

other science. Well attested facts and sound logic, combined if possible with literary courtesy, these are what, I am sure, your readers wish, and whoever brings them to your mill and helps to establish truth or sweep away error will be welcomed.

I trust I have avoided saying anything of which Mr. Jukes-Browne can complain, for I have profited a good deal from what he has written elsewhere. I have no wish to exchange sharp words.

ARLEY HOUSE, LYTHAM, NEAR PRESTON.

HENRY. H. HOWORTH.

December 10th, 1892.¹

THE MAMMOTH AND THE GLACIAL DRIFT.

SIR.—The tone which Mr. Jukes-Browne has thought it advisable to adopt in his attacks on Sir Henry Howorth, in recent Numbers of the *GEOLOGICAL MAGAZINE*, does not, I hope, commend itself generally even to the official mind, still less will it to those who, like myself, believe that it always has been and will still be to the advantage of geological science that it should be cultivated by others than those who have been made geologists by Act of Parliament, or who have adopted it as a profession.

Pending the appearance of the “man who has acquired an insight into the subject by long experience and by approved practical work in the field,” (he does not say by whom or by what authority the work is to be approved) who will some day settle the question “beyond dispute.” I should like to ask Mr. Jukes-Browne by what rule of evidence could he expect Sir Henry Howorth to accept “as final” the imaginary case he cites, viz. “Gravels with Mammoth bones resting on Boulder-clay.” Surely in the first place he should point out a typical case, so that an opportunity may be given for critically examining the evidence. But let it be granted that he could point out such a case, how is it to be proved that the remains, which are those of land animals, are to be considered as of contemporaneous age with the gravels, and not as having been derived either from an earlier deposit, or directly from an older land surface? The only evidence that could be conclusive would be the finding of Mammoth remains, *in an undisturbed state*, on an old land surface with undoubted glacial deposits below it: such a surface as that on which the Endsleigh Street remains were found, but not having, as there, only pre-glacial beds below but some typical glacial deposits instead.

I have already pointed out that Mammoth remains were found by me in caverns in the Vale of Clwyd, under undoubted glacial deposits. I have this year obtained a fragment of a tibia of a Mammoth from the Lower Glacial Gravel at Finchley in a section where a great thickness of Chalky Boulder-clay, containing the well-known derived fossils, reposed on the gravel. The Endsleigh Street evidence, in my opinion, is equally conclusive in showing that the Mammoth lived there early in the Glacial period. The foregoing and similar cases which have been recorded can only *prove* that the Mammoth lived in this country, or in the districts in which the remains were found, during a part of or before the Glacial period.

HENDON, Dec. 8, 1892.¹

HENRY HICKS.

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