and that is that the Navy Boards would occupy a very important position, not only with regard to control over expenditure of money, but in the appointment, selection and control of officers and men; as they would have over three-fourths of the money voted and about half the officers under them. The Imperial Admiralty would control merely the sea-going fighting machine, becoming, as it was in the past, in reality an Executive General Staff concerned with the preparations for, and conduct of war only.

On the calling out of the reserves both ships and men would also be placed under the Imperial Admiralty, the division of expense being agreed beforehand on the same principles, but the actual decision as to mobilization being a question of policy, would be under the control of the Conference of Prime Ministers or whatever central body may be formed. Until some better organized office is provided for the Conference,

arrangements would be made between the various governments by telegraph.

(o) THE SYSTEM AT WORK

The proposals here would in no way interfere with what has yet been done by Australia and Canada, they merely provide for a development of the action already taken if and when those governments chose to adopt them. Until they did so, they would have their own Naval departments independently of the rest of the Empire, and consequently no representation at the Admiralty, but it would be open to them, if they decided to throw in their lot with the rest, to appoint each their two representatives at the Imperial Admiralty, their Minister of Naval defence, as head of their Navy Board, and an admiral as one of the sea lords.

In practice, the complete Naval estimates for the year would be drawn up by the full Board of the Imperial Admiralty. The Minister of Defence of each Dominion would come with full knowledge of what his part of the Empire would be prepared to spend, and therefore of the approximate division of that sum between his Navy Board and the Imperial Admiralty. The complete estimates for the whole of the Navy would be presented to each government and would show the proportion contributed by each. The acceptance of their own portion would of course be a matter for each government, but their own estimates having in each case been prepared by a cabinet minister, he would have consulted his colleagues beforehand. A change of government in the interval between the preparation and presentation of the complete estimates would not occasion any more difficulty than it does now. Subsequent changes would also be dealt with as at present. The estimates would provide for new construction, armament, pay, distribution of the fleet and other matters as at present, but they might have to be in a somewhat altered form, for they would have to show in some detail the expense to be borne by each part. Each government would thus know exactly what the Navy was estimated to cost and the share contributed by each part to each item of the expense. It could no doubt be arranged that the estimates should be presented simultaneously to each Parliament although of course each government would have to know them some time beforehand.

The Commander-in-Chief on each station would be under the orders of the Imperial Admiralty, but one member of the Board, the Minister of Defence or Minister for the Navy, would be on his station in charge of the Navy Board and they would settle the peace programme and movements of the squadron in consultation. The Ministry or Department of Foreign Affairs would communicate with the Imperial Admiralty when they desired a ship to be sent to any particular place to represent the interests of the Empire, and the Admiralty would issue the necessary orders to the Commander-in-Chief as at present. The

Commander-in-Chief would draw his stores, etc., through the local Navy Board, and accounts would be adjusted at a meeting of the Imperial Admiralty at which the Minister for the Dominion was present. The squadrons would come by degrees to be composed of local officers and men, but defence would not be localized, and by constant interchange of officers there would grow up a feeling of unity which is quite impossible if a system of separate fleets, locally controlled is carried out.

An officer would be selected and undergo his elementary training under arrangements prepared and controlled by his own government and subsequently would become an officer of the Imperial Navy. A very large proportion of his service would be spent in his own part of the world, sometimes under the Admiralty, at other times under his Navy Board, but he would have intervals of service in other parts and as wide opportunities of training as British Naval officers have at present. The men would be raised under local conditions and would spend most of their time near their own homes but would have occasional periods of service elsewhere, in ships manned wholly or in part by their own Dominion. Their gunnery, torpedo and other training would be carried out in their own ports. Where rates of pay differed all those under the Admiralty would receive the same pay although rates might differ on different stations. This would apply to men raised by a Dominion Navy Board at perhaps a higher scale of pay than the general rate. These men would only be paid the general rate whilst under the Admiralty, the balance being held over by the Dominion which recruited them until their return to its service under the Navy Board. The Admiralty would pay no pensions or half or retired pay, and officers and men would receive this through their Navy Boards who would therefore be able to recruit as is done in the British Navy, *i.e.*, with smaller pay and pensions, or, as some of the Dominions prefer, with higher pay and no pensions. The length of service would be a matter for local arrangement, but it is probable that a minimum length would be agreed.

In the event of any man wishing to change his domicile and settle in another part of the Empire, he would be allowed to do so, and his name would be transferred from one to the other Navy Board's list and no doubt he would be helped in moving his family. If there were any difference in rates of pay or conditions of service, he would come under those in his new home, and any arrears of pay or financial adjustment would be by a scale agreed upon between the two Navy Boards. Both officers and men would thus look to their own Navy Boards as their pay master, and upon their time under the Imperial Admiralty as being seconded or detached for active service or war training. But as their promotion would be regulated by their fitness for the service of the Empire, they would realize that being seconded was the principal means of earning it, and would therefore join the Navy knowing that they could only

get on by sea service, although a large part of that service would be in their own part of the world.

DISTRIBUTION AND MANNING

Ships would not be tied to particular parts of the world. A fleet unit, as proposed by the Admiralty at the Conference in 1909, might then have been quite a suitable allocation of the fleet. It by no means follows that it will be equally suitable some years hence. It may be that long before the ships Australia is now providing have served their allotted span of life, the strategical conditions of the Empire's Naval Defence will have changed so much as to make it necessary to keep a squadron of Dreadnought cruisers there. Similarly there may be another squadron in Canadian Pacific waters. Such squadrons would be provided by the Empire as a whole on the recommendation of the Admiralty, and the ships would be liable to be moved to some other part if the defence of the Empire required it. They would be so moved or stationed by an Admiralty on which all parts were represented, and with sole regard to the needs of the whole. The Australian Squadron might include some South African ships, or the Canadian some from New Zealand and Australia. Their home ports would be in their own Dominions, just as the home ports of the British manned ships in the same squadron might be Chatham or Portsmouth, but they would all be serving together under one command. The officers would all be on one list, have undergone the same training and be colleagues. The Admiral commanding might have been born and entered in any part of the Empire, but the Captain and officers would have full confidence in him as having passed through exactly the same experiences as they were then undergoing themselves.

Ships would be manned locally *i.e.*, there would be Plymouth ships, Australian ships, etc., but it would not follow that the same vessel would always be manned at the same port, or stationed in the same part of the world any more than is the case now. A ship that had become obsolete for one station might be quite useful elsewhere, and the men who had manned her might more profitably be turned over to a more modern vessel, or one of a different class altogether. Arrangements of this kind would be made by the Admiralty when deciding upon the distribution of the fleet from time to time, *i.e.*, when the civil members were present, and, therefore, the Dominion who paid for the ship would be consulted. It is unlikely there would be any objection to this course, except for reasons of sentiment. A Canadian or Sheerness ship would be so named from its port of manning as at present, and not because the builders were paid by Canadian or British money. The fleet would be Imperial and jointly owned, and it would not matter to any part of the Empire where a particular ship was built. With

separate fleets the ships would gradually become obsolete, and involve any Dominion in heavy expense in keeping its section up to date, an expense which would be avoided by all parts contributing to a common navy in the way suggested.

(P) SUMMARY

The following summary may help to make the scheme clearer. For reasons which have been examined there is no practicable answer to the questions we are considering, except that we must provide by means of decentralization for a single fleet jointly controlled. The organization by which it is proposed to achieve this on the technical side is through national Navy Boards and an Imperial Admiralty.

The Imperial Admiralty would consist on the technical side of five Admirals or Senior Captains chosen from the Imperial Navy List, each division of the Empire nominating one. The five political heads of the Navy Boards would be ex-officio members of the Imperial Admiralty to represent the civil side, but, inasmuch as the functions of the Admiralty would be almost entirely technical, the presence of the civilian members would seldom be required except for the preparation of estimates and for general consultation as to the best distribution of the work. Each Navy Board would consist, in addition to the civilian head, of four or five members to take charge of the various departments. The Navy Boards would be independent of each other, and entirely under their own governments, but would be connected for consultative purposes through the Admiralty. The proposed distribution of work is as follows.—

Admiralty (Imperial.)	*Navy Boards (National.)*
1. Promotion and appointment of officers.	1. Entry of officers and recruiting of men. Training of cadets and boys. Gunnery and Torpedo schools. Drafting of men.
2. Intelligence Department and War College.	2. Dockyards. Shipbuilding. Repairs and Maintenance
3. Distribution of the Fleets.	3. Recruiting and training of reserves. Coastguard and fishery protection. Pensions and Half Pay.
4. Preparation of Estimates.	4. Victualling and Clothing, coal and stores.
5. Martial law, Prize Courts.	5. Armaments and ammunition.

There would seem to be no great difficulty in initiating such a scheme. The civilian members of the present Board of Admiralty would have practically the same duties as now, but part would be carried out through one Board, part through another. We all want to maintain the unity of the Empire. The navy exists to maintain this unity, and, if our argument is correct, the Naval officers in the Admiralty, although losing control over auxiliary work connected with the Navy, would merely be reverting to older practices, and would be just as willing to make such a sacrifice for the good of the Empire as they would be to sacrifice their lives in the same cause.

SHALL WE WORK TOGETHER OR SEPARATELY?

The subsidiary work for which the Sea Lords are now responsible would be done, also by Naval officers, through the Navy Board. Difficulties are made to be overcome, and there is no difficulty inherent in this scheme which cannot be surmounted, if once the need for it is recognized. The Dominion Governments could hardly object to being put in exactly the same position as the United Kingdom, and would have as distinctive a share in the Naval Defence of the Empire as we have, always supposing the statesmen can evolve a reasonable system by which they may have a voice in its Foreign Policy. This, we have argued, is imperative, for without it no departmental scheme can be complete. The alternatives are between a decentralized single Navy or five separate and distinct fleets, between the true strategical view that the sea is all one and the false idea that Naval defence can be localized. There is no time to lose and delay will be fatal. We are dealing with young and energetic democracies, with advanced ideas, and growing pride in their nationality. We cannot continue with them unless we make some effort to meet their aspirations. We cannot any longer monopolize the control of the Naval power of the Empire, because they have determined to take a share. Shall we work together or separately? The responsibility for the answer rests with us, but in any case we shall have to leave it to them to say what they will spend and how they will spend it, and in any case they will require a distinctive part. If we will not take them into partnership by making the Navy Imperial, we shall find it is no longer the fleet of the Empire but that of the United Kingdom and its dependencies only, and as with the Navy so with the Empire. New interests will develop and each part will consider its own to be paramount, until gradually we drift apart. It is worth an effort to prevent such a catastrophe, and the only true line is for all parts to make the good of the Empire their first consideration.

"BOY SCOUTS"

In connection with National Training and National Service.

By LIEUTENANT-GENERAL SIR ROBERT BADEN-POWELL, K.C.B., K.C.V.O.

Wednesday, March 29th, 1911.

Chairman: The Right Honourable Viscount HALDANE, Secretary of State for War.

SYNOPSIS OF LECTURE.

"To be a Soldier a man must be a MAN, not a sheep."

The drilled machine of Frederick the Great is out of date: the fighting unit must nowadays be composed of intelligent and handy individuals.

Marksmanship and drill are useful steps towards making a defence force efficient against a civilised enemy, but are useless if the *moral, i.e.*, spirit, character and discipline, is absent.

The British character is independent and does not take readily to repressive discipline though it is amenable to a sense of duty when that is impressed in good time.

Discipline through a sense of duty has to be inculcated in the boy, it is difficult to implant in a man after he has grown up.

Yet it is the task of the regimental officer to-day to make up in his recruits the want of a previous school education in manliness and discipline.

Public schools inculcate some such discipline but it is only among a restricted class. Lower schools do nothing.

Cadet Corps are valuable institutions for instructing in marksmanship and military training but cannot naturally effect much in character training.

The principle of the public school discipline of "good form" and "playing the game" needs development on right lines, and extension to other ranks of life.

An attempt is made in this direction in the Boy Scouts where, by means which appeal to the boy, he is encouraged to practise discipline, pluck and sacrifice of self daily, together with handiness in campaigning and scouting.

Thus, although he does little or no military drill, he is none the less, the best material for a soldier, having had as a foundation the all-round training as a good citizen, and a manly fellow.

The Boy Scouts can and do help the Cadet Corps and Defence Forces.

A large number of parents conscientiously object to their sons being instructed prematurely in ideas of fighting and bloodshed, and therefore are averse to military training for them. They have no objection to their becoming Scouts. Scouting, therefore, fills a gap between Cadet Corps and other drilled organizations for boys, by getting hold of those who would otherwise receive no training in character and patriotism.

Although it is non-military, scouting can be utilised by Cadet Corps as giving the essential training for soldiers (and for sailors) in a form which really interests or attracts the boy. There is no lack of recruits for such training.

It is already so utilised in many Cadet Corps, especially in Oversea Dominions and in Russia, etc.

The Boy Scouts and their training are in no sense rivals to Cadets or harmful to Defence Forces, but exactly the opposite.

VISCOUNT HALDANE: Ladies and Gentlemen: General Baden-Powell is a remarkable man. He has an unusual gift, a gift which he has displayed in various phases of a varied career: he possesses the endowment of imagination, one of the rarest and most valuable of endowments, especially when it is coupled with other qualities of a practical nature. General Baden-Powell has founded a great organization—an organization in which I am glad to think this country has been a pioneer. The Boy Scouts are a comparatively modern institution, and yet an institution which has taken root in many parts of the globe already. Its essence, as conceived in the brain of its founder is this: to distinguish between two things that are very often mixed up but which are really quite distinct, namely, national training and national service.

NATIONAL TRAINING AND NATIONAL SERVICE

A great many people fall foul of national training because they mix it up with national service; and a good many people fall foul of national service because they think it means nothing but national training. Now these two are very different things, and it is with national training that we are concerned to-day. National training covers many fields. It covers the field of education; it is essentially educational, whatever it may lead to beyond. In this country our educational organization has been a very limited one in its scope, and what General Baden-Powell has done is to bring into the national education new elements of development. In saying that, I am far from underrating things which have been accomplished by others who have preceded him and who are working hard to-day. No one who

knows the magnificent work which has been done by the Boys' Brigade and the Church Lads' Brigade and other organizers of Cadet Corps, will fail to appreciate what they have accomplished for the budding manhood of the nation. The differential quality of General Baden-Powell's plan is, to begin with, its elasticity, and, in the second place, that it appeals to certain instincts that are very deeply planted in the British boy, and which are perhaps more easily taken hold of than any other instincts. You see how the nation is awakening to that fact. The success of the Officers Training Corps in our schools and universities is an illustration of the enlargement of view which is being brought about right and left. The advances in the Cadet Corps of different kinds are another illustration of the same notion of expansion. People no longer look upon these things as a fad; they recognize that without a certain amount of physical training and a certain amount of organization and discipline you cannot bring out all the best elements that are inherent in the composition of our youth. That points to the neglect by the country of a very crucial period, the period which for most boys intervenes between the time when they leave the elementary school and the time when they take up more serious work. There is a gap there, a gap which has begun to be filled in our public schools by such institutions as the Officers Training Corps and the old Cadet Organizations, a gap which those who founded the other organizations of Boys' and Church Lads' Brigades and other similar institutions have aimed at filling—only under very much less advantageous circumstances. Here in the Boy Scouts you can organize almost anywhere—the small section in the country village or the large section in a populous centre. It is only an illustration of what has to be done in order to fill up the gap to which I have alluded. Now that gap is receiving attention at the hands of the educational authorities. I myself was in some degree associated with an Act of Parliament which was passed three years ago and under which in Scotland—which stands alone in this matter—education is carried on after the elementary school age of 14. We took power to the School Boards and to the Scottish Education Department to carry on in Scotland continuation classes, and there was even a local option to make them compulsory. Well, that has begun. The scope is very elastic, it affords room for physical training. That is only a beginning, a principle, but the principle has been adopted, and if I am not much mistaken we shall see it quickly extended to other parts of the United Kingdom.

THE ELIMINATION OF THE HOOLIGAN

What is important is that we should not take too narrow a view of what must be included in the national training in that period between 14 and 17. It is a perfectly safe period to work in. You do not interfere with the sources of recruiting, you do not do anything which renders a boy otherwise than more fit for the functions which he will afterwards have to discharge when he becomes an adult; but although it is of supreme importance that his education, which is generally curtailed, and his technical training should be continued after he reaches the age of 14, that is not everything. We know what we have to combat in the shape of that sporadic growth known as the hooligan. If you want to eliminate the hooligan you must lay stress on the moral element, on the element of organization and discipline, on that physical training which never progresses without carrying with it also a certain amount of mental training.

Well, Ladies and Gentlemen, our fashion in this country is for the pioneers of Government work to be voluntary workers, and the remarkable success which the Boy Scouts have attained is simply an illustration of what has often happened before. Someone has been found who has advised something which, to my mind, gives an indication of the elements which will have to be included in the continuation training that follows in our schools in order to make them complete. It is an admirable thing that this organization should have got so far. It is an admirable thing that the Cadet Corps should have progressed as they have progressed; but what is necessary is that the third stage should come, when the State should recognize that, as part of the education, I think the compulsory education of the youth of the country, some kind of physical training of an organized character should be included, along with that mental discipline which is essential to fit people for the work of life. You cannot, if you would, separate soul and body. Our ancestors used to think you could, but we know better than they. Soul and Body are curiously interlaced; the things of the body assist the things of the mind, and the things of the mind assist the things of the body. We know that to-day.

THE BOY SCOUTS—A GREAT OBJECT LESSON

Well, here are the Boy Scouts among us, a great object lesson of how to enlarge the system of our education. Public opinion moves slowly, but it does move, and when it has moved to a certain extent it moves with accelerated velocity and things

become accomplished which seem impossible if you look at them from years behind. To my conception, the system of our national education will not be complete until we have continuation classes covering that period of from 14 to 17, and including among them physical training devised with the sort of imagination and elasticity which there is in the Boy Scout organization. I do not see that you can include that just as it stands in any ordinary school curriculum. There is too much of the element of what is fancy free about it, and if there had not been that element of fancy free, I doubt whether there would be the acceptance there has been by the general public. It is plain, however, that the Education Department has got a new field in front of it. I entirely agree with what I think is General Baden-Powell's view, that it is well to keep these things distinct from the operations of the War Office. We are not trained at the War Office to handle these delicate and subtle educational problems, but the Board of Education is extending its activities; it is a body which has an enlarged future in front of it, and if we can only keep this distinction between national service, which is a question, however you may look at it, with which the War Office must deal, and national training, which is a thing, in its earlier stages at all events, for the Board of Education, then I think you have lines along which, if you choose to proceed, you will find the friction and the prejudice, which you might otherwise have to encounter, reduced to a minimum, and your path made a pretty smooth one. That is really the main reason why I wish to insist on what I am saying this afternoon, the extraordinary educational value of the Boy Scouts Movement.

THE LESSON OF SELF RESTRAINT

I think it has been a great advantage that General Baden-Powell has resolutely kept it apart from other organizations and institutions. It stands by itself as an object lesson. We see how different these boys are when they have gone through this course of training. We see what we get by the awakening in the boy of the sense of responsibility. If you give him his *Bushido*—to use the Japanese term—to study and incorporate in his mental constitution, you see what you can do if you appeal to the standard of honour, the standard of truthfulness and the standard of readiness to subordinate himself to the good of the whole. There was a discipline which they used to teach in Japan, and which I believe they still teach to their young officers, to subject themselves, in the cause, to the command

of those who are weak and incompetent, in order to be taught the lesson of self-restraint. It is a great lesson, that lesson of self-restraint, a lesson of subordinating what the Greeks used to call the ὑπερηφάνεια, the pride, which prevents people from accepting the great truth that the whole is more important than the individual who belongs to it. Well, the Boy Scouts Organization includes that notion of discipline, includes the feeling that the Scout ought to set an example to those about him, and above all ought to look to the good of others before he looks to his own good. That is a great educational lesson if you can spread it in the nation, and it is because General Baden-Powell has conceived that and many other points in connection with his organization that I have been one of those who have welcomed it. I welcome it from the point of view of education; I welcome it from the point of view of the War Office; I welcome it from the point of view of the national good; and I shall listen, as I think you will listen, with real and genuine interest this afternoon to what its founder has to tell us of his doctrine and the way in which he has applied it.

LIEUTENANT-GENERAL SIR R. BADEN-POWELL, K.C.B., K.C.V.O.: I propose in this paper briefly to discuss the need of a training of our youth in "character" as a basis for training for National Defence, or indeed for any service or career.

I would indicate where Cadet Corps may fail, and how the Boy Scouts' Organization can, and does help them.

Also I would sketch in outline the aims and methods of the Boy Scouts.

COMMON SENSE TRAINING

Lord Haldane has just spoken of the gap which exists between National Training and National Service. It is a gap which must be bridged over before we can be an efficient nation. National Service is of no use without National Training as a foundation. Our present educational system does little to supply this.

The Boy Scouts scheme is, as I will endeavour to show, one attempt among others to fill that gap by laying in the boy a foundation of character upon which he may build a career in any direction.

The general idea of the Boy Scouts movement and training was not one, as seems to be inferred, that came as a sudden inspiration; it was merely a mixture of experiences gradually gathered in training recruits in the Army. In the Army our

education has, during the last few years gone through various transitions. The method of Frederick the Great, of having a drilled machine, worked very well in his day, and he won great battles, but it would not have been successful in the present day, when we want men rather than machines to do our fighting. The text which heads the syllabus of my lecture — "If you want a man to be a soldier he must be a MAN and not a sheep" —is one the truth of which, I think, none of us can nowadays deny. When I began my service we were in the transition stage, when we were still being drilled, and when we were not allowed to develop in peace time what are termed the three C's of the soldier, viz., Courage, Common sense and Cunning. I think I have suffered as much as most people in being hauled over the coals for "playing the fool instead of carrying out the manœuvres." I remember especially one occasion in Ireland, many years ago, when I happened to be a very young Captain in charge of a squadron, that I saw an enemy's battery in action. We crept along by a hollow road till we got right in front of it, under a crest of the hill, unseen by either the battery or its escort—which was doing its proper duty as was laid down in those times, i.e., looking to its "front." We came up to the battery at about ten yards distance, and walked into it and captured it. Well, the officer in command of the escort said that being a dry, hot day, he naturally expected we should kick up some dust and merely sat there looking around for any dust in the distance. As we did not happen to make much dust he had not noticed us. Next day it happened, going across some hills, we found this same battery in action again, with the same escort looking out for dust. We thought it a pity not to oblige. A few soldiers, under an astute sergeant, armed with lassoes on their saddles, cut down a few branches of trees and rode along at a trot in a shallow road some little distance to the front of the escort. They towed these branches along behind them, thereby kicking up an enormous dust. Away went the cavalry after them, and we merely then walked into the battery again, this time from the rear. We were just congratulating ourselves on having done a clever thing—for us—when an aide-de-camp came galloping down and said that the Commander-in-Chief wanted the officer in charge of the squadron. Well, the feeling came to me as I suppose it has to many of you—as if somebody had poured a quantity of cold oil down inside you. I rode off with the galloper thinking of what my next profession in life would be

after I had left the army. When I got to the Commander-in-Chief, he said, "Did you do this thing?" I said, "Well, Sir, my squadron did." I dared not look at him as I said that, but when I did look, I found he was laughing. He patted me on the back and said, "That is the sort of thing I want to see, use of your commonsense." I felt myself blushing down to my toes. That General was Lord Wolseley. A new era had dawned. There was no longer any regard paid to the red tape fetish; we realised that we were not to slavishly follow drill books, but that we had to use our commonsense as occasion demanded. That system has continued to develop up to the present time; we train our soldiers, each as an individual, to use his commonsense, and to be a man, instead of being merely a machine. Frederick the Great won battles by his drilled machine, but Bonaparte won his with hordes of conscripts merely by the *moral* of his magnetic leadership. In the same way you saw in later days, in the Russo-Japanese War, one side a drilled machine, and the other composed of individual men of spirit. You saw the Boers—what a formidable foe they made. Although never drilled, they had the spirit, the common sense and the cunning of the campaigner—all those points which go to make a soldier; it merely wanted the extra luxury of a drill to make such a man into the finished article. It is the human, manly side which needs developing. No one realizes this better than the Emperor of Germany.

As a basis for training your soldier you must have in your pupil the attribute of character. Officers getting their recruits from amongst the men—or rather the over-grown boyhood—of the nation, want men with character, but they do not get such, because our education does not go in for character-training. It teaches the "three R's," and our lads perhaps are gaining more book-intelligence, but they are getting less and less of character into them, because of over-civilization, and the book-education of our schools does nothing to counteract this. Only three days ago I was speaking to an educational authority, who said, "Our nation has been very nearly ruined by those monks of old who started book-learning as the one corrective to the over zealous soldiering of the day, and they have thereby practically wrecked our 'character'."

THE HOBBLE SKIRT

Of course, education has improved enormously, but to a very large extent it has been directed by the educators them-

selves. With all due deference, they are not always the best judges of what kind of education is required for the different lines of life. We see a parallel in the dress of the ladies to-day. They want a dress which looks graceful and artistic, which is easy and comfortable for walking in, and which does not expose too much of the form divine, and so on. They wear a hobble-skirt. It is made for them by the dressmaker, who says it is the right thing, that "it is easy and graceful, and if you do not like it, or think other forms of dress are more useful or becoming—well, you can go somewhere else." That is what we have in regard to our education. The educators tell us "You boys have to learn reading, writing and arithmetic, and that is all that is necessary. If you have absurd fads about training a man to make himself a success in life, you can go somewhere else." There are others—especially our self-made men—who say that reading, writing and arithmetic do not necessarily make a man's career a success; it is his character.

CHARACTER TRAINING FOR BOYS

Character is the great essential to success, whether in the nation or the individual. Yet, character training is the one thing which is omitted in our education. It is true that boys in our great Public Schools pick up a certain amount of character, but that is just fortuitous: it is not directed: they have a certain sense of "good form" and act up to it. But there is nothing of that kind amongst the poor class of boy in the Elementary Schools. There is nothing inside or outside the school walls which trains them in character. That is where the Boys' Brigade and the Church Lads' Brigade and the Young Men's Christian Association are doing good work; they are trying to inculcate in the lower order of boys some sort of character by the institution of organized games and discipline. The Boy Scouts is the newest addition to this group. But, of course, it is uphill work, done by individuals, and the different organizations work in different ways—although we all endeavour to pull together as much as possible. I only wish we could see some authority taking command of the whole lot of us and organizing us, and bringing our efforts in a proper channel, so that there is no overlapping or leakage. If some such "combine" were carried out, we could, I believe, get hold of the mass of the boys and make them men of character, and thus change the whole outlook of the nation in the near future.

CADET CORPS

Character training for our boys, then, is the essential ground work for making our men into a nation of good citizens. It is equally essential for making them into soldiers. Now, one great organization which is doing a great good for the boys, in addition to those I have referred to, is that of the Cadet Corps. It gives them an outdoor life and physical development; it gives them the training of soldiers, the love for their country, and a sense of duty and discipline, which, as I say, is not given them inside the school walls. I have been an ardent cadet-man since I was a bugler in the Charterhouse Cadet Corps; I have had cadets under me on active service; I have held the rank of Honorary Commander of several Cadet Corps; and I have seen their great expansion in our over-sea Dominions; but, gradually, as I have got older and studied their ways and looked around, I have detected many shortcomings and many defects in the cadet system. Not long ago, my suspicions were turned into almost certainty by Mr. John Burns. "You are going in the wrong direction with those cadets of yours" he said, "because the more you train and drill a boy to be a soldier in his youthful years, the less he will want to become a soldier when he comes to the age for soldiering. You have to be careful how you put the glamour of wearing the King's uniform before him, because it may wear off as he gets older; he gets bored with the drill, and he may never want to take to it again."

One sees, on looking into the returns, that that is very much what has happened with Cadets; only a very small percentage have gone into the Service afterwards. Now that the system is improving, and the work is getting more interesting —less of the goose-step and more of the field work—no doubt that state of things will improve, but, still, there are undoubted drawbacks to the Cadet organization. We should owe a great deal to Cadet Corps if they could make up for the omissions of the school education of the boy. If you look at the large mass of the middle class and lower class boys, you will find, as they grow up into young men, they have no sense of discipline, they are very self-assertive—though for very little reason—and they are wanting in self-reliance and in fortitude, which are essential qualities whether they are going to be citizens or soldiers. That point is brought home to us by our over-sea Dominions where "no Englishmen need apply," where formerly, an Englishman used to be the very type of fellow that was wanted.

One sees it too, in the Army, thriftless fellows coming in with no idea of discipline, and officers having to try and hustle it into them at an age when they are probably too old to pick it up. So a great possibility would seem to lie before Cadet Corps, at any rate in the United Kingdom. What it may be in some of our over-sea Dominions where there is an obligatory system I do not know; the authorities may be able to keep them longer as Cadets and to give them a more thorough training in real sound discipline such that it becomes part of their character. But we British do not readily accept a merely repressive form of discipline, with punishment for faults. It does not take hold of us. What we act up to is more a sense of "playing the game," a sense of honour and "good form." These appeal to an Englishman much more than any dread of punishment, and supply a much sounder and more permanent form of discipline, and one which we can instil into him if we can only get the boy early enough, before he has grown into the hooligan or the lout.

SHORTCOMINGS OF CADET CORPS

The points which I have regretfully to acknowledge against my beloved Cadet Corps are these.

1. First of all there is need for specially capable officers for training the boys, because it is not every man who has the pecular gift of training a boy, and these are very hard to find, good officers preferring the more serious form of soldiering.
2. The expense limits the Cadet training to only a certain class of boys.
3. A very considerable portion of our citizens conscientiously object to their sons being taught soldiering, and the idea of fighting and bloodshed, before they are of age to judge for themselves, and therefore bar their sons from serving as Cadets. Well, that is a thing you have to take into consideration.
4. The principle of the Cadet Corps is only applicable to populous centres, where you can raise a company. Out in the country districts a boy gets no chance of becoming a cadet.
5. The physical training is only a nominal thing. While they are on parade they get a certain amount of exercise, but the parades are very few and far between.
6. It is the same with the discipline. They only obey orders while they are on parade; the discipline is put on

with the uniform and taken off with the uniform; it does not go into their soul and mind, and it does not become part of their character—which is what we want.

7. Then there is the fact that the glamour wears off when they come to the age to go into the Service. Only ten per cent. join the Army.
8. Then, of course, the system fails to give any idea to the boys of their duty as citizens.
9. It involves the expenditure of a certain amount of public money.

ADVANTAGES OF THE BOY SCOUT SYSTEM

I fear I have drawn a very dark picture of the Cadet Corps system; I want to show up the Boy Scouts movement as the bright side!

1. In the Boy Scouts we have a work which appeals more widely to both the officers and boys, so there is less difficulty in getting qualified officers to join.
2. The Boy Scouts movement is non-military, that is to say, we do not do any military drill. That fact appeals to a very large number of parents. We have in our ranks boys of all denominations, Non-comformist and others; anti-military parents will allow their sons to join the Boy Scouts, but prohibit them from joining a Cadet Corps. Even the Boys' Brigade and the Church Lads' Brigade undertake a certain amount of military drill. So we fill a gap.

Incidentally the Army Council have done us a good turn by not allowing officers in uniform to inspect us. That has gone a long way to explain to people that we are non-military. They accept us now; they used to suspect us before of being a trap to catch boys for the Army. I do not know whether this principle is followed in the over-sea Dominions; I think that there the authorities rather encourage officers to come in uniform as an aid to recruiting, because their medals catch the eyes of boys, and start in them the spark of military keenness.

3. The Boy Scouts' Organization is applicable to small centres. Our unit is eight boys under their own patrol leader, so that every village and hamlet can have its little group of Boy Scouts. This would not apply to a Cadet Corps, so we fill up a blank there. I am thinking also of far-away corners of the world; for instance, Canada, where they find the idea particularly useful in

all their little back towns and villages. They are able to raise their little troop or group of Boy Scouts where they could not raise a Company of Cadets.

4. The moral training and sense of duty and discipline goes on all the time. The question was asked of headquarters the other day, "When is a Boy Scout off duty?" We replied, "Never; he is always on duty, whether he is in uniform or not." It is his business to be ready, just like a policeman, to help at any moment. The boys all realize that. They are always on the look-out to do something for somebody, whether they are in uniform or not. Therefore the sense of duty and discipline really becomes part of their character.

5. The training, which they undergo, of living in camp, cutting their own fuel, cooking their own food, being able to swim and save life, managing boats—all those things make for health and handiness, and make them resourceful, manly fellows. That training is intended to lay a character foundation in the boy for taking up any line of life afterwards. Thus, if a Boy Scout goes into the Army, he is thoroughly grounded in discipline and sense of honour and duty, as well as in campaigning, scouting, pioneering, and signalling, and it only needs the polish of drill to make him into a first-rate, all-round soldier. Let anyone ask a commanding officer of a Regiment who has tried both, which he would prefer to have—a Cadet or a Boy Scout as a recruit and the answer will invariably be that he would prefer the Scout.

6. Although our policy is not to make the boys into soldiers, but as a first aim to make them good citizens, the results show that a very large proportion of our boys who have left us have gone into the Service; as far as I can judge, about 70 per cent., and they join from an idea of serving their country, and not, like so many other recruits, from want of employment.

7. Since the Boy Scout system has spread to every part of the Empire, it can standardize the training of our race if desired. Such standard, if used in all the Cadet Corps, would be of very great importance, especially in the near future, for our Imperial Army.

8. Then, the movement has done a great deal of good for the Scout Masters, who are young men who have had no character training themselves, but, in dealing

it out to boys, are bound to pick up some of it themselves. Employers have told us that their young men who become Scout Masters improve enormously, and we are really coming to be looked upon as a university for that class of young man who cannot afford to go to the big universities. We have at the present moment 7,000 of these young fellows, and we are opening classes of instruction for them. In the meantime, they are developing for themselves that character which they otherwise would never have picked up, either at their school or at their places of business.

9. The movement has spread, as you will probably know, to all corners of the Empire; I think there is scarcely an over-sea Dominion, however small, which has not got its scouts. (Yesterday we heard that Fiji and Honolulu are the latest recruits.) It means that there is a comradeship between these boys right across the world, which is something more than a mere sentimental touch, such as comes from reading books or newspaper They feel they are brothers and comrades, all under the same flag, wearing the same uniform, doing the same kind of work, and reading the same newspaper. It, therefore, brings the over-sea Dominions into closer touch with our boys at home.

The movement has not spread merely to the over-sea Dominions, but has spread to other nations besides ourselves, and great sympathy is being aroused between different races of boys from the fact that they communicate with each other. The system is that those who live in a town beginning with a certain letter of the alphabet communicate with another town commencing with the same letter. Boys in Manchester, for example, are communicating with Melbourne, or Moscow on St. George's Day by means of picture postcards with greetings on them. In that way, the movement is creating a sympathy between the boys of all nations of the world.

10. Lastly, scouting does not cost anything to the taxpayer.

THREE AIMS IN THE SCOUTS' TRAINING

I will now sketch briefly the scheme of training adopted in the Boy Scout movement.

Our main aim is to help the national training in character.

Over-civilization threatens England with deterioration. Free feeding and old-age pensions, strike pay, cheap beer and indiscriminate charity do not make for the hardening of the nation or the building up of a self-reliant, energetic manhood. They tend, on the contrary, to produce an army of dependents and wasters, and this is being steadily recruited by 46 per cent. of our working boys, who are employed, so long as they are boys, in "blind alley" occupations, which fit them for nothing when they become grown up.

The best types of manliness left in our race are our Colonial frontiersmen—men who, if they want to live, have to be resourceful and energetic, plucky and enduring under the difficulties of climate and surroundings, and who have to fight their way to success.

These are the men whom we hold up to the boys as examples to follow. They are the true "scouts" of the nation.

Their backwoods life appeals to every boy, and he is eager to practice its detail.

So, under the attractions of scout craft we inculcate into our young Scouts the better attributes of their heroes, the backwoodsmen. We divide the training into three parts:—(a) individual character; (b) handicrafts; (c) public service.

(*a*) *Individual.*—Our first object is to make the boys good individual men. We do that by teaching a boy field scouting and campaigning work. Before he can become a first-class scout, he has to pass all sorts of tests in backwoodsmanship —a work which appeals to him; he has to be able to chop down a tree, be able to build a hut, make a tent, light a fire, kill his animal and cook it, make bread, be able to swim and save life in the water, manage a boat, and many different things of that sort, and in addition, he has to have a balance at the savings bank—it may be only a shilling, but, still, he has to open a banking account, thereby gaining an incentive to thrift. Then, again, he has to be helpful to other people; he has to learn first aid; he has to know how to signal; he has to know all these things before he can become a first-class scout. A first-class scout is therefore a capable, all-round young *man*.

(*b*) *Handicrafts.*—The second point is that we try to teach him to be a handicraftsman. We induce him to take up hobbies which may be useful to him in after-life, and, even if he should fail in one, he still has a second or third to fall back upon.

Take a Boy Scout as a sample. First of all, the badge on the front of his hat and the little flag on his staff mean that he

is a "patrol leader" who is in charge of eight other boys. He commands them, and is responsible for them at all times. Then, on his arms he wears badges of efficiency. He has passed as a gardener; he has also passed as a leather worker, that is, in saddlery and boot-making, and that kind of thing. He has also passed as a musician; as a cook; as a shorthand writer; as an animal naturalist; and as a missioner (which means he can go down into the slums and look after aged people, changing their bedding, and so on). He has the first-class badge as a scout, which means he has made himself an all-round man. He is also a King's Scout, which means that he has qualified himself in various details in four different subjects which make him of good service to the King, should he ever be required. In the first place, he is a "cyclist"; that means he owns his own bicycle, and knows how to mend it; he can find his way by map, and carry a message in his head for an hour; he has signed on to turn out at any moment, whenever the King may require his services. Then, he is a "signaller." He is a "marksman" with the rifle. And he is a "guide": that means he knows all the short cuts round his place of residence; he knows the supplies, where to get horses and forage, where the telegraph, telephone, hospital, fire and police stations are to be found in his neighbourhood. That makes him a King's Scout.

Those badges of efficiency are merely to induce the boys to learn for themselves, and it is perfectly surprising to us who are working in the movement to find to what a great extent they adopt and carry out the idea. Over 100,000 of these badges have been issued. There are 5,000 Scouts who have passed the test of being able to signal in the same way as the Army signallers. The marksmen number 5,799, and, of cyclist despatch riders, each owning his own bicycle, and signed on to serve the King, there are 14,284. Of "King's Scouts" there are 2,140.

(*c*) *Public Service.*—Our third point is to teach the Scout a sense of service to others. It is the business of a Scout to save life whenever he can, and to do good turns daily to people. It does not matter how small or big they are. I heard of an instance as I was coming in. A Boy Scout had been to a dance last night, and he went and asked the hostess if she would introduce him to a certain lady in the room. The hostess said, "Have you fallen in love with her?" He said, "No, but she looks so old and plain that I do not think anybody will dance with her, and I shall not be doing my duty if I do not dance with her." We issue life-saving medals to those

who risk their lives, and certificates to those who save life without risk. Of life-saving medals, we have issued 226, and of certificates, 105. That is in the short time we have been at work. It means a great deal, because the cases are very highly tested. Then, when they do a good act, they are never allowed to say anything about it. Troops and patrols specialize their work for the public service: thus one troop will take up Fire Brigade work, another Ambulance, or Missioners, or Coastguards, duties for the good of the community.

HOW THE SCOUTS HELP CADET CORPS

The Scout movement and system is also helping the Cadet Corps more than people seem to realize, especially in our over-sea Dominions. In New Zealand, by an arrangement with the Government there, a boy has the alternative of becoming a Scout or a Cadet, and the idea seems to be working very well. In India the Government have decreed that in all the schools for boys of European origin, the boys should be Scouts till they are 14, and a capitation grant is made for those who pass their tests as first or second-class Scouts. In other places, there is an arrangement whereby a boy can go for two years as a Boy Scout, and then be promoted to a Cadet, when he gets the finishing touches of drill, tactics, and military training. In Canada to a very large extent the Cadet Corps are using the Boy Scout system for training their boys.

There are several mounted troops of Scouts in Canada. I saw one particular corps, a cadet squadron to Strathcona's Horse, and they are the smartest lot of lads one could wish for.

SEA SCOUTS

Then we have sea Scouts in addition to land Scouts, and they are being recognized now by the Board of Trade. They are divided into (a) Coastguard Scouts; (b) Seamen Scouts. We have just got news from Canada of the first training guard-ship being started at Vancouver with Boy Scouts as her crew, and no doubt the idea will spread to Toronto and other centres, and form a nucleus for manning their future Navy.

Of course, we are only very much in embryo at present. I am only mentioning these points to you because they point the way in helping the defence forces both here and oversea.

BOY SCOUTS OF FOREIGN COUNTRIES

I should like to point out that in countries where military service is obligatory the Scout training has also been adopted,

because the authorities appear to recognize the value of the character training which underlies it. In Russia they have taken it up specially with that view. They have a large number of cadet corps there which have now adopted the Scout training to a large extent. There are now over 10,000 at work, and they are increasing every day. I had to go to Moscow in the winter, and I saw over 3,000 there. They fully recognize that drill is not everything; character training is also wanted. Italy has taken it in the same way, and I may say that the Emperor of Russia and the King of Italy are both at the head of their respective movements, and are keenly interested in it. Again, in that country, which I look upon as the finest military country of all—at least, they are the soldiers I should least like to meet in battle, namely, Chili—they have gone in for Boy Scouts, and have 10,000 at the present moment. The Chilian is a fine fellow, with a fighting instinct, with a General Staff trained entirely by the German military staff in the most up-to-date tactics and strategy. They have a fine army, and you would think they were the finished article, but, still, they have gone in for the Boy Scout movement. That indicates that there are points other than mere military training in the Scout movement, which military nations find of value.

NEEDS AND POSSIBILITIES OF THE SCOUT MOVEMENT

In the Scout movement we aim for better citizenship, because we all recognize that a nation, to be great and strong and prosperous, is not necessarily the greatest in its fleet or in its armaments, but that its character is what gives it supremacy. To make character in your citizens you have to make each individual man a man of character, but we have no proper education for that at present within our school walls. We have to try and do it outside the school walls, and that is what we are endeavouring to do in the Boy Scouts—to put character into these young lads of all classes. Our only need is for more men to act as officers and commissioners. We have already a good number of ex-officers and others at work. Our numbers are practically limited by the numbers of men who come to us as Scout Masters; we can get nearly the whole of the boys. If we can get their support I believe that we ought to do very great things. We are being very much encouraged on all sides. The movement is spreading in all the over-sea Dominions.

Large numbers of Scouts are coming over for the King's review on the 4th July. Some are even coming from Australia

as well as Canada and South Africa and nearer places, which means that the boys of our Empire will get into a close personal touch of brotherhood with each other.

In the United States also they have their Boy Scouts. There is a greater number of them there than in this country, because the money in the States flows in more easily. The last report received shows that they were going on for their 300,000 Scouts. I have no doubt the same thing will happen in our over-seas Dominions. In Ontario, for instance, they are getting on for their 10,000. There is a great feeling of unanimity and brotherhood right through the movement, and if it goes on spreading there is no doubt it will make a great feature in our Imperial feeling throughout the Empire, and also be one of the elements which will make for that great general peace of the world for which we all hope.

THE CHAIRMAN: There seems, and I think it is natural, no desire to debate this address—there is so much in it which I think we should all like to meditate upon. General Baden-Powell has presented us with a living picture of the Boy Scout movement. I do not mean merely in the introduction of the young Admirable Crichton who sits on his right, but by the general description of the Corps, which he knows as only the man who has been at its head from the beginning can know. Therefore, I think I shall best suit your wishes without expressing any opinion, as a Chairman sometimes does, but simply move a vote of thanks to the lecturer. It is a motion I do not propose to put, because I am sure it is a motion about which we shall all feel of one mind. General Baden-Powell has rendered the nation a great service in giving a lead to this matter (applause), and to-day he has brought before our minds of what that League consists. The moral element in it is very striking, and without the moral foundation no system of education is ever a real system of education.



SEA POWER IN THE PACIFIC.

By ARCHIBALD R. COLQUHOUN,

Gold Medallist, Royal Geographical Society, etc.

Wednesday, April 5th, 1911, at 3 p.m.

Admiral Sir R. N. CUSTANCE, K.C.B., K.C.M.G., C.V.O., in the Chair.

TEN years ago the writer of this paper published a volume called "The Mastery of the Pacific," in which he reviewed the position of those Powers which for geographic or economic reasons are engaged in the Pacific area, and declared that in that ocean lay the arena of the greatest struggles of the future. It is never quite satisfactory to re-read one's own prophecies—there is always so much that one has failed to foresee—but it is useful to go back to the standpoint of a decade earlier in order to realise the rapidity with which we are moving, and to trace the direction in which our progress is made.

The theory that the Pacific must be to the twentieth century what the Atlantic was to the eighteenth and early nineteenth is now no longer a novelty, but an accepted fact. Ever since Japan began her career as a world Power some such change was evidently inevitable. But the events of the Russo-Japanese war, (which no prophet, however wise, would have ventured to forecast ten years ago), have precipitated matters, and have altered some of the fundamental conditions. In 1901 one still saw in Russia a great land Power, stretching across Asia, established at Vladivostock, and with a possible naval base in open waters further south on the Pacific; one hardly realised the possibilities of the Japanese navy; and, last and most important of all, one looked upon the Pacific as one of the natural bases of the British navy, and upon the contingent of that navy in the China sea as a dominating factor in the Pacific situation. The conclusions reached were that the United States must play a dominant part in the Pacific, modified by the ambitions of Japan and the well-defended interests of Great Britain, but that eventually, in the distant future perhaps, the great Russian Colossus, and that extraordinary reserve of man-power known

as the Slav peoples, must make a bid for the domination, if not of the world, yet of the continents of Europe and Asia.

To-day we find the Colossus, whose aims and ambitions loomed so large, broken and shattered. One day he will arise, but for immediate purposes he can almost—not quite—be discounted in our examination of Pacific possibilities. Another Power, which ten years ago seemed to dominate the situation, has withdrawn her forces from the Pacific for the present. When the Anglo-Japanese Alliance was concluded in January, 1902, and again when that Treaty was extended in 1905, it was with the idea of securing our position in the Far East, while enabling us to concentrate our naval force in our own waters. But, as Mahan has pointed out, our diplomacy, which contributed largely to the overthrow of Russia in the Far East, has actually helped to increase our difficulties in Europe. The confusion in Russia which followed Japan's victory removed from action the most formidable of Germany's continental rivals, left her free to consolidate her position in the Triple Alliance, and to turn her attention even more seriously to naval matters. Therefore we purchased a kind of security in the East at the expense of increased pressure in Europe. There is no desire to indict the policy which has had these results. It was, perhaps, hardly possible to foresee at the time how far-reaching the results would be, but it is essential that we should realise that we cannot expect, by any policy of alliances, to secure for ourselves a position which was originally won not by diplomacy but by sea-power of a predominant kind.

CHIEF GEOGRAPHIC CHARACTERISTICS

A few words as to the geographic characteristics of the Pacific may not be out of place. The most singular feature is the absence on the American littoral of natural harbours or islands. The great twin continents lie, as it were, with their backs to the Pacific; the great mountain chains which form their spine lie close to the Pacific coast, and consequently there are few great rivers, and few indentations, save on the extreme north and south in Alaska and southernmost Chile. From Vancouver to Valparaiso, a distance of 8,000 miles, there are only some 8 or 9 good harbours; of these there are three in the United States—at Seattle, San Francisco, and San Diego. The only group of islands which could conceivably be of strategic importance are the Galapagos group, belonging to Ecuador, and these are nearly 1,100 miles from the Pacific terminus of the Panama Canal and 1,000 miles from the coast. On the other hand, the Western and S.W. Pacific are a maze of island groups, and the continents of Australia and Asia are flanked by a chain of islands (some of them among the largest in the world) from New Zealand, in the south, through New Guinea, Celebes, Borneo, Java, Sumatra, the Philippines, Formosa and Japan. North of Japan

runs a chain of islands, the Kurile, which all but connect with another, the Aleutian Isles, stretching out from Alaska.

NAVAL BASES OF THE UNITED STATES

When these geographic conditions are kept in mind it will be allowed that the United States has displayed considerable forethought in securing, with very little noise, a chain of stepping stones across the Pacific to compensate for her initial disadvantages. Hawaii, Midway Island and Guam lead her by reasonable stages to the Philippines, and although the American nation as a whole was surprised when Dewey sailed into Manila Bay, there can be little doubt that the acquisition of the Philippines was only another step in the logical expansion of the United States as a world power, for which her most far-seeing statesmen had been preparing. By securing the splendid harbour of Pango-Pango in Samoa she has provided a useful *pied à terre*, but at the present time she is spending all the resources at the disposal of her War Department (by no means adequate) on the fortification of the Panama Canal and completing the defences of Manila Bay and Subic Bay (Philippines) and Pearl Harbour and Honolulu (Hawaii). The idea is to have well fortified bases in these insular possessions in order to leave the navy free for effective action. For some time past the United States has been negotiating with Ecuador for the purchase of the Galapagos Islands, whose position will give her great strategic possibilities when the Canal is opened. It is said that these negotiations have fallen through, and it is certain that the United States has had to meet greater difficulties than the cupidity or ambition of Ecuador. Rumours of intrigues in which Japanese individuals (not the government of course) were concerned, have been rife, and there are tales afloat of the attempts to secure the South American States as allies, including one to the effect that a Japanese Naval base may actually be established in the waters of a South American state. One should not attach too much importance to the letter of these rumours, but the spirit of them is undoubtedly true. The smaller republics of South America do not love their great neighbour. They regard with apprehension her southward march, and they are desirous of asserting the independence and individuality of the Southern, as compared with the Northern continent. Some of them—Argentina, Brazil and Chile especially—are progressive and ambitious. They are said to have formed a union—the so-called A.B.C. alliance—whose chief object is protection against any economic or other aggression from the Northern republic. The position of Chile is important in the Pacific question. She is already a minor naval power, and there is no doubt that she is quite ready to coquette with Japan if by so doing she can advance her own importance. The opening of the Panama canal,

by bringing the Pacific littoral into closer touch with the Eastern states of the Union and with Europe, will certainly lead to a more rapid development of this hitherto remote region.

THE PANAMA CANAL

The completion of the Panama canal, whether it takes place in 1915 or, as its engineer Colonel Goethals seems to expect, a year earlier, will of course be the signal for a new era in the Pacific. The new route which will be opened will finally end the isolation of the Eastern Pacific, which will be covered with ocean highways. The immediate result on the United States will be to stimulate the growth of her merchant shipping, for it is hardly likely that she will be content merely to provide a path for other nations. By shipping subsidies, rebates, and other means she will stimulate her ocean-borne traffic, and while two great streams of it will go north and south (but more especially south, where railroad competition is not equally keen), a great proportion of the trade must cross the Pacific to that immense market of Eastern Asia which has so long been the objective of the great trading powers. At once arises the question of commerce protection—a question which the United States as yet has not faced. The extravagant claim has been made that the Panama canal will "double the power" of the American navy. While greatly increasing the mobilizing power of the navy, it cannot be pretended that a navy with its base at Key West, with the whole length of the canal to negotiate before it could reach the Pacific, and with that wide ocean to cross before it arrived on the probable scene of action, would be in an advantageous position. Moreover, the contingency has to be faced that Alaska might be the objective of a hostile attack.

THE AMERICAN PACIFIC LITTORAL

Alaska is a country of good harbours, with a healthy climate and vast natural resources. It is entirely defenceless. It could not be defended by a fleet with its base at Key West. The possible enemy would be in his own home waters, by no means far away from the Alaskan coast, and covered in his advance by that bridge of islands already mentioned. The Pacific littoral of the United States is almost equally defenceless, sparsely populated, and with no adequate protective force in the highly trained but small regular army. The Pacific States are only too aware that their militia system is amateurish. It is well known that the military preparations of the United States are altogether inadequate to her position and pretensions. The United States Chief of Staff, General Leonard Wood, has put it on record that his country is quite unprepared for war with any first class Power, and the Secretary for War has confirmed this view. It is, therefore, almost incredible that the near future should not

see a change in the United States' Policy, of which a salient feature will be the basing of her Naval power on the Pacific. She is already, as we have seen, making provision for fortified harbours and coaling stations across the ocean.

THE ASIATIC LITTORAL

Turning to the other side of the ocean we note this fundamental change in the position in the last twenty years. Whereas the naval Powers with which we had to reckon were then only contingents, having their main bases in their own waters, many thousands of miles away; the emergence of Japan as a naval factor gives us for the first time a navy actually concentrated in its own waters in the Western Pacific, and with all the resources for sea-power—coal, iron, harbours, *matériel*, and (last, but by no means least) a splendid sea-going population—all absolutely on the spot. Natural advantages, moreover, have been made the most of. Her great and growing Mercantile Marine is an important factor in her sea power, and is part of the machinery. Japan's system of universal service gives her an enormous reserve of trained men, and by her method of automatic conversion from a peace to a war footing she secures the minimum of friction and the maximum speed in mobilization. It appears to the writer that her geographical position makes it inevitable that Japan should dominate the Northern Pacific, and in view of this the position of Alaska and of the coast of British North America are at once serious considerations. Neither of them have, so far, been accorded any adequate protection. At the same time there is a possibility of Japanese emigration to the South American continent, where, it is said, they blend well with the present inhabitants. It is certain that the ambitious Japanese will want to share in the trade expansion of the Pacific littoral. They have been making a close study of the conditions in the South American States. The creation of an economic bond of union, and a greatly increased traffic from Japan on the North-West Pacific to the South-Eastern Pacific littoral of America, are developments to be looked for, which cannot be without their influence on the general situation.

GERMAN AND CHINESE FACTORS

The position of Germany in the Pacific is not without interest. She has no naval power to speak of at present on the spot, but she has a valuable naval base at Kiaochau, with a fine *hinterland*, and she has spent many millions in improving this position. She has possessions in the Southern Pacific, most of them acquired at the period when all the world set out to grab the unappropriated bits, and Germany (coming late) had to take what no one else had wanted. In Samoa she had better luck, and part of New Guinea was secured, thanks to the supineness of the British government of the day, while a number of

small island groups were also gathered in, without apparent justification, since her interests in these regions were of the slightest. A possible reversionary interest in the splendid, and (excepting Java) little developed, inheritance of Holland in the Dutch East Indies has also to be considered, but for present considerations the principal importance of Germany lies in her power of throwing what weight she possesses into the balance in any dispute that may arise.

China is another factor chiefly important on account of the use which may be made of her by others. It is round trade with the Chinese Empire that the fiercest rivalry must inevitably be waged, and at the present time it is by the use of her influence in fomenting anti-foreign feeling that Japan is most successful in defeating her European competitors. There can be little doubt that Occidental influence and Occidental trade have been relatively on the decline ever since Japan won the hegemony of the Far East, and this despite that nominal preservation of the open door and the *status quo* which were the prices of the Anglo-Japanese Alliance. The United States has assumed the lead, once taken by Great Britain, among the foreign Powers who strive to secure trading privileges from China but the trend of feeling in that country is against such privileges (a fact largely due to Japanese influence, direct and indirect) and even in the matter of railways the obstructions to enterprises financed from Europe or America are proving a barrier to the completion of schemes which would certainly be a great boon to China herself. The advantage to any power in close touch with China of access to her reserves of coal, iron, foodstuffs, and sea-going men is obvious and it is not an advantage ever likely to be possessed by any Occidental nation. At the same time Japan is not at all likely at present to emphasize the racial cleavage, which is so important a feature in the Pacific, by an open or aggressive alliance with any Oriental Power. Such a course would at once array against her the powers of the Occident, who would temporarily sink their differences to face the Yellow Peril.

BRITISH POSITION IN THE PACIFIC

And now what is to be said of the British Empire in the Pacific? With astonishment one realizes that, whereas Japan's naval power is an established fact, and at present the dominating fact, the position which we are to take up has still to be debated. We have not yet decided on our Pacific policy. It is now a recognized factor in the situation that the first line of defence of the British Empire as a whole is that cordon which is drawn across the path of her most dangerous rival in the North Sea. No one could desire this otherwise. By a system of alliances and understandings our diplomatists have done away with, for a time, the necessity for those outlying bases for defensive

forces to watch over distant possessions. But it is obvious that this strategy is only temporary, and can only be adhered to so long as the one possible enemy is that one whose striking force is penned up by our first line of defence. In other words, we have only provided against possible attack from one quarter, but we have no guarantee that we can count on perpetual freedom from friction and collision in other quarters. In the year 1915, the Anglo-Japanese Alliance terminates (if denounced by either of the allies), the Kiel Canal will be completed, the naval programme of the Triple Alliance will place a powerful fleet of Dreadnoughts in the Mediterranean, and the Panama Canal will be open. There is, in my belief, no reason to suppose that no troubles can befall us until the year 1915 brings all these things to pass. But, supposing that brief respite from serious anxieties is secured to us by a merciful Providence, we shall certainly have to meet a number of new problems then, and not least of them is the problem of the Pacific.

THE ANGLO-JAPANESE ALLIANCE

There is, of course, a possibility of renewing the Anglo-Japanese Alliance, but, looking at the matter from the Japanese point of view, it is difficult to see what she would secure from this, unless she made certain terms, and those terms could hardly be accepted by the British Empire as a whole. Here is the crux of the question. It is not as an island Power, remote, bent on trade, with an overwhelmingly powerful navy, that we should be negotiating, but as a Pacific empire, with great and undeveloped possessions, as yet sparsely populated. The most important factor, when the moment for that negotiation arrives, will be the sea-power which we are able to devote to maintaining the balance in the Pacific, and there is little doubt that, to be efficient we must have at least one, and perhaps two, well provided bases for that power actually in Pacific waters.

THE BRITISH PACIFIC FLEET SCHEME

The last Imperial Conference carried the discussion of this question up to the point of determining that there should be a Pacific Fleet, formed of three units—the East Indies, China, and Australian units—the last to be provided by Australia, and to consist of 1 armoured cruiser of the Indomitable class, 3 unarmoured cruisers (Bristol class), 6 destroyers (river class), and 3 submarines. The other units were to be similar in composition. New Zealand agreed that her Dreadnought should be the flagship of the China unit, but adhered to the policy of contributions to the Imperial fleet rather than to that of the formation of national units.

The scheme thus outlined is, however, quite insufficient to meet the needs of the situation, since it is obvious that the main Imperial Fleet may not, under certain contingencies, be

able to contribute any ships to the Pacific if it is to maintain its numerical superiority in home waters. The question will be the most serious one for debate in the coming Imperial Conference. The spirit in which the oversea Dominions approach the question will have great influence, and it is to be feared that even they, with so much at stake, have hardly appreciated the momentous character of the decisions they are now called on to make. This is the only interpretation to be put on the fact that in Australia the discussion of the agenda for the coming Conference was postponed to the end of the Parliamentary session, while in New Zealand it was crowded out altogether. Canada, says her Premier, has no suggestion to offer. In adopting universal military training, in getting the best expert advice on military and naval matters, and in laying the foundations of a navy Australia has, however, made a sound beginning.

PROPOSED AUSTRALIAN NAVY

It is not for a layman to criticise the report which Admiral Henderson has just presented, but his suggestions, which would provide Australia with a fleet of eight Dreadnought cruisers, ten protected cruisers, eighteen destroyers, and twelve submarines, to be finished by 1933, errs on the side of the "long view." It is possible to look too far ahead, especially in the matter of ship building. Incidentally, the expenditure to be faced is estimated at £23,500,000 for construction between now and 1933, and nearly £5,000,000 is calculated as the amount for annual charges, including maintenance and depreciation. The *personnel* is to be ultimately 15,000 men, and provision is to be made for the local manufacture and supply of guns, ammunition, and shipbuilding material. Admiral Henderson recommends Sydney and Fremantle as primary bases, but there would surely be an advantage, from the point of view of Pacific strategy, in choosing one base rather than two (on either side of the Australian continent), and Port Darwin appears to possess the qualifications needed for the purpose.

URGENT NEED OF A NEW BRITISH NAVAL BASE

Some discussion has already taken place as to the best site for a new base of British naval power in the Southern Pacific, a centre in connection with the East Indian, Australian, and China units. Ceylon, Singapore, and Port Darwin are variously advocated, the idea being to develop a central naval base, in connection with the military expeditionary forces which Australasia and South Africa will be able to furnish. The selection of Colombo for the purpose—a plan favoured by Mahan, I believe—is thought by many to ensure the most effective distribution of power. The defence of India is an Imperial problem which ought to be interwoven with our Pacific policy, and part of the present military expenditure, it is suggested, might

be saved to India, and a sum of money devoted to maintaining a naval centre in the Indian Ocean, in close connection with Australasia and South Africa, both of which could be defended from this base, and could in return furnish expeditionary forces if necessary. South Africa, it must be noted, is already taking steps to provide for military training, and Table Bay is to be fortified and a scheme for the defence of Durban (behind which lies South Africa's chief coal supply) is being framed. These necessarily constitute the initial share of South Africa to Imperial defence. A special interest attaches to proposals which foreshadow the forging of new links of empire by binding together the tropical and self-governing regions. It is almost inconceivable that, where defence is concerned, so rich an empire as ours should calculate meticulously the cost of maintaining an adequate system, but the burden imposed on the taxpayer of the mother country is enormous, and the lack of elasticity in the methods of raising revenue have actually brought us to the pass of wondering how we can continue to meet this heavy competition. The solution cannot be found in any single line of policy, but the appreciation by the overseas Dominions of the fact that Imperial defence can no longer rest on the shoulders of Great Britain alone is undoubtedly the first step in the right direction. At the same time, it is obvious that the Dominions will not be satisfied with a scheme of defence in which Germany is regarded as the only possible enemy, and which concentrates the naval force of the Empire in the North Sea. Australia's naval policy, still in its infancy, is capable of expansion, and is not complicated, to anything like the extent, as is that of Canada by the jarring of the two forces of Nationalism and Imperialism. At the same time, the smallness of the Australian population and the comparative slowness of its increase are serious difficulties in the way of building up in the sub-continent a power formidable enough to play a leading part in the Pacific.

CANADA AND THE PACIFIC

As regards Canada, the same general conclusion must be reached, though the difficulties are for the most part of a different nature. Her present lack of population is offset by an abnormal rate of immigration, which will soon place her far in advance of Australia in this respect. But, on the other hand, Canada's interests are not entirely centred on the Pacific; moreover, there are political complications, already touched upon, which make Canada curiously blind to certain obvious dangers. It should be the aim of British policy to encourage by every means possible, mutual interests and intercourse between Canada and Australia, and there is much to be said for the view (expressed by certain Canadians, as well as by strategists at home) that all the British squadrons in the Pacific, including the small naval force shortly to be organized

by Canada in those waters, should be under a single command. In this connection, and as regards British interests generally, the all-British Pacific cable (from Vancouver to Australasia via Fanning and Norfolk Islands) should be mentioned as being of great strategic importance. One great advantage of that cable is that it is laid in deep water, with only two or three vulnerable points and remote from the ordinary routes of traffic. The All-Red route, giving a through connecting service between the mother country, Canada, Australia, and New Zealand, with an Atlantic service of 25 knots and a Pacific service of 18 knots, between Vancouver, Honolulu, Suva, Auckland, and Sydney, is a project of great Imperial importance.

ARBITRATION PROPOSALS

There is no intention here of attributing a bellicose or aggressive attitude to any Power. There are few instances in history, as a matter of fact, of nations starting out deliberately to provoke war. The pacificist spirit, of which the latest evidence is Mr. Taft's proposal and Sir Edward Grey's reception of it, is probably on the increase, and we are far removed to-day from the period of dynastic wars, or those conflicts whose main object was the glorification of a military commander. At the same time it may not be out of place here to point out that the much discussed (and sometimes misunderstood) *pour-parlers* of the President of the United States, and the British Secretary of State for Foreign Affairs amount to little more than declarations of the willingness of their respective States to submit to arbitration all arbitrable subjects. There will be—there must be—reservations on both sides. The United States would never, for instance, submit to arbitration any point in which the Monroe doctrine was called in question. The conclusion of an agreement to submit to arbitration all *international* questions between the two great English speaking Powers, leaving them free, as they must be, to decide *domestic* questions for themselves, and abide the consequences, will not, in short, be any very great advance on the present state of affairs, though in itself a useful movement. From the point of view of sea power in the Pacific, however, this agreement may foreshadow certain changes of a more definite kind in that re-grouping of the Powers which is becoming vitally necessary in that ocean if peace is to be ensured.

ASIATIC EXCLUSION POLICY.

The connecting link between the English-speaking peoples of the Pacific littoral is the policy of Asiatic exclusion, and it may be said at once that there is not the slightest prospect of a modification in that policy, and that not one of the peoples involved but would put their last man in the field in defence of it. It is the most vital question of the day in inter-national rela-

tions, and one of the most difficult problems of inter-Imperial relations. The attitude taken at present by Japan is a very significant one. In 1894, when the British Government agreed to the abolition of its extra-territorial rights in Japan, that country entered into the comity of civilized nations. A commercial treaty between Great Britain and Japan gave privileges to the traders of each, and allowed unrestricted rights and liberties to travellers "in any part of the dominions or possessions of the other." An amending clause, however, added that these rights should not be granted in India or the self-governing Dominions unless they consented. Only Natal and Newfoundland acceded; the other Dominions offering to adopt a proviso similar to that put forward in the commercial treaty between the United States and Japan of 1895, but going beyond it in excluding not only labourers, but artizans.

ATTITUDE OF JAPAN

These terms were practically accepted by Japan, but when the question was discussed at the Colonial Conference of 1897 it was finally decided to refuse the treaty altogether. By 1906 trade between Canada and Japan had shown such signs of increase that the Dominion asked to be allowed to become a party to the original Japanese-British commercial treaty of 1894, without any restriction on immigration. No sooner was this done than a large Japanese immigration into British Columbia began, and anti-Asiatic riots were the result. A Canadian Minister was sent to Tokio, with the result that Japan intimated that she would not "insist upon the complete enjoyment of the rights and privileges" to which her position, by the treaty of 1894, still entitled her. In short, while she had been willing in 1895 to accept treaties with the Dominions and with the United States which involved the exclusion of Japanese immigrants, she refused in 1907 to do more than voluntarily, and as a favour, restrict emigration from her shores to those of Canada.

THE DAMOCLES SWORD OF THE INTERNATIONAL SITUATION

In the commercial treaty with the United States, which has just been ratified, the same significant change is noticeable. In 1895 the United States exerted the right to exclude Japanese labourers. That paragraph has been altogether dropped in the new treaty, and the question is therefore suspended, as it were, by a single hair, the real Damocles' sword of the international situation. It is not merely Japan versus the United States, or Japan versus Canada and Australia, but Asia versus Europe, North America, and South Africa—East versus West. The awakening of China, the seething unrest in India, are but phases of the same question, which cannot be eternally shelved for future consideration.

AN IMPERIAL FLEET

For present purposes we have to consider the question

chiefly in its relation to the sea-power of the Pacific, but from an Imperial point of view we ought not to lose sight of the problem as a whole. If it is decided that we need a Pacific Fleet, let us get to work on it as soon as possible, assured that, whatever difficulties may be in our way, they can be solved, and must be solved if our Empire is to continue as a whole.

It is a well-known fact that armed strength averts war much more often than provokes it—it is weakness which often leads to conflict—and without any desire to encroach on the rights of others, we must be prepared, when we have ideals, to defend them. We have been the warmest friends and admirers of the progress of Japan; despite much that is to be regretted, we have been good friends to China in the past; we desire peace and prosperity in every part of Asia, and have no aspirations after further territorial acquisitions. Nevertheless, we cannot rely on anything but sea-power to secure for our children the Empire which sea-power built up, and as our Empire is world-wide, and the rivalries we may have to encounter are equally world-wide, it is essential that our naval power should be adjusted with due regard to the interests to be safeguarded. A great step towards the ideal of a truly Imperial fleet has already been taken. Let us hope the coming Conference will work out the problem to a solution worthy of our race, and of the Empire for which they are responsible.

GENERAL SIR EDWARD CHAPMAN, K.C.B. :—We all owe a debt of gratitude to Mr. Colquhoun for having brought before us so important a subject as that of 'Sea Power in the Pacific.' I will not, however, attempt to deal with the Paper he has read, but you have kindly permitted me to take an early part in the discussion upon it, for which I thank you. Lord Curzon in the Debate in the House of Lords last night said " the 'Defence of India' exercised his mind more than the balance of power in Europe." I may be pardoned if I assert that not only the question of the defence of India, but the proper protection of all the shores of the Empire that touch on the Indian Ocean, is at this moment a question of vital importance to us all. India, Ceylon, the Straits Settlements, the Persian Gulf, Australia, New Zealand, and South Africa are in danger so long as a suitable scheme for the defence of the Indian Ocean is not adopted, and we are not prepared to assert sea power in the Pacific. India, and the adjacent Colonies of Ceylon and Singapore, must be the keynote of any plan of defence that may be discussed at the approaching Imperial Conference, when the consideration of 'Reciprocity in Defence' should be dealt with by the Imperial Delegates. Preliminary however to such a plan for mutual defence being discussed, it is essential that India be allowed to take her proper place at the Conference. In order to do so she should be acknowledged to be a unit of the Empire and have representation for defence purposes as such. For any proposals that may be made to carry out the defence of our Asiatic possessions and our dominions over the seas, must be based upon India and Ceylon, and Singapore must guard the entrance from the Pacific.

DR. T. MILLER MAGUIRE :—I feel somewhat, Sir, at being called

upon so soon before such an august assembly. The only reason which can explain my having been asked to speak is that I happened to have the honour, with Lord Roberts as Chairman, of going into these questions before and during the Russian-Japanese War, and it may be a proud thing to say that nearly every one of the statements in these lectures have been singularly confirmed by history since. As the gallant officer said, we owe a very great debt indeed to the distinguished and learned author. He has been really the instructor of the people at large, although not listened to, as is the case with many other instructors, ever since he wrote that splendid book "The Mastery of the Pacific" which rivals Bancroft's "New Pacific" in sound appreciation of modern strategic and racial tendencies. The question of India and the Colonies in relation to Imperial Defence was very well discussed indeed at the instance of the distinguished officer whom I see in this audience, Major Macaulay, before the Asiatic Society. The Japanese Isles to the East of Asia must be after Tshushima, 1905, what the British Isles were to the future of the Atlantic after Trafalgar, 1805. The Japanese have not the slightest intention of adopting a very mild Pacific policy, and quite rightly. If you want to control the yellow race you will not do so by talking; it must be by force. So long as there are splendid settlements ready for people in South America and in Australasia they will go there. It is no use drawing up conventions or treaties.

THE MONROE DOCTRINE.

Now the Lecturer spoke about the Monroe Doctrine. I am very glad indeed that he adopted that true tone. The talk about Arbitration between America and the rest of the world, when America lays down the Monroe Doctrine, is absurd. I should like to ask the Lecturer, would we have been allowed to buy the Galapagos Islands? They would have been very useful isles to us, because, as every naval officer knows, we have no port at all from the Falkland Isles all along the Pacific Coast as far as British Columbia. Why did we not get those islands? The Privateers had them; they were bases of occupation for the Buccaneers, for Morgan and his compeers in the Stuart period. Why should not we have had them? Because of the Monroe Doctrine. This Doctrine is not a mere paper idea of the United States diplomatists. They will fight for it. I asked at least one hundred and fifty people of all classes belonging to the United States of America whether they would or would not fight rather than put the Monroe Doctrine to arbitration, and to a man they said they would fight. Will the United States refer the Panama fortifications to arbitration? If not, why not? Is not the Panama Canal as likely to be as important a factor with regard to the strategy and the commerce of Canada, Australia, India, the islands of the Pacific, China, Japan, as the Isthmus of Suez is to all the trade and commerce of the East? It is a matter vital to every man in this room, to every merchant in the British Isles, and above all to naval officers. I happen to have had a correspondence with Admiral Mahan on these matters, and I quite agree with the views of Admiral Mahan in this respect. It is Admiral Mahan's duty to make the United States as powerful as he can and he tries to do it, without cant and philosophic humanitarianism. In 1897 he wrote it down that there is not the least use in spending money on the Panama Canal unless strong positions east and west, strategic bases, are acquired, for the security of the Canal, and accordingly he laid it down that it was highly desirable to promote such

a state of public opinion or intrigue in Hawaii as would lead to such social revolutions as would induce the interference of the United States of America. The gallant Admiral in the Chair knows how they interfered! They entered Hawaii and are now fortifying it. With regard to the Panama, they only wanted a stretch of a few miles on each side, but it was convenient that the people of Panama should get discontented with their ruler, and there was a bit of a revolution—and the United States has now control of Panama! There is one point that must strike us all as very significant. Lord Roberts laid down when supporting me in this Hall in 1904 that the future of the strategy of the world was in the Pacific even as in the past it had been in the Mediterranean in Greek and Roman times, and as in the times of the Tudors, and Stuarts, and the early Hanoverians, it was in the Atlantic. Since that speech not one politician has paid the least attention to this vital subject.

A WONDERFUL EPOCH

In the last sixteen or seventeen years we have had an epoch I am glad to have lived through. It was just as important or wonderful an epoch as the time of Alexander the Great, which revolutionized all Asia, or the time of Zenghis Khan, which sent the Mongols pouring into Europe and rewrote from Karakorum the annals of mankind, or the time of Napoleon. The East, resurgent, is against the West; challenges the West. As my friend Baron Suyematsu says: the "Rising" has become the Risen Sun. I hope you will allow me to thank the Lecturer for his long-continued services in the Imperial cause, and above all for to-day giving our nation some really sound information on vital points.

ADMIRAL LORD CHARLES BERESFORD:—May I offer my congratulations to the Lecturer on his most interesting paper. It has a good Imperial ring about it. We are forgetting in these days that we are an Empire. We are only thinking about our little country that is the heart of the Empire. We are forgetting that the Empire is like a chain with many links, and any link, if it becomes defective, hurt or weak, may jeopardise, and would jeopardise, the whole. The Lecturer has disclosed weaknesses which if not grappled with very shortly, in the very near future, will put our Empire on the list of all those of the past, that lost their greatness, lost their influence, lost their countries and power, simply by not looking facts in the face, and by not having their defences prepared and properly organized for war. It is either a want of appreciation of the facts or carelessness.

NAVAL POLICY

The Lecturer indicated clearly that in the near future (in the next few years), the strategic situation is going to be entirely altered. We will shortly be face to face with new problems of the most vital character to our Empire as a whole, and we are doing nothing whatever to meet those problems, and as far as I can see we shall do nothing until the problems really occur, and then we shall be totally unprepared to meet them. The Lecturer referred to the Japanese Alliance, and pointed out that when it terminates it will produce new strategic conditions in the Pacific. The Panama Canal will be completed, the Kiel Canal finished, and the Triple Alliance more complete in effective defence, with Dreadnoughts and other auxiliaries and units in their place and ready. All those points are points we have to watch carefully, and we have to begin to get ready now. As the Lecturer pointed out, they are

problems upon which our Empire will depend, and if they are not grappled with and properly met the Empire will become a thing of the past. I have many friends in the House of Commons amongst the Socialists and the Labour Party, and certainly amongst my own countrymen; they are all totally opposed to my policy of naval expansion, though one and all say, "We are just as keen as you are to keep the Empire going, but you want too much money for the Fleet." The whole question of the continuance of the Empire depends upon maintaining the command and control of the sea, and ensuring the punctual and certain delivery of our raw material and food. What does that depend upon? That depends not only on the strength of the Fleet but on the Fleet being properly organized for war.

THE CHAIRMAN:—I am sorry to interrupt you, Lord Charles, but I must call your attention to the subject of the Lecture, which is "Sea Power in the Pacific." If you can work in your relation between the subjects, well and good.

LORD CHARLES BERESFORD:—I can quite see that, but it is the whole Imperial question I wanted to dwell upon, and the Pacific is only a part of it. However, as the Chairman has called me to order I must obey.

THE NAVAL SITUATION IN THE PACIFIC

The Lecturer wants to know how we stand in the Pacific. Well, in the Pacific at this moment, on the whole West Coast of America, we have two sloops, the *Algerine* and the *Shearwater*. Is not that a proud position for the British Empire to hold in that Sea? Of course it may be claimed that we have so many ships on the China Station. But there we have only three armoured ships, the *Kent*, the *Minotaur* and the *Monmouth*, and three unarmoured, the *Astraea*, the *Flora* and the *Newcastle*. We ought to reinforce the Pacific Station at once, looking to the enormous properties we hold there and the immense trade that is involved, and also having regard to the new developments and new problems which the Lecturer has pointed out in his admirable paper. With regard to the Colonies and the Great Dominions over the seas, to their lasting credit they came to our rescue when they were told that the old Empire was in danger in 1909; but my fear is —and I think this fear is also illustrated in the paper: will our possible enemies who are undoubtedly seeing facts as they are more than we do, wait until the Dominions get the ships ready, until we get their ends of the trade routes properly defended? I do not think they will. In my humble opinion the outlook is very gloomy; it is very gloomy for the principal reason that we are not looking ahead to meet the problems we shall have to face, and if those problems are not faced my humble opinion is that we shall wake up one morning to find that the old Empire is in jeopardy; and notwithstanding the splendid pluck of our people and our latent resources we shall not be able to utilise them in time to avert the fate of the Empire.

ADMIRAL HON. SIR E. R. FREMANTLE:—I have very few words to say with regard to this Lecture except that I am glad attention is now being paid to the Pacific. It is quite true as Dr. Miller Maguire remarked, that this matter was brought to our notice some time ago and it then appeared in a new light to a good many people; but it is quite clear also that the way things are developing now in the Pacific we must look to the Pacific in the

future as probably taking the place in the world's history which the Atlantic hitherto has held.

BRITISH INTERESTS IN THE PACIFIC

My object in rising, is to say that not only ought we to prepare at once, but we ought to show that we intend to prepare for eventualities which may affect us, and will affect us, especially, as was pointed out by the Lecturer and Lord Charles Beresford, in 1915. We have done exactly the reverse, and I venture to think that the most fatal policy which could have been adopted for the Empire—some people may think it was absolutely necessary either for economic reasons or other reasons—was to withdraw from all our distant stations. I speak especially of the Western side of America, where, as Lord Charles says, we have two sloops, one of which, the *Algerine*, it may not be generally known, was dug out of the scrap heap at Hong Kong, where she was intended to remain until she was sold, and sent to the West Coast of South America, where she has done good service in showing the British Flag. I know that our trade with Chili is a matter of great importance to Great Britain. I was present at the Chilian Centenary Banquet not long ago when Sir Edward Grey and the representatives of Chili paid each other compliments as to the fraternal feeling between Chili and Great Britain; and yet we treated them in that way, and they felt it very much. The number of British residents in Valparaiso was such that they erected a triumphal arch on the occasion of the Centenary of the Chilian Republic, an arch which cost £10,000. That shows the interest Great Britain has there. By withdrawing our ships not only from South America but from North America and various other places we practically declared to the world that we were not a great ocean Empire, that the time had come to defend the heart of the Empire, that we must withdraw from those responsibilities which we had undertaken previously and from the position which had been won for us by the valour of our forefathers; and I think it had a very bad effect on our position in the world. I hope that now, thanks to the loyalty and patriotism of the Overseas Diminions, we shall make not only a commencement but carry on and gradually form an Oceanic Fleet in the Pacific. I think it is quite possible to do it. I daresay some of you have read Mr. Gerard Fiennes' book about "Our Ocean Empire." It is a work very much to the point. Whether it is possible that the scheme may be carried out as completely as he proposes is another question, but we ought to aim in that direction for the cogent reasons given.

DIPLOMACY, FORCE AND PRESTIGE

There has recently been a good deal of talk about treaties and ententes and so on, but all our present audience at least know that diplomacy depends in the ultimate resort upon force. It is only a few days ago that a certain matter was settled between Russia and China by an ultimatum, and we may be quite sure that, if our diplomatists are to have a chance and if we are to maintain that peace that we all wish to maintain, it can only be by having a suitable force behind the diplomatists. The way we hear some people speak one would think that Switzerland had just as great an influence in Europe as Germany or Russia. We know perfectly well that Switzerland may produce the most wonderful international jurists, but at the same time it has practically no voice whatever in the affairs of the world, and so long as it is a small Power the opinion of the jurists will carry no weight. If that does not appeal to

the common sense of people I do not know what will. I do not want to depart from the subject; I only rose to say that one thing has been neglected very much and that one thing ought to be restored at once, namely, our prestige in distant parts of the world.

Mr. A. COLQUHOUN, in reply, said:—There are only one or two points on which I ask permission to say a few words. First of all, I want to get the people of the Mother Country and the people Overseas to understand one another better, so that we could come together and talk plainly to each other. This in my opinion is a time for plain talk between our people here and those Overseas. This is no time for generalities and vague talk about everlasting peace and the brotherhood of man and so on. We are confronted with very serious dangers, dangers that will arise within a short time. My general feeling is that we in the Mother Country are confronted with most serious complications in connection with the Central European Powers; that is to say, the heart of the Empire is threatened in Europe. The Overseas Dominions are also threatened by a serious danger indicated in my paper. It is true that the Australians, New Zealanders and Canadians realise this to a certain extent; that they are not far from the great Asiatic hordes, and that it will be difficult for them to keep those hordes out unless their great empty spaces are filled, and unless they prepare to defend themselves. But they are only just at the very beginning of appreciating what their position, the position of the Empire, really is. I do hope that at this coming Conference there will be some plain speaking between our representatives here and those from Overseas. These Overseas nations are now in a position to play their part in the defence of the British Empire. Hitherto, this country has, almost single-handed, for a couple of centuries, upheld the Empire and defended the Oversea States. When you consider that the Oversea Dominions, these young nations now rapidly growing up, have not only enormous areas which can carry huge populations, for their territories are almost virgin to a large extent, undeveloped, only merely scratched as yet—but that one of them, Canada, is growing in population and wealth at an amazing pace, having this year a surplus of over six millions sterling, and being in a position to pay for the whole of her public works out of the annual surplus, then I do think that Canada, at any rate, is not playing her part in the task of Imperial defence. I think it would not be right of any man who has the honour to belong to the British Empire, whether he be an Australian or a Canadian, an Africander or an Englishman, not to speak his mind frankly on this subject of common defence. The continuation of the present position of affairs is, I believe, impossible. It cannot go on as it is. The Oversea Dominions must now be prepared to undertake new responsibilities and to share more fully in the defence of the Empire if that Empire is to hold together. It is now only a potential or nominal Empire. If it is ever to become a real and living Empire a great deal more must be done than hitherto by our kinsmen overseas, and I believe they are quite prepared to do it if only our people at home come together with them and make the position clear to them. With regard to Lord Charles Beresford's reference to Japan, I hope that none of you will think that I spoke in at all an unfriendly way about Japan. Quite the contrary. There is no reason whatever why we should not be good friends with Japan. We must recollect what, at any rate, our friends of the United States seem to be forgetting, that our alliance with Japan does not bind us to support Japan

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under all circumstances, either against the United States or anyone else. It is a purely defensive alliance, and it is only in case of attack by a third Power upon certain specific rights and interests of either (rights clearly defined in the preamble) that both Powers are bound to come to one another's assistance. Therefore, it could only be in the case of an overt attack of Japan by the United States or some other Power that we should have to come to the assistance of Japan. The question of the Panama Canal and the Galapagos Islands has been raised. I think I made it perfectly clear what would happen to them, and to a great number of other places, when I said that the United States would never submit to arbitration any point in which the Monroe doctrine was called in question.

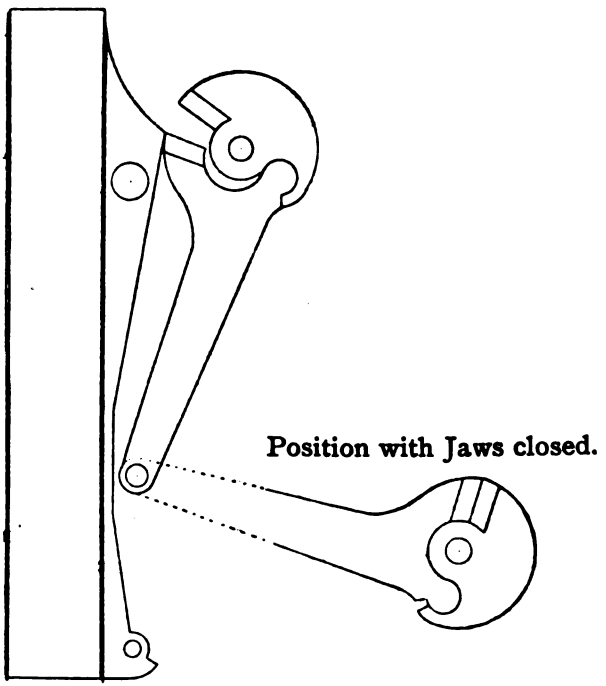
THE OLIVER WIRE-CUTTER.

NOTE.—At the conclusion of the Lecture and Discussion on "Sea Power in the Pacific" on Wednesday, April 5th, 1911, the audience were given a practical demonstration of the action of the new wire-cutter invented by Dr. M. T. Oliver and Captain W. B. Dunn (4th Battn. Dublin Fusiliers). Sir John Macdonald, who presided, spoke as follows:—

The instrument I am going to show you this afternoon is an instrument for cutting wire, which, I daresay, as even the ladies know, in modern warfare is used a great deal to prevent the advance of troops. Wire entanglements are placed in their way, and it is of great importance to be able to cut the wire. The present methods are not very satisfactory. The ordinary mode is to use a pair of heavy pliers; this requires a great deal of exertion, and also necessitates the man leaving his rifle when doing the work; again, the pliers are often ineffective if the wire is strong. In the Japanese War there was such terrible danger in endeavouring to cut wires that only the bravest men could be got to do it, and most of them perished in the work. Lately, an invention has been put forward by means of which the muzzle of the rifle is placed against the wire, so that, on firing, the wire is broken by a bullet; but that is undoubtedly a dangerous mode of procedure, and has the drawback that there is no secrecy about it. It is, of course, essential to advance as quietly as possible, and not to attract attention by firing, and accordingly there is no element of surprise in that invention.

The desiderata of a wire cutter might be given as follows:—First, it must be of a reasonable weight, because the soldier has plenty to carry already; secondly, it must have certainty of action; thirdly, it must have ease and rapidity of application, efficiency of action, durability in use, freedom from risk of mechanical failure when being used, power of using without any hindrance to the soldier using his rifle if required to do so, and also, especially at night, the power capacity for being used without such noise as may put an enemy on the alert. The particular instrument which we are considering to-day slides on to the bayonet; when the bayonet is pushed up against the wire, the latter

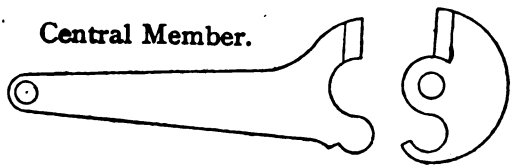
falls into a slot in the instrument, and the two jaws meet and cut the wire. Here we have a large-sized model which will explain the working of the instrument.

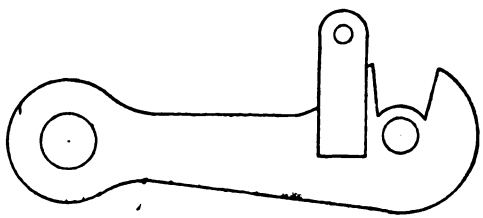


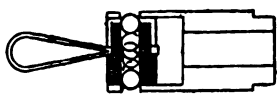
VERTICAL SECTION.

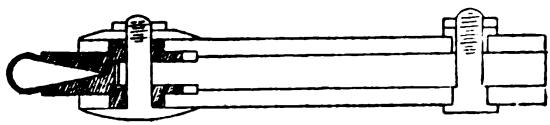
You will observe that when the instrument is pulled down, the jaws close up and cut the wire. When pulled up again, the jaws open ready for another wire. The difficulty suggested when first the instrument was invented was: How are you going to get this shut up again after it has cut the wire? Numerous ideas were suggested by my friend, Captain Dunn and the inventor, and one suggestion was that a spring might do it; but a spring is an awkward thing in connection with violent usage, because it very often gives way. It occurred to me that there was no need for a spring at all, as the rifle had only to be brought back suddenly to shut up the jaws at once. You will see, in the demonstration, that as the wire is cut the reaction sends it up instantly. There are here some specimens of wire which have been cut—stranded wire, ordinary barbed wire, and steel wire. (These were handed round.) When my friend, Captain Dunn, went to show the instrument to some manufacturers in Sheffield, he found that they rigged up nothing but steel wire for him to cut. At first that rather alarmed him, because it was never intended for cutting steel wire; but on

applying it, he found it cut steel wire as well as iron wire. You will see cases in which it has cut through a very large number







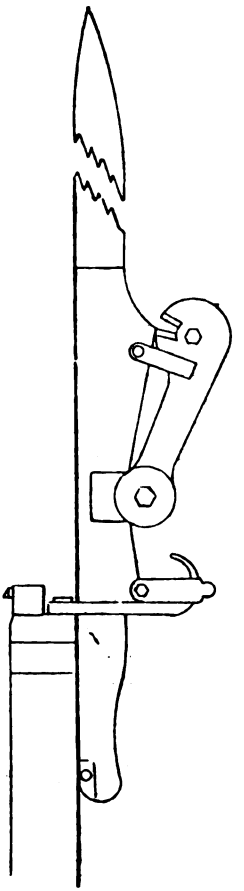


HORIZONTAL SECTION.

of stranded wires. If you will allow me, I will show you by the aid of Dr. Oliver, who is the main inventor of this little instrument, how it works on a number of wires fastened up.

(Dr. Oliver then exhibited the action of the instrument on a number of wires tightly* stretched between stout wooden posts. The instrument was placed on the bayonet, and on being plunged against the wires, the latter were cut.)

* In the case of a slack wire it is only necessary to push on till it becomes taut, the cutter will then act.—J. H. A. M.



OLIVER'S PATENT WIRE CUTTER IN "READY" POSITION.

MODUS OPERANDI.

1. To sever a wire a thrust must be made so as to engage the wire with the edge of the bayonet.
2. The bayonet passing across the wire directs it into the jaws of the cutter by means of the guide provided.
3. The pressure of the wire against the jaw disengages the retaining catch and depresses the movable arm of the cutter.
4. Thereby closing the jaws together and severing the wire.
5. On recovering the rifle from the thrust made, the arm of the cutter automatically swings back and is caught by the retaining catch in readiness for a thrust at another wire.

NOTE.—Throughout the whole of this operation the point of the bayonet is free and is instantly available for attack or defence. The rifle also can be fired at any moment.

AEROPLANES OF TO-DAY AND THEIR USE IN WAR.

By CAPTAIN C. T. BURKE,
Royal Irish Regiment (Army Air Battalion).

THE PRESENT POSITION OF AEROPLANES

IT is evident, from the money and work at present being devoted to aeroplanes in France and Germany, that these two Powers consider that the aeroplane has sufficiently established itself to be of practical military value.

Although the aeroplane has been successfully evolved by the method of trial and error, this is too costly a procedure to apply to war. It is, therefore, necessary for the soldiers to arrive at its military use by study in time of peace.

Pleasant though it may be to wander into the realms of fancy and to picture the aeroplane of the future, it is better to take the existing machine, or in the words of M. Clementel in his report to the Senate "the aeroplane as it is."

Civilian enterprise, meetings, competitions, etc., have greatly assisted us in discovering the possibilities of the types of machine which we possess.

Some Recent Achievements of Aeroplanes.—At the moment of writing* there are four French types which have completed over three hundred miles without a stop, viz.: the Bleriot, Breguet, Farman, and R.E.P.; three types of motors are employed in these machines. The height record has passed ten thousand feet and has, therefore, ceased to be of any military interest. A speed of sixty miles an hour has been obtained with the driver alone, and with one or two passengers. Latham has flown in a wind measured at forty miles an hour; Lieutenant Cammerman flew from Paris to Mourmelon at a height of three thousand feet, in a wind measured at thirty miles an hour at the Eiffel Tower. The carrying of several passengers has become quite an ordinary affair; in fact there is a speed record for a pilot and four passengers.

From figures obtained from the Meteorological Society it can be seen that between sunrise and sunset on 346 days of the year there was a wind of less than twenty-five miles per hour for three consecutive hours.

Rising and Alighting.—All good machines are now able to rise to a height of 80 feet, carrying a passenger, within a horizontal distance of 200 yards from the starting point; some 80 yards of this distance may be run along the ground. In order

* March, 1911.

to alight safely a clear space of at least 100 yards by 30 yards is required; the objects immediately surrounding this open space must not be of greater height than 20 feet.

Want of Experience of Pilots.—It must be borne in mind, however, that even the successful pilots lack experience, and, at the present time, there are very few who have eighteen months of practical steady flying to their credit. Consequently, from now on, we can hope to obtain better results from the existing machines, owing to our increased experience.

Again, in war the risk of losing a few lives will not deter a general from endeavouring to obtain all possible information about the enemy, and it will be a matter of indifference to him whether the lives are lost in reconnaissance by aeroplanes or cavalry patrols. In war, therefore, we may expect that aeroplanes will face risks which they would not incur in peace time, and the results achieved should be proportionately greater.

Most Suitable Hours for Flight:—The early mornings and late afternoons are the times of day most suitable for the flights of aeroplanes. These hours are also the most suitable from the point of view of aerial reconnaissance, because, in the early mornings, the enemy's marching columns will usually be strung out along the roads, and some clue as to their intentions may thus be afforded; while in the evenings his troops will be settled in bivouacs, or, if a night march is contemplated, will be making preparations which will not escape the eye of a trained observer.

Data for Employment of Aeroplanes in War:—From the above it appears that the employment of aeroplanes in war should be based on the following data:—

(a) An aeroplane can fly in any wind less than twenty-five miles per hour.
(b) It can carry a passenger and cover a distance of two hundred miles without stopping.
(c) It can rise to and travel at a height of two thousand feet.
(d) It can be usefully employed on 346 days of the year.
(e) It can be employed on any terrain that is suitable for the manœuvre of a division.

EXPERIENCE IN TACTICAL EMPLOYMENT OF AEROPLANES AT MANŒUVRES.

The French Manœuvres, 1910.—At the French Manœuvres (1910) the observers were all officers, though it does not appear from accounts in the press that all were staff officers. The aeroplanes flew at a considerable height, and yet were able to bring back remarkably correct information. This shows that flying high is compatible with accurate observation, provided of course that the observer is well trained.

On one occasion, after a long march, a body of French troops had entrenched themselves and settled down for the night, when, about sunset, an aeroplane passed, flying high. The troops were, in consequence, moved after dark to another position eight miles away; the complaints of some of the rank and file at this move, though not unnatural in the circumstances, bore witness to the demoralizing results which might be produced by aeroplane reconnaissances.

Experiences in America.—In America some aerial reconnaissances were carried out by excellent pilots who were not, however, trained observers. Not only did they fail to bring back much information, but what little they did bring back was dangerously misleading. Some of them would certainly have been hit, in real war, as they flew at a height of only 600 feet.

Visibility of Objects from Aeroplanes.—With reference to the visibility of the objects from an aeroplane, it is only necessary to make one journey in an aeroplane to realise that the higher up one is the slower the ground moves and the more methodically one can search the countryside. It is possible that the habit of expressing heights in feet is misleading to the ordinary person, and though three thousand feet up may seem a tremendous distance it is only one thousand yards away. Practice, however, is necessary to rapidly identify objects, as everything is presented to the observer in plan. Even from this height the fact that troops are making a stay in a village could be deduced from the increased animation which is usual in such cases, and by turning in small circles at a good height all the advantages of hovering over a place are gained.

THE TACTICAL ROLE OF THE AEROPLANE

Before considering the organization of aeroplanes it is necessary to define their duties, when forming part of a mobilized force.

Information the Chief Object.—It cannot be too strongly insisted upon that the great, indeed, almost the only, value of the aeroplane for military purposes lies in the amount of good and reliable information it brings back.

It is probable that it will be a long time from now before aeroplanes will be utilized as a means of transport for troops, *matériel* or supplies. At present we have the aeroplane as a part of the eyes and ears of the army, as a possible means of transporting staff officers, and as a weapon of offence and defence against its own kind.

Conditions Favourable to Employment of Aeroplanes.—In war, we have many and varied means of communicating orders, messages, etc., and in certain countries some methods are superior to others. Similarly, we have many means of gaining

information, and one of these is the aeroplane, and some countries owing to climatical and topographical conditions, lend themselves more than others to its employment. It is important when considering any military question to remember that wars are much more probable in the different parts of our wide Empire than in England, and the climatic conditions of continents are much more suitable to the use of aeroplanes than are those of our wind swept island.

Aeroplanes will be especially useful in countries where horses cannot live, or where there is an absence of roads; or, again, with a force undertaking an expedition overseas, as they are ready for service as soon as they have been landed and put together (a matter of a few hours) unlike cavalry, who cannot be employed till they have been got into condition, as we found to our cost in South Africa. The Journal of the United States Infantry pointed out how useful aeroplanes would have been to the American troops in their campaign in Cuba.

AEROPLANES IN EUROPEAN WAR

Strategic Reconnaissance.—In European warfare aeroplanes will henceforward be a recognised means of reconnaissance; but in such warfare they will not replace cavalry. Their use will rather be to extend the radius of cavalry reconnaissance, which is limited either by distance or by the action of the enemy, or by natural objects such as a line of water.

Limitations of Cavalry.—The action of cavalry is limited by the ground, but, for distances up to one hundred miles, this will not affect an aeroplane. Another limitation of cavalry is the fire of the enemy. Now, though it may be difficult to rise under all flying conditions to a height of two thousand feet within an aerodrome, most cross-country journeys are made at that height as a matter of course, and considerably higher levels are reached during the course of the journey; without it becoming impossible to search the surrounding country with the naked eye and to see everything that passes on the roads below. On the other hand at the height of two thousand feet, it becomes difficult for the man on the ground to distinguish between friend and foe; this difficulty will be increased by the study of neutral tints and by their application to aeroplane fabrics, and even the pilot will be clothed in some neutral colour and will no longer appear the black dot he does now. These facts, combined with the speed and changing altitudes of the aeroplane will make it an indifferent target for a direct hit, though the airman may be endangered by the aerial disturbances caused by shells bursting in proximity to his aeroplane.

It appears, then, that extended reconnaissance by aeroplanes will be possible, and that under certain climatic conditions (which may be expected during 94 per cent. of the year) the

service of exploration in front of an army may be extended considerably beyond the distances hitherto covered by cavalry divisions; it will thus become increasingly difficult to conceal the existence of any large bodies of troops or numbers of guns. General Bonnal, in an article on the effect of aeroplanes, states his opinion that they will make the power of the higher commanders more felt, and that they will make success more than ever dependent on good leadership.

The possibility now arises that the fear of discovery by the enemy's aeroplanes may cause the policy of marching by night to be pushed to extremes, because, during the hours of darkness, the aeroplane can do nothing without running extraordinary risks. It must be borne in mind, however, that dirigibles can be employed at night; in fact, it seems clear that the dirigible and the aeroplane are intended for employment by night and by day, respectively; we cannot, therefore, afford to abandon dirigibles.

Transmission of Information.—Aeroplanes which are to be used for extended reconnaissance, should, like the cavalry divisions, be attached to the headquarters of the Army; they should be very fast, in order to ensure rapidity in the transmission of orders or of any information that they may have gained; the time occupied in crossing the space intervening between the headquarters of the army and the front of the contending cavalries need not be considered as entirely lost, because it can be used to gain ground to a flank, so as to arrive within the enemy's lines from a flank, at such a height as to render it difficult for him to distinguish friend from foe.

It is important that the intelligence gained should be reported without the intervention of intermediate aids (such as orderlies, telegrams, etc.) and that the commander should be able to question the officer who obtained the information.

Encounters of Hostile Aeroplanes.—As aeroplanes employed on such duties will encounter hostile aeroplanes with a similar mission to themselves, they must be prepared for attack and defence, or in other words, their means of destruction and defence against their own kind must receive consideration from the outset.

This must not be taken to mean that fleet actions between aeroplanes are to be expected in the immediate future, or that the aeroplane will be immediately used as a means of destruction to the land forces, but simply that one must be prepared for a struggle between hostile aeroplanes, similar in its object to the struggle between the independent cavalries of two hostile armies.

TACTICAL EMPLOYMENT OF AEROPLANES

Importance of Aeroplanes in the Front of Battle.—On the hostile forces coming into contact the cavalry falls back to the

flanks or the rear and the fast aeroplanes whose duties are momentarily over, imitate them. The whole attention of the commander-in-chief is now concentrated on the battlefield; he will know, thanks to the previous reconnaissance, what forces he has to deal with, but he will be ignorant when and where the enemy intends to make his decisive effort, while the great extent of the front of the battle will prevent him from following closely the fluctuations of the engagement. In consequence he is bound, at the outset, to keep a considerable reserve in hand to guard against contingencies.

If, however, the commander of one side were kept constantly informed of the distribution, size and composition of the opposing forces he would be free to act with decision; in fact, such would be his mental and moral superiority, that victory would be practically assured him.

Aeroplanes alone can render such a service to a general because they alone can reconnoitre above the front of combat. But in doing this, their method of action will be entirely different from that of machines intended for exploration at long distances, and in this we may see a warning not to confine ourselves to one type.

Improvements in modern firearms have brought about a great extension of the front, but the rate of Infantry marching remains the same; it is possible for an army corps or a division to receive a crushing blow before the neighbouring troops can intervene to support it.

It therefore appears desirable that the commanders of army corps and divisions, as well as the commander of the army, should have aeroplanes at their disposal to keep them in touch with the movements of friend or foe in their neighbourhood.

Use of the Helicopter Type of Aeroplane.—As the battle draws near the enemy will have brought up batteries especially constructed to fire on aerial craft. To escape their fire it will be necessary for the aeroplanes to mount high and quickly, and the most useful type for this purpose would be the one which most nearly approaches the helicopter; that the French military authorities consider this point of importance is evident by the regulations which they have drawn up for the competition for military aeroplanes.

For similar reasons a machine of this type is required for duty with siege and heavy batteries, the fire of which requires rapid and accurate observation.

A practical objection to the use of aeroplanes for transporting staff officers is that, in enclosed country, the only possible landing place may be some distance from the desired point.

RECAPITULATION

To recapitulate, aeroplanes are a necessity to Commanders of all organizations higher than a division, and also to

Commanders of fortified positions and of high angle fire batteries.

For distant exploration they should be allotted to an army. For reconnaissance immediately preceding and during an engagement aeroplanes should be attached to the headquarters of armies, army corps, and divisions, and for this latter duty the type should be the one best suited to the battlefield.

PROVISION OF PERSONNEL

For aeroplanes intended to scout far ahead of the army, aviators accustomed to reconnaissance work are required, and cavalry officers appear to be the best suited for this work. For aeroplanes on the field of battle, aviators of all arms are necessary; it is essential that they should have been attached to tne other arms and thoroughly conversant with their methods, for it is to be expected that the enemy will conceal themselves as much as possible, and it will require a well trained officer to deduce their numbers and positions from the fleeting indications he will get.

The pilots of machines attached to fortified places should be officers of engineers and of artillery. For duty with guns, artillery officers will naturally be the most suitable. In the case of naval fortresses officers of the navy should be employed.

The air corps would thus be open to all who are anxious to share its risks and dangers.

It is obvious that no staff officer is really efficient who cannot correctly observe from an aeroplane.

ORGANIZATION, TRAINING AND EQUIPMENT OF AIR SERVICES

It is incontestable that one of the most important factors for success in war, is the previous organization for war, in times of peace; we have only to go back a few years to the Russo-Japanese war for an example of this. The organization in peace must, therefore, be for war.

Again, to obtain the full value from any instrument it is necessary to know how to use it; and before employing a new weapon under the trying circumstances of active service it is necessary to become familiar with its uses and limitations. Those who may be called to use aeroplanes in war must, therefore, have studied them and had practical experience in handling them in peace.

Whether aeroplanes should be turned out by Government factories or by civilian firms, or by a combination of both, can only be decided by a knowledge of facts and figures difficult to obtain. With regard to the type of machine, the French Government have stated their requirements for a military aeroplane, and these are undoubtedly sound.

DEDUCTIONS AS TO USE OF AEROPLANES

From instances of the employment of aeroplanes given above, and from others which have appeared in the press but have not been dealt with here owing to want of space, the writer has drawn the following conclusions:—

1. From a military point of view the observer is the important person.
2. Untrained observers may bring back dangerously misleading information.
3. The observer should be able to drive the aeroplane in case of need.
4. Pilots and observers must be in the air as much as possible.
5. Practice in observation should form part of a Staff College course.
6. Knowledge as to how much can be seen from an aeroplane is necessary.
7. During peace manœuvres no information gained at less than two thousand feet should be permitted. This can be easily arranged by a clock barometer.
8. Every effort should be made to increase the knowledge of the higher commanders with regard to the new weapon.
9. Aeroplane units should, in peace, form an integral part of their war organizations.
10. All military machines should be able to carry two people.
11. The armament of aeroplanes must be commenced at once.

IMPORTANCE OF THE SUBJECT

Has the aeroplane any particular importance for the British Empire? The writer thinks that it has. We have only a small army and nothing must be neglected to make it as efficient as possible. We have not the expense and strain of conscription and consequently should be able to afford greater expenses in material, and to give greater facilities to those who take up the duty of defending the Empire. May not the command of the air be as important to us in the future as the command of the sea is at the present moment?

FRENCH REGULATIONS FOR CONDITIONS OF A COMPETITION FOR MILITARY AEROPLANES.

Object of the Competition.

1. The competition is open to constructors who are established in France, and who have been previously authorised by the Secretary of State for War under the conditions specified hereafter in Clause 5 for a competition for military machines.

Board of Examination.

2. The competition will be judged by a board which will be nominated by the Secretary of State for War. Some commissioners, also nominated by the Secretary of State for War, will be added to the examination board to follow and control the operations of the competitions.

Obligatory Conditions to be Fulfilled by the Machines.

3. The machines entered must fulfil the following conditions:—

(*a*) Including the motors, to be constructed in France with the greatest care, and of selected materials.

(*b*) To complete a flight of 30 kilometres (187 miles) without descent, and on a laid out course.

(*c*) During above run to carry a weight of 300 kilos (approx. 6 cwt.) in addition to the fuel, oil, petrol, water, etc., necessary for the flight.

(*d*) To be provided with three seats—one for the pilot, the second for the assistant pilot, the third for the observer.

(*e*) To realise a mean speed equal to 60 kilometres (37 miles) an hour.

(*f*) To land easily in cultivated land, clover, grass lands, and stubble; and to start easily from such country.

(*g*) To be easily transported, whether packed up or not, either by road or rail; and to be rapidly prepared for duty without minute regulating.

The machines which do not fulfil the conditions laid down in this clause will be eliminated.

Desirable Qualities.

4. In addition to the above, the machines should fulfil the following requirements:—

(*h*) They should be provided with means of control, either in duplicate, or within reach of the assistant pilot; and in such a manner that either the pilot or his assistant can easily assume control.

(*k*) They must have as clear a field of view as possible, uninterrupted by struts, stretchers, etc. These conditions are announced solely with a view to guide constructors in their work, and will not be taken into account in judging the competition.

Application to Enter.

5. Every constructor who wishes to compete should apply to the Secretary of State for War before January 1st, 1911.

Submission of the Machines.

6. The machines, put together and ready for work, must be exhibited to the Commissioners on October 1st, 1911, on a manœuvre or flying ground, which will be notified later by the Secretary of State for War.

The board of examination . . . will proceed to inspect the machines . . . and make them undergo the following tests.

Eliminating Tests.

7. The eliminating tests will comprise:—

(*a*) An examination with the object of finding out whether the machines are constructed in accordance with the conditions specified in paragraph 4 of clause 3.

(*b*) Three flights, carried out with a complete load of 300 kilos (approx. 6 cwt), and with the necessary supplies of petrol, etc., over a course adjoining the ground selected for landing under the conditions specified in paragraph (*f*) of articles 3 above. The machines, after having landed in the places selected, should rise again for a few minutes, and alight again at the same place.

After each of these flights, the machine will be brought back to the point of departure by road or rail.

(*c*) A flight, also made with entire load of 300 kilos (6 cwt. approx.) and with full supplies of petrol, etc., in the course of which the machine must round a point agreed upon beforehand, and return, without descending, to the point of departure.

The Commissioners will note the duration of this flight, in order to assure themselves that the pace is above 60 kilometres (37 miles) an hour, as provided for in clause 3.

(*d*) Two altitude flights, also with complete load; the machines to rise to a height of 500 metres (1,650 feet) above the ground in less than 15 minutes.

The detailed programme of these flights will be drawn up by the commission, and handed to the competitors at the commencement of the meeting on October 1st.

The competitors will have the whole of the month of October in which to carry out these flights, and will choose their days, it being clearly understood that the flights shall take place in the order indicated above, and that all departures and landings which take place after sunset or before sunrise, or between the hours of 11 and 2, shall be disregarded.

With these reservations, the competitors may, if they wish, recommence any tests in which they may have been unsuccessful.

A Commissioner may take his place on board the machine during any test.

It is to be noted that the preliminary tests do not include the flights of 300 kilometres (187 miles) without descent, which is obligatory for all machines in the classification tests.

Repair and Change of Machines.

8. During the period reserved for the eliminating tests, the competitors may, after warning the commissioners, make such repairs, etc., as they may consider desirable, without the machine quitting the aviation ground. They may even put in an entirely new motor, or replace the machine by another provided that a machine furnished with a new motor or an entirely new machine shall be examined as specified in clause 6, and shall undergo the series of eliminating tests, and have completed them by the 21st October, 1911.

Classification Tests.

9. The commission will draw up a list of the machines which have passed the preliminary tests, and which will be admitted to the classification tests.

10. This test will consist of a journey of 300 kilometres (187 miles) out and home without descent, and with full load of 300 kilogrammes (6 cwt. approx.). The departures will be arranged by the commission on a day fixed by them at intervals of 5 minutes in the order in which the machines have been drawn.

Any machine making a false start will be allowed to start again after the departure of other competitors.

The test may be recommenced a second and a third time, provided the request to do so is made within two days of the test to be repeated. The commission will fix a day for these new tests, leaving an interval of at least 48 hours between the two journeys; this period the competitor may devote to putting the finishing touches or repairs to his machine on the spot, it being understood that neither the motor nor the machine itself may be changed..

The other competitors may compete in these new tests, but the final classification will be based on the best of the journeys performed by each machine.

11. The prize will be awarded to the constructor of the machine which shall have performed in the shortest time the test previously arranged in No. 10.

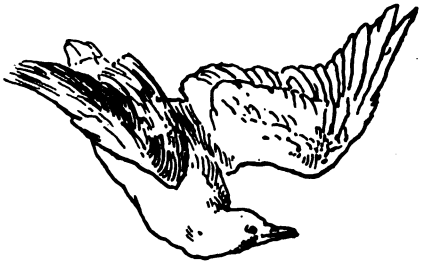
The Prize and Advantages to be Gained by the Winner.

12. The prize will consist of a sum of 100,000 francs (£4,000) to be paid to the winner in return for the surrender of his machine to the State. In addition to this, the constructor will receive an order for ten similar machines, with a normal speed of 50 kilometres (32 miles) per hour, at the rate of 40,000 francs (£1,600) each. This prize will be increased by a sum of 500 francs (£20) for each extra kilometre above 60 per hour.

The constructors of the machine which may be second or third in the competition will receive orders for six and four machines respectively, also at 40,000 francs (£1,600) each; in addition, there will be the additional 500 francs (£20) for each kilometre above 60 per hour.

It will be seen from the conditions enumerated above that the French do not seem to pay any attention to:—

(*a*) Armament of aeroplanes.
(*b*) Gliding angle. Behaviour of machine while gliding.
(*c*) Oil and petrol consumed.
(*d*) Protection and comfort of observer.
(*e*) Visibility.
(*f*) Noise.
(*g*) Horse power required to develop pace.
(*h*) Weight of petrol and oil required per h.p. hour.



MILITARY EDUCATION.

Notes by the Editor.

EXAMINATIONS FOR PROMOTION, DECEMBER, 1910 [1]

(*d.*) (*iv.*) MILITARY HISTORY: CAPTAINS AND LIEUTENANTS, ALL BRANCHES (EXCEPT R.A.M.C., A.V.C., A.O.D.).

(*Continued from page* 488.)

Campaign set for the first time.

First Paper [2].

The subject set for the first paper was:—

"The Russo-Turkish War, 1877-78, omitting the Operations in Asia Minor."

(*Remarks on the Candidates' Work.*)

The following remarks, made by the examiner, are quoted from the report.

The work sent in was, on the whole, very satisfactory. Most of the officers appeared to have studied the campaign in a thoroughly practical manner. This must be attributed, in a great measure, to the lectures given in commands, where this campaign has been studied during the winter.

The following criticisms apply to the work of some of the officers.—

Question 1.—"Explain fully the Russian plan at the commencement of the campaign and the considerations on which it was based."

"In what respects do you consider this plan open to criticism?"

(*a.*) In some cases officers failed to point out the main defect in the Russian plan of campaign, which was that it did not aim primarily at the defeat of the enemy's forces in the field. (*b.*) A good deal of irrelevant matter was introduced, including, in some instances, several pages on the causes of the war.

Question 2.—"Describe generally the situation which confronted the Grand Duke Nicholas after the main Russian Army had crossed the Danube in July, 1877, and comment on the manner in which he dealt with the problems presented to him."

A number of officers made no comment on the manner in which the Russian Army, after its passage of the Danube, was split up into a number of detachments, which were employed in carrying out quite minor operations.

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(1) The passages quoted from the report are reproduced by permission of the Controller of H.M. Stationery Office.

(2) A map of Turkey in Europe was issued to each candidate with this paper.

Question 3.—"What conclusions do you draw from your study of this campaign as to the result to be obtained from the detaching of large bodies of cavalry to take part in raids?"

This question produced some very interesting answers, but some officers were inclined to write dissertations on the subject of cavalry raids generally, without any special reference to the campaign of 1877-78.

Question 4.—"Show, with reference to this campaign, the value of sea power in relation to operations on land."

In the answers to this question also there was a distinct tendency to generalize and to quote Mahan and other writers copiously on the subject of sea power and its value, whilst, in some cases, very little was said as to the bearing of the events of the Russo-Turkish War on the matter.

Second Paper.

The subject for the second paper (Special Period), was.—

"The operations round Plevna (including those at Lovtcha and on the Plevna—Sophia Road) from 18th July to 10th December, 1877, inclusive."

The following remarks made by the examiner are quoted from the report.—

Remarks on the Candidate's work.

The results of this paper were also very good as a whole. Some officers, however, did not seem to be aware of the alteration in the scope of this paper. The object of the latter is "to elicit from the candidates their knowledge of tactical principles, and to test their power of applying these principles, whilst discriminating between the methods by which those principles were applied during the campaign in question, and the methods by which they would be applied at the present time."

As regards details.—

Question 1.—"Describe the dispositions made by Rifaat Pasha for the defence of Lovtcha, and point out in what respects the tactics of the Turkish Commander were faulty."

A large number of officers failed to notice the principal fault in the Turkish dispositions for the defence of Lovtcha, namely, that too extensive a position was occupied for the force available.

Question 2.—"Explain fully the principles underlying the tactics employed by the Russians in their attack on Lovtcha (3rd September, 1877).

"How far do you consider these principles applicable to the warfare of the present day?"

This question was well done, but a good many officers did not attempt to answer the latter part of the question, which asked how far the tactics employed by the Russians are applicable at the present day.

Question 3.—"Give a short topographical description of the Turkish position at the third battle of Plevna, and show, by a rough handsketch, the general arrangements of the defence."

This question was satisfactorily answered by nearly all, but a number of the hand-sketches were difficult to understand, chiefly because the names of such localities as the Green Hills, the Grivitsa redoubts, and the Janik Bair range were not clearly shown.

Question 4.—"What tactical deductions may be made from the battles round Plevna?"

Most of the officers dealt with this question satisfactorily, although a certain number failed to draw any deductions from the disconnected nature of the Russian attacks, the denseness of the Russian formations, and the want of co-operation between the Russian infantry and artillery during the battles round Plevna.

TACTICAL FITNESS FOR COMMAND—PART I. MAJORS: ALL BRANCHES (EXCEPT R.A.M.C., A.V.C., and A.O.D.).

The paper consisted of a tactical scheme, the main features of which were as follows: A mobile column (1 infantry brigade, 1 cavalry regiment less squadron, 1 battery R.F.A., 1 company R.E.) operating on the line of communications (which consists of a line of railway forming the sole line of supply of the Blue Army) are billeted partly in a town held by a permanent garrison, and partly in a neighbouring village. During the night it becomes known that two Red infantry battalions, with mounted infantry and guns, have reached a point some 10 miles from the railway; that they form part of a raiding force, unsupported by other troops, and are said to be somewhat exhausted after a long march. The column commander receives orders at 5 a.m. (sunrise being at 7.55 a.m.) to take immediate steps to defeat this force. Candidates were required to write, as General X commanding the column, (1) an appreciation of situation at 5 a.m.; (2) action proposed; (3) orders necessary for execution of action proposed.

Remarks on the Candidates' Work.

The following remarks by the examiner are quoted from the report.

The greater part of the candidates took a reasonable view of the scheme and, sending forward their cavalry, less a small body retained for duty with the advanced guard, to reconnoitre, directed the remaining troops towards some central point, leaving further movements to depend on circumstances.

Many officers seemed to think that it is sufficient to recite the probable (and often improbable) courses open to the enemy without giving any opinion as to which course he is most likely to take. They apparently did not realize that one of the objects of an appreciation is to arrive at some conclusion as to what the enemy is likely to do.

Some officers made bad use of their cavalry, and did not send it forward with a sufficiently free hand to discover the enemy's whereabouts and movements. In many cases the cavalry was given the primary mission of holding certain points, often of doubtful importance, or of importance only in eventualities which could not be foreseen with certainty, thus leaving scarcely any mounted men for the paramount duty of reconnaissance. Further, it did not seem to be recognized by all officers that unless the enemy's mounted troops are singularly inactive, cavalry must fight for information, and that weak, unsupported patrols pushed forward

along the roads will, as a rule, effect little or nothing. In too many instances, instead of allotting the cavalry commander his task and allowing him to carry it out in his own way, detailed instructions were given which left nothing to his initiative.

Misapprehension appears to have arisen in the minds of some candidates regarding the physical condition of Red. The scheme said that the Red troops were stated to be "somewhat exhausted." It was, therefore, probable that the commander would give his men some rest, but there was nothing to justify the assumption made by some candidates that the raiding force would be unable, after food and a few hours' sleep, to proceed on its mission. In war even exhausted troops must at times march and fight, perhaps without food or rest.

In a few cases the candidates, although in complete ignorance of Red's tactical dispositions, even supposing he made no movement, committed the grave error of giving elaborate and detailed orders for the attack on a position which they imagined he would be holding in the neighbourhood of Thame*

The operation orders were, on the whole, clear and complete, but, as is perhaps natural in the case of officers many of whom have seldom written orders in the field, a good deal of unnecessary repetition and a certain diffuseness were noticeable. Officers should cultivate a concise style, remembering that when, as in this case, orders have to be written under pressure, copied or dictated at once, every additional word adds to the delay.

Most officers took the wise course of leaving their 2nd line transport in billets, realizing, no doubt, that it could always be sent for if wanted Some, however, ordered it to follow close in rear of the fighting troops, apparently oblivious to the inconvenience and possible danger of such an arrangement.

(To be continued).

Commissions in the Regular Army.

The following regulations for candidates from the Special Reserve, Militia, and Territorial Force, were issued on April 18th, 1911.

1. In view of the decision to reduce the period of probationary training required of an officer appointed to the Infantry of the Special reserve (Special Army Order dated 27th February, 1911), the service and training which a candidate for a commission in the Regular Army will be required to complete before he can be regarded as eligible to present himself at the competitive examination for such commissions (*vide* paragraph 3 (*d*) of the Regulations under which commissions in the Regular Army may be obtained by Officers of the Special Reserve, Militia and Territorial Force), will in future be as follows.

2. A candidate must, on the 1st April for a March Examination or on the 1st October for an October Examination, have completed a total

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*Thame was the point which the Red force was reported in the Special Idea to have reached.—Ed. R.U.S.I.

service of 18 months, and must, during such service, have undergone a period of training with a Regular unit of the Cavalry, Artillery, Engineers or Infantry.

3. Certificate "A," or Certificate "B," obtained in a Cavalry, Artillery, Engineer or Infantry unit of the Officers Training Corps, will entitle the holder to a reduction of these periods of service and training.

4. The periods of attachment and service required of each class of candidate are shown in the following table:—

A candidate in possession of—	Arm.	Attachment to a Regular Unit.	Other Service in Special Reserve, Territorial Force or Militia.	Total service.
No certificate ...	Infantry ...	6 months ...	12 months ...	18 months
	Other arms	12 months ...	6 months ...	18 months
Certificate "A"	Infantry ...	5 months ...	9 months ..	14 months
	Other arms	8 months ..	6 months ..	14 months
Certificate "B"	Infantry ...	3 months ...	7 months ...	10 months
	Other arms	4 months ...	6 months ...	10 months

5. In cases where the required period of attachment to a Regular unit exceeds six months, it must be continuous. Periods of six months or less may be either continuous or performed in two parts which need not fall within the same year. No portion of the attachment may be performed at a Depôt, and no period of less than 5 months duration must commence in, or extend into, the months of October and November.

6. Infantry officers now undergoing attachment to a Regular unit will terminate their attachment forthwith if they have completed the period to which they became liable under the above rules, or, in other cases as soon as they have done so.

7. The lower limit of age for appointment to the combatant branches of the Special Reserve has been reduced to 17. The age at which an officer of the Special Reserve, Militia, or Territorial Force may present himself at the Competitive Examination remains unchanged (*i.e.*, he must be within the ages of 20 and 25 on the 1st April for a March Examination, or on the 1st October for an October Examination).

THE NORTH SEA

Its History, Politics and Geography.

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NAVAL history knows of no great sea-fights which were fought in mid-ocean. Neutral and international by nature, the high seas can never be the object of contention; pathless and trackless, yet everywhere accessible and passable, they are the most unlikely meeting-place for combatants. Mediterranean seas and the borders of the ocean, and of these, again, the coastal waters in particular, are the historical theatres of war.

Of pre-eminent importance in the world's history, are those connecting yet separating seas which lie directly between the Naval Powers struggling for participation in the world's empire, and upon which maritime traffic, streaming to and from the world's economic centres, concentrates maritime interests. The decisive naval battles of the world have consequently been fought in the Roman Mediterranean, in the English Channel, and the waters bordering Western Europe; off the coasts of the West and East Indies; and lastly, in the entrance to the Japanese Mediterranean.

Thus, the political and economic geographical importance of the countries to which the coasts belong, forms the basis of the military value of a sea; upon which its own geographical elements then imprint their special character and the conditions for its strategical utilisation.

I.—THE NORTH SEA POWERS.

1. THEIR HISTORICAL DEVELOPMENT.

The Position in the 16th Century.

As long as the Mediterranean was the political and economic centre of Europe, the North Sea was historically insignificant. It was only when the finding of a sea-route to the East Indies and the discovery of America shifted Europe's centre of gravity westwards, that the North Sea Powers became historically im-

portant. Until then the chief trade routes led principally overland, connecting the trade of Northern Europe—grouped around the Baltic Sea—with the advanced West, and especially with the all-important centres of civilisation of the Mediterranean. Now that the over-running of the eastern Mediterranean by the Turks—occurring simultaneously with the Spanish-Portuguese voyages of discovery—had, for centuries, cut off this sea from the world's economy, the North Sea naturally became the most important thoroughfare between North-east and South-west Europe.

To-day England and Germany, Belgium, Holland, Denmark, and Norway are the countries which, through their coasts, have a share in the North Sea. They are the North Sea Powers in a narrower sense. France and Sweden, whose coasts adjoin the entrances to the North Sea—France the Channel, and Sweden the Kattegat—must, in a wider sense, be also included; just as England, by possession of Gibraltar alone, would be a Mediterranean Power. This geographical position has thus, up to the most recent times, given them a voice in the settlement of North Sea questions.

Up to the middle of last century two only of these countries played the part, politically and economically, of North Sea Powers, viz., Holland and England. The rest partly lacked favourable geographical position and configuration, and partly, sufficient greatness or a suitable management of their economic and political power.

Flanders—the Belgium of to-day—owing to her situation close to the junction of the Atlantic and North Sea, possessed all the advantages of geographical position, which England and Holland enjoy as North Sea Powers. But she lacked the most important element for the development of maritime strength from this position—free access to the sea. Adhering to Spain from religious motives, and against her commercial and political interests, she had, in the middle of the 16th century, lost in the delta islands of Zeeland the key to the coast, which alone could have maintained the ancient splendour of Bruges, or have transferred it permanently to Antwerp—which was nearer the sea by reason of its position on the Scheldt.

Norway and Denmark, and still more naturally Sweden, lay too far distant from the new centre of Europe, and had directed their political energies eastwards—Denmark and Sweden by the natural compulsion of their geographical position, and Norway following in the train of Denmark owing to her alliance dating from 1380. They spent their strength in the struggle for supremacy in the Baltic, without ever becoming North Sea Powers.

Germany was politically impotent. The Hanseatic League, which, in the Middle Ages, was her only body of any maritime and economic importance in northern Europe, was on the decline. Without political support of some sort, this union of mercantile towns could only take the lead as long as it was a

question of the guardianship of territories but little developed in culture and commerce—the northern Europe of the Middle Ages. Naturally diminutive, it was not in a position to adapt itself to new conditions, and at the right moment transfer the centre of gravity of its economic strength from the confined area of the Baltic to the vicinity of the Powers of north-west Europe, who now entered the arena. Vanquished in the east by the increased strength of the Poles and hard pressed in the north by Danes and Swedes, the League went under in the Baltic conflict and resigned without a struggle, to the Dutch and English its economic position in the North Sea, which might have been the foundation of a North Sea German Power and in itself the basis for growth of new internal strength.

Holland was the first Power to enter into this economic inheritance.

The Predominance of Holland.

Almost one-quarter insular, her mainland intersected by rivers, canals and bays—in which the tides carry the sea far into the land—a nation of an almost entirely maritime character had here arisen; and this maritime nation occupied the position most favourable for development of international commerce in the coming centuries. Here the maritime traffic of northern and western Europe, and that from the heart of the continent over the rivers of the Rhine system, as well as the overland trade by the old trade routes, naturally converged. This of itself gave these provinces—politically dependent upon Spain—great economic prosperity. From it they derived the strength for beginning their fight for freedom in the middle of the 16th century, and for gathering into their own hands, during this eighty years' war, nearly all the advantages of the Spanish and Portuguese discoveries. To all these were added favourable political conditions.

Germany was powerless; France as yet had no maritime interests; and England was held back by internal strife. Thus, at the close of the 16th century, little Holland became the first commercial nation of the world. Amsterdam became the more mighty successor of Venice, of Lisbon, and the Hansa. Into Amsterdam poured the timber and, especially, the cereal trade of the Baltic; to Amsterdam Dutch ships conveyed the riches of the North Sea fisheries, as well as those of the coasts of England and Norway. Amsterdam was the world's emporium, where the countries of Europe exchanged their goods with one another, and with the tropical products of the East and West Indies.

Geographical position, national character, and favourable political conditions were here united, and created the first Naval Power of the North Sea.

For a whole century Holland had complete command of the North Sea. Then with her whole political strength England entered into the economic struggle for supremacy at sea.

England's command of the Sea.

The glimmer of insular liberty and independence, which, thanks to the amphibious position of their country, pervades the history of the Dutch in the 16th and 17th centuries, shines with full radiance through the whole of England's history since 1066. In that year, for the last time, a hostile invasion intervened, checking the internal development of this island state. Thenceforth the English nation and the English state developed without external hindrance. Restricted at first to its island country, then, urged by natural necessity to expansion and sea power, by the middle of the 17th century a state had arisen which comprised the most united and politically mature race in Europe.

As early as the 16th century this country had, by the foundation of chartered trading companies, begun to release itself from the tutelage which foreigners—the Hanseatic league, and then Holland—had hitherto imposed upon it economically. In 1554 the Russian, and in 1579 the Baltic companies came into existence; and in 1567 Hamburg—once one of the executive centres of the Hanseatic league—became an English mart. Yet more rudely were the economic fetters shaken by the embargo on Dutch trade imposed by Elizabeth in 1564. But the political strength necessary to shatter them was still lacking. This was won in a last, violent internal crisis. On the 9th October, 1651, when by her Navigation Acts, England declared her economic independence, she was strong enough to impose this claim on Holland by force of arms. Then began the political exploitation of the advantages which England, as an island nation, possessed for economic expansion and sea power.

In twenty years Holland's naval ascendency had been overcome, and her economic expansion arrested. In twenty more —at the end of the 17th century—London's trade already surpassed that of Amsterdam. Nevertheless, England did not as yet succeed in entirely disposing of her opponent by force of arms.

A new rival appeared in the world's arena—the France of Louis XIV. This compelled England to abandon her internecine war with the Dutch. The long war between England and France now began and lasted, almost without a break, over 100 years.

During this century, it is true, French manufactures flourished, thanks to the national industry which Colbert guided into the right channels for advancement of the whole state; indeed, during this period the foreign trade of France increased five-fold, and she took part in the colonisation of the world; but, fighting side by side, England and Holland from the commencement of this war, prevented the threatened growth of French naval power in European waters. On this account the Northern company of France, formed in 1670 for North Euro-

pean trade, was never able to gain a firm footing in the North Sea or Baltic. The gateway to the North Sea was closed to France by the English and Dutch fleets.

Thus England and Holland remained the only naval powers in the North Sea in the 18th century. But whilst outwardly war had ceased between them, and a balance of power had apparently been arrived at, England (by virtue of her sound political instinct, and her more united national spirit) entirely overcame the naval power of the Dutch allies without recourse to arms. The English called to their head the leader of the fight against France—William of Orange—who had been left in the lurch by Dutch political short-sightedness and party fanaticism. He gave them that leadership which was their due. In barely twenty years, the disparity between the two Northern Sea Powers became so great, that Frederick the Great spoke of them as "the English warship with the Dutch sloop in tow."

Political superiority was quickly followed by the complete economic victory of England.

In the second half of the 18th century American trade came more and more to the front in the world's commerce. This increased the value of England's geographical position. She formed a natural threshold between America and the Continent of Europe. Simultaneously, an increase in her internal economic strength had taken place. Englishmen invented the tools, contrivances and methods which created the wholesale trade in machine-made goods. This gave England's industries, hitherto considered to be inferior to those of the Continent, priority, and endowed the island kingdom with strength to seize almost the whole of the American trade for herself.

At the beginning of the 18th century, England's total trade was still inferior to that of the Dutch; at the end it was five times greater. The centre of the great North-West European corner of trade and commerce had again been shifted west and north. It now lay in England. Thus England became, politically and economically, the greatest North Sea Power.

Only once again was this premier position threatened. Napoleon's decree of Blockade in the year 1806 aimed at the exclusion of all English trade and commerce from the Continent. In vain: the annihilation of French sea power at Trafalgar had already decided the victory of England in this embittered economic war.

Sustained by her unique geographical position, her industrial strength, her insularity, and consequent political unity and maritime strength, England commanded the ocean approaches to the Continent of Europe. Economically and politically she held undisputed sway in the North Sea.

At the close of the 19th century the situation had completely altered.

2. The Present Position of the North Sea Powers.

The Economic Situation.

As long as the receptive capacity and productive power of the various economic regions of Europe did not suffice for the maintenance of permanent independent commercial intercourse with trans-oceanic places, producing the necessaries of European civilisation, international commerce required entrepôts and marts which permitted an exchange of commodities. These places of exchange could only come into existence in situations convenient to the principal trade routes. The larger the place and the more varied its communications, the better it fulfilled the requirements of economic life.

To these economic conditions is attributable London's position of monopoly during the 18th and 19th centuries, which was rendered possible by her geographical position at the very junction of the American and North and West European network of sea-routes.

The development of manufactures by machinery and growth of population caused a continual increase in the economic strength of the Continent of Europe during the second half of last century. This, together with the expansion in all relations with the interior—rendered possible by the extension of the network of railways—made the seaports of the Continent strong enough to enter into independent trans-oceanic commercial intercourse. The value of the hinterland took the place of the overwhelming importance of a favourable geographical maritime position. Thus the spaciousness of the Continent, as opposed to the comparatively limited area of the British Isles, became economically perceptible. The struggle of the Continental seaports against London's monopoly was able to begin.

The first perceptible blows were the inauguration, in the fifth decade of last century, of a direct regular service of steamers to North America, first by Hamburg, and soon after by Bremen. However, it was only after the foundation of the German Empire had brought about a renewed increase in the power of production and consumption of this most important hinterland of the North-west European sea-coast, that the supremacy of London in the North Sea was finally overcome.

The Great Commercial Cities of the North Sea.

Antwerp, Rotterdam, Amsterdam, Bremen, and Hamburg became ports of international trade. Hamburg was foremost of all.

Situated at the apex of the south-east corner of the North Sea, this city of the Elbe, in spite of its great remoteness from the Atlantic, had never ceased to play at least a modest part in the local trade of the Scandinavian and Baltic countries with England. Now, her position at the mouth of the Elbe, aided

by the tariff policy of the German railways, which strengthened German export trade, opened up almost the whole German economic territory to her, far into central Europe. Thus strengthened, she was able to extend successfully her over-sea connections further and further, and gradually drive out London trade. As a result of this, London's re-export trade has fallen almost a half in the last thirty years. To-day, it has to share the international trade of Scandinavian and Baltic countries with Hamburg. Since the seventies, the number of English flags in the shipping of Hamburg has decreased by more than half, while Hamburg's total trade has increased six-fold in the same period; and, with half London's ships in number, but two-thirds of their tonnage, it no longer stands far behind the Thames city in its seagoing import and export trade.

Besides Hamburg, Bremen prospered, rising almost exclusively owing to new over-sea conditions. Supported mainly by its west German hinterland, its direct extra-European traffic was brought about by the furtherance of emigration of the surplus population of Germany to America, which began in the middle of the century. Since then her maritime traffic has increased twenty-fold. With a round sixteen million tons register, ontgoing and incoming, the Weser ports at present occupy the second place among German ports.

But these two great German ports have not remained London's only competitors in the region of the North Sea. Simultaneously with them, the ports of the Rhine-Maas-Scheldt region have, during the last fifty years, risen to renewed prosperity; like them, deriving their principal vitality from the German economic districts. First of all, came Amsterdam and Rotterdam, particularly since Rhine traffic—facilitated by the Rhine Navigation Acts—opened up new channels for reviving their old trade connections; lastly, Antwerp, which has only made a fresh start since 1863, when the withdrawal of the Scheldt tolls—this last remnant of the Dutch closure of the Scheldt—had set aside the barrier to access to the ocean, which had lasted for almost three hundred years. The maritime traffic of these three towns was practically of no consequence in the middle of last century. To-day, their united maritime traffic exceeds that of London; and of this that of the youngest of them—Antwerp—alone supplies over 50 per cent.

Nevertheless London has not remained at an economic standstill in the meantime. The increased productive power of its hinterland has likewise long ago far more than made up for the shrinkage in its exchange trade. In the forty years during which the maritime trade of Hamburg, Rotterdam, and Antwerp increased six-fold, and that of Amsterdam and Bremen four-fold, London's figures for incoming and outgoing ships were trebled.

Taken altogether, this means quite an immense growth in maritime traffic on the short stretch of the North Sea (only 380

miles long) between Dover and the Mouth of the Elbe. Six great commercial ports are crowded into it. No other region of the sea in the world can boast of even an equal concentration of economic strength. In round numbers 125,000 seagoing ships, on the average, traversed the North Sea during the last few years, coming from or going to these six great ports, and completely dominating North Sea traffic. They give the North Sea —and naturally its southern part in particular—an economic importance, which it never possessed at any previous period.

The Commercial Countries of the North Sea.

Four North Sea countries lie behind these six North Sea ports—England and Germany, Belgium and the Netherlands. The number of ships flying their flags, that navigate the North Sea, differs considerably.

Whereas in English and German ports the flags of the respective countries predominate—amounting in London to almost 68 per cent., in Hamburg to 55 per cent., and in Bremen even to 70 per cent., of the total sea-going traffic, the number of ships sailing under it (the country's own flag) in Netherland ports drops to less than a half—in Amsterdam to 45 per cent, in Rotterdam to 20 per cent.—and in Belgian Antwerp it disappears almost entirely with a share of only 5 per cent., and even these for the most part are carried by English ships, which only sail under the Belgian flag by agreement.

English and German ships take their place, however. More than half of the total shipping in Antwerp flies the English flag—her share in Rotterdam and Amsterdam amounts to almost one-third—and the German merchant flag has a good 25 per cent. and 18 per cent. share in the departure and entries of this city of the Scheldt, and in the ports of the Netherlands.

On the other hand, Dutch shipping plays no part in the North Sea region outside its own ports. Its share in English and German ports is barely 1 per cent. Belgium does not enter into the question at all.

There is only one North Sea flag, in addition to the English and German, that does not entirely disappear in its own ports —the Norwegian—which has a share of at least 50 per cent. in the shipping of Bergen and Christiania, and takes a fourth place among the mercantile navies of the world. Even this, however, does not alter the general aspect. The foreign trade of the most important Norwegian ports does not amount to more than a good fiftieth of the trade of London; and even in them the English and German flags take second and third places.

Thus these flags dominate North Sea shipping. Fully 75 per cent. of all incoming and outgoing sea-going ships in the great North Sea ports, belong to England and Germany, whose shares are in the proportion of 4 to 3. This renders the North Sea—that most important of international trade routes—econo-

mically an Anglo-German ocean. Only these two commercial states are, economically, Great Powers in it.

Politically, also, they are the North Sea Powers.

3. The Military-Political Situation.

The Smaller Powers.

The political importance of the four smaller North Sea Powers, whose populations taken together scarcely amount to eighteen millions, must naturally be far behind that of England and Germany with their hundred million inhabitants. Indeed, two of these powers—Belgium and Norway—have to a certain extent abandoned their political activity. They are neutralized States. In return for a pledge of absolute neutrality in all future wars, the Great Powers have guaranteed their integrity. Thus they are tied by international law; restricted in their ability to form alliances. Neither the Belgian Treaty of Neutrality of 1831, nor the Norwegian Declaration of 1907, has interfered with the sovereign rights of these countries to such an extent that this neutralisation has imposed upon them the duty of disarming and of dismantling their fortresses. Both have an armed force.

Belgium has made successful efforts to maintain an army, which in case of need can secure her own neutrality. And rightly so—for Belgium owes her neutralisation to her perilous position as a natural thoroughfare, and not to political insignificance. Despite all treaties, this dangerous situation might easily render an army of its own necessary for the protection of the country. Based on the well-fortified town of Antwerp, its present army, having a war strength of about 143,000 men, is adequate for the task. On the other hand, its sea-coast—without protection of a fleet of any kind—lies open to hostile attack, although it also forms a natural threshold in a west-easterly direction.

Norway is not in the dangerous position of a buffer-state. Her neutralisation originated from purely local Scandinavian requirements, after her separation from Sweden. The strength and composition of her army is solely suited to those requirements. The duties of her army, which has a war strength of about 75,000 men, are purely defensive; and her fleet—composed of a few armoured coast defence ships and gun boats, or torpedo boats, and, lately, submarines — serves for coast defence only.

Too weak by themselves, incapable of alliance by reason of their neutralisation, Belgium and Norway scarcely enter into the question of the military-political situation in the North Sea.

The forces of the two other smaller North Sea Powers—Denmark and Sweden—are not materially larger. Each of these kingdoms can put about 70,000 men in the field. Like that

of Norway, the Danish fleet is only composed of armoured coast defence ships, gun boats and smaller vessels—in fighting strength and numbers about equal to the Norwegian. Holland's sea power is somewhat greater. In addition to ships serving merely as floating coast defences, the Dutch Navy possesses about twenty modern destroyers and six battleships of 5,000 to 6,000 tons displacement. But in spite of the smallness of this force in comparison with the armed forces of the great North Sea Powers, these two countries are an important military-political factor in the North Sea. On the north and south, their frontiers flank the German North Sea coast. Between them and England lie the Netherlands; between England and the German waters of the Baltic lies Denmark. Denmark's south and Holland's east frontiers are only about 60 miles distant from the apex of the German North Sea triangle. That increases the political importance of both countries. They can facilitate transit from west to east; and Holland, at any rate, from east to west also. In particular, however, they are the natural connecting links whose possession must appear desirable to England for carrying on a North Sea war against Germany effectively. Their annexation, or an alliance with them, is therefore a much desired aim of English policy, whose attainment would considerably strengthen England's position in the North Sea, and would thereby bring about a fundamental displacement in the balance of power in the North Sea.

Such an alteration in the balance of power, can, of course, be prevented to a certain extent by the North Sea Agreement. This Agreement, concluded at Berlin on the 23rd April, 1908, between all the North Sea Powers, including France and Sweden —but, of course excluding the neutral States of Belgium and Norway—is to secure by International Law, the present *status quo* in the territorial ownership of the North Sea countries and the adjoining dominions. According to it, each country is "to maintain its own sovereign rights in those territories, and respect those of the other countries" inviolate. This Agreement, however, does not refer— as a memorandum expressly adds—"to the free exercise of sovereign rights of the countries over these possessions."

Thus, the treaty can no doubt operate against a forcible displacement in the balance of power, which might possibly be aimed at by one of the Great Powers—at any rate, in so far as international agreements are able to do so—but it could not be invoked, if one of the buffer states, using its sovereign rights to conclude alliances, should one-sidedly strengthen the political position of one of the great Powers in the North Sea.

In this ability to form alliances, together with their intermediate position, lies the great importance therefore— now and in the future also—of the political position of Denmark and Holland as regards the great North Sea Powers, in spite of the North Sea Agreement.

4. The Great Powers.

England.

As long as the goal of foreign policy of the continental countries of Europe lay in Europe, and when non-European naval Powers did not yet exist, England was able to found and extend her position as a Great Power in all parts of the world, without requiring at the same time a strong maritime expansion of power in Europe. Thus, at the beginning of the last quarter of the 19th century, England had almost become an extra-European Great Power. The maritime development of France, her colonial plans, which aimed at a further expansion of her North African possessions, and the command of the Mediterranean, turned the attention of English statesmen back to Europe, and in the first place to the Mediterranean. The opening of the Suez Canal, the rapid, yet only temporary, expansion of an Italian sea power in the eighties, the creation of a fleet in Russia, whose political effort was directed southwards towards the Balkan States and Persia, strengthened England's Mediterranean interests. The alliance of Russia with France, and the consequent increased importance of the waters of North Europe, made little change in the direction of Engand's strategy in time of peace.

In the Mediterranean, on the main routes connecting France and her colonies, therefore, lay the principal strength of the English fleet—based, until the turn of the century, on Malta and Gibraltar, and unquestionably superior to the French fleet at Toulon. Even during peace England's second strongest force, the Channel Fleet, patrolled in front of the west and north-west coasts of France. "Stronger than France and Russia; ready for strategical advance against France"—that was the task of English naval policy.

The entry of Germany, the United States of America and Japan into the rank of first-rate naval Powers, engendered new aims. The change in the direction of Russian policy from south to east, and the peaceful overpowering of France since Fashoda, smoothed the way for them. The Japanese Alliance of 30th January, 1902, followed, and the rapprochement with France, which was sealed by the Arbitration Treaty of 18th October, 1903. England was temporarily relieved from anxieties in Eastern Asia and the Mediterranean. The re-organization of the Fleet in 1904 was able to begin. Through it, the girdle of English warships encompassing Europe was drawn tighter; but at the same time its centre of gravity was transferred northwards from the Mediterranean to the coasts of England. Since then, during the last few years, all efforts have been directed to the further strengthening of this northern wing, which is designed for possible action in the North Sea.

To-day—and henceforth also, therefore—England's fleet lies based on her Channel ports, in spite of all *ententes* firmly en-

compassing her ancient rival, France, in her (France's) harbours facing the English coast. But her strategy is no longer directed southwards only, but always more and more towards the north-east.

The basis of strategical operations has already been extended North Seawards beyond the Thames, up to the Firth of Forth; and for about a year past Scapa Flow, situated in the extreme north, seems to have been receiving naval attention. The further development of these northern extensions of the existing bases of the fleet, would form another link in the chain of peace preparations for a possible strategical advance in the North Sea during war.

Germany.

For a quarter of a century, the newly established German Empire had been able to confine itself politically to its continental position in Europe. But during this period its population had increased by almost thirty per cent.; and almost the whole of this addition had fallen to the share of the urban population—that is, to the population industrial by profession. This had removed the centre of gravity of German political economy from the domain of agriculture to that of manufacture and trade, and had made Germany economically dependent on foreign countries in a constantly increasing degree. The increase of about 60 per cent. in German foreign trade, and simultaneous growth of about 250 per cent. in the transport capacity of the German mercantile marine during the 30 years following 1870, bore fruit; and, during the nineties of last century, put Germany in the second place among the world's commercial powers—the aggregate increase in whose performances during the same period only amounted to 20 and 135 per cent. Thus Germany became a sea power economically; for, fully three-fourths of the increase in her foreign trade was sea-borne trade, to which belonged almost alone the increase in German trade, as compared with the increase in the world's commerce. Seventy-five per cent. of this German maritime trade, however, is exported or imported through the ports of the North Sea coast.

The expansion of the military forces of the Empire had not kept pace with this development of German maritime interests, and, up to the nineties, had solely been adapted to the Continental needs of an Anti-Dual Alliance policy. The Fleet Laws first of all brought about the necessary change, and, side by side with the land forces, set up the fleet, whose object it is to secure the inviolability of German maritime interests. To-day it holds the first place among the navies of the continental countries of Europe. Its strategical base is the German North Sea coast—that short, important fringe of the ocean from which German maritime trade pulsates, and the maintenance of whose political freedom is necessary to the economic position of the German Empire as a World-Power.

To-day the North Sea is an Anglo-German Ocean, in a military-political sense, as well as from an economic standpoint.

II.—THE NORTH SEA.

1. The Military-Geographical Elements of the North Sea.

The North Sea Area.

The North Sea, extending over 10 degrees of latitude (51° and 61° N.), and 10 degrees of longitude (2° W. and 8° E.), in the Northern hemisphere covers an area of about 570,000 sq. km. (220,000 sq. miles). That is only one-fifth of the area of the Roman Mediterranean; but, while the latter is broken up by numerous peninsulas and islands, the North Sea, according to its surface configuration, forms a large and almost unbroken expanse of water. The North Sea has few islands. Their area is only equal to $\frac{1}{868}$ of its extent; whereas in the Mediterranean, for example, it equals $\frac{1}{217}$ and in the Baltic even $\frac{1}{14}$ of the area of the sea. Moreover, these few North Sea islands are situated near the coasts. They belong immediately to the mainland, like the low sandy Frisian Islands, or the rocky islets of Norway; or, again, they are like the Atlantic coast fringe of North-Western Europe—itself the outer edge of the North Sea and formed of old crags, deeply indented by bays, and surrounded by innumerable little islands and rocks. Thus the North Sea possesses no natural intermediate stations within its limits which are suitable for bases. That makes it comparatively spacious. The most distant spot from any coast is about 170 miles off—a distance as great as that in the five times larger Mediterranean.

Configuration of the North Sea.

The shape of the North Sea somewhat limits its spaciousness. The principal part of the North Sea forms a nearly regular rectangle running north and south, to which, in its south-west corner, is attached an independent smaller part forming the junction between the North Sea and English Channel. In this southernmost region of the North Sea, the greatest distance from coast to coast is only 120 miles; and this is further reduced southwards, until in the narrowest part—the Straits of Dover—it only amounts to 20 miles.

Thus the North Sea, in this region, entirely loses that property of a sea separating military forces. Almost directly in front of the enemy's coast lies its own opposite shore, based on which all operations of naval war can be undertaken without having to surmount any obstacle in the shape of distance.

The sides of the larger, rectangular region of the North Sea are respectively about 600 and 300 miles in length. They are, however, unequal in value. On three sides only is the North Sea bounded by land. Its northern entrance, throughout the 300-400 miles that it covers, is free. Owing to this, the

shorter distances, in an east-west direction, become of far greater importance than the longer ones from north to south. A modern fleet can cover its length of 300 miles in 15 to 20 hours; and even the slowest war vessels—the submarines—require little more than one day to do so. In spite of this, however, these short east-west routes make considerable demands on the operations of naval warfare. These 300 miles of unbroken sea, separating the eastern from the western coasts of the North Sea, put great difficulties in the way of all operations of war, viz., the preparation for or leading up to an opportunity for battle by blockade; the fighting out of a decisive action off the enemy's coast with the co-operation of torpedo boats and submarines; the following up of successes in battle by commencing war on land; or the toning down of a defeat by the rapid retreat of the naval forces to their own bases of operations. Thus the North Sea, despite the cramped appearance of its shape, is yet comparatively roomy throughout its greater part, *i.e.*, in the whole of the region lying to the north of the Dutch and German coasts.

Nevertheless, the whole of this unbroken area can to-day be controlled as a single field of operations, from one point. The whole of the North Sea is within the range of modern wireless telegraph stations. The greatest distance from coast to coast is not more than 700 miles in a south-west to north-east direction.

Depth of the North Sea.

The North Sea is as uniform as regards depths as it is in regard to the configuration of its surface. It is for the most part free from shoals. Outside its coastal waters, even the comparatively shallow part of the North Sea—to the south of a line from Cromarty Firth to the Skaw, whose average depth is only about 70 metres (230 feet)— exhibits, in a military sense, only one shoal worthy of notice, viz., the South-West Patch of the Dogger Bank. Owing to its depths, in places 19 metres (62½ ft.), it may occasionally, in unfavourable weather, be regarded as impassable. All other irregularities in its bottom, however important they may be as regards navigation, are, from a military point of view, of no consequence. Even the submarine—the war vessel demanding the greatest depth of water for its operations—is nowhere inconvenienced by them.

The Geographical Position.

Apart, however, from shoals, there are in the ocean certain impassable tracts. Even outside the Arctic regions stationary ice-sheets may block whole regions of the sea, and floating icebergs make sea-routes impassable.

From its high latitude, the North Sea might well be blocked

by ice for long periods. In winter, in the Northern Hemisphere, icebergs are often found as far south as 40°; and the northern parts of the Baltic, Hudson Bay, and the Sea of Okhotsk—situated in the same latitude as the North Sea—are covered with ice for a large part of the year. The North Sea, however, lies to the south-east of the warm, protecting Gulf Stream, which, travelling northwards west of Ireland, forces its way between the Faroe Islands and the Shetlands, and reaches the Norwegian coast. The Gulf Stream thus lies as an insurmountable barrier in the way of the Arctic ice, and sends out small warm tributary currents from the north-west and south-west through the Pentland Firth and the English Channel into the North Sea, raising the temperature of its waters and keeping its whole surface constantly free from ice.

North Sea Weather.

In spite of this favourable climatic position, the seasons are not unimportant as regards warfare in the North Sea. The sailor, whose quarters are at the same time his place of action, is certainly more independent of great climatic influences—of summer heat and winter cold—than is the soldier. But the transient phenomena—day and night, storm and fog—which, in their duration and frequency are dependent on geographical position, and change with the season of the year, can exercise an influence on his operations.

The longest day in the North Sea lasts from 16 to 18 hours—the shortest from 6 to 8 only. This means a severe limitation of all daylight actions during the winter months; and especially the almost complete exclusion of effective night operations in summer. In the northern region of the North Sea—especially in June and July—the midnight sun replaces daylight during the few hours between sunset and sunrise, and prevents any unperceived approach. Owing to this, the fine months of the year lose considerably in value for fighting purposes, especially for him who desires, or is obliged, to make the most of the means of guerilla warfare. Only a few hours can be required to decide a naval action fought in daytime. Even the shortest winter days are sufficient for that. But long dark nights, the basis of all success in the more secondary operations of naval warfare—escape of a blockaded fleet; attacks by the lighter forces against an intact battle fleet; destruction of a beaten fleet by torpedo boat attacks, etc.—do not exist in summer.

Even the winter months, however, present difficulties for the operations of war.

At this period fogs are most prevalent in the North Sea. From late autumn till January, fog or very hazy weather is prevalent on about one day in three, throughout almost the whole region of the North Sea, with the sole exception of the extreme north, where—especially on the Norwegian coast—the

mid-summer months are the haziest. At the same time, also, the winter is the windiest period in the North Sea. Westerly winds prevail. Almost three-fourths of all North Sea winds blow from between S.W. and N.W. Of them, however, the S.W. winds, which in the winter months are by about 30 per cent. more prevalent than any others, are at the same time, on the average, the strongest North Sea winds. They surpass by about 30 to 50 per cent. in average velocity the winds blowing from north, east and south.

One-third of the month fog, half the month fresh south-west winds, with much rain and snow—that is the North Sea weather in the winter. Even now-a-days, when steamships are no longer directly dependent on the wind, it can aid or hinder naval warfare. Speed and ability to keep the sea are considerably influenced by wind and state of the sea, especially as regards the smaller warships. Thus, the prevalence of westerly winds is an advantage for the offensive operations of guerilla warfare, for torpedo boat attacks, and submarine actions from westwards against an adversary in the east. The same state of weather, however, may also become a protection for the east, if stormy west winds compel naval forces stationed for blockade or observation, without shelter, off the east coasts to abandon their posts. Too high a value must not, of course, be attached to this protection.

Those depressions of the barometer which bring stormy winds to the North Sea regions, travel exclusively from the west across the North Sea or neighbouring districts influenced by its weather. They move eastwards at the rate of 8 to 10 metres (26.2 to 32.8 ft.) per second, and thus take about a day to travel from the western to the eastern edge of the North Sea. It will therefore be possible to send large and more seaworthy cruisers eastwards in good time, when any danger arises of the light vessels being obliged to abandon their posts on account of stormy weather. Thus, it will still be possible for an enemy attacking from the west to maintain the operations of war on the exposed eastern coasts of the North Sea, in spite of unfavourable weather.

2. Coasts of the North Sea. ...

The Nature of the Coasts.

There are many different coast formations in the North Sea —precipitous coasts in the northern part, and flat ones generally in the south. In the north-west, opposite the western slope of the Scandinavian mountains, which form the deeply indented precipitous coast of Norway—more than abundantly supplied with islands and bays—lies the steep, monotonous shore of Scotland, almost the only breaks in which are the funnel-shaped openings of the few river-mouths. Rich in islands, pierced by

many water courses, the low, sandy Frisian coast forms the south-eastern boundary of the North Sea from the Scheldt to the mouth of the Eider. England's south-western border of the North Sea is more repellent, and frequently accompanied by shallows stretching far out; and is partly fringed with sand-dunes and dotted with marshes. The southern and northern extensions of the Frisian coast, and the flat coasts of Belgium and Denmark, are as good as harbourless.

The physical nature of none of these different forms of coast excludes the possibility of maritime development and the formation of bases for military operations. Precipitous and flat coasts, indented and unindented ocean shores, have equally been the home of historical naval achievement and dominion. The expeditions of discovery and conquest of the Vikings started from the much indented rocky coast, where lurking place adjoins lurking place, and sally-port succeeds sally-port. The home of the Hansas was a flat, inhospitable coast, rich in harbours, however; and, in spite of their undeveloped—now almost desolate—coast, the Phœnicians were once able to rule the ocean from the solitary ports of Tyre and Sidon.

The country behind the coast, the inhabitants of the coast, and its position, increase or diminish its value. The nature of the latter, however, forms the basis upon which the development of the other factors can proceed—quickly or slowly, abundantly or restrictedly. A coast which affords natural harbours is superior, from a military-geographical point of view, to an unbroken uniform coast; but even one with few good harbours has by nature a greater military-geographical value than one whose innumerable bays and inlets afford far too many points of attack. The military suitability of a coast as a base of naval operations, must be considered from this twofold point of view:—firstly, from the offensive standpoint—can its own forces develop for attack from it; then, from the defensive—does it naturally afford protection from hostile attack? Here the natural geographical superiority of the southern and western coasts of the North Sea over those of the east and north-east becomes evident. The extreme forms presented by the indented, precipitous coast of Norway, and the almost straight, flat coast of West Jutland, impede the military development of these shores.

The North-east and East.

Along the whole extent of the Norwegian coast—some 17,000 km. (10,500 miles)—there is not a single place among the whole mass of inlets which appears pre-eminently suitable from its natural shape for a self-contained base of operations. There are, it is true, innumerable places of shelter from sea and enemy, and an unlimited series of sally-ports for the operations of guerilla warfare; but at the same time, also, there is a chain of undefended points open to every attack.

It, therefore, does not form a suitable geographical foundation for modern naval power.

What this coast lacks in natural protection, the west coast of Jutland has in excess. Its repellent shore, rendered dangerous by sandbanks, stretches harbourless from Horns Riff to the Skaw in front of a great, broad line of dunes 350 km. (217 miles) long. For that reason it is known as the "iron coast." It affords, indeed, the most effective coastal protection; but is quite destitute of hiding-places for warlike action, and, even more so, of geographical features suitable as bases of naval operations.

The West and South.

It is otherwise in the west and south.

A few river mouths opening out into deep bays—the chief being the Moray Firth, the Firth of Forth, the mouth of the Humber, the Wash, and, lastly, the mouth of the Thames—subdivide the east coast of England, which is about 560 miles long as the crow flies. Such is the natural concentration of strength which the connecting strip (*sic*) between land and water possesses; for, between these points of ingress and egress, lies the bold unbroken coast of East Scotland, as also the flat shores of Suffolk and Yorkshire, neither of which are very accessible.

The values of the repellent yet penetrable coasts in the south are even more differentiated. Here, all the shores are flat. It is in the nature of all flat coasts that, owing to navigation being endangered by the shoals in their vicinity, they constitute a strong defensive element. Thus, since the times of the Romans, the sandy shoals of our North Sea coasts have often provided a natural defence against hostile invasion. Rivers, navigable far inland, force their way through these sandy shallows. Their mouths, which open up the interior towards the west in the Rhine-Maas-Scheldt delta, and towards the north by the German rivers Ems, Weser, and Elbe, are the natural maritime bases of the southern coast of the North Sea. Enclosed, to some extent like a frontier fortress whose flanks are covered by impassable country, they unite strong defensive power with the possibility of developing great offensive power.

The Situation of the Coasts.

The military value of the south and west coasts of the North Sea is yet more enhanced by their position in regard to the oceanic borders of this sea. Fully 370 miles, or 18 per cent. of its circumference of nearly 2,050 miles, are bordered by the sea. How small in comparison is the sea entrance to the Baltic, for example—amounting to only 7.5 per cent.; or even of the Mediterranean, to less than 0.1 per cent. of its boundary; and yet the North Sea produces almost the same effect as an inland sea. Three hundred miles, or 80 per cent. of this sea bor-

der are situated in the north—beyond lies the Arctic, from which intercourse with the North Sea is insignificant; for even vessels coming from the great commercial centres of the higher latitudes of America give preference to the southern route.

The North Sea has thus, practically, but one approach from the ocean—namely, the Straits of Dover in the extreme south-west—20 miles broad. The whole of the foreign trade of England and Germany, which predominates in the North Sea, radiates from this point; and here its world-encircling net is drawn together also.

That raises the military-geographical superiority of the west and south coasts still more above that of the east and north east coasts. Its river mouths and bays, which, from the natural formation of the coasts might provide the most suitable bases for military operations thus flank the principal trade and traffic routes of the North Sea.

III.—The Strategical Position in the North Sea.

The Threshold of the North Sea.

The North Sea lies behind the rocky coast of North-west Europe, and in front of the Continent. It thus forms the threshold between the oceans and central and eastern Europe. This threshold position gives it a special military-geographical importance. Just as in the domains of strategy, an island immediately in front of the mainland, a peninsula, or even a projecting province, is naturally a particularly attractive spot for first gaining a firm foothold; so, on the other hand, such regions in particular represent pre-eminently suitable defensive positions —firstly as natural obstructions, and then because they form the threshold by which alone the defenders can become the attackers. Thus it is with the North Sea. It is the threshold from which central and eastern Europe can be economically controlled. But it is also the threshold which central and eastern Europe need in order to participate in the commerce of the world. To keep it free is therefore a vital necessity in the policy of the country lying economically behind it; to command it, is the natural military aim of the country which wishes to prevent participation in the world's trade and commerce of the Powers lying behind it.

Thus the North Sea, in peace or war, naturally becomes the area contested for between the two great Naval Powers on its west and south-east borders—between England and Germany.

England's Strategical Position in the North Sea.

The North Sea cannot be possessed in a political sense—"The sea is only political ground in so far as authority extends over it from the land." The sea, however, can to a certain extent be controlled in a military sense.

Military command of the North Sea is therefore the strategical task of the English fleet in the North Sea. The east coast of England forms the strategical base of operations to this end. It comprises the whole of the western border of the North Sea—from Dover to Duncansby Head, a distance of about 500 miles, prolonged some 60 miles more in the north by the Orkneys. Its centre of gravity has hitherto been situated directly on the south flank, in conformity with the pre-eminent importance of the southern North Sea entrance, as indeed of the southern basin of the North Sea altogether. The mouth of the Thames, with the first class naval ports of Sheerness and Chatham, and its advanced torpedo boat and submarine bases at Dover and Harwich, here commanded the North Sea routes from and to the Straits of Dover, whose small breadth and long and gradually narrowing northern entrance facilitates the watching or even closing of the Strait. The growth of German naval power, whose North Sea base lies about 2½ degrees farther north than Dover, has led to the construction of a second, more northern, first-class base. For some years past Rosyth, situated in the Firth of Forth, 350 miles north of Dover, has been laid out as a first-class naval port.

The eastern borders of the Scottish-Scandinavian channel, the entrance to the Skagerrak, Heligoland, and Dover, are almost equidistant from Rosyth. That gives this future base an ideally central position for the strategic command of the North Sea.

This central position is, to be sure, not favourable for the immediate object of English naval strategy—the close blockade of the German North Sea coast. The necessary detachment of ships to complete with stores, provisions, etc., from a blockading fleet based on Rosyth—situated about 400 miles from the blockade line—might cause an undesirable weakening in the fighting power of even the English fleet, so vastly superior numerically. English professional writers consider that the necessary and practical limit of distance between base and blockade line is about 150 to 200 miles. Even the second-class naval places on the east coast of England, nearest to Germany—the Wash and mouth of the Humber—would not conform to this standard. This explains why it is that the English Naval Authorities are obliged to seek bases on our North Sea islands to blockade our river mouths—an aim which has recently again been displayed with peculiar clearness in the proceedings at the Leipzig trial.

Further difficulties are added when the coast of the blockaded Power combines considerable natural capacities for defence with the possibility of developing the offensive. That, however, is the case on the North Sea coast of Germany.

The sides (roughly 60 miles long) of this angle in the coast—110 degrees wide—are commanded by the fortified central Weser-Elbe position, together with the advanced base of Heligoland, 20 miles to the north-west.

The sands and shoals, the difficulties to navigation caused by changing currents, give these positions additional defensive strength.

The Frisian and Danish coasts further limit the directions of approach and departure, in the north-west quadrant of this angle in the German coast, to 120 miles westwards and over 200 northwards. This occasions considerable difficulties in the execution of an extended close blockade of the coast—presupposing an energetic enemy provided with torpedo boats, and especially submarines.

Even the English authors of the 1903 Prize Essay in the Journal of the Royal United Service Institution considered they must therefore appraise the disadvantages of the dangers arising from all these conditions for the blockading force so high, that they generally deprecated the strategy of close blockade. In the meantime, the continued development of the submarine has undoubtedly strengthened the position of the blockaded force afresh, much more considerably than that of its offensive adversary.

From these considerations the idea—more and more discussed in the last few years—appears to have arisen of an extended blockade of the North Sea. The flanking of both entrances of the North Sea by England's North Sea base urges this; and the construction of a third naval North Sea point of support on the extreme north wing of this base, takes account of it. From Scapa Flow—the great, sheltered and accessible roadstead, situated between the Orkney islands of Mainland, Hoy, and Ronaldsay—the twelve times wider northern entrance to the North Sea is to be closed, in the same way as the southern entrance is from the Thames base. It is certain that it will be possible for England to solve even this more difficult problem of closing the entrance—250 to 300 miles broad—between Scotland and Norway, in view of her superior number of warships of every description, and her almost unlimited number of auxiliary vessels, which can be drawn upon in time of war—if her blockade line is supported by a strong battle fleet based on Scapa Flow. The Orkneys are undoubtedly favourably situated for such point of support, in spite of their one-sided wing-position in the blockade line. They are situated at the western extremity of the passage. However, the important sea routes to the northern entrance of the North Sea only lead from the west; and the goal of an enemy breaking out of the North Sea region in the north, can only lie westwards of the Orkneys.

The Firth of Forth, however, gains fresh importance as a central position in regard to the problems of this strategy of extended blockade. It is only 200 miles south of Scapa Flow. The importance assigned to it on account of its central position is shown by the fact that influential persons are demanding the construction of a Forth-Clyde Canal—a line of communication

between the North and Irish Seas cutting through Scotland. This is intended to render it possible for a Rosyth fleet to join up with a fleet from Scapa Flow, or the Channel, in the rear of that place, without having to fear an encounter of a single division of its fleet with an opponent of perhaps equal strength, as might occur were direct co-operation in the North Sea aimed at.

Such a strong strategical position as that afforded by the Thames-Rosyth-Scapa position would undoubtedly enable the superior English fleet "to seal the North Sea"—at any rate, from a military point of view. What ultimate object the advocates of this strategy have in view without a simultaneous commercial blockade of the North Sea, must remain questionable. A commercial blockade of the entire North Sea would, however, be equivalent to the implication of neutrals in an Anglo-German North Sea war.

If England desires this, then, by breaking the North Sea Agreement, and utilising neutral Danish or Dutch ports, she might do better to enforce afresh her historical strategy of close blockade. Thus, at least, she would avoid violating the rights of neutrals situated outside the North Sea to the east of its entrances.

Only an England, which feels herself too weak to venture upon a more vigorous offensive war, will want to take such political disadvantages into account. As long as that is not the case—in spite of strategical discussions as to close or extended blockading positions in the North Sea—the strategy recently demanded afresh in the English Press must be reckoned on, which perceives its own base on the enemy's coast, notwithstanding all the dangers therewith connected (true to Nelson's saying, "If we do not try we never can be successful").

The greatest possible strength and utmost readiness for war of the German naval forces and of the German North Sea coast are the sole defence against this.

NAVAL NOTES.

BRITISH EMPIRE.

Home.

Naval and Marine Officers on the Active List witnessing the Royal Processions on June 22nd, 23rd and 29th, or witnessing the Naval Review on June 24th as visitors on board His Majesty's ships of war, or attending the Gala Performances at the Royal Opera and His Majesty's Theatre, are to appear in full dress uniform. Officers not on the Active List are desired to wear full dress uniform if they are in possession of it.

The following are the principal appointments which have been made:—

J de M. Hutchison, C.V.O., C.M.G., to be Commodore 2nd Class in charge of Royal Naval Barracks, Devonport; T. W. Kemp, C.I.E., to *Duke of Edinburgh;* L. Clinton-Baker to *Berwick*; T. P. Bonham to *Blonde.*

Admiral Sir. W. H. May, G.C.V.O., K.C.B., hoisted his flag on the 11th ult. on board the *Mars* at Devonport, in succession to Admiral Sir W. H. Fawkes, K.C.B., K.C.V.O., as Commander-in Chief at Plymouth; Sir W. H. Fawkes' flag was struck at sunset on board the *Impregnable* and Sir W. H. May's flag was then transferred to her.

Rear-Admiral Sir C. R. Keppel, K.C.V.O., C.B., D.S.O., has been selected to command the Naval Brigade, which is to be sent to London for the Coronation Ceremonies.

The first-class battleship *Formidable* paid off at Chatham on the 3rd ult., and recommissioned on the following day for a further term of service with the Atlantic Fleet. The first-class battleship *Implacable* arrived at Sheerness from Gibraltar on the 19th ult., and paid off at Chatham on the 24th ult., recommissioning on the following day for a further term of service with the Atlantic Fleet. The first-class battleship *Africa,* lately attached to the Second Division (Second Battle Squadron) of the Home Fleet paid off at Chatham on the 24th ult., and recommissioned on the following day for service as flagship of Vice-Admiral H.S.H. Prince Louis of Battenberg, G.C.B., etc., Commanding the Third and Fourth Divisions of the Home Fleet; she arrived at Sheerness on the 3rd inst., and Prince Louis's flag was then transferred to her. The first-class battleship *Agamemnon* has been transferred from the First Division of the Home Fleet to the Second Division; the First Division is now entirely composed of battleships of the *Dreadnought* type.

The first-class armoured cruiser *Cochrane* paid off at Portsmouth on the 3rd ult., and recommissioned on the following day for a further term of service with the Second Cruiser Squadron; she left Portsmouth on the 29th ult. to rejoin the flag at Bantry Bay.

The second-class cruiser *Forte* paid off at Simonstown on the 11th ult., and recommissioned on the following day for a further term of service on the Cape Station. The third-class cruiser *Barham* arrived at Sheerness

HOME—*continued.*

on the 1st ult. from the Mediterranean; she paid off at Chatham on the 7th ult., recommissioned for a further term of service on that station on the following day and left on the 13th ult. for Malta.

Result of Gunlayers Test with light Quick-firing Guns, 1910.—The result of the test of the Gunlayers with light Q. F. Guns, when allowance is made for the new plan of marking, shows satisfactory progress. It is prefaced by an abstract of the firing for the last six years, from which it is seen that the percentage of hits to rounds fired was: in 1905, 21.63; in 1906, 34.53; in 1907, 42.08; in 1908, 47.28; in 1909, 50.13; and in 1910, 45.19. The rate of accurate firing also compares well with previous years with all calibres of guns, when allowance is made for the new method of marking. With the 12-pounder gun, the heaviest used in the practice, the China Squadron for the fourth time running heads the list in order of merit, the flagship *Minotaur* being the best ship in the Squadron and in the Navy, 11.16 hits per minute having been made by her gunners. The First Division of the Home Fleet and First Cruiser Squadron stands second with the *Dreadnought* as best ship, and the Second Division of the Home Fleet and Second Cruiser Squadron third with the *Africa* as best ship.

With the lighter guns, the 6-pounder and 3-pounder, the Cape of Good Hope Squadron heads the list, with the *Forte* as best ship, with the China Squadron coming second and the Third Division of the Home Fleet and Cruisers third, with the *Sapphire* as best ship in the Squadron and in the Navy with 8.44 hits per minute to her credit. Classified in order of merit of ships competing, the *Minotaur* is first ship with Able-Seaman A. Kitson as best shot; the *Africa* comes next with Petty-Officer W. Scotton as best shot, and the *Dreadnought* third, with Able-Seaman H. Fletcher as best shot. The number of ships competing was 55.

RESULT OF TEST OF GUNLAYERS WITH LIGHT Q.F. GUNS IN HIS MAJESTY'S FLEET, 1910.

—	1905.	1906.	1907.	1908.	1909.	1910.
Number of ships that fired ...	86	89	122	111	104	110
Number of guns	1,118	1,421	1,898	1,483	1,407	1,531
Number of hits... Direct ...	2,228	4,666	7,462	6,120	7,157	3,483
Number of hits... Ricochet ...	—	—	—	—	—	283
Number of misses	8,291	8,845	10,272	6,823	7,119	4,254
Percentage of hits to rounds fired	21·63	34·53	42·08	47·28	50·13	45·19*†
Hits per gun per minute:—						
12-pounders	2·12	3·417	4·471	5·319	6·005	5·454*
6 and 3-pounders (except Vickers)	1·97	3·356	3·640	4·507	4·191	3·651*
3-pounders, Vickers ...	—	8·144	6·140	6·069	7·810	6·127*

* Ricochet hits counting half a hit. Not directly comparable with previous years.

† The figures for 1910, counting ricochet hits as a whole hit, as in previous years, would be 46·95.

HOME—*continued.*

12-POUNDER GUNS.

ABSTRACT, 1910.

Order of Merit.	Fleet or Squadron.	No. of Ships.	No. of Men Firing	Hits per Minute.	Best Ship in Fleet.	Hits per Minute.
1	China	4	40	8·195	*MINOTAUR* ...	11·16
2	Home Fleet, 1st Division and First Cruiser Squadron	9	149	7·648	*Dreadnought* ...	9·87
3	Home Fleet, 2nd Division and Second Cruiser Squadron	13	154	5·685	*Africa*	10·19
4	Home Fleet, 3rd Division and Cruisers	15	214	5·672	*Sentinel*	9·64
5	Atlantic and Fifth Cruiser Squadron	8	116	4·715	*Formidable* ...	6·36
6	Mediterranean and Sixth Cruiser Squadron ...	10	113	4·625	*Exmouth* ...	8·29
7	Cape of Good Hope ...	1	8	4·314	*Hermes*	4·31
8	East Indies	1	8	3·514	*Hyacinth* ...	3·51
9	Australia	2	24	3·140	*Powerful* ...	3·55
10	Special Service Tenders	5	36	2·644	*Eclipse*	5·17
	Total, 1910 Test ...	68	862	5·454‡		
	Total, 1909 Test ...	68	771	6·005		

‡ Ricochet hits counting half a hit. Not directly comparable with 1909.

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6 AND 3-POUNDER GUNS (EXCEPT 3-POUNDER Q.F. VICKERS).

ABSTRACT, 1910.

Order of Merit.	Fleet or Squadron.	No. of Ships.	No. of Men Firing.	Hits per Minute.	Best Ship in Fleet.	Hits per Minute.
1	Cape of Good Hope ..	2	17	4·750	*Forte*	5·16
2	China	5	29	4·234	*Flora*	7·25
3	Home Fleet, Third Division and Cruisers ...	21	130	4·080	*SAPPHIRE* ...	8·44
4	Australia	4	38	3·627	*Powerful* ...	6·53
5	Mediterranean Fleet and Sixth Cruiser Squadron	10	45	3·432	*Hussar*	6·00
6	Home Fleet, First Division and First Cruiser Squadron	2	16	3·390	*Pathfinder* ...	4·20
7	Special Service Tenders	9	35	2·813	*Cumberland* ...	6·35
8	Fourth Cruiser Squadron	2	16	2·705	*Scylla*	3·19
9	Home Fleet, Second Division and Second Cruiser Squadron	1	8	1·783	*Skirmisher* ...	1·78
	Total, 1910	56	334	3·651*		
	Total, 1909	70	414	4·193		

* Ricochet hits counting half a hit. Not directly comparable with 1909.

HOME—*continued.*

Result of Gunlayers' Test from Torpedo Boat Destroyers, 1910.—This return differs in form somewhat from those hitherto issued, the destroyers being no longer classed in their respective flotillas, but altogether. The tabular statement shows that 175 vessels fired for the test, with 736 guns; that 1,545 direct hits and 171 hits on ricochet were made, the number of misses being 2,131. The percentage of hits to rounds fired was 42.38 the best firing being with 6-pounders fitted with telescopes, and the next best with the 4-inch gun. With the last-named gun the *Bull Dog* headed the list, Leading-Seaman P. Hawkins being best shot; with the 12-pounder on the new mounting the *Beagle* was first, her best marksman being Able-Seaman W. Tepps; with the same gun on the old mounting Torpedo-boat No. 11 headed the 144 vessels so fitted, Able-Seaman S. Steer being best shot; with the 12-pounder 8-cwt. guns the *Erith* was first, Able-Seaman B. Barker being best shot. With the 6-pounder and 3-pounder fitted with telescopic sights the *Roebuck* heads the list in order of merit, Able-Seaman A. Simonds being her best shot; with the same guns without telescopic sights the *Dragon* was first, with Petty-officer J. Crabb as best shot.

For all the tests the award of the medals has yet to be announced.

RESULT OF GUNLAYERS' TEST FROM TORPEDO BOAT DESTROYERS OF HIS MAJESTY'S FLEET, 1910.

Number of ships that fired		175
Number of guns		736
Number of hits	Direct	1,545
	Ricochet	171
Number of misses		2,131
Percentage of hits to rounds fired		42.38

Hits per gun per minute—	4-inch B.L.	3.63
	12-pr. 12-cwt.	3.88
	12-pr. 8-cwt.	2.73
	6-pr.	6.43

ABSTRACT: 1910.

Nature of Gun.	No of Guns.	Rounds.	Hits.		Misses	Per Minute.		Percentage of Hits to Rounds Fired.
			Direct.	Ricochet		Rounds.	Hits.	
4-inch B.L.	28	140	62	5	73	8·41	3·63	46·07
12-pr. 12-cwt. on P. V. and VI. mountings..	30	135	57	9	69	9·28	4·31	45·56
12-pr. 12-cwt. on P I. mountings	220	1,052	386	51	615	9·65	3·85	39·12
12-pr. 8-cwt.	99	461	125	17	319	9·41	2·73	28·96
6-pr. with telescopes ..	334	1.921	878	82	961	13·56	6·63	47·84
6-pr. without telescopes	25	138	37	7	94	12·70	3·73	29·35
Total	736	3,847	1,545	171	2,131	10·488	4·368	42·38

HOME—*continued.*

ABSTRACT OF RESULTS OF FLOTILLAS WITH DIFFERENT NATURES OF GUNS.

Nature of Gun.	Flotilla.	No. of Vessels.	Hits per Minute.	Flotilla.	No. of Vessels.	Hits per Minute.	Flotilla.	No. of Vessels.	Hits per Minute.
4" B.L.	1st	18	3·63	—	—	—	—	—	—
12-pr. 12-cwt. on P.V. and VI. mountings ..	1st	10	4·31	—	—	—	—	—	—
12-pr. 12-cwt. on P.I. mountings	4th	35	4·49	China	5	4·29	1st	16	4·13
12-pr. 8-cwt.	3rd	4	3·92	2nd	18	2·61	1st	11	2·48
6-pr. with telescopes ..	China	5	7·60	5th	18	7·45	Medn.	6	6·42
6-pr. without telescopes	Medn.	5	3·73	—	—	—	—	—	—

Nature of Gun.	Flotilla.	No. of Vessels.	Hits per Minute.	Flotilla.	No. of Vessels.	Hits per Minute.	Flotilla.	No. of Vessels.	Hits per Minute.	Flotilla.	No. of Vessels.	Hits per Minute.
4" B.L.	—	—	—	—	—	—	—	—	—	—	—	—
12-pr. 12-cwt. on P. V. and V I. mountings ...	—	—	—	—	—	—	—	—	—	—	—	—
12-pr. 12-cwt. on P.I. mountings...	5th	32	3·90	3rd	34	3·88	2nd	23	2·97	Medn.	11	2·84
12-pr 8-cwt ...	—	—	—	—	—	—	—	—	—	—	—	—
6-pr. with telescopes	3rd	12	6·40	4th	21	6·16	2nd	5	5·48	—	—	—
6-pr. without telescopes	—	—	—	—	—	—	—	—	—	—	—	—

Japan.

Steam Trials of the "Aki."—The new first-class battleship *Aki* has recently completed her trials, and as she is the first of the new Japanese battleships to be fitted with turbine engines, the trials have been watched with great interest.

The ship was laid down at the Imperial Yard at Kure in March, 1905, launched in April, 1907, and completed for sea in the early part of 1910, and has since been undergoing a prolonged series of trials to thoroughly test the turbine system. Her dimensions are as follows:—Length between perpendiculars 492 feet; beam, 84 feet; maximum draught, 28 feet 9 inches. Her length over all is 499 feet and her normal displacement 19,750 tons. The protection of the *Aki* is moderate only, the main belt being 9 inches thick amidships, 6 inches at the bow and 4 inches at the stern. The main battery is protected by from 8 to 10 inches of armour. In view of the fact that our 45-calibre 12-inch gun has penetrated 10-inch armour at 8,000 yards range, the protection of the vitals in this ship must be considered rather too light. The armament of the *Aki*, however, is unusually heavy for a vessel of her displacement. All the guns are 45 calibres in length. Forward and aft are two 12-inch. On the broadside, in two-gun turrets, are twelve 10-inch. All of these main guns are mounted on the upper deck, which has an average freeboard of 19 feet, the axes of the guns being, therefore, from 23 to 25 feet above the normal water line. On the

JAPAN—*continued.*

gun deck are twelve 6-inch, widely distributed, eight of these being protected by the 6-inch armour of the central battery. The torpedo armament is heavy, consisting of five torpedo discharge tubes. The *Aki* has the great defect that when she is fighting a broadside engagement, no less than six of her 10-inch guns, being on the lee side of the ship, will be masked by the funnels and the turrets on the opposite beam, and will therefore be idle.

The Curtis turbines with which the *Aki* is driven are 12 feet in diameter, and they were contracted to show an aggregate horse-power of 24,000. The vessel was originally designed for 19-knot speed, which was to be obtained with reciprocating engines; but subsequently, it was resolved to substitute a pair of Curtis turbines driving twin propellers.

In the recent progressive official trials, at 94 revolutions per minute and 1,352 shaft horse-power, the *Aki* was driven at 8.4 knots for a consumption of 31.9 pounds of steam per horse-power per hour. At 160 revolutions and 5,773 horse-power, the speed was 13.9 knots for a consumption of 19.5 pounds of steam per horse-power per hour. At 221 revolutions and 16,115 horse-power the speed was 18.6 knots for a consumption of 15.3 pounds of steam, and at 259 revolutions and 27,740 shaft horse-power, the speed was 20.2 knots for a consumption of 14.4 pounds of steam.

United States.

Visit of U.S. Ships to European Ports.— It has been announced that the Second Division of the Atlantic Fleet, which has been ordered to visit European ports during the summer, was to leave New York on the 10th inst. The Division, which is commanded by Rear-Admiral C. E. Vrealand, is composed as follows:—

First-class battleships—*Louisiana* (flagship of Rear-Admiral Commanding), *Kansas, South Carolina, New Hampshire.*

Among other ports to be visited is Kiel, and it is stated that great preparations are to be made for entertaining the Squadron, and according to present report, it will be met in the North Sea by the German High Sea Fleet, which will be led by the Kaiser in person, whose standard will be hoisted on board the first-class battleship *Deutschland.* According to present arrangements the Squadron is to return to Cape Cod Bay about July 15th for the Manœuvres.

In addition to this cruise of the Second Division, it is stated that the whole of the Atlantic Fleet is to visit the Mediterranean in the Autumn, leaving in October and being absent from American waters for three months. The Atlantic Fleet, which is commanded by Rear-Admiral S. Schroeder, is in addition to the ships of the Second Division given above, composed as follows:—

First Division: First-class battleships.—*Connecticut* (flagship of the Commander-in-Chief), *Delaware, North Dakota, Michigan.*

Third Division: First-class battleships—*Minnesota,* (flagship of Rear-Admiral Ward), *Vermont, Mississippi, Idaho.*

Fourth Division: First-class battleships.—*Georgia* (flagship of Rear-Admiral T. B. Howard), *Nebraska, Rhode Island, Virginia.*

Fifth Cruiser Division: First-class Armoured Cruisers.—*Tennessee* (flagship of Rear-Admiral Stanton), *Montana, North Carolina, Washington.*

Attached to the Fleet are also two supply ships, a range-ship, a repair ship, a hospital-ship and three tenders.

UNITED STATES—*continued.*

Launch of the Arkansas.—The successful launch of the 26,000-ton battleship *Arkansas* at Camden, N.J., on January 14th, 1911, will add to the U.S. Navy, when completed, the most powerful warship in the world yet afloat. She is the largest battleship ever launched, and with her main battery of twelve 12-inch rifles in turrets and her broadside battery of twenty-one 5-inch rapid-fire rifles, and with her secondary battery of ten guns of various sizes, she will be able to send about 77,000 pounds of metal at each broadside.

The *Arkansas'* keel was laid down at the Camden yards on January 25th, 1910, and she is at present 60 per cent. completed, and the contract with the Navy Department calls for delivery not later than May 25th, 1912. Her dimensions are as follows:—Length on broad water line, 554 feet; length over all, 562 feet; beam on load water line, 93 feet 2½ inches; mean draft, 28 feet 6 inches; full load displacement, 27,243 tons; trial speed, 20½ knots.

The main armament consists of twelve 12-inch breech-loading guns, mounted in six turrets on the centre line of the ship, two forward, two aft and two amidships; each turret is protected by armour twelve inches and eight inches thick, and supplied with ammunition by electrical hoists from the magazines and shellrooms immediately below. The entire working of the guns is also done by electric motors.

For defence against torpedo boat attacks there is provided a secondary battery of twenty-one 5-inch rapid-fire guns, mounted in a central casemate, protected by armour of medium thickness; there are also fitted two submerged torpedo tubes. Close division into compartments of the hull below water and strong transverse bulkheads form additional protection against the damage likely to result from mine or torpedo explosions.

The main belt armour is about eight feet wide, and has an average thickness of ten inches. Above this is another belt of ten inches and above this again, amidships, is the casemate armour protecting the secondary battery and funnel bases. At the ends of the main belt are transverse armour bulkheads. Each barbette is of armour varying from four inches to eleven inches in thickness, which protects the entire ammunition handling machinery for the 12-inch guns in the turret above. A strong protective deck extends all fore and aft.

The propelling machinery of 28,000 shaft horsepower consists of Parsons turbines, six for ahead and four for astern, driving four shafts. At full speed the revolutions are about 330 per minute. Steam is supplied by twelve Babcock and Wilcox water-tube boilers. Coal or oil may be used for fuel. She will have two funnels and two cage masts.

Electricity is generated by four turbine driven dynamos. Beside a complete lighting equipment, there are several 36-inch searchlights. All ventilating fans, including the forced draught blowers, are driven by electric motors. A complete telegraphic system is also to be installed. The *Arkansas* is fitted for a flagship, and her complement as such will consist of 65 officers and 978 men. The contract-price of her hull and machinery is 4,675,000 dols. (£97,400).

Précis from Army and Navy Journal.

MILITARY NOTES.

BRITISH EMPIRE.

Home.

The following will be the military arrangements in connection with the Coronation Procession and the Royal Progress on the 22nd and 23rd June next:—

The total number of troops on duty on 22nd June will be about 45,000, and on 23rd June about 55,000. On each day every arm and branch of the Service will be represented on the line of route, the basis of representation in the case of the Special Reserve and Territorial Force being 26 of all ranks from each regiment or battalion, with a proportionate representation from other arms and branches. In addition there will be contingents representing the Royal Navy. Arrangements have also been made for the attendance of other bodies with naval or military connections, such as nursing services, Chaplains' Departments, Officers Training Corps, Naval Cadets, recognised Cadet Units, the Territorial Force Reserve, the Veteran Reserve (including representatives of the Crimean and Indian Mutiny Veterans). Representatives of certain institutions, such as the Duke of York's School, the Gordon Boys' Home, the Baden-Powell Boy Scouts, and some other similar organizations, will also be present as privileged spectators.

The military contingents from the Dominions and Colonies will be accommodated in the Duke of York's School at Chelsea, where Major-General the Lord Cheylesmore, K.C.V.O., will be the commandant; the Indian contingent will be encamped at Hampton Court; camps for the troops to be employed on the line of route will be provided in the Royal parks and elsewhere.

Dress for Royal Processions, etc.—His Majesty the King directs that all officers on the active list witnessing the Royal Processions on 22nd, 23rd, and 29th June, 1911, or witnessing the Naval Review on 24th June, 1911, from His Majesty's ships of war, or attending the Gala Performances at the Royal Opera and His Majesty's Theatre, shall appear in full dress uniform.

Officers not on the active list are desired to wear full dress uniform if they are in possession of it.

Officers of the Territorial Force who are not in possession of full dress uniform will be permitted to wear service dress, except at the Gala Performances.

Pay of Officers in Parliament.—Officers below the substantive rank of lieutenant-colonel elected to the House of Commons are to be given the option of being seconded or placed on half pay. In the former case they will draw no pay, etc., from Army funds till they return to duty, and are absorbed; the period of seconded service will not count towards retirement; and their retired pay will suffer a reduction of £5 for each year during which they are seconded. Officers placed on half pay will draw half pay at the rates laid down by the Royal Warrant.

Regulations and Training Manuals.—The issue of the following Regulations and Training Manuals was notified in Army Orders of 1st April:—

HOME—*continued.*

"Manual of Field Engineering," superseding the old "Manual of Military Engineering of 1905." "Garrison Artillery Training, Vol. III.," revised edition. "Army Service Corps Training, Part III. (Transport.)"

Also amendments to:—"Musketry Regulations," Parts I., II. "Training and Manœuvre Regulations." "Cavalry Training." "Handbook for 60-pr. B.L. Gun, 1909."

Special Reserve of Officers.—The lower limit of age for an officer of the combatant branches has been reduced to 17 years; and the normal period of probationary training for an Infantry officer to six months. The probationary training of an Infantry officer who possesses certificates obtained in the Officers' Training Corps will be reduced, if in possession of Certificate "A"—to five months, or of Certificate "B"—to three months. The probationary training of an Infantry officer may be either continuous or performed in two parts, which need not fall within the same year. No period of less than five months' duration must commence in, or extend into, the months of October and November.

A candidate for a commission in the Special Reserve Infantry may elect to be appointed either (*a*) to a Special Reserve battalion, or (*b*) supplementary to an Infantry regiment, without being posted in peace to any particular battalion of that regiment. An officer who is not posted to any particular battalion in peace will be permitted to perform his annual training with either a Regular or Reserve battalion. A candidate desirous of being appointed supplementary to an Infantry regiment, without being posted in peace to any particular battalion, should apply to the Officer Commanding one of the Regular battalions of the regiment he wishes to join, who will supply him with the necessary form. Infantry officers now on probation (except those who are candidates for Commissions in the Regular Army) will be given the option of completing the period of probationary training to which they were liable under the old regulations, or of terminating their probationary training when they have completed the period to which they would be liable if appointed under the new rules.

Voluntary Aid Organisation.—The figures given on page 515 of the JOURNAL showed the progress of the Voluntary Aid Movement up to December, 1910. On the 28th April, 1911, there had been registered at the War Office 659 detachments in all. The total personnel was nearly 20,000, of whom the men formed roughly one-third. In England the counties of Gloucester and Hampshire were first with 50 detachments each, whilst London (37), Devon (35), Essex (30), Glamorgan (28), Sussex (27), and Nottingham (25), had all done well.

In Scotland the counties of Fife and Perth (25 each) tied for first place, Kincardine (12) coming next.

The "Army Review."—It has been decided to enlarge the scope of the quarterly official publication entitled "Recent Publications of Military Interest," which will in future be called the "Army Review."

The object of the new publication is to keep officers of the Army more in touch with the military tendencies and developments of modern armies, to assist them in the discussion of strategical and tactical problems, and to place at their disposal the results of the most recent researches of military history. The magazine will be open to voluntary contributions from officers on military subjects. No payment will be made for contributions.

India.

Operations in the Persian Gulf.—Last year (1910), during the limited season when arms caravans come to the Persian Gulf from Afghanistan and the North-West Frontier of India, a force of Indian troops was employed, operating from two ships on the Persian coast in conjunction with the Navy, in the suppression of the illicit traffic in arms from Muskat and the Arabian coast. This measure, having met with distinct success, is being repeated this year; a force of Indian troops, comprising the 104th Rifles, 2 sections of the 32nd Mountain Battery, 2 sections of No. 19 Company Sappers and Miners, and half of No. 151 Indian Field Ambulance, in all about 1,000 strong, left Bombay on the 7th April in the Royal Indian Marine ships *Hardinge* and *Northbrook*, to co-operate with the naval forces on H.M.'s cruisers *Hyacinth* and *Fox*. Mule transport, giving the force a certain radius of action ashore, accompanies the troops. The military force is commanded by Colonel Delamain, 123rd Rifles, the joint naval and military forces and the conduct of their combined operations being under the orders of Admiral Slade, Commander-in-Chief of the East Indies Squadron.

FOREIGN POWERS.

France.

Uniform.—Some months ago a committee was appointed for the purpose of selecting a new uniform which should be less conspicuous than the red pantaloons of the French infantry. This committee has chosen a uniform of greyish-green colour, which shall be practically the same for all arms. The Minister of War has decided to test this uniform during the Army manœuvres next September, and it will accordingly be issued to the 106th Regiment of infantry, the 12th Chasseurs à Cheval. and to certain units of artillery and engineers.

Special Reserve of Officers.—With a view to accelerating promotion a new law has been passed enabling 100 officers to pass, every year, into what is called a "Special Reserve." These officers must have at least 12 years' service, of which half must be commissioned service; they are allotted to reserve units, and are required to come up for five weeks' special training every two years; they receive a rate of pay varying from £50 a year after 12 years to £88 a year after 29 years' active service. On completing 30 years' service, they cease to belong to the "Special Reserve," and receive a pension of the same amount as their "Special Reserve" pay.

Aeronautics.—A shed capable of holding two dirigibles is being constructed at Belfort. A site near Pau has been acquired for a military aviation school.

According to press reports, officers certified to be efficient flyers are to receive extra pay at the rate of 5 francs a day; furthermore, officers who have made a definite number of flights during the year can claim a year's seniority, just as if they had been on active service.

The French Operations in Marocco.

The following summary of the events in Marocco during April is taken chiefly from the *Temps* and from the *Times*.

At the beginning of April the situation was as follows: Colonel

FRANCE—*continued.*

Mangin, with about 2,000 ill-armed and ill-disciplined natives, was holding Fez.

Major Brémond, with about 3,000 European-drilled natives, was operating against the Sherarda tribe about 30 miles north-west of Fez.

Captain Moreau, with an ill-disciplined Moorish "mehalla," was at Alcazar (El'Ksar).

ISOLATION OF FEZ.

On April 2nd two attacks were made on Fez from the south by the Ait Youssi and Beni M'tir tribes, numbering 2,000 mounted and 1,000 dismounted men. Colonel Mangin met these attacks by making a sortie with his mounted troops, and drawing the tribesmen under the fire of Maxims and Schneider mountain guns mounted on the city ramparts. After an engagement lasting five hours, the second attack was repulsed. The losses to the Sultan's troops were 6 killed and 13 wounded.

On April 12th, attacks were made, both on Fez and on Major Brémond's column; these attacks were repulsed with, it is said, heavy loss to the attackers.

Previous to the engagement of April 12th, the Beni Warain and Beni Sadden had sent 1,000 men to reinforce the Fez garrison. After looting a portion of the city these men deserted to the insurgents on the 9th April, carrying with them the arms, ammunition and provisions with which the Sultan had furnished them. After deserting, they encountered some reinforcements sent to the Sultan by the Hiaina tribe. They killed the commander of these, whereupon the remainder at first turned back, although 800 of them reached Fez about the 18th April. A "mehalla" of 1,500 men of the Uled Jama, who had been left to connect Major Brémond's force with Fez, not only deserted, about this period, but looted a convoy sent up by Major Brémond to Fez. The defection of the Uled Jama caused all regular connection between Tangier and Fez to be cut off, although isolated runners, and even occasional convoys, have since got through to the city.

On the 19th April the Uled Jama made an attack on Fez, which was unsuccessful, but in which the Shereefian army is stated to have had heavy losses during a sortie.

MAJOR BRÉMOND'S MARCH.

Major Brémond's force remained during the first half of the month at the Sherifa ford over the Sebu River, about 20 miles north-west of Fez. He had to decide between the advisability of coming to the assistance of Colonel Mangin, or of awaiting a convoy which Monsieur Buisset, French Vice-Consul at Alcazar, was endeavouring to get through to him. He adopted the latter alternative, partly because the heavy rains made it difficult to move, in any case. He successfully withstood attacks on the 21st and 22nd of April: on the 23rd he began to move towards Fez.

On the 24th April he was engaged with a hostile force of 7,000. On the 26th he reached Fez, his force having lost (according to *La France Militaire*) 6 killed and 25 wounded, and having expended 16,400 rounds of rifle ammunition and 405 rounds of gun ammunition in the period 12th 26th April. The enemy's losses in the same period were estimated at 270 killed and many wounded.

Major Brémond's arrival raised the strength of the Fez garrison to

FRANCE—*continued.*

some 4,500 irregular cavalry, besides some 2,000 irregular horse of very doubtful value. The relief afforded was, however, only momentary.

According to reports from Fez at the end of April the garrison was demoralized, their ammunition was almost exhausted, food was scarce, and the attitude of the population was uncertain. It appeared doubtful if they could hold out beyond the middle of May while the relief column could scarcely arrive before May 20th.

THE FRENCH FORCE AT CASABLANCA.

The force at Casablanca under General Moinier's command amounted, at the beginning of April, to about 10,000 men, made up as follows :—

White Troops.
2 Battalions.
1 Squadron
2 Field Batteries.
1 Mountain Battery.
1 Company Engineers.
Black Troops.
5 Battalions.
2 Squadrons (Spahis).
Mounted Police.

On April 18th, four battalions of white colonial infantry were despatched from Toulon. Later in the month it was decided to bring the Casablanca force to a strength of 23,000 men: at least 5,000 of the reinforcements are to be white troops from France, the remainder being white and native troops from Algeria and Tunis. These last reinforcements began to arrive at Casablanca on April 27th; some 2,800 will have arrived on April 30th, and it is estimated that the whole 23,000 will be disembarked by the third week in May.

The efforts of General Moinier are confined to the relief of Colonel Mangin's and Major Brémond's columns. A flying column under Colonel Brulard, about 3,000 strong, with, in addition, 1,500 native horsemen, was sent off, and arrived at El Knitra on April 30; thence to Fez is a march of 5 to 6 days, even without fighting. This northerly route was presumably taken because of the capture of Mekinez by the El Zemmour tribe.

FORCES ON ALGERIAN FRONTIER.

The French do not appear to contemplate the despatch of a relief column to Fez from the Algerian frontier. As a precautionary measure troops under General Toutée are being concentrated on the line Taourirt-Debdou, which is about 60 miles inside the Moroccan frontier. According to press reports, 9,000 men were to be concentrated on the above line by the beginning of May. The distance from Taourirt to Fez via Taza is about 110 miles, and the route is good.

THE MOROCCAN CAVALRY.

In the "Revista de Caballeria" a Spanish officer gives a description of the Moroccan mounted troops. The following is a summary of the article :—

The basis of the Morocco armed forces is a species of territorial militia recruited from the Maghzen tribes. These tribes are under an obligation to furnish the Government with some 10,000 horsemen in case of war. In the contingents drawn from the plains or from districts rich in pasture, the whole of the men are mounted. The contingents vary from 300 to 600, and are subdivided into units of 100 mounted men each.

The uniform of the cavalry consists of a conical crimson cap, a white shirt with ample sleeves, loose breeches of cloth or white calico, a crimson

FRANCE—*continued.*

sash, short riding boots of yellow sheepskin, and long spurs. But, in point of fact, owing to the general absence of discipline, the troops turn out in the most varied equipment.

The horse appointments are simple, but cumbrous. Wooden saddle, high in the cantle, and peaked in front, flaps lined with scarlet cloth, the horses' backs protected by 4 or 5 coloured rugs of thick felt, the head-stall elaborately embroidered and adorned, a single pair of reins attached to an iron ring-shaped bit, without a curb chain, which punishes the horse more than it guides him and ruins his mouth, a wide leather breastplate, lined with cloth, and girths of various kinds, always worn slack.

The mounted troops carry firearms of every description, ancient and modern. The ammunition is carried loose, either in the large mule bags which hang from the saddle, or in pouches made of palm leaves, which are generally attached to the pommel. Side arms are carried, but only for show.

The Maroccan horses are hard-mouthed, inclined to stand over, badly nourished, and generally deficient in strength and muscle as a result of neglect in breeding and of bad methods of breaking and training. They would not, in the writer's opinion, be of any value as remounts for a European force operating in the interior.

The troops have little claim to the extravagant praise which has been bestowed upon their horsemanship. They have not even the most superficial knowledge of equitation, and, as already pointed out, their horses are deficient in training. They are absolutely without discipline, and have no capacity for manœuvre or for shock action. Their tactics are therefore reduced to noisy *fantasias*, dashing forward, wheeling suddenly about, discharging their guns in mid career, in the hope of bewildering the enemy by these evolutions, the only result of which is the complete exhaustion of their horses.

The contingent of mounted troops in attendance on the Sultan is certainly rather better organized and trained. Even these troops, however, are very little above the average of the remainder.

The Maroccan mounted troops cannot, therefore, in the writer's opinion, be considered as a serious factor in war, or, indeed, as anything more than a confused and heterogeneous mob, ill mounted and badly led, entirely incapable of withstanding European troops, and not even suited to be formed into a serviceable irregular corps.

Germany.

Technical Attachés.—Germany has decided to appoint technical attachés to embassies and legations. A commencement is to be made with those in London and Washington. The duties of these attachés will be to watch technical progress in trade and industry.

Cable to Brazil.—Telegraphic communication between Germany and Brazil by the cable extension Emden-Teneriffe-Monrovia-Pernambuco became available to the public on March 29th. The cable, which is 6,712 miles long, is German throughout.

Italy.

Mechanical Transport.—The Minister of War has offered £3,200 in prizes for the best types of mechanical transport wagons of light and medium types. The following conditions are imposed.

ITALY—*continued.*

(1) The light type to weigh not more than 2,500 kilos (49 cwt.), and to carry a load of 1,000 kilos (1 ton).

(2) The medium type to weigh not more than 5,000 kilos (98 cwt.), and to carry a load of 2,500 kilos (49 cwt.).

(3) The vehicles to complete a non-stop run of 500 miles to test reliability, fuel consumption, etc.

Russia.

Directorate of Military Education.—An Army order of February defines the duties of the Directorate of Military Educational Establishments at Army headquarters. The Directorate will consist of a Chancery, 4 divisions, disciplinary and accounts sections, and a library. The Director has powers equal to that of a commander of a military district. He is *ex-officio* president of a consultative educational committee, and has under his orders an inspector-general of military educational buildings (a major-general of engineers) and his assistant (a colonel of engineers).

Switzerland.

The National Council has now passed the Bill for the reorganization of the army. The measure does not entail any large increase in the "élite" or first line, but consists rather of a re-grouping of units.

The principal changes involved are:—

1. The former 4 army corps are replaced by 3 army corps commands. In peace time the army corps commander supervises the training and administration of his command: in war the army will be formed into divisions, and not into corps as formerly. The former corps troops are now merged in the divisional organization.

2. The former 8 divisions are to be replaced by 6 divisions.

3. A division is to contain 3 infantry brigades instead of 2, the divisional artillery is to consist of 12 field and 2 howitzer batteries instead of 6 field batteries.

4. The 3rd brigades of the 1st, 3rd, 5th, and 6th divisions are to become mountain brigades, formed of 1 mountain infantry brigade of 5 battalions, 1 company of machine guns, and 1 "group" of 2 batteries of mountain artillery with mountain departmental troops.

5. Twelve line of communication battalions are to be formed, 6 in the "élite" (first line), and 6 in the *Landwehr.*

Turkey.

The Albanian Rising.—Shevket Torgout Pasha, who commanded the troops in the operations last spring has again been appointed to command in Albania, and with reinforcements of several battalions has arrived at San Giovanni de Medua. Further reinforcements, both of Nizam and Redif troops, are announced as proceeding to the disturbed locality.

The Rising in Yemen.—Official reports state that a Turkish relieving force entered Sanaa on the 6th April; but fighting was apparently still proceeding round that place.

Army Reorganization.—The following progress is reported in regard to the new reorganization scheme. A complete "Ordre de Bataille" of the future grouping of units has been published, and, in so far as cer-

TURKEY—*continued.*

tain European corps are concerned, the necessary changes have been effected. It is calculated, however, that a period of some years will be required to produce the full working of the scheme.

Railways.—The construction of the first section of the Hodeida-Sanaa railway was commenced on March 1st. This section will run from Ras-el-Ketib via Hodeida to Hujjeila, a harbour being also constructed at Ras-el-Ketib.

United States.

The Troops in Texas:—On April 22nd a review of the division was held at San Antonio; the following troops were present:—

1st Infantry Brigade (11th, 15th and 18th Regiments).
2nd Infantry Brigade (13th and 22nd Regiments).
3rd Infantry Brigade (10th, 17th and 28th Regiments).
The 3rd Battalion of Engineers.
The Cavalry Brigade (9th and 11th Cavalry, the latter organized in 2 provisional regiments).
Company "I" of the Signal Corps.

The Artillery Brigade and part of Company "D" of the Signal Corps were away at Leon Springs.

The strength of the Division on April 23rd was just under 13,000; many recruits have been received, but the war strength has not yet been reached.

The health of the troops is good; it is believed that the Division will remain at San Antonio till July 1st.

As mentioned above the 11th U.S. Cavalry has been organized, as an experiment in two provisional regiments, which are designated the First and Second Provisional Organizations respectively. Each "Provisional Organization" consists of six troops, organized in 3 squadrons of two troops each; the machine gun platoon is assigned to the third squadron of the Second Provisional Organization. The administration of the whole remains for the present in the hands of the regimental commander.

The following are briefly the arrangements for keeping headquarters in touch with the patrols observing the Mexican border:—Before the mobilization, a wireless telegraph station was in existence at Eagle Pass, on the Rio Grande. About ten days after the mobilization was completed, detachments of the Signal Corps worked down the Rio Grande, east of Eagle Pass, and established three field wireless sub-stations, the most easterly being at Minera, on the frontier, some 25 miles north-west of Laredo. Seven men of the Signal Corps, including two operators, were posted at Eagle Pass and at each of the three sub-stations. The country along this portion of the frontier is almost uninhabited; there is no town on the river between Eagle pass and Minera.

On April 12th two more Signal Corps companies were sent to the frontier with the object of extending the chain of stations westwards towards El Paso, which lies on the Rio Grande 400 miles above Eagle Pass.

All sub-stations report three times a day to the Eagle Pass station, whence the reports are transmitted to General Carter's Headquarters at San Antonio.

The Cavalry who are observing the frontier, work with patrols of two men, each patrol covering 50 miles of the frontier in a day, and

UNITED STATES—*continued.*

passing a patrol going in the opposite direction during the 12 hours daylight. Thus the whole 1,800 miles of river frontier are traversed twice a day by patrols.

In the portion of the frontier between Eagle Pass and Minera, the patrols work in close touch with the wireless telegraph stations and always report to the nearest station in the course of their day's ride.

It is reported that the Mexican Government has given orders that 15,000 militia are to be recruited in Mexico city, and drilled weekly; it is proposed to extend this movement to the rest of the Republic, so as eventually to provide a force of 100,000 militia in case of foreign invasion. Volunteers are given to understand that in no circumstances are they to be used in civil war in Mexico.

Précis from Army and Navy Journal, 29th April, 1911.

NAVAL AND MILITARY CALENDAR.

APRIL, 1911.

1st (Sat.) H.M.S. *Barham* arrived at Sheerness from Mediterranean.

3rd (Mon.) H.M.Ships *Formidable, Cochrane,* and *Aboukir* paid off at Chatham, Portsmouth and Devonport respectively, and recommissioned the following day.

7th (Fri.) H.M.S. *Aboukir* left Plymouth for Mediterranean.

,, ,, H.M.S. *Barham* paid off at Chatham and recommissioned the following day.

11th (Tue.) H.M.S. *Forte* paid off at Simonstown and recommissioned the following day.

12th (Wed.) Launch of H.M.S. *Yarmouth* from London and Glasgow Shipbuilding Co's Yard at Govan-on-Clyde.

,, ,, 50th Anniversary of the bombardment of Fort Sumter, Charleston Harbour, by the Confederates, which marked the commencement of the Great Civil War.

13th (Thurs.) H.M.S. *Barham* left Sheerness for Mediterranean.

19th (Wed.) H.M.S. *Implacable* arrived at Sheerness from Gibraltar.

24th (Mon.) H.M. Ships *Africa* and *Implacable* paid off at Chatham and recommissioned the following day.

29th (Sat.) Launch of H.M.S. *Princess Royal* from the Vickers Yard at Barrow.

FOREIGN PERIODICALS.

NAVAL.

Argentine Republic.

BOLETIN DEL CENTRO NAVAL. Buenos Aires: *February, 1911.*—The naval battle of San Nicolas. A new type of coast defence vessel. National events.

Austria-Hungary.

MITTHEILUNGEN AUS DEM GEBIETE DES SEEWESENS. No. 1. Pola: *April, 1911.*—Tactics and Dreadnoughts. The annual official report on the navy of the United States. The Schwarzenberg-Eggenberg memoranda to the Emperor Ferdinand II. The naval Budget of Austria-Hungary for 1911. The raising of the German Submarine "U 3." The new regulations for traffic in the S. Antonio Canal, near Sebenico. The transmission of time signals to vessels at sea. The instructional target practice of the 1st French squadron. The mishap to the French submarine *Loutre.*

Chili.

REVISTA DE MARINA. Valparaiso: *January 31st, 1911.*—Why be alarmed? M. Dunoyer's apparatus for compensating compasses. Practical instruction for the 1 (*a*) class of the Guardia Marina. The regulations affecting the retirement of officers of junior rank. The workmen in the Naval Dockyard of Talcahuano. Notes on the Regulations for Promotion.

France.

REVUE MARITIME. Paris: *March, 1911.*—Investigations on the action of the liquid compass card. Professional instruction in France and recruiting of personnel for the engineering departments of the navy. The official history of the naval war between Russia and Japan (continued).

LA MARINE FRANCAISE. Paris: *April, 1911.*—Naval conscription in the French Chamber. The question of battleships: a reply by Vice-Admiral Germinet. The necessity for an intendance service for the naval arsenals. The entente cordiale. The new Minister of Marine: are changes to be expected? To what extent can dirigibles affect the course of a war? (translation).

LA VIE MARITIME. Paris: *10th April, 1911.*—The navy and the manufacturing industry. Necessity of continuity in naval commands. Bizerta. *25th April, 1911.*—A reply to M. Grosdidiers on the question of boilers. The commissioning of the first French Dreadnoughts. The influence of accidental causes on naval politics.

LE YACHT, Paris: *1st April, 1911.*—The debate on the Naval Estimates in the French Chamber. Notes of a cruise in Equatorial Africa. The British battleship *Hercules. 8th April.*—American Naval Defence. Luminous buoys for fishing. A floating dock for raising sunken vessels. *15th April.*—Secondary artillery. Notes on a cruise in Equatorial Africa. The most practical form of torpedo boat. Motor boats at Monaco. The launch of the *Bayonnaise. 22nd April.*—The most practical form of torpedo craft. Wireless telegraphy personnel. *29th April.*—Naval construction and private industry. Notes on a cruise in Equatorial Africa.

Germany.

MARINE RUNDSCHAU. Berlin: *April, 1911.*—Reflections on the first Anglo-Dutch War (1652-1654). An unknown narrative of Magalhaes' voyage round the world. The development of the Austro-Hungarian Navy. The naval policy and Budget of Japan (with a sketch). Improve-

GERMANY—*continued.*

ments in nautical instruments. China's tendency to expand towards the West, and the problem of Turkestan.

Italy.

RIVISTA MARITTIMA. Rome: *April, 1911.*—Presentation of a flag to the *S. Giorgio.* Remarks on battleships. Sailing ships in the present and in the past. The 50th anniversary of the proclamation of Rome as the capital of Italy.

Spain.

REVISTA GENERAL DE MARINA. Madrid: *March, 1911.*—Incorrect nomenclature. Memorandum on the application of internal combustion engines to vessels of the navy mercantile marine and fishing fleets (continued). Drinking water on board ship. The labour question in the naval arsenals (conclusion). Naval organization: specialists (continued). Lines of mixed electric mines (continued). The construction, management and organization of modern warships. Official history of the Russo-Japanese war (continued).

MILITARY.

Austria-Hungary.

DANZER'S ARMEE-ZEITUNG. Vienna: *6th April, 1911.*—The renewed vitality of our Navy. A counterblast to the pacificists. Peace-loving Uncle Sam. Field-Marshal Siedler as a corps commandant. The supply of officers in the German army. The Anson method of learning languages. *13th April.*—The powers that be in Austria. A place of refuge for Albanian fugitives. A certain amount of drill is indispensable. The communication troops of the European Powers. A French opinion on General von Schlieffen's article on war. *20th April, 1911.*—The "Neue Freie Presse," appeals for a crusade. The enactments for provision for Soldiers' families. Divisional cavalry. The communication troops of the European Powers. Italy and Hungary: an inflammatory speech. *27th April.*—Field-Marshal Benedek: let justice be done! The military museum at Vienna. The laws for compulsory service and emigration. How to improve the position of retired officers.

STREFFLEUR'S MILITÄRISCHE ZEITSCHRIFT. Vienna: *April, 1911.*—Calendar of military history. The battle of Kolin. The technique of command. The duties and employment of divisional cavalry. The new manuals for technical duties of infantry and cavalry. Changes in Foreign Armies in 1910. (*c*) Germany. (continued). Aeronautics and aviation in Germany. Communications from the School of Musketry: remarks on methods of machine gun fire. The question of the Dutch coast defences. Important innovations in naval war in the near future. Technical notes: supply of gas for balloons in the field.

KAVALLERISTICHE MONATSHEFTE. Vienna: *April, 1911.*—The employment and duties of divisional cavalry. Prince Frederick Charles of Prussia. How to get the full value from cavalry. The question of gallopers riding their own horses. French proposals for the reorganization of cavalry. Methods of carrying the sword. What makes horses shy. The latest remount statistics from the German Army. Horse supply in the Italian army. Women as soldiers in legend and history.

Belgium.

BULLETIN DE LA PRESSE ET DE LA BIBLIOGRAPHIE MILITAIRES. Brussels: *15th March, 1911.*—Reflections on the tactical offensive in Germany, Eng-

BELGIUM—*continued.*

land, and France. The cavalry divisions at the German Imperial Manœuvres in 1909 (continued). A new Wörth: a battle of to-morrow (continued). *31st March.*—The cavalry divisions at the German Imperial Manœuvres in 1909 (continued). A new Wörth: a battle of to-morrow. How to fire at enemy's aircraft (continued). *15th April, 1911.*—Political and military notes on the South African Union. Notes on the changes in education and training of infantry entailed by the adoption of short service. The new military service Bill in Holland. A new Wörth: a battle of to-morrow. How to fire upon our aerial enemies. *30th April, 1911.*—A new Wörth: a battle of to-morrow. The new German Army Bill. Some remarks on the method of training and education for infantry entailed by short service.

France.

JOURNAL DES SCIENCES MILITAIRES. Paris: *1st April, 1911.*—Some notes on the Flushing question. An infantry officer's inpressions of cavalry. Training of a company in field service (continued). How to increase the lightness, mobility, and means of rapidly intervening in the fight of field engineers (concluded). The small arms of modern armies and their ammunition (continued). *15th April, 1911.*—The army in Africa and the cadres law. Study of the manœuvre regulations. The French annual Army List. Training of a company in field service.

REVUE D'INFANTERIE. Paris: *15th April, 1911.*—The Japanese in Manchuria. The new regulations for field fortification, for officers of all arms in Russia. The right wing of the Prussian army at Rezonville. Machine guns in the Dutch army.

REVUE D'HISTOIRE. Paris: *April, 1911.*—The campaign of 1908-1909 in the Shawia. The marches of Napoleon's armies. The manœuvre of Pultusk. Napoleon and the German fortresses in 1813. The campaign of 1813: the introductory stage. The war of 1870-1871. The First army of the Loire.

REVUE MILITAIRE DES ARMEES ÉTRANGERES. Paris: *April, 1911.*—The new quinquennial Army Bill in Germany. The main lines of communication in the Ottoman Empire (with 2 sketch maps). The reorganization of the military schools in Roumania.

REVUE D'ARTILLERIE. Paris: *March, 1911.*—Balloons and flying machines. Infantry batteries: their employment on the offensive. A study of the problem of aviation (concluded).

LE SPECTATEUR MILITAIRE. Paris: *1st April, 1911.*—Topical notes. A year's tactical training in a demi-regiment of cavalry (continued). Synthesis and Analysis of methods of technical musketry instruction. A corner of the battlefield of Hericourt (continued). The Germans in the Gâtinais (continued). *15th April, 1911.*—A year's tactical training in a demi-regiment of cavalry (continued). Analysis and synthesis of methods of musketry instruction. The employment of the higher formations. A corner of the battlefield of Hericourt. The Germans in the Gâtinais.

Germany.

MILITÄR-WOCHENBLATT. Berlin: *1st April, 1911.*—Von Löbell's annual report for 1911. Reconnaissance by divisional cavalry. Telegraphic communication between Germany and her colonies. Notes from the Belgian army. *4th April.*—The history of the science of equitation. The Turkish army. Telegraphic communication between Germany and her colonies.

GERMANY—*continued.*

Probability calculations and commonsense in field artillery practice. *6th April.*—Night manœuvres; training and inspection of troops. The care and treatment of horses' tendons. Notes from the Roumanian army. *8th April.*—The silver wedding of the King and Queen of Württemberg. The Russian General Staff account of the Manchurian war. Training and inspection of troops in night operations. The new instructions for the training of cavalry remounts in Russia. *13th April.*—Impatience on the battlefield. The Chinese troop horse. The field gun of the future. The memorandum on the defence policy of Sweden. *15th April.*—Notes on the Russian army. Impatience on the battlefield. The dowery of the reservist. *20th April.*—The General Staff treatise on the seven years' war. Notes from the British army. Impatience on the battlefield. *22nd April.*—The General Staff treatise on the seven years' war. Artillery officers' patrols. Fields of fire in front of fortresses. Military technical notes. Aeronautics. *25th April.*—Searchlights in field warfare. *27th April.*—The Boer war and its tactical lessons from German and British points of view. Military notes from Switzerland. Probability calculations. *29th April.*—Notes from the French army. The military importance of the German motor expedition from Cairo to Cape Town. The Boer war and its tactical lessons from German and British points of view.

ARTILLERISTISCHE MONATSHEFTE. Berlin; *April, 1911.*—Resistance to the air offered by projectiles according to the kinetic theory of gases. Experiments regarding erosion of the bore in the United States. What influence should field artillery exercise on the progress of a campaign, in future. Notes on the Russo-Japanese war, 1904-1905. How can field artillery defend themselves against cavalry attacks. Some further remarks on covered positions. Proposal for a school of equitation and driving for junior officers of field artillery. The Ehrhardt "high explosive shrapnel" and the Krupp "common-shrapnel." Laying competitions and prize firing in the French field artillery.

VIERTELJAHRSHEFTE FÜR TRUPPENFÜHRUNG UND HEERESKUNDE. Berlin: *2nd Number, 1911.*—Benedek's strategy in the light of recent research (by General Count Schlieffen). Tactical reconnaissance in Frederick the Great's army in the Seven Years' War. Recollections of the Turkish army manœuvres (by Field-Marshal v. d. Goltz). Reflections on German artillery tactics. The offensive with a limited object (by Major-General v. Freytag-Loringhoven). Tactical views in the Russian Army. Studies of the Spanish War, 1808-1814. The British Army manœuvres in 1910. The methods and direction of the attack in fortress warfare. The importance of technical aids for the distant reconnaissance in field warfare. The organization and tactics of the French field artillery.

JAHRBUCHER FUR DIE DEUTSCHE ARMEE UND MARINE. Berlin: *April, 1911.*—German and French views of Moltke's strategy between Metz and Sedan. Lessons deduced from the hits obtained at target practice by bodies of infantry (Rohne). Support of the infantry attack by artillery. Wellington and Blücher on 17th June, 1815. The French troops in the Congo and the campaign which is imminent in Wadai. The question of the calibre of naval artillery.

Spain.

REVISTA TÉCNICA DE INFANTERÍA Y CABALLERÍA. Madrid: *1st April, 1911.*—The evolution of military law in modern nations. A critical study of the special musketry course for first lieutenants of cavalry. Relations

between Spain and Marocco. Military cycling. The educators of our army. *15th April.*—The advance of infantry under artillery fire. The evolution of military law in modern nations (continued). Prussian appreciation of Spanish army organization (continued). A critical study of the special musketry course for first lieutenants of cavalry. The educators of our army.

REVISTA CIENTIFICO MILITAR Y BIBLIOTECA MILITAR. Barcelona: *10th April, 1911.*—Some words about rewards in time of peace. Fear in war, and the influences which act against it. Mine warfare according to the lessons of Port Arthur. Inspections in the German Army. *25th April,* —The regiment of 3 battalions. Native troops in European war. Lance or sword. The new guns of the German foot artillery. The general staff career in England. Notes on aviation. Combined infantry and cavalry exercises in France.

Switzerland.

REVUE MILITAIRE SUISSE. Lausanne: *April, 1911.*—The manœuvres of the St. Maurice garrison in 1910 (continued). The Lenz cavalry division, and its mission during the period 31st August—1st September, 1910. Military patrols on *ski.* Reflections on the necessity for revising the regulations for recruitment in Switzerland (continued). The Russo-Japanese war, and the infantry regulations.

United States.

INFANTRY JOURNAL. Washington D.C.: *March, 1911.*—Honolulu as an outpost. The purpose of the army. Tactical instruction of line officers. Field artillery fire. Bread. The making of a soldier. The automatic rifle.

NOTICES OF BOOKS.

Horse Mastership. By FRED F. MACCABE, M.B. London. Baillière Tindall and Cox. 1/6.

This book consists of a lecture on horsemastership delivered to the South Irish Horse and to the officers of the Dublin Garrison, and of an appendix containing notes on the training of jumpers. Dr. MacCabe writes from prolonged experience in the training of race horses and in the care of troop horses under varied conditions. "Prevention is better than cure" may be said to be the key-note of his lecture; and cleanliness, combined with fresh air and sunlight, is indicated as the chief factor in the prevention of disease; these principles are embodied in six useful rules (pages 26, 27). Comparing the state of many stables in the United Kingdom, "with their dusty cracks and cobwebbed corners," to that of the lengendary stables of Augeas, the author points out that, like Hercules of old, we have ready to our hand the means wherewith to cleanse them—the streams of sunlight and the ocean of fresh air.

Among the many other important points touched upon in the lecture the passages on first aid to the horse, care of the feet, and diseases on foreign service appear specially deserving of attention.

The appendix contains some suggestions which should be of interest to officers having to deal with horses hired from dealers, on the method of funigating the throats and lungs of such horses before they take their places in the ranks.

RECENT PUBLICATIONS OF MILITARY INTEREST.

COMPILED BY THE GENERAL STAFF, WAR OFFICE.

APRIL, 1911. PUBLISHED QUARTERLY.

PART II. SECTION I.—*(continued).*

Communicated by the General Staff and reprinted by permission of the Controller of His Majesty's Stationery Office.

HISTORICAL.

A WOUNDED PRISONER OF WAR IN PARIS UNDER THE PROTECTION OF THE RED CROSS, 1870-71. (Verwundet und Kriegsgefangen in Paris under dem Schutze des Roten Kreuzes 1870-71.) By Dr. Carl Geyer. 272 pp, three maps and two illustrations. 8vo. Berlin, 1910. Kohlhammer. 3s.

This little work gives a narrative of the writer's personal experiences in the Franco-Prussian war of 1870-71. It was first published in 1890; the present edition has been somewhat enlarged and contains some appendices giving the names and present position of his former comrades and friends.

The book begins with the mobilization of the regiment and the march out of Stuttgart, it then gives the author's experiences day by day up to the time of his capture. His accounts of the marches, billets and bivouacs in France, together with notes on the attitude of the inhabitants and the tact required when endeavouring to purchase little luxuries, are most interesting, and throw much light on the position of civilians in a country occupied by the enemy.

When wounded and captured during the siege of Paris, he was fortunate enough to be taken to one of the numerous hospitals established by voluntary effort. The doctor in charge was apparently both skilful and sympathetic, while nothing could have exceeded the kindness of the sister superintending the establishment. Geyer's notes on the condition of affairs prevailing inside Paris during the siege are well worth reading. He especially praises the municipal authorities for the management of the food supplies; the rations allowed to each individual naturally became steadily smaller and poorer in quality as time went on, but it was only owing to this despotic control of all foodstuffs, whether public or private, that Paris was able to resist for so long.

The men composing the Garde Mobile of Paris, "ces bandits de moblots," appear to have done as much damage to the property of the Parisians as did the German bombardment; their value as a military defensive force, enrolled for training on the outbreak of war was even less than the most pessimistic prophet would have ventured to foretell.

OFFICIAL HISTORY (NAVAL AND MILITARY) OF THE RUSSO-JAPANESE WAR. Vol. I To the 24th August, 1904. Prepared by the Historical Section of the Committee of Imperial Defence. 566 pp., with 20 plates in the text and case of 18 charts and strategical maps. 8vo. London, 1910. His Majesty's Stationery Office. 15/-.

This volume contains an account of the Russo-Japanese War from the opening of hostilities until the end of the first general attack

upon Port Arthur on the 24th August, 1904. It deals with both the sea and land operations. The account is to be completed in two further volumes.

The narrative of the land operations has already appeared in Parts 1, 2 and 3 of the *Official History of the Russo-Japanese War* issued by the Committee of Imperial Defence. The chapters of this work are now reprinted interspersed with naval chapters. Some new material has been added to them, notably the instructions given by General Kuropatkin to General Stoessel with regard to the general line of conduct to be followed by the garrison of the Kuan-tung peninsula in case of a Japanese landing, and the latter commander's instructions to his subordinates based on them. Panoramas of the Ya-lu, Nan Shan and the Mo-tien Ling have also been added. There has been a slight rearrangement of the original chapters. Nan Shan has now a chapter to itself, instead of being included in the chapter on the landing of the Second Japanese Army; whilst "The Defences of Port Arthur" and "The Capture of Ta-ku Shan and Hsiao Shan," which were separate chapters, now form one.

The chief interest in the volume is therefore naval. Whereas, however, the original military work was purely a narrative of events, the present combined account contains one chapter of 14 pages of "Naval Comments," followed by one of 23 pages of "Military Comments." In these the connection between the sea operations and the land operations is brought out.

The naval narrative is clearly and simply written, and is well illustrated by charts and black and white pictures of the actions. The only expression used which is not likely to be at once understood by landsmen is "blockship" or "block ship" (both versions appear in the book), to mean a vessel used for blocking a harbour entrance.

It is well in these days to be reminded again of the hazardous and uncertain nature of naval war as compared with war on land. In less than an hour's fighting on the 10th August, the after turrets of both the *Mikasa* and the *Asaki* became "silent and the *Shikishima* had one of her foremost 12-inch guns out of action, reducing the primary armament of the (Japanese) battleships from 16 to 11 guns." At the end of an hour's hard fighting when neither fleet had gained any real advantage, "a lucky shot," as the account truly calls it, killed the Russian Admiral, nearly brought down the foremast of the flagship and in some way interfered with its helm, causing uncertainty and confusion in the fleet, of which the Japanese took advantage. This "lucky shot" was the direct cause of the dispersal of the Russians. Nothing in any way similar could occur in land warfare, except, perhaps, during a night attack, or to a cavalry brigade, were the general commanding and staff suddenly wiped out when the squadrons had been brought within a decisive radius of the enemy's horsemen. In reading the naval narrative one is in fact constantly reminded of the similarities between the action of a fleet and that of a cavalry division manœuvring on a perfectly level plain without chance of concealment or hope of mystifying the enemy.

The most serious misfortune, however, happened to the Japanese fleet when it was, to use military language, within its own lines. On the 15th May two of the six first-class battleships, the *Hatsuse* and the *Yashima*, whilst on blockading duty off Port Arthur, struck mechanical mines and sank. Admiral Nashiba, who was on the former ship, transferred his flag to the despatch vessel the *Tatsuda*, but this vessel went ashore the same evening on one of the Elliot Islands and remained there for a month. "In the early hours of the same day, the Japanese fleet had sustained yet another loss, not on this occasion due to any act of the enemy." The second-class cruiser *Yoshino* was rammed in a thick fog by the *Kasuga* and sank in deep

water, only 90 of her crew being saved. "Even this was not the last of the Japanese misfortunes," for on the night of the 17th May the destroyer *Akatsuki* struck a mine and sank immediately. "Thus in the course of little more than three days, the Japanese navy had been deprived of two battleships, a second-class cruiser, a destroyer and a gunboat." without having even a Russian dinghey to show on the profit side. As a great critic has pointed out, the lesson for England "is the frightful risk and overmastering anxiety which arise from the maintenance of an inadequate margin of naval strength." Henceforward aggresive tactics on the part of Admiral Togo became impossible.

The chapter of "Naval Comments" is practically wholly devoted to strategy. The only other topic treated in it is the influence of recent inventions. A page and a half are given to illustrating the extraordinary value of submarine mines. They are stated, in addition to the material damage they actually occasioned, to "have proved most useful in delaying the movements of the (Japanese) enemy and in preventing co-operation between his army and navy," and later to have been "a source of great anxiety to the Japanese. The five ten-inch guns in the Electric Cliff Battery were sufficiently formidable to keep the Japanese fleet at a distance of over seven miles." "The value of a few modern guns of high power mounted on shore was thus very clearly proved." It is further stated that "the risks are so great that a fleet will seldom be justified in engaging permanent works." Compared with the submarine mine and the gun, the torpedo "proved a somewhat ineffective weapon." "On the nights of the 23rd June and the 10th August, although a large number of attacks were made under conditions which might be considered favourable to the assailants, and many torpedoes were fired, not a single Russian ship was struck."

In dealing with naval strategy, it is pointed out that "the maintenance of Russian supremacy in Manchuria was only indirectly dependent upon the fleet, since there was a complete line of land communication from St. Petersburg to Port Arthur." On the other hand the island power "Japan was so placed that defeat at sea would have been disastrous, while victory, however complete, was no more than a supremely important step towards the defeat of the Russian Army." It is clear that, as has been said of defensive warfare, naval victories may prolong the agony but they cannot win a war.

It is admitted that Togo's "true rôle was in its essence defensive," "From first to last the Japanese naval commanders never forgot that their first duty was to guard the oversea communications of the army." He is praised for his self-restraint and perseverance in sticking to his plan of confining his enemy to Port Arthur and declining after the heavy losses from accident that the Japanese fleet had sustained in May, to risk his "precious battleships." It is, however, laid down that "It is a cardinal rule of warfare that once battle is accepted no effort should be spared to make the result decisive." "It is conceivable that had Admiral Togo (on the 10th August in the battle of the Yellow Sea) closed to effective range at the outset, the victory would have been as complete as that of the Sea of Japan a year later."

The chapter of "Military Comments," like that of "Naval Comments," is mainly strategical. Less than four pages are devoted to tactics and of these more than half relate to cavalry. The failure of the Russian cavalry is said to be "not difficult to account for . . . . the country was most unsuitable for mounted action; large bodies could always be checked by well-posted infantry, and, at the same time, the Cossacks were practically untrained to act on foot, or in small bodies." The ineffectiveness of the Japanese cavalry is

attributed to "faulty organization . . . . more than three-quarters of the available mounted troops were tied to the infantry" (as divisional cavalry). As regards the other arms only two points are noticed at this point of the history:—the gradual conversion of the Russian artillery to indirect fire and the bold handling of the Japanese reserves.

It is stated that the "idea which underlay their (the Japanese) land strategy from the outset of the war" was the conviction "that Liao-yang was the point at which the first great battle against the Russian main army would be fought . . . and, true to their German teaching, they resolved that from the first their troops must be deployed in such a way as to enable them to envelop their enemy at Liao-yang."

It is, however, pointed out several pages later that the interest attaching to Port Arthur had a special effect on the strategy. "Be the result of the war what it might in other ways, on one point the mind of the Japanese people was made up, namely, that Port Arthur should become Japanese territory; and it was realized that when the time should come to make peace, it would greatly strengthen the hands of statesmen if the coveted fortress was already in the hands of soldiers and sailors." The problem which arose " as soon as the decision to pursue the double objective had been formed" is carefully examined. The dispersion it imposed is held to have been "to some extent obviated by the landing of the 10th Division at Ta-ku shan, but still more by the skill with which numbers and intentions were concealed from the enemy."

In strong contrast to the Japanese, whose "diplomacy and strategy kept pace," the Russians are said to have been "Completely unprepared. The inevitable result followed. The initiative in the conduct of operations was resigned to the enemy." Their strategy in holding on to Port Arthur is accounted to be correct, because the ships it contained were a constant menace to Japanese communications."

There are one hundred pages of appendices. In addition to the military ones which have already appeared, there are naval appendices giving lists of Japanese and Russian war vessels and auxiliary vessels, and of the 67 "merchant vessels seized or sunk up to the 19th August, 1904"; the losses at the battles of the Yellow Sea and Ulsan (as the fight in which the *Rurik* was lost is now called); and the damages sustained by Russian ships in these battles.

MY COMMAND IN CUBA. (Mi Mando en Cuba.) By General Weyler. Three Volumes, 496, 530, and 520 pp. with four maps. 8vo. Madrid, 1910. Gonsalez. 7/1 per volume.

General Weyler's book deals with events in Cuba from February, 1896, to October, 1897, during which period he was engaged in endeavouring to crush the insurgent forces in the island.

The Spanish-American War, which began in the spring of 1898, is therefore outside the scope of the book.

In a lengthy introduction, General Weyler explains the situation in Cuba when he took over the governorship of the island from General Martinez Campos. The subsequent events are dealt with in great detail, and form an interesting study of guerilla warfare. The utility of the work as a book of reference is considerably affected by the want of an index, and by the fact that no scales have been drawn for the maps.

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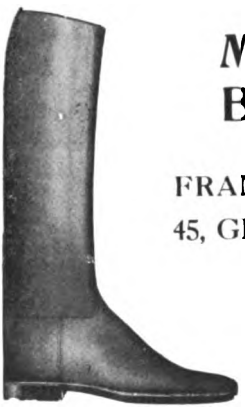
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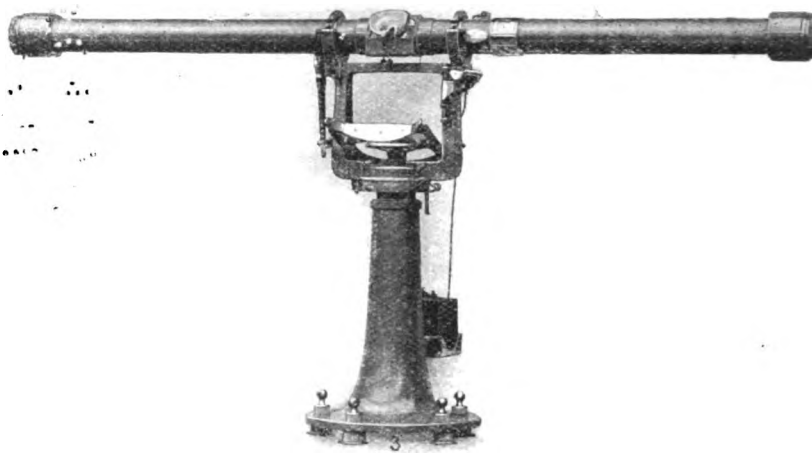
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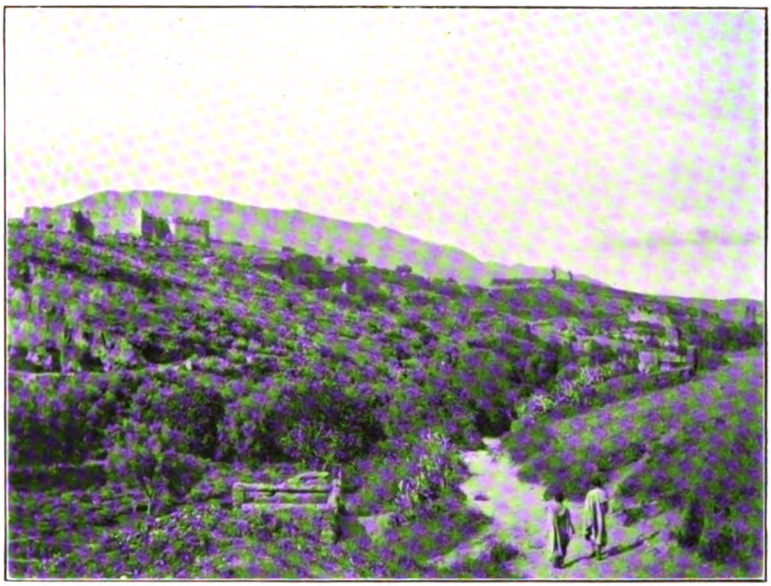
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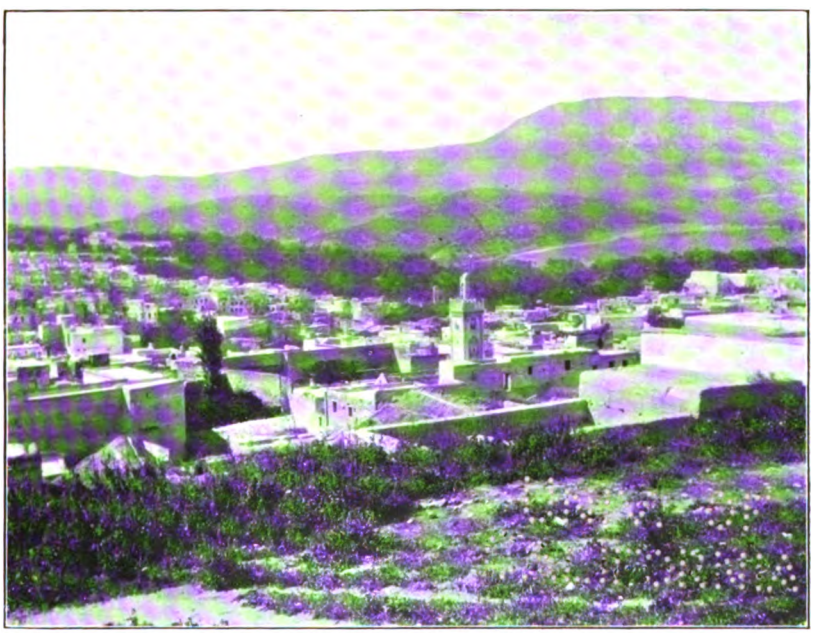
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FEZ: The Northern Bastion.



FEZ: looking towards Jebel Zalagh.

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ROYAL UNITED SERVICE INSTITUTION

JUNE, 1911

SECRETARY'S NOTES.

I.—OFFICERS JOINED.

The following officers joined the Institution during the month of May:—

Paymaster-in-Chief C. E. Gifford, C.B., R.N., retired.
Rev. A. H. Boyd, M.A., Chaplain (T.F.).
Captain A. V. Jarrett, York and Lancaster Regiment.
Captain G. T. Hankin, Officers Training Corps.
Second-Lieutenant N. J. S. Huntington, 6th Battalion Rifle Brigade.
Engineer Rear-Admiral J. J. Stuart, R.N.
Captain V. Le N. Foster, Officers Training Corps.
Second-Lieutenant G. McM. Robertson, North Staffordshire Regiment.
Lieutenant D. J. D. Noble, R.N.
Lieutenant R. F. H. Wallace, Royal Highlanders.

II.—CORONATION SEATS.

The ballot for the extra seats, which were obtained from H.M. Office of Works for the Foreign Members, for the Coronation Procession and the Royal Progress, took place on June 1st, and the tickets for these will be issued as soon as they are received from H.M. Office of Works with the other tickets.

All further information will be given either on the tickets themselves or on the notice accompanying same.

III.—CORONATION.

The Board of Trade have kindly granted permission to any Members who desire to witness the Coronation and Royal Progress Processions from the Institution building, to pass through their entrance on the Embankment into Whitehall Gardens.

IV.—ADDITIONS TO THE MUSEUM.

(6325.) Key Bugle of the Royal South Gloucester Militia, early 19th Century.—*Given by Colonel W. P. Burges and the Officers, 3rd Battalion Gloucestershire Regiment.*

(6326.) A Persian Iron Mace with fluted head and damascened with brass.—*Given by Lt.-Colonel W. H. M. Jackson.*

(6327.) Shako with black cock's feather plume of Light Horse Volunteer Cavalry, about 1820.—*Given by Mrs. F. E. Clarke.*

(6328.) A Scarlet Pelisse with silver lace and buttons of Light Horse Volunteer Cavalry, about 1820.—*Given by Mrs. F. E. Clarke.*

(6329.) A Line Engraving published by Colnaghi and Co. in 1813, drawn by H. L'Eveque and engraved by Charles Heath, entitled "The Siege of Badajos."

V.—REGIMENTAL COLOURS.

The Secretary is prepared to arrange for the repairs to Regimental Colours and Cavalry Standards, in service or otherwise, at the Institution. A very large number have been received during the past seven years.

VI.—CHANGE OF RANK OR ADDRESS.

The attention of Members is called to the necessity for communicating any change of address or rank to the Secretary. It is essential that such changes should be made in writing. If such changes be not notified, Members will themselves be responsible if their Journals fail to reach them through being wrongly addressed, and officers are requested to write their initials and names distinctly on such communications. Several signatures have recently been received which it has been quite impossible to decipher, while recently several notifications of change of address were received without signature.

VII.—NEW MEMBERS.

A form is inserted in this Journal, and will be repeated regularly, for the benefit of those officers who may wish to join the Institution. The filling up of the form and its transmission to the Secretary is all that is necessary in the case of officers appearing in the Official Active Lists. The Council hope that Members will circulate the forms. Officers joining after the 1st October in any year are not called upon for any subscription the following year.

VIII.—LECTURES.

Members desiring to deliver lectures in the Theatre or contribute papers in the Journal are requested to submit them for the perusal of the Council, through the Secretary. The Council specially hope that they may receive the offer of lectures on Naval Subjects.

IX.—THE WAR GAME.

The Home District Military Society having been recently dissolved, have presented to the Institution their collection of maps and materials for playing the War Game, and these have now been sorted and stored. The Council has arranged that sets of maps and pieces can be lent to any Regular, Special Reserve or Territorial Unit or recognised Society of the same, at a fee of 10s. per occasion, the Unit or Society paying the carriage both ways and making good any loss or damage incurred. Umpires, Assistant Umpires, schemes and all other arrangements to be made by the parties engaged. Should it be desired, a room at the Institution can be placed at the disposal of players after 5 p.m., at a charge of 10s. per evening, but not less than 10 days' notice must be given in respect of it.

PRINCIPAL ADDITIONS TO LIBRARY DURING MAY, 1911.

Memoirs of Captain Rock, the celebrated Irish Chieftain, Written by himself. Crown 12mo. (Presented.) (Longman, Hurst, Rees, Orme, Brown and Green). London, 1824.

The American War of Secession, 1863—Chancellorville and Gettysberg. By Colonel H. P. DALBIAC. Crown 8vo. 5s. (Presented). (George Allen and Co., Ltd.) London, 1911.

La Marine Moderne. By L. E. BERTIN. Crown 8vo. 2s. 8d. (Illustrated). (E. Flammarion). Paris, 1910.

La Marine de Guerre. By A. S. JOURDAN. Imp. 8vo. 7s. 6d. (Illustrated). (Librairie Vuibert). Paris, 1910.

A Holiday in South Africa. By the Rt. Hon. Sir H. MORTIMER DURAND, G.C.M.G., etc. Crown 8vo. (Presented). (William Blackwood and Sons). Edinburgh, 1911.

War Rights on Land. By J. M. SPAIGHT. 8vo. 12s. (Presented). (Macmillan and Co., Ltd). London, 1911.

Umpiring. By Colonel G. T. FORESTIER-WALKER, A-Q-M-G, Southern Command. (Aldershot Military Society). Crown 8vo. 6d. (Hugh Rees, Ltd). London, 1911.

Das Internationale öffentliche Seerecht der Gegenwart. By F. PERELS. 8vo. 7s. 3d. (E. S. Mittler and Sohn). Berlin, 1903.

Das Seerecht. By Dr. KARL H. BERNSTEN. 8vo. 4s. 9d. (Franz Vahlen). 8vo. Berlin, 1911.

Die Feuerprobe der russischen Armee im Kriege, 1904-5. By Lieut. RICHARD ULLRICH. 8vo. 5s. 5d. (R. Eisenschmidt). Berlin, 1910.

L'Aviation aux Armées et aux Colonies. By General H. FREY. 8vo. 2s. 8d. (Berger-Levrault). Paris, 1911.

Bateaux Sous-Marins á grande vitesse sous l'eau. Par C. Del PROPOSITO avec un projet de M. C. LAURENTI. Imp. 8vo. (Illustrated), (Presented). (Augustin Challamel). Paris, 1910.

De Re Militari. By FLAVIUS VEGETIUS. Fc. fol. (Illustrated). (Presented). n.p. n.d.

For Remembrance and in Honour of those who lost their lives in the South African War, 1899-1902. Lest we forget. By Colonel Sir JAMES GILDEA. 4to. £2 2s. Illustrated (Presented). (Eyre and Spottiswoode, Ltd). London, 1911.

Peace or War East of Baikal? By E. J. HARRISON 8vo. 21s. (Illustrated). (Kelly and Walsh, Ltd.). Yokohama, 1910.

1911. Kent—The Boy Scout's Directory. Crown 8vo. (Presented). ("Courier" Co., Ltd). Tunbridge Wells, 1911.

Armée Russe—La nouvelle Instruction pour la Conducte du Combat d'Infanterie, 1910. Traduit du russe par le Chef de bataillon Painvin. 8vo. 1s. (Henri Charles-Lavauzelle). Paris, 1911.

The Revolt in Central India 1857-59. Compiled in the Intelligence Branch Division of the Chief of the Staff, Army Head-quarters, India, By Major R. G. FURTON. 8vo. (Presented). (Government Monotype Press). Simla, 1908.

Handbook of the Medical Services of Foreign Armies. Part V. Italy. Crown 8vo. 6d. (Presented). (H.M.'s Stationery Office). London, 1911.

The Voyage of the "Why Not" in the Antarctic. The Journal of the Second French South Polar Expedition, 1908-10. By Dr. JEAN CHARCOT. English version by PHILIP WALSH. Imp. 8vo. 20s. (Illustrated). (Hodder and Stoughton). London, 1911.

British Statesmen of the Great War 1793-1814. The Ford Lectures for 1911. By the Hon. J. W. FORTESCUE. 8vo. 7s. 6d. (Clarendon Press). Oxford, 1911.

Metternich. By G. A. C. SANDEMAN. 8vo. 10s. 6d. (Methuen and Co., Ltd). London, 1911.

The real Captain Kidd. By Sir CORNELIUS N. DALTON. Crown 8vo. 5s. (William Heinemann). London, 1911.

England and the English from an American point of View. By PRICE COLLIER. Crown 8vo. 2s. 6d. (Duckworth and Co). London, 1911.

A Handbook of British and Foreign Orders, War Medals, and Decorations awarded to the Army and Navy. By A. A. PAYNE. Imp. 8vo. 31s. (Illustrated). (J. W. Northend). Sheffield, 1911.

Memoirs of General Sir Philip Bainbrigge, K.C.B., and Reminiscences of the Peninsula War. 8vo. (Presented). n.p., n.d.

THE JOURNAL

OF THE

ROYAL UNITED SERVICE INSTITUTION.

VOL. LV. JUNE, 1911. No. 400.

[Authors alone are responsible for the contents of their respective Papers.]

THE CRIMEA REVISITED

BY MAJOR-GENERAL H. T. ARBUTHNOT, C.B.

On Wednesday, 1st March, 1911.
General LORD WILLIAM F. SEYMOUR, K.C.V.O.
in the Chair.

BEFORE I commence my lecture, I should like to say how much pleased I am to see so many of my old comrades of the Crimea here this afternoon. I do not know if any of the men who are here were in any regiment or battery attached to the Second Division. If they were, it is just possible that some of them were on picket together during that eventful winter. I see that some of them have the four clasps; therefore some, at all events, were at Inkerman, and were, no doubt, engaged in the field attack. I hope some of them may have been with me during that period.

I joined at Woolwich as a 2nd-Lieutenant in the Royal Artillery in August, 1853, and was posted to the second company, then on the Roster for foreign service. Quite early in the year 1854 the company was converted into a Field Battery (there was no Field Artillery proper in those days) and placed under orders for the East to join the Expeditionary Force which was being sent out. We embarked at Woolwich on March 29th, 1854, arrived at the Bosphorus on May 6th, and landed at Scutari on May 8th. We were first quartered with other

troops in a large Turkish barrack at Coolali; there was nothing remarkable about that barrack except its extreme filth and the extraordinary number of fleas which pervaded the whole place. We were therefore very glad when in about ten days' time we were moved out and encamped in a very shady position near a cypress grove; the Battery was then attached to the 2nd Division under Sir de Lacey Evans. In June and July the Army was moved up to Bulgaria. The 2nd Division was encamped near the village of Pravadi, about 20 miles from Varna, on the extreme left of the English lines facing North. Towards the end of August the Army embarked for the Crimea, and after sailing about in the Black Sea for a fortnight or more, the disembarkation commenced on September 14th, but owing to a storm which sprang up on the night of the 14th, which made it impossible to land horses, it was not completed till the 18th, and on the 19th the march towards Sevastopol commenced, and on the next day, the 20th, was fought the battle of the Alma. I always had a hankering to revisit the spot where I spent so many months of my early soldiering days, but the opportunity for doing so only occurred last year, and I propose this afternoon to give you an account of the wonderful reception I met with on the part of the Russians, and to give you my impression of the ground as it now is, as compared to what it was when covered with the English Army in 1854-55, with some account of the stirring events in those years.

I was saying just now that the opportunity for revisiting the Crimea only occurred last year, and it came about in this way: A brother officer of mine, Colonel Jocelyn, is engaged in writing a history of the Royal Artillery from the year 1853 to 1863, and as I have the great good fortune to be one of the few surviving Royal Artillery officers who went through the whole of the Crimean War, he was constantly asking me questions about it, and I suggested to him that he ought to go out and see the ground for himself, and it was arranged that we should go out together in the spring of last year. I put myself in communication with Lieutenant-General Yermoloff, the Military Attaché to the Russian Embassy in London; he took the greatest interest in my proposed visit, and at once communicated with the authorities at St. Petersburg, and did everything in his power to ensure that my visit should be both agreeable and instructive, and it was largely due to his good offices that I met with such a splendid reception. At the last moment circumstances prevented Colonel Jocelyn from accompanying me; but I had gone too far to draw back, and I was afraid I should have to go alone, but luckily my son, who is a Major in the Royal Berkshire Regiment, the 1st Battalion of which, the old 49th, was one of the Regiments of the 2nd Division, arrived home from India on long leave a fortnight before my departure, and he agreed to

go with me, and to him I am indebted for the photographs which I shall presently show you on the screen.

ARRIVAL IN THE CRIMEA

We proceeded *viâ* Marseilles to Constantinople and thence by a Russian steamer direct to Sevastopol, and on arrival there were met by the British Consul, who took us to our hotel. Early the next morning I was visited by Captain Dobrovolsky of the Russian Navy, who had been deputed by the Governor of the Crimea, under directions from St. Petersburg, to wait upon me, with instructions to show me everything I wanted to see, and to take me anywhere I wanted to go; at the same time I was to be at perfect liberty to go alone anywhere I liked and to take what photographs I liked, and during the whole time I was at Sevastopol there was not the slightest vestige of espionage in any way whatever. The selection of Captain Dobrovolsky to wait on me was a great compliment, as he is the officer attached to the Court when the Czar visits the Crimea. The Grand Duke Alexander Michaelovitch, who is in charge of the Crimean battlefields and relics, also wired to his Chamberlain Gordinski to do all he could to make my visit as agreeable as possible, so it began under the happiest auspices. After a little general conversation, Captain Dobrovolsky asked me what I should like to do on that first day of my visit. I naturally replied that my first duty would be to call on the Governor and others in authority; but he replied: "Not to-day; we will do that to-morrow." At the time I could not understand his reason for this, but I ascertained afterwards it was because he wished to apprise the Governor and others of my intended visit, so that I might be received with all due honour. He suggested that we should go to the Museum in the morning, and in the afternoon go round the original defences of Sevastopol as they existed at the time of the Siege. Chamberlain Gordinski did the honours of the Museum, of which he is in charge. It is an interesting museum, consisting entirely of reminiscences of the war—all the projectiles and munitions of war used at that period —articles picked up on the battlefields—portraits of the Generals in command—models of the forts and ships and so on.

THE DEFENCES OF SEVASTOPOL

In the afternoon Chamberlain Gordinski, accompanied by the Engineer Officer in charge of the lines, arrived at my hotel with two carriages to take us round the defences. I should mention here that it had been intended to celebrate the Jubilee of the war in 1904, but the Japanese War prevented it, and it is now proposed to have a Diamond Jubilee in 1914. But with a view to the Jubilee, the lines defending Sevastopol

were restored exactly as they were at the time of the siege, and one of the forts, the Flagstaff Battery or Bastion-du-Mât, was also restored, built up with gabions and fascinès, and mounted with old guns of that period. At the time of the siege every regiment in Sevastopol had its allotted place in the defence, and now a brass plate with the name of the regiment on it is let into the parapet of that part of the lines which that particular regiment had to defend. We drove right along the lines, commencing at the extreme left of the Russian position, resting on the Harbour, to the Flagstaff Battery, which was where the English left attack ended and the French attack began, visiting the Malakoff and the Redan as we went along. I was immensely struck with the extraordinary strength of the Malakoff Tower, with the bomb-proof casemates slightly in rear, where the defenders could remain in perfect safety until called out to repel an attack, but once the attacking party got a firm footing in the Tower, they would be able to hold it because it was not open in the rear, so that when the defenders were driven out no fire could be brought to bear on the attacking party. But not so the Redan; this work was open in the rear, so that if the attacking party got a footing in the work an overwhelming fire could be brought to bear upon them from the rear. It is very easy to be wise after the event, but it seems to me to have been an error of judgment to have attacked the Redan at all. The Redan is commanded both by the Malakoff and Flagstaff Battery. On the day of the assault the Flagstaff Battery was left practically unmolested, but had a successful attack been made on it by French and English, in combination, the Redan would have been untenable. The visit to these Russian defences, as they were 56 years ago, was most interesting, for it shows what a formidable task the Allies undertook in attacking so strongly defended a position with the means then at their disposal. Close to the Flagstaff Battery there is a public garden called the "Boulevard Historique"—why, I do not know. Chamberlain Gordinski had ordered tea for us there, so after completing the inspection of the defences we repaired there and partook of a most sumptuous tea; after the tea champagne was brought, and Gordinski proposed toast after toast as an excuse for another glass of champagne. This was the beginning of the Russian hospitality so freely extended to us; and before I proceed further I wish to emphasise the extraordinary cordiality with which we were everywhere received. Nothing could exceed the extreme friendliness shown to us on all occasions. I do not wish for one moment to imply that this was personal to myself. It had a far deeper significance: it was due to the great satisfaction of the Army and Navy with the *Entente* which has been arrived at between Russia and Great Britain, and every officer

with whom I conversed made no secret of his wish that this *Entente* would develop into an alliance.

VISIT TO THE BLACK SEA FLEET

On the following day, accompanied by Captain Dobrovolsky and the British Consul, we spent the morning in paying visits of ceremony to the Governor of the Crimea, the General Officer Commanding at Sevastopol and the Commandant of Artillery, by all of whom we were most cordially received and hospitably entertained. In the afternoon we called on the Admiral Commanding the Black Sea Fleet on his Flagship. He sent a steam launch to the landing stage to bring us off to his ship. On reaching the ship we were received by the Admiral and his Flag-Captain at the head of the companion ladder. The whole ship's company was mustered on deck. The guard presented arms and the officers saluted. We were shown all over the ship—men's quarters, sick bay, guns, magazines, cook house—in fact, everything. Whilst going round the Admiral remarked: "Of course, this is nothing to you; our ships cannot compare with yours, we know, but I thought perhaps you would like to see what our ships are like." After completing the round of the ship, the Admiral entertained us at tea in his state cabin, and when I was preparing to leave, the Commander came forward and said the Ward Room officers hoped we would honour them by visiting the Ward Room. I naturally accepted such a friendly invitation, and on reaching the Ward Room we found a most sumptuous repast prepared for us, with the inevitable champagne and usual toasts. Eventually we were able to get away. Again the whole ship's company was mustered on deck, and we received the same salutes as on arrival. There is a custom in the Russian Service that when a Commanding Officer has a parade, either ashore or afloat, he greets his men with a friendly "Good morning, brothers!" to which the men reply. I was told what the reply is, but I forget it; and the same ceremony is gone through on leaving. Knowing this custom in the Russian Service, I took care to observe it, and the extreme heartiness with which the men responded to my salutation showed me that they fully appreciated my action. On leaving the ship I fully expected to be taken back to the landing stage; but no, I was taken round the whole of the Black Sea Fleet, steaming round every ship, and as we passed each ship, the same ceremony was gone through as on the flagship: the crews were mustered on deck, the guard presented arms, and the officers saluted. Altogether we had a most splendid reception from the Fleet; I had never for one moment anticipated anything like it.

VISIT TO A RUSSIAN BARRACK

On my visit to the General Officer Commanding in the morning, he asked me whether I would like to see a Russian barrack. I said, "Yes, I would"; so he said he would send carriages for us in the morning to take us to the barracks of the Bialostok Regiment, now garrisoning Sevastopol. Accordingly, on the following morning two carriages came to the hotel to take our party, consisting of myself and son, Captain Dobrovolsky and the British Consul to the Barracks. On arrival there we were received by the General and the Colonel of the Regiment, with his Adjutant. A Russian Regiment, as probably most of you are aware, is more like an English Brigade, consisting of four Battalions, the whole being commanded by a Colonel, who is equivalent to our Brigadier-General. We were first taken to the barrack rooms, where everything was well arranged, scrupulously clean—the men, the beds, the rooms, all as neat and clean as possible. We were then taken to the kitchens, where the men's dinners were being prepared; we tasted the various foods, of which there was a great variety, and which were all excellent. We then saw the field kitchen, which appeared to me to be excellent in design and, from what I hear, superior to anything in our own service; and I was glad to read in the papers one day last summer that a field kitchen on the Russian model was to be tried at Aldershot. We then visited the workshops, the stables, the stores and the schools. A Russian Regiment is complete in itself; it has its own stores, its own transport, and its own camp equipment. The interior economy appeared to me to be perfect, and I was very much impressed with all I saw. When the inspection was over the Colonel asked me if I would like to see a squad at physical drill. On my answering in the affirmative, a squad of 120 men was drawn up in the barrack square and put through the course, which they did with great precision. Their drill is somewhat different to ours, and, I should think, rather more severe as a test of physique and endurance. When this was over a photographic group was taken of ourselves, the General, all the officers of the Regiment, and as many of the men as could be got on to the plate. We then repaired to the messroom for lunch, where the whole of the officers of the four battalions were assembled. It was a most sumptuous banquet and the splendid band of the Regiment played in an adjoining room during the repast. When my health was drunk the band played the English National Anthem, and the cheers were so persistent and continuous, and the band kept on playing so long, that I thought it was never going to stop. The Colonel, who proposed the toast, referred to me as "once our enemy, now our friend." Two incidents in particular with regard to that banquet deserve to be recorded as showing the extremely

friendly feeling now pervading the Russian Army towards us. In the course of conversation my son happened to remark as a curious coincidence that the members of the Old Comrades' Association of the Royal Berkshire Regiment were holding their annual dinner in London that day. This was repeated to the Colonel, and he at once caused to be despatched the following telegram:

Secretary, Berkshires, Holborn Restaurant, London.
"Following from Colonel Bialostockski Regiment.
"Bialostockski Regiment in Sevastopol entertaining at "luncheon Major Arbuthnot; drink health of Crimean "comrades, 49th Regt."

I think this shows a true soldierly spirit of camaraderie, as the 49th and the Bialostok Regiment were, in years gone by, opposed to one another before Sevastopol. I have been unable unfortunately to obtain a copy of the reply, but I need hardly tell you that it fully reciprocated this friendly feeling.

The other incident is still more striking. In one of the sorties from Sevastopol during the siege, an officer of the Bialostok Regiment picked up an English Bible in the trenches. It has been treasured ever since as a Regimental Relic, and at the time of my visit was in possession of the grandson of the man who first found it. When he heard that I was to be entertained by the Regiment, he brought the Bible to the Colonel with a request that he would return it to me as a mark of esteem for the English Army. I think that is one of the most touching incidents I can call to mind. I shall now always treasure that Bible, not only as a mark of esteem for the Russian Army, but also as a memento of the splendid hospitality extended to me and my son by the Bialostok Regiment.

After the repast the men of the Regiment were called in and sang Russian songs, and showed us some Russian dances. We then, having spent a most enjoyable day, took our departure amidst much cheering and other manifestations of goodwill; and with this ended the ceremonial part of my visit.

THE BATTLEFIELD OF THE ALMA

The next day, the Admiral having placed his motor at my disposal, we went out to the Alma. The main features of the ground are, of course, unaltered; but the village of Bourliouk has been rebuilt and extended, and many country villas have been built which were non-existent on the day of the battle. This made it difficult for me to locate the exact spot where my battery had been in action; but from the position of the grand redoubt I could form a good general idea of the position occupied by the English artillery. The wooden bridge by

which we crossed the river is still there. We went up to the position of the grand redoubt where the Russians had their battery of 18 guns, and standing on that hill, and looking down to the river one can realise what a magnificent feat of arms it was for that redoubt to have been captured by assault, the attacking column having to charge 400 or 500 yards up hill in face of a murderous fire. The 23rd Royal Welsh Fusiliers, to which regiment the honour of capturing that redoubt is due, lost heavily, 9 officers killed and 6 wounded, and a monument is erected on the spot to the memory of those who fell. The regiment captured a Russian gun and team complete. That gun is now in the barracks of the depot of the regiment at Wrexham, and I have here a photo of the gun.

BALAKLAVA

The following day we drove to Balaklava, stopping on our way in to visit the house which Lord Raglan made his headquarters. There is a brass plate let into the wall of the room in which he died, with the following simple inscription:—

"In this Room died F.M. Lord Raglan, G.C.B., Commander-in-Chief of the British Army in the Crimea, on the 28th June, 1855."

On the door of the room in which he died the names of the three Generals, who successively commanded the British Army in the Crimea are cut, and in the garden there is a stone tablet with the following inscription:—

"To the memory of Field-Marshal Lord Raglan, K.C.B., Commander-in-Chief of the British Army in the Crimea, died 28th June, 1855."

What a pretty spot Balaklava Harbour is; so quiet and peaceful, so different to what it was as I knew it 56 years ago when it was crowded with shipping, and was all confusion and bustle. The wharves put up by the English to facilitate unloading are still kept up, although there can be very little use for them now. The road between the wharves and the houses of the village of Balaklava is very narrow, and the houses, if not the same as were in existence at the time of the war, are built on the same site. We returned from Balaklava to Sevastopol by the track leading up from the plain to the Col; how it recalled to my mind the many weary trudges I made up that track, bringing up forage and provisions to the battery. We had no difficulty in identifying the positions of the several Turkish redoubts captured by the Russians, nor the sites of the cavalry charges of the Heavy and Light Brigades on that memorable day, October 25th, 1854. There is a monument

put up to the memory of those who fell on that day with the following inscriptions:

South face.—"In memory of those who fell in the Battle of Balaklava, 25th October, 1854."

West face.—"Erected by the British Army, A.D. 1854."

North face.—Russian inscription.

East face.—A cross.

THE BATTLEFIELD OF INKERMAN

The day following our visit to Balaklava was, to me, the most interesting of all, for on that day we visited the battlefield of Inkerman. Those of you who have read Kinglake's history of the war will remember that the Russians brought up four distinct columns to the attack, two of these columns being intended to turn the right flank of the English position, and drive the 2nd Division, to which my battery was attached so, I thought, in order to get a good idea of the Russian attack, I would approach the battlefield by the route followed by one of the Russian attacking columns; so we took a boat and sailed up the harbour to the Tchemaya River, and up the river as far as the bridge by which the Russian column crossed the river; from there we followed the route taken by the Russians and walked up the Quarry Ravine.

Where the track up the ravine joins the Post Road to Sevastopol a barrier of loose stones, known as the 2nd Division Picket, had been thrown up. On the 26th of October the Russians made a reconnaissance in force, evidently with the view of ascertaining our strength on our right flank, bringing some guns on to Shell Hill. It was therefore, thought desirable to throw up a breastwork of earth 700 or 800 yards further back from the barrier, and about 200 yards in front of the 2nd Division Camp, as a slight protection to the guns of the 2nd Division, which, in the event of a serious attack, were to come into action behind it, one battery on either side of the Post Road. On debouching from the Quarry Ravine we found no trace of the barrier left; being only made of loose stones, they had probably been utilised for mending the road. But walking back down the Post Road about 700 or 800 yards, there, sure enough, was the very breastwork to which I have referred, just as we left it on evacuating the Crimea, and only slightly washed down by rain. How the whole scene came back to me in a flash; there was the position of the 2nd Division camp; there was the breastwork behind which my battery was in action from half-past six in the morning till half-past two in the afternoon, firing away over 800 rounds of ammunition; there to my left front was Shell Hill where the Russian artillery was posted, from whence they pounded us the whole

day, causing us to lose 49 horses and 22 men killed and wounded—rather a hot day's work for one field battery. But the Russians ought never to have been allowed to occupy Shell Hill, the height of which is 580 feet; there is a hill to the right of the 2nd Division camp, the height of which is 646 feet. After the battle a redoubt was erected on this hill, and it was armed with 18 pounder guns. Had that redoubt been in existence on the day of the battle, its 18 pounders could have prevented the Russian artillery from ever establishing themselves on Shell Hill.

I may say here that it fell to my lot to fire the first shot at the battle of Inkerman, which came about in this way. On the morning of that day I was going on picket with two guns to our outlying picket on Shell Hill, which was strengthened by two guns in the day time. I had not proceeded far when I heard firing in the direction of Shell Hill. I could see nothing as it was a very foggy morning, and the ground was covered with thick brushwood. I hesitated for a moment whether I should go on or not, but as the sound of the firing kept getting nearer and nearer to me, I knew that our picket was being driven in; so I trotted back to the breastwork, and at once opened fire on Shell Hill, the position and the distance of which I knew exactly.

Well, after finding that the breastwork was still in existence, I thought I would try to find the remains, if any, of the Sandbag battery, so I walked off in the direction in which I knew it ought to be, and again I was gratified to find it still in existence. This battery was erected to silence two Russian guns, which had been placed in position on the Inkerman heights on the opposite side of the Tchemaya Valley to prevent our foraging parties from carrying off meadow hay, which was stacked in the valley below the 2nd Division camp. The battery was armed with two 18 pounders, and it fell to my lot to have to work them. I had very little difficulty in silencing the Russian guns, but I noticed that after firing their gun the gunners ran down a path in the rock, and took shelter in a building cut out in the face of the rock. I thought I ought to have them out of that building, so I laid a gun on the door through which they entered it. To my astonishment the very first shot went bang through the door—a marvellous shot for a smooth-bore 18 pounder, at a range of 1,700 yards. Out ran the gunners, followed by a priest. I then found that quite unwittingly I had fired into a church; but it was not I who desecrated the building, but the able-bodied fighting men, who had no business to use a church as an asylum of refuge. But now for the sequel. I naturally went over to see this little church on my recent visit, and there to my astonishment and delight are the very two round shot, which I fired into the building, placed on two

pillars at the entrance to the chancel. They have been blessed as having been fired into a sacred edifice without doing it any harm. I was pleased to see them there, as I like a story of this sort to be confirmed, otherwise one might be accused of telling travellers' tales.

After photographing the Sandbag Battery, we retraced our steps to the breastwork, and walked down a road laid out straight from the breastwork to Shell Hill, in preparation for the Jubilee to which I have referred. On Shell Hill the Russians have erected a monument to the memory of those who fell at Inkerman, and the English monument is close by with the following inscription.

South face.—"In memory of the English, French, and Russians who fell in the battle of Inkerman, 5th Novr., 1854."

North face.—Russian inscription.

East face.—A cross.

West face.—"Erected by the British Army, A.D. 1856."

We also walked over the ground occupied by the 2nd and Light Divisions and the Guards' Brigade, which were all close together, and it was perfectly easy to trace where the lines of tents had been, as the stone paths between them which the men had made are still perfectly visible. After this we returned to Sevastopol, having spent a most thoroughly interesting day.

THE SIEGE WORKS

Having completed my inspection of the battlefields, I next turned my attention to the siege works and approaches, commencing with the French attack on the Mamelon and Malakoff. The parallels and zig-zags for the attack on the Mamelon, as well as the sites of the breaching Batteries, and also the approaches from the Mamelon to the Malakoff, are all quite distinct, and it is easy to follow the line of the French attack. It is surprising to see how very near the French had crept up to the Malakoff before the final assault; the distance they had to cover in the open certainly not exceeding 40 yards at the very outside. A monument to the memory of the Russians and French who fell on September 7th, 1855, is erected just outside the Tower, and from there you can get a very good view of the town and harbour of Sevastopol.

Leaving the Malakoff, we went back to the English Right attack, and worked our way right along to the Left attack. We were able to locate the position of Gordon's 21-gun Battery, as well as Chapman's Battery. The parallels and approaches are also quite distinct, and the parallel connecting the English Right and Left attacks is as plain as if it had only been made a year or two ago. We walked right along it, going down one

side of the ravine and up the other side to Chapman's Battery. But it was more difficult to find the sites of the more advanced Batteries, as a great deal of quarrying has been, and is still, going on, so that in many cases the sites of the breaching Batteries are entirely obliterated. The nearest parallel to the Redan, from which the final rush for the assault was made, is quite 200 yards from that work and uphill all the way; and now, after a lapse of over 50 years, looking at the work from the English side, and having also seen it from the Russian side, one can easily realise why it was the English were unable to hold it after having gained a footing in it. The English have erected a monument in the Redan to the memory of those who fell in the assault.

It was difficult to locate the exact position of the siege train park or of the windmill which was used as a magazine, and which blew up on November 15th, 1855. The ground about there is not so rocky as on other parts of the upland, so it is more cultivated. But the sites of the camps of the 3rd and 4th Divisions are even more distinguishable than those of the 2nd and Light Divisions and Guards' Brigade, the reason probably being that the 2nd and Light Divisions and the Guards bore the brunt of the fighting at the Alma and Inkerman, and suffered far more severely than the 3rd and 4th Divisions, and therefore had not so many men available for making roads, etc., in the camps.

THE CEMETERIES

A few words now with regard to the cemeteries in the Crimea and at Scutari. When the Board of Works heard that I was about to visit the Crimea, I was requested to inspect the cemeteries and to report as to their condition, and to make such recommendations with regard to them as might occur to me. It was a source of great satisfaction to me to be able to make a most favourable report as to their condition. The cemetery on Cathcart's Hill is very pretty, and is beautifully kept under very difficult circumstances on account of the want of water, without a good supply of which the plants cannot be kept alive. Every drop of water now has to be brought up in a water barrow from a stream of water running through a ravine below the cemetery, thus entailing a great expenditure of time, labour and money; whereas for an expenditure of about £300 water could be laid on by means of a force pump. This would be a saving in the end, as the services of a man could be dispensed with. I have urged this strongly on the Board of Works, but whether my recommendation will be attended to or not I do not know. Most of the monuments in the cemetery are in good preservation, but others are decaying and require renovation.

The cemetery at Scutari is very prettily situated, overlooking the Bosphorus, and it also is very beautifully kept. A handsome monument has been erected in the centre of the cemetery, and the following inscription has been engraved on the four sides of the base in the languages of the four Allied Powers engaged in the war—England, France, Turkey and Sardinia:—

TO THE MEMORY
OF THE
OFFICERS AND MEN
AND OF THE SAILORS
OF THE ENGLISH ARMY AND FLEET
WHO DIED FOR THEIR COUNTRY
IN THE WAR AGAINST RUSSIA
1854—1855—1856
THIS MONUMENT WAS ERECTED
BY
QUEEN VICTORIA
AND HER PEOPLE
1857

The English inscription, being on the side most exposed to the weather, is almost illegible, and I could only gather what the inscription was by reading it in French. I have urged the necessity of renovating this inscription on the Board of Works, but with what result I know not.

With regard to the town of Sevastopol itself I have not much to say. It is a well-built town, with good streets and good shops, well kept, very clean and orderly, with a good public garden, and embellished with statues of the leading Generals and Admirals engaged in the war. I was shown the spot where the Bridge of Boats, by which the garrison retreated on the night of September 7th, 1855, was thrown across the harbour to the North side. The Karabelnaia suburb, which suffered most during the bombardment, has been entirely rebuilt, and now shows no signs of the way in which it was knocked about in 1854-1855. New docks also have been built on the site of the old docks, which were blown up early in 1855.

And I have now only to say in conclusion that the visit I paid to the Crimea last April was the most interesting trip I ever made in my life; and I can never forget as long as I live

the great kindness shown to me and my son on all sides, and the extreme cordiality and hospitality extended to us.

DISCUSSION.

MAJOR-GENERAL A. K. RIDEOUT, C.B., late R.A. :—General Owen and I went out to the Crimea in '54, but General Arbuthnot embarked for the Crimea a month before I did, at Woolwich. I remember perfectly seeing him off at the dockyard. I have been most interested in hearing the state of the old country that we fought over, and of the glorious and hospitable reception he met with from those gallant friends of ours of the Russian Army. Personally I received great kindness from the Russians after the peace. I was most hospitably entertained by them both at Simpheropol and Baktchiserai by a great friend of mine in the Russian cavalry, Captain Dombrowski; and also by Captain Vallaeff. I want to ask my old friend, General Arbuthnot, if he saw anything of an old building that I lived in for some weeks and months, the old monastery of St. George, where we had a convalescent hospital after a time, and where we had as prisoners of war the family of Captain Stomati. He was the Commandant at Balaklava and when we marched round, he wanted to show fight, but it was impossible against the allied forces, so he surrendered. The family of "Stomati" were taken care of by the British, and were accommodated in a house in the monastery of St. George, half way between Cape Kheronese and Balaklava.

MAJOR-GENERAL C. H. OWEN, late R.A. :—We have all listened with the greatest interest to the description the lecturer has given of the Crimea, especially those of us who were there at the time. There is one thing that must have struck us all in the lecturer's dealings with the Russians, and that is not only the immense hospitality and respect which has been shown to General Arbuthnot, but the tremendous pride that the Russians took in their magnificent defence. I should like to ask: Where is the pride of the British public, or even of the British soldier, in the grand deeds that we did in the Crimea? Nothing was supposed to be worth looking at a few years ago, except the great Franco-German War of 1870; but I think those present will agree with me that there is far less to be learned from the war of 1870, as far as we British soldiers are concerned, than there is from the war in the Crimea. We are not going abroad with seven or eight army corps to fight in the Plains of Europe, but there is every probability that we may take part in a combined naval and military expedition not so very far off, perhaps in Belgium, say, and therefore it is a great pity, I think—of course I may be wrong—that the Crimea War as a campaign, and all the difficulties that we overcame there, and the deeds that we did, do not receive more attention.

NEGLECT OF THE ARMY BEFORE THE CRIMEAN WAR

Long before the Crimean War, the army had been reduced to a mere skeleton. In 1851 we had the great Exhibition, and after that we were all to live in peace in a sort of commercial heaven. There was to be no more war at all. What was the consequence? When the army was sent out to the Crimea, I venture to say that no finer body of 25,000

men had ever left this country as soldiers. They were splendid men, well disciplined, fine-hearted, and strong; and they were well armed, considerably better armed than any of the other nations employed. When our force arrived out there, it was not an army, for there was no commissariat, no transport, no hospital corps, and, what was more important still, no reserves. All those had to be made during the war at enormous expense. Mr. Gladstone supposed that he was going to pay for the cost of the war out of the revenue of the year, but as a matter of fact it cost eighty millions.

THE SIEGE OPERATIONS

I do not want to take up too much of your time to-day, so I shall not touch on the battles that were fought. What I want to impress upon you is this, that the general idea of the public in England is, that the Crimean War consisted of four battles, in three of which the Allies defeated the Russians; but that all the rest of the campaign was tedious ill-managed siege work. Lord Wolseley in his "Story of a Soldier's Life" says, "Never was any great siege more stupidly planned; we floundered along upon archaic principles." I think that is very hard upon our army in the Crimea. I was very much surprised to see in a report of what was said by General Sir Robert Biddulph, when another paper on this subject was read at Woolwich, that he made the statement: "It is perfectly true the guns were exactly the same as had been used in the Peninsula." Why, in the Peninsula they used 18 pounders and 24 pounders as siege guns.

MAJOR-GENERAL ARBUTHNOT:—The guns I had in my battery at the Crimea were actually used at Waterloo.

MAJOR-GENERAL OWEN:—The 6 pr. of the Horse Artillery was a toy gun. I am confining my remarks now to what is after all the main feature of the campaign, namely, the siege operations. Well, as far as the siege guns were concerned, instead of 18 pounders and 24 pounders we had 24 pounders and 32 pounders, and some quite new 8-inch shell guns; and we got from the navy some 10-inch guns and 68 pounder guns. We had 10-inch mortars, and we got some 13-inch mortars from Malta.* The French siege guns were 24 pounders and 16 pounders—very small—but they got some heavy guns from their fleet, and they had some 8½-inch howitzers, and 8½ and 10½-inch mortars. Their field gun was a 12 pounder shell gun. The Russian guns and mortars were very heavy pieces, because they had the fleet and arsenal behind them; and the Russian field guns and howitzers considerably exceeded ours in weight of metal. At Inkerman those pieces overpowered our troops and batteries, until the arrival of our position guns, which the lecturer has mentioned.

Then I may call your attention to the fact that Lord Wolseley has said in his "Life," speaking of the officers of the Royal Engineers, "Few knew much of the world, and by their training at Woolwich and Chatham they were small minded. All would have gone better had they never read Jones's 'Sieges in Spain', reverenced as the sappers 'Book of the Law.'" In the first bombardment the batteries constructed were no disgrace to our engineers. The French batteries, which were much

* The British had also some six 8-pr. guns rifled on the Lancaster system. C.H.O.

lighter, were put on flat ground, and they were all placed together. Therefore the fire instead of being converging, as it ought to be, was diverging, and the Russians converged their fire on them. Not only that, Todleben put out a battery near the Quarantine Ravine, which enfiladed the French batteries. The English batteries were very skilfully placed on two separate hills. Colonel Todleben, one of the greatest engineers of the century, said that the French batteries were inferior to the English batteries in their weight of metal, disposition, and sites chosen; that their fire diverged on the Russians, while that of the latter concentrated on them. It was otherwise, said Todleben, with regard to the English batteries: "The advantages offered by the ground were seized, so that while firing directly on one face of a work they could at the same time enfilade and take in reverse an adjacent face." When we come to the first bombardment, what happened? It was commenced about half past six in the morning, and by half past ten the French were completely shut up. Todleben's counter battery blew up the magazine; and they did not open fire for three days afterwards. Then the whole of the fire was diverted to our batteries. Our batteries on that day did some most wonderful work. They reduced the Redan and the Malakoff to ruins. Out of 22 guns on the Redan only two remained, and Todleben gave a most touching account of the condition of these works. There is little doubt that the Redan might have been attacked that night before any repairs had been made, but that was impracticable for various reasons. The French, having failed, would not join with us, and we had not enough troops of our own.

MAJOR-GENERAL RIDEOUT :—The French magazines blew up at 8 o'clock in the morning.

MAJOR-GENERAL OWEN :—I said their fire was shut up at half past 10—that they did not fire a shot after half past ten, and I think I am right.

I should like you to realise what the Siege Train had to do while we were in the Crimea. We only had two reliefs of eight hours during the day, and, as it took an hour to go to, and an hour to come back from, the battery, we only had six hours in which to eat, drink and sleep, and if anybody has tried that sort of life for ten days they will know what hard work is, especially on the food that we had. We simply had salt beef and biscuit, and rum and water. Throughout that winter we suffered tremendous privations. We had to do a lot of heavy work, such as mounting guns, and conveying ammunition, etc. The snow was on the ground for two months. You have all read over and over again of the hardships we had to bear because all the winter clothing went down in the *Prince*.

THE GENIUS OF TODLEBEN

What I should like to point out, although the lecturer says it has nothing to do with his paper, is that we had there a great opponent, who was the greatest genius as an engineer of the last century, namely, Colonel Todleben. In the spring, Todleben developed quite a new system of siege tactics. He made pits, extended them to trenches, and then made works. He made an advance on the besiegers of 400 yards. First of all he constructed the two White Works, which appeared quite unexpectedly on the 23rd February. Then on the 10th of March he seized the Mamelon while the French were thinking about it, and made a formidable work, and he also converted the quarries under the Redan into a

work. Those all had to be retaken afterwards, and it entailed several months of hard work to drive him back into the main works again.

THE EFFECT OF THE BRITISH ARTILLERY FIRE

I will only refer to another subject, and that is, the tremendous effect of our fire upon the Russians. It is the fashion in these days to say that the chief effect of artillery is its moral effect. As a matter of fact, after the fourth bombardment, a Russian officer said to a British officer during a truce, "Our losses are from 1,000 to 1,500 a day. You should see our batteries; the dead lie in heaps and heaps. Troops cannot live under such a fire of hell as you poured upon us." After the fifth bombardment, a Russian officer remarked that the state of the Russians was terrible; the parapets were in huge fragments; the interiors in holes from shells so that no gabions or sand bags could be erected, and guns could not be replaced under such deadly fire. The defenders were in caves under the parapets, and the gunners who were lying dead, and could not be removed under fire. The daily losses were from 800 to 900. It was this deadly fire which enabled the French to take the Malakoff. We found out that, owing to there being such a tremendous fire, the Russians only relieved their troops in the middle of the day, and they did not bring in the relief until those that were in the Malakoff had gone out.

THE ASSAULT ON THE MALAKOFF

The French had only 25 yards to go to reach this work. They poured men into the works; they sent thousands to fill them up, and the work being enclosed, they could not be dislodged; and our battery in the quarries did immense service by preventing the Russians coming to the relief and attempting the re-taking of the Malakoff.

THE CHAIRMAN:—Had we not on our side, so far as the construction of the trenches is concerned, to which you drew attention just now, two of the finest officers of the Royal Engineers who had previously gained their experience in the Peninsula, that is Sir John Burgoyne and Sir Harry Jones?

MAJOR-GENERAL OWEN:—Yes, that is so. We had Sir John Burgoyne, and afterwards Sir Harry Jones relieved him, but the latter was hardly on a level with Todleben. We had also many good engineer officers of lower rank.

THE CHAIRMAN:—I only said that because your previous remarks rather intimated that we suffered from not having engineer officers of sufficient experience there.

MAJOR-GENERAL OWEN:—Oh no: Lord Wolseley said that. We had also some General officers of reputation and experience in warfare, such as Sir de Lacy Evans, Sir G. Cathcart, &c., and among Brigadiers, Sir Colin Campbell. The French had two Generals whom I have very great pleasure in mentioning, because they were active, resolute and capable soldiers, namely, Pélissier and Bosquet. Pélissier quite changed the face of things. General Canrobert had been so much hampered by orders from the Emperor of the French, conveyed through General Niel, who had been sent out as adviser, that he resigned the command of the French army; and Pélissier was appointed to succeed him. The latter paid no

attention to the advice of General Niel, but determined on a regular and systematic plan of advance on the Malakoff from the right (the main French attack had before been on the left), which, with the co-operation of our right attack, succeeded in capturing the Russian outworks, and eventually in taking the Malakoff by assault, causing the fall of the place.

Before sitting down I should like to make a few remarks about the difficulties of the siege. You must remember that during this siege we were thousands of miles from our base, and then we experienced considerable difficulty owing to the divided French and English command. Then there was another very important thing which had its bearing on the campaign, and that was the interference of the French Emperor. Another great difficulty was the hard ground we had to work over; and then we had such few troops, and no transport, except the teams of the horse and field artillery, until the rail road was made. The greatest difficulty of all was, that Sevastopol was not invested. The enemy had an arsenal and dockyard at their disposal, and they could replace every gun we dismounted, and supply themselves with ammunition and stores of all kinds. The Russians had every reason to be proud of such a prolonged and terribly disastrous defence, and the Allies had as much cause for pride, in capturing the place after such a stout resistance.

CAPTAIN E. C. RASON, R.N.:—I should like to say that I spent five months in Russia learning the language, and during that time I saw the whole of the Crimea; I should like to be allowed to refer in the few remarks I have to make to the reception which the lecturer received from the Russians during his visit to the Crimea.

RUSSIAN FRIENDSHIP FOR ENGLAND

There seems to be some idea prevalent that he received it for his own sake, and that the *entente cordiale* or friendship for the Russians has only been recently begun. I can assure you, however, that I have known Russia for 25 years, and have travelled all over it. I have lived in a Russian family; I have gone into Russian society. I was always treated absolutely as a friend and a comrade. I was at Sevastopol just at the time when there was so much trouble about Fashoda, and war appeared likely between England, and France assisted by Russia. I was very doubtful whether I ought to go to Moscow, and I told my friends so. I went back to my hotel, and found that a very distinguished Russian officer had called upon me. I waited for him, and when he came he said "I have come to see you, because I have heard that you are afraid to go to Moscow because there is some difficulty between England and Russia. I assure you there is no difficulty, and that you can go to Moscow or anywhere else you like." When he shook hands with me he put his hand on my shoulder and "I can tell you one thing: we, the Russians, will never go to war with England."

This friendship of Russia which General Arbuthnot has told us about, and of which he received such a striking example in the Crimea, is not a new friendship at all. It is a friendship that has existed for hundreds of years before the Crimean war. I have been from the north to the south and from the east to the west of Russia, and wherever I have gone I have always been treated—although they knew I was an Englishman—as a Russian would treat a brother. I remember saying once to a Russian lady "You are always most hospitable and friendly to English people," and she said "Yes, you carry your passport with you. We are always

very glad to meet an English gentleman, and we are more especially glad to meet him when he shows his sympathy with Russia by knowing our language." I have done all I could for the last 25 years to get a better feeling created in England towards Russia, and I therefore feel I owe my personal gratitude to the lecturer for having brought to the notice of the English people, through the medium of this lecture, the sentiment which exists in Russia in favour of England.

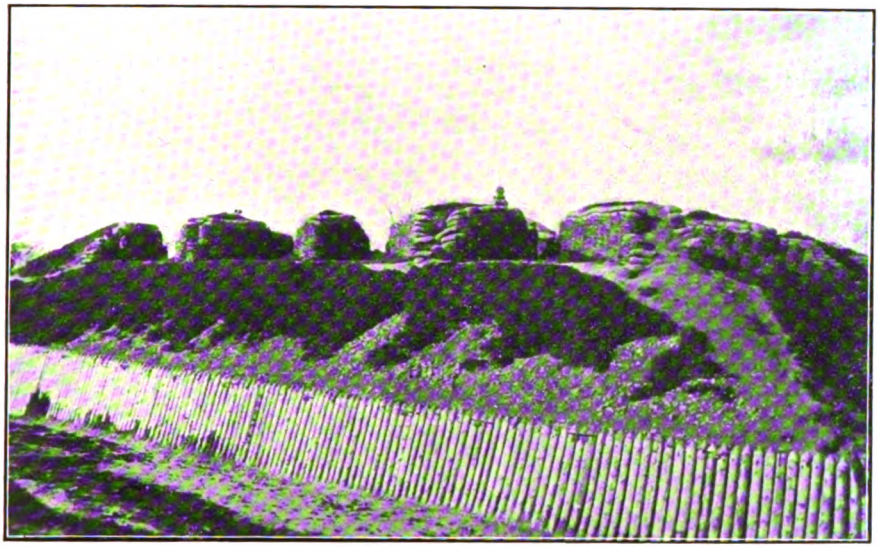
THE CHAIRMAN, LORD W. F. G. SEYMOUR:—After what we have heard I do not think there will be any difficulty in my asking you to pass a cordial vote of thanks to General Arbuthnot for the lecture he has given us to-day, and also to the gentlemen who followed him, and who have explained certain points that I will not say were left out by him, because he left out nothing, but for slightly amplifying the lecture. We have had very great pleasure in listening to those artillery officers who took such a mighty share in the siege of Sevastopol. I heartily agree with General Owen in thinking that the Crimean campaign was not confined to those three battles that have been mentioned. All those who served in the trenches—unfortunately I was not one of them—know well enough that—whether they were artillerymen working batteries or whether they were infantrymen in the trenches—the work there was as severe, as dangerous, and as glorious as in the three battles that had previously been fought.

I was so very glad to hear, both from the lecturer and from Captain Rason, of the good feeling that has since been brought about between the two nations. I was in Russia twelve years ago, and nothing could exceed the kindness with which we were all treated. I will not say anything about myself personally, but anyone going, as we did, to see their army could not but be struck with the interest they took in individual regiments of our service, and also in our particular ships. I found that the present Emperor took a most vivid interest in a reconnaissance that was made by Her Majesty's ship *Driver*, which came right up almost to the gates of Kronstadt. The Emperor said "How could that be done now?" for which I do not think I had a ready answer, considering that the batteries that have been built since that time are ten times as strong as they were in the days of the *Driver* under Captain Cochrane. One of the Grand Dukes said to me "What regiment were you in?" On my naming it he said that was the regiment that lost so many officers at Inkerman, where he, the Grand Duke Nicholas, had obtained his baptism of fire. Then they asked some questions of two fine old veterans who had served in the brigades there, who have been given excellent appointments in the Royal palaces. There is no Chelsea Hospital at St. Petersburg, but in the Royal palaces, both at St. Petersburg and Moscow, the Emperor told me there are certain places which are always filled, if possible, by men who served during the defence of Sevastopol, showing that they look after their old soldiers, just in the same way that these men here from Chelsea Hospital this afternoon have always been looked after by the Sovereigns ever since those days in England. It now gives me the greatest possible pleasure to ask you to record a vote of thanks to General Arbuthnot for the very valuable and interesting lecture he has given this afternoon, which has raised such an interesting discussion. I am afraid, as General Owen hinted, that some of us may be too old to go out to the Crimea again, but I always regret not having re-visited it. I had a chance to go with my eldest brother when he went out there; he

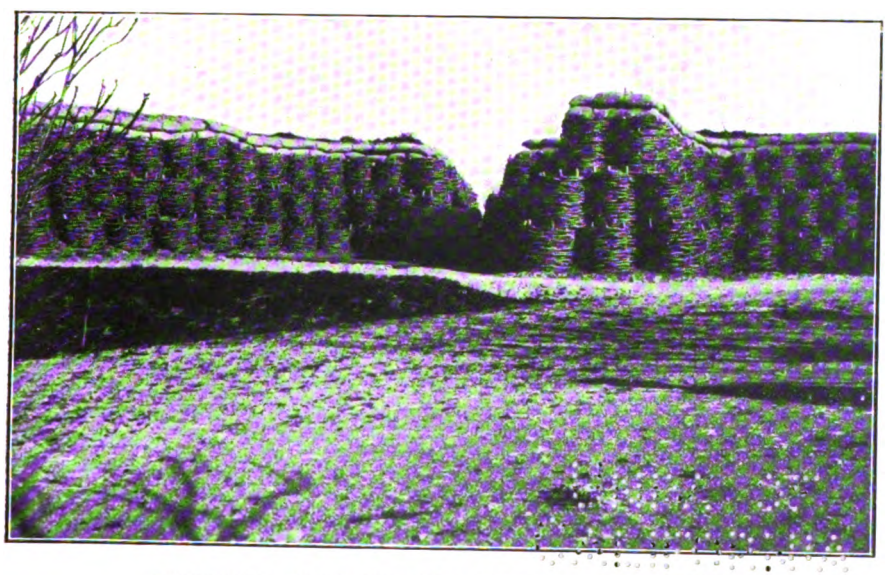
told me that he has experienced the same warm hospitable reception from the Russians that General Arbuthnot received on the present occasion.

MAJOR-GENERAL H. T. ARBUTHNOT, in reply, said: I beg to thank you very heartily for the cordial vote of thanks you have just passed. I purposely left out of my lecture all reference to the war itself, because I knew it would make the lecture a great deal too long. I am sorry I did not have time to visit the monastery of St. George, nor the French lines down as far as Kamiesch, nor could I go into the interior to Simpheropol and Baktcheray. I hope to visit them on a future occasion, because I have been invited to go to the Diamond Jubilee in 1914, when I hope Lord William will come with me. He says he is too old; but he really is not, and I hope he will come.





FLAG STAFF BATTERY, SEVASTOPOL.
Restored 1904.



INTERIOR FLAG STAFF BATTERY, SEVASTOPOL.
Restored 1904.



THE TACTICAL EMPLOYMENT OF TORPEDO BOATS.

By L. VANNUTELLI, Capitano di corvetta.

Translated from the *Rivista Maritima* by Commander R. H. KEATE, R.N., and published by permission.

DEFINITIONS OF ABBREVIATED TERMS USED.

Lines between points are sometimes called by the double name, such as Ship-Boat line, Observer-Target line, etc.

Angles are represented by the double name of the vessels, and indicate the angle between the course of the first vessel and the bearing of the second; thus, Ship-Boat angle=angle between Ship-course and Ship-Boat line, whereas Boat-Ship angle =angle between Boat-course and Boat-Ship line. Similarly the terms Torpedo-Ship angle, Torpedo-Buoy angle are used. Bow, Beam and Stern angles=angles from right ahead abeam and astern respectively. Profile-angle is the angle between Target course and Target-Observer line. Impact angle=angle between the Ship and Torpedo courses at the moment of striking.

The instant of time is shown by a present participle, thus: Torpedoing profile-angle =angle between Target course and Target-Boat line at the moment of firing the torpedo. Courses angle=angle between the courses of two vessels.

TACTICS OF TORPEDO CRAFT

The History of Naval War offers no typical examples of the action of groups of Torpedo craft against ships under way, from which principles can be deduced; it is probably due to this fact that there is so much difference of opinion about this important matter. Such questions should without doubt be studied experimentally rather than by purely theoretical analysis: nevertheless, as there is no defence made by the ships attacked in peace exercises, they have but a relative value, and some of them carried out on special hypotheses are perhaps more likely to evolve wrong principles than right ones.

The boats, secure from all imminent danger in peace time and undisturbed in their manœuvres, can follow a previously laid down course of action with exactitude, and the defending ships scarcely trouble to manœuvre to ward off the attack. But we should always suppose that the ships are not passive, but will act in the most efficient manner for their own safety; though

they will sometimes be caught at a disadvantage of which the boats must avail themselves to the uttermost.

Consequently, tactics should not be rigid or consist of too restrictive formations, but should be susceptible of adaptation to the special circumstances of the case.

Chance conditions of the moment may decide the initial moves; for instance, fog, moon, sea, hydrographical conditions, conditions of visibility, position of boats, illuminated zones, sighting of several objects at once in different directions; all these may influence the course of action adopted and the results achieved.

It is a fatal mistake to miss a good opportunity of torpedoing an enemy's ship simply to preserve a geometrical flotilla formation.

A group of torpedo boats should manœuvre with a maximum of co-operation and confidence and on general principles rather than under fixed rules, so as to take advantage of weak points of searchlight systems and faulty defensive manœuvres, and the other momentary circumstances.

Certain evolutions performed in peace time are simply conventional, and of very doubtful tactical utility. The want of synthetic application to exercises of the general principles of tactics has often resulted in the triumph of tactical systems at variance with these principles.

TORPEDO ATTACKS

It is now universally admitted that torpedo boats cannot attack by day, but must leave the hours of daylight entirely to the submarines. Increase in size of torpedo boats has augmented their speed, seaworthiness, and armament; there are fewer boats, but each one has more tubes; the number of torpedoes, then, capable of being fired from a point, being greater than before, and the value of each boat being greater, authorises more dispersion of the units of attack. (I refer to sea-going boats with 3 tubes, 2 forward and 1 aft).

I propose a greater dispersion of the boats of a group with a view to the concentration of their effect. It does not appear impossible that the group shall be so dispersed that the probabilities of being hit and put out of action, and also of being sighted simultaneously are a minimum, but that the torpedo firing shall be simultaneous or nearly so, thus obtaining the maximum effect required.

Torpedo boats are fragile weapons, and must get close to their prey without any preliminary offensive action. Thus, surprise is the most important point; hence, the attack should be made by night, with several units at once, but in extended order and at high speed.

Only the rapidity and impetuosity of the attack and the protection of darkness can give a good chance of closing on the

ships before discovery. Dispersion in the same sector of the battleship's defence increases the number of targets fired at and the chances of immunity for the boats, even to the extent of some boat closing sufficiently without being seen. When a torpedo boat is sighted from a ship there is a tendency to concentrate attention on her, so that the other boats have more chance to avoid the lit-up zone. But the number of units that can attack at once is limited by the necessary dispersion and by the restricted area available for torpedoing. One must not hesitate to sacrifice one's own boat to ensure the success of the group. Consequently the first boats will often be sacrificed, and their function will have been to make the enemy reveal herself to the other boats by means of her own projectors and gun-flashes, or to enable these to approach unseen while the first boats attract the gun fire.

The tactics of torpedo boat attacks are not only those of surprise, but of initiation, so that formations of regular and concise character are required for conducting the groups to the points of dispersion.

To recapitulate, the fundamental principles of the attack are:—

1. Simultaneous attacks by a number of boats, this number allowing of the necessary dispersion.
2. Attacks so conducted as to bring the individual boats to the firing points without interfering with each other's movements.
3. Attacks so conducted as to render convenient the relative positions of the boats if the surprise fails or if the ship manœuvres to parry the attack.
4. Attacks conducted on general principles but not under rigid rules.

THE PROBLEM OF FORMATIONS

Formations, as already stated, are only needed to bring the groups to the starting place of attack; they should therefore correspond to the requirements of scouting and approach, and at the same time permit of applying the principles of attack above enumerated.

A formation should possess:—

1. Elasticity, to allow the boats liberty of movement and some facility for altering course.
2. Simplicity, so as not to require too much attention to preserve the order.
3. Safety, so as to reduce the chances of collision in case of changes of speed or casualties to engines.

In studying the problem of formations the following considerations present themselves:—

1. Too close formations make large targets and are more easily discovered, especially with regard to the large clouds of smoke they emit.
2. In close order or on the same bearing from the enemy directly one boat is discovered, the remainder are also detected.
3. Formations of too great length immobilise the boats in the rear, prevent them from seeing what is happening ahead and hinder the transmission of orders and information; the intervals between the torpedoes of the successive boats are too great.
4. In single line ahead, intermediate boats are liable to disturb the manœuvres of the next ahead or astern, causing extension of the line; at high speed a dangerous proximity between units is frequent.
5. Formations should enable boats to imitate the manœuvres of their Group Leader without signal, and to approach with facility for the purpose of giving information and orders.
6. Formations should allow all units to sight the object of attack at once, and then to place themselves with facility as required to avoid covering each other's line of attack, so that each one can keep the enemy in sight during the approach, follow his movements and estimate his speed and course.
7. Formations should be such as to prevent the smoke of the boats enveloping their companions, a condition which generally arises in single line ahead.
8. Formations are advantageous in which boats can see each other without lights, *i.e.*, when they can see the whole length and not only the beam of the others.
9. Formations should lend themselves to easy grouping in case of meeting destroyers, and allow of suitable manœuvring if the attack is discovered and the ship alters course in time to parry the attack.

Though I consider that the formation can often be altered during the approach if there is a supporting cruiser, still it will often happen that contact with the enemy will be made too late to alter the formation; the latter should be suited for scouting purposes as well as attack, so that in the worst case at least a few units can attack in their present order. The problem of formations is intimately bound up with the number of boats forming the groups and flotillas, a number which is limited by the requirements above enumerated, especially by those of flexibility, facility of manœuvre, easy transmission of orders, necessity of dividing into two groups to enable the enemy to

be surrounded in certain cases, and the probabilities of destruction by gun fire; it should not be greater than will allow of a suitably extended order and of all units of a group arriving nearly simultaneously at the firing position.

It is true that by increasing the number of boats the chances also increase of at least one boat getting close enough to fire, but if there are too many boats their conduct becomes difficult, and the result is confusion and premature discovery, increasing the chances of the guns in greater proportion than those of the torpedoes.

PROBABILITY OF DESTRUCTION BY GUN FIRE

Let us now consider the probability of a boat being destroyed by the ship's guns with a view to deciding the best number of boats in a group.

It must be borne in mind that a ship will not always be able to open fire at 1,500 metres immediately, and that successful torpedoes are sometimes fired at above 500 metres, and at angles of impact above 90°.

We will take the period of useful fire to be a minute.

Practical rate of firing at night of guns capable of destroying a torpedo-boat with one hit, six shots a minute.

Probability of each shot hitting 1/10, in other words, probable number of hits = 10 per cent. of shots fired.

The number of shots that a ship can fire against each boat being limited, and a single hit being enough to put the boat out of action, what is the chance that any particular boat will be hit?

In this special case the number of hits is a minimum, *i.e.*, one, consequently we cannot consider the chance of the boat being hit as number of shots multiplied by chance of each shot hitting; for this product is only true for an infinite number of shots. We will therefore subject the problem to a more rigorous examination, *i.e.*, to the theory of repeated events.

If the chance of hitting is 1/10, the chance of missing is 9/10 for each shot.

Therefore $(9/10)^n$ is chance of missing in n shots, *i.e.*, the non-hitting event recurs n times.

Thus at first shot the chance of missing is 9/10
at second ,, ,, ,, $9/10 \times 9/10$
at third ,, ,, ,, $9/10 \times 9/10 \times 9/10$
In n shots ,, ,, hitting $(1-(9/10)^n)$

If P is chance of hitting in n shots, to make practically certain of hitting P must be put nearly = 1 or say 9/10.

Thus $P = 9/10 = 1-(9/10)$ or $n \log 9/10 = \log 1/10$
$n = \log 1/10 \log 9/10 \therefore n = 21.$

So to have odds of 9 to 1 on hitting requires 21 shots. But in the one minute of exposure to fire, each gun fires 6 shots.

Therefore at least 4 guns must oppose each boat if the boats are on different bearings.

In present battleships each quadrant can be swept by 10 guns at most, so the number of attacking boats in the quadrant should be at least 3 to give a chance of some boat penetrating through the fire of the 3 guns opposed to her.

Supposing two guns can be aimed at each boat in the same sector (of 60° on an average), then the chance of hitting each boat is $1-(1-0{\cdot}1)^{14}=1-0{\cdot}2=0{\cdot}8$, or it is 4 to 1 against any boat getting within 600 metres.

The want of practical results obtained from exhaustive experiments has induced me to examine the above theory of probabilities to get a slight idea of the effects of gun-fire against torpedo boats in a night action, and remove some of the vagueness attaching to the question.

Let us take two cases:—

1st. When the target is not illuminated by searchlights.

2nd. When the target is illuminated and the firing can be adjusted, however difficult this may be in practice.

In both cases:—

Let opening range = 1,500 metres.

Firing rate = 6 shots a minute or 1 in 10 seconds.

Boat-Ship closing rate = 15 m a second = 30 knots.

Mean Boat-Ship angle = 30°

Length of boat vitals = 20 m = Target length = 20 s in 30° = 10 m.

Target height = 2 m.

Vertical target error (due to sight error) = 0·9 m per 100 m sight.

Vertical target error (due to aiming error) = 2 m at 600 m and then increasing 1 m (2/10° elevation) per 150 m range increase.

Lateral target error (due to error in aiming) = 10 m at 600 m and then increasing 5 m per 150 m range increase.

Distance.	Vertical Target (Fixed Sight) error.	Mean Vertical Target (Aiming) error.	Mean Lateral (Aiming) error.
1500	3 m. short	8 m.	40 m.
1350	2·1 ,,	7	35
1200	1·2 ,,	6	30
1050	0·3 ,,	5	25
900	0·6 over	4	20
750	1·5 ,,	3	15
600	2·4 ,,	2	10

We must remember that the target attracting the gun-layer's eye is always above and to one side of the vitals of the boat;

only 10 seconds are allowed to fire each shot; the target is very difficult to see and moving very rapidly; the variations in illumination have a deterrent effect on the shooting; often the gun-ports limit the view. Let us determine what is the probable number of hits in the two cases of dark and light target between 1,500 and 600 metres, the latter distance giving a mean torpedo-range of 500 metres.

Let P x/d=probability of hitting a target of size 2x with a mean error d; *i.e.*, the proportion of the number of shots with an error less than x to the total number of shots. Then, using Professor Alger's "Tables and Formulæ in Exterior Ballistics," which give the values of P for the various values of x/d.

For the dark target when a fixed 1,000 metre sight is used for the entire 7 salvos of n shots.

We have for the first salvo:—

$$P = 1/2 \left(P\frac{3 \times 1}{8} - P\frac{3-1}{8}\right) P_{5/40}.$$

Or

Probability of hitting target=1/2 (Probability when x=3+1 and d=8 minus Probability when x=3−1 and d=8) X (Probability when x=5 and d=40).

$$P = \frac{0{\cdot}310 - 0.157}{2} \times 0{\cdot}076 = \frac{0{\cdot}153 \times 0{\cdot}076}{2} = 0{\cdot}005814$$

Therefore:—

Probable number of hits in the 1st salvo of n shots is

$$N = n \text{ X } 0{\cdot}005814.$$

For the second salvo at 1,350 m

$$P = \tfrac{1}{2} \left\{ P\frac{2{\cdot}1 + 1}{7} - P\frac{2{\cdot}1 - 1}{7} \right\} P\frac{5}{35} = \frac{0{\cdot}274 - 0{\cdot}094}{2} \times 0{\cdot}088$$

$$= \frac{0{\cdot}18 \times 0{\cdot}088}{2} = 0{\cdot}00792 \quad N = n \text{ X } 0{\cdot}00792.$$

For the third salvo at 1,200 m

$$P = \frac{1}{2} \left\{ P\frac{1{\cdot}2\ 1}{6} - P\frac{1{\cdot}2-1}{6} \right\} P\frac{5}{30} = \frac{0{\cdot}225 - 0{\cdot}019}{2} \times 0{\cdot}1$$

$$= \frac{0{\cdot}206 \times 0{\cdot}1}{2} = 0{\cdot}0103 \quad \therefore N = n \text{ X } 0{\cdot}0103.$$

For the fourth salvo at 1,050 m

$$P = \frac{1}{2}\left\{ P\frac{0{\cdot}3+1}{5} - P\frac{0{\cdot}3-1}{5} \right\} P\frac{5}{25} = \frac{0{\cdot}163+0{\cdot}088}{2} \times 0{\cdot}12$$

$$= \frac{0{\cdot}251 \times 0{\cdot}127}{2} = 0{\cdot}015938. \quad \therefore N = n \times 0{\cdot}015938.$$

For the fifth salvo at 900 m

$$P = \frac{1}{2}\left\{ P\frac{0{\cdot}6+1}{4} - P\frac{0{\cdot}6-1}{4} \right\} P\frac{5}{20} = \frac{0{\cdot}25+0{\cdot}064}{2} \times 0{\cdot}0157$$

$$= \frac{0{\cdot}314 \times 0{\cdot}157}{2} = 0{\cdot}024649. \quad \therefore N = n \times 0{\cdot}024649.$$

For the sixth salvo at 750 m

$$P = \frac{1}{2}\left\{ P\frac{1{\cdot}5+1}{3} - P\frac{1{\cdot}5-1}{3} \right\} P\frac{5}{15} = \frac{0{\cdot}492-0{\cdot}1}{2} \times 0{\cdot}207$$

$$= \frac{0{\cdot}392 \times 0{\cdot}207}{2} = 0{\cdot}04572. \quad \therefore \quad = n \times 0{\cdot}04572.$$

For the seventh and last salvo at 600 m

$$P = \frac{1}{2}\left\{ P\frac{2{\cdot}4+1}{2} - P\frac{2{\cdot}4-1}{2} \right\} P\frac{5}{10} = \frac{0{\cdot}0825-0{\cdot}424}{2} \times 0{\cdot}31$$

$$= \frac{0{\cdot}401 \times 0{\cdot}31}{2} \Big\} = 0{\cdot}0615 \quad \therefore N = n \times 0{\cdot}06155.$$

Therefore the number of hits during the whole seven salvos is $N = n \times (0{\cdot}005814 + 0{\cdot}00792 + 0{\cdot}0103 + 0{\cdot}015938 + 0{\cdot}024649 + 0{\cdot}04572 + 0{\cdot}06155) = n \times 0{\cdot}171891 = 17$ per cent. With an illuminated target let the first salvo be fired at 1,500 metres with a fixed sight of 1,000 m as with the first salvo of the dark target series.

So for the light target we have:—

For the first salvo

$$N = n \times 0{\cdot}005814$$

Similarly for the second salvo

$$N = n \times 0{\cdot}00792$$

For the third salvo at 1,200 m we will suppose the sight

to be set to the distance within 50 m, so that

$$P = \frac{1}{2}\left\{ P\frac{0\cdot3+1}{6} - P\frac{0\cdot3-1}{6} \right\} P\frac{5}{30} = \frac{0\cdot133+0\cdot088}{2} \times 0\,1$$

$$= \frac{0\cdot221 \times 0\cdot1}{2} = 0\cdot011. \quad \therefore N = n \text{ X } 0\cdot011.$$

For the fourth salvo at 1,050 m suppose the error on the sight is reduced to 25 m, and

$$P = \frac{1}{2}\left\{ P\frac{0\cdot15+1}{5} - P\frac{0\cdot15-1}{5} \right\} P\frac{5}{25} = \frac{0\cdot145+0\cdot106}{2} \times 0\cdot127$$

$$= \frac{0\cdot251 \times 0\cdot127}{2} = 0\cdot015938. \quad \therefore N = n \text{ X } 0\cdot015938.$$

For the fifth salvo at 900 m let the sight be correctly adjusted so that

$$P = P\left(\frac{1}{4}\right) P\left(\frac{5}{20}\right) = 0\cdot157 \times 0\cdot157 = 0\cdot024649.$$

$$N = n \text{ X } 0\cdot024649$$

For the sixth salvo at 750 m

$$P = P\left(\frac{1}{3}\right) P\left(\frac{5}{15}\right) = 0\,207 \times 0\cdot207 = 0\cdot042849.$$

$$N = n \text{ X } 0\cdot042849$$

For the seventh and last salvo at 600 m

$$P = P\left(\frac{1}{2}\right) P\left(\frac{5}{10}\right) = 0\cdot31 \times 0\cdot31 = 0\cdot0961.$$

$$N = n \text{ X } 0\cdot0961$$

Therefore in the second illuminated case

$N = n$ X (0·005814 + 0·00792 + 0·011 + 0·015938 + 0·024649 0·042849 + 0·0961) = n X 0·204270 = 20 per cent. of hits.

In practice, when the target is not illuminated, unless it is an exceptionally clear night, the errors in shooting are much greater than those shown above, so that the 17 per cent. of hits would be greatly reduced. Similarly, when the target is lit up, taking into consideration the difficulties in adjustment of range and in keeping the sights on, and that it is not always possible to show up all the boats if they are well dispersed, 20 per cent. is a fair estimate even if the errors for a clearly seen target are less than those given.

The above analysis of probabilities again bears out the

principle of extended formations, which also prevent one projector lighting up more than one boat at a time. Ships generally have only 4 fights each side, so that only 4 boats can be lit up on each side simultaneously.

If the number of boats is too great, the formation must be made deeper, otherwise too many boats are crowded together when they arrive at the firing positions; the angular space including these positions is, of course, limited by the proportion between speed of boat and speed of ship. The moral effect of boats sinking near to others taking part in the attack must not be lost sight of. It is generally thought that a division should number 4 to 6, a sub-division or tactical unit 2 to 3. The attack is made by 2 sub-divisions at a time from different sides or sectors, this method being especially useful when the ship manœuvres to parry the attack. (The Japanese used groups of 2 boats; Captain Labrès recommends 3.)

Some nations, such as France, Germany and the United States, attach a scout to the flotilla which conducts the division, and takes part in the attack herself with her torpedoes or by firing at the defending destroyers.

The best manœuvres for attack depend on circumstances and their opportune combination, *i.e.*, to avoid discovery and consequent destruction by gun-fire, and at the same time to obtain the best chance of hitting the ship with the torpedoes.

As regards the ship's guns:—

1. Ships cannot see torpedo-boats more than 1 mile on an ordinary dark night.

2. Experiment has shown that firing with Q.F. guns against a target 6 m. by 2 the hits are only 3 per cent. Lieutenant Dewar says that only 6 hits were made out of 128 shots fired by 12 pounders at 800 yards. It would be very interesting to carry out a long series of experiments of night firing against a target towed at high speed and appearing at unexpected moments.

3. The time a boat is exposed to fire before firing herself is extremely short, only a minute.

In the following table:—

Ship opens fire at 1,500 metres.
Ship speed 14 knots. Torpedo-boat speed 20 knots.
Torpedo speed 34 knots.
Torpedo range 500 metres.
Impact angle of torpedo 90.

TABLE I.

The definitions on first page explain all the terms used.

Parallel Attack, *i.e.*, on Ship's reversed course.			Perpendicular Attack, *i.e.*, Course at right angles to Ship's.	
Time under Fire.	Distance Ship to Boat.	Ship-Boat Angle.	Distance Ship to Boat.	Ship-Boat Angle.
0 secs.	1500	19 30	1500	60
10	1342	22	1387	60 10
20	1185	25	1265	60 30
30	1032	29	1142	60 40
40	890	35	1025	61 30
50	752	41 30	900	62 30
60	635	51 30	780	63 30
70	547	66	660	65
71.5	540 (fire)	68		
80			540 (fire)	68

No account is taken of the turn necessary when approaching at right angles if there is no right ahead tube.

From Table I we see that the boat remains during the whole 80 seconds of the perpendicular attack in a sector of maximum fire, whereas on opposite courses she is exposed to a sector of diminished fire for the first 30 seconds and encounters the full fire of the ship for only 41 seconds.

The depth of target presented by the boat = length × cosine boat-profile angle. It is greater during the first 30 seconds in the parallel attack, and then diminishes, but in the perpendicular attack the target length increases continually during the approach. In the first case this boat-profile angle is the same as the ship-boat angle; in the second case it is the complement of that angle; in both cases it is the boat-ship angle.

4. The chances of hitting increase with the depth and narrowness of the attacking formation, for when the boats are in close order the target is longer and more easily seen, and *vice-versa* the more the boats are separated on the line at right angles to the line of fire the smaller and more difficult to pick up are the targets.

5. These chances of hitting are a maximum when the boats are massed in lines ahead close together, steering for the ship right ahead of them.

6. If the boats alter course much the hitting chances again increase, for the closing rate then decreases rapidly. In fact even boats with the best turning

powers take 35 seconds to turn 90 degrees at full speed, and in this time their change of position is very small.

I have not mentioned other well known conditions affecting the hitting probabilities, such as the time exposed to fire, sectors of maximum danger, distance and variation rate of bearing.

PHASES OF THE ATTACK

In a typical attack by torpedo-boats there are three successive phases:—

1st. Getting into contact or reconnaissance.
2nd. Manœuvre to prepare for attack.
3rd. Approach, and discharge of torpedoes.

In the Mediterranean, especially when under the lee of the land and considering the high position of the bridge in the most modern boats, the latter should often make out the ships, especially when in close order, before they themselves are observed.

Ships cannot hope to sight torpedo-boats above a mile distant, even if warned of their approach by the defending destroyers, whereas torpedo-boats can sight battleships between 2,000 and 3,000 metres.

Those boats that have succeeded in passing the screen of destroyers, having seen the vague mass of the enemy's ships or their searchlights, will approach nearer to recognise them and to make out their course, then retire if necessary and take their stations for attack.

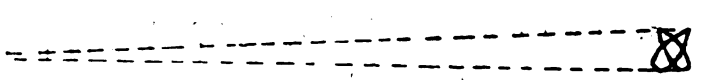
CONDITIONS OF ATTACK

Let us consider the conditions of attack:—

1st. Only one torpedo can be fired from each tube in one attack, the tubes being nearly certain of destruction, so that great care must be taken to get into a good position and to fire at the right moment.

2nd. It is a mistake to fire torpedoes at great distances against moving ships because of the difficulties of estimating the enemy's speed and course, the speed of a torpedo not being yet sufficiently great to counteract aiming errors.

3rd. The speed of ship can generally be better estimated than the course. Thus, the profile of two ships on courses making supplementary ship-observer angles is at long distances the same.



Expert observers can estimate the speed of a ship within 3 knots and course to within 20°.

4th. The chance of a torpedo hit increases inversely as the distance, but the torpedo should not be fired at less than 100 metres, so as to give the torpedo time to steady on its course. The poor results which the Japanese obtained in the Russo-Japanese War is supposed to have been due to their desire to fire their torpedoes at extreme range, often firing beyond it in consequence.

5th. The chances of a hit increase inversely as the speed of the ship, so one must get closer if the ship speed is greater.

6th. If the ratio target speed /torpedo speed=1/2, the chance of hitting varies with the ship torpedo courses-angle or angle of impact; the hitting probabiliy is greatest at 90°, is very good between the bow angles 90° and 30°, but decreases rapidly for bow angles above 90°, as is evident on examining Table 2.

7th. There is a very good hitting chance up to 700 m. with a torpedo speed of 34 knots, or 41 seconds run, but this chance decreases quickly for greater distances.

8th. We must also remember that for a torpedo fired above 700 m. off, the ship has time to manœuvre and avoid it, or make the angle of impact so small or so large as to prevent the pistol acting. Present time battleships turn 90° in 80 seconds.

TABLE 2.

Numbers proportional to chance of hitting with torpedo.

Angle of Impact.	Ratio of Target speed to Torpedo speed.		
	½	⅓	¼
0	3·88	4·61	5·40
10	3·58	4·27	5·00
20	6·42	7·83	9·29
30	8·52	10·75	13·00
40	9·89	13·18	16·22
50	10·68	15·10	19·14
60	11·09	16·87	22·03
70	11·34	18·65	25·16
80	12·91	21·05	29·42
90	12·98	25·14	36·26
100	7·90	16·48	24·58
110	5·17	11·51	17·69
120	3·55	8·37	13·14
130	2·50	6·14	9·87
140	1·78	4·52	7·38
150	1·24	3·22	5·34
160	0·81	2·12	3·56
170	0·41	1·09	1·84
180	0·44	1·16	1·96

This table is calculated by Professor Alger, for a target surface varying with the angle of impact.

TABLE 3.

Maximum lateral errors of torpedo at a buoy target.
Ratio ship speed/torpedo speed = 1/2.
Error in estimated ship speed = 1/10 of the speed.
" " " course one point.

Bow angle from Ship at instant of firing Torpedo.	Distance in Metres.		
	500	750	1000
0	33	50	67
10	36	54	72
20	39	58	77
30	41	62	83
40	43	65	86
50	45	67	89
60	45	67	90
70	44	66	87
80	38	57	76
90	33	50	67
100	49	73	98
110	65	97	129
120	80	120	159
130	92	138	184
140	102	153	204
150	108	162	216
160	109	164	219
170	107	161	213
180	100	150	200

The two errors are added together and from the maximum error in estimates thus arrived at Professor Alger has calculated the above distances of the torpedo from the buoy at the point of greatest proximity, viz., at the moment the torpedo-buoy angle is a right angle.

9th. An angle of impact of 30° is enough to insure the action of the torpedo; a somewhat exaggerated idea of the necessity of a large impact angle is in vogue.

10th. Torpedoes fired at greater distances than 600 metres can also succeed if the impact angle is less than 90°, as a component of the ship-speed is added to the torpedo-speed, decreasing the range; but if the impact angle is greater than 90° the range is increased and a miss results.

11th. Whereas for a boat firing from well before the beam of the ship the torpedo range is less than the distance at moment of firing, if the ship-boat angle is greater than the after impact-angle, the torpedo range is greater than the firing distance.

12th. Aiming while the boat is turning is less difficult than one thinks, as one is prepared for it and the boat turns at a uniform rate; on the other hand, on a straight course the boat often makes unexpected yaws which disturb the aim.

13th. Estimating the speed and distance of the target when approaching at right angles is much easier than from the parallel opposite course to the ship.

14th. The torpedoes should be fired from such positions as exclude the possibility of hitting a friendly boat.

15th. If the torpedoes from several boats are fired simultaneously, or nearly so, the chance of hitting is increased, the errors cancelling each other and giving the same advantages as salvos of guns.

If p is chance of hitting of each torpedo, then $P = 1 - (1-p)^n$ = chance of hit with at least one torpedo if n torpedoes are fired; p being always nearer to zero than to unity, evidently P will be considerably greater than p.

16th. The theory of probability will give us an approximate idea of the relative value of torpedoes fired in different circumstances.

Let the maximum error of estimated ship-speed $= \frac{\Delta v}{v} = \frac{1}{3}$

" " " " ship-course $= \Delta R = \frac{1}{2}$

the unit being the quarter radian or about 30°.

Let ship-speed/torpedo speed = 1/2.

Let distance ship to boat at instant of firing = 600 m.

Taking the favourable firing position on the ship's bow bearing of 40°, which gives an impact angle of about 60°.

From Table 4 we get the lateral errors due to errors in estimating ship's speed and course, thus:—

$D' = 600 \times 1/3 \times 0{\cdot}2558 = 51{\cdot}16$ or about 50 m.

$D'' = 600 \times 1/2 \times 0{\cdot}3042 = 91{\cdot}26$ or about 90 m.

Total lateral error $= 50^2 + 90^2 = 102$ or about 100 m.

Similarly, taking the symmetrical impact-angle 120°, which gives a firing position on the ship's bow bearing 90°, we find by the table that the total lateral error is 130 m.

For both these firing bearings the target exposed is 100 s in 60 (taking ship length 100 m.) $= 100 \times 0{\cdot}866 = 86{\cdot}6$ or about 80 m.

With a total lateral error of 100 to 130 m., the hitting chances P and P′ for a target 80 m. long (*i.e.*, of having an error less than 40 m.), using Alger's Tables, are:—

P for × 40/ d 100 = 0.25 = 25 per cent.

P′ × 40/ d 130 = 0.18 = 18 per cent.

But I have already said that if, for example, a ship can concentrate the fire of two guns on each boat, every boat sighted at 1,500 m. has a 0·20 chance of getting to the firing point intact. Therefore, the combined probability of any particular boat arriving and hitting is:—

$0{\cdot}20 \times 0{\cdot}25 = {\cdot}05 = 5$ per cent. from the 40° bearing.

$0{\cdot}20 \times 0{\cdot}18 = {\cdot}036 = 3{\cdot}5$ per cent. from a 90° bearing.

If three boats on a line of bearing all succeed in firing their torpedoes nearly simultaneously from favourable positions as above explained (neglecting slightly different angles of impact), the chance of one torpedo hit is:—

$1-(1-0{\cdot}25)^3=1-0{\cdot}42185=0{\cdot}578125$ or 57 per cent. in the foremost sector.

$1-(-0{\cdot}18)^3=1-0{\cdot}6=0{\cdot}40$ per cent. in the after sector.

Thus we see the great advantages of simultaneous attack. But each boat has a 0·2 chance of getting to firing point intact. Therefore the chance of one boat getting to firing point is:—

$1-(1-0.2)^3=1-0.5=0.5=50$ per cent.

Finally, the total probability that the lucky boat arriving at the firing point also hits the ship is:—

$0{\cdot}5\times0{\cdot}25=0{\cdot}125=12$ per cent. in the foremost sector.

$0{\cdot}5\times0{\cdot}18=0{\cdot}090=9$ per cent. in the after sector.

Thus the chance of the ship escaping from an attack by 3 boats is 22 to 3 on the ship, in one case, and 10 to 1 in the other.

TABLE 4.

Ship-boat angle (on firing Torpedo).	Torpedo-Ship angle (on firing Torpedo).	$\frac{D'}{\Delta\, v/v}.S$	$\frac{D''}{\Delta\, R.S}$
0	0	0·0	·3333
10	4·59	·0586	·3321
20	9·51	·1193	·3278
30	14·29	·1843	·3193
40	18·45	·2558	·3042
50	22·31	·3329	·2799
60	25·40	·4174	·2410
70	28·02	·5053	·1839
80	29·30	·5649	·0996
90	30·00	·6667	·0
100	29·30	·7221	·1273
110	28·02	·7482	·2728
120	25·40	·7379	·4160
130	22·31	·6881	·5776
140	18·45	·6031	·7175
150	14·29	·4828	·8362
160	9·51	·3370	·9258
170	4·59	·1700	·9820
180	·0	·0	1·0000

Ship-speed/torpedo-speed = 1/2.

D' = lateral error due to error in estimated ship-speed.

D'' = ,, ,, ,, ship-course.

S = distance ship to boat on firing torpedo.

$\Delta\, v/v$ = error in estimated ship-speed/ship-speed.

$\Delta\, R$ = ,, ,, ship-course in 1/4 radians. (about 30°)

This Table was calculated by Professor Alger.

Supposing the chances of one boat of the attackers arriving at the firing point unseen are 60 per cent., or 3 to 2 on, what is the minimum number of groups of three necessary to get another

40 per cent. or 2 to 3 chance that the *discovered* boats hit the ship? so that the chances of the undiscovered boat+the chances of the discovered boats shall be very good. The chance of one discovered group making one hit is 12 per cent. Therefore:—

We require the chance of success of n groups to be 0·4
or ,, failure ,, ,, 1—0·4
But the ,, ,, one group is 1—0.12
$\therefore 1-0{\cdot}4=(1-0{\cdot}12)^N$

$$n=\frac{\log 1-0{\cdot}4}{\log 1-0.12}=\frac{\log 0{\cdot}6}{\log 0{\cdot}88}=\frac{-1{\cdot}7782}{-1{\cdot}9445}=\frac{0{\cdot}2218}{0{\cdot}0555}=4$$

We therefore require 4 groups or sub-divisions of 3 each. The question now arises whether in making an attack of 2 sub-divisions on each side of the ship, it would be better to let 1 sub-division on each side attack simultaneously from abaft the other, as in Fig. 7, or that each sub-division should attack on the ship's reversed course in succession as in Fig 6.

In the first case the foremost sub-divisions chance is 12 per-cent., and the after one's chance is 9 per cent.; therefore the division chance is 21 per cent.

In the parallel attack in succession, the ship might increase the number of guns against each boat on perceiving that the attack was only from this sector, *i.e.*, after 20 seconds or at the 4th salvo some of the after guns would be pointing out of their sector in aid. Suppose at the 4th salvo 3 guns instead of 2 were in action against each boat, 4 extra shots would be fired. Each boat's chance of being hit is:—

$1-(1-0{\cdot}1)^{10}=1-0{\cdot}9^{10}=1-0{\cdot}149=0{\cdot}851.$

The chance of one boat getting to firing point is
$1-(1-0{\cdot}149)^3=1-0{\cdot}616=0{\cdot}384$

The chance of first sub-division hit with torpedo is
$0{\cdot}384\times0{\cdot}25=0{\cdot}096.$

Therefore chance of first division success is
$0{\cdot}096\times1=0{\cdot}192=19$ per cent. or 4 to 1 against.

Thus the two kinds of attack are practically of equal value, especially as the extra guns mentioned are doubtful.

17. In the Parallel Attack the tube can be trained to a bow-angle equal to the minimum impact-angle desirable, whereas in the Perpendicular Attack the tubes should be trained as far ahead as possible to minimise the turn necessary for getting the sights on for firing.

18. Though the torpedo hitting chances increase as the distance decreases, yet the torpedo-boat arrival chances decrease; it therefore seems to me that in a boat under fire possessing

several tubes, the first torpedo should be fired at the greatest distance offering a reasonable chance of success, keeping the others for closer range.

The distance for the first torpedo depends on the product of the boat's immunity chance and the torpedo's hitting chance, and should correspond to the maximum value of this product. To give an idea of the relative values of the firing distance, look at the gun hitting chances against a dark target given above.

There we find the hitting chance of n guns is

Between	1,500 and 600 m	n X 0·17
,,	900	0·06
,,	1050	0·03
,,	1200	0·02

Hence, if 2 guns fire at each boat the total hitting chance is:—

At

600 m	$P' = 1-(1-0{\cdot}17)^{14} = 1-0{\cdot}073$	Boat's escape chance	$=0{\cdot}077$
750	$P'' = 1-(1-0{\cdot}11)^{12} = 1-9{\cdot}247$	,, ,,	$=0{\cdot}243$
900	$P''' = 1-(1-0{\cdot}06)^{10} = 1-0{\cdot}538$	,, ,,	$=0{\cdot}583$
1050	$P'''' = 1-(1-0{\cdot}03)^{8} = 1-0{\cdot}783$	,, ,,	$=0{\cdot}788$
1200	$P''''' = 1-(1-0{\cdot}02)^{6} = 1-0{\cdot}885$	,, ,,	$=0{\cdot}853$

Let ship speed/torpedo speed $=1/2$.
Ship-boat angle at torpedoing instant 40°.
Hence impact-angle 60°.
Let lateral errors be 100, 200, 300, 400, 500.
For distances 600, 750, 900, 1,050, 1,200 respectively.
Target exposed perpendicular to torpedo-course = 80 m.
The torpedo-hitting chance of such a target is Px/d or

At 600 m	P for x/d	40/100 = 0.25
750		40/200 = 0·127
900		40/300 = 0·082
1050		40/400 = 0·064
1200		40/500 = 0·04

By Alger's Tables.

Hence the chance of the simultaneous event Intact Boat and Ship hit is:—

At 600 m	0·073 X 0·25	0·01825
750	0·247 X 0·127	0·03136
900	0·538 X 0·082	0·04411
1050	0·783 X 0·064	0·05011
1200	0·885 X 0·04	0·03540

So that 1050 metres is the distance giving the greatest probability of success. Torpedo-range = 1050 X s in 40/s in 120 = 777 metres.

19. It seems to me that boats with several torpedoes should fire all of them rather than sink with all their unused missiles.

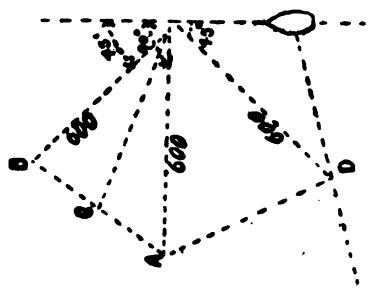
20. In order to diminish the chances of discovery, torpedo-boats should avoid emitting flames and smoke from their funnels, consequently not forcing their speed until seen.

Summarising the attack, it appears that:—

1. The best positions for commencing the Attack-Approach are in the two foremost quadrants; this renders it necessary to get well ahead of the enemy beforehand.

2. Without doubt it is better to attack on the reversed ship course in succession in sub-divisions, but simultaneously from either side if possible. The Two-side Attack is more likely to disconcert the enemy, and the resulting concentration of his attention on the first boats seen favours attacks carried out in rapid success, enabling some boats to reach striking distance unobserved.

FIG. 2.



It is evident that the aftermost torpedoing position for obtaining an impact-angle not greater than 90° will be that corresponding to torpedo and ship courses at right angles.

The Ship-Boat torpedoing bearing depends on the ratio, ship speed/torpedo speed, the zone of good torpedoing positions is comprised within the ship's bow angle of 60°, for cot 60° = about 1/2.

With the same speed ratios and a 600 metre torpedo range and a limiting impact-angle of 135°, the extreme torpedoing bearing can be determined by Fig. 2.

Resolving the triangle, torpedo-speed, impact-angle and ship-speed, the ship-boat angle is found to be 107°.

We can, then, distinguish two efficient torpedoing zones, one between the angles from ahead 30° and 60°, giving impact-angles from 40° to 90°, the other between the angles from ahead

60° and 110°, giving impact angles 90° to 135°. If the ratio ship-speed to torpedo-speed is less, the zone angles are greater.

I will now pass to the examination of the most important moment—the torpedoing moment—with a view to ascertaining the best disposition of the boats to render this culmination of the attack successful, for everything else must be sacrificed to this end.

At first I must reiterate the maxim of dispersion of force and concentration of effect; it is the only way of surprising the enemy, and increases the torpedo chances enormously, chances which for each separate torpedo are very small.

It follows that the boats of each sub-division must arrive at torpedoing positions simultaneously.

The torpedoing zones are not only limited by the profile angles 30° to 60° and 60° to 110°, but also by the impact angle 45° to 135°, and the torpedo-range 600 metres (*vide* Fig. 2).

In Fig. 2 the boats of each sub should arrive together on the arcs or chords AB and AD.

Then the greatest length of AB = AD = 2BC $2 \times 600 \times s$ in $22° 30' = 444$ m.

So the boats cannot be more than 150 m. apart, with 3 in a subdivision and 6 in a division, which practically fixes these numbers as the most suitable.

In "The Truth about Port Arthur," page 99, line 17, we read that the Japanese attacked in groups of two boats in succession; Captain Labrès recommends 3 boats to a group.

The lines AB and AD are also the best for encountering the ship's fire, being the perpendiculars to the fire lines.

For the best line AB, the sub-divisions on either side might steer different courses; for instance, the port one might steer the ship's reversed course and the starboard one might steer at right angles. The Parallel Attack is obviously the least exposed, because the closing rate is a maximum and the Attack Approach is half the time in a zone of reduced gun fire, *vide* Table 1, page 719.

If the sector 0° to 30° is commanded by 3 guns, and the sector 30° to 90° by 6 guns, the boats on the ship's reversed course receive the first 4 salvos of only one gun each, whereas the Perpendicular Attack receive 2 guns' fire each the whole time.

The Parallel Attack receive 8 salvos, or 12 shots each, in 71 seconds.

The Perpendicular Attack get 9 salvos, or 18 shots each, in 80 seconds.

If 10 per cent. of shots are hits, the immunity chance of each boat is, in the first case $1 - (0{\cdot}1)^{12} = 0{\cdot}28$; and in the second case $1 - (0{\cdot}1)^{18} = 0{\cdot}15$.

It therefore appears that the Parallel Attack is incomparably superior; if two sub-divisions attack from ahead they can foil the ship's parrying manœuvres by dividing. For instance, in

Fig. 3.

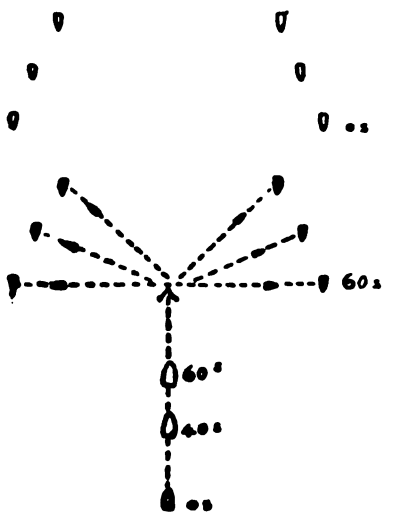


Fig. 4.

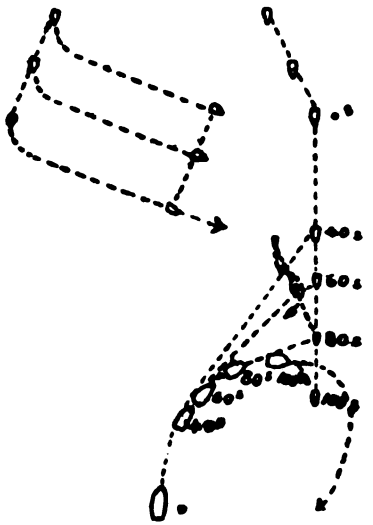


Fig. 5.

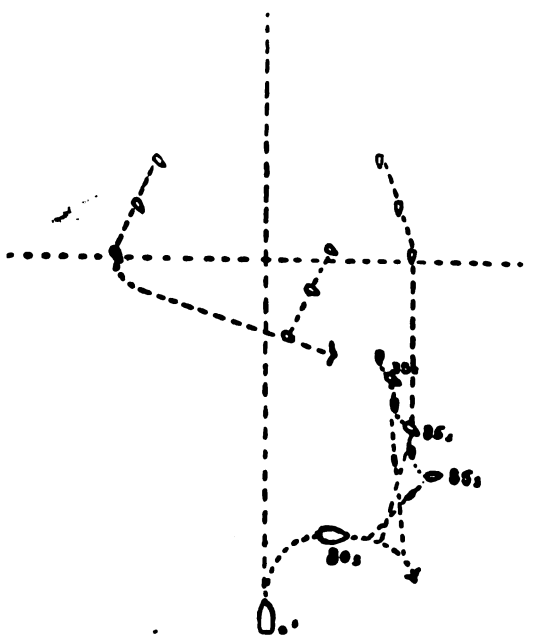


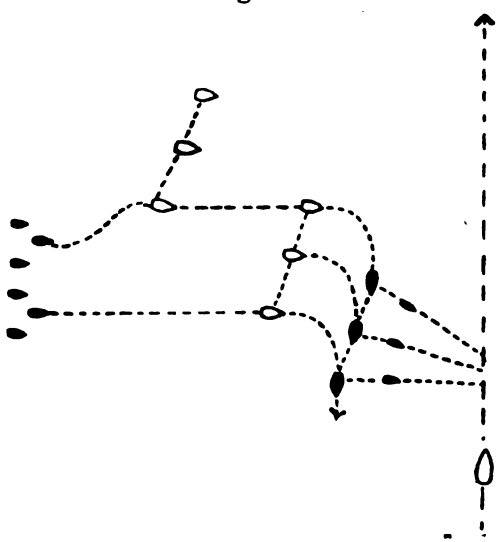
Fig. 4, if the ship keeps steering for the boat first sighted, the boat will be in a sector of diminished fire the whole time.

Or, as in Fig. 5, the ship may put her helm hard over to get the boats further astern, and thus minimise the torpedo hitting chances.

The greatest distance of sighting torpedo-boats being 1,500 metres, and the time for a turn of 90° being 80 seconds, Fig. 5 illustrates the attackers' counter manœuvre if the boats are in sufficiently extended order, the first sub-division turning together at 80 seconds to port and firing at 85 seconds, but this is a critical case, and requires a maximum of co-operation.

Returning to the case in Fig. 4, when the ship follows the first boat, the boat should try to keep the ship's attention fixed on her to give the other boats a chance of approaching and

Fig. 6.

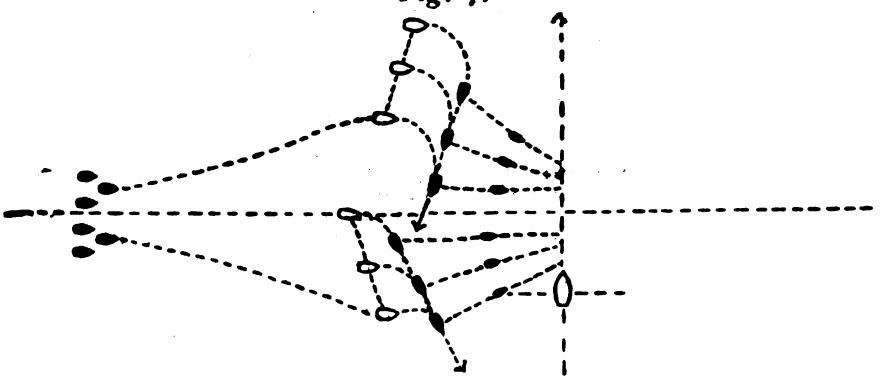


firing, and then perhaps getting an opportunity herself when the others are seen. The first boat will find herself close ahead of the ship at 80 seconds (Fig. 4), but must not attempt to turn away, as to turn 90° requires 35 seconds, which would enable the ship to ram her, whereas by keeping straight on into the inside of the ship's turning circle across her bows she would pass at a greatly increased relative speed and fire her torpedo, though not in good circumstances.

Turning our attention now to the other extreme case, viz., the Perpendicular Approach, it is evident that if carried out in the same sector on one side by two sub-divisions, it must be in succession as in Fig. 6; if in different sectors on the same side, it may be simultaneous, as in Fig. 7.

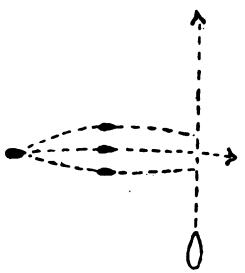
The general principles deduced from the above analysis are that attacks should be made by sub-divisions from well before the ship's beam in lines of bearing perpendicular to the line of fire or ship-boat line. The sub-divisions will therefore be in lines abreast for the Perpendicular Attack, and nearly in lines ahead for the Parallel Attack, the second and third boats keeping slightly towards the ship's course, *vide* Figs. 3, 4, 5. In this case the tubes will be trained at a bow angle, diminishing from the first to the third boat, and firing simultaneously, the impact-angles (equal to the bow angles) will be slightly different from each other, the first series at 1,000 metres (torpedo range 750) and the remainder at shorter distances.

Fig. 7.



In the Perpendicular Attack, if the boats have gyroscopic torpedoes, the whole 9 torpedoes can be fired simultaneously right ahead, making a dangerous zone about 100 metres wide from each boat and obviating the necessity to turn to fire, *vide* Fig. 8.

Fig. 8.



The attack formation proposed leaves room ahead for each boat to manœuvre, allows everyone to see the enemy, decreases the probability of being sighted simultaneously and of being hit, and finally allows of simultaneous torpedoing. It appears to me to be the best method of attack under the best conditions without preventing a favourable opportunity of any sort being

seized. It is not proposed to be always in this formation before the attack, though it is more logical to organise everything with regard to the attack formation rather than to preliminary formations.

The approaching formation, then, should resemble as closely as possible the attack formation; the quicker the attack formation can be taken up from the scouting formation the better.

In the preliminary phase of searching for the enemy the boats will of course steer fixed courses on some plan, according to the circumstances of the case and the information available, and arranged for the complete co-ordination of the scouting services of the various groups for fixing the enemy's position.

SCOUTING FORMATIONS.

The chief requirements for a scouting formation are:—

Maintenance of contact.

Quick distribution of information.

Avoidance of getting on bearings from ship attacked too widely separated, so that all boats are before her beam when she is sighted.

Getting too far astern from the commanders of groups, necessitating increase of speed and pressing of boilers to get up again, is to be avoided, consequently I think that single line ahead is too long a formation, especially with the longer torpedo-boats of to-day. Fig. 9, showing sub-divisions in line abreast, appears to be the best scouting formation, the triangular formation for divisions of six boats is recommended by Labrès, and, according to Chandler, is used by the Germans.

Fig. 9.

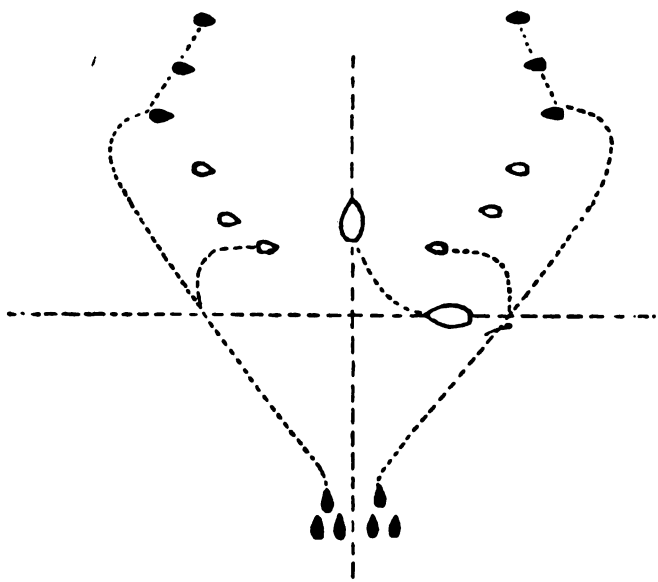


Lines abreast offer the greatest security for navigation at night without lights, especially when the course is fixed beforehand as when scouting; they permit a better look-out ahead, and are easier to keep than those accustomed to line ahead would believe.

On the other hand, in line ahead at high speed it is easy to lose contact or to incur danger of collision, especially without lights, when 100 metres is enough to lose sight of the stern of the next ahead, but in line abreast the dark lines of the whole length of the other boats are visible at much greater distances to their neighbours. We all know the intense attention required to maintain the line ahead, exercising a very tiring effect on the station keepers. Columns of sub-divisions in line ahead pre-

sents the tactical groups well clear of each other and ready to separate at any moment for the necessary manœuvre for position. Fig. 3 shows how well this formation adapts itself to the Parallel Attack. Figs. 6 and 7 show its use for the Perpendicular Attack. In the Perpendicular Attack if the ship keeps her bow pointed towards the first boat sighted, the result would be the same as in the other form of attack. If, however, she turned away she would have ample time to present her stern to the attackers, who must then divide and attack again from one or both sides (see Fig. 10).

Fig. 10.



I have analysed the attacks in the foremost sectors of the ship's bearings, and shown the advantages of the line abreast formation. Attacks from the after sectors can only be considered forlorn hopes. I do not deny the disadvantages attaching to line abreast, but while it is easy to form line ahead from line abreast, the inverse manœuvre is slower. These formations are simply the means of proceeding to the starting points of attack; the individual boats are not tied to the formation, but must merely keep in sufficient extended order and endeavour to co-operate with one another not only by non-interference, but by active assistance keeping the ship's attention fixed or by keeping their relative positions so as to arrive simultaneously at the torpedoing point.

I have not tried to enumerate the actual orders necessary, but simply to enunciate general principles, to indicate the object

of the manœuvres rather than the actual manœuvres themselves. In practice perhaps the flotilla would remain in close order until the ship is sighted, then extend to take up stations for attack, then try to arrive at the firing point simultaneously, being careful, when turning to retreat after firing, not to obstruct the movements of others; in the parallel attack no boat should fire her torpedo before her next ahead has fired hers; and in the perpendicular attack the boats bearing furthest aft from the ship should fire first.

These formations appear to be the most rational theoretical solution of the complicated problem presented, and their realisation is certainly feasible when the nights are not very dark, and against large squadrons of ships. The results of numerous and accurate experiments well organised and executed would be certainly more interesting and convincing still than all these theoretical calculations. I cannot understand the excessive value placed by some officers on long formations, permitting only successive torpedoes, merely to obtain ideal perpendicular impact-angles; the advantages of extended order at all events should not be overlooked for the favourable cases that may occur, leaving the long formations for the worst conditions.

THE USE OF EXPLOSIVES IN AERIAL WARFARE, WITH SOME REMARKS ON METHODS OF DEFENCE.

By WALTER F. REID, F.I.C., F.C.S., President of the Society of Chemical Industry.

On Wednesday, 22nd February, 1911.
SIR ANDREW NOBLE, Bart., K.C.B., in the Chair.

HISTORICAL SURVEY

VERY soon after the invention of balloons by the French it was suggested that they might be used in warfare, and a *Compagnie d'Aérostiers* was created, and did good service, especially for reconnoitring purposes. From the battle of Fleurus to that of Paardeberg balloons have proved their utility as a means of observing the position of the enemy. Their use for offensive purposes naturally suggested itself at an early date; but such trials as were made did not prove successful.

Employment under the First Republic.—One of the reasons why the use of balloons remained somewhat restricted under the first French Republic was the scarcity of sulphur, which was indispensable for the manufacture of gunpowder, and could not be spared for generating the hydrogen required for inflating the balloons. Captain Coutelle worked out a process for producing hydrogen by the decomposition of steam in contact with red-hot iron; but the furnaces required for this purpose were cumbersome and their transport difficult. Even now this process can scarcely be considered a practicable one for military purposes. In connection with Napoleon's schemes for the invasion of England, many suggestions were made for the use of balloons as a means of attack; but these, as well as the sketches to which they gave rise, are now more a source of amusement than of instruction.

Employment by the Austrians, 1849.—The Austrians appear to have been the first to put balloons to practical use as a means of attack. In 1849, during the siege of Venice, no position within range of the town could be found for the siege guns, and it was resolved to employ balloons. Montgolfier, or hot air, balloons were used, made of thin writing paper, and having a cubical capacity of 94 cubic metres each. The lifting power of

such a balloon was 31 kilogrammes (68 lb.), and bombs of 15 kilogrammes (33 lb.) could be carried by them for about half an hour. The point of departure of the balloons was necessarily dependent upon the direction of the wind and was determined with the aid of a map and pilot balloons. The charge of explosive was dropped by means of a time fuze, the distance and the velocity of the wind being taken into account. In inflating and sending up the balloons a portable screen was used, and the whole equipment required five waggons for its transport. The effect upon the enemy of this novel method of attack was more moral than material, although some of the charges were effective, one of them bursting in the Square of St. Mark. On more than one occasion the balloons, driven by unexpected air currents, discharged their missiles upon the besiegers instead of the besieged, and their use was abandoned. Although at that time only partially successful, the use of hot air balloons might well be revived at the present moment with better hopes of success. They are cheap, portable, and, with the aid of liquid fuel, can be made much more efficient than formerly. With a map, and two observers connected by telephone, the position of a balloon can be determined with a fair degree of accuracy, and a fuze, detonated by Hertzian waves, would enable the charge to be dropped within a comparatively small area. The advantage of such free balloons is the practical impossibility of defence against them, as they are not dependent upon a crew for their efficiency, and to hit them with a projectile would simply mean exploding their charge sooner.

Employment in 1862 and other Campaigns.—The use of balloons for directing the fire of artillery is, of course, well known. General Stoneman, at New Bridge, on May 24th, 1862, appears to have been the first to use them for this purpose against an enemy altogether out of sight of his gunners.

On the night of January 18th, 1900, the position of the Boers on the Tugela was reconnoitred by means of rockets discharged from a balloon, and much useful information was thus obtained.

Kites have also been used for the purpose of dropping explosives upon an enemy. In 1869, during the civil war in Japan, the government troops besieged the fortress of Wakamatzu. The besieged, by means of a kite, sent up a man, who dropped explosives upon the enemy; but the effect seems to have been slight. In 1866, during the war between Brazil and Paraguay, General Caxias used a balloon in the swamps of Neembucu, and the destruction of this balloon by fire was one of those remarkable cases of apparently spontaneous combustion which have occurred several times with balloons.

Mishaps due to Electricity.—Some of these mishaps may possibly be due to electricity. When a current of dry air passes over varnished material, especially over oiled silk, a considerable amount of electricity is generated, and this may accumulate

in the balloon to such an extent that sparks are generated should the balloon approach any conductor of electricity. With a free spherical balloon there is little friction against the air, except during ascent and descent; but with dirigibles and captive balloons, danger may arise during dry weather. Explosives carried in balloons should be packed in materials that are bad conductors of electricity, and they should not be placed in the vicinity of metal articles such as grapnels. Electricity, however, is destined to play an important part in the working of aerial craft. Already in 1854 experiments were made at Vincennes with an electrical apparatus for dropping projectiles from a captive balloon. These experiments were only partially successful; but with the recent progress in the science of electricity, as well as in the construction of balloons, much better results may be hoped for. Since these experiments were made, the science of aeronautics has advanced by leaps and bounds. A city like Paris, if besieged, could now communicate with the outer world, either by dirigible or aeroplane, and might make use of either for offence as well as defence.

POSSIBILITIES OF OFFENCE BY AERIAL CRAFT

International Agreements.—There seems to be a general impression that the use of explosives from aerial craft is prohibited by international agreement, but this is not the case. At the peace conference at the Hague, in 1898, the great Powers agreed to prohibit the dropping of explosives and projectiles from balloons for five years; but in 1907 Germany and France withdrew from this undertaking. There can be no doubt, therefore, that in the next European war this, the most recent means of attack, will be fully utilised. It behoves the British nation to make such preparations that we shall not be caught unprepared. In making our preparation, however, it would be folly to overestimate the dangers we may have to meet, as is so frequently done by some alarmists. Let us calmly consider, in the light of experience, what damage could be done by such charges of explosives as might be carried by dirigibles or aeroplanes

Possible Objectives of Dirigibles.—As regards dirigibles, they could only approach an enemy having aeroplanes at his disposal, if they themselves were protected by a fleet of aeroplanes. Night attacks might indeed be made, but would be of little use, not only on account of the difficulty of steering, but also because it would be almost impossible to aim accurately without a good light.

Attacks upon individuals however eminent, may be disregarded from the national point of view; they would but spur us on to reprisals. I have heard a distinguished general say that much of the splendid work done by our troops during the Indian Mutiny was inspired by the memory of the women and

children murdered by the mutineers. At any rate, among civilised nations the lives of non-combatants are spared, and aeronauts wilfully sacrificing them would have a short shrift, if caught. Public buildings and hospitals are usually spared, and one use to which captive balloons have been put has been to indicate to the artillery of their own side the positions of such buildings so that they might not be struck by shells. On the other hand, arsenals, dockyards, fortresses of all kinds and especially powder magazines are targets that would at once attract an aerial enemy. Explosive factories, as I have pointed out elsewhere, have little to fear, for the buildings are so sub-divided and protected by mounds that even if half a ton of dynamite were dropped upon one of them, and exploded, the damage would be but local. Explosive magazines belonging to private owners are also in such positions, and the quantities are so reduced that nothing but local damage would result from attacks upon them. Some of the government magazines, however, contain unnecessarily large quantities of explosives massed together, and one of the largest of them is so near a populous town that a great disaster might be produced under the new conditions of warfare. The War Office should, at the earliest possible moment, sub-divide these masses of explosives and isolate each magazine from its neighbours, as is done by private manufacturers under the Explosives Act. Modern smokeless powder would probably keep better if stored underground, and such a method of storage would afford additional security against aerial attack.

As regards arsenals much damage might be done if an attacking aeronaut could make sure of hitting one particular building among many, which is at present very doubtful. In connection with dockyards it will be remembered that the Japanese, on entering Port Arthur, expressed their surprise at the small amount of damage done by their heavy shells, which had rained vertically upon the Russian ironclads for weeks. It must also be remembered that the penetrative power of a shell is much greater than that of a charge of explosive.

As regards fortresses, they are already prepared to resist such attacks as might be made upon them from above. Here, as well as in the field, horizontal screens of canvas might be used to hide the movements of bodies of men or specially vulnerable points.

Powers of Offence of Aeroplanes.—Unless some quite new and unexpected developments should take place in aeroplanes they will be unable to carry charges of explosives that could do more than local damage, always remembering the limited radius within which destruction is wrought by modern high explosives. Rapid motion is essential to them, and to aim correctly from a rapidly moving station must always remain a very difficult matter, requiring great skill and practice to obtain even average results.

Dirigible balloons can carry larger charges and provide steadier platforms; but these unwieldy craft are already at the mercy of such aeroplanes as we now possess and, before this year comes to a close, we shall have a sufficient number of British aeronauts to deal with any foreign dirigibles that may reach our shores, provided that some little assistance is afforded by the War Office in the matter of weapons, and instruction in the use of explosives. Having come into contact with many of our aeronauts, I have no hesitation in saying that they are a great national asset. For courage, coolness and fertility of resource no body of men can surpass them, and I feel assured that there is not one of them who would not willingly place himself and his craft at the service of our country should the necessity arise. Such men should meet with every encouragement from those who are responsible for the defence of this country.

DIRIGIBLES VERSUS AEROPLANES

Rapid Development of the Aeroplane.—Although the prospects of dirigibles as instruments of warfare appeared bright a few years ago the rapid development of mechanical flight has, in my opinion, now pushed them into the background. So high an authority as Colonel Capper said, in October last, that, in the future, the aeroplane will knock the dirigible out from war; but he qualified that opinion by saying that we are not in the future yet. At that time the carrying of passengers on an aeroplane was exceptional, now it is an everyday occurrence and, although the nervous strain on the pilot may still be as great as ever, yet the second occupant of the craft is as free to attend to aggressive matters as a passenger in a dirigible. If aeroplanes had not appeared upon the scene dirigibles might have inflicted serious injury upon our navy, and, even now, our ships will not be safe until they have a sufficient supply of aeroplanes. Such aeroplanes can be constructed to rise from and alight upon the water, as has recently been done with the Curtiss biplane; but refuge ships will have to be provided for stormy weather.

Relative Value in Rough Weather.—When the water is too rough for an aeroplane, starting platforms may be necessary; but an attack by dirigibles is scarcely to be feared in windy weather. One by one the much-vaunted Zeppelins have come to grief, and no means have yet been devised to enable a large dirigible to land with safety even in a moderate wind. The true position of affairs was well summed up in the reply recently made to a member of the Advisory Committee for Aeronautics who inquired when the Barrow airship would be taken out of the shed for the first trip. He was told that "Nobody with the slightest sense would expect a 512 feet airship to be taken out in the worst months of the year on her first trials. The trials will be undertaken when the winter weather breaks." The

Times correspondent adds: "Although indefinite, this is about all that can be said with certainty." We trust that, after this announcement, our enemies will kindly abstain from attacking us during the winter months. During these worst months of the year, however, numbers of aeroplanes have been making their trial flights and practising at the various flying grounds throughout the country, especially at Brooklands. Aeroplanes can therefore, even in their present stage of development, fly in weather that dirigibles seldom venture to face.

RELATIVE FIGHTING VALUE OF DIRIGIBLES AND AEROPLANES

As regards the relative speeds of the two kinds of craft there is no doubt that aeroplanes can be propelled at such a rate that they could easily overtake the swiftest dirigible. Not only can they overtake it, but they can without difficulty rise above it and, in that position, could destroy it without themselves being exposed to any appreciable danger. With so helpless and fragile an enemy lying beneath him the airman need not be particular in his choice of the numerous methods of destruction that are available. A simple missile thrown by hand from a sufficient height would suffice to pierce the fabric of the balloon; for instance, a bullet dropped from a height of 3,000 feet would acquire a velocity of about 450 feet per second. But perhaps the most effective missiles would be small bombs provided with contact ignition. A charge of half an ounce of blasting gelatine will tear a hole more than a foot in diameter in balloon fabric under moderate tension; but nitro-glycerine would be preferable as an explosive, because the larger proportion of oxygen in its products of combustion would more readily ignite the gas in the balloon. The construction of such bombs is easy, but they would be quite different from those now in use. As they are not discharged from a gun the contact fuzes may be very sensitive and a simple ribbon or streamer attached to the upper end of the missile ensures a straight fall. With a self-opening tin, half a pint of petrol and a box of safety matches, any aeroplanist can improvise a projectile that would put an end to a dirigible in a few minutes. Strong acids that would rapidly destroy the balloon fabric would cause a certain, if less sudden, collapse.

DEFENCE AGAINST AEROPLANES

While there appears to be no reasonable doubt that aeroplanes can protect us from dirigibles, the more serious question arises: How are we to protect ourselves from aeroplanes? As they can rise beyond any serious danger from artillery it is obvious that we must adopt what is at present the sole means of pursuit available, namely, other aeroplanes. The position as it now stands, therefore, seems to be that aeroplanes of the highest speed and efficiency are the best means of both attack

and defence. Probably nothing can prevent aeroplanes or even dirigibles at night from entering British territory; but a fleet of aeroplanes on our frontiers, combined with an efficient telephone service, would effectually prevent the repatriation of any of these undesirable immigrants.

EMPLOYMENT OF AERIAL CRAFT IN BATTLES

As to the use to be made of aerial craft in the battles of the future I feel much diffidence in speaking in the presence of so many experts in the art of war. Generally, however, they will have to descend within rifle range if they are to be of any practical use in active combat. The difficulty of hitting a rapidly moving object at an unknown distance will be their chief defence; but an aeronaut would have an even greater difficulty in hitting anything, and even a machine-gun mounted upon an aeroplane would probably do less damage than if fired at ground level.

ANTI-BALLOON ARTILLERY

Foreign nations have for some time directed their attention to the subject of artillery for use against aerial enemies. The firm of Krupp, especially, has produced several guns for this purpose. During the siege of Paris, Krupp constructed a special gun for attacking balloons; this may now be seen in the Berlin arsenal. As soon as it was brought into use, however, the French escaped any possible danger from it by sending off their balloons in the night. The diameter of the French balloons was known to the Germans and, with the aid of a special telescope, the distance could be calculated. The head of a human being affords an approximate measure that may also be used for range-finding. In those days the Germans obtained their first balloons from England, Coxwell going out with them to instruct the aeronauts in their use.

Krupp's 7.5-cm. gun has seats for five men, and storage for 62 shells. It is mounted on a car which weighs 4,300 kilogrammes (4 tons), the weight of the gun alone being 1,065 kilogrammes (21 cwt.). Each projectile weighs 5.5 kilogrammes (12 lb. 2 oz.), and the horizontal range is given as 9 kilometres (9,900 yards). The vertical range is 6,300 metres (6,930 yards). A lighter gun of 6.5-cm. gauge weighs with car 875 kilogrammes (17 cwt.), the gun weighing 352 kilogrammes (7 cwt.). Each projectile weighs 4 kilogrammes (8 lb. 13 oz.), and the extreme horizontal range is stated to be 8,650 metres (9,450 yards). The height of fire obtainable is 5,700 metres (18,700 feet). The initial velocity of the projectile is 620 metres (2,034 feet) per second. A coiled spring balances the weight of the gun when pointed above the horizontal.

For naval purposes Krupp has constructed a 10.5-cm. gun weighing 3,500 kilogrammes (69 cwt.) with carriage. The pro-

jectile weighs 18 kilogrammes (40 lb.). The muzzle velocity is 2,100 feet per second, and the shells discharge a train of smoke to facilitate aiming.

Ehrhardt, at Düsseldorf, has also built a special gun for use against aerial craft. Its bore is 5-cm. and its barrel is 30 calibres long, while the length of the Krupp barrels is 35 calibres. The weight of the Ehrhardt gun alone is 400 kilogrammes (7.8 cwt.); with car, ammunition and five men the weight is 3,200 kilogrammes (63 cwt.).

The French have also been busy in the same direction, and the French army has guns especially made for use against balloons or aeroplanes. At the present moment there is in Paris a Voisin biplane carrying a small quick-firing gun; but it does not yet appear to have been put to a practical test. Le Creusot have made trials with a new 305-mm. gun, 39 feet long, firing a shell weighing 2 cwt. to a distance of 18 miles.

So far the effects of artillery fire against balloons have been disappointing. Captive balloons which wait patiently until they are hit have indeed been brought down; but, even if hit, they are not necessarily placed *hors de combat*. Colonel F. C. Trollope mentions that only one case occurred of a balloon being hit during the Boer war. A shrapnel shell, fired at a range of about 600 yards, burst in front of it and made 68 holes; but the balloon took twenty minutes to come down and was subsequently mended.

A new form of the old chain shot might be used against aerial craft with advantage. If the shrapnel balls were made in two halves, these halves being joined by steel wire coiled up inside them, then the damage done to a balloon or aeroplane would be considerably greater than with the present projectiles.

We have still much to learn as to the damage which the pressure of an adjoining explosion might cause to a balloon. In the case of a spherical balloon, not very tightly distended, the structural injury caused by air pressure would probably be much less than in the case of a dirigible which has to be rigid in order to steer. With an aeroplane, a side blast would be more dangerous than a rising or falling rush of air.

On these and many other points experiments should be made, and the nation that makes them first will be in the best position for utilising aerial craft as a means of offence or defence.

THE CHAIRMAN (SIR ANDREW NOBLE, BART., K.C.B.). Gentlemen.—We have had the pleasure of listening to a most important and interesting lecture upon a most important and interesting subject, and it now becomes my duty to invite you to take part in a discussion on it. But before you discuss the paper, I would venture to draw your attention to one or two points on which I think it would be of the greatest advantage to obtain the views of the members. Those points are:—First, the effect of balloons against towns, whether fortified or otherwise; secondly, what is the possibility, considering the ignorance of the aeronaut, both of the exact height and of the exact velocity with which he is moving, of his

hitting any desired object; thirdly, what weight of shell can be carried, and if dropped from a very considerable height, what effect will such a shell have? The difficulty of hitting any particular object would, I think, be considerable; but in discussing the very important subject, which has been so well brought before us to-day, it is very important indeed that we should hear the views of experts upon it. It is my duty to ask you that the questions I have mentioned shall be raised in the course of the discussion.

COLONEL FRANCIS G. STONE, R.A.: This is not the first time I have had the pleasure of listening to Mr. Reid, and as usual I have learned a great deal from him. With regard to the division of the subject which the Chairman has asked us to devote our attention to, I should say myself, with regard to the effect of high explosives, that, no matter whether they are discharged from dirigibles or aeroplanes or anything else, I entirely agree with Mr. Reid that the effect of all high explosives hitherto has been extremely disappointing, even to their most sanguine supporters.

BOMB DROPPING

The effect is intensely local. There have been one or two experiments made quite recently which promised to give us an enhanced effect from high explosives; but the question is only at present in its infancy, and I cannot say any more about it. I do not suppose, however, it will revolutionize warfare in any way. With regard to the chances of hitting, speaking as a gunner, I know pretty well what the difficulties are of hitting anything, even under the most favourable conditions, on land and on sea. The difficulties of hitting anything from a moving platform in the air, at an uncertain distance from the target, must undoubtedly be infinitely greater; and, although I shall have something to say later on about specific targets, I must say I have very little faith in anything like wholesale successful practice from the air upon enemies upon the earth. I think the useful limitations of such practice will be very restricted, and a little later on I shall suggest what those restrictions will probably be. With regard to the weight of shell and the effect, I think there are so many considerations against the discharge of heavy bombs from aeroplanes, that, at present, we need hardly consider the question as within the realm of practical politics. With regard to the discharge of heavy bombs from dirigibles, calculations can very easily be made as to the useful loading which any dirigible in existence can carry, and, I think, speaking quite roughly from memory, one may take it as a useful guide that a dirigible with 500,000 cubic feet capacity could very easily, in addition to its ordinary load, carry high explosives, for the purpose of discharging them, to the amount of at least 1,500 lb. I think that is a very conservative estimate indeed. As the Lecturer pointed out, the discharge of a bomb, as such, will not be so efficacious as that of a shell which, in itself, has high penetrating power, owing to its velocity. The effects produced by the Russian shells and also by the Japanese shells, notwithstanding the penetrating power they possessed through being discharged from guns or howitzers, were extremely disappointing to all concerned. The examination of the Russian ships, which were struck in the harbour at Port Arthur by the shells from the 13.5-inch Japanese mortars, showed that the effect had been very much smaller than had been anticipated, and it is very doubtful whether the actual sinking of any ship was due to that cause

THE HAGUE CONVENTION

There are one or two points which I should like, if time allows, to refer to, in addition to the three which the Chairman has put before us; and the first is with regard to the Convention agreed to at the Hague Conference of 1907. I was not able to get a copy of the Lecture before it was read this afternoon, so I did not come prepared with any data, but, speaking from memory, I think that article 25 of Convention 6 laid down absolutely that the discharge of explosives against undefended towns or villages or localities, by any means whatsoever, was prohibited. The history of that particular Convention was that at the previous Hague Conference the discharge of high explosives, or explosives of any kind from airships, was prohibited, but all the Powers did not agree. Great Britain agreed, but I do not think the United States agreed, and there was one other Power which did not agree. At the next Conference, held in 1907, the question came up again, and it was generally recognized that it was not fair to expect occupants of a dirigible to refrain from retaliation if they were attacked, as naturally they would be attacked. If you were using a dirigible for the purpose of strategical reconnaissance, even though you might not be using it for any deadly purpose, it would naturally be attacked if the enemy had the means of attacking it; and it was generally agreed by the representatives of the Powers that to prohibit the discharge of particular projectiles from a dirigible under such conditions would be ridiculous. Still, at the same time, the Powers wished to keep the discharge of explosives from dirigibles within the limitations of civilized warfare; in other words, they wanted to restrict it absolutely within the same limitations as bombardment from ships or bombardment from guns on shore; and the custom of war, long before the Hague Conference started, as everybody knows, was that undefended towns should not be bombarded without due warning being given. A warning would be given if the town resisted an attack, in which case it would cease to be an undefended town, so that the whole point I wish to bring out is that the discharge of bombs, or any kind of explosives, from dirigibles or aeroplanes is under precisely the same limitations as the discharge of explosives from guns on shore or from guns on ships; and the hysterical effusions which, I am sorry to say, one has not only read in the Press and in light literature, but has also heard from a great many people who might have considered more deeply before they spoke—with regard to an enemy's dirigibles coming and laying our towns waste, creating panics in Fleet Street, and playing general havoc with the whole of our complex civilized organism—should, I think, once and for all be dispelled from the public mind, and I am very glad the Lecturer has given me the opportunity of bringing that point forward.

USE OF DIRIGIBLES BY NIGHT

Then again, with regard to the difficulty of navigation, and of finding your way about by night in a dirigible, I have no personal experience of doing it, but very experienced officers—of whom I will quote two, Colonel Capper and Captain King, both of the Balloon School, who have spoken on the subject—have said that, given a certain amount of previous reconnaissance, they were both surprised at the facility with which they could find their way about at night, the accuracy with which they could read properly prepared maps, and find their way by that aid from point to

point. I think any objective which is likely to be attacked by a dirigible at night would be of such a conspicuous nature—in other words, the objective would be something, we will say, in a dockyard or a harbour—that a proper reconnaissance by any hostile power should make it quite an easy matter for the dirigible to find its way. I think the Lecturer has conveyed the idea that that is rather more difficult than it really is. The great point in favour of the dirigible at night is that the lower down it is on the horizon the more difficult it is to detect, and therefore the nearer it can get to its target before it is seen, which I think is a very important point. It appears to me to be quite a feasible mode of attack for a dirigible, having previously reconnoitred the position with the greatest care, to come up wind in the evening, and, after taking up its station with the greatest care, come down wind at night without using its propellers, so as not to attract attention, until it has got as near as it can by those means to its objective, which we will say, for the sake of example, is a dockyard. By the time it had to use its propellers in order to correct its position with a view to discharging its missiles, it appears to me quite possible that it would be able to effect its object before it could be interfered with. It is customary in discussing this question to lose sight altogether of the fact that no dirigible will venture to attack in daylight—at least I should think not. As the Lecturer has said, an aeroplane would very soon knock it out; but the discussion on how such an attack is to be prevented by night has been extremely meagre on every occasion on which I have heard the question raised. Perhaps the Lecturer could throw out a suggestion as to how such an attack should be made, if he thinks it is feasible. I do not see any difficulty whatever in meeting an attack by daylight by retaliating by means of aeroplanes.

CAPTAIN J. BURKE, Royal Irish Regiment:—I have lately had the opportunity of visiting France, and discussing with officers of the French army the question of the use of aerial craft in warfare, and I should like this afternoon to hear what the opinion of the Lecturer is on the subject.

THE TACTICAL RÔLE OF THE AEROPLANE

The opinion of French officers, quite openly expressed to me, was that as a means of offence the aeroplane, in the stage it has reached at present, is not worth the trouble and expense it costs. They consider, however, that it is all-important for scouting purposes. General Bonnal has written an article in which he says that the advent of the aeroplane has distinctly altered modern warfare; and he gives the great weight of his opinion to the statement that the aeroplane has made the difficulties of a general far greater than they hitherto have been. The French have, therefore, decided, so far as one can judge by what they say and have done, not to worry about organizing for attack by means of aeroplanes on armed forces, but to organize aeroplanes as a means of reconnaissance. They are at the present moment thinking how aeroplanes should defend themselves against kindred craft, that is, other creatures of the air. If it is possible to use explosives and fight from an aeroplane you will have to organize for a dual objective; and therefore I would like to ask whether it is the Lecturer's opinion, and the opinion of other experts in this country, that we should organize with a dual objective, that is, organize aeroplanes for scouting, and organize them as a weapon of attack. Only a certain amount of money will be expended on aerial craft, and the question we have therefore to consider

is: Will it pay for us to renounce the great advantage of scouting which, it is now considered on the Continent, can be gained by the use of aeroplanes, by attempting to organize these craft for attack as well as for reconnaissance? We have been shown on the screen some very interesting photographs of guns specially designed for attacking air-vessels. I was at Mourmélon during November and December, and was almost every day in what corresponds to the officers' waiting-room of the French air corps at Farman's works, and I noticed that the aim of the French officers is to endeavour to practise flying every day at a height of 2,000 feet. I must say that they did it perfectly, because, during the whole of the time I was there, there was only one day on which there was no flying. This was in November and December, and the weather was awful, but they went out whenever they could get a moment, and there was not a day, except one, when they were not out for half an hour. They always flew at a height of 2,000 feet, because they consider that at that height the risks of a direct hit are very small. There is a point that I have since thought of that I did not discuss with them, namely: Is it possible by means of the detonation of a bursting shell to cause such a disturbance of the air as to upset the airman? Personally I do not know anything about explosives, but I would far rather risk a direct hit from any weapon, while flying, than risk a disturbance of the air caused by the bursting of a shell. Therefore I ask the second question: Is it possible to cause an explosive to explode in the air in such a way as to make a disturbance sufficient to upset the aeroplane? Then there is a point which has not hitherto cropped up which has impressed me very much. We are inclined only to consider operations in England, in connection with air work; but we do not hope ever to fight in England; we hope to fight on the Continent.

AEROPLANES IN SAVAGE WARFARE

It has also to be borne in mind that the British army, more frequently than not, fights against savages. Therefore I should like to ask the question with regard to aerial combats with the aeroplane: Would it be possible for our aeroplanes to come close down upon some body of ill-armed natives and attack them with explosives? Take Northern Nigeria, for example, where they have a terror still in the shape of a Mahdi. The people there are poorly armed and are very fanatical, and would not the great moral effect of a bomb coming from an aeroplane make it worth while to try it on them? I think it might be advisable to send an aeroplane out there. I put that forward, because I happen to have been in Northern Nigeria, and I know that the climatic conditions there are very good for flying, and there is the possibility of a Mahdi rising up at any time. Then the Lecturer mentioned the fact that the Viosin has a machine-gun mounted on it.

MACHINE GUNS ON AEROPLANES

I do not think the Voisin has ever fired that gun, in fact I am practically certain that it has not, for the good and excellent reason that, with a machine-gun, you have to get rid of your empty cartridge cases. In the Voisin the propeller is behind the man, and the cartridge cases would go straight into the propeller, and would break it (a cap blown into an ordinary wooden propeller will break it). There is that difficulty to contend with; in fact I do not think firing a gun is feasible from an aeroplane. To repeat, the questions I would like to ask are: (1) Is it worth while

to try and organise our aeroplanes for a dual objective, that is, scouting and attacking? (2) Is it possible to upset an aeroplane by detonating some explosive in the air within a certain radius of it? and (3) Should we not consider the question of utilizing the aeroplane in our wars against savages in different parts of the Empire?

Mr. WALTER F. REID, in reply, said:—I should like to thank Colonel Stone for the information he has given on this occasion, as he did on the previous occasion on which this subject was discussed. Being in a very responsible command, Colonel Stone has the opportunity of seeing things and learning things that are denied to a civilian; and I am sure it was very good of him to give us so much fuller information about this Convention than anything I could tell you. So far as I understand his remarks we are in this position, that we are not supposed to shower down explosives on persons who are not combatants, or upon towns that are undefended, and there is now no undertaking by any of the Powers that explosives shall not be sent down from aeroplanes or aerial craft of any kind. I believe the first point that I mentioned in my paper was that no explosives of any kind should be sent down from aerial craft.

USE OF AIRCRAFT BY NIGHT

I venture still to differ a little from Colonel Stone's view with regard to attacks by dirigibles at night. A stranger coming over here, unless he has had previous opportunities of scouting, would, even with a map, be a little bit at sea as to the towns or buildings that were passed over. He would not himself be detected so soon if he flew low—that is quite true; but on the other hand, he would much more rapidly approach the spot that he wished to attack, and would pass it quickly. Colonel Stone has mentioned one point which I omitted to refer to in my paper, namely, that the noise of a propeller of an aeroplane will, even in the dark, give you a very good notice of its arrival. We have had some most interesting information given us by Captain Burke of the work that has been done in France. The French are undoubtedly very strenuous in their studies, and they are doing very good work. No doubt many of our own officers have become qualified as experts and are quite able to work an aeroplane, but I am afraid they do not obtain the same facilities from the War Office as the French Government give their officers. I think 2,000 feet is a very safe height at which to fly; you are not very likely to be hit under such conditions. I would not mind taking the chance myself at 2,000 feet. Captain Burke asked three questions, the first of which dealt with the utility of organizing for scouting purposes. There can be no question at all about the advisability of doing that. Whatever views may prevail as to aeroplanes from the point of view of aggressive tactics, there can be no doubt at all as to their utility for going over the ground, and for taking photographs, or taking notes of what the aeronaut sees. Therefore for scouting purposes they should be organized, and at the earliest possible moment.

EFFECT OF EXPLOSIONS ON AEROPLANES

Then with regard to Captain Burke's question as to the action of an explosive in upsetting an aeroplane, from the very nature of things we have not yet built an aeroplane that will be stable without a human being in it, although we are already progressing rapidly towards auto-

matic stability. Some very interesting experiments have been made in that direction, and before very long it may be possible for us to have an aeroplane flying through the air without a human being in it; then we can make actual experiments as to what happens to the aeroplane while it is flying through the air when an explosive bursts close to it. My own opinion is that if you detonate sufficient explosive on the ground the current of air that would be driven upwards would be enormous, and I should not like to be in an aeroplane that was moving in the air over that spot. But the difficulty is in doing it. Major Baden Powell, I think, suggested that plan when I last read a paper on a similar subject—that the explosion of a mass of explosive on the ground would create such a turbulent mass of air moving upwards that an aeroplane might be upset. Captain Cody, who was in the room at the time said, with his usual intrepidity, that if anyone would detonate a charge of 100 lb. of gun cotton on the ground he would be very pleased to fly over it. That shows his courage, but I do not think it proves the point.

MORAL EFFECT

Next with regard to moral effect. Moral effect is good as long as it lasts, if you do not presume upon it too much. You will remember what took place during the siege of Mafeking, where the ladies used to sit out in the streets doing their needlework, with a bomb-proof shelter close at hand, and when the signal was given that the Long Tom had been discharged they all popped into the bomb-proof shelter; and as soon as the shell had exploded, they came out again and went on with their work. As I say, moral effect is good as long as it lasts. The French had a very interesting experience in Morocco. They brought a captive balloon over there, and the Arabs when they saw it simply ran away. They said, "If Allah allows these infidels to pitch their tents in the skies it is no good us fighting against them." But when they came, within two or three weeks, to find out what it was, they used to keep a look-out for the balloon to find out where the French position was, so the French packed up their balloon and sent it back home again, especially as it was not very much good in fighting against such a disorganized rabble as they had to contend against. The moral effect was great at the beginning, but it was lost afterwards. I quite agree with the view Captain Burke expressed about the gun on the Voisin aeroplane. I mentioned in my paper that I had not heard of it having been tried. I did not like to infer that it was a useless thing, but reasons have been given to-day why its efficiency at any rate cannot be very great. Sir Andrew Noble asked what was the weight of the shell that could be discharged from an aeroplane. Quite recently some most marvellous things have been done with aeroplanes. For instance, an aeroplane that was supposed to carry only one passenger has gone up with two or three. Perhaps you have seen illustrations in the papers of some flights made by Cody, in which you have noticed that a man is standing right out on one of the spars of the aeroplane on one side, showing that the balance can be kept very well indeed on an aeroplane. Therefore I think that an aeroplane could carry a charge of explosive—in fact it is almost demonstrated that it can by actual tests—if it were suspended as near as possible in the centre of gravity—of some 200 or 300 lb. at least. With regard to the weight of explosive that can be carried in a dirigible and dropped; if a charge of about 1,000 lb. were dropped from a dirigible I should be very sorry

indeed to be in that dirigible. First of all, you have to keep your balance, and that is a very critical thing to do. The dirigible is balanced at the start with that weight of 1,000 lb. If you have the weight precisely in the centre of gravity, what would happen would be this: the balloon, when such an enormous weight was released from it, would shoot upwards, and a body of that shape will invariably go point first. A dirigible would almost certainly capsize. I should not like to discharge suddenly a weight of anything more than, say, 100 lb. from a dirigible. Even that might be dangerous to those who were undertaking it.

I would like, before sitting down, to thank you, Sir, very much indeed for having come all the way from Newcastle to preside over this meeting. It is not the first service of this kind you have rendered to us by any means.

THE CHAIRMAN (SIR A. NOBLE, BART., K.C.B.):—Ladies and Gentlemen,—It is my duty now to propose a special vote of thanks to Mr. Reid for the most important and most interesting Lecture he has given us to-day. The question of the weight of the shell which can be carried is one on which a great deal of information is required; while another point of some importance is the mode of ensuring that the projectile shall explode when it strikes the ground. It is not like something fired from a rifled gun, because you do not know how it may hit the ground. In that case you could not very well tell whether the fuse, unless it was a specially designed fuse, would explode immediately or not. That is a subject that should be very carefully considered. At present the opinion is very much that which is given in France, among other countries, namely, that it may be a cause of much annoyance but it would not be exceedingly serious unless the point to which I have alluded was complied with. I think this is a matter of very considerable importance that should be properly studied. I only regret that I did not think of bringing with me a diagram, which I had made some considerable time ago, showing the position of dirigibles at various heights, and the elevations necessary to hit them. I should say, speaking roughly, that it is a waste of ammunition to fire at balloons, at an unknown height, at angles of between, I will say, 65 and 90 degrees. The chances of your doing any good are practically nil; but at angles considerably less than those the chances of hitting are very great indeed. I can only express our great thanks to Mr. Reid for the most interesting Lecture which he has given us to-day.

BALLAD POETRY OF THE SEA.

By Lieutenant Julian Tenison, R.N.

Though it would be natural for English poetry to be rich in allusions to the sea, our greatest poets, with the notable exception of Swinburne, who stands pre-eminent as the laureate of that restless, changeless element, have not been over-generous in their celebrations of its beauties. True, we have Tennyson's immortal "Revenge," and Byron's grandiloquent panegyric of the "dark blue sea" in "Childe Harold's Pilgrimage," but the wealth of sea poetry has been given us by the ballad-makers, many of whom have remained anonymous. Some of their best productions deal with sea-fights, and perhaps the finest of them all is the heroic story of Sir Andrew Barton, that celebrated Scottish captain, who, in the sixteenth century, plundered all fat and prosperous merchant ships that came his way. As he had letters of marque against the Portugese, and on the strength of them plundered any rich trader regardless of the flag she sailed under, he was little better than a pirate; but his end was magnificent. Typical as it is of the spirit which has animated our sailors from all time, we cannot fail to admire his exhortation to his men when he is mortally wounded in the action against the ships fitted out for his capture by King Henry VIII.

> Fight on, my men,' Sir Andrew sayes,
> 'A little Ime hurt, but yett not slaine;
> Ile but lye down and bleede a while
> And then Ile rise and fight again.
> 'Fight on, my men,' Sir Andrew sayes,
> 'And never flinshe before the foe;
> And stand fast by St. Andrewe's crosse
> Untill you heare my whistle blow.'"

He then dies silently; and his men continue the fight, waiting for the whistle which he can never blow, until at last their ship is boarded and taken by their opponents.

The Spanish wars of the Elizabethan period inspired a number of these heroic ballads, such as "The Winning of Cales," which tells of the attack of Lord Howard and the Earl of Essex on Cadiz in 1596.

> "Long the proud Spaniards had vaunted to conquer us,
> Threatening our country with fyer and sword,
> Often preparing their navy most sumptuous
> With as great plenty as Spain could afford.
> Dub a dub, dub a dub, thus strikes their drums:
> Tantara, tantara, the Englishman comes."

The swaggering refrain is repeated at the end of each verse. In its clumsy language the ballad gives a vivid description of the panic in the town on the appearance of the English; the

action is but shortly sketched, and it is the plunder that seems most appreciated:—

"Entering the houses then, of the most richest men,
For gold and treasure we searched eche day:—"

Evidently our anonymous author was one of the seamen or soldiers of the expedition, and enriched himself at the expense of the inhabitants. What an alluring picture he draws:—

"Full of rich merchandize, every shop catched our eyes,
Damasks and sattens and velvets full fayre;
Which soldiers measured out by the length of their swords,
Of all commodities eche had a share."

Another ballad of the same period is "The taking of Cartagena," by Thomas Greepe, in which the Spaniards are shown in full retreat before Drake's onslaught:—

"And as they fled, strange news they tell:
These be not men, but fiends of Hell.'"

The wars of the seventeenth and eighteenth centuries were celebrated in braggadocio rhymes of slender merit, the Restoration period producing little nautical verse deserving of remembrance, except the courtly Dorset's song at sea "To all you Ladies now on land," which is graceful and polished, but is the poem of a landsman who wishes himself ashore.

"For though the Muses should prove kind
And fill our empty brain,
Yet if rough Neptune rouse the wind
To wave the azure main,
Our paper, pen, and ink, and we,
Roll up and down our ships at sea."

The tears of the unhappy gallants exiled on the ocean causing high tides at Whitehall is a pretty conceit, and the poem abounds with smooth and well-turned compliments, as when it says of the enemy:—

". . . . what resistance can they find
From men who've left their hearts behind?"

But my Lord Dorset and his fellow wits were obviously better qualified to sing the praises of the ladies they had left behind than to be laureates of the boisterous sea on which they were so ill at ease.

Most of the foregoing verses—be they Elizabethan or Carolian—celebrate the sea wars rather than the sea itself; but there is another type of ballad poetry in which the sea is made the scene of supernatural demonstrations such as the "Flying Dutchman." Many of these poems are gruesome and uncanny in the extreme, dealing as they do with sea monsters and spirits which assume the outward appearance of handsome men, and in this guise woo and win fair maidens of the land. Then, carrying their victims far out on the ocean, they reveal the grisly forms and cruel natures hitherto magically concealed, and the too trusting damsels are destroyed to the accompani-

ment of raging tempests. Such ballads abound in words strong in expression of the ghastly and terrible; in one we read of a "grumly beast"; and in the "Daemon Lover," at the point where the spirit resumes his own monstrous and revolting form,

> " . . . grim, grim grew his countenance
> And *gurly* grew the sea."

This is a word which at once brings before our eyes the grimness of the scene, the swirl and the gnarled broken appearance of the water, and we see vividly the horror of the woman going to her death

> " . . . . . where the white lilies grow
> In the bottom of the sea."

"Gurly grew the sea," too, in "Sir Patrick Spens," a ballad which is remarkable as giving an early example of the use of a device common in the modern man-of-war. To stop the rent in the vessel's side, Sir Patrick orders his men to

> "Gae fetch a web o' the silken claith,
> Anither o' the twine,
> And wap them into our gude ship's side
> And letna the sea come in."

This is on the same principle as the modern collision mat—a piece of canvas stitched with oakum, placed in case of emergency over a hole in the hull to keep out the water. Unfortunately for Sir Patrick it proved ineffective:

> "O laith, laith were our gude Scots lords
> To weet their cork-heeled shoon,
> But lang ere a' the play was played
> They wat their hats abune.
>
> And mony was the feather-bed
> That fluttered on the faem,
> And mony was the gude Scots lord
> That never mair came hame."

Not only must the sailor face the fury of the elements, but there were syrens, mermaids, and ghoulish spirits to lure him to destruction. Yet Coleridge's "Rime of the Ancient Mariner" is unnecessarily and inconsistently supernatural, and suggests actual ignorance of the sea. As to the love ballads, it is striking that they nearly always end with storm, death, and disaster; and it is the cruel rather than the beautiful aspect of the sea that seems to have inspired these old singers, who show the same hatred and fear of its terrors which possessed the ancient Greeks, and led Archias of Byzantium to write his Sea Dirge—the complaint of some hapless voyager who, dashed to pieces on a rocky promontory, is laid to rest

> "Within the hateful hearing of the deep."

The writers of the love ballads draw pretty pictures of "bonny ships" that might grace a fairy tale—ships whose

> " . . . . masts were of the good red gold,
> The sails of cramoisie."

Here is a dainty vessel, fit to sail enchanted seas:—

"The sides were of the good stout oak,
The deck of mountain pine,
The anchor of the silver sheen,
With ropes of silken twine."

Alas, what a downfall from this vision of loveliness to the cargo steamer of to-day, with her clumsy lines, grimy funnel, and rust-stained iron hull.

Many ballads have been sung in praise of piracy, but few are of great worth, except Charles Kingsley's spirited "Last Buccaneer," with its description of the "pleasant Isle of Avès"—

"Oh, sweet it was in Avès to hear the landward breeze,
A-swing with good tobacco in a net between the trees,
With a negro lass to fan you, while you listened to the roar
Of the breakers on the reef outside, that never touched the shore."

With what regret and longing did the broken old pirate, begging his bread in the streets of Bristol, look back upon the happy West Indian island and his fierce days upon the Spanish Main.

There have been poets in modern times who have sung of the horror, the cruelty, the grandeur, and the fascination of the sea, but it is curious that so few sailors have done so. Sea verse has almost always been written by landsmen, and often by those who have scarcely ever seen the sea, except from the shore. Falconer, however, was a sailor, and although his once famous but now neglected "Shipwreck" gives descriptions of voyage and storm, interlarded with admirable professional precepts, he shows us only the discomforts and dangers of the sea; and if he occasionally pauses to admire some seascape, he soon ruffles the surface of the water, clouds the sky, and turns his pleasant picture into one of horror. Captain Marryat has occasionally broken into verse, but most sailors of the present day cannot or will not put their intimate knowledge of the sea into words, and the efforts that come from the shore are not always satisfactory. The sentimental and idealised poems of Dibdin have no genuine "smack o' the sea" about them, while "Black-eyed Susan" teems with technical absurdities. On the other hand, no sailor can fail to appreciate Mr. Henry Newbolt's ballads of "Admiral Death" and "Drake's Drum." The former is the grim superior officer of all mankind.

"He's sailed in a hundred builds o' boat
He's fought in a thousand kinds o' coat
He's the senior flag of all that float
And his name's Admiral Death."

And what spirit and confidence there are in the fine lines of the latter—Drake's last words:—

"Take my drum to England, hang et by the shore,
Strike et when your powder's running low;
If the Dons sight Devon, I'll quit the port of Heaven
An' drum them up the channel as we drummed them long ago."

Mr. Kipling occasionally grapples with the sea in what may be called tramp-steamer verse, suggestive of oil, coaldust, and ugliness. It is realistic enough perhaps, and reveals a certain knowledge of the subject, but it misses the true poetry of the sea, although some of his ballads—such as that of the "Bolivar"—have a certain rough bravado that is not without its charm.

The Merchant Service has provided one notable exception to the general reticence of seafarers, and all sailors who have read Mr. John Masefield's "Salt Water Ballads"—or, indeed, any of his admirable sea poems—will realise that here at last is the real thing. Here is no idealised view of the ocean through a landsman's eyes, here are no mock heroics, no false sentiment expressed in ladylike language; it is the sea itself that we find in the pages of this book. Take, for example, the comments of the crew on their dead messmate:—

"'Bill, e's dead,' was all they said
'E's dead, an' there 'e lies.'"

What a contrast to the tearful rhapsodies of Dibdin's tars! One feels that it is exactly what rough sailors, a silent race not in the habit of expressing their emotions in high-flown language, would have said in the circumstances.

From a later book of ballads we get "Port of Holy Peter," with its simple yet vivid description:—

"All the day the wind's blowing
From the sick swamp below the hills,
All the night the plague's growing,
And the dawn brings the fever chills,
In Spanish port,
Fever port,
Port of Holy Peter."

Even if we have never seen such a spot, the vision of it rises before us. Indeed, so many of the ballads are striking, that it is difficult to select examples.

In recent years the Royal Navy has produced no poet except Mr. G. S. Bowles, the best of whose verses is "Raggies," the lament of a bluejacket over his friend who has been killed during an evolution. For the benefit of the landsmen, it should be explained that when two seamen are inseparable friends, they usually keep their brass-cleaning rags together, hence the name, which has the same significance as the colloquial "*pals*" on shore. Mr. Bowles skilfully sketches the rough yet very real grief of the ingenuous A.B.

In humorous verse the sea has received such attention from Sir W. S. Gilbert that it is impossible to refrain from mentioning the immortal "Bab Ballads." Most of us know and have delighted in Captain Reece, Captain Capel Cleggs, and the host of entertaining mariners who pass with their exaggerated sea roll through his pages. The majority of the nautical ballads refer to the Navy. One of them—that of Sir Blennerhasset

Portico—despite its burlesque tone, reminds us of certain estimable officers whose anxious care for trivial matters renders their lives a burden to themselves and all those who serve under them.

> "A captain in the Navy, he—
> A Baronet and K.C.B.,"

who, admiring Rodney, and wishing to ape him in every detail, is more concerned about the fitting of a "mystic selvagee" than any other matter in the conduct of his ship. Memorable also are Lieutenant Belaye and Sir Berkely. It was Lieutenant Belaye who took such pride in his ship's armament; he

> ". . . . commanded the gunboat 'Hot Cross Bun,'
> She was seven and thirty feet in length, and she carried a gun."

Sir Berkely was the terrible martinet who relieved Captain Reece of his command. How different he was to that admirable officer, under whose rule

> "A feather bed had every man.
> Warm slippers and hot water can,
> Brown Windsor from the Captain's store,
> A valet, too, to every four."

What a picture is drawn of Sir Berkely's brutalities:—

> "He stopped all songs at 12 p.m.,
> Stopped hornpipes when at sea,
> And swore his cot (or bunk) should not
> Be used by aught than he."

Can one wonder that this outrageous harshness caused a mutiny?

The Merchant Service, too, comes in for a share of the fun, and there is a hit at that absurd professional jealousy which so long existed between it and the Navy. When the Bishop of Rum-ti-foo returns to his See after a long absence, he finds a sad deterioration in the morals of the black inhabitants:—

> "Some sailors, whom he did not know,
> Had landed there not long ago,
> And taught them 'Bother!' also 'blow!'
> (Of wickedness the germs).
> No need to use a casuist's pen
> To prove that they were merchantmen;
> No sailor of the Royal N.
> Would use such awful terms."

Two more types of sea ballads remain—the Chanties and runaway choruses of the Merchant Service, and the gunroom songs of the Navy. The former stand by themselves, and consist roughly of a solo line and chorus, from the measure of which the men take the time to haul. Some of them are very inspiring. Some are mere repetitions, slightly varied, of the same two or three lines, as:—

> "Haul upon the bowline, the fore and main top bowline
> Haul upon the bowline, the bowline haul."

These two lines—the first solo and the next chorus—are repeated

twice, and in subsequent verses for "the fore and main top bowline" are substituted "so early in the morning," or almost any phrase that the singer chooses. All the chanties are on the same principle, though the metre and time vary according to the nature of the hauling—there are capstan chanties, halliard chanties, and furling chanties. Some, such as "Rio Grande," "Whisky Johnny," and "Blow the man down," are fairly well known outside the Merchant Service, and are often sung in gunrooms of men-of-war. The runaway chorus, as its name implies, is used by the men manning a rope led along the deck, and "running away" with it, its words giving time for the stamp of their feet in the same way that a band or bugle does in the Navy.

In warships' messes, one of the most popular songs is "Farewell and adieu," which describes a fleet in the days of sail of the line, leaving Spain and proceeding up Channel, finally anchoring in the Downs. It is always sung when a ship is sailing for home. But alas! few of the songs of the gunroom will bear repetition. In a ship in which the writer once served, the midshipmen used to sing a topical alphabet which had three versions. One contained most laudable sentiments, and was sung at a public "sing-song" before the Admiral. The second, of a somewhat broader nature, was reserved for occasions on which senior officers were present as guests in the gunroom; while the third, produced before members of the mess alone, was of a positively libellous character, and was sung with infinite relish by the juniors.

Though gallant ships and favouring winds offer the fairer prospect, it is in "the slimy bottom of the deep" that the poetic fancy may well seek the elements of song and story. The darkness and silence, the mystery, the fearsome monsters that dwell in the depths, the rotting ribs of the old sunken ships, the bones of the English and Spanish seamen that people the floor of the ocean, with the treasures they fought and died for now lying useless beside them in the ooze, contain the elements of a hundred romances yet to be written—romances of—

> " . . . a thousand fearful wrecks;
> A thousand men that fishes gnawed upon;
> Wedges of gold, great anchors, heaps of pearl,
> Inestimable stores, unvalued jewels—
> All scattered in the bottom of the sea."

Surely the great unchanging ocean which scattered the Invincible Armada, and helped to win for us our right to boast the lordship of its waves should not be execrated by our poets as cruel and treacherous, but rather should be celebrated as an ally, friendly and kind; or, at the worst, let it be considered a quiet resting place for those seamen whom it takes to sleep in its depths until that last day when, as St. John tells us, there shall be no more sea.

THE ORGANIZATION OF THE BRITISH BOARD OF ADMIRALTY.

Translated from the *Marine Rundschau*, by Colonel H. Wylly, C.B., and published by permission.

I. ORIGIN AND PRESENT COMPOSITION.

THE system of the British Admiralty is, as Admiral Sir Vesey Hamilton says in his book, "Naval Administration," "no product of the organizing skill of one or more individuals, or of ai single period. It is, if I may be permitted the expression, an organic growth, having its roots far back in mediæval history or earlier, developed under constantly expanding conditions, but owing its special character to the original circumstances out of which it grew."

The control and administration of the Navy, which in early days had appertained to the Crown, were, from the end of the 14th century, by an important and far-reaching transfer of authority and power handed over to certain high dignitaries. Even from the year 1385 we find Lords Admiral of England. From 1407 these dignitaries were entrusted with Letters Patent and bore the title of "Lords Admiral of England, Ireland, Aquitaine and Picardy," and later on were known as "Lords High Admiral." This office has been permanently constituted since the days of Henry VIII., and that monarch conferred upon it in the year 1512 the authority which the Admiralty possesses to this day.

In the 17th century, at the commencement of which the council-system received general acceptance in the English Government, a navy council also began to take the place of personal control, and in 1628 the office of High Admiral was for the first time represented by a commission. At the time of "the Long Parliament"—about 1640—it naturally came about that, in the different administrative departments established by Parliament after the outbreak of the Civil War, responsible ministers were appointed, who, for facilitating the harmonious transaction of business, were organized as councils.

After the Restoration, in 1667, Charles II. established a Committee for Admiralty, Naval, and Military Matters—in addition to other permanent administrative committees of the Privy Council, and in 1690 the Admiralty was permanently composed of a board or council, and this form it has, except during three brief periods, retained up to the present day.

As at present composed under the Orders in Council, dated 10th August, 1904, this board consists of six Commissioners for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland (known as "Lord Commissioners"), viz:—

The First Lord of the Admiralty,
The First Sea Lord.
The Second Sea Lord,
The Third Sea Lord, who also is known under the title of Controller of the Navy.
The Fourth Sea Lord.
The Civil Lord.

The parliamentary and financial secretary, and the permanent secretary are also of the governing body of the Board, holding the same independent position without being actually colleagues. The members of the Board are appointed by patent, the wording of the patent being that "full power and authority is conferred upon two or more members of the Board to do all that appertains to the office of High Admiral." Therefore, according to the terms of the Patent each member stands upon an equality with the others in regard to his powers and Parliament. But the general opinion is that this contra- *collectively* responsible. By the Admiralty Orders in Council, however, of the 14th January, 1869, and 19th March, 1872, the First Lord of the Admiralty was designated as individually responsible to King and Parliament for the whole business of the Admiralty, and it was declared that the remaining members of the Board were severally responsible to the First Lord for the conduct of all business which he might apportion to them. This contradiction between the wording of the Patent and the above quoted orders in Council has for years past given rise to repeated discussions—in the proceedings of Parliament, in parliamentary committees, and in commissions of inquiry appointed by King or Parliament—in regard to the position of the First Lord and the other members of the Admiralty Board towards one another, towards the Cabinet, and towards Parliament. But the general opinion is that this contradiction is rather apparent than real, that actually, during a long and unbroken period, the higher authority of the First Lord over his colleagues, and his greater responsibilities have been generally recognised.

It is proved from the reports of the special committees of the Lower House in 1861 that the administrative efficiency of the Admiralty was already maintained on these principles prior to the issue of the Orders in Council of the 19th March, 1872. Those of the 14th January, 1869, wherein the sole responsibility of the First Lord for the government of the Navy was for the first time officially laid down, merely gave expression to what had for years past been the general practice.

The former First Lord of the Admiralty and reorganizer of the English naval administration—Sir James Graham—said in regard to this before the Special Commission of 1861, that "the Board of Admiralty would indeed never be able to perform its duties if the First Lord were not placed first, and regularly exercised superior and controlling authority." But before the self-same commission it was expressly said, on the other hand, that this "practice" had altogether changed the character of the Board and that this character had now appreciably approached to that of an organization where a Minister governs with the help of an advisory council. The opinion given in appendix I. of the 1890 Report of a former Permanent Secretary of the Admiralty goes even further: "It would be more correct to call the First Lord of the Admiralty, Secretary of State for the Admiralty, and the other members of the Council, Heads of Departments, instead of calling them the Board of Admiralty." Rear-Admiral Hotham, then Junior Naval Lord (now called Fourth Sea Lord) of the Admiralty, expressed himself in similar terms: "It would be better to do away with the title 'Board of Admiralty,' and to call the First Lord 'Navy Minister,' which he actually is according to custom and practice, and according to the Orders in Council." The Report of the Commission of 1890 says, in agreement with this, that "the present system of Admiralty administration is the result of parliamentary interference in what was at one time in all respects a Council. The responsibility and also the supreme power of the First Lord of the Admiralty have substantially increased, and he is now, for all practical purposes, the Naval Minister." This coincides with the conclusions arrived at from the proceedings of the Special Commission of the House of Commons in 1888 on the affairs of the Navy.

Despite this recognition, and the generally accepted view that the Board organization of the Admiralty may be regarded as a fiction not worth keeping up, the British nation has not been able to make up its mind to rectify this contradiction between the working of the Patent and its actual interpretation and the decisions of the Orders in Council, and in the place of the "Board" to appoint a Minister or Secretary of State. It is feared that were the alteration of the Patent pressed, the Admiralty would not be so all-powerful as it is at the present time. Some reservation might be made for the Royal Prerogative, which might thereby be strengthened. Particular expression was given to this feeling by the special commission of 1861. Then there is the English dependence on tradition, "that innate conservatism, which has contributed much to the strength and something to the weakness of Britain," and also the deeply-rooted idea that only by means of a "board" can unnecessary outlay be prevented. The English statesman, Robert Lowe, remarked before a committee of the Lower House in 1865: "A board is a

very bad thing to administer, but a very good thing to check expenditure of public money."

In still more recent times—in 1898—Lord Goschen spoke out for the retention of the Board system of government; he said that the collective actuality of the Board of Admiralty, so far as it went, answered the Parliamentary system of government best, and therefore ought not to be set aside. This rooted conviction of the special advantages of a Board administrative organization is so prevalent among Englishmen that in the creation of new government departments (Board of Trade, Board of Agriculture and Fisheries, Local Government Board, Board of Education), formal boards were created by the inclusion of Ministers of other departments, who have quite enough to do in their own offices, and which are consequently organized and worked on a thoroughly bureaucratic basis.

Finally, any alteration in the terms of the Patent is considered undesirable because it is believed that the present wording of the Patent, whereby the remaining members of the Board are described as having equal powers and equal responsibilities with the First Lord of the Admiralty, raises the authority of the individual members in the eyes of the public. This is, however, contradicted by what was said by Sir Charles Wood, at one time First Lord of the Admiralty, before the special committee of 1861: "That he had never himself read the Patent, nor heard of anyone else who had done so." There are probably, therefore, not many people whose views on the authority wielded by the individual members of the Board, are based upon actual knowledge of the words of the Patent.

2. POLITICAL STANDPOINT.

(*a*) *In Regard to the Cabinet.*

The Cabinet stands above the Admiralty as above all other English Departments of State, in the same way that in the German Empire the Chancellor is above all the State Secretaries. The Cabinet is composed of a selection of politicians, who all belong to the party in office, are chosen by the Prime Minister, and are appointed by him to their various offices. It consists of the First Lord of the Treasury as Premier, of the Chancellor of the Exchequer, who is really the Finance Minister, of the five Secretaries of State, and the Lord Chancellor, and usually, for a long time past, of the First Lord of the Admiralty and of the Lord Lieutenant of Ireland or of his secretary, the Chief Secretary to the Lord Lieutenant of Ireland.

This Cabinet decides upon the general lines upon which the government is to be carried on in agreement with the general policy of the State; it controls in important administrative matters the action of individual heads of departments, and especially does it determine the establishments of the Army and Navy. The Cabinet alone can decide upon what sum of money is re-

quired for the furtherance of its particular policy, and lay down, from this basis, what portion can be allotted for the Navy. "Expense governs everything," said the Second Sea Lord before the special committee of 1888. The responsibility of the Cabinet therefore takes the place of the responsibility of the First Lord of the Admiralty so far as this direct co-operation of the Cabinet goes; in other respects the First Lord, as will be more clearly shown later on, is responsible for the administration, control, and policy, of the Admiralty. But for the proper understanding of the nature of this responsibility, it must be borne in mind that the collective responsibility of all members of the Cabinet forms the basis of Cabinet government. Unless, therefore, the Premier suddenly throws over his colleague and follower, the House of Commons can only accept the view of the responsibility of the First Lord of the Admiralty by turning out the Ministry; but it will hardly come to the determination to do this on a mere matter of departmental detail, and force a change of government with its attendant inconveniences, expense, and the uncertainties of the elections.

Should, however, the Cabinet find it necessary to resign on a vote of censure or want of confidence by the House of Commons, or when by a majority it resolves for reasons of its own upon resignation, or if the Premier alone thus decides, then all the other members, including the First Lord of the Admiralty, must resign their offices at the same time. This occasions a constant change in the control of the Admiralty, which has frequently been regarded as an evil. Sir Thomas Cochrane, for example, thus expressed himself before the special committee of 1861: "The chief and crying evil, in my opinion, is the frequent change in the composition of the Admiralty Board. I believe the whole business of the Admiralty would come to a standstill were it not that the permanent officials occupy leading positions. Since I have been in the Service changes have taken place two and twenty times, and since I was eight years ago appointed Commander-in-Chief at Portsmouth, there have been five changes at the Admiralty." The frequent change is all the more disturbing, as it is the rule that, not perhaps all, but the *majority*, of the remaining members of the Board go out with the First Lord.

This is all, however, looked upon as an unavoidable evil resulting from the parliamentary form of government, the nature of which induces a constant change of system and vagueness of plan with the change of party. "So long as the parliamentary system is in the ascendant, so long must all the great departments of State be subject to the control of Parliament. And if they are subject to such control, then they must be influenced by the ebb and flow of parties. The predominant party will possess the power and will select its own instruments for exer-

cising it; but certainly frequent changes at the tiller naturally lead to erratic steering."

A further consequence of the parliamentary system is that the Head of the Admiralty—like the Head of the War Office—rarely belongs to the Service. It is a recognised principle of the party system that the parliamentary form of government requires political and especially *party*-political experience in aspirants to high office. Such experience cannot be acquired, even in positions of authority incidental to the Service, but only in public life, in the war of parties. Interesting details under this head are to be found in the Minutes of the Report of the Commission of 1861. The then First Lord of the Admiralty, the Duke of Somerset, stated, for instance: "I do not think that, with a representative government in the country, you could go on without having the First Lord of the Admiralty a Cabinet Minister; and if you are to have the First Lord a Cabinet Minister, it will not often happen that an officer will be found in the Navy in that position in Parliament to be made a Cabinet Minister." Sir James Graham said: "I am strongly of opinion that while our government is parliamentary, it is greatly in favour both of the Service and of the State that a civilian should be at the head of the Board of Admiralty."..." Under our Parliamentary Government, I cannot conceive the office to be divested of political bearing."..." There is a great difficulty in finding a naval officer, however eminent in his own profession, consistently with the Parliamentary Government, capable of performing adequately the political functions, . . . but if you come to political life, to controversies in Parliament, to sustaining in debate the views which they (the officers) may strongly entertain, if they have to superintend all the details of the Civil Service, which past habits have not made familiar to them, I think they have not an equal chance with civilians; you cannot expect that they will render the same service any more than if you send a civilian to command a fleet; he would be found extremely deficient." The views of Admiral Sir Thomas Cochrane and of Vice-Admiral M. Berkeley are in agreement with the above. The celebrated Admiral Lord St. Vincent, on his appointment to be First Lord of the Admiralty, wrote: "How I shall succeed remains to be proved: I have known many a good admiral make a wretched First Lord of the Admiralty."

The possibility of acquiring the necessary political experience in public, and especially in party, life, has been rendered much more difficult for an officer through the Reform in the Franchise.

Besides the First Lord, the Civil Lord and the two Secretaries are usually civilians. It is, however, possible that the Civil Lord (only so-called because he must have a seat in the Lower House) may, be a naval man. One of the two secretaries

may also be represented by a naval officer, but this is by no means the rule.

In other respects also the British Navy is controlled and administered by civilians to a far greater extent than is the case with the navies of other Powers. The Commission of 1890 held that from many points of view this was an advantage; a greater cohesion in the administration was thus arrived at than if the major portion of the work of the Department was in the hands of officers, who, if they were not at certain regular intervals sent back to their own legitimate employment, would soon lose touch with the advances made in the knowledge accumulated of the duties demanded of them. By employing permanent officials in high places, a greater mastery of the details of the administration is assured. On the other hand, the Commission considered it an imperative necessity that, to a greater extent than had hitherto been the case, naval officers should be employed in the Admiralty for the despatch of technical matters of business connected with the work of the department; in this way, by employing naval officers on the staff of the Admiralty, sea-going officers would acquire a wider knowledge of the general system, of the possibilities and difficulties of the administration; a sense of confidence would be aroused, and the disposition to criticise, inseparable towards all departments of State by subordinates, would be lessened.

(*b*) *In Regard to the Secretaries of State.*

Besides the influences above mentioned, those must be noted which the Secretaries of State, *as such*, are able to exercise upon the Admiralty. Thus each of the five Secretaries of State can in case of emergency call upon and direct the military and naval forces of the country. And even in other respects the preponderance of the Secretaries of State over the other departments applies also to the Admiralty. Thus in the proceedings of Parliament during the Session of 1898 Lord Charles Beresford, then a member of the House of Commons, pointed out that when a naval officer was recommended for a decoration, such as the Commandership of the Bath, the recommendation had to be laid before the Crown— not by the First Lord of the Admiralty, but by one of the Secretaries of State. He had therefore for years past pressed that the First Lord should be made a Secretary of State: the Service suffered throughout from the existing arrangement.

(*c*) *As Regards the Imperial Defence Committee.*

Finally, the Imperial Defence Committee also exercises a certain influence upon the Admiralty. This is neither a Council of the Crown, nor a Committee of the Cabinet, and it has no executive functions. It exists, solely for the purpose of formulating and putting on record the best possible advice in regard to questions of Defence of the Empire for the benefit of the De-

partments chiefly concerned—the Army and the Navy. It is composed of the Premier as President, the Lord President of the Privy Council, the Secretary of State for War, and the First Lord of the Admiralty; to those are added the following, who are not members of the Cabinet: the First Sea Lord, the representative of the Mobilisation Department of the Navy, the representative of the Naval and Military Intelligence Departments, and other technical experts who may be summoned by the Premier to attend.

(*d*) *The Admiralty as a Court of Law.*

The Admiralty has no longer as of old any position in the legal system of the State as a special Court of Law. The Court of the Lord High Admiral, or of his representative, existed in the time of Edward III., since 1357, and enjoyed a prescriptive right of jurisdiction, which, in accordance with a decree confirmed in the time of Richard III. (1377-1399), was concerned with all kinds of injuries incurred at sea, beyond the boundaries of the Kingdom, and which later was extended to deal with all matters having reference to the sea. It had, further, a special jurisdiction in all matters connected with prizes, and finally it came to be concerned with all offences committed on board ship, on the high seas, and on the tide-way of rivers below the first bridge. This jurisdiction has now practically come to an end since all punishable offences committed at sea are now, so far as their character and culpability are concerned, dealt with just as if they had been committed in England or Ireland. The only jurisdiction remaining within the province of the Admiralty is under the Naval Discipline Acts of 1866 and 1884, and it is exercised by Courts Martial, and under the summary powers of the ship commanders; these are supervised by the Judge Advocate of the Fleet. But all persons belonging to the Navy, in the same way as soldiers of the Army, are amenable to the ordinary law of the land, as well as to the jurisdiction of the Articles of War. The former Admiralty Court is now a part of the "High Court of Justice—the Probate, Divorce and Admiralty Division." The experts required for adjudication on naval questions—known as the Nautical Assessors—are nominated through the Admiralty.

3. THE EXTENT OF THE WORK.

(*a*) *In General.*

Since the days of Henry VIII.—1509-1547—and up to the year 1832, the business carried on by the Board of Admiralty was conducted by three different departments—the Board of Admiralty, the Navy Board, and the Victualling Board. The first-named was the department of the Lord High Admiral or of the Commissioner appointed to "execute his office"; it concerned itself chiefly with the appointment and promotion of

officers, the movements of ships, and the general control of navy policy. The management of the dockyards, finance and payments, the provision and distribution of stores, the rationing of the Navy, and the transport arrangements all belonged to the departments of the Navy and Victualling Boards. The business conducted by the Admiralty Board was, as an English historian states, of the nature of that which in the German Army is carried out by the King, the Military Cabinet, and the Great General Staff; while the work of the two other boards resembled that which in the German Army is conducted by the War Ministry. The Navy and Victualling Boards were originally subordinate to the Board of Admiralty, but succeeded by degrees in making themselves more and more independent of it. By means of the reforms introduced by Sir James Graham in 1832, the different civil departments, numbering 13, and each more or less independent of the other, and of the Admiralty Board, were united under the Admiralty. According to Hamilton, it is by this measure, which in the space of four years effected a saving of over a quarter of a million, that the Admiralty and its various departments acquired the uniform and flexible character which they to-day possess. In modern times, however, the existing reorganization scheme of Graham is regarded rather as a blunder, and as a misfortune for the Navy. It is said to be a divergence from the sounder organization of Henry VIII. above described, which endured during 300 years, and particularly during the times of the great naval wars; that the political and executive control should be superior to the administration, but should also be separate; that those who have the guidance of warlike operations should be freed from the worry about details connected with the provision of ships, munitions, supplies, etc., by means of which war is carried on. All the Lords of the Admiralty are now brought into touch with questions of the provision of material, and their thoughts are turned from considerations of the best methods of using the means to be provided.

The result of the centralization of all the work in the year 1832 was that all transactions of the administration and of finance, in addition to the war and technical and command work, were united in the hands of the Board of Admiralty, namely, both the administration and the command of the Navy. Since then the Admiralty, as Hamilton states, "exists for the proper constitution, maintenance, and disposition of the fleet in its material and personal elements. It is the organizing force behind our Sea Power—that system and that machinery by which the fleet is created and sustained, by which it is supplied with trained officers and men, distributed throughout the world, and constantly furnished with everything necessary for the exercise of its functions in peace, and for its readiness in case of war."

The control and the employment of the fleet in war are also imposed on it.

(*b*) *The Patent.*

The Royal Letters Patent, which at every change of Ministry appoint the Commissioners who jointly compose the Board of Admiralty, form the basis of the full powers conceded to the Board for the proper performance of its duties. This Patent goes back to that granted to the Lords High Admiral, and transfers in regular sequence the Powers of the Lords High Admiral to the Board as it now exists. To-day's Letters Patent find their earliest type in those which Henry VI. (1422-1461) granted to the Earl of Warwick. Since those days only certain trifling alterations have been made in the wording of the text. There is only one change of any importance—formerly the Letters Patent were granted to "three or more Commissioners," whereas to-day the wording runs "to two or more Commissioners," but at the present time this does not have any particular effect, since in the actual result the will of the First Lord stands predominant.

The Patent is divided into 8 main parts: the first pronounces the warrant for "executing the office" of Lord High Admiral. By virtue of the second part the Commissioners issue orders for the building, repair, and fitting out of ships, and fix the scale of payments. Part 3 directs the officers of the Navy and the officials of the different branches of the administration to obey the orders of the Commissioners. In Part 4 the Commissioners are empowered to draw up rules and regulations for improving the discipline of the Service. The fifth part is concerned with matters which to-day have no application—fees, dues, and prerogatives of the Admiralty. By virtue of Part 6, the Commissioners are empowered to nominate Vice-Admirals of the Coast of England, whereby must be understood the present representatives of the Lord High Admiral, and not senior or executive officers. Part 7 gives the Commissioners the power to appoint the heads of the various departments, while in the 8th Part they are authorised to make contracts. The Letters Patent conclude by clothing the Commissioners with the authority of officials who no longer exist, such as "the Principal Officers," the Commissioners of the Navy Board, and the Commissioners of the Victualling Board.

It has already been pointed out that nobody troubles himself much with the terms of the Letters Patent, the less that it is generally recognised that the Patent expressly confers upon the Board of Admiralty no more than a fraction of the power which the Board uses and has hitherto enjoyed, and that for the control and for the privileges of the office the real standard is immemorial usage, which in all offices becomes a kind of tradition. The authority of the Lords High Admiral themselves and of their forerunners, the local admirals, was exercised according to immemorial usage, and by virtue of the full powers conferred by

the Crown in regard to maritime affairs. There is in the body of the Patent a certain indefinite authority—nowhere actually laid down—based upon *custom*, and whereby it becomes possible for the First Lord of the Admiralty to carry out any project which appears to him to be required for the safety of the Kingdom.

The custom which covers this authority is specifically mentioned in a Declaratory Act of the year 1690, which affirms "that each and every authority, dominion, and power with which by any act of Parliament or by other measure the Lord High Admiral of England was and is clothed and invested, and which in the same manner was and may be attached to him, the same has always belonged to the Commissioners executing the office of Lord High Admiral of England, and will by right be by them possessed, enjoyed, and exercised, and can and shall be possessed, enjoyed, and exercised, according to this Act, for all purposes and at all times, as if the named commissioners were themselves the Lord High Admiral of England."

(*c*) *Organization and Responsibility within the Board.*

At the head of everything stands the First Lord of the Admiralty, whose powers are only limited by the Orders in Council, and who, by virtue of the above mentioned authority of the Board, apportions the work among the individual members, and the different departments and branches supervised by the members and the secretaries.

We shall have more to say later on about the distribution of the work. One consequence of the division of the business of the administration among the individual Lords and Secretaries in place of the former collectively, is that the individual members of the Board have now each a varying degree of responsibility. Something has already been said above about the responsibility of the First Lord in regard to the Crown, to Parliament, and to his colleagues. He is responsible for the whole Navy so far as concerns policy, control, and administration; he represents the Navy in Parliament, in everything which concerns the Navy he is looked to. His is the final decision in all matters, and he is not in any way bound by the advice of the other members of the Board, or even by an unanimous vote of his colleagues; he is not even obliged to hear what the others have to say prior to any decision he may come to, nor need he permit them to share in carrying out any plan which may seem to him advisable. He can also at any time demand of the Cabinet the dismissal of any colleague. The responsibility of the First Lord has been so defined as being responsible for the Admiralty in the same way that the Premier is for the Cabinet or an admiral for the fleet he commands, who, for example, is not responsible for a collision between two ships unless it results from one of his orders or from miscarriage of such order.

The question of the responsibility of the remaining members of the Board has not been always undisputed. It is laid down in the Order in Council of 1872 that the members of the Board are answerable to the First Lord (but not to Parliament or Crown) for the conduct of such business as he may entrust to them. The more closely defined the administrative business of the individuals may be under this allotment, the more complete and distinct must their personal responsibility become. Absolutely clear definition is not, however, under all circumstances possible, a certain overlapping is unavoidable, which not only, as Sir James Graham remarked before the Royal Commission on "Civil Establishments," acts with a retarding influence upon the course of business, but brings in its train a degree of uncertainty as to the personal responsibility of individual members. But doubts have chiefly arisen as to the extent of responsibility of the individual members, owing to their curtailed spheres of business, and especially in regard to decisions come to at the Board meetings.

The Commission of 1890 ascertained that one side declared as to this, that, "while the First Lord was responsible for the whole Navy, the members of the Board were together equally responsible with the First Lord of the Admiralty for the strength of the Fleet and for its strength being sufficient"; further, "the responsibility for any decision come to by the Board, as such, must be shared by every member who has not opposed it, or, if the matter is of great importance, has not resigned." On the other side, it was contended that "it was at least a debatable question whether it is part of the duties of the members to state in opposition to the First Lord what in their opinion were the naval requirements of the country; such an act, although within their powers, was rather one of patriotism than of duty"; again, "the responsibility for the strength of the Navy lies with Parliament, and not with naval officials."

The Commission of 1890 laid down definitely that "the organization of the Navy Department partook more of the character of an advisory council with a responsible head than of a governing board. The Minister was the only person who could be recognised by Parliament and public as responsible, and the responsibility of the members of his council, whether in regard to their governing or ordinary powers, rested entirely with the Minister. On the First Lord alone must rest all responsibility for decisions in regard to measures of precaution to be taken for naval exigencies, and the existence of an advisory body cannot be considered as in the smallest degree intended to lessen such responsibility." That in such a case the responsibility of the Cabinet takes the place of that of the First Lord has been already explained under 2 (*a*).

In relation to the First Lord the responsibility of the individual Lords is the same for all. But for the First Lord alone certain new modifications have recently arisen in this respect.

The Commission of 1890 decided that the First Sea Lord, in view of the extent of the business conducted by him, should be recognized as the chief adviser of the First Lord of the Admiralty, and for this reason should occupy a special position. The Commission held it to be necessary that he should bring to the notice of the First Lord all questions connected with the distribution of the fleet in peace and war, the proportionate strength of the British fleet as compared with those of other Powers, the duties of the fleet in regard to the protection of commerce and of oversea possessions, the number, class, and type of ships to be retained in the service or to be built, the relation of the Navy to the Army under all conditions in which amphibious operations or separate action might be necessary; in fact, all matters rather of naval policy than of administration.

The Commission proposed that the "constitution of the Office of the First Naval Lord" (now First Sea Lord) should be that of "Chief Adviser of the First Lord in all great questions of Naval Policy."

In a special note attached to the report, Sir F. Richards, one of the Commissioners, pointed out that such a ruling would place the First Sea Lord in a position of isolation, since it would deprive him of the support of his colleagues; it would also tend to restrict the First Lord of the Admiralty to dependence upon a single man in regard to responsible professional advice.

By the Orders in Council of 10th August, 1904, the proposal of the Commission was accepted on being brought before both Houses in 1905, on the motion of the First Lord of the Admiralty on 20th October, 1904. The First Sea Lord has now, therefore, to advise the First Lord of the Admiralty on all great questions of naval policy and war. By this decision he is also considered in relation to the First Lord, as responsible for the seaworthiness of the fleet and its readiness for war.

But just as the Report of the Commission of 1890 aroused opposition, so in like manner have the regulations arising from the Order in Council of 10th August, 1904, given rise to discussion. It has been said that they constitute a great innovation, that the position and authority of the other members of the Board have been seriously depreciated, that even the position of the First Sea Lord has been lowered, that he no longer receives the support of responsible colleagues, but of irresponsible men, who are practically no more than heads of departments under him; it is, moreover a risky matter to place the First Sea Lord between the First Lord and the rest of his colleagues. But thereby the fact is not altered, that it is laid down in the work-distribution plans that all members of the Board have the right of dealing directly with the First Lord of the Admiralty. Another disadvantage of the regulations is that they have the result of giving the First Sea Lord too much voice in questions of *matériel*.

(To be continued.)

The following article is, by agreement with the Society for Nautical Research, reproduced from the current number of "Mariner's Mirror."

THE UNION FLAG.[1]

By Rear Admiral Sir R. Massie Blomfield, K.C.M.G.

I VENTURE to attempt a further elucidation of the question so ably treated by Mr. Perrin, in the February number of the Mariner's Mirror, as to the origin of the practice of British Royal Ships flying on a flagstaff at the bowsprit end a small replica of the National Flag.

From ancient seals it appears to have been usual for Royal ships to carry a flag at the bow; but the earliest mention of a bowsprit flag as proper to be carried in time of war, or in a Naval Action, which I have found, is in a MS. in the Domest. S.P., Elizabeth, Vol. CCLIX., 48 (June, 1596), containing a paper book, with "Certaine briefe notes and necessaries, with objections, for warlike affaires concerninge two Princes' Armies of Shipps meeting uppon the Seas to encounter the one with the other, w^{h} I doe sett downe of myne owne simple experience," by a Captain John Yonge, whose sea service extended back to the time of Henry VIII, and whose forty-six "Rules for Naval Affayres," submitted for the approval of Lord Charles Howard and the Earl of Essex in 1596, appear to have formed the basis of the instructions issued by them for the conduct of the fleet in the voyage to Cadiz.

Rule VIII, which, he says, is "moste needfull to be observed in all pointes as shall appeare to divide the good service from the badde," contains the following: "It is convenient and very necessarye to knowe whoe dothe or doth not come in, that everye Admirall and all his own Companye must weare uppon theire Mizzen Yarde Armes, Pendants; and looke, howe manie Admiralls you have, soe many severall cullers of Pendants you must have alsoe, unto the full copplement of yo^{r} Shipps, Barkes, and Pinnaces, by which meanes being accomplished you shall easily see and perceyve whoe doth come into the Fight or not, whiche, without these sondrie cullers of Pendants for yt, cannot be otherwise perceyved; and, that the cullers maye be the better knowne from those of the Enemy's yf they chance to have the like, it shalbe, then, convenient that upon yo^{r} mizzen flagg-staves, or *th'ende of yo^{r} bowlesprits*, there bee but a *smawle little flagge with a red Crosse*, yt being but a little bigger than a vaine of a greate Catche."

[1] See Journal R.U.S.I. for February, 1911, p. 219.

Here we have an evident suggestion for what was afterwards known as the "jack," or small form of the National Flag, shewing that the idea did not originate in the reign of James I, whether it was that of Captain Yonge or only in accord with his own experience; but, as the "jack" is not shewn in the illustrations on pp. 45, 47, 49, 51, Vol. XX., N.R.S., of the Flagships in the Howard-Essex Fleet of 1596, the suggestion of Captain Yonge may not have been adopted, and we are still left in the dark as to when the term "jack" was first applied to the "smawle little flagge with a red Crosse" at "th' ende of our bowlespritts."

The use of the above-mentioned "cullered pendants" at the yard arms, or at different mastheads, to distinguish the ships of different squadrons, was continued throughout the reigns of James I and Charles I, and are those alluded to by Mr. Corbett in his note at p. 108, Vol. XXIX of the N.R.S., cited by Mr. Perrin, until superseded in 1653 by the fly-ensigns introduced by Blake, Deane, and Monk, with the universal man of war pendant at the Main.

The Duke of Buckingham, in 1625, and Sir William Monson[2] and Captain Nathaniel Boteler[3] (both writing about 1635 A. D.), are very clear as to the use of coloured pendants at that date by men of war, being always indicative, in conjunction with the place at which they were displayed, of the particular squadron to which they belonged. Sir W. Monson says, "Every ship of the Squadron, besides, is to wear a streamer of the same colour in the Forehead or Mizenyard to be distinguished from the other Squadrons." The colours of these squadron-streamers, or pendants, unless specially designated by the Commander-in-Chief of the Fleet, being like the flags of the Squadron-Admirals, Vice-Admirals, and Rear-Admirals, left to the discretion of the Squadron-Admiral, who, as Vice-Admiral, or Rear-Admiral of the whole fleet, also carried the British Flag at the Fore or Mizzen.[4]

Monson, who was then Vice-Admiral of the Grand Fleet under the Earl of Lindsay, is speaking of a fleet of that size, of which the three primary divisions were each sub-divided into three sub-squadrons having their own Admiral, Vice-Admiral and Rear-Admiral. In the following instance the fleet

[1] Is it only a coincidence that Capt. Yonge's name was Jack?
[2] Book III., Naval Tracts "Instructions from a General to his Vice-Admiral Rear-Admiral and Captains to be observed by them at Sea."
[3] Dialogical Discourse, &c. Dial. 5th, Sloane MS. 758.
[4] This is well illustrated at pp. 45, 47, 49, 51 of Vol. XX., N.R.S.

was too small to necessitate the three Main Squadrons being divided into more than two parts.

[5] Intruççons given by mee, George, Duke of Buckingham, Lord High Admiral of England for this ffleete, appointed to transport the Queen's Ma[tie] ffrom Bulloigne, June 4, 1625; ffor ye more convenient orderinge of this ffleete I have thought good to divide the same into three partes or squadrons, viz:—

The Admirall in y[e] Prince Royall wearing y[e] Flagg in y[e] Main Topp who (though she be attended by all y[e] rest) shall especially have y[e]	Rainbowe Mary Rose Royal Ark Abygail	with y[e]	Hopwell Adventure of Ipswich Abiah	Everye of them wearinge y[e] pendant in y[e] Main Topp
The Vice-Admirall in y[e] Anne Royall with y[e] Flagg in y[e] Fore Topp, to be attended by y[e]	Antelope Prudence Saphire Martha	with y[e]	Dreadnought Talbott Assurance of Dover	Every of them wearing y[e] pendant in y[e] Fore Topp
The Rear-Admirall in y[e] Lyon, with y[e] Flagg in y[e] Mizen Topp	Assurance Convertive Zouch Phenix Globe	with y[e]	Supply Mary Constance Mary Anne	Everye of them wearinge y[e] pendant in y[e] Mizzen Topp

Here follow twenty Articles of "Instruççons for Saylinge," in which no mention is made of the colours of flags or pendants; but Art. XVII of Lord Wimbledon's Instructions, a few months later, says:—

[6] "The whole Fleet is to be divided into three squadrons; the Admiral's Squadron to wear red flags and red pendants at the Main topmast head; the Vice-Admiral's Squadron to wear Blue flags and Blue pendants at the Fore topmast head; the Rear-Admiral's Squadron to wear White flags and White pendants at the Mizen topmast head"; no discretionary power as regards the colour of flags or pendants being left to the Squadron-Admirals nor, indeed, any mention of the latter; but we know that the fleet was sub-divided in the orthodox way from the following list, which I give verbatim (dated, October 8th, 1625) [7] of the ships forming it."

Domest. S.P., Charles I.
Vol. XXIX., N.S., p. 55.
[7] Domest. S.P., Charles I., Vol. VII., pp. 48, 49, 50.

Again, Nathaniel Boteler, in his 5th Dialogue,[8] says of Pendants, "The use of them is to distinguish the Squadrons of a Fleete by hanginge them out in the topps of such shipps as carry noe flagges there. As, for example, all such shipps as are of the Admirall's Squadron are to hang them out in their Main Topps; those of the Vice-Admirall's Squadron in their Fore Topps; and those of the Reare Admirall in their Missens; and here alsoe they are to be of severall cullers; But besides this use, in great shipps and especially in such as belong to the King, they are often used by way of tryumphe and ornament, and are then hung att every yarde arme, and att the

The Admirall's Squadron.		The Vice-Admirall's Squadron.		The Rere-Admirall's Squadron.	
The King's Ships.		*The King's Ships.*		*The King's Ships.*	
Admirall	Anne Royall.	*Admirall*	Swiftsure.	*Admirall*	Red Lyon
The Lo. Marshall	Tunnes 1000	The Earl of Essex.	t. 876	Sir Fra. Steward.	t. 650
Captain Sir T. Love.	Seamen 400 Landsmen 0	Capt. Sir S. Argyll	s. 250 l. 0	Captain ?	s. 250 l. 0
Vice-Admirall	St. Andrew.	*Vice-Admirall*	St. George.	*Vice Admirall*	Raynbowe.
The Lo. Denbigh.	Tunnes 895	The Lo. Valentia.	t. 895	The Lo. Cromwell.	t. 650
Capt. Sir J. Watts.	Seamen 250 Landsmen 0	Capt. Gilbert	s. 250 l. 0	Captain Chadley.	s. 250 l. 0
Rere-Admirall	Convertive.	*Rere-Admirall*	Reformation.	*Rere-Admirall*	Bonadventure
Sir W. St. Leger.	Tunnes 500	The Lo. de la Warr.	t. 750	Sir H. Palmer.	t. 674
Captain Porter.	Seamen 200 Landsmen 0	Capt. Greeves.	s. 250 l. 0	Captain ?	s. 250 l. 0
N.B. Attached to the Admls. Squadron were 20 Merchant Vessels averaging 300 tons each, and carrying in all 4,400 soldiers and landsmen.		N.B. Attached to the V.-Admiral's Squadron were 21 merchant vessels carrying 3,008 soldiers and landsmen; also 5 victualling ships.		N.B. Attached to the Rear-Admirall's Squadron were 20 merchant vessels carrying 3,000 soldiers and landsmen; also 5 victualling ships	

heads of ye mastes. *And these are their only uses and employment.*"

The Proclamation of 9th March, 1661, directing the flags, jacks and pendants of H.M.S. to be thenceforth made of "Red, White, and Blew," cited by Mr. Perrin, is certainly obscure; but may have reference to the option which Monson says was given in his day to Vice-Admirals and Rear-Admirals of a fleet to choose what coloured flags they should display at the main of their Flagships as Admirals of a squadron, in addition to the National flag flown at the fore or mizzen as Vice-Admirals or Rear-Admirals of the whole fleet; and may have been intended, thenceforth, to confine the Royal Navy strictly to the three colours of the Union—Red, White, and Blue.

We find a still more obscure direction in the instructions of L.H.A. the Duke of York "for the better ordering of H.M. Fleet in sayling," signed by himself and his secretary, Mr. Werden (which fixes the date as between August 1672 and

[8] Sloane MSS. 768, B.M.

May, 1673). There are 26 articles, of which Art. VIII., after describing who is to come on board the flagship when the *Union Flag*, an Ensign, the Standard, a Red flag, a White flag and a Blue flag, respectively, are displayed in the "Mizzen Shrouds"; proceeds to say who should come on board when the Standard, a White flag, a Blue flag, and a "*Jack coloured with colours*," respectively, are displayed at the "Ensign Staff."

Are we to suppose that the old British "jack" was still in use in the Royal Navy, as well as in the Merchant Service, in 1672, and that the "Jack coloured with colours" means the Union Jack, the peculiar description of the latter being necessary to distinguish one "jack" from the other?[9]

As regards the misapplication of the term "jack" to the Union Flag when flown elsewhere than at the bowsprit end, which I have described in the "Navy" journal as dating from two centuries ago, I may cite Josiah Burchett, Secretary of the Admiralty from 1695 A.D. to 1742, who tells us, that, in 1702, "there were some doubts whether his Lordship (L.H.A, the Earl of Pembroke) should have borne at the Main topmast head the Royal Standard of England, or *the Union*, or, more properly speaking in Maritime phrase, *the Jack Flag*."[10]

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[9] NOTE.—The MS. copy of these instructions in the Admiralty Library, which is believed to have been made for the Duke of York's own use, shows in the margin against this description of the "Jack coloured with colours" a drawing of the Union Jack. There can thus be no doubt as to the interpretation of the term.—ED.

[10] Naval History, p. 619.

THE MEXICAN ARMY.

Translated from the *Revue Militaire des Armées Etrangères* for May, 1911, and published by permission.

PEACE AND WAR STRENGTH

THE Mexican Army consists at present of 28,515 of all ranks viz:—

Officers.	
Divisional Generals	7
Generals commanding Brigades ...	41
Brigadier-Generals[1]	55
Superior Officers	511
Subaltern Officers	1,771
Total Officers	2,385
Rank and File.	
Infantry	17,080
Cavalry	5,800
Artillery	1,550
Other Arms and Departments ...	1,700
Total Rank and File	26,130

To these figures must be added 41 superior officers, 110 subaltern officers, and 1,000 rank and file belonging to the Navy, but administered by the War Department, making a grand total peace strength of 31,500 men, a number which the Government can increase as required by a simple demand on the Governors of States.

The war strength is estimated, in theory, at about 84,500 men, but it is doubtful if more than 50,000 combatants would actually be available.

DISTRICTS AND COMMANDS

Mexico is divided into ten military districts, and three commands, besides the independent command of Tepic. These districts are of equal strength, as regards the provinces, but in the federal district of Mexico there is a considerable concentration of troops with a view to the maintenance of order.

[1] These Officers may be employed to command Battalions, Regiments, or Brigades.

The whole of the artillery, the battalion of engineers, six battalions of infantry, 5 regiments of cavalry, the squadron of military gendarmerie, and the squadron of presidential guards, about one-eighth of the army, are allotted to the district.

ORGANIZATION

The President is head of the army, and acts as commander-in-chief.

Infantry.—The infantry consists of 30 battalions of 4 companies each (strength of a company 8 officers and 140 men); 4 cadres of infantry battalions[1], and 2 local companies of Lower Californias.

Cavalry.—The cavalry consists of 18 regiments of 4 squadrons each (strength of a squadron 8 officers and 80 sabres); 1 squadron of presidential guards, 1 squadron of military gendarmerie, 4 cadres of regiments of 2 auxiliary corps at Puebla, and in Sonora, and a squadron which acts as escort for the commission of exploration.

Under the cavalry arm may also be reckoned the "Rural" troops formed by Suarez, immediately after the French intervention; these men are recruited with great care, and are much respected in the country districts. They consist of 20 sections of 100 men each.

Artillery.—The artillery consists of 4 regiments of 4 six-gun batteries (including one field and one mountain battery) each. There is also a mounted detachment, armed with quick-firing guns of small calibre, consisting of 2 batteries intended to accompany cavalry, besides 1 company armed with 12 machine guns, 2 companies of heavy artillery, 3 sections of coast artillery, and 1 "squadron" of artillery transport.

Engineers.—The engineers consist of 1 battalion of about 600 men, an engineer park (one company), and a telegraph unit.

The staff is a separate corps, and is formed by officers drawn from the Military College at Chapultepec, who have studied for 7 years.

Ordnance Corps.—The ordnance corps (*Artilleurs constructeurs*) are responsible for the repair, preservation, and improvement of all military *matériel*.

Under this corps are:—

The Commission, which undertakes the manufacture of warlike stores.
The National Arms Factory.
The National Gun Factory.
The two National Powder Factories.
The general artillery magazines.

[1] Since the above was written the 4 Cadres have been abolished: the total number of battalions is now 34.—Ed., R.U.S.I.

Engineer Constructors.—The corps of engineer constructors (*ingenieurs constructeurs*) are responsible for the building and maintenance of barracks and military buildings, railway duties, bridges and telegraphs.

Medical.—The medical service consists of doctors, apothecaries, and veterinary surgeons. The medical personnel is drawn from the students of the Army Medical School and the Instructional Hospital, and from civilian doctors and apothecaries who have passed an examination. Veterinary surgeons are drawn from the Veterinary School.

Invalids.—There is a National Corps of Invalids, commanded by a general or colonel, and organized in two companies. This corps receives officers and soldiers who have lost limbs or are chronic invalids, and soldiers of over 60 years of age who have no families.

The Officers' Depôt.—To the officers' depôt belong all retired officers on the emergency list who would be immediately available to complete units to war strength.

The General Treasury Section.—This section supervises the administrative services. The paymasters of regimental units are under the Minister of Finance.

Transport Services.—These are practically non-existent, but could be easily organized owing to the large number of mules available in the country.

Military Justice.—This is regulated by the Revised Code of Military Law, drawn up in 1901.

The courts existing in time of peace are: The Supreme Court of Military Justice, which acts as a court of appeal, and is composed of eight supernumerary generals.

Two courts of military justice, which act as revising courts.

Two courts martial, of which the prosecutors constitute the only permanent personnel.

CONDITIONS OF SERVICE

The principle of compulsory service is authorized by the law of the 31st October, 1900, which has been in force since the 1st July, 1901. This law fixes the establishment of the cadres, and lays down regulations for their organization and mobilization. Owing to various causes, it has not, however, been carried out up to the present time.

The actual method of recruiting is by enlisting unemployed labourers and loafers for periods of 4 or 5 years.

The law provides for the creation of a first and a second reserve for the active army; but scarcely any steps have been taken to form these reserves.

Finally there are, on paper, at any rate, the militia troops of the several States.

In spite of a somewhat listless exterior the private soldier (who is generally of Indian extraction) possesses military virtues of great value. He is extremely sober, active, a good marcher, courageous, handy, and intelligent. If need arises, he can easily shake off his indolence. The enforcement of obligatory service would, moreover, produce a better class of recruit. As the soldiers are nearly all married, their wives are admitted to barracks; on manœuvres they perform the functions of a supply department, carrying and cooking the daily rations for their husbands.

The Mexican is a horseman from his birth, and gets the best work out of the country-bred horses, which are small, but sturdy, and, like their riders, capable of great endurance. They do not require shoeing, or regular feeding. These animals are suited rather for reconnaissance work than for shock tactics or for remounting the artillery. In addition, a certain number of horses are imported from the United States.

The use of field artillery would be much restricted by the rough and broken character of the country. The mules are excellent; those that are used for pack transport in the mountain artillery have a very practical form of pack saddle, which is well balanced and seldom causes a sore back.

ARMY ESTIMATES

Although the number of effectives has decreased since 1907, the army estimates have increased considerably, the chief causes being improvements in barracks, *matériel,* equipment, and schools.

The Budget for 1907-8 was £1,796,876; that for 1910-11 amounts to £2,177,987. The money for the principal votes is allotted as follows:—

War Department	£59,010
Staff, etc.	112,197
Commands of Military Districts, forts and prisons	31,309
Infantry	560,145
Cavalry	231,313
Artillery	213,860
Medical Service	101,034
Military Justice, Archives, Library	62,724
Administration	439,132

EDUCATIONAL ESTABLISHMENTS

The following are the military educational establishments:

(1) The Military School of Chapultepec. This school accommodates 285 pupils, who join at the age of 16; 80 of these pass out every year. Sixty commissions into the army are given each year, viz: about 35 into the infantry and cavalry after 3 years at the school, and the remainder into the engineers, staff, and artillery after 7 years. The instruction is given

gratuitously. The commandant of the school is a general; his staff consists of 75 officers and professors.

Those pupils who only attend for 3 years attain a standard of military education very little superior to that of the French non-commissioned officers.

Those who study for 7 years have a thoroughly good foundation both in theoretical and professional knowledge, and this is developed by suitable courses on staff, etc.

(2) The school for aspirant officers at Tlalpam. This school has been in existence since 1905. It trains subaltern officers for the infantry and cavalry. At its head is a colonel, with a staff of 37 officers. The students, who number 210, join between the ages of 17 and 21. Some of them enter the school from civil life, by examination; others consist of officers of the active army who have received commissions into the army direct from civil life; the remainder consist of non-commissioned officers who are being trained for commissions. The number of officers who get commissions direct from the ranks without having passed through a military school, or direct from civil life, decreases every year.

Officers are frequently seconded for service with foreign armies.

(3) The School of Musketry, to which each regiment sends two officers every year.

(4) The Medical School, to which is attached the Instructional Hospital.

(5) The Veterinary School. [1]

ARMAMENT

Infantry.—Magazine rifle, Mauser pattern, 7-mm., charger holding 5 cartridges. General Mondragon, formerly military attaché in France, has invented an automatic rifle (known as the "Porfirio Diaz") which has been recently adopted for the army. 4,000 rifles of this pattern have been ordered from a foreign firm. The rifle has a bolt action mechanism, for magazine fire, with a charger holding six cartridges, and a contrivance for utilising the force of the powder gas at the moment of discharge, in order to effect the opening and the closing of the breech.

Cavalry.—The Mauser carbine of the same calibre as the infantry rifle.

Reserve Troops.—Remington rifle, 1893 model.

Field and Horse Artillery [2]—75-mm. Schneider-Canet quick firing guns, 1898-1901 pattern; Saint Chamond Mondragon 75 mm. guns, 1901 pattern; old de Bange field guns, converted under the supervision of General Mondragon to quick firing guns, by the adoption of a simpler breech-mechanism, a hydraulic brake, and a trail spade; de Bange moun-

[1] Details of educational establishments were given in the March number of the JOURNAL, pp. 388 *et seq.*—Ed., R.U.S.I.

[2] Abbreviated from the original.—Ed., R.U.S.I.

tain guns converted into light quick firing field guns on the Mondragon system, capable of being transported on mule back.

There are thus four different types of gun, but nothing which can properly be called a mountain gun.

There are, moreover, no real coast defence guns in spite of the importance of the harbours of Vera Cruz, Tampico, Salina Cruz, Coatzacoalcos, and of the completion of the railway across the Isthmus of Tehuantepec.

FACTORIES FOR THE MANUFACTURE AND REPAIR OF WAR MATERIEL

It will be long before Mexico is able to dispense with giving orders for arms and equipment abroad. Nevertheless she possesses the following factories:—

(1.) The Small Arm Ammunition Factory of Tacubaya, which was founded in 1907, and turns out, at present, some 9,000 rounds a day, an output which could be doubled if required. This factory is under a General with the rank of Brigade Commander, with an assistant director and 156 male and female employees.

The cartridge cases, the lead portion of the bullets, and the caps are manufactured entirely in Mexico. The outer casings of hardened steel, and the smokeless powder are obtained abroad.

(2.) The Powder Factories at Santa Fé and at Chapultepec. The former factory produces all the black powder required in Mexico; since 1910 it has also made some smokeless powder. The latter factory is poorly equipped, and its output is inconsiderable.

(3.) The Arms Factory at Mexico, which is primarily intended for carrying out repairs; it also manufactures a certain number of gun stocks.

(4.) The Arsenal at Mexico, which also carries out repairs; recently it has undertaken the manufacture of artillery wagons. It is under a Colonel, and employs some 50 workmen.

(5.) The Almacénès, which is a magazine for artillery *matériel* and mobilization harness. It contains more than double the number of guns actually in use, besides a few Hotchkiss machine guns.

(6.) The Naval Arsenal of Vera Cruz, which only undertakes repairs. It contains some armament of French origin, and a few American guns. All the above establishments have been in existence for ten years, and are constantly being improved.

RAILWAYS

The Mexican railways have a total length of about 15,000 miles. The Mexican Railway Company is the most important system, and is under State control. It is affiliated to the Central Mexican, the National Mexican, and the Interoceanic Railway

Companies. The usual gauge is 4 ft. 8.15 inches; but some less important lines have a smaller gauge.

Since the Téhuantépec Isthmus Railway was opened for traffic in 1907 the district surrounding it has gained in military importance, on account of the economical interests concentrated in the Isthmus; the latter is about 125 miles wide, and is traversed by a mountain range, the Sierra Madre, which falls gradually in a succession of terraces towards the Gulf of Mexico, and slopes steeply towards the Pacific Ocean. The length of the railway is 190 miles.

The chief works involved by its construction are at Salina Cruz and at Coatzacoalcos. This is the only railway which is the property of the State.

MILITARY EDUCATION.

Notes by the Editor.

EXAMINATIONS FOR PROMOTION, DECEMBER, 1910[1]

(*d.*) (*iv.*) MILITARY HISTORY: CAPTAINS AND LIEUTENANTS, ALL BRANCHES (EXCEPT R.A.M.C., A.V.C., A.O.D.).

(*Continued from page* 637.)

TERRITORIAL FORCE.

(*Lieutenants all branches except R.A.M.C. and A.V.C.*)

THE reports of many of the examiners draw attention to carelessness in reading questions, irrelevancy, and want of pains in framing answers. To quote from the remarks of the examiner in military engineering (B. 7).

"A word of warning seems desirable as to the necessity of taking pains in answering questions.

In one or two cases it was clear, from sketches and so on, that candidates knew more than they put down on paper, but it is impossible, of course, to allot marks by drawing deductions of this kind, if candidates do not take the trouble to write the necessary explanations."

Taken as a whole, the reports show that candidates were better acquainted with the theoretical side of their subjects than with practical details, or with the exact meaning of technical terms.

Thus, in the paper on Field Service Regulations (B.1) we read that in answer to a question as to the sanitary measures to be taken by a company commander in camp, such answers as "I should not have anything to do with such matters, as I should expect to find them arranged for me before arrival at camp" were frequent. On the other hand, the answers to a question on the true rôle of the defensive showed that officers had thoroughly grasped the principle that passive defence can rarely be justified. Similarly in the remarks on the paper on Organization (B. 3) the examiner points out that it is useless to attempt to write on this subject without knowing the applied meaning of such terms as "war organization," "mobilization," "unit," "division," "2nd line transport," etc. A question in this paper as to the stores which would be taken in a G.S. wagon by an infantry detachment marching off to occupy a post 45 miles distant brought out the fact that many candidates did not know what food or ammunition the soldier carries on his person in war, or what amount of stores could be carried in a G.S. wagon. With regard to the second part of the above question, which dealt

(1) The passages quoted from the report are reproduced by permission of the Controller of H.M. Stationery Office.

with the arrangements to be made on arrival at the post, the examiner remarks :—

"The answers to the second part of this question showed that not many candidates were capable of making good arrangements for their men on service. Small detachments can rarely count on the assistance of Army Service Corps or Royal Army Medical Corps, and all officers should know enough of their duties to be able to carry out such of them as are indispensable to the fighting efficiency, health, and comfort of their men.

The best way to have ammunition readily available in a post is to keep plenty of it in the trenches, where, of course, the men must sleep. Some officers seem to imagine that their 50 men would live in billets. A small detachment such as this can hardly undertake the protection of a post if the officers and men live anywhere but in the trenches they would have to defend, *however unlikely* an attack may be."

The report on the paper on Field Artillery Training (B. 5) shows a marked improvement on the standard of "any previous examinations in this subject since the formation of the Territorial Force," especially in the work of officers of howitzer brigades. The examiner observes that "as any question on the application of the angle of sight always seems to present difficulties to a large number of candidates, it may help future candidates and their instructors to call attention to this weak point." The examination also showed a very great advance in knowledge of animal management, questions on which have always been badly answered in previous examinations. No candidates presented themselves for the examination in Wireless Telegraphy (B. 10). It is not intended to set another paper in this subject until a syllabus has been laid down.

Coming to the report of the examiner on Infantry Training, we read that "the number of failures is unsatisfactorily high, especially bearing in mind the number of candidates who have qualified by obtaining the minimum marks required." Moreover, the answers showed an "apparent lack of appreciation amongst young officers of the vital importance of grasping the principles of infantry training." The following remarks on two of the questions are quoted from the report, together with the questions they refer to :—

Question 4. Your company is the left flank company of a battalion attacking across open, undulating country, admirably adapted for the employment of Cavalry.

(*a.*) Where would you expect a cavalry charge to come from? Give your reasons.

(*b.*) What steps would you take to guard against a Cavalry charge?

(*c.*) In the event of the enemy delivering a Cavalry charge, what would you do to defeat it?

(*d.*) At what stage of the attack would you be most apprehensive of a charge?

(*e.*) Under what exceptional circumstances only would you be anxious as to the result of a charge?

(*f.*) What should be impressed on every foot soldier as to the relative merits of fighting on foot and on horseback?

Remarks by the Examiner:—The answers, on the whole, were disappointing.

(*a.*) Was generally well done.

(*b.*) Was generally well done.

(*c.*) The majority of the candidates said that they would form the company to the exposed flank, closing, fixing bayonets, and opening fire as if it was a parade movement. It did not seem to occur to them that the leading half company, at any rate, would probably be so closely engaged in a fire fight that it would be impossible to form or close, although in answer to (*d*) the same candidates gave as their replies, "at the last stage of the attack," "just before the assault," or some other similar expression.

(*d.*) The answers to this varied from those quoted above to such answers as "at the commencement of the attack," "when the company is still in close order," "when it would be difficult to beat off the attack."

Only a very small number of candidates seemed to grasp the fact that the time of apprehension is the critical stage which every hard-fought infantry fight *must* go through when the men are well nigh worn out with long physical and moral strain. Success and failure then hang evenly in the balance. During such moments it will be the duty of the officers with the firing line to do their utmost to provide the necessary moral stiffening, those on the flanks adopting special precautions against a cavalry charge taking the weary and exhausted firing line by surprise.

(*e.*) This was fairly well answered on the whole.

(*f.*) Most candidates are inclined to lay too much stress on infantry being able to lie down and avoid the worst effects of a successful charge, and not enough on those qualities which should render infantry impervious to a charge by defeating it at a distance. Confidence in himself and his rifle is the infantryman's greatest asset when opposed to charging cavalry.

Question 8. "Both in attack and defence the most intimate co-operation between the Artillery and Infantry must be aimed at if the latter are to derive full advantage of the support of the former." (Infantry Training, Section 135.)

State briefly how this co-operation should be carried out during the various stages of the attack.

Remarks by the Examiner:—This was very disappointing. Candidates wrote a good deal, quoting such terms as "co-operation," "artillery duels," "silencing the enemy's guns," &c., but hardly any showed that they grasped what is meant by co-operation, viz., that the advance of the infantry draws the enemy's fire, making him expose his position, thereby giving their own artillery a target to fire at, &c., as is so clearly expressed in Section 138, Infantry Training. The old idea of a prolonged preliminary artillery duel prior to the advance of the attacking infantry appears to be very popular amongst candidates.

NAVAL NOTES.

BRITISH EMPIRE.

Home.

The following are the principal appointments which have been made :—Captains.—F. G. St. John to *Hecla,* E. G. Barton to *New Zealand,* E. L. Botty to be Master of the Fleet from June 1st to July 1st, 1911; P. Vaughan Lewes, D.S.O., to *Commonwealth;* W. Henderson to *Diamond,* and in Command of Third Destroyer Flotilla; G. L. Sclater, to *Euryalus;* E. G. Lowther-Crofton, D.S.O., to *St. George;* C. Greatorex to *Natal;* A. R. Hulbert to *Venus;* R. E. Benson to *Cæsar;* I. D. Gilpin-Brown to *Hercules;* E. P. Grant to *Falmouth.*

The first-class battleships *Temeraire* and *Superb* paid off at Portsmouth on the 15th and 29th ult., respectively, both recommissioning the following days for a further term of service in the first division (1st Battle Squadron) of the Home Fleet. The first-class battleship *Exmouth* arrived at Portsmouth on the 30th ult. from the Mediterranean; she paid off on the 6th inst., recommissioning on the following day for a further term of service as flagship of Admiral Sir E. Poë, K.C.B., K.C.V.O., Commander-in-Chief in the Mediterranean, and left again on the 10th inst., for her station. The first-class battleship *Commonwealth,* commissioned on the 6th inst. for service with the Nore Sub-division of the Third Division of the Home Fleet. She takes the place of the *Bulwark* and thus materially strengthens the Sub-division; she is the second ship of the *King Edward VII* class to be so transferred, her sister ship the *Africa* having recently assumed the duties of flagship of the Commander-in-Chief of the Third Division.

The first-class armoured cruiser *Leviathan,* flagship of Rear-Admiral E. E. Bradford, C.V.O., Commanding Fourth Cruiser Squadron, paid off at Chatham on 15th ult., recommissioning the following day for a further term of service as flagship of the Squadron; the first-class armoured cruisers *Berwick* and *Donegal* paid off at Chatham and Devonport on the 15th and 22nd ult., respectively, and recommissioned on the following days for a further term of service with the Fourth Cruiser Squadron.

The second-class cruiser *Æolus* commissioned at Devonport on the 23rd ult. to take the place of the *Scylla* on the West Indies and North American Station and left on the 29th ult. for her station. The second-class cruiser *Hyacinth* arrived at Plymouth on the 11th ult. from the East Indies, and proceeded to Chatham, where she paid off on the 2nd inst. The second-class cruiser *Scylla* arrived at Sheerness on the 15th ult. from the North American and West Indies Station, and paid off on the 24th ult. at Chatham. The new second-class cruiser *Glasgow* has been detached from the Second Division of the Home Fleet for service on the East Coast of South America, where she will relieve the third-class cruiser *Amethyst,* and left on the 15th ult. for her station. The third-class cruiser *Medea* arrived at Plymouth on the 10th ult. from the Mediterranean, paid off on the 15th ult. at Devonport and recommissioned on the following day for a further term of service on the station, leaving Plymouth again on the 20th ult. for Malta.

Home—continued.

The destroyers *Ardent, Banshee, Boxer, Bruiser* and *Dragon* have been withdrawn from the Mediterranean Station where they have been serving continuously for more than 15 years; they are among the earliest of this type of vessel that were constructed and were all launched in 1894; their places are being taken by the *Colne, Chelmer, Garry, Jed* and *Welland*, five of the so-called River class, which were launched in 1904, have twice the displacement and carry four 12-pounders as against one 12-pounder and three 6-pounder in the earlier vessels. The *Colne, Jed* and *Garry* left on the 29th ult., for Malta, and have since been followed by the *Chelmer* and *Welland*.

Naval Battle Practice, 1910.—The result of the battle practice of the Fleet in 1910, has been issued as a Parliamentary Paper (Cd. 5592). In a prefatory note the Admiralty state that the conditions of the practice differed considerably from those of former years, so that no comparison can be made. The following is an abstract of the results:—

First in order of merit, Australian Squadron; 5 ships, with 55 guns; average points made, 212.6. First ship *Pyramus*, with a score of 333.2 points, and *Prometheus* second, with 287.6 points.

Second in order of merit, 3rd Division Home Fleet, 10 ships, with 132 guns; average points made, 192.5. First ship, *Carnarvon*, with a score of 306.7 points, and the *Magnificent* second, with 275 points.

Third in order of merit, China Squadron, 6 ships, with 76 guns; average points made, 185.1. First ship, *Minotaur*, with a score of 430.9 points, and *Astræa* second, with 195.9 points.

Fourth in order of merit, 2nd Division Home Fleet and 2nd Cruiser Squadron; 14 ships, with 202 guns; average points made, 184.0. First ship *Africa, with* a score of 313.9 points, and *King Edward VII*, second, with 302.3 points.

Fifth in order of merit, 1st Division Home Fleet and 1st Cruiser Squadron; 11 ships, with 122 guns; average points made, 179.6. First ship, *Agamemnon*, with a score of 316.3 points, and *Invincible* second, with 286.0 points.

Sixth in order of merit, Atlantic Fleet and 5th Cruiser Squadron; 9 ships, with 135 guns; average points made, 159.6. First ship, *Formidable*, with a score of 577.3 points, and *Drake* second, with 164.4 points.

Seventh in order of merit, Mediterranean Fleet and 6th Cruiser Squadron; 13 ships, with 179 guns; average points made, 98.3. First ship, *Bacchante*, with a score of 191.1 points, and *Triumph* second, with 171.5 points.

Ships inside range (800 yards or over); None.

Ships outside range (800 yards or over); 6, with 90 guns; average points made, 93.6. First ship, *St. Vincent*, with a score of 195 3 points.

The total number of ships firing, 74, with 991 guns; and the average number of points made, 161.5

The ships on the Cape of Good Hope Station fired at a fixed target, the *Hermes* being first ship, with a score of 560.7 points, and the *Forte* second, with 400 points.

The following Gunboats also carried out battle practice, *Circe, Jason Speedy*, but no points were awarded.

HOME—*continued.*

Although the conditions under which the battle practice for 1910 differed somewhat from the conditions prevailing in previous years, it may be interesting to recall that in 1909 the China unit of the Eastern Fleet stood first with 348.68 as the average number of points, the *King Alfred* being first ship with a score of 510.4 points; but the ship with the highest individual score was the *Boadicea*, with 541.6 points to her credit, the Commodore's ship of the First Destroyer Flotilla.

FOREIGN POWERS.

Argentine Republic.

New Turbine Destroyers.—Early last year the Government called for tenders for the construction of 12 turbine destroyers, the first units of a powerful destroyer flotilla, which is to form part of the new naval programme. The English firm of Messrs. Cammell, Laird and Co. secured the contract for four of these vessels; the Germania Krupp Yard at Kiel two; the French Chantiers de la Brétagne (Nantes) four, and the Schichau Yard (Elbing) two. The following are the principal data in regard to these vessels:— The dimensions of the boats to be constructed by Cammell, Laird will be: Length, 292.9 feet; Beam, 27 feet 7 inches; Draught, 8 feet 6 inches, with a sea displacement of 1,175 tons. The turbine engines are to develop 20,000 I.H.P., to give a mean speed of 32 knots on a six hours' trial speed, with 60 revolutions. The fuel capacity is to be 225 tons of coal and 75 of oil.

The two to be constructed by the Germania Yard will have a length of 288 feet; a beam of 27 feet 1 inch; a trial displacement of 935 tons on a draught of 8 feet 2 inches; with the sea displacement of 1140 tons, the draught will be 9 feet 6 inches. The engines are to develop 19,500 I.H.P., giving a mean speed of 32 knots during the six hours' run on the trial draught. The fuel capacity will be 250 tons of coal and 110 of oil.

The two to be built by the Schichau firm will have a length of 295.2 feet; a beam of 29 feet 7 inches; a sea displacement of 1,110 tons on a draught of 9 feet 2 inches; the engines to develop 19,500 I.H.P., to give a mean speed of 32 knots on the six hours' trial run. The fuel capacity will be 290 tons of coal and 50 tons of oil.

The four to be built by the French firm will have a length of 280.7 feet; a beam of 28 feet 2 inches; a sea displacement of 1,170 tons on a draught of 10 feet 2 inches; the engines to develop 19,000 I.H.P., to give a mean speed of 32 knots on the six hours' full speed trial. The fuel supply will be 256 tons of coal and 82 tons of oil.

The system of turbines adopted will be the Curtis, driving twin-screws. Though the projected motive power varies between 19,500 and 20,000 I.H.P., it is expected that the actual full power developed at the steam trials will be 22,000.

The armament of all 12 destroyers will be identical, viz., four 4-inch 50-calibre Q.F. guns, the ammunition supply for which will be 250 rounds and they will also all be fitted with four tubes to discharge the new Whitehead 21-inch torpedo, which carries a charge of 331 lbs. of gun-cotton, and has a speed of 41 and 29 knots at a range of 2,000 and 5,000 yards respectively. They will have a complement of 110 officers and men.

The radius of action of these destroyers will be considerable; with an

average of 250 tons of coal and 80 to 100 tons of oil, they will be able to steam practically 3,300 to 3,500 miles at 14 to 15 knots, which will enable them to operate not only away from their home bases in the South Atlantic, but in the South Pacific as well. *Engineer* and *Le Yacht.*

Austria-Hungary.

General.—The Evolutionary and Reserve Squadrons for 1911 have been constituted as follows:—

Evolutionary Squadron.

First-class battleships—*Erzherzog Franz Ferdinand* (Flagship of Rear-Admiral von Kunsti, Commander-in-Chief), *Radetzky, Erzherzog Ferdinand Max.*

First-class armoured cruiser—*Kaiserin und Königin Maria Theresia.*

Scout—*Admiral Spaun.*

Torpedo gun-vessels—*Magnet, Blitz, Komet.*

Torpedo Depôt ship—*Gaea.*

Destroyers—*Ulan, Velebit, Streiter, Wildfang,* and the sea-going torpedo boats *Kaiman, Kormoran, Schwalbe.*

Reserve Squadron.

First-class battleships—*Babenberg* (Flagship of Rear-Admiral Graf Lanjus, Commanding), *Erzherzog Karl, Erzherzog Friedrich.*

First-class armoured cruisers—*St. Georg, Kaiser Karl VI.*.

Third-class cruisers—*Zenta, Sziegetvár.*

Destroyers—*Huszar, Scharfschütze, Reka, Dinara,* and four sea-going torpedo boats (names not given).

The second-class cruiser *Kaiserin Elizabeth* has been commissioned for foreign service, and the river-monitors *Temes* and *Bodrog,* with the patrol boats, *d, e, f* and *g,* have been commissioned for service on the Danube.

The new first-class battleship *Zrinyi,* the last of the three battleships of the *Tegethoff* class to be completed, and which was launched on the 12th April last year from the Stabilimento Tecnico, Trieste, is approaching completion and will commence her acceptance trials in a few weeks. She has been built to take the place of the *Kronprinzessin Ehzherzogin Stephanie,* now in use as a gunnery training-ship, at a total cost of £1,780,000.

The new floating dock with a lifting capacity of 22,500 tons, which has been built at the Imperial Dockyard at Pola, was completed in April; her first use will be docking the *Viribus Unitis,* the first of the new battleships of the *Dreadnought* type, which is to be launched on the 24th inst., according to present arrangements, from the yard of the Stabilimento Tecnico, at Trieste.

The new Salvage-ship *Hercules,* a vessel of 1,500 tons displacement, has been commissioned at Pola for service, and the new submarine Salvage-ship, which is being built at the Danubius Yard, Fiume, is to be completed during the summer.

From the Whitehead Yard at Fiume was launched on the 14th March the third of the submarines for the Austro-Hungarian Navy, which have been constructed by this firm. The new submarine is of the improved *Octopus* type, has a length of 104 feet, a beam of 13 feet 3 inches, and when submerged a displacement of 274 tons; she is fitted with two periscopes of special construction, and will have a surface speed of 11 knots, which it is hoped she will be able to maintain when submerged.

AUSTRIA-HUNGARY—*continued.*

The New Building Programme.—The Minister of Marine, Admiral Count Montecuccoli, has secured the approval of both the Austrian and Hungarian Delegations, for the new building programme, the estimated cost of which will amount to £13,016,066, to be spread over a term of six years. The new programme provides for the construction of four large battleships of the *Dreadnought* type, which are to take the place of the four wooden corvettes *Donau, Ersherzog Friedrich, Dandolo* and *Saida;* although these vessels have long since disappeared from the navy list, it is of interest to recall their names, as they formed part of Tegethoff's second line at the battle of Lissa, 20th July, 1866, which was under the command of Commodore Petz; three cruisers to take the place of the *Frundsberg, Aurora* and *Zrinyi;* six large destroyers; twelve sea-going torpedo boats and six submarines. Two of the battleships were laid down early last year at the Stabilimento Tecnico, Trieste, the directors of the company offering to build at their own risk these two ships according to plans sanctioned by the Admiralty, as no funds had been voted for them in the estimates for the year. The offer was accepted by the Ministry of Marine, which will thus be able to obtain these ships, the Delegations having since approved of their construction at a much earlier date than would otherwise have been the case.

The third ship is to be laid down on the slip which is shortly to be vacated by the launch of the first of the group, and the fourth at the Imperial Dockyard at Pola. Two of the smaller ships will probably be built at the Danubius Yard, Fiume, a strong feeling existing in Hungary that she should have her share in the future work of construction, and the Hungarian Government having recently granted a subsidy of £125,000 to increase the capacity of the yard, although it will not be ready to undertake the building of large ships for probably another two years.

The Naval Estimates for 1911.—The Ordinary Naval Estimates amount to £2,673,433, as against £2,538,017 for 1910, showing an increase of £135,416. The Extraordinary Estimates amount to £190,615, as against £243,532 for 1910, showing a decrease of £52,917. The Estimates (Ordinary and Extraordinary) amount therefore to £2,844,048, as against £2,781,549 for 1910, an increase of £62,499. To these Estimates have to be added a sum of £2,291,666, being the amount granted for the year towards new construction, out of the special credit of £13,016,066 approved for the final development of the fleet; the total amount of the Estimates therefore amounts for this year to £5,135,714.

The following are the principal votes provided for;—

Ordinary Estimates.

Permanent Expenditure :—

Pay of Officers, etc., £248,377; Pay and Clothing Petty Officers and Seamen, £243,334; Land Service, £122, 336; Sea Service, £355,380; Shore Establishments, £35,643; Maintenance of Fleet, £414,913; Total, £1,499,983.

New Construction, &c. :—

First-class battleships—

1. *Erzherzog Franz Ferdinand* (*Ersatz Tegethoff*) of about 14,000 tons, fifth and final instalment out of a total vote of £1,095,333, £137,500;
2. *Radetzky* (*Ersatz Kronprinz Ersherzog Rudolph*) of about 14,000 tons, fifth and final instalment out of a total vote of £1,095,333, £179,166;

AUSTRIA-HUNGARY—*continued.*

3. *Zrinyi* (*Ersatz Kronprinsessin Erszherzogin Stephanie*) of about 14,000 tons, fifth and final instalment out of a total vote of £1,095,333, £166,666;

4. Scout Cruiser *Admiral Spaun* (*Ersatz Zara*) of about 3,500 tons, fourth and last instalment out of a total of £200,000, £8,333;

5. Twelve torpedo-boats of about 100 tons, fourth and last instalment out of a total vote of £200,000, £12,500.

Total, for new construction £504,165.

Armaments (guns, torpedo fittings, &c.) for above-named ships, £329,166.

Guns and small arms, £148,375.

Miscellaneous, £208,410.

Extraordinary Estimates.

Pay and Clothing, &c., £2,083; Shore Establishments, Charts, &c., £458; Refit and Reconstruction Work on the *Kaiserin Maria Theresia, Erzhersog Albrecht, Habsburg, Lussin, Huszar* and floating dock for Destroyers and Torpedo Boats, £47,500; Guns and Small Arms, Torpedo Fittings, Mines, &c., £27,500; Buildings, £90,008; Miscellaneous, £3,006.

Extraordinary Credit for Development of Fleet.

The programme for the expansion of the Navy includes the construction of the following new vessels:—

1. Four battleships (IV., V., VI., VII.) of about 20,000 tons displacement each, cost £10,000,000;
2. Three cruisers (G. H. J.) of about 3,500 tons each; cost £1,250,000;
3. Six torpedo vessels of about 800 tons displacement each; cost £750,000;
4. Twelve high seas torpedo boats; cost £500,000;
5. Submarines; cost £416,666.

Total cost of the whole programme, £13,016 066.

NOTE.—The above figures include the entire cost of armament and equipment.

The above sum is to be expended in yearly instalments as follows:—

1911 ...	£2,291,666,	1914 ...	£2,833,333,
1912 ...	£2,791,666,	1915 ...	£2,041,666,
1913 ...	£2,833,333,	1916 ...	£208,333.

The instalment of £2,291,666 allottted to 1911 is to be expended as follows:—

£1,191,666;

1. Battleship "IV." first instalment out of a total vote of £1,541.666,
2. Battleship "V.," first instalment out of a total vote of £1,541,666, £1,016,666;
3. Battleship "VI.," first instalment out of a total vote of £1,541,666, £208,333;
4. Battleship "VII.," first instalment out of a total vote of £1,541,666, £208,333;

AUSTRIA-HUNGARY—*continued.*

5. Cruiser "G," first instalment out of a total vote of £685,000, £125,000;
6. Cruiser "H," first instalment out of a total vote of £685,000, £83,333;
7. Cruiser "J," first instalment out of a total vote of £685,000, £125,000;
8. Six Destroyers, first instalment out of a total vote of £685,000, £83,333;

For battleships "IV." and "V." out of a total vote of £983,333 for each ship for armament (guns, torpedoes and ammunition) first instalments of £195,833 and £158,333 respectively are allotted.

Précis from *Mittheilungen aus dem Gebiete des Seewesens, Marine Rundschau* and *Revue Maritime.*

China.

Reorganisation of the Chinese Navy and creation of a Ministry of Marine.—In 1909 a Naval Commission presided over by Prince Tsaï-Chen was sent to Europe to study the organizations of the leading Naval Powers and the best types of warships. The Prince was accompanied by Admiral Sah-Tchenping as his principal adviser.

Up to quite recently, the Navy, like the Army, has been organized in each province by the respective Viceroys; but in May, 1909, the Prince-Regent acting under the advice of Admiral Sah, determined to create a really national fleet.

The supreme command is vested in the Emperor, but he being a minor, it was assumed in his name by the Prince-Regent. Practically, the control over both Army and Navy was to be exercised by a Superior Council of War, presided over by Prince Tsaï-Tao; the Council being assisted by a Naval Commission, at the head of which was placed Prince Tsaï-Chen; the other members being the Minister of War, the Minister of Finance, the Duke Tsai-Tse, and Admiral Sah-Tchenping. In addition, the Viceroys of the Maritime Provinces of Pechili, Liang-Kiang, Min-Che, Liang-Kwang, and of Manchuria, were appointed extraordinary members. The Prince Tsaï Chen was specially charged to report on all questions connected with Naval constructions, the choice of the types of warships, their armament and manning; to the Minister of War was entrusted all questions of organization; while Admiral Sah-Tchenping had charge of the Dockyards and Naval bases, the hydrographical Department, and certain questions connected with the *personnel.*

This organization is, however, now to be altered, for by an Imperial Edict of the 4th December last, a regular Ministry of Marine (*Hai-Kiun-pou*), has been created; His Highness Prince Tsaï-Chen, younger brother of the Regent, and President of the previously constituted Naval Commission, being placed at its head, and an Under-Secretary of State, Tsang-Hsio-Hang, who has been for some time one of the Councillors to the Prince, has been appointed to assist him. Admiral Sah, who was one of the old Commissioners, has been appointed by a Decree of the 6th December, Commander-in-Chief of the Squadron of the Yangtse.

CHINA—*continued.*

According to report, the organization of the Ministry, in addition to a General Staff, will consist of nine sections, as follows:—

1. Centralization;
2. Administration;
3. Technical Department;
4. Law;
5. Defence of Coasts;
6. Medical;
7. Music;
8. Supply;
9. Accountant.

A new distribution of the Naval Forces is projected, comprising three squadrons.—

The Squadron of the North, or Peiyang;

The Squadron of the Centre, or the Yangtse;

The Squadron of the South, or the Koangtong.

The question of the Budget to be granted to the new Ministry so as to permit it to get to work, is not yet settled. At the meeting of the 26th November, the Committee of the Tse-tcheng-yuan, discussing the Budget with the representatives of the different Ministries proposed a reduction of 25 per cent. on the pay of the officers and men of the fleet. The Committee further demanded that a reserve fund should be constituted by reducing the money allotted for new constructions. The only new vessels, whose construction has been recently agreed to, are, according to report, two gunboats of 400 tons, to be built in Germany (one at Krupp's Germania yard), and two of 780 tons to be built in Japan; and certain amounts have also been allotted to the River Police and Customs troops.

In 1911, two training ships, building in England, are to be delivered. It is also announced that next year a certain number of students are to be sent for training to foreign Naval Schools.

The Chinese fleet at the present time is extremely weak. It consists, practically, of only four good comparatively-speaking modern cruisers, or, rather, scouts, constructed in 1897-98, viz.: the *Haï-Chi* (4,000 tons, and 24 knots speed, built at Elswick); the *Haï-Chen, Haï-Cheng,* and *Haï-Yung.* These three last were built by the Vulcan Yard, Stettin, and have a displacement of 2,950 tons, with a speed of 19.5 knots; the armament consisting of three 5.9-in., and eight 4-in. Q.F guns, with 12 small machine guns and 2 torpedo tubes. The armament of the *Haï-Chi* is much heavier, consisting of two 8-in. Q.F., ten 4.7-in Q.F., and twelve 3-pounder Q.F. guns, with ten small machine guns, and 5 torpedo tubes for 18-in. torpedoes. In addition, there are 3 older non-protected cruisers, with a displacement of some 2,300 tons, two of which were built by the Howaldt Yard, Kiel, and the third at the Foochow dockyard; 3 destroyers of 850 tons, and 23 knots speed, one built by the Vulcan Yard, Stettin, and two at Foochow, the engines being supplied by the Forges et Chantiers, at Havre, and some 12 gunboats of from 600 to 750 tons. Small as this fleet is, the dockyards barely suffice to keep it in order. Since the war of 1894, when the Chinese lost Port Arthur, the only dockyards have been the provincial ones at Whampoa, Foochow, Kiang-Nan near Shanghai and Nanking, which are all small and comparatively speaking, with the exception of Kiang-Nan, poorly equipped.

To remedy this unsatisfactory state of things, Prince Tsaï-Chen and Admiral Sah have prepared and submitted to the Emperor a scheme to be carried out progressively during the next seven years, providing for the

CHINA—*continued.*

construction of battleships, cruisers, destroyers and submarines. For the moment, all that has been decided is as follows:—

1. The existing fleet to be divided into the seagoing and river fleets, and to be strengthened during the next four years, at a cost of £5,362,500 by the following new constructions:—

3 Cruisers of 3,000 tons each;
1 Transport-Aviso of 2,000 tons;
8 Gunboats of 500 tons each;
1 large Destroyer of 850 tons.

2. A War-Harbour on an extensive scale is to be created in San-Mun Bay[1], with docks, basins, workshops, coal depôts, etc.; this new dockyard is to be connected with the interior by means of a railway, telegraphs, and telephones. It is intended to transfer the Naval College and training Establishments here in due course. A sum of £487,500 is to be devoted to the commencement of this new Naval Establishment.

3. The arsenal and dockyard at Kiang-Nan, near Shanghai, is to be reconstructed, and is to become the principal building yard of the fleet.

4. The provincial Naval Schools at Chefoo, Nanking, Foochow, and Whampoa are to be reorganized; the instruction given is to be brought up to date, special attention being paid to gunnery and torpedo training.

5. The system of training of specialists for different branches of the service, as in foreign navies, is to be reorganized.

6. The Maritime provinces are to be divided into recruiting districts, so as to facilitate recruiting for the fleet.

The new 3,000-ton cruisers are to be "scouts" of a similar type to the *Haï-Chen*, which was built at the Vulcan Yard.

With regard to the choice of a new Naval port, an attempt was first made to re-purchase Weï-haï-Weï from the English, but the price that was asked was considered too high. Among the places considered were: Tschin-Wan-tao in the Gulf of Pechili; Ki-Ang-Yin, on the Yangtse; Ting haï in the Chusan Archipelago; Tschin-Haï near Ningpo; San-Mun Bay; Foochow; the Boca Tigris or Whampoa in the Canton River, and Kuli-Kiang on the South coast of Haï-Nan, San-Mun Bay was at last settled upon, as fulfilling all the required conditions, and on the Governor of the Province (Che-Kiang) undertaking to connect San-Mun by a railway with Ningpo.

The placing of the Kiang-Nan Arsenal, near Shanghai, on a proper footing will not be a difficult matter. It is the best arsenal and dockyard in the Empire, being capable of producing 6-in. Q.F. guns, and of effectively repairing the present ships of the fleet.

Every effort is to be made to constitute an efficient corps of officers, who will have to be the instructors of the future, officers who will be as efficient and more devoted than those borrowed in former days from England and the United States.

With regard to the funds which will have to be found for the future Chinese Navy, a sum of £5,850,000 is required in the near future, of which £5,362,500 is, as already mentioned, to be devoted to new construction and £487,500 to the equipment of the dockyards. This sum is to be dis-

[1] San-Mun Bay is a fine anchorage lying to the south of Chusan Islands, and is distant about 100 miles from Shanghai.

CHINA—*continued.*

tributed over four years. During the first year there will only be expended £325,000 on the ports and £162,500 on new construction. For each of the following years there will be an expenditure of £1,625,000.

The necessary funds are supplied partly by the Minister of Finance, partly by the Governors of the Coast provinces, while a certain amount has been given by private persons. Thus the Governor of Chen-Kiang has presented £325,000 for the Navy, a rich Hong-kong merchant has given £65,000, while the mandarins of the province of Hupei have promised to provide annually, for seven years, £32,500 for the permanent expenses, and a further sum of £260,000 in four years towards the reconstruction of the fleet.

In addition, the Dowager Empress had promised an annual subsidy of £260,000, and a legacy at her death of £3,025,000 for the Navy.

These subsidies are interesting because they point to a revival of the national spirit, which, after a long slumber, showed itself in the Boxer rising of 1900, and again in 1906-07, when so severe a boycott was established against American and Japanese goods.

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France.

The following are the principal promotions and appointments which have been made:—

Vice-Admirals—H. A. Jauréguiberry to be President of the Lights Commission; M. P. de Fauque de Jonquières to be Inspector-General of Matériel. Rear-Admirals—P. Auvert to be Vice-Admiral; M. A. Cros to command of Algerian Naval Division; F. P. Moreau to be Chief of the Naval Cabinet of the Minister of Marine; F. A. Journet to be Chief of the Staff at Cherbourg. Capitaines de Vaisseau—F. A. Journet, F. P. Moreau, M. G. de Ramsey de Sugny to be Rear-Admirals; C. T. Charlier to be Assistant-Chief of the Staff at Cherbourg; L. E. Jochaud du Plessix to *Carnot;* A. H. de Spitz to *Jules Ferry;* A. H. Nissen to *Charlemagne;* I. I. M. Kéraudren to *République.*

Journal Officiel.

General.—Vice-Admiral de Fauque de Jonquières, Member of the Superior Council of the Navy, has been named Ambassador Extraordinary to represent the French Government at the Coronation of King George; he will be accompanied by General of Division Count Dor de Lastour, commanding the 3rd Cavalry Division, and Capitaine de Vaisseau Langier, Naval A.D.C. of the President of the Republic, with M. Maurice Herbette, First Secretary of Embassy.

Vice-Admiral de Marolles, Commander-in-Chief at Brest, has been selected to represent the French Navy at the Coronation Naval Review, and he will hoist his flag on board the new first-class battleship *Danton* for the occasion. The *Danton* has just successfully completed her gunnery trials; her armament, like her five sisters, consists of four 12-inch guns in pairs in turrets fore and aft, and twelve 9.4-inch guns in pairs in 6 turrets, two of which are forward and two aft, the guns firing over the foremost and after turrets from about 30 degrees before and abaft the beam respectively, the other two turrets being on each beam. Seventeen rounds were fired from the 12-inch guns, the time of loading, not including closing and opening the breech, averaging 20 seconds per round; the average time of loading the 9.4-inch guns, which fired 25 rounds, was 12

FRANCE—*continued.*

seconds. These results were considered very satisfactory. The *Danton* commissioned at Brest on the 1st inst.

Vice-Admiral Auvert, promoted to that rank on the 28th March last, has gained his final step—there are no Admirals in the French Navy—at what is comparatively speaking the early age of 58, his birthday having occurred six weeks before his promotion. As a Rear-Admiral he commanded the Cruiser Division of the 2nd Squadron and is at present Chief of the General Staff of the Navy. Rear-Admiral Journet on the other hand, who is one of the last promotions to his rank, only obtained his flag, when within a few weeks of being 58, while Rear-Admiral Moreau, also promoted the same time, is only 53 and is the youngest officer but one on the flag list.

The Examining Commission for the admission of Candidates to the *École d'Application d'Artillerie Navale* will consist of :—

A Vice-Admiral (President);
The Director and Assistant Director of the School;
Four examiners nominated by the Minister of Marine.
Vice-Admiral Germinet has been appointed president for 1911.

The French Senate has returned the *Projet de loi* relative to the construction of the two new battleships to the Chamber of Deputies with certain alterations modifying Table A *Systémes de Chaudières,* and striking out the amendment of M. Justin Goddart, one of the Deputies, which had been passed by the Chamber directing the Minister of Marine not to conclude contracts with any private firms having on their directorate or being in any way controlled by Members of Parliament. To avoid a conflict with the Senate, M. Goddart has agreed to accept certain alterations to his amendment. The Minister of Marine stated that the Government did not intend to intervene in the matter which concerned the dignity of Parliament only.

Steam Trials.—The first four battleships of the *Danton* class, viz., the *Danton, Condorcet, Diderot* and *Voltaire* have now all concluded their trials and are ready for commissioning, while the two others, the *Mirabeau* and *Vergniaud* are now carrying out their trials and are expected to be ready for service in a few weeks. The following were the trials carried out :—A ten hours' trial at full speed with all the boilers alight : a three-hours' trial at full power with three-quarters of the boilers alight but a coal consumption allowed up to 396 lbs. per square metre of grate as against 130 in the first case; two coal consumption trials, one with half the boilers, the other with a fourth of the boilers, under natural draught, with speeds of 14 and 9 knots respectively. All the ships are fitted with turbine engines. For the ten hours' trial, a speed of 19.2 knots had to be maintained, with the engines not making more than 300 revolutions, and a maximum coal consumption of 2130 lbs. per mile. These conditions were more than fulfilled, as the following table shows :—

Ship.	*Speed.*	*Coal Consumption.*
"Condorcet"	19.25	18·75 tons.
"Danton"	19,44	18·50 ,,
"Diderot"	19.48	18·25 ,,
"Voltaire"	19.71	18·25 ,,

These were not the maximum speeds of the four ships. At the three-hours' full speed trials, the *Condorcet* made 19.8, the *Diderot* 19.9; the

FRANCE—*continued.*

Danton, 20.18 and the *Voltaire* 20.66. In the *Voltaire* the shaft-power developed was 29,650, which was 7,150 over the contract, while the number of revolutions was 332 per minute.

In the twenty-four hours' trial each of the four ships maintained a speed of over 18 knots, in place of the 17.5 stipulated for in the contract, the coal consumption being only 12 cwt. 100 lbs. per mile, as against 14 cwt. 41 lbs. allowed by contract. At the fourteen and nine-knot trials, the coal consumption was 6 cwt. 111 lbs. as against 7 cwt. 97 lbs. allowed.

The turbines worked well, but, as was predicted, the coal consumption proved larger than with reciprocating engines. At the full speed trial when the *Voltaire* made 20.66 knots the consumption per shaft-power per hour was 1.98 lbs., the corresponding consumption of the *Verité* with reciprocating engines and making 19.26 knots was only 1.8 lbs. per horse-power per hour, while with the *Edgar-Quinet*, making 23.8 knots the consumption was only 1.67 lbs. It was the same when the ships were running at low speeds; at 14 knots the consumption per mile was 881 lbs., representing almost 1.43 lbs. per shaft-power per hour, as against about 1.1 lbs. in vessels fitted with reciprocating engines. Nevertheless, in spite of a greater coal consumption the advantages of the turbines cannot be gainsayed, while with more experience the coal consumption will probably be reduced.

New Ships.—The following are the chief data of the *Mangini* destroyer under construction in Schneider's yard at Chalons sur Saône: period of construction 26 months; displacement, 804 tons; length, 255 feet; beam, 25½ feet; two turbines of the Schneider-Zoelly type by Creusot, and 4 of the Temple-Kessel for oil fuel; storage for oil fuel 1-65 cubic metres; horse-power 15,800; speed 30 knots; armament, two 10-cm., and four 6.5 cm. guns, 4 torpedo tubes (twin tubes), 6 torpedoes of 45 calibre; crew 6 officers and 81 men.

The following are the chief data of the *Cimeterre* destroyer, launched on the 13th April, at Bordeaux, from the Chantiers de la Gironde; displacement, 730 tons; length, 253 feet; 2 turbines of 13,500 horse-power; speed, 31 knots, other data as for the *Mangini*.

In the Gironde yards a vessel, to be named the *Kangreoo*, is being built specially for the purpose of transporting the submarines constructed by the Petit-Creusot firm (at Chalons-sur Saône) to their destination. Her dimensions are: length 315 feet; beam, 39 feet; draught 22 feet; displacement, 5,540 tons. The submarines will be taken on board through an opening in the forward part of the ship.

A mine vessel, the *Cerbère* is to be built at Cherbourg as a sister ship to the *Pluton*.

Submarines.—As a result of the accident to the submarine *Loutre* (which sank after being in collision with a trawler on the 16th March, when cruising with her periscope above water, and was only able to rise to the surface after releasing the safety weight), it has been decided to equip submarines with sirens in order to enable them to warn other vessels of their existence.

The submersible *Brumaire*, of the *Pluviose* type was launched at Cherbourg on the 29th April.

At the end of March, some interesting mobilization exercises were carried out from Toulon, by 11 submarines.

FRANCE—*continued.*

The attacking force consisting of 6 submarines, was despatched to a point representing a hostile port, 60 nautical miles distant from Toulon. Starting from this point the submarines appeared in front of Toulon with a view to blockading the harbour. By night they rose to the surface to charge their accumulators, by day they continued submerged. Five torpedoes, of which four were hits, were fired at the *Admiral Tréhouart*, which attempted to break the blockade. During March attacks by submarines were carried out against the IInd Squadron, which was defended by destroyers in front and on the flanks. The submarines were hindered in their work by heavy squalls; on the other hand these conditions helped them to avoid the notice of the destroyers when delivering their attack. *Le Yacht, Le Temps,* and *Marine Rundschau.*

MILITARY NOTES.

British Empire.

THE KING.

On the 1st May, at noon, the King presented a new State colour to the King's Company of the Grenadier Guards.

On the 16th May, the King unveiled the Queen Victoria Memorial in the presence of the Queen, the German Emperor and Empress, the Princess Louise, and most of the other members of the Royal family. A deputation from the 1st Dragoons of the Guard, the Prussian regiment of which Queen Victoria was honorary Colonel, was also present. After the ceremony representative detachments of the Navy and Army marched past the Memorial.

The King has appointed His Imperial and Royal Highness the Crown Prince of the German Empire to be Colonel-in-Chief of the 11th Hussars.

The German Emperor has appointed the King to the rank of Field Marshal in the German Army.

The King of Spain has appointed the King to be Colonel-in-Chief of the Zamora Infantry Regiment.

Deputations from the following foreign regiments will attend the Coronation :—

Germany :—The 1st Dragoon Regiment of the Guard; The Hussar Regiment Fürst Blücher of Wahlstatt; the Cuirassier Regiment Graf-Gessler (Rheinisches).

Austria-Hungary :—The 12th Field Howitzer Regiment.

Spain :—The 8th Zamora Infantry Regiment.

Home.

VETERAN RESERVES.

On May 20th Lord Roberts inspected 2,246 of the Surrey Veteran Reserve at Guildford. The total enrolled strength of the corps on that date was 96 officers and 3,101 men, organized in 14 companies.

In the course of his address to the men, Lord Roberts paid a tribute to the services rendered by Mr. St. Loe Strachey, and General Sir E. Ellis in connection with the organization of the Surrey Veterans.

HOME—*continued.*

Field Marshal Sir Evelyn Wood, has issued an appeal to the counties round London to follow the example of Surrey, and to make known to their resident ex-soldiers the importance of registering their names for service in case of national emergency.

TRAINING ARRANGEMENTS FOR REGULAR TROOPS IN 1911.

Aldershot Command.

1st Cavalry Brigade:—Brigade Training, July 13th to August 12th near Aldershot. Divisional Training, September 4th to September 15th near Cambridge. Inspection of Cavalry Division by I. G. Forces 7th to 9th September. Army manœuvres, September 18th to September 21st.

1st and 2nd Divisions:—Brigade Training, July 1st to July 16th near Aldershot. Divisional Training, July 17th to August 12th near Aldershot. Interdivisional Manœuvres, September 11th to September 16th in Norfolk, Cambridgeshire, and Suffolk. Army Manœuvres, September 18th to September 21st.

Eastern Command.

2nd and 4th Cavalry Brigades:— Brigade Training, 2nd Cavalry Brigade August 16th to September 1st on the Sussex Downs. 4th Cavalry Brigade, August 13th to September 3rd on Salisbury Plain. Divisional Training, September 4th to September 15th near Cambridge. Inspection of Cavalry Division by I. G. Forces, 7th to 9th September. Army Manœuvres, September 18th to September 21st.

4th Division (10th, 11th, 12th Infantry Brigades):—Brigade Training August 19th to September 2nd at Aldershot. Divisional Training, September 4th to September 13th at Aldershot. Army Manœuvres, September 16th to September 21st.

Southern Command.

18th Hussars:—Attached to 4th Cavalry Brigade, Eastern Command.

3rd Division (7th, 8th, 9th Infantry Brigades):—Brigade Training, August 13th to August 29th on Salisbury Plain. Divisional Training, September 5th to September 14th on Salisbury Plain. Army Manœuvres, September 16th to September 21st. Inspection of 3rd Division by I. G. Forces, 11th to 14th September.

London District.

Household Cavalry Brigade:—Divisional Training, September 4th to September 15th near Cambridge. Army Manœuvres, September 16th to September 21st.

4th Infantry Brigade (Foot Guards):—Brigade Training, September 4th to 9th, in the Manœuvre Area. Divisional Training, September 11th to 16th, with the 2nd Division in Norfolk, Cambridgeshire, and Suffolk.

Irish Command.

3rd Cavalry Brigade:—Brigade Training, July 24th to August 13th at the Curragh. Divisional Training, September 18th to September 23rd near Glen Imaal.

5th Division:—Brigade Training: 13th Infantry Brigade, September 11th to 16th at Shillelagh, 14th Infantry Brigade, September 5th to 17th at Colbinstown, 15th Infantry Brigade, September 4th to 13th at the Curragh. Divisional Training, September 18th to 23rd near Glen Imaal. Inspection of 5th Division by I. G. Forces 25th to 26th September.

HOME—*continued.*

6th Division:—Brigade Training, 16th Infantry Brigade, August 28th to September 10th south-west of Fermoy, 17th Infantry Brigade, August 28th to September 10th near Kilworth. Divisional Training, September 11th to 23rd near Kilworth.

Northern Command.

2nd Dragoons: *Royal Scots Greys*:—Divisional Training, September 4th to 15th near Cambridge. Army Manœuvres (with the Composite Mounted Brigade), September 18th to September 21st.

18th Infantry Brigade:—Brigade Training from September 4th to 9th at Rhyader. Medical Manœuvres, August 24th to 26th at Rhyader.

Army Manœuvres.

Army Manœuvres, in which troops of the 1st, 2nd, 3rd, Divisions and the London District, and the Scots Greys from the Northern Command will participate, will be held between September 18th and September 21st in the area comprising portions of the counties of Norfolk, Suffolk, Essex, Hertford, Huntingdon, Bedford, and Cambridge.

The following appointments have been made:—Lieut.-Gen. Sir B. M. Hamilton, to command the "Red" force; Lieut.-Gen J. M. Grierson, to command the "Blue" force; Lieut.-Gen. Sir H. L. Smith-Dorrien, Chief Umpire "Red Force; Gen. Sir C. W. H. Douglas, Chief Umpire "Blue" Force.

THE TERRITORIAL FORCE.

The following Territorial units will take part in the Manœuvres in the neighbourhood of Cambridge in September:—2nd West Riding Brigade, R.F.A.; 1st and 2nd West Riding Field Companies, R.E.; West Riding Divisional Telegraph Company, R.E.; 6th (Cyclist) Battalion Norfolk Regiment; Essex and Suffolk Cyclist Battalion; Liverpool Infantry Brigade; Liverpool Brigade Company, West Lancashire Divisional Transport and Supply Column; 2nd West Lancashire Field Ambulance.

The results of the musketry training of the Territorial Force in 1910 have now been published. There has been a considerable improvement in this branch of training, during the past 12 months, especially as regards the number of battalions which performed field practices. The following figures show the numbers tested and qualified:—

	Number Tested.		Number Qualified.	
1909	Recruits ...	65,721	25,433	
	Trained men	107,545	81,218	
			On Open Range.	By attendance
1910	Recruits ...	66,624	36,089	24,430
	Trained men	113,096	90,672	18,348

CADET UNITS.

The policy of the War Office in regard to recognized Cadet units was set forth a year ago in a circular memorandum to the County Associations, to whom the whole business of forming and administering Cadet units was handed over. The local Military authorities were to have no direct responsibility for their organization or training, but it was provided that Cadet units officially recognised by their County Associations should be inspected once a year under arrangements made by the General

HOME—*continued.*

Officer Commanding-in-Chief. No standard of efficiency was laid down, but the issue of a grant from Army funds (£5 per annum for each authorized Cadet Company) was to depend on the inspection showing that a spirit of loyalty, discipline, and smartness prevailed in the unit, and that the conditions laid down by the Army Council had been fulfilled. The Military authorities offer certain privileges to all bodies of lads accepted by the County Associations. Any body of lads exceeding 30 in number, that is trained in elementary Military exercises, and fulfils certain simple conditions, is eligible for recognition.

Twenty-six out of 94 County Associations have raised Cadet units, the total number of the latter recognized at the end of April, being 79 (including the 6 old Cadet battalions). These 79 Cadet units are organized in 176 Cadet companies, the total strength on the 30th April, 1911, being 349 officers, and 9,932 other ranks. When it is remembered that the strength of the Cadets on 21st May 1910, the date on which the new regulations came into force, was only some 170 officers and 5,000 other ranks, it will be seen how rapidly the movement is developing.

On the 25th May, a special Army Order was issued announcing that the King had been graciously pleased to present a Challenge Shield for miniature-rifle shooting, to be competed for annually by members of Cadet units officially recognized by their County Associations. The competition, which will be known as the "King's Shield Competition," will, as a rule, take place on "King's Birthday," but this year September 23rd has been fixed as the date.

Every officially recognized Cadet squadron, battery, or company, will be allowed to enter one team of Cadet N.C.Os. and Cadets, all of whom must be under 17 years of age on the day on which the competition is fired, and must have been posted to the squadron (battery or company) for at least three months before the date of firing, unless the unit has not been formed for that time.

The Challenge Shield presented by His Majesty will be held by the Cadet unit to which the winning team belongs until the result of the following year's competition is announced. In addition, the members of the first and second teams will receive silver and bronze badges, respectively, which will become their own property, and will be worn on the right forearm as long as the recipients serve as Cadets in a recognised Cadet unit.

AERONAUTICS.

On May 12th the Parliamentary Aerial Defence Committee organized a flying demonstration, to which all officers on the active list were invited as guests, on the aerodrome at Hendon. The tests included:—

Speed in erecting and dismantling aeroplanes (*a*) from transport wagon to actual flight; (*b*) from time of landing after flight to time of loading upon wagon ready for transport.

Despatch Carrying and Reliability Tests Across Country:—(*a*) Carrying despatch to Aldershot; (*b*) bringing back reply.

Distance Required for Rising and Alighting:—(*a*) Rising from ground in shortest possible distance; (*b*) alighting. Distance was measured from point of contact with ground to point where machine came to rest. Both monoplanes and biplanes were used in these tests.

Comparison of Speed between Monoplane and Biplane.

Bomb Throwing:—(*a*) By aeroplanes at high speed (at moderate

HOME—*continued.*

height; (b) from aeroplanes hovering in circles at greater height; (c) dropping a missile weighing 100lb. from a biplane.

Reconnaissance Test with Officers as Observers.

As a result of the above tests a deputation of some 60 members of the Parliamentary Committee visited the War Office on the 24th May and were received by Lord Haldane. The Chairman of the Committee urged the necessity for utilizing existing civilian agencies for training airmen, and for giving financial encouragement to men in the Army who wished to learn flying. They further urged that the Government should give encouragement to manufacturers, and pointed out the necessity of having an adequately trained corps of mechanics.

Lord Haldane, in his reply, pointed out that the subject of aerial science was still in a state of evolution, and that it was therefore desirable to move cautiously. He admitted that our Army and Navy were behind the armies and navies of foreign countries in regard to the number of people who were actually engaged in flying. But, he observed, unless they had a big volume of public activity in these matters they did not get a big body of official activity; he quite agreed that it was desirable to get all the civilian element possible; steps had already been taken to bring this about; in regard to encouraging the manufacture of aeroplanes, the War Office would not lose sight of the idea of giving prizes for designs offered. They were progressing, he thought, but they wanted to get the first principles solved before they embarked upon any particular scheme with any particular machine.

The deputation was afterwards received by Mr. McKenna, who, in reply, asked the Committee to remember that the Admiralty had devoted itself to experiments with the dirigible, not because the possibilities of the aeroplane had been overlooked, but because by arrangement, the Army had undertaken the experiments with the aeroplane while the Navy had dealt with the dirigible.

The Army (Lebaudy) Airship was totally wrecked on May 4th at Farnborough, when descending after a trial flight.

Canada.

Reorganization of Commands.—The Canada Government Gazette dated April 29th, 1911, promulgates an order reconstituting the 4 military commands in Eastern Canada so as to form 6 divisional areas providing 6 infantry divisions and 4 cavalry brigades. To each divisional area will be appointed an officer to command the infantry division, and in addition to command and administer such other units as may be quartered in the divisional area.

A General Staff Officer (2nd grade) will be appointed to the staff of each divisional area.

The fortress of Halifax within the 6th divisional area will be commanded by a selected officer. The military districts of western Canada, Nos. 10, 11 and 13, will remain for the present as district commands.

This reorganization was recommended by General Sir John French after his recent tour of inspection in the Dominion.

BRITISH EMPIRE—*continued.*

India.

The Expedition against the Gun Runners:—Admiral Slade's expedition landed at Galag on the Mekran coast on the 11th April and marched inland, a party proceeding as far as Binth. The Afghans retired northwards but no arms were found; the troops were re-embarked at Galag on the 21st April.

On the 25th April the troops landed at Sirik on the Biyaban coast to operate against Mir Barkat Khan, the chief instigator of gun running in that district. Some fighting ensued and a few arms were recovered. The expedition left the Gulf on the 4th May and was de-mobilized on return to India.

FOREIGN POWERS.

Austria-Hungary.

Manœuvres in 1911:—According to statements in the Austrian press large Cavalry manœuvres, in which 12 Cavalry Regiments will take part, will be held this year near Grodek in Galicia. The Cavalry will be exercised in brigades prior to the manœuvres. Réconnaissance work will be carried out on a large scale; communication between reconnoitring detachments and the main body will be kept by cavalry telegraph sections, formed partly from the personnel of the telegraph school at Tulln.

New Law of Military Service:—The difficulties which stood in the way of the introduction of the 2 years' term of colour service, followed by 8 years in the reserve, have at length been overcome. The annual recruit contingent is in future to be 212,000 men.

The changes in organization consequent upon the introduction of the new law are not yet fully known but it is probable that they will include the following:—

"*Common*" *Army*.—The peace establishments of infantry units are to be raised and a special corps is to be formed to carry out certain garrison and barrack duties. The number of "employed" men will thus be diminished and training of all ranks facilitated.

Austrian and Hungarian Landwehrs.—The peace establishment of infantry companies is to be raised from 50 to 90 men.

Nothing is yet known regarding new formations in the Austrian *Landwehr*, but it is stated that the following new units will be raised in the Hungarian *Landwehr*:—

4 new infantry regiments.
2 new cavalry regiments.
1 horse artillery brigade, besides several howitzer batteries, which will later be formed into howitzer brigades.

It is hoped that when full effect has been given to the changes consequent upon the introduction of the new law, Austria-Hungary will be able readily to mobilize 2,000,000 men.

Mountain Artillery:—Mountain Artillery Regiment No. 7 has been formed from the detachment of Mountain Artillery Regiment No. 6 stationed in Dalmatia. The headquarters are to be at Ragusa and the ammunition park cadre will be stationed at Castelnuovo.

The 25th mountain gun and 6th mountain howitzer batteries with the 15th and 16th Army Corps have been formed into 4 divisional regiments of artillery.

Belgium.

Manœuvres in 1911 :—Manœuvres lasting from the 24th to 31st August (including period of concentration etc.), will be carried out by the 3rd and 4th Divisions, and the 2nd and 3rd Cavalry Brigades.

Fortress manœuvres will be held from the 4th to 8th September at Antwerp, Liège, and Namur.

France.

M. Berteaux, the able Minister for War, was killed at Issy on the 21st May by the fall of an aeroplane. General Goiran, formerly Commander of the 6th Army Corps, has been appointed Minister for War in his place.

Manœuvres in 1911 :—The following are the arrangements for manœuvres during 1911 :—

Date.	*Place.*	*Corps.*
5th to 20th Sept. ...	Army Corps Region	All Army Corps except 1st, 6th, 7th and 17th.
1st week September	Camp de Mailly, near Chalons	39th Infantry Division; 1st and 7th Cavalry Divisions.
30th August to 5th September	near Lyon	6th Cavalry Division; 14th and 15th Cavalry Brigades; 1st Infantry Divisions.
27th August to 12th or 15th September	Camp de Mailly, near Chalons	39th Infantry Division; 1st and 7th Cavalry Divisions.
7th to 13th Sept.	near Vesoul	7th Corps.
11th to 14th Sept.	Region of Nantes	11th Corps.
4th to 10th Sept.	Near Crest, South of Lyon	27th Division.
11th to 15th Sept.	near Latour du Pin, s.e. of Lyon	28th Division.

Marocco.

The Situation at the End of April :— The military situation at the end of April was as follows: On the Atlantic coast General Moinier, based on Casablanca, was in command of a force of some 16,000 French and native troops, and was being rapidly made up to a strength of 23,000 by reinforcements from Algeria and Tunis. A flying column under Colonel Brulard, and a Shereefian *Mehalla* of 1,500, under M'Rani had been sent as far as Kunitra (El Knitra on map) on the route to Fez, and was there engaged in accumulating supplies and forming an advanced base.

In the Gharb district (between Kunitra and Alcazar) Colonel Moreau was collecting supplies near Suk-El-Arba; with him were 800 troops, including 300 regular infantry.

MAROCCO—*continued.*

On the Algerian frontier a force of some 9,000 French and native troops under General Toutée were being concentrated on the River Muluya, on the line Taurirt-Debdu, the troops being brought up at the rate of 1,000 men a day from railhead at Zaid-El-Beghal.

In Fez Major Brémond and Colonel Mangin with some native irregulars, variously estimated at 4,500 to 7,000 were beleaguered by some 7,000 to 10,000 tribesmen, and were then believed not to be able to hold out beyond the middle of May, owing to lack of food and ammunition.

The Approaches to Fez:—South of Fez lie the Atlas mountains; to north lie the hilly districts of the Riff; to west a plain traversed by the Sebu River reaches to the Atlantic coast, interrupted by some isolated blocks of hill country about Dardzrari.

East of Fez this plain narrows, but continues past Taza as far as the River Muluya, forming a depression bounded on the north and south by hilly country. The most practicable routes to Fez are therefore those from the east and from the west.



There are four routes to be considered, none of which are more than caravan tracks:—

(1). The direct route from Rabat, south of the oak forest of Mamora and north of the Bou Ragrag, *via* Mequinez to Fez.

(2) The route from Mehedia, south of the marshes in the bend of the Sebu River and north of the forest of Mamora *via* Dardzrari to Fez.

(3) The route from Larache, crossing the Sebu River and joining route (2).

(3). The route from the Algerian frontier through the Taza depression to Fez.

Route (1) is the natural route to Fez, and leads over easy country, between the Sebu and Bou Ragrag Rivers. Unfortunately, this road is exposed on its southern flank to attack by the Zaer tribe living south of the Bou Ragrag River; again, the capture of Mequinez by the rebels made it probable that strong resistance would be met with in this road.

MAROCCO—*continued.*

Route (2) measured from Mehedia is only 106 miles; it possesses the advantage that the Sebu River is navigable for local boats almost up to Fez, while lighters of 30 to 60 tons can get up to Kunitra with the tide. (Kunitra to Fez, 99 miles). The port, has, however, a difficult bar, and at the beginning of May landing facilities were non-existent.

From Kunitra, the road, which skirts the northern edge of the forest of Mamora, leads over a level plain for 60 miles; the crossing of the river Beht, some 20 yards in width, is seldom difficult; the Beni-Hassen also inhabit this region and are a warlike tribe. On entering the Sherarda district the road gets into hilly country.

Route (3) suffers from the disadvantage of skirting mountainous country, inhabited by warlike tribes, lying north-east of it, and of crossing the Sebu River, at a point where it is still a formidable obstacle. It is true that, instead of crossing the Sebu, one may proceed up its right (north) bank almost as far as Fez, but this is impracticable after heavy rain.

Route (4) lies over level country from the Muluya as far as Taza, half way to Fez. West of Taza, the country is somewhat more hilly, while the mountains lying to north and south of the road would make the defence of the line of communications difficult [1].

Political Considerations :—A section of the Spanish press appeared to be suspicious of France, especially as regards the concentration of French troops on the River Muluya on the border of the area claimed as the Spanish sphere of influence.

From statements in the inspired press it appeared that Germany would not object to the advance of the expedition on Fez, provided that no permanent alteration was made in the *status quo*.

Public opinion in France was uneasy with regard to the critical position of Fez, and to the delay in the departure of Colonel Brulard's force; voices were raised in favour of an advance of General Toutée from the Algerian frontier, *via* Taza. The French government, however, adhered staunchly to their original plan; apart from geographical considerations, the objections to an advance from the east was that the tribes in the area traversed would have flown to arms; that General Toutée could in no case be ready to advance before the 8th or 10th of May; and that Spanish susceptibilities might be severely tried by an advance from this quarter.

The following outline of the operations during May is taken chiefly from the telegrams to the *Times* and the *Temps*; information on numerous points of detail is not yet available.

A Supply Problem :—The direct opposition to the advance on Fez from the Atlantic coast was not expected to be formidable. The problem for General Moinier was chiefly one of communications, transport, and supply.

It was estimated that if Colonel Brulard pushed on to Fez with 2,000 men, some 5,000 or 6,000 troops would be required to secure the communications between Fez and the coast. Further, it was necessary to carry sufficient supplies for the relief force and for the garrison of Fez, and to accumulate a reserve of supplies.

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[1] A clear description of the routes and topography is given in *Questions Diplomatiques et Coloniales* of May 16th, 1911. The route eventually taken did not completely follow any of the 4 routes taken.

MAROCCO—*continued.*

The following causes delayed the advance:—

(1) The harbour of Mehidia, which was best situated for a port of disembarkation, was in such a state of disrepair that no use could be made of it at the outset. Everything had therefore to be disembarked at Casablanca, and even here, only one vessel a day could be unloaded. Stores had then to be transported by camels 62 miles along the coast to Rabat, crossing the Bou-Ragrag River 6 miles above that town, and another 18 miles to Kunitra, the advanced base. Early in May the port of Mehedia was opened up and tugs and lighters were sent there; it was still found best, however, to use this port chiefly for the disembarkation of stores, while personnel and animals landed as before at Casablanca.

(2) Many of the units were still without their war establishment of transport; some 2,000 mules and 1,000 camels were shipped from Algeria during the fortnight ending May 9th to complete deficiencies.

(3) The country up the south side of the River Sebu is poor, and the tribesmen had concealed whatever forage they possessed.

Advance of the Relief Force.—During the first week in May several attacks on convoys moving between Rabat and El Kunitra were made by 300 of the Beni Hassen tribesmen, issuing from the forest of Mamora. It became necessary to picket this road by sections of Colonial infantry stationed at intervals. The convoys, consisting of 500 camels, marched on a broad front, well closed up, with an escort of half a company of Algerian Tirailleurs and 1 troop of mounted Spahis. On the 7th May an attack was delivered on General Brulard's camp at El Kunitra.

On the 7th, 8th, and 9th May, Colonel Brulard's column, assisted by M'Rani's *Mehalla,* carried out numerous reconnaissances to the south and east, and into the borders of the Mamora Forest. The presence of a large hostile gathering was established at a point about 20 miles distant on the road to Fez.

On May 11th Colonel Brulard left Kunitra with 8 battalions of infantry, 4 squadrons of cavalry, and 4 batteries. A column 1,800 strong, under Colonel Gouraud followed in support. The Algerian Brigade (1,500 strong) reached Rabat on May 12th, and appears to have followed, together with General Moinier's headquarters, in rear of Colonel Gouraud's force.

Slight opposition was offered by the Beni Hassen, but on May 13th, the columns under Colonels Brulard and Gouraud were united at Lalla Itto, which lies in the plain about 30 miles east of Kunitra. On the same night at about 1.30 a.m. the French camp was attacked by the Zimmour and Beni Hassen, who crept up through the standing corn to 100 yards range. The French had to charge with the bayonet, but successfully drove off the attack, as well as a second one delivered at 5 a.m. After the relief force had started, M'Rani's *Mehalla* was moved to the north, into the Gharb country.

On May 16th General Dalbiez's column accompanied by General Moinier reached Lalla Itto, where a wireless telegraph station was established. A field telegraph line was laid from Casablanca to Rabat. Colonel Gouraud appears to have been left at Lalla Itto to organize a large supply convoy, which was to follow the relief force.

Meanwhile fighting continued daily in Fez, the most severe attacks taking place on May 4th, May 11th (in which the insurgents were said to have had 250 casualties) and on May 17th.

MAROCCO—*continued.*

The original orders issued by the French War Minister had been that the relieving column should advance as far as the hills overlooking Fez in order to establish communication with the French officers in the town and re-victual the garrison. On the 17th May, in consequence of an urgent appeal from the Sultan, the relief force was ordered to occupy the capital itself, but only so long as should be strictly necessary.

Relief of Fez:—Exact details of the route followed by General Moinier after leaving Lalla Itto are not available, but it appears that the column followed a line roughly east from Kunitra to the upper part of the Sebu River, thence *via* Mikkes Valley to Fez, which was reached on the 21st May.

The French force, numbering 8,000 including irregulars, marched up to the town with bayonets fixed and bands playing.

The Moors appear to have been greatly impressed by the rapid and irresistible advance of the French troops; the Beni Mtir broke up their camp and fled at the first appearance of the relieving column.

General Moinier advised the Maghzen to issue a proclamation giving the rebels (except the Beni Mtir) 8 days in which to make their submission. Unfortunately, the Sultan appears to have immediately commenced a series of savage reprisals against the neighbouring tribes.

Attacks on the Communications:—In spite of the deep impression created by General Moinier's arrival, his communications have been subject to incessant attacks.

Colonel Gouraud with a convoy of 1,800 camels marched from Lalla Itto on the 20th May escorted by 2 battalions of Colonial infantry, 1 battalion of Tirailleurs Algériens, 1 squadron of Spahis, 1 field battery; near the River Beht they were attacked on the 22nd May by the Zemmur tribesmen, who are said to have charged up to within 500 yards of the convoy. The attack was beaten off with a loss of 125 killed, the French loss being 5 killed and 20 wounded, but fresh opposition was encountered on entering the hill country near Fez, and the column was persistently sniped till it met General Dalbiez's force which had been sent out from Fez to bring it in.

On the 25th, General Ditte, who had been left in command of the base, was attacked between Mehidia and Rabat.

It was stated, early in June, that General Moinier's force would be distributed as follows:—

500 men, as a garrison, outside the walls of Fez:

3,400 men keeping open the communications from Fez to the sea, *viz.*: 300 men at the port of Mehidia, 700 men at the advanced base at Kunitra, 1,200 men each at Lalla Itto and Sidi Gueddar (a post between Lalla Itto and Fez), and a post of 500 men at Sale, near the port of Rabat).

The line of communications, under the command of General Ditte, was to be divided into two sections: 1st section Rabat to Sidi Gueddar; 2nd section thence to Fez. A mobile force of 3,000 men was to be available for keeping open the communications.

A force of 5,000 men was to be allotted to the Shawai. This distribution would still leave 11,500 men available under General Moinier for operations against Mequinez or elsewhere.

MAROCCO—*continued.*

Operations on the Algerian Frontier :—General Toutée's force remained in observation in the Muluya country during the month. Though no general advance was attempted a good deal of fighting took place.

On May 10th, a mixed force of 1 battalion, 1 battery, 1 squadron, and 1 "goum" engaged in a punitive expedition near Guercif, killing 34 of the insurgents.

On May 13th, the tribesmen raided the French camp at Taurirt and successfully carried off 200 cattle.

On May 16th, a reconnoitring party of the Foreign Legion were ambushed in a fog near Debdu, and lost 1 officer and 27 men killed, and 1 officer and 6 men wounded.

On May 19th and 21st, Taurirt was again attacked in the early morning, the numbers of the assailants being estimated at 400 and 300 respectively. On the latter occasion they were driven across the Muluya under fire, leaving 6 casualties.

Spain and Marocco.

During the events above described, the following movements took place in the Spanish sphere of influence :—

On May 8th a portion of the Spanish garrison at Ceuta occupied and entrenched the following points on the Ceuta-Tetuan road :—

Kudia Federico, dominating the valley of the Almarza River;

Kudia Fajana, commanding the left bank of the Castillejos River; and the Condesa heights.

The Prime Minister described the action of Spain in taking up these new positions as merely for the purpose of policing the district pending the installation of Spanish-Maroccan police, to which measure the Maghzen has already consented.

On May 21st, Spanish troops from Ceuta (moving by sea and landing without difficulty) occupied Monte Negro, a point close to the coast and half way between Ceuta and Tetuan, and established a police post there.

By the occupation of Monte Negro it was hoped to ensure the tranquillity of the region and to exercise greater vigilance on the coast.

On May 13th, a Spanish column from Melilla marched *via* Zoco el Arbaa and occupied Zaiu, a position near the left bank of the Muluya 19 miles south-east of Zeluan and 25 miles from Zoco el Arbaa.

The occupation of Zaiu (which is in the Spanish sphere of influence) is said to have been contemplated since October, 1910. Two roads lead from Melilla to Zaiu; one *via* Zeluan and the other *via* Zoco el Arbaa.

It is further reported that on May 23rd, two posts were taken up to link the troops at Zaiu with Zeluan.

Germany.

Regimental tents are to be made of "field grey" the material, the colour of the new service uniform, in place of the grey brown formerly used.

Pistols adapted for throwing a kind of star shell with a view to lighting up ground at night are now to be issued as an article of equipment to Pioneer battalions. They have been experimented with for some time past, and have been found especially useful during night fighting in fortress warfare.

GERMANY—*continued.*

Manœuvres in 1911.—The Imperial Manœuvres will take place from the 11th to the 13th of September between the Guard, II. and IX. Army Corps. According to the German Press the opposing sides will consist of a Northern Army, under command of Field Marshal Prince Leopold of Prussia, Inspector-General of the 1st Army Inspection, consisting of the II. and IX. Army Corps, a cavalry division, and a landing party from the fleet; and a Southern Army commanded by Field Marshal von Kessel, with the Guard Corps and a XX. Army Corps, which will be formed for the occasion from portions of neighbouring army corps.

Dirigibles and aeroplanes will be allotted to both sides. The manœuvre area will be in the valley of the Oder. The great ceremonial parades which precede the Imperial Manœuvres will be held for the IXth Corps on the 26th August at Altona; for the IInd Corps on the 29th August, at Stettin; and for the Guard Corps on the 1st September, at Berlin.

It is understood that at this year's manœuvres all the troops will wear the old blue uniform. The reason is said to be economy, as it is not possible to provide the new service dress for all units at present in addition to that required for mobilization.

Japan.

Manœuvres in 1911:—The following manœuvres will take place in 1911:—

(*a*) Special grand manœuvres of the 6th, 12th, and 18th Divisions in the 12th Divisional Territory.

(*b*) Inter-divisional manœuvres, 4th and 16th Divisions.

(*c*) Special heavy artillery manœuvres during October in the neighbourhood of Shimonoseki. The 5th and 6th Regiments and Tsushima, Sasebo, and Nagasaki Battalions of heavy artillery will take part.

Military Mission:— General Yamaguchi (chief of mission); General Toyobe; Lieutenant-Colonel Onodera and 3 other Japanese officers are making a special study of the French army.

Mexico.

Resignation of President Diaz:—About the beginning of May formal negotiations were opened between President Diaz and the rebels. On May 22nd a preliminary agreement was signed at Juarez near the United States Frontier, between General Madero and the representatives of the Government, one of the conditions being the immediate retirement of the President and Vice-President.

General Diaz accordingly resigned on the 26th May, and immediately left for Vera Cruz, the Government being carried on by Senor de la Barra as provisional President. It is estimated, according to a telegram to the *Times* dated May 28th, that the cost of the war is £4,166,666 while damages payable to foreigners amount to £416,666.

Russia.

Manœuvres in 1911:—Manœuvres of all arms will be held this year, probably in September, in the Vilna, Warsaw, Kiev, and Pri-Amur Military Districts; each under the supervision of the G.O.C. the Military District.

After the conclusion of the above manœuvres special autumn cavalry manœuvres will take place from the 11th to the 17th in the Vilna Military District, and in the Volinsk Government of the Kiev Military District.

Turkey.

THE ALBANIAN RISING.

The region affected by the Albanian rising this spring is the country between Kopliku and Tuzi extending from the Alps of Albania to the shores of the Lake of Scutari. The Kastrati, Klementi, Skreli, Pulati, and Hoti (Catholic) clans, who inhabit this district number about 27,000; they demand that Albania should be constituted as a separate province; that Albanian schools should be maintained by the state; and that Albanian conscripts should not be liable to serve outside Albania in peace time.

Some 10,000 Albanians living on the other side of the Montenegrin frontier are in sympathy with the insurgent cause.

In the first stage of the rising (end of March) the rebels attacked and captured nearly all the Turkish posts in this section of the frontier, with the exception of the fort of Shipshanik (near Tuzi). The Turkish losses were said to be 164 men, 3 guns, many rifles, and 10 blockhouses.



In the second stage (first week of April) the Turks, who originally had only four battalions in the whole Vilayet of Scutari, were reinforced by some reservists (*Mustahfiz*) called hastily under arms, and, led by Emin Bey, drove back the insurgents, relieving fort Shipshanik.

In the third stage (about April 7th) the Albanians renewed the attack and Emin Bey was for a time isolated at Tuzi. Three battalions which had landed at San Giovanni de Medua abouf 3rd April pushed up to Tuzi and relieved that place. Shevket Torghoud Pacha was appointed to command the operations.

TURKEY—*continued.*

The Minister of War now ordered the mobilization of the Anatolian *redifs* to be accelerated, and some battalions were shipped direct from Asia Minor.

The difficulty of getting reinforcements to the theatre of war was increased by the attitude of the Mirdite clan. It became necessary to cease using San Giovanni de Medua as a port of disembarkation, and, instead, to tow the troops in lighters up the narrow and winding River Boyana to Scutari.

A series of engagements, regarding which reliable information is difficult to obtain, occurred between the 8th and 12th April. The Turks appear to have lost heavily in ambushes, without, however, re-opening communications with Tuzi. Reports from Turkish sources stated that the rebels were receiving arms and assistance from Montenegro, an allegation which was vehemently denied by King Nicholas. It appears evident, however, that relations between Turkey and Montenegro have been severely strained by the continuance of operations close to the frontier.

About the 17th April the force under Torghoud Pacha is said to have consisted of 16 infantry battalions, including 9 battalions of *redifs*, which arrived from Asia Minor on, or after, the 13th April. The garrison blockaded at Tuzi was stated to consist of 1,000 Turks and 1,000 Bashi Bazouks.

In the fourth stage the Turks endeavoured to localize the rebellion, and drive the Albanians up against the neutral frontier by a combined sweeping movement with two columns, one from the south, and one from the north-east.

About the 17th or 18th April the Turks advanced in 2 columns, one from Gusinje, and one from Scutari, converging towards Tuzi.

The Gusinje column, after severe fighting in the snow, was forced to retreat. The Scutari column also encountered strong opposition near Kastrati, and after several days fighting had gained some success, but had, apparently, failed to reopen communications with Tuzi.

EVENTS IN MAY

About the 3rd May a general attack delivered by the Turks on the Hoti-Kastrati position, was again repulsed with heavy loss; the movement of troops from Salonika to Uskub and the north of the vilayet of Kossovo was commenced.

Torghoud Pacha now issued a proclamation calling on the tribes to lay down their arms within 5 days. On the 14th May active operations were again commenced and on the 16th and 17th the Turks reported that the Scutari force had captured important points on the Scutari-Tuzi roads, besides the position of Planitza close to the Montenegrin frontier. On the 18th the Albanians renewed the attack, and stormed the Planitza position in the face of heavy artillery fire, capturing large quantities of ammunition and stores; the captured position was, however, almost immediately evacuated by the Albanians (who were apparently, anxious regarding the movements of the Gusinje column) and was re-occupied by the Turks.

The Gusinje column was again checked in the mountains, and forced to retire without having effected a junction with Torghoud Pacha. The troops of this column were Anatolians, unused to the hardships of mountain warfare.

On the 29th May a fresh combined movement was attempted with both columns, but was again checked.

TURKEY—*continued.*

At the end of May Shevket Torghoud Pacha had under his orders some 33 battalions, in the Scutari district, with over 20 battalions further to the north and east on the Montenegrin frontier.

The next stage of the war was marked, in the first week of June, by the somewhat belated revolt of the powerful Mirdite clan, numbering some 10,000 fighting men. Alessio was attacked and occupied by the Mirdites, while telegraphic communication between Scutari and San Giovanni de Medua was interrupted.

From "Questions Diplomatiques et Coloniales" 16 May. Telegrams to the "Times," April and May.

THE RISING IN YEMEN.

The Turkish Military operations, the result of which was the relief of Sanaa and clearing of the country between that place and Hodeida, appear to have been well carried out, though the news from this locality is by no means full. A move will now be made in the other disturbed area, *i.e.*, in the Assyr province, and for this purpose a division including 5 battalions of Syrian *redifs* is being landed at Cunfuda, to co-operate with the Sherif of Mekka's levies.

ORGANIZATION.

The details of the *redif* distribution, introduced in consequence of the new scheme of army re-organization, have now been made public. As previously reported the *redif* divisions will normally consist of three 3-battalion regiments, corresponding to the *nizam* grouping, and the number of such divisions will be 39 of the 1st Class (6 in Europe and 33 in Asia) and 19 of the 2nd Class (2 in Europe and 17 in Asia).

Greece.

The Army Law this year fixes the peace strength of the Regular Army at 27,621, and the number of the recruit contingent at 13,111.

Rumania.

The 10th Reserve Division, which was created last year, is being transformed into an active division; this necessitates the formation of 4 new infantry regiments and 2 additional regiments of artillery.

A new rank, that of "General of Army Corps," has been created; hitherto the highest rank was "General of Division."

NAVAL AND MILITARY CALENDAR.

MAY, 1911.

1st (Mon.) Launch of H.M.S. *Conqueror* from the yard of Messrs. Beardmore and Co., Dalmuir on Clyde.

5th (Fri.) Centenary of the battle of Fuentes d'Onor.

10th (Wed.) H.M.S. *Medea* arrived at Plymouth from Mediterranean.

11th (Thur.) H.M.S. *Hyacinth* arrived at Plymouth from East Indies.

15th (Mon.) H.M. Ships *Leviathan* and *Berwick* paid off at Chatham and recommissioned the following day.

,, ,, H.M. Ships *Temeraire* and *Medea* paid off at Devonport and recommissioned the following day.

,, ,, H.M.S. *Scylla* arrived at Sheerness from North America and West Indies Station.

16th (Tues.) Centenary of the Battle of Albuhera, 1811.

20th (Sat.) H.M.S. *Medea* left Plymouth for Mediterranean.

22nd (Mon.) H.M.S. *Donegal* paid off at Devonport and recommissioned the following day.

23rd (Tues.) H.M.S. *Æolus* commissioned at Devonport.

24th (Wed.) H.M.S. *Scylla* paid off at Chatham.

25th Thur.) Launch of first-class battleship *Wyoming* from Cramp's yard, Philadelphia, for U.S. Navy.

26th (Fri.) Birthday of Her Majesty Queen Mary.

27th (Sat.) Official celebration of the birthday of His Majesty the King.

29th (Mon.) H.M.S. *Æolus* left Plymouth for West Indies.

,, ,, H.M.S. *Superb* paid off at Portsmouth and recommissioned the following day.

30th (Tues.) H.M.S. *Exmouth* arrived at Portsmouth from Mediterranean

NOTICES OF BOOKS.

For Remembrance and in honour of those who lost their lives in the South African War, 1899-1902, "Lest we forget." By Colonel Sir James Gildea, K.C.V.O., C.B. 444 pp., with an index. London, 1911. Eyre and Spottiswoode. 2 guineas.

This book is probably unique, among all others of its kind, for the thoroughness and completeness with which the task undertaken has been carried out. Particulars, illustrated by excellent photographs, are given of some 900 memorials in the United Kingdom, India, Ceylon, Canada, Australia, New Zealand, and South Africa. Nevertheless, the book is far more than a mere album of photographs of memorials. For purposes of

historical record it fills a part which alone would have justified the infinite care and labour involved in its compilation; for the friends of many among the 20,766 whose names fill the death roll of the war, it will never be possible to stand beside the graves, or read the inscriptions graven on obelisks from which they are separated by oceans and continents; for them Sir J. Gildea's book performs a loving service, and it is to be hoped, in the interests of poorer citizens, that as many public libraries as possible will obtain copies; the price is certainly not unreasonable considering the number of photographs and the excellent finish of the work, and it is to be noted that all profits are to be devoted to the Royal Homes for Officers' Widows and Daughters. Again, the publication of a book of this kind cannot fail to be of assistance to those societies which have undertaken the task of tending the graves, by arousing interest in the work which they are faithfully carrying out, often under great difficulties. Finally, there is an immense service which this book renders to the whole Empire, and that is the appeal it makes to the spirit of comradeship, which constitutes the real bond of Empire. The lists of names inscribed on tablets and obelisks are drawn from almost every British Dominion and Colony, and they are an enduring testimony to the strength of the sentiment which called forth such willing sacrifice for the Empire in the hour of her need.

Manual of Field Engineering.—General Staff. War Office. 131 pages, with numerous diagrams and an index. London, 1911. H.M. Stationery Office.

Until recently the idea was generally prevalent that field engineering was a highly technical subject which was better left to the expert. The reasons for this attitude are not far to seek. Text books dealing with the subject were full of the most elaborate drill for the construction of the simplest objects and in addition bristled with formulae which were unsuitable for field use. In practice also little or no effort was made to bring the engineers and other arms into close touch so that they might become better acquainted with each others powers and limitations. First of all South Africa and subsequently Manchuria emphasised the lesson of Plevna and showed what might be done by all arms by means of field fortification.

The importance of the subject and the necessity of the various arms being trained to apply correct methods in the field is now generally recognised. While field fortification must always be regarded as a means to an end, it must also be remembered that its judicious employment, by enabling a commander to husband his resources, may make all the difference between failure and success.

In the new edition of the manual of field engineering, the chief object has evidently been to assist the various arms in dealing with such questions as may present themselves on service, and for the solution of which elaborate methods are unsuited. A brief recapitulation of the chief innovations may, therefore, prove of some service to officers studying the subject.

In Chapter I the increased power of penetration of the newest type of bullet should be noted. This will necessitate a corresponding increase in the amount of cover, if it is to be effective.

Chapter II deals briefly with the tools and materials usually available in the field. The value of sacks as revetments or to form parapets is emphasized.

In Chapter III., which deals with working parties and their tasks, stress is laid on the principle that units should always be able and ready to construct suitable defences for themselves. The engineer field companies allotted to a division will usually have plenty of work requiring technical skill though it may be necessary to give the other arms assistance in special cases. While rules for working party tasks are given as a guide, it is pointed out that mechanical spacing and distribution for digging fire trenches are to be avoided, but that this should not prevent the distribution of the parties being carried out with regularity, so as to avoid confusion and possible loss of tools.

A simple form of working party table is given on which the commander of a unit can show, in a simple form, the works he his undertaking, and how his men and tools are employed. If he requires additional tools application to his superior should be made, and the latter can fill in any additional source of supply.

Chapter 4 deals with the improvement of the field of fire. It lays down that attention should first be directed to clearing the field of fire near the position, subsequently working forward as time permits.

Chapter 5 discusses various types of earthworks. The importance of selecting their sites with a view to mutual support and of hiding them so as to avoid drawing attention to their existence are two of the principal points mentioned. Various types of head cover and their value are discussed, though the difficulty of concealing a trench thus provided is recognised.

Types of protected look-outs and of emplacements for machine guns have been added.

The next chapter discusses the principles of employment of obstacles and the conditions which they should fulfil. It is pointed out that the most effective obstacles are those made with wire, as they are difficult to destroy or pass. The arrangements for forming an obstacle of this nature are dealt with in detail, and it should be noted that symmetry does not form part of the plan. A section dealing with the passage of obstacles has been added.

Chapter 7 deals with the defence of a position and of localities, and is the most important from a tactical point of view as it gives an outline of the principles on which the defence of a position should be organized. Plates 16, 17, and 18, should be studied in this connection though it should be constantly borne in mind that they are types only, and that slavish adherence to them is nowhere demanded. Improved methods of camp cooking and sanitation are dealt with in Chapter 9.

Chapter 13 deals first with the passage of water by extemporised methods (section 80), a method of swimming horses is then shown, and lastly, various types of bridges requiring more preparation are discussed. Formulae have been reduced as far as possible, and two plates, numbered 57 and 58, have been inserted from which the necessary size of trestle legs to take various weights can be readily obtained.

The last two chapters deal with hasty demolitions with and without explosives.

Appendix II shows in one table various details, which were scattered throughout former editions, of the men, time, and tools required for the execution of certain field works. By means of this table calculations for the performance of all the usual work in the field can be made.

A Study of the Development of Infantry Fire Tactics. By Colonel Beca. Translated by Captain A. F. Custance, with a preface by Colonel Hacket Pain, C.B. 129 pp. London, 1911. Swann Sonnenschein and Co.

This book is a comprehensive study of the whole subject of infantry tactics. In the preface we are given a clear summary of the leading points of difference between the French and German schools of thought. The introduction, which is by the translator, contains some diagrams of the organization and fighting formations of infantry which, in the opinion of Captain Custance, are fairly typical of most continental armies. It would, perhaps, have been better to have explained that the diagrams of battle formations are in no sense to be regarded as "normal formations." these being no more in favour on the continent than in England. In the book itself, the evolution of infantry tactics is first treated historically, from the time of Alexander the Great up to the present day. Colonel Beca shows how the French suffered in 1870 from adhering too long to regulations which took no count of the development of fire power; and how the disquieting doubts raised on the continent by Boer tactics, were finally set at rest by the successes of the Japanese attacks in Manchuria. Under the head of "Vulnerability of Infantry Formations," the author gives some interesting data regarding musketry experiments at Chalons, and sums up the results in four useful and practical rules. In the concluding chapters, dealing with battle tactics, Colonel Beca quotes freely from the French and German Manuals, without, however, bringing out as clearly as might be wished the essential points of difference between the two systems. Fortunately this omission has been supplied in the preface by Colonel Hacket Pain. We are not told to what nationality Colonel Beca belongs, but speaking generally, he appears to incline rather to the French than to the German school.

Colonel Henry Bouquet. A Biographical Sketch. By Lieutenant-General Sir Edward Hutton. 40 pp. Winchester, 1911. Warren and Sons.

The histories of British regiments afford many glimpses of brilliant and attractive personalities, but few that can excel in interest that of this intrepid soldier of fortune, who, after an apprenticeship served in the Dutch and Sardinian armies, was called to the command of a British regiment (the 60th Royal Americans) then newly raised for service in North America. Great indeed must have been the originality and adaptiveness which enabled the new commander to break entirely with European traditions in matters of tactics, dress, and equipment, and to adopt the methods of Indian frontier warfare. Colonel Bouquet's first opportunity for distinction came in the expedition against the French at Fort Duquesne (1758), in which, though not in chief command, he played the leading part; but the exploit with which his name will always be most closely connected with his campaign on the Ohio during the Indian rising known as the "Conspiracy of Pontiac" (1763). The flying column under his command, for the relief of Fort Pitt, consisted of some 1,500 men, including his own regiment, and the 42nd Highlanders. The route lay through dense and pathless forests; the column was opposed at every step by Indians, and was finally forced to take up a defensive position at Bushey Run. Colonel Bouquet succeeded, by the use of an Indian stratagem,

in extricating his force, and in inflicting a crushing blow on the enemy. Pressing on, he relieved Fort Pitt, and continued his march westward for ten days into the heart of the unexplored country.

Imposing on the Indians by the audacity and speed of his march, he was able without further fighting to bring the rebel chiefs to a conference, and finally to secure the release of all the captives, and the acceptance of the conditions of peace demanded by the Government.

The ingratitude with which his efforts were rewarded by those who had most cause to be grateful to him, his disappointment, and his early death form a tragic sequel to the delightfully written narrative of his achievements.

Burmese Self-Taught. By R. F. St. A. St. John, Hon. M.A. (Oxon). 168 pp. Marlborough and Co., London.

This manual has been arranged in such a way as to serve both as a text book for students of the Burmese language, and as a handbook for tourists or travellers in Burma. The book opens with a chapter on the alphabet and pronunciation, the underlying idea of the system of phonetics employed being that each sound in the Burmese language is represented, as far as possible, by a separate phonetic sign, so that each sign must always be pronounced in the same manner. Next follow a series of vocabularies, arranged by subjects. The manual concludes with a short chapter on grammar, and a collection of conversational phrases.

The Naval Annual for 1911. Edited by T. A. Brassey, A.I.N.A. 472 pp. With numerous diagrams and illustrations. London, 1911. T. Griffin and Co.

In entering on its twenty-fifth year of publication the Naval Annual has lost nothing of its usual completeness, embracing as it does, the whole field of British and foreign naval affairs.

Part I. of the new volume contains, in addition to the usual reviews of the progress of Navies, some articles of great importance, foremost among which are those by Admiral Sir Cyprian Bridge and Mr. John Leyland on the Declaration of London. In connection with this subject Lord Brassey furnishes an article on "Mercantile Auxiliaries," a subject which may come unexpectedly into prominence if the right to convert merchant steamers into cruisers is to be conceded.

Special articles are also contributed on "German Naval Administration" by Mr. John Leyland; "Oil Engines versus Steam Turbines," by Mr. Alex. Richardson; "The Tactics of Trafalgar," by Mr. J. Thursfield; and "The Dreadnought Era," by Commander Robinson. The article on Foreign Navies is by Mr. John Leyland.

Part II. consists of the usual tables of British and Foreign ships and Ordnance, by Commander Robinson, R.N., and Mr. John Leyland; Part III. of Armour and Ordnance tables, by Commander Robinson; Part IV. of Gunlayers Tests, official statements, estimates, etc., regarding British and Foreign Navies; and the text of the Declaration of London. The illustrations include the *Neptune, Newcastle* and *Boadicea; Justice* (French); *Augsburg* (German); *San Giorgio* (Italian); and *Giorgios Averof* (Greek). The index is very complete, and adds greatly to the usefulness of the book.

FOREIGN PERIODICALS.

NAVAL.

Argentine Republic.

BOLETÍN DEL CENTRO NAVAL. Buenos Aires: *March, 1911.*—Capture at Sea. The Declaration of London. Artillery practice from ships. Calculations necessary for the installation of a wireless telegraph station. Light houses with intermittent lights worked automatically. Telescopic sights. Utilization of gas power for ships' engines.

Austria-Hungary.

MITTHEILUNGEN AUS DEM GEBIETE DES SEEWESENS. No. 6. Pola: *1911.*—The launch of the *Admiral Spaun*. The results of the cruise of the non-magnetic yacht *Carnegie* in 1909—1910. Some theories as to the introductory stages of fleet actions. The Italian Naval Budget for 1911-12. The Japanese Naval Budget for 1911-12, and their building programme up to 1916.

Brazil.

REVISTA MARITIMA BRAZILEIRA. Rio de Janeiro: *March, 1911.*—A just punishment for the mutineers. Summary of the administrative systems of various foreign navies. The manufacture of side arms. The navy of Brazil (Chapter XXVII). The interplanetary spaces (continued).

France.

REVUE MARITIME. Paris: *April, 1911.*—A problem in naval cinematics. Notes on the employment of motor boats in navies. The projection of light.

LA VIE MARITIME. Paris: *10th May, 1911.*—What is the object of naval raids on a large scale? Visit of United States cruisers to Europe. Influence of accidental causes on naval policy. French auxiliary cruisers in the 17th and 19th centuries. The tour of the President of the Republic in Tunis. How are reforms carried out in the navy. The navy and the naval policy of the United States. *25th May.* New naval construction. The trials of the *Voltaire*. The fleet and the naval policy of the United States.

LE YACHT. Paris: *6th May, 1911.*—Squadrons and Flotillas. The composition and distribution of the British naval forces in 1911. *13th May.*—The employment of the compass in aerial navigation. The launch of the destroyer *Boutefeu*. *20th May.* The composition of the division of our battle squadrons. Notes on a cruise in equatorial Africa. The composition of the French fleet in 1912. The trials of the *Voltaire*. The composition and distribution of the British naval forces in 1911. *27th May.* The trials of the *Danton*. Notes on a cruise in equatorial Africa.

LA MARINE FRANCAISE. Paris: *May, 1911.*—The second stage of the naval programme. The education of naval officers. Naval bases and points of support for our fleet. How far can dirigibles influence the course of a war?

Germany.

MARINE RUNDSCHAU. Berlin: *May, 1911.*—Remarks on the first Anglo-Dutch war (1652 to 1654) (concluded). An unknown narrative of Magal haes' voyage round the world. Australian defence policy. The annual report on the United States navy for the financial year 1909-10. The debates on the French naval estimates for 1911. The British naval estimates for 1911-12. *June, 1911.*—The rising in Ponape and its suppression by the *Emden, Nürnberg, Cormoran, and Planet.* The present position of dirigibles and aeroplanes and their employment in naval war. The annual report on the navy of the United States. The organization of surgical stations on board ship during an action.

Italy.

RIVISTA MARITTIMA. Rome: *May, 1911.*—The presentation of a flag to the *S. Marco.* The hydrographical cruise of the *Ciclope.* Firing against dirigibles and aeroplanes.

MILITARY.

Austria-Hungary.

DANZER'S ARMEE-ZEITUNG. Vienna: *4th May, 1911.*—The May promotions in the Austro-Hungarian army. The North American Civil War. Torpedo flotillas. *11th May.*—Making use of ground. Criticism of a pamphlet dealing with strength of contingents. The contracts for the Servian Artillery. Should our naval officers know more about our coasts? *25th May.* —A resumé of the new military service law. General Staff duties. Dreadnoughts of the air. Disadvantages of militia systems. Experience of foreign armies with one-year volunteers in the cavalry.

STREFFLEUR'S MILITÄRISCHE ZEITSCHRIFT. Vienna: *May, 1911.*—The battle of Kolin 18th June, 1757 (continued). Changes in the Austrian army in 1910. Field Artillery fire effect. Transport and Supply service of the 1st Corps in the manœuvres of 1909 in Moravia. Changes in foreign armies in 1910 (continued). Communications from the Army School of Musketry: employment of machine guns in breaking off an engagement. Notes from the armies of Germany, France, Great Britain, Italy and Russia. Technical notes: encounters between aircraft; difficulties of orientation in aircraft; electrical transport trains in Germany.

Belgium.

BULLETIN DE LA PRESSE ET DE LA BIBLIOGRAPHIE MILITAIRES. Brussels: *15th May, 1911.*—The Imperial Manœuvres in Germany in 1911. The new German Army Bill. A new Wörth: a battlefield of to-morrow. *31st May.*—Notes on the organization of the British Army. The new German Army Bill (concluded). A new Wörth: a battlefield of to-morrow. The Imperial Manœuvres in Germany in 1910.

France.

JOURNAL DES SCIENCES MILITAIRES. Paris: *1st May, 1911.*—Railways in war. Bürde's "Tactical Principles," The Army of Africa and the law

of Cadres. Montaigne's essays and military science. The small arms of modern armies and their ammunition. *15th May, 1911.*—The engagement of La Marche en Woëvre. Bürde's "Tactical Principles" (continued). The new privisional regulations for field artillery fire. The small arms of modern armies and their ammunition. Practical instruction in making use of the ground.

REVUE D'INFANTERIE. Paris: *1st May, 1911.*—The Japanese in Manchuria (continued). The new regulations for field fortification for officers of all arms in Russia. The right wing of the Prussian army at Rezonville. The Roumanian regulations for machine gun companies.

LE SPECTATEUR MILITAIRE. Paris: *1st May, 1911.*—The education of soldiers, especially of infantry soldiers. A year's experience of tactical instruction of the cadets in a demi regiment of cavalry. Italy: the General instructions for the employment of the larger formations (to be continued). The Germans in the Gatinais.

15th May, 1911.—A year's experience of tactical instruction in a demi regiment of cavalry. The employment of the larger formations (concluded). The training, education and conditions of service of the German officer. The battle of Coulmiers (to be continued).

REVUE DE CAVALERIE. Paris: *April, 1911.*—The battle of Magenta: a charge of cavalry. Advice to the new editing staff. Our leaders: General Durand de Villers. Soldiers who are members of the academy. The need of an Inspector-General of Cavalry. The military fencing society. On the battlefield: a study in combined tactics. Remounting of the German army. *May, 1911.*—A study on the conduct of war: the effect of moral influences (1793). The effect of the two years' system on the French cavalry. The cavalry of the future. The Trakehnen horse breeding establishment and the East Prussian horses. The heavy brigade of Saxon cavalry at the battle of the Moskwa.

REVUE MILITAIRE GENERAL. Paris: *April, 1911.*—Written comments on manœuvres by General officers commanding. Some critical remarks on the engagement at Drijdelé (Wadai), 9th November, 1910. Tactics (more letters to a young officer). The combination of the 3 arms on the field of battle. A fifth study of Alpine tactics. The doctrine of national defence.

REVUE D'HISTOIRE. Paris: *May, 1911.*—The campaign in the Shawia (concluded). Marching in the days of Napoleon (to be continued). The manœuvre of Pultusk (to be continued). Napoleon and the German fortresses in 1813 (to be continued). The campaign of 1813: the introductory stage (to be continued). The war of 1870-1871. The 1st army of the Loire (to be continued).

REVUE MILITAIRE DES ARMÉES ETRANGERES. Paris: *May, 1911.*—The German Imperial Manœuvres in 1910 (concluded). The Mexican army.

REVUE D'ARTILLERIE. Paris: *15th May, 1911.*—The independent line of sight in 1901. An apparatus for showing the minimum elevation required to clear the crest of cover when using indirect fire. The experimental Commission of the Prussian army. Signalling without trained signallers.

Germany.

MILITÄR-WOCHENBLATT. Berlin: *2nd May, 1911.*—Range practices or field firing. The task of the VII. Corps at Gravelotte. Obituary notice of General v. Scherff. Movements to a flank of large modern armies. instruction for field fortifications for officers of all arms in the Russian army. Notes from the French army.

4th May.—Debatable points regarding the campaign of 1813. The instruction for field fortifications for officers of all arms in the Russian army. The Austro-Hungarian Military Budget for 1911.

6th May.—The British 'memorandum on army training,' The instructions for field fortifications for officers of all arms in Russia. Development of motor transport in Germany, France and Austria.

9th May.—The instructions for military engineering for officers of all arms in Russia. A new work about Prince Frederick Charles of Prussia. Germany as a world power.

11th May.—Is secrecy necessary regarding fortresses? Passage of infantry through lines of guns in action. Supply service in the field in the Italian army. *13th May.*—Field-Marshal v. d. Goltz completes 50 years' service. Gymnastics in the army. Amendments to the French infantry regulations. *16th May.*—The training of British infantry in night fighting. The rates of pay during the war of liberation. The scale of equipment with maps, and their use in Russia.

18th May,—Moltke's military works: Part III. The tactical preparation for the battle. The German Navy List for 1911. Motor vehicles for medical duties. The distribution of the British Army. *20th May.*—The Army List for Prussia and Württemberg. Progress in military affairs in Turkey. *23rd May.*—The task of the VIIth Army Corps at Gravelotte. Carbines and lances in dismounted fighting. The characteristics of the Greek soldier. The principles of the new Japanese Field Artillery Regulations. *25th May.*—Range practices or field firing? The task of the VIIth Army Corps at Gravelotte. *27th May.*—Notes from the French army. *30th May.*—Close reconnaissance. Notes from the French army. Aeronautics in Germany in 1911.

JAHRBÜCHER FÜR DIE DEUTSCHE ARMEE UND MARINE. Berlin. *May, 1911.*—Moltke's strategy between Metz and Sedan from French and German points of view (concluded). The provisional regulations for field artillery fire of March, 1911. Night fighting. Notes on the study of ground. Notes from the Russo-Japanese war of 1904-5. The question of full and half sights. The strategical importance of the Panama Canal.

ARTILLERISTISCHE MONATSHEFTE. Berlin: *May, 1911.*—A reply to C. Cranz's article on ballistics. The new French field artillery regulations. The revise of the Russian firing instructions for 1909. Notes on the development of combined shell for field guns. Training of remounts in the French field artillery. The question of the strength of batteries in Holland. The new 7.5 cm. field gun for the Netherlands East Indies. The Comet Mast.

Italy.

RIVISTA MILITARE ITALIANA. Rome: *April, 1911.*—The organization and tactical employment of machine guns in the field (continued). The march of Garibaldi from Renda to Palermo in May, 1860 (continued). Speeches of Frederick the Great (continued). Historical notes on the fortress of Osoppo. The critical period when the strength of the army is at its

lowest, and the calling up of the recruits in two portions. The military preparations of Prussia and the peace of Villa Franca in 1859. The employment of field artillery. Alcoholism in the army.

Spain.

REVISTA TÉCNICA DE INFANTERÍA Y CABALLERÍA. Madrid: *1911.*—The advance of infantry under artillery fire. A critical study of the special musketry course for first lieutenants of cavalry. Preparatory military instruction for youths.

REVISTA CIENTIFÍCO MILITAR Y BIBLIOTECA MILITAR. Barcelona: *10th May, 1911.*—Tactical methods in Marocco. Lance versus sword (concluded). The re-organization of the N.C.O.'s of the Italian army.

Switzerland.

REVUE MILITAIRE SUISSE. Lausanne: *May, 1911.*—The history of the regiment of Swiss guards in the service of France (continued). The manœuvres of the St. Maurice garrison in 1910 (concluded). The French mountain gun, Deport system.

United States.

JOURNAL OF THE U.S. CAVALRY ASSOCIATION. Fort Leavenworth, Kansas: *May, 1911.*—Psychology of War. The work of the Cavalry equipment board. Cavalry equipments. A criticism of our cavalry drill regulations. Cavalry Instruction. Field training versus target practice. A proposed method of linking and dismounting to fight on foot. The Fort Reno Remount Depot. The Cavalry of the British Army.

JOURNAL OF THE MILITARY SERVICE INSTITUTION. *May—June, 1911.*—Volunteer Camps. Militia conditions. Signalling in France. Regimental organization. Militia training. Logistics.

PROCEEDINGS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS. New York: *May, 1911.*—Mule back reconnaissances. (page 794).

RECENT PUBLICATIONS OF MILITARY INTEREST.

COMPILED BY THE GENERAL STAFF, WAR OFFICE.

APRIL, 1911. PUBLISHED QUARTERLY.
PART II*. SECTION I. HISTORICAL—(*continued*).

Communicated by the General Staff and reprinted by permission of the Controller of His Majesty's Stationery Office.

THE CAMPAIGN OF 1878 IN BOSNIA AND HERZEGOVINA. (La campagne de 1878 en Bosnie-Herzegovine). By Reginald Kann. 188 pp. with one map. 8vo. Paris, 1910. Charles Lavauzelle. 3/6.

Little is known of the Austrian campaign in Bosnia and Herzegovina which, in spite of the great efforts made to obviate it, was rendered necessary for the occupation and pacification of these two provinces, the administration of which was handed over to Austria-Hungary by the Treaty of Berlin.

The origin of the war and the steps taken to prepare for it are first described. The operations of the three columns, into which the Austro-Hungarian field force was divided, are then followed separately until the columns re-united shortly before the capture of Sarajevo, which put an end to all organized resistance. The work of occupation and pacification is then described in detail.

THE PHILOSOPHY OF A WAR. (Philosophie d'une guerre—1870). By Emile Ollivier. 346 pp. Paris, Flammarion. 3/-.

The author of this book was the head of the Ministry which was in power during the fatal days of July, 1897. Although his account of the diplomatic events which led to the Franco-German War must be considered to be to a certain extent an *ex parte* statement, it is impossible not to praise the frankness displayed by him. Of course Bismarck is the villain of the piece, and probably there is no one nowadays who will deny that he deliberately provoked the war. Still it must equally be admitted that the success of his intrigues was facilitated by the French national jealousy and by the vacillations of Napoleon, and, in spite of Monsieur Ollivier's protestations, of his Ministers. It is true that Bismarck's and Prim's plot to offer the Spanish throne to Prince Leopold Hohenzollern burst upon France like a thunderbolt, and that the French Emperor and his Ministers did what they could to find a peaceful solution of the problem. But when Prince Leopold's renunciation seemed to have settled the question, Napoleon played Bismarck's game by demanding guarantees of the Prussian King. The telegram ordering the French

* The titles of all books are given in English; this does not indicate that the books have been translated. The original title in the language in which a work is written, if not in English, is given in brackets.

Ambassador to approach the King for this purpose was, according to Monsieur Ollivier, drawn up by Napoleon and the Duc de Gramont without the knowledge of the other Ministers.

The author shows clearly, however, that the French military authorities were completely confident of their ability to meet the Prussian Army, and of their preparations for mobilization. Marshal Leboeuf, Minister of War, was asked at a Cabinet Council whether he was ready and he replied in the affirmative, adding "the French Army, even if inferior in numbers, will beat the enemy." The Naval Minister said "Never have I believed in any institution as I believe in our army."

THE RUSSO-JAPANESE WAR, PART IV. (Der Japanisch-Russische Krieg IV. Teil). By General von Lignitz. 287 pp. (numbered 501-788). Table of contents; list of maps, list of authorities; 19 illustrations in text; 10 sketch maps; 2 sheets of plans; 23 appendices. 8vo. Berlin, 1911. Vossische Buchhandlung. 7/6.

This volume deals with the siege of Port Arthur from the middle of November, 1904, onward; and with the battles of Heikoutai, Mukden and Tsushima, and the fighting in Saghalien. The sketch maps and plans show the front of attack at Port Arthur, the 203-metre height (from N.W. and S.E.), and Fort Sung-shu; the fighting at Mukden (several plans); the march of the Japanese 3rd Army (from Japanese sources) between the 26th February and the 10th March; the Malakov; Vladivostock; Harbin; Saghalien.

The appendices comprise:—

Various accounts of conditions inside Port Arthur during the siege by German merchants, Japanese prisoners, and a Russian officer; a letter from General Kondratenko to General Stoessel; a memorandum by Colonel Reiss, Chief of the Staff, Port Arthur; descriptions of fighting at Mukden; General Mishchenko's instructions preceding his raid; Russian and Japanese accounts of Heikoutai; Japanese cavalry raids; tactical instructions issued by General Oku; official reports and private accounts regarding the fighting at Mukden; sanitary and supply details.

All the principal events which the author relates are shortly but clearly told, and the narratives of operations are interspersed with references to small details which are of interest to the military reader. Japanese and Russian official reports of engagements are inserted successively after the author's description. General v. Lignitz thinks that Kuropatkin's best course after the fall of Port Arthur would have been to withdraw from his advanced positions on the Shaho to a line Fushan—W. front of Mukden, postponing an action until April, when the arrival of fresh troops and a general thaw would have enabled the Russians to resist the Japanese onslaughts more effectively. Commenting on the fighting at Port Arthur, he points out how concrete has enabled improvised fortifications to become as capable of resistance as permanent masonry works within a short period, but that a less thickness than 90 centimeters (36 inches) is of no avail against shells larger than 6 inches. Exposed concrete is dangerous on account of splinters, and must yield to high explosives. Good flanking arrangements for ditches are what strengthen works. Partitions to doors and galleries should be loopholed. Approaches are best defended by light pieces and machine guns which must only be brought up when necessary. Communications to the rear must be covered from view. Armoured observation posts are a *sine qua non*.

Sebastopol (taking of Malakov) is briefly mentioned, and its defence is said to have been stouter than that of Port Arthur.

Regarding Heikoutai, attention is called to the order by Kuropatkin directing that two field or mountain pieces per regiment (four battalions) should accompany columns attacking localities or fortified points; these guns to be used for battering and to aid in holding points won. The Russian shrapnel is said to have been useless against stout clay buildings. The fighting around Sandepu on the Japanese side (page 569 *et seq.*) is held up as a model for the use of advanced positions. Outlying hamlets were lightly held and helped to conceal the main village from hostile artillery. The faintheartedness of the Russian leaders is criticised, and of Stackelberg, who forfeited his command owing to disobedience, he remarks :—"In war mistakes arise mainly in the matter of choosing between desirable initiative and tactical obedience: firmness of character must be brought into play in deciding upon measures to be adopted." The Mukden position (Russian) is given as 130 kilometres (some 75 miles) long. On page 603 are given Russian strengths and the number of their units is compared with the Japanese. Out of 263 battalions and over 1,000 guns Oyama kept only 30 and 42 respectively at his disposal. The difficulties of wide outflanking movements were exemplified by the fact that Nogi's men carried four days' rations which had to last for six. The twenty-one Pioneer battalions from Port Arthur were distributed as grenade-throwing parties throughout the Japanese armies. The author thinks that if the Japanese cavalry had been accompanied by numerous guns (if necessary captured pieces as well as their own) the results would have been more decisive. [See also R.P.M.I. Nos. 10 and 13.]

EUROPE SINCE 1815. By C. D. Hazen, Professor of History, Smith College, Northampton, Massachussetts, U.S.A. 830 pp. 8vo. London, 1910. G. Bell and Sons, 15/-.

This book gives a sketch of the history of Europe from the overthrow of Napoleon to the year 1909. Covering such an extended period, and dealing with affairs of so many nations, the author in his single volume has necessarily to omit many important events. In his preface he claims to have endeavoured to explain the internal development of the various countries, and their external relations in so far as they have been vital; also that he has attempted to preserve a reasonable balance between the different periods of the century, and to avoid the danger of over-emphasis.

On the whole he has been successful, and has produced a concise and readable history. From its conciseness however it will appeal only to the general student; to the student of military history it is of little value beyond that it briefly points out the causes which led to the several wars.

BUSSACO. By Lieut.-Colonel G. L. Chambers. 260 pp. with maps and illustrations. 8vo. London, 1910. Swan, Sonnenschein and Co. 7/6.

The author briefly reviews the events leading to the battle, and deals in detail with the course of the battle itself. The special feature of the book is the careful study of the ground which it affords by means of a number of excellent photographs.

The description of the battle is put in an interesting way and is easy to follow.

MEDICAL.

POCKET MANUAL ON THE EXAMINATION OF FOODS. (L'Expertise Rapide. vade mecum hygienique de l'alimentation usuelle). By. E. Gautrelet. 263 pp. 8vo. Paris, 1910. Fournier. 1/2.

This little manual gives a concise description of the examination of all ordinary kinds of food and drink, together with the commoner adulterations of each article, and simple tests for the detection of these. It should be useful to sanitary officers employed with troops on manœuvres in the field, as it can be comfortably carried in a pocket and the tests described do not call for elaborate apparatus.

THE PREVENTION OF MALARIA. By Ronald Ross and other contributors. 669 pp. with 36 figures and illustrations. London, 1910. Murray. 21/-.

In his preface Ross points out the formidable character of malaria. in India alone the death-rate from malaria is estimated at 1,130,000 persons per annum, and in every tropical country from one quarter to one half of the total sickness is due to malaria.

The first half of the work is by Ross himself, and in it he discusses in detail the general problems which have to be solved. The question of the parasites and their carriers has been omitted, as the work is intended to deal with the problems of infection and its prevention. The epidemiology of malaria is discussed mathematically, many formulæ being used to show the value of the various factors concerned in spreading the disease.

All the contributions are well worth studying. In these the incidence of malaria, and preventive measures undertaken in various countries of the world, are described by experts thoroughly acquainted with the particular locality. Two of the contributions, viz., that by Lieutenant-Colonel Melville, R.A.M.C., on the prevention of malaria in war, and that by Major Fowler, R.A.M.C., on the prevention of malaria among troops under peace conditions should be carefully read by every military officer, in view of the fact that so many of our garrisons are situated in malarious districts, and on account of our frequent small wars in tropical countries.

The illustrations are well chosen, mainly with a view to showing typical breeding grounds of anopheles mosquitos, and mechanical means of protecting houses from mosquito invasion.

IN BESIEGED PORT ARTHUR. By V. B. Gyubbenet. 406 pp. with two maps. 4to. St. Petersburg, 1910. 9/-.

The author was a medical officer of the Russian Army who held the post of Specialist Surgeon to the 3rd Siberian Army Corps, and was shut up in Port Arthur during the siege. In the first chapter he gives a narrative of the Russian military operations in the Kuantung peninsula, and a general description of Port Arthur and its defences at the commencement of the war.

The statistics of losses in the various fights and during the whole siege are particularly valuable. He shows how the steadily dwindling effective strength of the garrison made the manning of the defences a most difficult matter, in fact after having taken every available non-combatant to reinforce the fighting line the hospitals had to be called on to discharge any man able to stand up and fire a rifle.

The effect of the explosions in the forts is shown to have been extremely severe: thus after an explosion in No. 2 Fort Chi Kuan only 17 men were left alive, while the whole garrison of 140 men was destroyed by an explosion in No. 3 Fort. At the time of the capitulation Port Arthur was merely a vast hospital; in 39 buildings more or less damaged by bombardment were collected 13,776 sick and wounded; nearly all the men counted as still able to fight were actually incapacitated by scurvy and should have been in hospital had there been sufficient accommodation for them. When the garrison surrendered every man who could crawl endeavoured to reach the collecting point for prisoners; 40 men died in the attempt to do so, while 1,468 soldiers were so exhausted that the Japanese medical authorities would not take the risk of attempting their transfer to Japan.

The organization of the medical services seems to have been needlessly complicated and in consequence to have suffered in efficiency. There were seven reserve field hospitals in Port Arthur which were gradually established, but the supply of medicines and surgical material was exhausted before the end of the siege.

At the battle of Nan Shan the regimental dressing station was at first established in an exposed position behind the central redoubt; in a short time about 40 stretcher bearers carrying wounded were killed or wounded.

The strength of the garrison may be taken as 42,000 men. From May 14th to December 17th the following casualties took place: killed, 149 officers, 5,394 men; wounded, admitted to hospital, 448 officers, 20,249 men; wounded, but remained on duty, 67 officers and 3,896 men; missing, 16 officers, 1,087 men. Casualties amounted to 75 per cent. of officers and 72 per cent. of other ranks.

All kinds of expedients were tried to prevent the occurrence of scurvy, but all of them failed owing to the conditions obtaining during the siege. The extensive prevalence of scurvy among the garrison considerably weakened the defence and materially hastened the capitulation.

ORGANIZATION AND ADMINISTRATION.

THE MOTOR CAR AND THE ARMY. (L'Automobile et l'Armée). By Captain Vannier, 111th Infantry Regiment. 414 pp. with 60 illustrations and three maps. Paris, 1911. Chapelot. 8/-.

This is a comprehensive and useful treatise on the military use of motor cars. After giving an account of the history and present position of the question in various foreign countries, of which Germany, England, Austria and Italy have made the greatest progress, the author describes in great detail the machine which the French War Office has purchased and the various trials and competitions for which Government prizes have been offered. He then discusses from the point of view of the French Army the future employment of motor lorries and considers that their use will permit of the suppression of the divisional cattle-park, three-quarters of the supply columns and parks, and one-half of the ammunition columns and parks. But since his calculations require for the French Army the use of 75 "Renard" trains, 4,000 motor lorries, 3,300 light motors and 600 motor-bicycles, it is evident that some years must still elapse before his plan can be brought into practice.

Chapter VI contains a carefully worked out scheme for the supply of food, ammunition, stores, etc., to an Army Corps by motor transport, and since the general idea is the same as that in "Un Voyage d'Etat Major de Corps d' Armée," published in 1908 by Chapelot, we have an interesting comparison between motor and horse transport.

The book will be useful to any officer desirous of studying the problem of motor transport and the administrative services of the French Army.

POLITICAL.

IMPORTANT POLITICAL TREATIES. (Les Grands Traités Politiques). By Pierre Albin. 554 pp. Paris, Felix Alcan. 8/-.

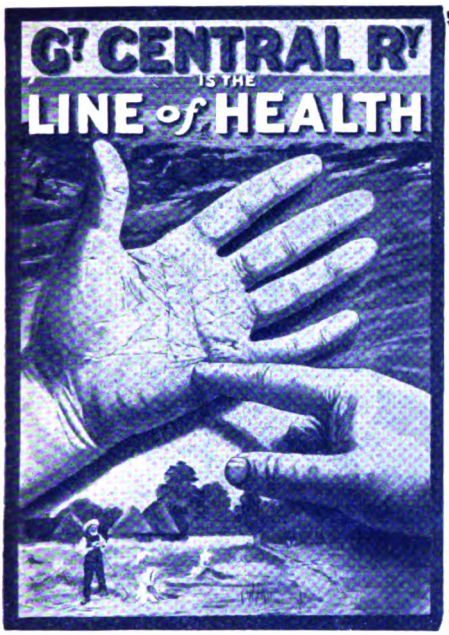
Giving as it does the text of the principal treaties between the Great Powers, this book is certain to be of interest to students of modern history. Although the treaty of 1740 between France and Turkey is included, the book practically commences with the Treaty of Vienna, 1815, while the latest treaty described is that of August, 1910, by which Japan annexed Korea. The volume is divided into six parts, of which the first deals with Western and Northern Europe, the second with Eastern Europe, the third with Africa, the fourth with Asia, the fifth with America and Oceania, and the sixth with International Arbitration.

STRATEGICAL AND TACTICAL.

NIGHT OPERATIONS (Nachtübungen). By Major Immanuel. 100 pp. 12mo. Berlin, 1911. Mittler. -/9.

This small book is based on the German Drill Regulations and on the lessons learnt during the 1910 Imperial manoeuvres. It deals with the training of recruits, of subordinate leaders, of the company and of larger formations in night operations.

(To be continued.)



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