

On 21 July the snow-bed measured about 120 ft. (36 m.) in length with an average width of 10 ft. (3.0 m.), the maximum depth being about 6 ft. (1.8 m.). A photograph taken at the time is almost identical with one taken on 29 June 1910 by Gethin Jones,² including the ripples with dirt on the crests and the position of the patch of softer clean snow near the head. The snow was hard, and from its appearance it was confidently expected to last into mid-August and break the 1879 record. But the next ten days were warm, and on another visit paid on 31 July, the last of the snow had vanished. This had obviously occurred only a few hours previously, as the melt water was still saturating a part of the ground amid dry surroundings. It was these warm ten days, the like of which did not occur in 1879, which caused such rapid ablation at the end.

There has been previous discussion of factors conducive to the long survival of this particular snow-bed, such as heavy accumulation, low spring temperature and a dry early summer with little warm rain. A further factor, already suspected and brought out in the present review, is a low frequency of south and south-east winds, the only ones able to blow up the gully and cause excessive sublimation during the late spring and early summer.

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REFERENCES

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2. Jones, J. R. Gethin. The Spot in England and Wales where snow lies latest. *British Rainfall*, 1909, p. 51.

REVIEWS

EISZEITALTER UND GEGENWART. (Ice Age and Present Day.) Year book of the Deutsche Quartärvereinigung. Oehringen, Württemberg: Verlag Hohenlohe'sche Buchhandlung Ferd. Rau. Vol. 1, 1951, 192 pages, 36 illustrations. 12DM.

AFTER protracted difficulties German Quaternary research has again produced a publication of its own with the aid of the Notgemeinschaft der deutschen Wissenschaft. The Deutsche Quartärvereinigung was formed in 1948 in order to enable geologists, geographers, biologists, students of prehistory and other research workers to meet and work together on such questions as the Pleistocene and the development of climate, soil vegetation and the history of Man up to the geological present. The task of uniting these many and various subjects in the sphere of Quaternary research, where stimulation from every angle was needed, was to be expressed in the name of this new periodical.

The first conference of the Quartärvereinigung was held in October 1948 in Hanover; a great number of papers read there are included in the present volume. Further conferences were held in 1950 in Munich and in 1951 at Mainz, and will be reported in later issues.

In the introduction the editor, Professor P. Woldstedt of Hanover, writes of the tasks and the aim of Quaternary research, ending with the desire for a world-wide union of Quaternary research workers, in the same way as was attempted by the International Quaternary Union formed in Copenhagen in 1928. The contents of the year book range from geological, geomorphological and palaeoclimatological investigations to anthropological and archaeological themes. J. Büdel gives

important basic consideration to the climatic zones of the Ice Age and especially to the Würm Glacial Period. H. Poser investigates the northern borders of the loess in Central Europe, and the late glacial climate. New ideas on the structure of the Ice Age are reported by I. Schaefer, and also by W. Wundt, based on the ice-balance curve. K. Gripp deals with the proofs of great ice-edge fluctuations in Holstein. R. Grahmann seeks to contribute to the elucidation of glacial geological notions and gives a new all-embracing description of the old palaeolithic discoveries in Markleeberg near Leipzig. D. Wirtz and H. Illies deal with the border of the Pliocene and Pleistocene based on the stratification of Sylt. Pollen analysis is considered several times, in a basic survey by F. Firbas, in investigations of interglacial formations in north-west Germany by P. Woldstedt, U. Rein and W. Selle, and also by P. W. Thomson. E. Schönhals reports on the stratigraphy of fossil areas in loess districts and K. Richter on periglacial phenomena in Lower Saxony. Finally the Magdalenian era is described by H. Schwabedissen as well as by H. Gross, followed by anthropological considerations by H. Weinert and thoughts on the position of the Neandertal in the history of Man by G. Asmus.

Although it is not possible here to go into close detail of the individual contributions it can be asserted that the year book gives a good insight into the conditions, the methods and the problems of German Quaternary research. This new periodical meets the urgent demand of Science. We wish it a wide circulation and co-operation from all sides and by all Quaternary research workers.

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AN PALAEOGRAPHICAL ATLAS OF THE BRITISH ISLES AND ADJACENT PARTS OF EUROPE. LEONARD J. WILLS. Blackie and Son, Ltd. London, 1951. 64 pages, 22 plates, 2 text-figures. 21 shillings.

AN essential part of this valuable work is the short incisive Preface in which Professor Wills warns all readers of the limitations of palaeogeographical maps and of the dangers of regarding them as anything more than reasonable guesses, to be improved upon with further knowledge. If the meaning of the Preface is grasped, any fear that the publication of the maps will do more harm than good may be dismissed.

Three maps illustrate the conditions which may have obtained during the Pleistocene glaciation. Plate XX shows the areas in Europe believed to have been covered by ice at different stages: the Ante-Penultimate, Penultimate and Last Glaciations (Zeuner's classification). Plate XXI is based on the "Older Drifts" and gives the distribution and directions of ice movement of the Penultimate Glaciation in the British Isles. Plate XXII based on the Newer Drifts is an attempt to synthesize the work of many authors and to picture various stages of the Last Glaciation in the British Isles.

If, as has been well said, the trick of stimulating thought largely consists in inciting disagreement, these maps will prove most valuable. They are clear and easy to read, and brief notes draw attention to their salient features. We noticed only one slip—the expression "isostatic changes of sea-level." Professor Wills is to be heartily congratulated on the production of the Atlas which will be a delight to all students of the Past.

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