

SIR,

*The Snow Survey of Great Britain*

Mr. Bonacina's kindly remarks about the 1946-47 Snow Survey Report are much appreciated. His studies of British snowfall in bygone times are well known and the various published papers embodying their results form a valuable source of information to workers on the subject. Full respect must be paid to his opinions, and for this reason I would ask a little of your space to meet the one criticism he passes on the conclusions set forth in our Report.

The statement queried by Mr. Bonacina, namely that with the possible exception of January 1879 no calendar month in the preceding seventy years appeared to be at all comparable with February 1947 for extent of persistent snow cover over Great Britain, was founded on a fairly thorough scrutiny of earlier data. Particular attention was, in fact, given to the five outstandingly severe seasons which he mentions: 1885-86, 1890-91, 1894-95, 1916-17 and 1941-42. The internationally accepted definition of "snow lying" (one-half or more of the ground within sight of the station covered with snow) was not adopted in Britain until 1889, and for some years thereafter records kept according to this scheme were very few. Until about 1895 it was, as a rule, impossible to ascertain precisely what an observer meant by an entry of "snow lying" in his meteorological return: unless (against the custom of the times) he specified a complete or nearly complete cover, doubt often existed whether anything more than patches of snow behind a southward-facing hedge had been observed. Having regard to these facts, and to considerations about to be mentioned, I am frankly sceptical of Mr. Bonacina's claim that "in 1890-91 most of England was continuously under snow from 27 November to 21 January." Where is his documentary evidence? During the search for a calendar month that could compare with February 1947, in which, as Mr. Champion and I stated in our Report, more than two-thirds and perhaps as much as three-quarters of the total area of England, Wales and Scotland lay beneath a persistent snow cover from start to finish, careful examination was made of the statistics for December 1890. It was found that, according to the records of G. J. Symons's observers published in *British Rainfall*, snow covered the ground on no more than 4 days of that month at Babbacombe (Devon), on 14 days at Ross (Herefordshire) and at Rotherby Hall (Leicestershire), on 17 days at Derby, and on 24 days at Salisbury. At three stations only—New Radnor (Radnorshire), Walthamstow (Essex) and Diss (Norfolk)—was it noted that snow lay through all, or nearly all, of the month. Reports from Scotland told of either "very little snow" or "an almost entire absence of snow." To go back a few years, Mr. Bonacina admits that the hard winter of 1885-86 was not outstanding for long duration of any particular spell of snow cover: in this instance his finding agrees with Mr. Champion's and mine, and thus need not be discussed. By 1895 official observers were beginning to recognize and act upon the international definition cited above. Their returns for the intensely cold February of that year do not support Mr. Bonacina's assertion that "the whole of the British Isles" (even if we allow this phrase to be taken as meaning the British Isles as a whole) lay continuously under snow for about six weeks from 22 January to 6 March. In February 1895 the number of days having one-half or more of the ground within sight covered with snow at the hour of morning observation, was, among Meteorological Office stations, 19 at Deerness (Orkneys), 26 at Laudale (Argyllshire), 13 at Glasgow, 20 at Hillington (Norfolk), and 15 at Southampton. There were also unofficial records of "snow on the ground" on 25 days at Brundall, near Norwich, and on 24 days at Evesham (Worcestershire). As to 1916-17 and 1941-42, we possess ample observational material for deciding the point at issue. In none of the calendar months from December 1916 to March 1917 was there a continuous snow cover according to the standard definition, at *any* official meteorological station in the British Isles. In 1941-42 February did give such a cover, but it was confined to 20 stations (mostly in Scotland) out of a total of some 300. There were no instances in December, January or March. In February 1947 nearly 50 per cent of all the observatories and climatological stations contributing returns to the *Monthly Weather Report* had the full 28 days of snow cover.

Mr. Bonacina suggests that because weather memories are apt to be short, even among meteorologists, recent experiences tend to be over-estimated. My contention, on the contrary, is that events remembered from the dim and distant past are those most likely to become exaggerated in minds that have stored them up over a long period of years.

Ivinglea,

Dagnall.

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E. L. HAWKE