WEATHER AND SNOW ON BEN MACDHUI

P. D. Baird

For over a year the author has been making trips to the neighbourhood of our highest Cairngorm summit as part of a study of the relation of semi-permanent snow-beds to climatic conditions. In the Snowy Corrie (Garbh Uisge Mor) of Ben Macdhui there is one of these, occupying the nearly east-facing slope of the north top. It is not quite so permanent as that in the Garbh Coire of Braeriach but much more accessible from Aberdeen, and one can glissade there any month of the year, or if very enthusiastic, make use of skis.

I had hoped to have a weather-recording station established as near as possible to this snow-bed from the beginning of the snow year (about end of September), but the equipment loaned by the Air Ministry Meteorological Office was not ready until December. It includes a special Antarctic Screen, designed for the British Trans-Antarctic Expedition, which theoretically lets snow blow in and out again without accumulating and choking the instruments inside: also a special graphic anemometer recording wind speed and direction with two pens on the same chart.

The erection of the screen and anemometer tower under mid-winter conditions was quite a problem. The gear (about 400 lb. weight apart from instruments) was carried up by some willing helpers in two main lifts, December 19 and January 22. But the construction, which meant fiddling with small nuts and bolts in bare hands, was rather slow, and had to be done by stages and only when the weather was reasonable.

Temperature and humidity recorders were started in mid-February and the anemometer in early March, and visits to change graphs have been made since on an average every eight or nine days. But if the Cairngorm Club is unable to arrange for good weather on its Sunday excursions, alas, no more can I for the Macdhui visits! When conditions are good it is an hour's job to change graphs, re-wind clocks, and re-ink pens, and measure the snow-patch changes. But often in winter there was blowing snow to delay matters, and during this late miserable summer much cold damp mist with wind and rain. I think these last conditions have been more unpleasant and just as cold on the hands as were the frosts of February and March. Only twice (April 14 and September 17) do I recall performing the job in sunshine and shirt-sleeves.

One of the finest days we had was December 19, when we staggered up with the Antarctic screen—seven of us, two with the 5 by 5 foot trapdoor: an awkward brute. By the time we left the site at 4 P.M. the temperature was down to 7° F. and we had one frozen toe and one frozen finger in the party.

I just missed the thunderstorm of June 11 which did such damage to the area around Glenmore Lodge. Its curtain of rainfall was over the Garbh Choire as I climbed Sron Riach, but it moved around to the northern slopes of Cairn Lochan and Cairngorm. I experienced ten minutes of violent hail while crouching under a tiresomely thin plastic raincoat at the source of Tailors' Burn.

Most of my thirty-six visits in the year were made from Derry (other helpers have made four trips to change graphs when I was engaged elsewhere). But I have been up once from the Corrour bothy and twice from Coylumbridge: during February I spent three nights in the Etchachan bothy while finishing the construction, and in mid-July I camped in the Snowy Corrie itself while doing some painting of the equipment.

One of the ascents from the Etchachan bothy was a fine example of a climbing error. Determined to have warm feet while standing for eight hours at the site, I foolishly went up in felt-lined sealskin boots. On the gentle hard snow slope covering the Etchachan path I could get no grip, and while carrying a delicate instrument couldn't afford to slip. I was forced to cut steps with a snow shovel. Fortunately no other climber was around to witness this feat!

Sometimes the station has been hard to locate, especially in mist when snow covers all the upper plateau. By now I know the route pretty well down to individual boulders and vegetation patches! For those of you who have not found it, it lies about a quarter mile north-east of the summit, at about 4,120 feet, exactly 3,000 feet above Braemar.

So far, results confirm what we already knew—it was a horrid summer, in strong contrast to 1955 when the temperature certainly reached 65° on the summit, and there were long dry spells of sunshine. This summer the station has been in damp cloud 80 to 90 per cent. of the time and the maximum temperature was 57°. March, May, and September were rather warm months, especially the last: April, July, and August were cold—the last exceptionally so, with snow showers on the last few days. The Durham University party, who planned to survey the Snowy Corrie in detail to assist me, were

Aberdeen Bon-Accord and Northern Pictorial

THE WEATHER STATION ON BEN MACDHUI

first blown out of their camp at 3,500 feet and then visibility was so seldom good that they were unable to complete the work.

Yet the wind speeds have not been phenomenally high (average 10 to 15 miles per hour). Of course the station is in a lee (because of this the snow accumulates very greatly on the slope—blown off the summit and reverse slope): also the anemometer is only 6 to 8 feet from the ground instead of the official standard of 33 feet. But this represents the wind the climber's head has to encounter!

It is when the wind is accompanied by freezing cloud that the most troublesome conditions occur. Great accumulations of ice appear on the screen and anemometer. On March 23 I found the latter's tower a solid pillar of ice 8 feet high and one fog crystal 43 inches long was growing out from the windward corner of the screen.

The snow patch itself just failed to survive the end of 1955's ablation period. On September 21 it was still there; on October 5 it had gone, but new snow was falling and began to accumulate from about that date. This year (1956) it is in a healthier state and looks like surviving since new snow and freezing temperatures arrived on October 2.* The enormous depth to which it piles up is shown by the fact that between the end of April (maximum) and the end of September 1956 the surface went down by over 27 feet—but there was still a foot or two left.

By the time the coming winter is over we will know a good deal more about the Ben's annual climate, and be able to compare it with the records of the old Observatory on Ben Nevis which did such fine work many years ago. And I will have had a good deal of fun and plenty of exercise.

SUMMARY OF TEMPERATURE RESULTS, 1956

	Macdhui.	Braemar.	Difference.
12 days of Feb. (17 to 28)	19·2° F.	28·4° F.	9·2° F.
23 days of Mar. (9 to 31)	26·8° F.	37·8° F.	11·0° F.
Mean for Apr. . .	25·9° F.	38·7° F.	12·8° F.
Mean for May . .	33·9° F.	48·6° F.	14·7° F.
Mean for June . .	36·8° F.	50·9° F.	14·1° F.
Mean for July . .	42·6° F.	53·7° F.	11·1° F.
Mean for August .	37·3° F.	49·9° F.	12·6° F.
Mean for Sept. . .	41·3° F.	51·5° F.	10·2° F.
Absolute Minimum .	11° F. (Feb. 18)	7° F. (Feb. 17)	...
Absolute Maximum .	57° F. (Sept. 25)	75° F. (June 11)	...

* It in fact did survive in 1956.