

### 13. Mines and Minerals.

Renfrew is not a great mining county. In this respect it lags far behind its neighbours Ayr and Lanark. The reason for this has been given in the section on Geology, where it was shown that the true Coal Measures do not occur in the shire. Coal-mining is carried on, it is true, but the pits are sporadic, and the surface gear is not an integral feature of the landscape as it is in parts of Lanark. Materially the county suffers, but there are counter-balancing gains. The sheep are not transformed to a sooty hue, nor is the vegetation blighted as in the typical "Black Country" of Scotland. Such coal-mining as exists is carried on in the eastern part of the shire, and the seams worked occur in the Carboniferous Limestone series beneath the true Coal Measures. In all, less than a thousand miners are employed, a number that sinks to insignificance beside the huge total of 55,000 for Lanark.

The coal is extracted either on the "stoop and room" system or on the "long wall" system. In the first

method roads are driven through the coal and connected by cross passages, leaving pillars of coal to support the roof. The roof is afterwards propped up by timber and the coal pillars removed. This method is generally employed for thick seams. For thin seams the long wall system is preferred. As the work proceeds outwards the whole of the coal is extracted, and the "face" is thus gradually pushed out, while the waste material is stacked up to support the roof. In recent years coal-cutting machinery has been largely introduced. It is used on the long wall system for thin seams, and is often made to cut through the under-clay, thus preventing any waste of coal. Some of the machines are driven by electricity, some by compressed air. In 1908 Renfrewshire produced nearly 97,000 tons of coal, which seems a fairly large figure until we find that Lanark was responsible for seventeen millions.

With regard to iron-ore, however, the county takes quite a respectable position. It produces almost as much as its larger neighbour Lanark, although both are easily surpassed by Ayr. But among them, these three adjoining shires produce far more ironstone than all the rest of Scotland put together. In the early days of the Scottish iron industry only local ores were used. A great impetus to the mining of iron ore was given at the beginning of the nineteenth century by the discovery that the miners were rejecting, under the name of "wild coal," a valuable ore known as blackband ironstone. For many years there was no need to import foreign ores, but the advantages of pure foreign haematite for steel-making, and the

gradual exhaustion of the better seams of local ironstone, have caused a great change in this respect. The output of Scottish ores has fallen off rapidly. Thus in 1881 the total production of Lanarkshire and Ayrshire was nearly two and a quarter million tons, in 1890 it was nearly three-quarters of a million, while in 1908 it was con-



Quarry Workings, Giffnock

siderably less than half a million, not a fifth part of what it was 30 years ago. Most of the imported ore is brought from Spain.

The one mineral product for which Renfrew takes first place is building-stone. In spite of the small size of the county, it surpasses every other shire in Scotland in

this respect, although Dumfries makes a good second; in fact, the growing popularity of the red sandstones of the latter county would seem to threaten the premier position of Renfrew. In 1908 over 150,000 tons of sandstone were produced, Dumfries and Lanark being the only other Scottish counties that ran into six figures. The famous quarries of Giffnock have built almost three-fourths of the city of Glasgow. These sandstones occur near the top of the Carboniferous Limestone series. The beds that are quarried consist of a yellowish-white, fine-grained freestone, which shows hardly any sign of stratification, and can be worked with equal freedom in almost any direction. The material is extracted mainly by open quarrying, although considerable quantities have been taken out by underground galleries, on a "stoop and room" principle, though on a huge scale. In recent years a serious problem has arisen in large towns owing to the rapid weathering of the building stones. This, curiously enough, takes place, not on the exposed parts, but on the undersides of ledges or the sheltered portions of ornamental work. It has been attributed by some to the action of acids in the air, by others to the destructive influence of certain bacteria. The cause is not clearly understood; it is certainly not a normal type of weathering, a conclusion that is demonstrated by the position of the decayed portions. The Giffnock sandstones on the whole resist this action better than the red Triassic sandstones of Dumfries.

Some of the bands of limestone in Renfrew are of considerable economic importance, and in several places quarrying is carried on. The chief bands are the Orchard

limestone and the Arden limestone, both of which occur above the Giffnock sandstones. The Arden limestone reaches a thickness of 10 feet in places, and has been largely quarried near Barrhead and Thornliebank, while the Orchard limestone, though not so thick, is prized for its valuable properties as a cement limestone. In 1908 nearly 20,000 tons of limestone were produced in Renfrew, a total unequalled by any other county in the west, although surpassed by Edinburgh and Banff.

All over the shire the volcanic rocks are used for road-metal. On almost every hillside gashes may be seen on the rock face, indicating where man is assisting nature in her endless task of dragging all things to a common level. The ideal road-metal should be hard, tough, not given to mud-making, should offer a good footing in all weathers, and bind well together. The igneous rocks of the county possess all these qualities in a high degree. From the flat lands in the east of the shire clay is obtained for brick-making. Only three other counties in Scotland surpass Renfrew in the production of clay and brick-earth, the total obtained in 1908 being nearly 35,000 tons.

#### **14. Shipping and Trade.**

The geographical advantages of Renfrewshire for shipping are obvious. The county borders the Clyde from the point at which the river becomes navigable down to the open firth. It is but natural therefore to find ports of considerable importance dotted along the



river frontage. The destinies of the county have been profoundly modified by the deepening of the Clyde. Shipping almost inevitably goes to the head of navigation of a river; and when, in addition, the greatest city of the district is situated there, the tendency for shipping to be drawn into its vortex of trade is irresistible. It would be interesting, though serving no practical purpose, to speculate on the destinies of Greenock or Port Glasgow if the Clyde had remained undredged. Certainly their shipping trade would have been much greater, though doubtless they would have lacked something of the general industrial stimulus that radiates out from every great manufacturing centre.

From Glasgow to the firth, the Clyde is largely the product of man. The conversion of a stream, in places but a few inches in depth, into a water-way for ocean-going ships is one of the romances of industrial history. In the sixteenth century an attempt was made to improve the channel at Dumbuck but was not successful. The magistrates of Glasgow therefore reported in 1668 that they had had "ane meeting yeasternight with the lairds, elder and younger, of Newark, and that they had spoke with them anent the taking of ane piece of land of theirs in feu, for loadning and livering of their ships there, anchoring and building ane harbour there, and that the said lairds had subscriyvit a contract of feu this morning; quhilk was all allowed and approvine be said magistratis and counsell."

On the ground thus purchased the magistrates laid out the town of Port Glasgow with harbours and a

graving dock. Here the goods were taken from the ships and loaded on the backs of little pack-horses that brought them by badly made tracks to Glasgow. In 1755 the river was still in a state of nature, for between Glasgow and Renfrew there were twelve shoals, one of which was only 15 inches deep at low water. James Watt surveyed the river in 1769, and reported a depth of 14 inches at Hirst Ford during low water. To John Golborne of Chester is due the first marked improvement in the navigation of the river, which was dredged and also narrowed by the construction of jetties. A few years later Golborne deepened Dumbuck Ford to a depth of 7 feet, and owing to the scour of the river due to his jetty system, this depth was in 1781 found to have become 14 feet.

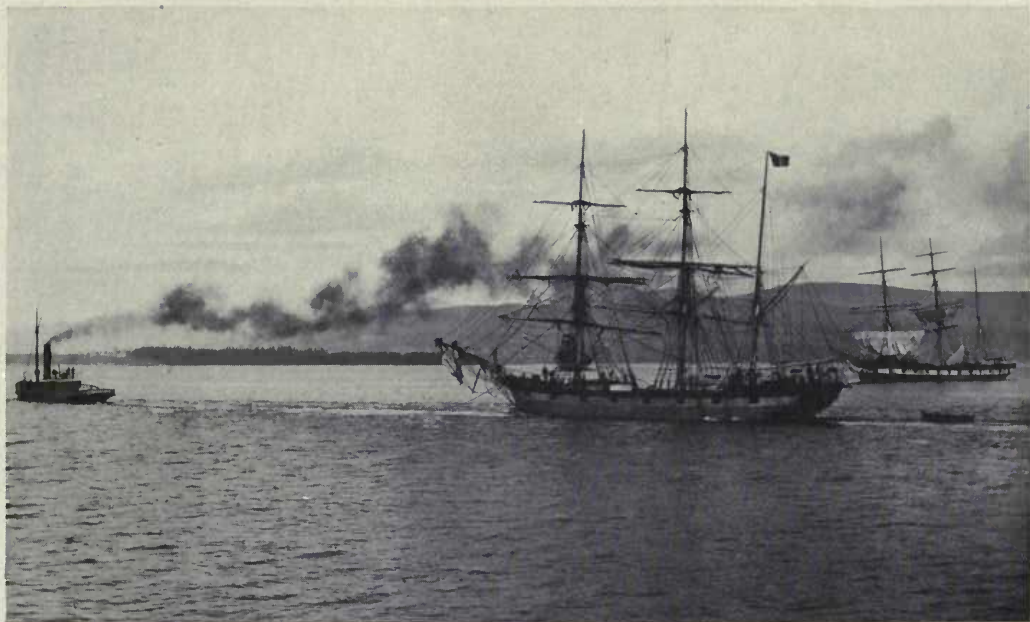
Act after act was carried through parliament giving new powers, and each meant a further improvement in navigation and a consequent stimulus to the commerce of Glasgow. A great advance was made by the application of steam power to dredgers, and the adoption of steam hopper barges, to which the present state of the river is largely due. A formidable obstacle was found in the Elderslie Rock, extending right across the river at a depth of 8 feet below low water. After years of labour this was removed at a total cost of about £140,000, giving now a depth at low water of 28 feet.

After its foundation Port Glasgow rapidly grew in size and importance till in 1710 it was made the chief custom-house port on the Clyde. Still the shipping grew, and in the middle of the century a graving-dock was constructed, the first ever built in Scotland. By the end of the

eighteenth century, however, Glasgow was beginning to draw the over-sea traffic to itself up the deepened river, until towards the middle of the nineteenth century it almost seemed as if Port Glasgow were doomed to extinction. But the natural advantages of the town's position asserted themselves, supported by the energy and enterprise of the inhabitants, and the town, no longer bound to the chariot of Glasgow, entered on a new lease of independent life. Ship-building was vigorously started, raw material was imported, and various industries, largely with a salt-water flavour, sprang up in the town. At the present time the trade is chiefly with Canada and the West Indies, great quantities of timber being imported from the former country.

From the beginning of its history Greenock has been identified with the shipping-trade. We have already mentioned that it became a sea-port of considerable standing by the enlightened policy of its lairds, Sir John Shaw and his son of the same name. In the middle of the seventeenth century we find the inhabitants of Greenock referred to as "all seamen or fishermen trading for Ireland or the Isles in open boats." Sir John Shaw's whole life was a determined and successful struggle to make his town a sea-port of prime importance. At this time the town was fettered by its inability to engage in foreign trade. This right was the prerogative of the royal burghs, and jealously they guarded it. They kept especially a wary eye on Greenock, for they could not fail to see its natural advantages, and several times Glasgow, Dumbarton, and Renfrew tried to thrust the rising port back to the



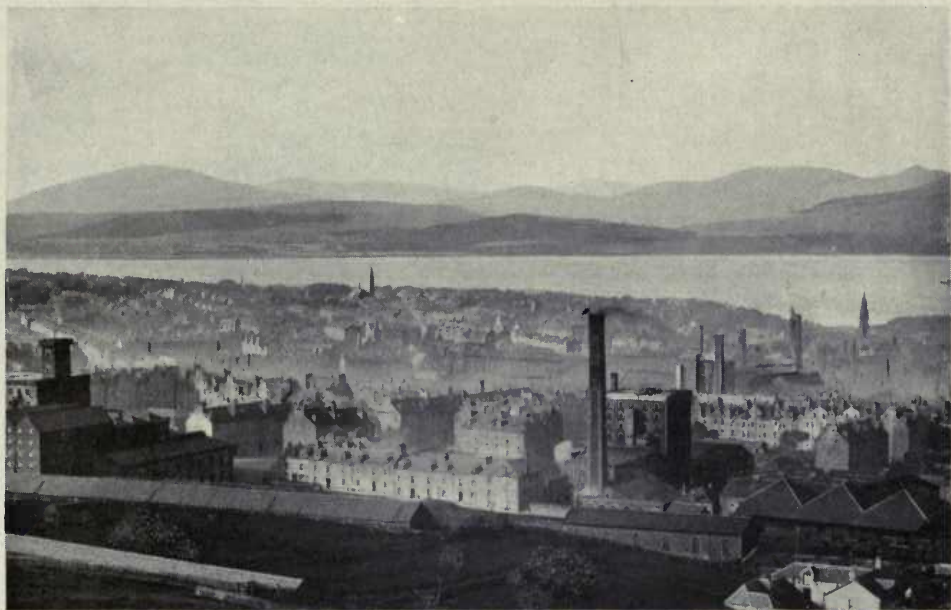


Off Greenock: Outward Bound

obscurity from which it had sprung. But without success, for Shaw of Greenock in return for special service to the king was able to throw open the gates of foreign commerce to the town.

In 1670 we find King Charles II connected with the town, and this time in a new *rôle* even for that versatile and accomplished monarch. He became a herring-curer, doubtless with little practical knowledge of the mysteries of that art, but at any rate as a shareholder in a herring-curing company that had one of its principal stations at Greenock. Greenock was the chief centre of the herring-fishing at this time, and exported yearly thousands of barrels to the Continent. By 1728 there were 900 boats engaged in the trade.

The year 1710 was a red-letter one for the town. The harbour and quays, "most commodious, safe, and good," built by the town on the suggestion of Sir John Shaw, were finished that year amid general rejoicing, and Greenock took its place as "the chief town upon the coast, well built, consisting chiefly of one principal street, about a quarter of a mile in length." But the rising importance of Greenock roused the animosity of more powerful opponents than even its jealous neighbours, the royal burghs. The great English sea-ports, London, Liverpool, and Bristol, saw with unconcealed anger much of their valuable foreign trade being captured by this upstart Renfrewshire town. Eager to damage Greenock at any cost, they accused the merchants of being in collusion with the customs officials, and thus unfairly securing trade at their expense, and even obtained the introduction



Greenock from Whin Hill

in parliament of a bill to deprive the town of its trading privileges. Almost exactly the same charge was made against Glasgow, but it is satisfactory to know that the Scottish towns were wholly exonerated by the commission



Renfrew Ferry

that investigated the matter. The passing of the bill would have been the death-blow to the prosperity of Greenock; but luckily the strenuous representations of the Scottish members averted the danger.

During the last hundred years the most important



landmarks in the history of Greenock shipping have been the construction of graving-docks and other harbour works. Most of these are situated at Cartdyke, formerly a rival, but now swallowed up by Greenock. The first graving-dock was built in 1786 and admitted vessels drawing 10 feet of water. The Custom House Quay, the East India Dock, the Victoria Harbour, the Albert Harbour, the Princes Pier, the Garvel Dock, and the great James Watt Dock for ships of over 30 feet draught, these form a succession of harbour works of which any town might justly be proud.

At one time Renfrew was the principal port on the Clyde, but its glory has departed. The causes of this are largely geographical. Lying between Glasgow and Greenock, it has the advantages of neither, for both Glasgow and Greenock are at "critical points" on the river. Greenock is at the upper end of the firth, it is the first town to be reached on the Clyde proper, while Glasgow has the immense advantage of being the farthest up point on the river to which ocean-going ships can come. This is the supreme advantage in maritime commerce; the head of ocean navigation is *the* commanding situation—witness not only Glasgow but also Liverpool, London, Montreal, Rangoon, and many other towns. In addition, it is profoundly true in geography as in other things that "Unto him that hath shall be given." The fact that a town is large, is enough in itself to establish a considerable ebb and flow of trade, which tends continually to direct minor streams of traffic into the main currents.

In spite of its situation on a small and tributary river Paisley has had for some time a fair shipping trade. More than a hundred years ago the Cart was deepened and rendered navigable for boats drawing not less than five feet of water. Many difficulties have been surmounted until the town can now be reached by ships drawing 15 feet of water. It should not be forgotten that at the middle of last century the Cart was the district noted for the building of the swiftest river steamers then on the Clyde.

For many years the river steamers of the Clyde have formed a class by themselves. Dwellers on Clydeside glory in the thought that their old boats, unable to hold their own against their younger and speedier rivals, are sent to other ports, there to become the cynosure of the district, the pride of the estuary, as the last word in river craft. And, flattering though the idea is, there is considerable truth in it. There is perhaps no other place on the face of the earth where such a combination of speed, comfort, elegance, and economy in steamboat travelling can be had as on the Firth of Clyde. One can sail for a day through some of the finest scenery in Britain for ninepence! In recent years the three great railway companies of the west of Scotland have taken the lion's share of river travelling. Two of the companies have their shipping headquarters in Renfrewshire, the Caledonian at Gourrock, and the Glasgow and South-Western at Greenock. From each of these ports there plies a fleet of powerful and speedy steamers, dashing back and forward between all the little pleasure towns of the firth. The

first glimpse of these dainty craft, with their distinctive colour-note in hull and smoke-stack, rolls the burden of care from the shoulders of the worried business man, and brings a transient gleam of sunshine into the black lives of children pent up, save for one week in the year, in a dreary wilderness of stone and lime. Greenock, Gourock, and Craigendoran have filched from the Glasgow Broomielaw much of its ancient glory. Nowadays almost everyone prefers to journey to the beginning of the estuary by train ; although quite recently a cleaner Clyde has made some prefer the slow but interesting sail from Glasgow.