

endow it at once with a special interest. I should like to hear enquiries as to how it happens that, as yet, no remains of any Scotch 'Old Red' Fish have been met with in English 'Old Red' rocks, as exposed in Herefordshire and the Border-counties generally. Also, if Mr. Pengelly's discovery in the Devonshire rocks of Fish-remains allied to the forms met with in the rocks of the Scottish Highlands (Middle Old Red) still stands alone.

9. As regards the uppermost zone of the 'Old Red,'—that known as the 'Yellow Sandstone,' a typical exposure of which was described by Prof. Morris and myself in the *Quart. Jour. Geol. Soc.*, vol. xviii. p. 94, as occurring in Shropshire,—I wish to call the attention of Geologists living in South Wales to its occurrence in the district between Haverfordwest and Tenby; and to the probability of it, as there exposed, yielding good fossils. Specimens of *Pterichthys macrocephalus*, Eg., should be keenly looked for.

10. Questions which arise out of the study of the Carboniferous rocks, and Notes, which I feel sure may be easily gathered, of new discoveries, and fittingly enshrined in the GEOLOGICAL MAGAZINE, are so many, that I will only indicate two matters which, if looked into, and the results preserved, will be of use in the advancement of knowledge. One is, that in the brown shaly coals of North Staffordshire, Shropshire, and West Worcestershire, Reptilian bones occur far more numerous than we have imagined. I have myself, years ago, seen many specimens; but, unluckily, I regarded them as belonging to some Holoptychian Fish, and took no special heed of them. 11. The other subject is connected with one of the mysteries of the Carboniferous epoch; the botanical position of the *Sigillaria* with *Stigmaria* as its creeping root. When possible, it appears to be exceedingly desirable that a careful drawing should be taken of any large individual tree found *in situ*, before the arrangement and relationship of the root with the trunk are disturbed; as there appears some probability that the huge plant was more nearly allied to the Mosses than we have hitherto considered. Prof. Goepfert has lately figured, in the 'Palæontographica' (vol. xii. pl. 36), the filaments of *Funaria hygrometrica* (a well-known English Moss) side by side with an outspread mass of Stigmarian rootlets.

But as I merely mean these remarks to be indicative of some of the many ways in which a 'Geological Notes and Queries' would be useful, I need not add to the few examples I venture to offer. Glad of such aid myself, I shall be equally pleased to find that its worth is appreciated by others.

GEORGE E. ROBERTS, F.G.S.

GEOL. SOC., SOMERSET HOUSE: Jan. 6, 1865.

To the Editor of the GEOLOGICAL MAGAZINE.

UNFORTUNATELY for our Irish Drift, shells have only been found very rarely, so that we must do without that kind of evidence; but nevertheless the different Drifts are well marked, and seem to correspond with those mentioned by your correspondent, Mr. Maw.

They occur in the following natural order :—

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| 3rd. | Gravels and sands, including Eskers and Kaims | } <i>Post-drift Gravels.</i> |
| 2nd. | Clay and blocks, usually made up chiefly of the débris of the underlying rocks, but sometimes consisting almost entirely of limestone fragments: in this latter case, the material is locally called 'Corn Gravel' | |
| 1st. | Gravel, sand, and clay; the last containing fragments of plants, &c. | } <i>Præglacial Drift.</i> |

In Ireland I do not remember to have seen a section in which these three kinds of drift are represented, but in many places I have found Nos. 2 & 3, and in a few Nos. 1 & 2. No. 2 is undoubtedly Glacial Drift, as it was deposited from the large sheet of ice that once covered the country; while No. 1 must have been previously deposited by water, or accumulated on the land; and No. 3 was formed from the part of No. 2 that was washed by and deposited in water. In both Nos. 1 & 3 I would expect to find Arctic Shells and erratic blocks, as they were formed in a similar manner to what is now going on in the Arctic and Antarctic Circles. There, in the large fields of ice, the materials for the Boulder-clay are accumulating; while in the seas around gravels and sands, with Arctic Shells, are being deposited; and the droppings from the passing icebergs supply the erratic blocks. If the land is rising, the field of ice, and consequently the Boulder-clay, will extend out over these sand-deposits; but if the land gradually sinks, part of the Boulder-clay will be washed into gravels and sands; and, as they still continue to be in an Arctic sea, there will be similar shells mixed with them, and passing bergs will supply the erratics. If the ice-field does not reach the coast-line, plants, &c. will grow on the intervening land, which will be destroyed and covered up by the Boulder-clay, if there be a continuation of severe seasons, and the ice-field extends beyond its usual limits. Recently I have found a section in the Baleyneenadouish River-valley, near Gort, Co. Galway, in which there is Præglacial Drift, under about twenty-five feet of Boulder-clay. The Præglacial Drift consists of clay and fine sand, and contains sticks, fir-cones, &c. This section I hope fully to describe in a forthcoming memoir of the Geological Survey.

In the *Præglacial Drift* I have never found striated blocks; but I do not say that they do not occur, as they might have been dropped into it from passing bergs. The surface of the rocks under it I never found polished or striated; but, when the true *Boulder-clay* lies without any intervening rubble, the rock-surfaces are always polished and striated. The *Post-drift-gravels* may lie on a 'dressed' rock, but the polishing and striæ are always obliterated; rounded blocks may also occur in it; but the polishing and scratches are always more or less obscure, and never have the fresh look of the

blocks out of the *Boulder-clay*. In this communication I have repeated part of what I formerly said, but I considered it best to enter fully into the subject.—Yours, &c. G. HENRY KINAHAN.


GALWAY: Dec. 5, 1864.

MISCELLANEOUS.

HOW THE SKULL OF THE MAMMOTH WAS GOT OUT OF THE BRICK-EARTH AT ILFORD. By H. WOODWARD, F.G.S., F.Z.S.—In reply to the Rev. O. Fisher's enquiry (see p. 44), having been present during the exhumation of the cranium of the Mammoth (*Elephas primigenius*) at Ilford (described and figured in the GEOLOGICAL MAGAZINE for November, p. 241), I will state the method adopted by Mr. W. Davies, of the British Museum, assisted by Mr. Thorn and others.

We sent down a one-horse spring-van, carrying a good supply of the best plaster of Paris (1 cwt.), six pieces of $\frac{1}{2}$ -inch nail-bar-iron, 6 to 8 ft. long, a bundle of splines, a box full of hay and tow, some strips of old canvas, whitey-brown paper, two large earthen pans in which to mix the plaster, spades, trowels, a saw, iron hammers, spatulæ, &c., good stout cord and rope, deal planks, and a handbarrow upon which to remove the remains, and some large wooden trays in which all the loose portions were to be systematically placed, and marked with pencil on separate papers to show the parts to which they belonged.

You must imagine the skull resting half exposed in compact brickearth, requiring a spade or trowel to remove it, but the fossil itself as friable as decayed wood or tinder, the ivory of the tusk being equally soft and shattered.

The first operation was to remove as much of the soil as could be done with safety; the whole tusk was then covered with sheets of whitey-brown paper; a coating of well-mixed plaster of Paris was placed over the paper covering the tusk, and allowed to settle down upon each side in the grooves which had been scraped in the brick-earth, forming a coat, of this shape , over the entire length of the tusk. When the plaster had set, two bars of the iron (above mentioned), which had been bent to the proper curve, were placed upon the hard plaster, and fixed to it with another coating of fresh-mixed plaster of Paris.

When these coats had properly set, the base of the tusk (which had been carefully cleared and coated all round with plaster) was sawn through a few inches below the socket, the tusk was burrowed under at intervals with the trowel, and hand-holes thus made beneath it, through which were thrust strips of canvas and pads of tow or hay, until the whole was swathed with bandages of canvas, hay, and cord, like a mummy. When thus secured, six men turned it gently over from its matrix and placed it upon a long plank prepared for it (the curved part being supported and fixed with packing), and so