

of some old river-terraces, of which, however, there are no examples as far as I have observed. On the other hand—from the elevation attained by the Drift, and erratic blocks on these hills—it is beyond question that at the Post-pliocene period nearly the whole country was submerged; and it is less incredible (to say the least of it) to assume the agency of the sea in the formation of these valleys (or parts of them), which we know *was* there, than that of a stream of which there is no trace.

The more I consider this subject the more I am satisfied that, in the great majority of instances in this region, the extent and limits of river action are capable of the clearest demonstration. Most of the valleys are really double valleys, or valleys within valleys, the smaller being alone due to river denudation. This is a subject, however, on which I have more fully stated my views in the pages of a contemporary,¹ and shall not further allude to at present; but before the enthusiastic advocates of sub-aërial denudation for *all valleys* can expect their views to meet with general acceptance, they must explain the origin of valleys without rivers such as those of the uplands of Yorkshire and Lancashire.

I remain, your obedient servant,

EDWARD HULL.

GEOLOGICAL SURVEY OF GREAT BRITAIN,
Manchester, 11th Sept., 1866.

To the Editor of the GEOLOGICAL MAGAZINE.

SIR.—Permit me through the medium of your Magazine to direct attention to some remarks made by Mr. J. W. Salter in the Appendix to the Memoirs of the Geological Survey of Great Britain, Volume III., lately published.

In reviewing the group of *Cystideans* (page 284), which had been so ably and philosophically handled in the preceding volume of the Memoirs, by the late Professor Edward Forbes, then Palæontologist to the Survey, Mr. Salter takes upon himself the responsibility of expunging the identification Professor Forbes believed he had correctly made, of specimens collected by the Survey from Rhiwlas, and Sholes Hook, in Wales, with *Echinospherites* (*Sphæronites aurantium*), describing them as a new species under the name of *Sphæronites stelluliferus*; the figures to illustrate this and the other fossils on Plate 20 being transferred from the very fine engraving by Mr. Lowry, originally made for Professor Forbes' article in vol. ii. part 2.

As to the correctness of Mr. Salter's views with regard to the structure of this singular group of Silurian Echinoderms, wherein he differs from Professor Forbes, I do not at present intend to enter; I cannot, however, allow the remarks on some of these species to remain unrefuted as I consider them unjust to the memory of one so universally admired for the strict probity and correct scientific observation, so characteristic of our late highly esteemed friend.

The following are the passages I especially allude to (the italics

¹ The forthcoming number of the Popular Science Review.

except where used for the scientific names are my own); at page 287 under *Sphaeronites stelluliferus* "Pl. 20, fig. 6 (6*a* wrongly figured)."

S. aurantium, Forbes, Mem. Geol. Survey, vol. ii., pt. 2, pl. 22, figs. 1, *a*, *b*.

"It was not a bad idea to put these species among the multiplied varieties of *E. aurantium*, for it really is allied to it; yet it differs in nearly all its characters. What is regarded (Forbes, *supra* fig. 1*a*) as the base is really the epauletted apex, and assuredly the external ornament (here fig. 6*a*) has been much exaggerated to suit the view taken of its affinities. It is far too much radiated; and I only give it in the hope of calling attention to the fact that the common northern species, *E. aurantium*, has never been found in Britain unless "*Ech. granulatus* McCoy be, as Forbes suspected, the same species: it is very much like it."

Again, lower down on the same page are these expressions: "Fig. 6*a* represents the outer surface, but, as above said, highly exaggerated as to the radiation. Nor is the central tubercle conspicuous, and I cannot help believing that Forbes had allowed his artist to figure a portion of the true foreign *aurantium* to make up for deficiencies in the British specimens supposed identical. Such mingling of figures, however, must be condemned as tending to create confusion. It is introduced here to call attention to it and prevent future mistakes."

As I am the "artist" alluded to in the above extract, and "Forbes" (Professor Forbes) is the author of this assumed misrepresentation of facts, I beg to state my firm belief to be that the figure was correctly drawn by me, from *Welsh* specimens, as clearly described in the explanation of the original plates accompanying Professor Forbes' articles (Mem. Geol. Surv., vol. ii., part ii., p. 537,) as follows:

"Plate XXII.—*Sphaeronites aurantium*.—*a*. specimen showing the base; *b*. cast, showing the plates; *c*. external structure of the plates: all from *Wales*, and in the collections of the Geological Survey;" and that it is highly improbable Professor Forbes would have "allowed" me to copy the markings upon a foreign specimen of the species he wished to identify it with, without, at least, stating such to be the fact.

I remain, sir, very truly yours,

WM. HELLIER BAILY.

BELLEVILLE, 135, RATHGAR ROAD, DUBLIN.

Sept. 15, 1866.

MISCELLANEOUS.

FIGURES OF CHARACTERISTIC BRITISH FOSSILS.—Mr. William Hellier Baily, F.G.S., F.L.S. (Belleville, 135, Rathgar Road, Dublin), Acting Palæontologist to the Geological Survey of Ireland, announces that he is about to publish, uniform in size with Professor