

but that they were brought to the same spot from arctic and tropical regions by the catastrophe which buried them in the Oolite formation, which was probably a universal deluge? For arctic and tropical animals never could have lived together in the same climate. The association of the remains of arctic and tropical animals has also been observed in other places. In a cavern at Brixham, near Torquay, in a mass of loam or diluvium, 15 feet in thickness, have been found the remains of the mammoth, the extinct rhinoceros, cave-lion, cave-bear, cave-hyæna, *reindeer*, a species of horse, of ox, and several Rodentia, besides other bones not yet determined. Speaking of similar geological facts, M. Cuvier remarks, that "the associated remains of the glutton and the hyæna, the rhinoceros and the reindeer, found in the same caverns, as we observe at Gaylenreuth and Brengues; the bison and the elephant, in the same diluvium, as we find in the valley of the Arno,—certainly reveal either a state of the earth very different from what we now witness, or imply in these animals a temperament opposite to what their kindred species now display." The remains of the lion or tiger, the rhinoceros, the hyæna, elephant, elk and *reindeer*, and other animals, have also been found in the quarries of Kostritz, in Upper Saxony.

As the remains of arctic and tropical animals, whether found in caverns or on the surface of the earth, are almost always embedded in loam or diluvium, which, according to Dr. Buckland, was deposited by a general deluge, it is far more reasonable to suppose that, as I have already intimated, they were transported to their present situations by a general deluge than that animals belonging now to such opposite climates should have formerly lived together in the same climate.

I am, Sir, your obedient servant,

THOS. D. ALLEN.

Rectory, North Cerney, Cirencester, April 21, 1863.

[How could there be a fissure before the rock was consolidated? and are we to believe that the elephants, etc., and men too, in those days, lived at the bottom of the sea, as they must be supposed to have done if we accept Mr. Allen's theory of the Portland ossiferous fissures occurring before the consolidation of the Portland Oolitic beds? Fissures of shrinkage may not, sometimes do not, extend to the top of a vertical section, any more than sand-pipes in a chalk-pit, which we know to be filled from above. The accompanying diagrams will show how a fissure may extend to the surface, and yet not be visible, in the face of a quarry or cliff occurs at Portland, and no doubt something of this kind has mystified Mr. Allen and his friends.—ED. GEOL.]

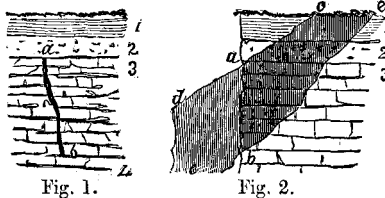


Fig. 1.

Fig. 2.

Fig. 1 shows the vertical face of the quarry, with a fissure, *a b*, apparently covered by the solid beds 1, 2. Fig. 2 shows the same fissure in section passing diagonally through the beds to the surface.

Human Remains at Luton.

SIR,—With respect to my letter of last month announcing the discovery of two human skeletons in the brick-earth at Luton, subsequent careful

examination has induced me to believe that they were not in the undisturbed brick-earth, but in the lower part of the bed which lies immediately upon it, consisting of washed brick-earth, the run of the hill. In this bed, which at this particular point is between 7 and 8 feet in thickness and deepens towards the N.E., there is a great difference between its upper and lower portions, for about 4 feet from the upper surface it contains a very large quantity of flints, below that they are less frequent, and disappear as you approach the true brick-earth. At first sight, there seems to be but little or no difference between the lower part of the rain-wash bed and the true brick-earth. Also, from the men that removed the soil immediately over the skeletons, I found that there was distinct evidence that it had been disturbed, for part of the upper portion of the bed was found mingled with the lower; that and the fact that the stone was between the skeletons, close to the skulls, would tend to show that they had been buried there, though perhaps at some remote period.

I remain, yours sincerely,

H. F. RIVERS.

Sidney Villa, Luton, Chatham, May 25, 1863.

Holoptychius and Glyptolepis.

DEAR SIR,—Will you allow me space for a few remarks on communications which have recently appeared in your pages, and which have been suggested at least by articles of mine?

And first, as to the restoration of *Pteraspis*, I intended that in my second diagram the posterior portion of the test should be marked off by a dotted or broken line. I was uncertain as to the exact position of the spine, and did not therefore venture to restore that portion, although specimens of it separated from the test were in my possession. Mr. Powrie's beautiful specimen clearly indicates the character and position of the spine. But on looking at his figure, it will be seen that it confirms the remark which I made, and which I considered the chief point brought forward by me, even that our Scottish specimens do not show any separation between the cornua and the test, but that the terminal edge on either side of the spine is continuous. I willingly admit that a shade of doubt rests on my first diagram; but I had virtually stated the ground of that myself, and I consider that diagram as of value chiefly in exhibiting the long-snouted form which the shield of *Pteraspis* sometimes assumes, perhaps indicating specific difference. I put forward my third diagram as entirely conjectural, and, along with my friend Mr. Powrie, must turn to the rocks, in the hope of finding some of those long-entombed relics which will throw light on the matter.

And then, as to the case which has been so much debated in your columns,—*Holoptychius v. Glyptolepis*,—I knew from Mr. Powrie's own article in the Quarterly Journal of the Geological Society that *Glyptolepis* had been noticed in the sandstone of Dura Den, and I simply wished to describe a slab in our local museum from that locality. I did not know what correspondence there might be privately between those who were interested in the matter. I am glad, however, that the attention of Mr. Davies has been called to it, and that he has communicated to your readers the results of his keen discrimination. On the specimen of *Holoptychius Andersoni*, to which I have access, there are several scales towards the posterior part of the body, which display what Mr. Powrie calls so picturesquely "the crescent of points;" but from what was said in the 'De-