

Woolacott was a true Northcountryman in his devotion to his native county, and, while he travelled widely in pursuit of geological knowledge, his original work was almost wholly given to the geological problems of Northumberland and Durham, concerning which he published upwards of twenty original papers. His attention was at first largely devoted to the Pleistocene geology of the area, and a large mass of work was collected into the paper on the "Superficial Deposits and pre-Glacial Valleys of the Northumberland and Durham Coalfield" (*Q.J.G.S.*, 1905), in which the leading features of the pre-Glacial surface was established. He studied with unflagging zeal every aspect of the local geology, but he will be remembered among his fellow-workers especially for his insistence on the importance of earth-movement as a leading factor in the production of the structural features of the rocks of the district, and in particular of the remarkable brecciation of the Magnesian Limestone. Some geologists will hesitate in accepting all the conclusions, but all will agree in their gratitude for the way in which the amazing structure of the rocks was demonstrated to them.

Fortunately, Dr. Woolacott published quite recently in this Magazine two papers ("The Magnesian Limestone of Durham," *GEOL. MAG.*, Vol. LVI, 1919, pp. 452, 485; and "The Interglacial Problem and the Glacial and Pre-glacial Sequence in Northumberland and Durham," *GEOL. MAG.*, Vol. LVIII, 1921, pp. 21, 60), in which he summarized his views on two of the main themes which had engaged his attention. It had been his intention to continue a series of such papers, which together would have constituted a complete account of the local geology, with discussions of its wider significance. Only those who had personal knowledge of the fund of information he had gathered can appreciate the loss which the cutting short of this project entails.

Woolacott was a true enthusiast, with the deepest love for his subject, and so, like all enthusiasts, a good teacher. He is remembered with affection alike by his colleagues and by the many students who passed through his hands.

G. H.

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## CORRESPONDENCE.

### MR. WARREN'S VIEWS ON PLEISTOCENE CLASSIFICATIONS.

The *raison d'être* for Mr. Warren's Presidential Address on "Pleistocene Classifications" delivered recently to the Geologists' Association (*Proc. Geol. Assoc.*, 1924, part iv), would appear to be revealed in the following statement (p. 265): "On the present occasion I propose to invert the usual order, and to take the human culture stages of France as the basis of the time scale, and to refer the ice ages to them instead of vice versa. This is being done as an experiment, in order to see how matters will work out on this basis."

Though it is not clear what was in Mr. Warren's mind when he was arriving at this decision, yet the result of this so-called experiment manifests itself in the form of a "Table of Comparative Pleistocene Classifications"—which, for sterile and chaotic complexity, will, it is to be hoped, for ever remain unrivalled.

While the exact meaning of Mr. Warren's thesis has eluded me, this paper contains a number of statements which are unsupported by evidence, and, as may be seen by reference to the original publications dealing with these matters, are inaccurate. Some of these misleading assertions are given below:—

1. p. 267. That the "Ipswich evidences" showing that the Upper Chalky Boulder Clay is of Mousterian age "have been misread".

2. p. 271. That the Boulder Clay overlying the Mousterian brickearth at High Lodge, Suffolk, "may be a redistribution or trail" of the Boulder Clay underlying this brickearth.

3. p. 273. That a "level" plain can exhibit any slope "appreciable" or otherwise.

4. p. 274. That, at West Runton, near Cromer, "The cliff-section here shows a palaeolithic river gravel overlying the glacial sands and contorted drift."

5. p. 277. That the early Chellean flint implements found upon the foreshore at Cromer "have not been washed out of the Forest Bed, but belong exclusively to the beach".

6. p. 277. That "the palaeolith from the beach at Palling, is clearly derived from one of the river-gravels which overlie the glacial deposits of the Norfolk coast".

It is clear that Mr. Warren is determined at all costs to attempt to maintain his opinions upon the question of the antiquity of man and his relationships to the glacial deposits of East Anglia. In order to do this it is only necessary, as he appears to believe, persistently to deny the validity of any discoveries that militate against his views and to put forward, without hesitation, baseless arguments in opposition to these discoveries. That this is true is shown firstly by his audacious suggestion, unsupported by one tittle of evidence, and in flat contradiction to all we know of existing primitive people, that (pp. 277-8) the earliest representatives of the human race did not use stone implements of any kind, and secondly by his equally audacious, and again entirely unsupported claim, made at a meeting of the Royal Anthropological Institute recently, that the early Chellean hand axes recovered by me from the base of the Cromer Forest Bed are of natural origin. Mr. Warren is living in the "dark ages" of prehistoric archaeology. He still holds to the belief that the earliest vestiges of man in England are referable to post-Upper Chalky Boulder Clay times, and, as would be expected, and as his latest utterances show, he is finding it increasingly difficult to hold what is, without doubt, an altogether impossible position.

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