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LOCHABER

THE SCOTTISH
MOUNTAINEERING CLUB GUIDE

BEN NEVIS

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ILLUSTRATIONS

BEN NEVIS.

(Division I. Group XXVII.)

Lat. 56° 48′; W. Lon. 5° 0′. Ordnance Survey Map, one-inch scale, Sheet 53. Bartholomew's Reduced Ordnance Map, No. 15.

1. Ben Nevis, 4406 feet, probably Beinn Neamh-bhathais = the sky-touching mountain. Lies 4 miles south-east of Fort-William.
2. Càrn Dearg, 3348 feet, the south-west spur of Ben Nevis = the red cairn. Lies ¾ mile south-west of No. 1.
3. Càrn Dearg, 3961 feet, the north-west spur of Ben Nevis = the red cairn. Lies ¾ mile north-west of No. 1.
4. Meall an t-Suidhe, 2322 feet, = the hill of rest. Lies 2 miles north-west of No. 1.

Ben Nevis, the monarch of British mountains, is not, as will be seen from the list given above, a solitary peak, but groups around him a cluster of stalwart summits. These, however, are so intimately bound together that they practically form one well-defined mountain with outlying buttresses. Unlike most of our Highland hills, Ben Nevis, speaking in the wider sense, is completely isolated on all sides but one, the solitary exception being the long and narrow eastern arête joining Ben Nevis and Càrn Mòr Dearg which never falls below 3475 feet. On the north-west it is bounded by Loch Eil and the Great Glen. On the west and south it is encircled by the profound depression of Glen Nevis, the floor of which rises so gradually that at a distance of about seven miles from the entrance, at a point due south of the Observatory, one is barely 500 feet above the sea. On the south-east it is bounded by a small tributary glen drained by the Allt Coire Giubhsachan and on the north-east by the deep valley of the Allt a' Mhuilinn (pron. *Voolin*), which runs into the river Lochy.

Although thus isolated, it is not easy for the tourist to get any satisfactory impression of its mass and height, for

the neighbouring mountains are of considerable altitude, and hem it in so as to prevent effective view points. From Fort-William the slopes of Meall an t-Suidhe (2322 feet), a low-lying buttress, are more prominent, and even from Banavie or Corpach the summit of Càrn Dearg (3961 feet) intervenes. On the other hand, from the western shores of Loch Linnhe the true mountain form of the Ben is well seen, and half way along Loch Eil is an excellent point from which to view it towering aloft, snow clad for the greater part of the year, and beckoning to the climber over the intervening leagues of water. The finest views, however, are obtained from the hills to the east, and the frontispiece to this Section shows the Ben rising boldly above the intervening arête of Càrn Mòr Dearg (4012 feet).

The usual impression of Ben Nevis is disappointing and one hears it described as a shapeless, uninteresting mound, which, but for its altitude and its Hotel, has few attractive features. Yet, save in the wild recesses of the Coolin, Ben Nevis has no rival in the British Isles for the savage grandeur of its rock scenery. From the railway between Spean Bridge and Fort-William glimpses are obtained of a precipitous northern face, but so distant that they fail to produce any impression on the hurrying traveller, who is bewildered by the recurring ridges of Aonach Mòr and Càrn Mòr Dearg, near neighbours of the Ben. Far different is it when the climber, intent on doing full justice to our Scottish hills, penetrates into the elevated valley of the Mhuilinn, or breasts the scree-covered slopes of Càrn Mòr Dearg, 4012 feet. For him there is disclosed a scene of mountain grandeur, which can hold its own with many of the most famous Alpine recesses. From either point of view, but altering in contour with each step, a range of stupendous precipices exposes a frontage of about two miles, and bewilders the eye with corrie and gully and shattered cliff. No mere dead featureless wall of rock uplifts itself, filling the heart with dulness at the impossibility of an ascent, but rather a fascinating, luring succession of steep arêtes, and ridges, and pinnacles, and gullies affording variety to suit the powers of all classes of

[*To face page 2.*

Mabel Inglis Jeffrey.

THE BEN NEVIS GROUP—SUNRISE

slopes, without the possibility of succour at the top from hotel resources.

From a meteorological point of view Ben Nevis is unique among our mountains. Standing as it does in the track of the storm centres which sweep across our islands from the Atlantic, it affords unusual opportunities for the investigation of many atmospheric phenomena. Rising to an altitude of 4406 feet from the sea which washes its base, it is possible, by simultaneous observations at summit, at base, and at half-way house, to accumulate important records tending to throw light on obscure meteorological problems. Hence it was that Mr Clement Wragge in 1880 conceived the idea of personally taking such continuous observations at a time when the summit offered no protection from the severity of the weather. Only those who have toiled up the snow slopes in winter or spring, or have encountered the hurricanes which sweep across the elevated plateau, can even faintly realise the enthusiasm and marvellous energy which supported Mr Wragge in his self-imposed task, and the S.M.C. may well hold his name in honour as a pioneer who first became acquainted with our beloved Ben in its aspects of storm and stress.

Ben Nevis possesses the double characteristics of a snow mountain and a rock peak. In altitude it does not greatly exceed quite a number of other Scottish mountains, but every additional hundred feet means snow, when lower down it is rain, and so a continuance of snow is ensured into early summer.

It is somewhat surprising to find that the area of Ben Nevis, above 4000 feet, is not quite so large as the corresponding area of either Ben Macdhui or Braeriach. If, moreover, the 3000-foot contour line is taken, the contrast is still more startling, for it will be found that at least fifteen of the flat-topped Cairngorms have a larger surface above 3000 feet, than Ben Nevis. Owing to the humidity of the atmosphere, the prevalence of fog, and the low temperature, fog crystals grow readily on all objects exposed to the wind, and as the growth is in proportion to the exposure, so the rocks hemming in the sides of a gully, or forming the precipitous face below the plateau, are

frequently to be found bristling with spears of ice, all pointing in the direction of the wind. During dense fog these will grow at the rate of fully two feet a day, and climbers do not need to be reminded that they have a predilection for the hair and clothes, on which they form thick deposits. These, if they are inconvenient, are at least valuable in rendering the clothes almost windproof.

Meteorology.

The Ben Nevis Observatory was founded in 1883 with the express intention of taking observations over a "sun-spot period." On the completion of this work the project was abandoned on account of further financial assistance not being forthcoming, and the Observatory closed on 1st October 1904.

An examination of the observations made at the Observatory from 1884 to 1901 shows that the mean temperature for these seventeen years was 31.4°, or about half a degree below the freezing point, and 15.8° below the mean of Fort-William—equal to a fall of 1° F. for each 274 feet of height. The low mean annual temperature of Ben Nevis would lead one to expect that lower individual temperatures would be recorded there than at places at lower levels. This, however, is not the case, for the lowest reading of the thermometer ever noted on the Ben was 0.7° Fahr., on 6th January 1894, whilst, except in very mild winters, readings below zero occasionally occur at low-lying stations. Thus February 1902 was a very cold month all over the United Kingdom, but the minimum for the month on Ben Nevis was 8.1° Fahr., whilst that at Lairg was 2° below zero Fahr. The highest temperatures recorded on the summit of the Ben have been 66.4° on 28th June 1902, and 66.2° on 23rd June 1887.

The mean monthly temperatures are appended :—

January - - 24.1°	May - - - 33.3°	September - 38.0°
February - 23.8°	June - - - 39.7°	October - - 31.3°
March - - 23.9°	July - - - 41.4°	November - 27.9°
April - - 27.8°	August - - 40.7°	December - 25.2°

Barometer.—The Fort-William barometer mean is reduced to sea level, while that for Ben Nevis Observatory

SUMMIT PLATEAU OF BEN NEVIS SHOWING N.E. PRECIPICES.

Snowfall.—While snow may fall on Ben Nevis on any day of the year, it does not begin to lie on the summit in any quantity till the end of October or beginning of November. At the snow gauge, which was placed on the flat mountain top, the maximum depth was usually registered about April, and by the beginning of July the summit is, as a rule, clear of snow. In the hollows of the northern face, however, the accumulation is much greater, and the snow remains till the following winter's fall begins. The following table gives the maximum depth of snow at the snow gauge from 1884 to 1902.

May 28, 1884	141 in.	March 13, 1894	127 in.
April 3, 1885	142 „	April 13, 1895	54 „
April 10, 1886	123 „	March 28, 1896	76 „
April 28, 1887	69 „	May 7, 1897	80 „
May 6, 1888	77 „	March 1 and May 15, 1898	77 „
April 24, 1889	57 „	April 19 to 23, 1899	67 „
April 25, 1890	96 „	April 15, 1900	89 „
May 4, 1891	56 „	April 16, 1901	91 „
March 9, 1892	74 „	April 3 and 4, 1902	62 „
March 17, 1893	66 „		

Wind.—In winter gales the velocity of some of the gusts is estimated to exceed 150 miles an hour on the summit.

General.—The following figures may be of interest :—

Annual Means of	Ben Nevis.	Fort-William.
Barometer	25.305 inches	29.847 inches.
Temperature	31.4° Fahr.	47.2° Fahr.
Sunshine	756 hours	1105 hours.
Rainfall	157.70 inches	77.34 inches.

Topography and Nomenclature.

As a preliminary to describing the ascents and climbing possibilities of Ben Nevis, it is desirable briefly to refer to the various parts of the mountain, so that the reader may be able to follow the somewhat bewildering accounts of ridges, and gullies, and corries. (See map.)

Approaching the Ben from Fort-William, the steep slopes of Meall an t-Suidhe, 2322 feet, are passed on the left, and in misty weather this secondary hill is sometimes

supposed to be the Ben itself, especially by those tourists who are satisfied with being "near the top." In the hollow between the Meall and Ben Nevis lies the little Lochan Meall an t-Suidhe. The great slopes which rise to the south-east belong to Càrn Dearg, 3961 feet, which projects in a northerly direction from the north-west side of Ben Nevis. Càrn Dearg possesses four great rock buttresses—the Castle Ridge, the Castle, the Càrn Dearg Buttress, and the Trident Buttress. The Castle Corrie lies at a high elevation between the Castle Ridge and the Càrn Dearg Buttress, all looking due east. In the angle between Càrn Dearg and Ben Nevis lies the Coire* na Ciste, with a little lochan, above which rises on the west the Trident Buttress, and on the south-east the rocks of the Tower Ridge of Ben Nevis. Above 3900 feet the summit of Ben Nevis forms a sloping plateau, gradually steepening towards Glen Nevis, but abruptly broken on the northern side by a great wall of precipices. Projecting from this in a more or less north-easterly direction are several ridges or buttresses, some of them still unclimbed. In order from Càrn Dearg these are—The "No. 3 Gully Buttress"; "The Comb," a narrow arête projecting into Coire na Ciste, and yet unclimbed from the valley; the "Tower Ridge," with a secondary ridge on the west; the "Observatory Buttress"; the "Observatory Ridge"; and the "North-East Buttress." Farther east lies Coire Leas, bounded on the south-east by the shapely Càrn Mòr Dearg arête, 3475 feet, connecting the Ben with Càrn Mòr Dearg.

Starting from the Castle Ridge and skirting the top of the cliffs in a general way, the distance is a quarter mile to Càrn Dearg (3961 feet), and another half mile to No. 3 Gully. Thence it is half a mile to the Observatory, which stands midway between the Tower Ridge and North-East Buttress, which are 250 and 300 yards distant respectively. Three hundred yards beyond the North-East Buttress, the eastern arête leaves Ben Nevis leading to Càrn Mòr Dearg. To find the arête in fog, steer 130° (true) from the Observatory for a quarter mile, then turn due east. On

* Pronounced *corrie*. The spelling "coire" is usually adopted in conjunction with Gaelic names.

the south-east side of the arête Coire Giubhsachan leads down to Steall in upper Glen Nevis.

From above, the precipices look hopelessly steep and inaccessible, and it is not perhaps to be wondered at that no serious attempts were made to climb them till quite recently. Up till 1892 only one gully, No. 3 (K on map), is believed to have been climbed, and so far as is known, none of the ridges had ever been attempted.

Ascent of the Ben.

The ascent of Ben Nevis by the ordinary route, though fatiguing, is perfectly simple under the usual summer conditions. The pony track constructed in connection with the Observatory is easily reached from Fort-William on foot or by driving. Leaving the town by the north road the Nevis bridge is crossed, and turning to the right at the end of the bridge, the road is followed to Achintee, two miles from Fort-William, where the Observatory path begins. Rising along the slopes of Meall an t-Suidhe (the hill of rest), a series of zigzags leads to a point near the Lochan Meall an t-Suidhe, where the path turns back to the right and passing the Half-way Hut and Red Burn gradually ascends to the scree-covered plateau near the head of No. 4 (L on map) Gully. Here it approaches the precipices, and the inexperienced climber would do well not to lose sight of the posts or cairns which direct the way to the Observatory. From October till June, when snow usually covers the path almost down to the lochan, the climber may easily lose the usual route, but should then keep directly upwards, inclining to the left till the line of precipices is reached, and followed (on the left) at a safe distance to the Observatory. As the gullies extend far into the plateau, it is necessary, especially when near the summit, to keep a good look-out in misty weather. In stormy weather even those who know the mountain best may easily be led astray, as when at Easter 1901, a strong party descending from the summit, and in spite of compass observations every fifty yards, failed to strike the true direction, and, in the face of a driving blizzard,

eventually reached Glen Nevis near Polldubh, arriving at Fort-William at a late hour.

A pleasant variation of this route is to leave the road at a cottage about half a mile beyond Nevis Bridge, and then steer due east across the moor, mounting the steep grass slope of Meall an t-Suidhe alongside a small water-course. Or the ascent may be made more gradual by keeping farther to the left round the end of the Meall ridge, eventually striking the old Banavie path near the Allt a' Mhuilinn. The Lochan an t-Suidhe is now passed on the right hand and the Observatory path joined below the half-way hut, or the more agile may strike directly up the scree slopes of Càrn Dearg, reaching the plateau at the junction of that mountain with Ben Nevis.

The old Banavie route is now but little used, more especially since a high deer fence has shut off the lochan from the Mhuilinn glen. It leaves the high road near Lochy Bridge at a distillery, and gradually ascending joins the alternative route already given in the Mhuilinn glen. The lover of scenery, as has been already hinted, should, however, continue his walk on the north bank of the Allt a' Mhuilinn, and in this way pass in succession the array of ridges so well shown in the panorama from the Allt a' Mhuilinn (see opposite).

Short divergences up the scree slopes should be made to grasp the form of each ridge as it is passed, and when at last Coire Leas at the head of the glen is reached, a fountain that gurgles from the shattered debris is an excellent excuse for a more prolonged rest, in order that the general relation of corrie and ridge may be appreciated. In summer time the scree slopes on either hand lead easily to the ridge above the Càrn Mòr Dearg arête, but in winter conditions the ascent of these icy slopes may be very difficult, one party on 3rd January 1898 taking 6½ hours to reach the ridge. In August 1874, the writer with a friend got into difficulties when in mist by climbing directly up from the tarn, and getting on to the steep rocks near the ridge. The southern corner of the corrie affords a superb glissade under suitable conditions. The ridge is here generally corniced, but avoiding this the

glissade should be commenced as far south as possible, where a free course to the valley may be obtained. Once on the arête, which in winter may be difficult, the route lies south-west, then west, and finally north-west, as the fatiguing "big scree" slope is breasted and the Observatory is approached. The arête may also be reached from the head of Glen Nevis, to which point, seven miles from Fort-William, driving is practicable. Those who desire it may climb the Ben from any point on the Glen Nevis side.

When the mountain is snow-clad, the easiest and most pleasant way to descend is by a series of sitting glissades. The best point to start from is just north of the path as it descends from the plateau at No. 4 Gully. At first the slope is very gentle, but it increases lower down to 30° or 35°. If the proper course is followed the glissader should find himself eventually in a shallow winding gully, the Red Burn, down which he may glissade at great speed, and in *snowy winters* with perfect safety till well below the level of the lochan. When the snow is favourable, a magnificent glissade may also be had from near the top of Càrn Dearg right down to the lochan itself. This has the advantage of being direct, and as the whole route is before the eye, there are no sudden pitches to startle the novice.

Climbing Routes.

These practically only exist on the precipitous northern face already described in a general way. It may be safely asserted that upon it, however, there is sufficient scope for climbing to occupy a party for a month. To reach this happy hunting-ground the pony track is made use of as far as the lochan. The route then lies across the boggy ground to the north till the deer fence is reached. Now descend either directly to the Allt à Mhuilinn or preferably contour the steep slopes of Càrn Dearg, gradually descending to the stream. In this way steady walkers may reach the "Lunching Stone" at the foot of the Castle Ridge in 2 hours from Fort-William.

The quickest route, however (1 hr. 35 mins.), is by the north of Meall an t-Suidhe, as described on the previous page.

In detailing the climbs it is proposed to enumerate them from west to east in the order in which they present themselves in ascending the Mhuilinn glen, and by this arrangement one will be gradually led along to the summit with its North-East Buttress. The chief objection to this plan lies in the numbering of the gullies as depicted in the sketch map. These are numbered from the left, as viewed from the glen, but as they only include a few of the more prominent, this nomenclature must only be regarded as furnishing designations for those gullies which so far possess no distinctive names.

Entering the Mhuilinn glen the great face of Càrn Dearg towers up on the right, the rocks at a great angle and with no definite gully or arête to tempt the climber. From the stream below to the summit of the cliff where the Castle Ridge ends is about 1900 feet, of which about 1600 feet consist of rock. The face looks due north and might be expected to afford good climbing. Several ledges or rakes which intersect the face and lead up to the steep rocks near the summit afford a line of ascent, but Raeburn, who alone has reported on them, states that the climbing is unsatisfactory. About a quarter mile farther on, near the bed of the stream, lies a large boulder, "The Lunching Stone," which forms a convenient shelter for storm-stayed climbers, and whence a first peep is obtained of the more remote ridges. A few hundred yards farther is the scree slope formed by the debris swept down the main "Castle Gully." The Castle Gully is so named because higher up it forks and encloses the magnificent piece of rock sculpture some 700 feet high, known as the "Castle," the description of which comes later.

The Castle Ridge.—On the right hand of this gully is the Castle Ridge (T on map) pointing due east from a shoulder of Càrn Dearg. On its northern side it falls uncompromisingly to the valley below, a depth of 1900 feet, while on the south it descends steeply into the "North Castle Gully." The ridge may be ascended in its entirety from the foot of the stone shoot, but as the rocks are slabby it is usual to commence the climb from the Castle Corrie, or from the lower end of the North Castle Gully.

It is also possible to climb from the valley and reach the ridge about the same point, but this is not recommended under wet conditions.

Considerable latitude is possible in the first part of the climb, for numerous chimneys and pitches offer varying sport, but every one should endeavour to ascend the fine steep chimney near the edge of the ridge overlooking the valley, both to enjoy the giddy outlook, and to include the best part of the climb in the route.

To those who already know the chimney, a sensational, but perhaps more easy variation is to the right, and partly on the north face of the ridge.

Above, the ridge narrows, and some care is necessary on the slabby rocks under unfavourable conditions, but where the most obvious arête proves too difficult, a careful search will always disclose an escape more within the powers of the climber. The Castle Ridge was first climbed on 12th April 1895, by Messrs Collie, Naismith, Thomson, and Travers. Even under winter conditions it has been ascended by a solitary climber, and to a well-equipped party should always be accessible. The scenery on this ridge and the views therefrom combine to make it a most fascinating climb.

The Castle is a precipitous cliff about 700 feet in height, the summit of which has a castellated appearance. The face looks due east, and is very steep. It is enclosed by the North and South Castle Gullies, from which it rises in steep inaccessible walls. At the base where the gullies join, the rocks for the most part overhang, and access is only possible with difficulty to the expert climber. The first ascent of the Castle was made by Brown, Maclay, Naismith, and Thomson at the Easter Meet of the S.M.C. in 1896.

Exact details are wanting, but the leader seems to have overcome the steep pitch at the bottom by standing on some one's shoulder. Thereafter the rocks being heavily coated with snow, the party zigzagged up about the centre, finally reaching the sky line by easy rocks to the north of the summit. The chief difficulties met with were caused by the sliddery condition of the snow.

Far different was the experience of Gibson and Raeburn,

who on 11th September 1898 ascended to the summit at a point about thirty yards north of the highest peak. The leader climbed by the very centre of the steep wall, but being unable to find a satisfactory hitch, his companion followed by a small recessed chimney in the wall a little to the left. Once over the bottom pitch, easy rocks follow for some distance, but all attempts to get on to the crest of the buttress overlooking the north gully failed. The route now traverses to the left, entering a trap dyke cleaving the porphyry slabs. This terminates at the top in a difficult chimney without satisfactory holds. From this the way leads over holdless sloping slabs where the utmost caution is necessary, and at least 50 feet must be ascended before a satisfactory hitch is obtainable. Above this the climbing is easy to the sky line, which is reached to the north of the great summit towers. Under certain weather conditions the whole route is raked by falling ice and stones from these towers. The most impressive points for viewing this superb buttress are, in addition to the view from the valley, the lower rocks of the Castle Ridge, and the very base of the Càrn Dearg precipice.

The *Càrn Dearg Buttress* runs parallel to the Castle Ridge, viz., due east and west, but the main precipices face north-east, while all round the southern side of the Castle Corrie they show a bold and forbidding front. At the north-east corner they are hopelessly steep, and no climber has proposed to tackle the great cliff there. More hopeful is it in the corrie, where certain steep chimneys ascend the cliffs near the South Castle Gully.

Raeburn's Buttress of Càrn Dearg was ascended by Raeburn, H. MacRobert, and D. S. Arthur on 28th September 1908. It rises at a very steep angle on the left side of the South Castle Gully, and in the photograph (p. 15) is seen as a slender pinnacle cut off from the body of the mountain by a deep cleft. It is separated from the *Cousins' Buttress* by a great avalanche gully. This gully, which is slabby and holdless, is mounted for 100 feet. At this height the gully divides, the right portion running into a deep chimney cutting into the wall of the Buttress, and this was followed. For 80 feet

Inns., 1912 *W. Inglis Clark.*

CÀRN DEARG OF BEN NEVIS.

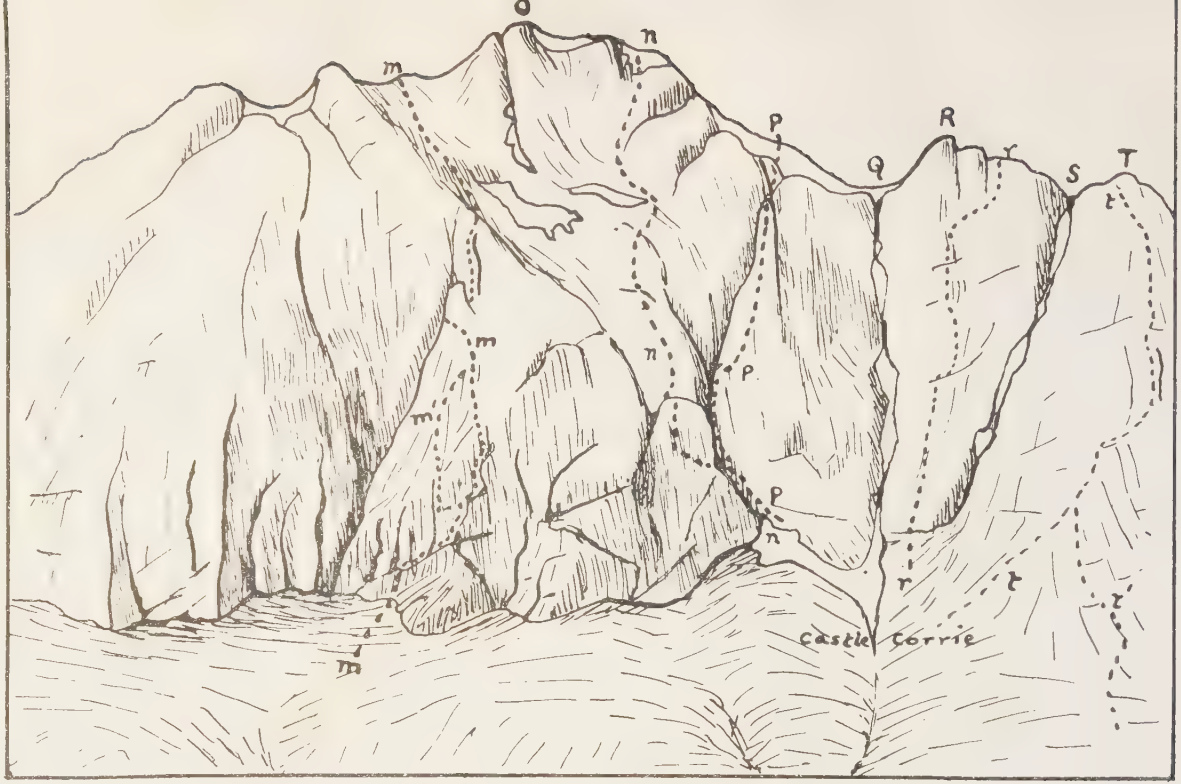
or so the rocks are greasy and slabby, but later the holds improve where a black cave with chock-stone is met with. Good holds on the slightly overhanging right wall lead upwards, where a somewhat similar passage has to be made, still to the right, into another narrow gully—the upper part of a deep crack cleaving the rocks from the foot. The actual arête is gained by ascending the wall to the right. The arête becomes steeper, narrower, and even overhanging. This difficult part is passed by a small foothold on the right side and another high up on the left, and the leader then gets astride a knife edge on the top of the slab. The now level arête leads to the buttress. Time, 3 hours 10 minutes. Height of the steep part, 700 feet.

The *Cousins' Buttress of Càrn Dearg* was ascended by C. W. and H. Walker on 11th June 1904. In the photograph opposite it appears as a broad pinnacle (the top illuminated by sunshine) midway between Raeburn's Buttress and the Staircase Climb. It is hemmed in on either hand by two avalanche gullies. The route commences in the more westerly of these (as for Raeburn's Buttress), and on the right-hand side. At the top of the first pitch, a series of smooth slabs is crossed to a hitch below a waterfall. An easy ledge to the left leads to a grass platform on the outer face of the pinnacle. Steep pitches and chimneys lead to the top, where a narrow tongue of snow formed a bridge to the main wall. A descent is made to a narrow grass ledge round a sensational corner, and thence two routes seem possible—to the left or straight up. The latter leads up 200 feet of very steep rocks, but with excellent holds, to a platform on a level with the top of the Staircase Climb. From here the latter might be reached, but an interesting climb leads to a point halfway between Càrn Dearg and the top of the South Castle Gully. The time taken was 5½ hours.

The Staircase.—On 12th July 1898, Bell, Maclay, and Naismith succeeded in ascending Càrn Dearg near the north-east angle of the great cliff by the "Staircase Climb." A small gully terminates here in a waterfall, at the foot of which the climb commences. Bearing to the right round a sensational corner, a stone shelf with

moderate holds is reached, but the novice can always be safeguarded with the rope let over a block at the corner. Thence a grassy shelf leads by giant steps up a rocky staircase. On the left hand rises a sheer wall, while on the right the eye looks down an ever-increasing height. The next difficulty is where the climber must follow a little traverse with good holds on the outside face, thence climbing into a small recess, large enough for two and carpeted with grass. The leader is here protected by passing the rope through a crack between the step and the left-hand wall. The rise of the next step is about eight feet and slightly overhung. The roof slopes downwards, and handholds are few. A crack next the left-hand wall admits the knee (at the roof), but the assistance of a shoulder may be necessary for comfortable and safe progression. Once up, the difficulty is continuous, and another step about five feet high must be reckoned with. For the first man this is the greater difficulty, but for the last man the ascent from the recess is more trying. Once past this bit, a broad platform with safe anchorage is reached, above which an easy scramble, finishing with a chimney, leads to the top of the lower cliffs. Steep grass is now mounted to the foot of the upper rocks at their lowest point, where a col connects an isolated pinnacle with the higher cliffs on the right. The low wall, 12 feet high, dividing the climber from the col has not gone, but a descent must be made to the left, and difficult steep ledges with poor holds climbed to the col. Thence a steep chimney (Bell's chimney), 60 feet high, is ascended, the top of which is close to a cave with two openings, which marks the head of the Waterfall Gully. In a few minutes the crest of the buttress is struck about 500 feet below the summit of Càrn Dearg. The ascent of this involves no difficulty.

A variation of part of the Staircase Climb has been devised by Raeburn (see *m* on diagram opposite). After negotiating the 5-foot step (already referred to) a turn is made to the left and a good ledge followed round the edge of the wall in the direction of the waterfall. Access is gained over slabs to a deep cut-in chimney, about 50 feet high, with smooth and holdless walls. This leads up to the



CÀRN DEARG OF NEVIS.

O. Summit of Càrn Dearg.
P. Raeburn's Buttress.
Q. South Castle Gully.
R. The Castle.
S. North Castle Gully.
T. Castle Ridge.
m. Staircase Climb.
n. Cousins' Buttress.
r. Castle Climb.
t. Castle Ridge Climb.

easy grass below the 12-foot wall. Instead of descending at this point over slabs to the left, a traverse is made round the pinnacle and a descent into the bed of the gully, which is ascended till level with the pinnacle col. The col is then reached by a traverse over rotten rocks. Thereafter Bell's chimney continues the climb in the usual way.

The Ledge Route starts from the south side of the buttress and offers a quick route to the summit of Càrn Dearg. In Howie's panorama (p. 32) it will be noticed that a broad band of snow starting in Coire na Ciste slopes gently upwards and across the rocks of the Càrn Dearg Buttress, and terminates above the highest point of the great cliff. On 9th June 1895, J. S. and R. G. Napier and Green made the first ascent of Càrn Dearg involving the use of ledges indicated by this "snow" band. Starting up the prominent gully, they followed first one ledge till it became impracticable on the cliff, and then another higher up but parallel with it. Shortly before its termination a stone shoot is followed upwards to the left, and then to the right, when the crest of the ridge is reached above the precipitous rocks. The crest is now followed direct to the summit, and offers no difficulty. This route is highly to be recommended from a scenic point of view both in winter and summer, and there still remain tempting variations among the steep rocks above the ledges referred to, which may be found to give good sport.

Passing farther south, the No. 5 Gully divides the Càrn Dearg Buttress from the "Trident Buttress of Càrn Dearg," so called from the three ridges which go to form it, each one terminating in a peak, well seen from the foot of the Tower Ridge.

The Northern Trident Buttress was ascended on 1st Jan. 1904 by Maclay, Raeburn and H. and C. W. Walker. The climb commences up a conspicuous trap dyke in the centre of the Buttress, which is steep but not difficult. Towards the top it develops into a ridge crowned at the summit by a steep tower.

The Central Trident Buttress was ascended in April 1904 by Raeburn and Mrs and C. Inglis Clark. The route

lies up a couloir or gully, with a steep pitch, and later by a still steeper pitch impracticable in winter. An awkward sloping ledge leads to the left. Rounding a corner, some rocks are negotiated and a traverse made to the right to the wide snowfield above which rises the final ridge. A direct attack is not always possible, but a gully leads to a pinnacle on the ridge, which is followed to the top.

The Pinnacle Arête of Càrn Dearg, the most southerly of these ridges, consists of a lower crag rising precipitously from the corrie, and divided from the upper portion by a grassy ledge which leads round to the north edge, overlooking a steep gully. No one has yet climbed the lower portion. On 29th June 1902, Raeburn, with Dr and Mrs Inglis Clark, ascended from the corner already mentioned. The rocks at first are unpromising, consisting of ledges set at an awkward angle and sloping outwards. After about 10 feet of these, an awkward traverse is made to the right round the sharp arête. Twenty feet higher better rocks with good holds lead back to the real arête, which is here narrow and very steep, but with superb holds. Bearing a little to the right for some distance, a broad platform is reached at the foot of a very steep pinnacle, previous to which a narrow crack splitting the arête affords a look down into the interior of the rocks. From the platform it might be possible to traverse round into the gully, but the ascent of the pinnacle is so sporting that no one would wish to miss it. It is not a true pinnacle, being really the steep arête, but, as it rises at an angle of about 85°, and in parts overhangs, it has all the effect of a genuine gendarme. A vertical chimney about 60 feet high gives exit to the left at the top, or the face itself, possessing most marvellous holds, may be ascended without danger. A little farther a short, steep wall leads slightly left to the now simple arête, and the climber looks down a smooth, straight corner running up from the starting ledge. The difficult climbing is over, but interesting rocks lead up to the final peak, with a boulder crowned by a cairn.

Returning now to the Castle Corrie which, as we have seen, is hemmed in on the south by the Càrn Dearg

Buttress, west by the Castle, and north by the Castle Ridge, the visitor, in spring at least, will notice signs of avalanches, and should not select their track as a possible lunching spot. These chiefly fall from a subsidiary corrie high above the rocks on the south and from the South Castle Gully. The snow and rocks may be projected right across the Castle Corrie and may even reach the glen near the Lunching Stone.

The *North Castle Gully* rises steeply on the right (looking up) of the Castle. On 4th April 1896, Bell and R. G. Napier ascended it in snow and met with no difficulty whatever. Later, on 17th May 1899, Dr Clark with another party ascended in a blizzard, and found a deep bergschrund half way up, with overhanging pitch, which was passed on the slippery wall of the Castle Ridge. The ascent of this gully was made in summer by Greig and M'Kenzie. The chief pitch is about 40 feet high, and must be passed, as stated above, on the wall of the Castle Ridge. So also another pitch, about 100 feet from the top, is passed by a small mossy chimney on the right. The cornices at the top are not usually heavy.

The *South Castle Gully* was ascended on 4th April 1896 by Brunskill, King, and Naismith. Under the snowy conditions prevailing, no difficulties were met with, but an easy rock pitch which might interfere with a glissade had to be skirted. The upper part offers grand scenery, confined as it is between steep rock walls, and the cornices at the head may at times be inconveniently large. In spring climbers must look out for avalanches. There is a steep high pitch near the bottom, and this should be borne in mind by those proposing to glissade.

A summer ascent was made by MacRobert, Workman, and Mrs and Miss Inglis Clark on 15th July 1911. A first fine pitch of 40 feet leads to a large platform under a waterfall. This obstacle is turned by a very steep, slabby and difficult ascent on the north wall. Above this the only difficult pitch is near the top, and the way lies up some 15 feet of rotten rock covered with moss.

The Waterfall Gully, farther to the east, has already been referred to (p. 16).

Rounding the buttress a large prominent gully, the *Càrn Dearg or No. 5 Gully* (see N, diagram, p. 10), will be seen leading up to the scree or snow-field below the summit. The lower part offers a high pitch, it then traverses a broad ledge, and becomes merged in the snow-field above, whence it re-emerges on the extreme right and passes between steep rocks to the summit, where it is overhung by heavy cornices. Indeed, from this point along the whole summit of Càrn Dearg southwards a line of immense cornices makes the exit of the climber a matter of uncertainty. When filled with snow the Càrn Dearg Gully may be glissaded from top to bottom, the angle not exceeding 40°.

The Moonlight Gully.—Going southwards a steep cliff is passed, and the first crack or recess indicates the commencement of a climb accomplished on 3rd January 1896 by Inglis Clark and Gibson. In summer the route up to and passing the great ledge will doubtless be perfectly simple. Above the ledge the gully becomes well defined, and is hemmed in by huge walls of rock, and is terminated on the north ridge of the Trident Buttress by a steep pitch some 500 feet from the summit. Owing to prevailing conditions the climbers only reached this point by moonlight, and as a distinctive name, "Moonlight Gully" is suggested. Emerging on an ice-covered platform, a descent was made to the right down the rocks overhanging the Càrn Dearg Gully, and a ledge followed leading on to the great snow-field. A direct route was now made to the centre of the great cornice, which was surmounted by the snow-covered rib of rock forming the south wall of the upper part of the Càrn Dearg Gully. The ascent afforded nine hours of constant stepcutting, the expedition lasting sixteen hours.

Rounding southwards into Coire na Ciste (corrie of the chest), and soon after passing the lonely Lochan na Ciste (about 3000 feet), an easy gully, known as No. 4 (L in map, p. 7) is reached. The ascent of this usually offers no difficulty, the bed consists of screes or easy snow slopes, but the cornices above are generally heavy and must be reckoned with. At Easter 1895 the angle of

THE COMB, FROM THE CORRIE.

No. 2 Gully runs up to the left of the circular snow patch.

snow below the cornice rose from 50° to 60° and 70°, and a small trench had to be cut to get through the cornice.

The last of the gullies on the western side of Coire na Ciste is No. 3 (K in map, p. 7), and lies at the junction of Càrn Dearg and Ben Nevis. It slopes up steeply at the very head, and on this account the surmounting of the cornices is sometimes a lengthy process. As it lies near the lowest point of the ridge, it is useful as a pass from the great Corrie to Glen Nevis. The scenery of the upper part is wild and repaying. There can be no doubt that this gully was one of the earliest climbed, the writer's knowledge of it going back to 1870.

No. 3 Gully Buttress.—Dividing No. 3 and No. 4 Gullies is a fine crag, which, from below, offers interesting climbing, but is so far virgin rock. To the east of No. 3 Gully, and forming its wall, is the "No. 3 Gully Buttress," which offers a climb of great and varied interest. On 29th June 1902, Raeburn, with Dr and Mrs Inglis Clark, descended into Coire na Ciste with the intention of attacking the buttress still farther east, the "Comb." This is divided from the No. 3 Buttress by a stupendous gully, so far impracticable. The climb was commenced by going up steep easy ledges to a slanting rake of slabs leading to and disappearing at a corner on the right, and immediately below the overhanging arête of the Comb. The traverse round the corner into the gully was difficult and dangerous owing to rotten rocks and the gully proved to afford no access to the arête of the Comb. A steep climb of 100 feet up the right wall of the gully proved abortive, and a descent was made to a snow patch by an easier route to the west. At the west end of the snow patch a gigantic basalt dyke led directly upwards, forming an easy staircase, and terminating in an unclimbable corner. Turning to the right an interesting corner is passed, and steep, good rocks ascended, till the final vertical wall is reached. Here an easy route to the top turns to the right, but the true finish is by a 40-foot vertical and exposed chimney, which ends on the upper edge of the buttress. This chimney is of a rare dolomitic character, but the superb holds make the

ascent not only interesting but safe, albeit somewhat exacting on the arms.

The Comb.—The next buttress is easily recognised by the exceedingly narrow arête which projects into the corrie. So far as is known, no complete ascent has been made, but the upper part has been prospected to near the point reached in the last-mentioned climb, and found to be easy. Raeburn made an icy ascent on 22nd April 1906, which, although not on the arête, yet led to the summit of the Comb. The climb was, however, almost entirely on snow and ice.

The Tower Ridge is one of the most fascinating buttresses of Ben Nevis. Starting from the glen below at an elevation of about 2500 feet, it boldly rises in a precipitous pinnacle some 700 feet high. Then after a sudden cleft or gap it compresses into a somewhat tortuous narrow ridge, which soars at a steep angle to where "The Tower," which gives it its name, forces the climber to escape on either side and thus reach its cairn. Narrowing again to a mere wall with sensational cleft, it now joins the summit cliff, at a height of 4360 feet.

The Tower Ridge was first ascended as far as the Tower by J. E. and B. Hopkinson on 3rd September 1892. Next day the same party, descending from the summit, reached the point attained previously and completed the descent, including the bottom pinnacle which they descended on its north-east face (*Alpine Journal*, vol. xvii. p. 521).

This feat attracted but little notice, and it was not till Collie, Collier, and Solly, in March 1894, forced a passage to the top under wintry conditions that the Tower Ridge became a recognised route to the summit. This party climbed on to the ridge from the foot of the Observatory Gully, attacking the rocks at the first convenient point above the gap which separates the *Douglas Boulder* from the rest of the ridge, turning the Tower on the right or north-west side.

The Douglas Boulder.—The base pinnacle of the Tower Ridge is generally included in the ascent, but there is only one published account of a direct climb of this pinnacle from the valley. Rising as it does in

formidable precipices on the north, north-east and north-west faces, it offers little encouragement to the climber.

On 3rd April 1896, Brown, Douglas, Hinxman, and Raeburn made the ascent up the ridge at right angles to the valley. On account of the absence of satisfactory hitches, 160 feet of rope were required. The rocks are excessively steep, and the holds, though secure, invariably slope outwards. The pinnacle was named by this party.

Bell and Napier, on 6th April 1896, found an easier route to the summit. This party joined the ridge on the east side not far from the lowest point by some easy rocks and screes, and climbed straight up from there, keeping on the east side, but near the top of the ridge the whole way. There were no difficult pitches, and the route terminated within a few yards of Brown's. In the panorama of Ben Nevis (see p. 32), the ledge by which this party went out on to the face is easily seen.

On the upper side the pinnacle may be reached direct from the col. A rather difficult balance climb, in which a shoulder is desirable, leads up the steep crack and so to the top. A more easy way is to descend a short distance down the gully leading from the col to the north-west, where a ledge leads on to the western ridge, and thence by easy rocks to the top.

On 6th September 1892, the Messrs Hopkinson descended on the north-east face, reaching the screes towards the Observatory Gully.

On 23rd June 1901, Raeburn, with Dr and Mrs Inglis Clark, descended from the summit some distance on the north-east face, thence round an awkward corner, after which a sensational hand traverse with good but small holds gradually led round to the south-east ridge overlooking the gully. Some steep and rotten rocks were now descended, and the snow reached at the foot of the Observatory Gully.

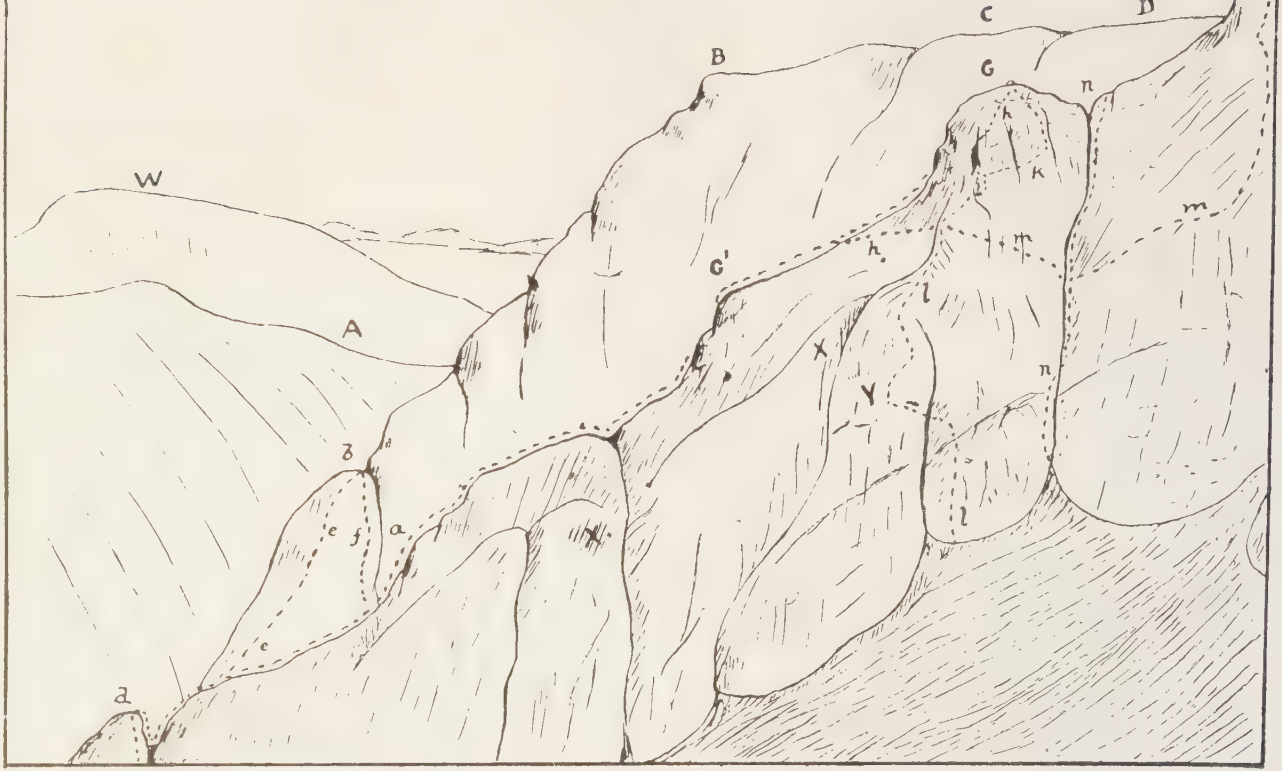
The col itself may be reached by either of the gullies on the east or west sides, and by the rocks to the left of the latter. These rocks are now the usual route to the summit of the Boulder and to the Tower Ridge itself.

The Tower Ridge proper above the Douglas Boulder

may be reached in a variety of ways, in addition to the routes mentioned in the last paragraph. The rocks on the south-east near the bottom, and indeed for some distance up, offer many sporting ways of attaining the ridge, and it is possible that some of the steep chimneys running down into the higher regions on both sides may yet afford access. From the Douglas Boulder col a steep chimney leads direct on to the ridge.

Once on the ridge it is difficult for the climber to lose his way, even in mist, but the different variations present such degrees of difficulty, that an unwilling ascent into some *cul de sac* is not impossible. Some distance up, the Little Tower is reached, where an awkward ledge and corner on the right require care. A trap dyke on the left is the easier route. From this point up to the Great Tower it is always possible to find an easy track, but when the steep rocks that give the name to the ridge are reached, the climber must decide whether he belongs to the Salvationist or Ultramontane ranks. Fortunately for the former, a narrow ledge (*The Eastern Traverse*) leads to the left, then through a cleft bridged by a large block, and straight up steep rocks to the cairn on the top of the Tower. This ledge may also be reached from the snows of the Tower Gully. So far as is known the direct ascent of the Tower has not been made.

The sporting routes, however, turn to the right, where an easy shelf leads to the north-west angle of the Tower. From this a broad platform is reached, from which the rocks are taken to the right as far as a block with a crack behind it affording a good hitch. Two routes are now open; one, *the Recess Route*, leads up to the left over some eight feet of smooth steep rock, with not quite satisfactory handholds, thus gaining a recess in the rock. From this, rising to the right, a fallen slab resting against the face is reached, and a short, steep chimney on the right ascended, and so to the cairn. The alternative is to climb straight from the block up a slender crack to a narrow ledge, and thence either to the recess or directly up the very steep rocks. Either route is sufficiently difficult in bad weather or under icy conditions, and even the Eastern Traverse may at times be com-



TOWER RIDGE AND N.E. BUTTRESS FROM CÀRN DEARG.

A. Càrn Mòr Dearg Arête.
B. N.E. Buttress.
C. Observatory Ridge.
D. Observatory Buttress.
G. The Tower.
G'. Little Tower.
W. Aonach Beag.
X. Secondary Ridge.
Y. Pinnacle Buttress.
a. Slingsby's Chimney.
b. 1st Platform.
d. Douglas Boulder.
e. Direct Route to 1st Platform.
f. Ordinary Route.
h. Recess Route.
k. Western Traverse.
l. Pinnacle Buttress Climb.
m. Goodeve's Route.
n. Tower Gap and Chimney.

J. Rennie.

THE ARÊTE TO CÀRN MOR DEARG.

pletely masked in snow and ice. The Recess Route was climbed by Naismith and Gilbert Thomson on 27th September 1894, and it was probably by the same route that the Hopkinsons first descended, as nail marks were noticeable on this occasion. The alternative or *Cracked Slabs Route* is more difficult, and was climbed by Macgregor in April 1896 under glazed conditions. It is just a few feet to the right of the Recess Route.

The *Western Traverse* is in no way behind those routes already described, but is not often followed. From the block already mentioned an easy ledge with good holds and hitches leads along for 30 feet ; but abruptly terminates in a small chimney, which has to be crossed by a rather awkward and wide step to the continuation of the ledge on the other side, which here narrows to about 12 inches in width, sloping downwards and inclining upwards. This ledge is about 12 to 15 feet long, and the holds, which are not too plentiful, are very rotten and dangerous, except when hard frozen. Both this ledge and the step across the chimney are highly sensational, with an almost sheer drop below of about 100 feet or more. Once up the ledge the corner to the left is turned, and a shallow gully climbed for about 30 feet, whence the good rocks on the left are taken and a bee-line made for the cairn on the top. This route was the one taken by Professor Collie's party in March 1894. (See sketch, p. 24.)

The Tower, crowned by a cairn, is joined to the main cliff by a narrow wall of rock, interrupted by a sudden cleft or "Gap," which at first sight appears forbidding, but offers good holds and hitches. Once on the steep rocks of the cliff there will be no difficulty in summer conditions in finding a route to the summit, but in winter more than one party has found the final slope tax all their efforts to force a way.

Alongside, and forming a supporting buttress to the Tower Ridge, is the *Secondary Tower Ridge.* Rising from Coire na Ciste in stupendous cliffs, it has attracted but little attention, and climbers of the Tower Ridge pass along above it without as a rule noticing it. It possesses, however, several weak points, and huge chimneys seem to offer

routes to the top. Where it abuts on the main ridge a shallow depression runs parallel to it throughout its length, and appears to be a mere walk.

At the south-west end, where it approaches the Tower, it falls to the valley in a steep rocky buttress, "*The Pinnacle Buttress of the Tower,*" well seen from the plateau above the Comb. On 28th June 1902, Glover and Inglis Clark descended to Coire na Ciste, and passing along by the foot of the Comb, crossed the great snow-field, and gradually rose to an isolated mass of rock, the "Garadh na Ciste," corresponding to the various *Jardins* of Switzerland. This lies immediately below the Tower, and is easily accessible from the upper corrie. From here the *Pinnacle Buttress* rises in huge walls and at a steep angle. Starting to the left, an easy gully runs 100 feet upwards, and the climb commences on the rocks to the right, which though almost vertical are rough and possessed of magnificent holds. Several steep chimneys lead to a ledge which traverses to the right, and can be followed into "The Tower Gap Chimney" (see later). Climbing straight up, a snow gully is seen (on the left) which terminates in a very smooth, holdless chimney. This is crossed by a trying ledge and corner, where an evident small cave with indifferent holds overhangs the chimney. After this, easy grass leads to the right again and on to the face, where a slabby pitch is encountered with holds sloping the wrong way. The arête overlooking what seems to be the upper part of the easy ledge on the Secondary Tower Ridge (p. 25) gives interesting climbing till the pinnacle is reached and turned on the west face by a rotten corner, leading to the second pinnacle overhanging the corrie. Thence by the arête direct to the Recess Route and to the summit of the Tower. It is evident that other routes on this buttress are possible, and by working round by the lower parts of the gullies (to the left) a comparatively easy ascent is possible.

The Tower Gap Chimney (Glover's Chimney) rises from Coire na Ciste above the "Garadh" and ascends direct to the Gap beyond the Tower. (See sketch, p. 24.) On 27th June 1902, Glover, with Dr and Mrs Inglis Clark, ascended the steep snow to the rocks immediately below

Mr. Walter Clark.

the chimney, a huge bergschrund preventing an attack immediately in front where the rocks are vertical and with few holds. In a recess to the left where a waterfall descends (the highest point of the snow) a tongue of ice with forked end afforded access to some gravel, and hitching the rope over a small pinnacle, the leader was able to pass through the fall and round a formidable corner overhanging the face. Though drenched with water, the rock proved rough and with wonderful holds. A narrow crack leads very steeply directly up under the main fall, where a comfortable ledge and a bold dash through the water land one directly below the chimney and on dry rocks. The chimney is here divided into two by a central rock. The right hand branch is the drier, and after perhaps 100 feet of steep pitches, lands one in the snow couloir, which now runs directly up till within 200 feet of the cleft, a restricted but interesting climb, with good holds on the rocks (often preferable). A pitch of rock followed by a final snow chimney leads to the highly sensational upper chimney, well known to those who have passed the cleft and looked down. At first the chimney or the north wall was followed, but higher up it was found easier to straddle the gulf and keep well out. Here excellent holds enable the straddler to look vertically down some 50 to 70 feet below, where his companions await their turn. Most of the dangerous rocks have been removed, and the climb is now safe. About 20 feet from the "Gap" the bed of the chimney is smooth and slippery, and it is convenient to straddle preparatory to turning on to the right wall, and after climbing up a few feet, making a sensational and not easy traverse on the south side of the cleft, finishing on the wall immediately above the cleft.

As already stated (p. 24), the Eastern Traverse may be reached from the Tower Gully. The Traverse extends along the whole eastern side of the Tower to the Gap, and therefore affords a short route to the top of the Ridge, omitting the actual Tower altogether.

Goodeve's Route (see *m* on diag., p. 24) from below the Tower to the summit plateau was the result of an attempt by a belated party to escape down into Coire na

Ciste. In the darkness and under the icy conditions they were unable to descend the Tower Gap Chimney, and so they finally cut their way to the summit, as shown. It would have been possible by continuing the traverse to the right past the second *m* to have reached easy ledges and slopes (to right of *e* on diag., p. 10), whence either the corrie near No. 2 Gully or the summit plateau could have been reached without difficulty.

Between the two gigantic ridges which are seen rising from the valley on the left of the panorama, p. 10, will be found the "Observatory Buttress" and the "Observatory Ridge." These can, perhaps, be better seen in the photograph opposite.

The Observatory Buttress.—The first of these was the object of at least two assaults before it was conquered. On 8th April 1901 a strong party, after a three hours' contest with icy rocks, during which they ascended a bare 300 feet, were forced to retreat. Later, on 23rd June 1901, another party endeavoured to force a way up the steep rocks to the east of the bottom, but were driven back by storm, taking shelter in a huge bergschrund at the foot. It was left to Raeburn, who had been in both attempts, to complete the ascent alone, owing to the failure of his companions to keep their appointment. On 28th June 1902, that climber began the climb exactly opposite the great chimney on the east side of the Tower Ridge. The buttress is very steep in its lower half, and rather slabby just at the foot where the start is made. Ascending a short distance, a traverse is made along a good ledge to the left till just above the bergschrund. Turning slightly to the right, excellent climbing rock is reached. The average angle greatly exceeds most of the climbs on Nevis, yet owing to the excellence and soundness of the holds the ascent cannot really be termed difficult. A series of small ledges with vertical or overhanging walls is overcome by using the "pulling-in handholds" of superlative quality, the character of the climbing being rather like the Chamonix Aiguilles. Farther up a traverse is made to a shallow chimney with broken rock and poor holds. Above, a snowy patch indicates a smaller angle, but beyond this the actual arête on the left is very steep, and looks diffi-

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Gilbert Thomson.

THE NORTH-EAST BUTTRESS AND TOWER RIDGE

cult. A steep but not difficult chimney on the right affords an escape, and soon the plateau is reached. Time from the foot, including rests and cairns, 1 hour 20 minutes.

The Observatory Ridge at a first glance looks so steep and unpromising that it is little wonder that it was for long left severely alone. On 22nd June 1901, Raeburn made the ascent alone. Crossing a small bergschrund, slabby rocks at no great angle, and poor in holds and hitches, were encountered. The ridge almost at once becomes a well-defined arête, which, higher up, is bounded by almost A.P. precipices. A few hundred feet up an easy hand traverse presents itself. It is begun by getting the hands into a first-rate crack on the left, then toe-scraping along a wall to the right till the body can be hoisted on to a narrow overhung ledge above. This does not permit of standing up, but a short crawl to the right finishes the difficulty, at the top of an open corner chimney—a more direct and possibly preferable route. Rather more than half-way up, a very steep tower spans the face. The route followed was round a sensational corner to the right, where there was a direct drop of several hundred feet. This point is a few hundred feet below the termination of the black portion of the ridge as seen in Thomson's photograph (p. 28).

The ridge now eases off, and traverses might possibly be made, either to the North-East Buttress on the left, or to the Observatory Buttress to the right. The climbing is not, however, over, for numerous steep or slabby bits must be overcome ere the crest of the ridge, still holding heavy cornices till midsummer, is attained.

The North-East Buttress is the last of the great buttresses of Ben Nevis, and is from all points of view a stately and imposing object. From the lower part of the valley it presents a formidable rock wall looking to the north-west, while the front view from below or a short distance up the scree slopes opposite, shows it as a lofty peak, its summit hemmed in by slabby rock, and at first sight inaccessible. Running parallel with the Tower Ridge, it projects a less distance into the valley, but as it starts from a higher level, the angle is not so great as might be inferred from this.

The rocks begin at about 2600 feet above the sea and terminate at an elevation of nearly 4400 feet. The first ascent, like that of the Tower Ridge, was made by J. E. and B. Hopkinson on 6th September 1892 (*Alpine Journal*, vol. xvii. p. 521). It is not certain, although one of this party has been communicated with, exactly at what point the ascent was begun. It appears to have been near the lowest point to which the rock projects into the valley and on the north-west face. In any case the climbers seem to have experienced no serious difficulty during the ascent. This interesting event was unrecorded till August 1895, so that when Brown and Tough on 25th May 1895 attacked the buttress, it was under the impression that this ridge had not hitherto been climbed.

Passing round the bottom rocks to the eastern side, a broad ledge runs to the right, and attains the ridge at the so-called "first platform." Up to this point it is literally a walk; but when the platform is crossed to the south-west corner the climbing begins. The narrow ridge is followed to a tower, where a choice of routes is offered. To the right a ledge leads round the corner, from the extremity of which the climb turns upwards to the top of the tower. On the left a stone shoot with chimneys and gullies succeeding one another leads upwards to the "second platform," where the first route is joined. Which is the more difficult route depends on the condition of the rocks and the weather, but it is generally possible to find more easy routes by keeping to the left. The second (small) platform is immediately above the tower, and leads directly to the narrow ridge which offers interesting sport up to the "gendarme," or "man-trap." This is the name applied to a steep wall about 10 feet high which blocks the way. On the right the rocks slope steeply down, while to the left the only alternative is an overhanging chimney with rotten holds. As a rule it is not difficult by the aid of a friendly shoulder to reach a narrow ledge on the wall, and so overcome the difficulty, but in cold or heavy rain this is not always possible. Brown and Tough descended to the right over some slabby rocks, and eventually reached the foot of a steep "40-foot corner" or chimney, the ascent of which

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W. Inglis Clark.

THE NORTH-EAST BUTTRESS AND DOUGLAS BOULDER.

requires some muscular effort, but is not difficult. Those who have climbed the "man-trap" direct follow the ridge, and so are led to the same "corner." Still another alternative is open. Turning to the left some 20 feet or so, the rocks will be found exceedingly rotten. An uninviting rotten chimney opens at this point, which in its upper part, slightly to the right, distinctly overhangs. So long as the holds last there is no difficulty, but the finish requires care and delicate handling. This overcome, the route is followed as before. At the top of "the 40-foot corner" the screes are at hand, and if desired the plateau is reached in a few minutes by a small recess to the left of the last wall of rock terminating the ridge. Unfortunately for the reputation of this buttress an easy route leads up from the second platform to the east, and passing by ledges and grass altogether avoids the "gendarme." The summit is reached by a scree gully to the east of the 40-foot corner.

There are other ways of attaining the ridge at the first platform. On 2nd June 1895, Hastings, Priestman, and Slingsby reached the first platform by "Slingsby's Chimney." This may be recognised in Clark's photograph (see p. 30) as running up to the ridge at the first platform from a distinct snow patch (see also *a* in diags., pp. 10 and 24). The lower two-thirds are not difficult, but need care. There are no well-defined pitches, but the floor of the gully is set at a steep angle. The ledges are small and a slip would land one at the bottom. The upper end of the gully opens out into a funnel with slabby rock and vertical cracks. The usual finish is on the left side of the funnel. The direct route in the line of the gully is very difficult, but has been climbed. The best route is, however, by the rocks to the left of the chimney, as described in the next paragraph.

On 23rd June 1901, Raeburn, with Dr and Mrs Inglis Clark, starting from a point about twenty feet from the foot of Slingsby's Chimney, gradually climbed to the left up the steep rocks, and then directly upwards to the ridge a little below the first platform. The route, though steep, cannot be called difficult. At the foot it admits of

variation, but about one-third of the way up a steep pitch limits the choice to a little chimney undercut at the foot, and close to the wall of the gully (see *f*, diag., p. 24).

On 8th June 1895, Green and Napier started on the rocks about half-way between the actual foot of the buttress and Slingsby's Chimney, and therefore to the left of the last route. The climb for the first 50 feet or so was distinctly difficult, the rocks being very slabby.

On 30th June 1902, Raeburn, with Dr and Mrs Inglis Clark, started from the very lowest point of the rocks.* First, a dolomitic sloping ledge above six feet wide with excellent holds brought one under a black overhanging corner, visible in most photographs of the buttress. Rounding this a grassy ledge overlooking a slabby wall was reached, and the climb commenced close to the corner. The angle was very great, but the rocks were of superb description. After some 80 or 100 feet another smaller ledge was crossed, and above this the absence of hitches rendered a traverse for 20 feet to the right essential. As progress is made upwards, the arête is again reached, and the whole climb, consisting of steep slabs, requires careful attention, traversing at times a few feet to the right and returning to the left. Near the finish a very interesting traverse is made to the left, crossing the arête by a sensational corner and for a short time ascending on the north-east or north wall. The arête is now followed over easy rocks and ends at the first platform. From a climbing point of view this ranks among the steepest on Ben Nevis, and would be impossible but for the magnificent nature of the rock. This party took 2 hours 40 minutes from the bottom corner to the first platform without resting.

On 21st August 1902, Newbigging and another ascended to the first platform in 80 minutes by a route commencing in the centre of the face of the Buttress and therefore round the corner to the left of the lowest point of the rocks. An upward traverse was made to the right at the foot of a vertical cliff of triangular shape. At the end of the cliff the route traverses back above it to the left. The upper-

* See *e*, diag., p. 24. This gives the approximate route only. At one point it crosses to far side of sky-line, as seen in photo., p. 30.

most of the shallow depressions on the great slabs is followed and the climb finishes by 100 feet of easy rocks to the platform.

There still remain to be described the gullies of Ben Nevis itself. No. 3 Gully, at the south-west corner of Coire na Ciste, lies at the junction of Càrn Dearg and Ben Nevis, and from this point to the North-East Buttress several steep gullies run up to the plateau level, some of them still unclimbed.

No. 2 Gully is a narrow twisted gorge shut in by tremendous cliffs between the Tower Ridge and the Comb. At Easter 1896, Collier, Hastings, and Slingsby ascended this gully, the angle of which increased to 60° before the cornice was encountered. An interesting account of their experiences is to be found in the *Yorkshire Ramblers' Journal*, vol. i. p. 173. The gully seems to be somewhat more difficult than Nos. 3 and 4, and as it extends to a greater altitude (viz. 4200 ft.), the cornice at the top is likely to be more troublesome. (See photos., pp. 21 and 22.)

No. 1 Gully (Observatory Gully).—Close to the Tower Ridge on its east side, and running parallel with it throughout, is a long straight snow gully—the longest of all. Two-thirds of the way up, it divides into two branches, the route to the right passing under the Tower and forming a steep-walled cleft, running into the plateau. This, the "*Tower Gully*," is quite simple in summer, but in common with the others, presents heavy cornices in winter. On 25th April 1897, Hastings, with E. L. W. and W. P. Haskett-Smith, found the exit blocked by a huge cornice some 18 or 20 feet above the highest point they could reach, and projecting many feet. They got through—*eventually*—by tunnelling, but found it very hard and cold work. MacRobert, ascending this gully in September 1911, found the only rocks to be just below the fork of the Gardyloo and Tower Gullies.

The Gardyloo Gully, or eastern branch of No. 1, is more formidable than the Tower Gully. It was first ascended on 26th April 1897, by Hastings and Haskett-Smith, who climbed it under snowy conditions. They found the pitch, referred to later, the less difficult obstacle. Above it the

snow was like flour and very dangerous, and steps 4 to 5 feet deep had to be made. A double cornice was found, but fortunately the secondary lip was firm, and the top was reached by cutting down the upper cornice. On 6th April 1901, the climb was repeated by Lawson and Raeburn, and found to possess peculiar difficulties. About 100 feet below the top, there is a large cave-pitch, which may be very difficult in summer. In winter this pitch is ordinarily a frozen waterfall. If the snow is sufficiently deep to cover this up entirely, the difficulty of the climb depends on the state of the cornice. The second party found the ice-pitch the harder. After breaking down the ice-door, an entrance was made into the cavern, which affords an excellent position for the second man. Hand-holds and foot-holds cut in the ice afforded a means of overcoming the curtain, and then followed about 18 feet of hard but easier work, till the snow was once more reached. Above, the angle rapidly steepened to the cornice, which is always more or less formidable till far on in the summer. A party at Easter 1911, took 5 or 6 hours for the final part of this gully.

On 29th June 1902, Raeburn descended to the rock-pitch and found that without snowy conditions the prospect of making an ascent is very slender. The mediæval name of "Gardyloo* Gully" has been applied to this east branch, because owing to the dust-cart being as unknown at Ben Nevis Observatory as in the narrow streets of old-world Edinburgh, this particular gully came in handy. The name of "Observatory Gully" should be reserved for the main gully before it branches into the "Tower Gully" and the "Gardyloo Gully."

Besides these gullies there are very steep ones on either side of the Observatory Ridge, but so far these have not been climbed.

The granite buttresses which overlook Glen Nevis alternate with steep grass and scree slopes. But for the superior attractions of the northern face these buttresses

* Derived from the French *gardez l'eau* and used in Edinburgh during the sixteenth century as a warning when emptying pails into a street from a window.

[*To face page* 34.

A. E. Robertson

THE SUMMIT OF BEN NEVIS AND THE OBSERVATORY
LOOKING ACROSS THE GARDYLOO GULLY.

and their gullies would doubtless receive more attention than they do. On 27th September 1894, Naismith and Thomson descended by Càrn Dearg (3348 feet), over a steep rocky buttress west of the cairn, the rope being used at one place.

On Meall an t-Suidhe there is a big gully to the left of the pony track. Under wintry conditions this gives a good climb. On Good Friday 1902, a party (Longstaff and Wigner) found the second of two long slabby places rather difficult for about 160 feet.

Time required for the Climbs.

Although nothing is more difficult than to say how long a party will take to accomplish any given climb, the following note of average times may be of some assistance. It must be clearly understood that the condition of the rocks mainly defines the time occupied in a climb, and that glazed rocks, powdery snow, wet weather, and the uncertainties of a first ascent may easily render say 10 hours necessary, where a subsequent party under favourable conditions will find 3 hours ample.

Fort-William to Achintee - -	about 30 minutes
Achintee to Lochan an t-Suidhe -	,, 60 ,,
Lochan to Summit (by track) -	,, 1¼ hours
Lochan to Lunching Stone - -	,, 30 minutes
Castle Ridge (from the Corrie) -	,, 1 to 2½ hours
The Castle (from the Corrie) -	,, 1½ ,, 4 ,,
Staircase of Càrn Dearg (to Summit)	,, 2½ ,, 4 ,,
Ledge Route, Càrn Dearg, from No. 5 Gully	,, 1 ,, 2 ,,
Fort-William, Castle Ridge, and return by Lochan - - -	,, 5 ,, 6 ,,
No. 3 Gully Buttress - -	,, 2 ,, 4 ,,
Tower Pinnacle Buttress - -	,, 2½ ,, 4 ,,
Tower Gap Chimney - -	,, 2½ ,, 4 ,,
Douglas Boulder (from Foot) -	,, 2 ,, 3 ,,
Tower Ridge - - -	,, 2½ ,, 5 ,,
Observatory Buttress - -	,, 2½ ,,
Observatory Ridge - - -	,, 3 ,,
N.E. Buttress by the Ledge - -	,, 2¼ ,, 5 ,,

N.E.B. First Platform by Bottom Arête	about 2 to 4 hours
From Fort-William by the Allt a' Mhuilinn and Càrn Mòr Dearg Arête to Summit - -	,, 4½ ,, 6 ,,
From Fort-William to foot of Tower Ridge - - - -	- about 2½ hours
From Fort-William to foot of N.E. Buttress - - - -	- ,, 3 ,,
Summit to Fort-William (by track) -	- ,, 2 ,,
,, ,, ,, (*via* Tower Ridge) - - - -	- ,, 4½ ,,

Note.—There is no record of a winter ascent of either the Observatory Ridge or Buttress. The only recorded descent of the former took 7½ hours in summer conditions.

Although mountaineers are not given to making records of speed in the ascent of Ben Nevis, yet the following notes may be of interest. The up and down record from the Post-Office at Fort-William is 2 hours 12 minutes, and the distance covered is about 14 miles, with a rise and descent of 4400 feet. A novel dynamical experiment was made on 1st October 1901. Seven competitors started from Achintee, the race being to the summit. In each case the weight was ascertained, and by a simple calculation the effective horse-power developed arrived at. The three first to arrive showed the following results:—

1.	Weight,	174	lbs.	Time,	68 mins.	19 secs.
2.	,,	166½	,,	,,	78 ,,	44 ,,
3.	,,	144½	,,	,,	80 ,,	34 ,,

the horse-power developed ranging from one-quarter to one-third of a horse-power. Mountaineers who evince a tendency to *embonpoint* must not, however, flatter themselves that they are likely to reach the summit sooner in the future than in the past.

The Geology of Ben Nevis.

The monarch of British Mountains offers geological problems of interest. The metamorphic rocks, which monopolise so much of the Highlands, seem to have here

had their arrangements considerably upset, the great mass of the mountain being of igneous origin, and rising high above them.

The mountain itself may be said to consist roughly of two layers, a lower layer of granite, and an upper of andesitic lavas (sometimes known popularly as porphyry) and agglomerates.

The granite, which is of a pink hue, is confined to a roughly triangular area, each side of the triangle being three or four miles in length. This area extends from about Glen Nevis to the west side of Aonach Mòr, and includes not only Ben Nevis itself, but all the Càrn Deargs round about. The whole of the upper part of the Ben from the base of the north-east cliffs is composed of the lavas and agglomerates, tough rocks of a dark grey colour, and admirably suited for climbing.

The junction of the granite and the lavas is indicated on several parts of the mountain by the colour of the loose scree changing, as one ascends, from pink to grey.

In the case of similar rocks found among the hills of Glencoe, it has been ascertained that the lavas (or porphyry) were first poured out by volcanic eruptions, and that subsequently the granite was forced up from below and intruded into them. This has not yet been actually demonstrated on Ben Nevis, but it is probable that we have here a repetition of the same phenomena.

The Flora of Ben Nevis.

The flora, though containing, it is believed, no species not found elsewhere in Scotland, comprises all the common Alpine plants ; but these, owing apparently to the comparative hardness of the underlying volcanic rock, fail to exhibit that luxuriance of vegetation so characteristic of districts situated within the mica schist area.

As in all our northern mountains, the most distinctly Alpine feature of plant life is the abundance of low-growing, tufted, or cushion-like perennial forms. Thus the margins of the smaller streams are adorned with clusters of golden *Saxifraga aizoides*, mingled with denser white-flowered

cushions of *S. hypnoides*, both of which exhibit, at least during summer, markedly hydrophytic characters. The moister and more shaded crannies in the rock face provide a resting-place for such rosette forms as *S. stellaris*, and, though more rarely, *S. nivalis* ; the former of which, however, not unfrequently carries on a hydrophytic existence, living almost submerged, and losing in consequence its rosette-like appearance. In early summer the dryer rocks are clothed with trailing evergreen, purple-flowered sheets of the xerophytic *S. oppositifolia*, along with which, and showing a similar mode of growth, *Silene acaulis* may be seen in crimson profusion. Tufts of the succulent-leafed *Rhodiola rosea* abound on the cliffs, and associated with it are numerous plants of *Oxyria reniformis*, also as a rule more or less fleshy.

Hairy plants are represented by such forms as *Cerastium saxatile* and *Alchemilla alpina*, the hairs in the latter case being confined to the silvery under surface of the leaf.

All the vegetation exhibits to a greater or less extent a dwarf character, but the plants in which this general feature is most conspicuously noticeable are probably *Sibbaldia procumbens* and the small willow *Salix herbacea*, both of which cover the ground in all directions.

The wetter rocks are in many cases clothed with a slimy film of algæ, the majority of which belong to the Cyanophyceæ, the most characteristic being *Scytonema myochrous* and *Stigonema mamillosum*, accompanied by numerous species of *Nostoc*, &c.

As the top of the hill is reached flowering plants gradually disappear, owing apparently to the dryness of the substratum, and their place is taken by mosses such as *Andreæa nivalis* and lichens like *Umbilicaria* which clothe the otherwise bare rocks, and are all capable of resisting prolonged periods of physiological drought.

The vegetation of the lake floor (Lochan an t-Suidhe) is almost exclusively composed, at least in the shallower parts, of such hydrophytes with awl-like leaves as *Subularia aquatica*, *Littorella lacustris*, *Lobelia dortmanna*, and *Isoetes lacustris*, mingled with taller sedges and grasses.

The Fauna of Ben Nevis.

First among the animals to be found on the slopes of the mountain must be placed the Red Deer, the Allt a' Mhuilinn Glen being now within the fence of a deer forest. Foxes abound, and no doubt were especially attracted in winter to the Observatory Gully, where the debris of the Observatory was thrown down. The Summit Hotel now supplies the debris.

White Hares are often seen by climbers, and Rabbits are tolerably numerous on Meall an t-Suidhe.

Stoats and Weasels are found right to the very summit even in winter, and the common Rat and Mouse have been captured in the Observatory. A party climbing the Castle on September 1898, found on one of the ledges a newly killed Water Vole of the black or Melanic variety. The animal could not very well have got to the spot itself, but was no doubt captured in the Allt a'Mhuilinn by a Buzzard or Eagle, and dropped where found.

The Field Vole is abundant in certain seasons, and has been seen on the summit, as well as at the foot of the northern precipices.

Shrews were frequently caught by the Observatory cat, as was also the common Vole.

Among the birds the most interesting, perhaps, are the Eagles and Snow Buntings. A pair of the former are usually to be seen on the north-east precipices, and at least four or five pairs of the latter are summer residents, the sweet song of the male bird as it floats up from the corrie, adding appropriateness to the rugged grandeur of cliff, and snow gully, and cornice. One or two pairs of Buzzards haunt the lower slopes, where also the Kestrel may sometimes be observed, and the Observatory Gully is usually haunted by a family party of Ravens, who, like the foxes, are there for what they can get.

The Ptarmigan is fairly abundant on or near the summits, and on the lower heathery ground Grouse are met with, though not in great abundance.

The Meadow Pipit, that ubiquitous little mountain lover, is of course abundant, while the Wheatear is common on

the lower slopes. Several pairs of Stonechats have also been observed on a certain part of Meall an t-Suidhe.

The Ring-ousel also is found on these lower slopes, and the Wren and Dipper follow up the streams to a considerable height. Perhaps the above list contains all the birds to be commonly met with on the mountain.

The species frequenting the upper 2000 feet are very few in number, though stragglers of many kinds no doubt occur. Thus the Hooded Crow, common in the surrounding glens, often extends its flight well up towards the summit, and the lochs, such as Lochan Meall an t-Suidhe, attract birds such as the Sandpiper.

View from Ben Nevis.

Every one climbing the Ben is advised to procure the excellent Panorama published by Messrs Shearer & Son of Stirling, a copy of which will be found in the little Summit Hotel, open from July to September. The principal objects of interest in the view may here be mentioned, following the course of the sun.

North.—Ben Wyvis over Loch Lochy, Mealfourvonie, the Black Isle, a glimpse of the town of Inverness (55 miles distant and invisible to the naked eye), and the Parallel Roads of Glen Roy, all to be looked for over the top of Càrn Mòr Dearg.

North-east.—Monadhliath Mountains, Creag Meaghaidh and a bit of Loch Laggan over Aonach Mòr; the Cairngorms beyond the col between the Aonachs; Stob Choire an Easan Mhòr, with Lochnagar right behind.

East.—Ben Alder right over Aonach Beag, a corner of Loch Treig, with the West Highland Railway skirting its shore,* and Ben Vrackie on the far horizon; a glimpse of Loch Ossian; the graceful cone of Schiehallion; Ben Lawers appearing straight over the near Binnein Beag, with a stretch of the Moor of Rannoch, and the depression of Glen Lyon between them; Loch Lydoch, with Meall Ghaordie, and a glimpse of the Ochils beyond.

* A striking view of Ben Nevis may be had from the railway between Corrour Station and Loch Treig.

South-east.—Binnein Mòr across Glen Nevis, with Loch Bà seen over its shoulder, and Ben Vorlich and Stùc a Chròin on the sky line ; the twin peaks of Ben More and Stobinian, always unmistakable, with Ben Ledi just showing to the left ; the Ben Dòran group on the far side of the valley that holds Loch Tulla, with what is said to be Ben Venue beyond them ; Clachlet and Stob Ghabhar seen over Buchaille Etive Mòr, with Ben Lomond on the horizon between them, and Ben Lui right over the central conical peak of the Shepherd ; Buchaille Etive Beag, with the Cobbler group beyond.

South.—Sgòr a' Mhaim close at hand, with Bidean nam Bian beyond ; to the left of Bidean is Ben Eunaich, and right over the top of Bidean, Ben Starav (though 225 feet lower than it !), while immediately to the right of Ben Starav a bit of Arran should be visible ; Ben Cruachan over the nearer Aonach Eagach ; Stob Bàn quite near, and the Pap of Glencoe behind ; Ben Bheithir, with the Paps of Jura far beyond ; to the left of Jura the sea is visible, and in absolutely clear weather a low line of land "dim to very dreaminess" is the coast of Ireland, 120 miles away.

South-west.—To the right of Jura the islands of Colonsay and Lismore ; Mull over Loch Linnhe ; Morven hills, with Tiree and Coll behind ; Sgòr Domhail.

West.—A little to the right of Sgòr Domhail, Barra in the Outer Hebrides, and a bit of the western ocean ; Fross Bheinn ; the north end of Eigg and most of Rum, over the dip of Glenfinnan ; Ben More and Hecla in South Uist, 93 miles distant, and a stretch of ocean seen over Loch Eil ; the Streaps, with the jagged Coolin behind ; Gulvain, Sgòr na Ciche and Ladhar Bheinn, all in a straight line over the top of Càrn Dearg.

North-west.—Ben Screel, with the Storr Rock peeping over its southern shoulder ; the Saddle, Scour Morar, Ben Bhan of Applecross and Scour Ouran, all apparently close together ; Ben Attow ; a glimpse of the Torridon Mountains ; Garbhleac near Clunie Inn ; Mam Soul and Carn Eige ; Riabhachan and Sgùrr na Làpaich, with a glimpse of distant mountains beyond, which may be the Fannichs ; and so round to Ben Wyvis again.

This is but a skeleton list and nothing to the long array of visions which flit before the mind, as the history of the past is unrolled and invests each mountain peak or sunlit loch with the incidents of one's own experiences, or the stern realities of a nation's life. From here a kingdom lies before the gaze, and each outlook under the wizard touch of sunshine or storm possesses a many-sided fascination which must ever appeal to the true mountaineer. It would be difficult to say whether the mountain looks its best under the deep blue of a June sky, or in the winter costume of March and April. While the ampler ermine mantle commends itself for purity, dignity, and grace, the tracery of snowy gully embosoming the fretted ridges, seems more in keeping with a living nature, which under the growing heat of summer throws off the restraint of winter, and expands to greater fulness in the sunlight.

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