

formation as much newer than the Drift as is implied by its occupation of a trough cut down, in its deepest part to more than 500 feet from the upper Drift; and because it is also in intimate connexion with the disturbances under which the Thames gravel emerged. In the sections I gave in your Magazine, space necessitated this being shewn as a vertical drop, but in reality it arises from a pitch in a north-west direction, as the following detailed section shows:—(See Woodcut, Fig. 2.)

These are instances in which actual ocular evidence of violent dislocations is obtainable. There are many more which are deducible from the structure of the crag and Drift, and I believe that many of the sections in these upper beds which present perplexing features are due to this cause. Thus the capping of Boulder-clay which rests on the Chillesford beds, at Chillesford, and which Mr. Fisher, in his paper, read before the Geological Society, brought into his evidence of "trail," I believe is nothing but an oblique throw of the upper Drift, on to the Chillesford beds; for in a pit, only a furlong and a half north of this section, there occurs one of the junction of the upper and middle Drift, which shews both these formations in strict conformability to each other, and arching under the influence of lateral pressure, somewhat in the same manner in which the beds are exhibited in the section of Aldringham church.

I am, Sir, etc., SEARLES V. WOOD, JUN.

FAULTS IN THE DRIFT AT HITCHIN.

To the Editor of the GEOLOGICAL MAGAZINE.

DEAR SIR,—My friend, Mr. A. H. Green, who is nothing, if not critical, has been very gentle in his criticism in my case; and, indeed, he is so genial a man that I am sure it must go against his grain, and be an act of stern duty in any case to find fault at all. Perhaps this may be the reason why he overlooked the faults at the Hitchin station. I can hardly think they have grown larger since his visit. But there they are; and confused as the mass of gravel and loam, which form the Boulder-drifts in that locality, may be, there is a tell-tale bed of conglomerate at the bottom which has betrayed all its movements—while surely, not even a tyro could mistake the dark brown gravel which caps the drift and fills the pipes, and which is so common in the Hitchin section, for the light-coloured sand and loam below.

The uneven surface of the Chalk here is indeed due to the same cause which has produced so many inequalities in the surface of our island—viz., the much-abused "unequal elevation" of faulted ground, however these faults may have been produced. In the case of the Chalk, that may, no doubt, in some cases be due to sinkings over subterraneous cavities produced by rivers and streams in Post-glacial times. For this idea I am indebted to my friend and former colleague, Mr. Thomas T. Mc K. Hughes, with whom I had previously examined the Boulder-drifts near Hertford, and therefore came to the section more prepared for examination than I should otherwise have been.

Whether this or a larger movement be the source of the appearances at Hitchin, I do not mean now to argue.¹ But that the clean-cut faults, passing through Chalk, pebble bed, and loamy gravels, exist in this locality, only needs a second visit to ascertain. Indeed, as I hope I fully mentioned in a note to the paper (for I have not the Journal at hand), one of these faults have been previously marked in the sections given by Mr. S. V. Wood, jun.—a fact I was not aware of when the paper was read at Somerset House.

After all, in most cases, we only see what we look for; and if I had been examining the Chalk specially, I should probably not have seen these dislocations. I am sure your correspondent could not have been long at Hitchin without making many good friends there, so I shall recommend him to go and dine with some of them this holiday time, and pay a visit to the old chalk-pit again.

I am, yours truly,

J. W. SALTER.

MALVERN, Dec. 3rd, 1866.

GLACIATION IN DEVON AND ITS BORDERS.

To the Editor of the GEOLOGICAL MAGAZINE.

SIR,—I have always distrusted my own power of observation in Glacial and other superficial phenomena, for whenever I have made an observation to a regular glacialist, or “drift describer,” I have generally had to *stand corrected*. It would not, therefore, be at all surprising to me to find I was quite wrong in my conclusions as to what appeared to me to be a glaciated surface on the cliff on the banks of the Exe above Barlynch Abbey.

The first time I ever was able to see these phenomena of rounding, moulding, and striation, so as to recognise them, was in the S.W. of Ireland, about the year 1851, under the guidance of the late Sir Henry De la Beche. Since then I have had many opportunities of observing them not only in Ireland, but in other parts of the British islands and in the Alps.

Coming down the valley of the Exe on the occasion described in the letter published in your MAGAZINE in 1865 (Vol. II. pp. 473), I saw before me a cliffy ridge marked, as it appeared to me, precisely in the same way in which so many so-called glaciated surfaces are marked.

These markings being large and obvious, and my time being all too short for geological observations of much greater importance, I did not spend more than ten minutes in examining them. If, therefore, they are not glacial as my friend, Mr. Pengelly and Mr. Vicary, have concluded, it only assures me of the wisdom of the old proverb, *ne sutor ultra crepidam*, and warns me to stick to the rocks themselves, and leave their external markings and superficial covering to those whose tastes and powers of observation are more suited to them than mine are. I hope, however, that some practised

¹ I may as well observe, that the faults at Hitchin station, large and small, are very nearly parallel to one another—as in most of our faulted districts. I think this indicates a more general movement than is implied in the idea of subsidence over cavernous ground, such as may account for the minor flexures in the drift gravel.—J.W.S.