

the pleasure of editing, I beg permission to express in your journal, which, I trust, has the wide circulation it deserves, my sincere regret that any one could be found to exhibit such a carelessness of truth, or ignorance of fact, in a book intended for an intelligent public.

I am, dear Sir, yours, &c.,

Somerset House, April 10, 1858.

T. RUPERT JONES.

## NOTES AND QUERIES.

BONE-BEARING GRAVEL OF CROPTHORNE.—NEW FERN FROM THE COAL NEAR BEWDLEY.—PASSAGE-BED BETWEEN SILURIAN AND DEVONIAN ROCKS IN THE ABBERLEY HILLS.

(Extract of a letter from Mr. G. E. ROBERTS to the Editor.)

DEAR SIR,—I have made two or three minor discoveries this month, but not of importance to warrant a paper; however, they are *interesting*, so you may use them as you please as extracts from this letter.

The bone-bearing gravel of Cropthorne (near Evesham), a post-tertiary deposit, is well known for its bones of Pachydermatous and other mammalia. I have discovered a northerly continuation of this at Himbleton (four miles north-east of Worcester). It there forms a terrace-line on the lower Lias, and presents the usual lacustrine indications; shells of *Unio*, *Lymnaea*, and *Cyclas* occurring among the gravel and bones, as in the Defford and Cropthorne beds. I have met with no elephantine remains, however; the bones (vertebræ, tibia, &c.) being restricted to one *Bos* (*B. longifrons*) and a *Cervus*. I first noted this ossiferous gravel in September last, and, meeting Dr. Falconer soon after, brought some of the bones under his notice. The bed is there six feet in thickness, and also contains bones of Saurians (*Ichthyosaurus tenuirostris* and *I. intermedius*) washed out of the Lias shales upon which it rests.

The hollow bones (tibia, &c.) are filled with an infiltration of marl, and are pierced, in some instances, by *Teredines* (?)

I have lately been working at a bed of estuarine shales, belonging to the upper Coal Measures, and exposed on the east bank of the Severn, two miles north of Bewdley. A new fern, of great beauty, from thence, is in the hands of Professor Morris, who intends to describe it. I have, also, from this bed, several fine fronds of *Pecopteris*, attached to the rachis, which fact goes far, I think, to connect these plants in a direct line of ancestry with our living *Pteris* and *Lastræa*; I had rather believe them such than the mere leaves of Silurian trees, as some have thought. The rachis is, in its compressed state, from half to three-quarters of an inch in width, just the dimensions of a recent fern-stalk, grown succulent in a damp situation.

My last excursion was to the north end of the Abberley Hill. Here I can add some, trifling matter to Professor Phillips's admirable monograph ("Palæozoic District of Malvern and Abberley," &c., &c.) I believe the equivalents of the Ludford Fish-bed, of the "Trochus and Beyrichiæ bed," and of the "Railway shales," are to be found there. The characteristic fossils of the first I have met with, but they are distributed through six feet of deposit, instead of being confined within the narrow limits of the "Fish-bed." (Shagreen-scales, a simple plate of *Cephalaspis*, fragments of fish-bone and *Onchus* spines.) Again, in the upper Ludlow Tilestones, well exposed on both sides of the terminal hill, *Trochus hebcites* occurs, and *Beyrichiæ* (two or more species), but I cannot detect the true equivalent of the "Trochus and Beyrichiæ bed."

*Orthis lunata* is very abundant where the Fish-bed ought to be, and *Orbicula rugata*; so we have the leading fossils, if we are here beyond the confines of that remarkable conclusion of ichthyic life. However, I do not think we are.

The rarest fossil I met with was *Agnostus Maccoyii*, in the Downton Sandstones, on the west side of the hill. I was pleased to find, on the east side, in the same formation, the equivalent of the Downton Vegetable-bed. The fossils are little more

than carbonaceous stains and nodules, such as are described in "Siluria," p. 139. These are, of course, much older in the annals of terrestrial vegetation than the well-defined vegetables of the upper Tilestones, first discovered by myself at Trimpley, two miles north-west of Kidderminster.

INTERPRETATION OF GEN. II. v. 5.—"SIR,—I observe in your last number (IV.) p. 160, a reference made by a correspondent, E. R. J. (Farnborough), to Gen. ii. 5, 'where it is written that no rain had fallen up to the carboniferous period.' As you have not rectified the quotation, according to the authorised version of the Bible, I begin to surmise that there may be a new translation, agreeable to modern discoveries, current and accepted by the geological world. If this be so, I should be glad to know where such translation or paraphrase of Scripture may be obtained, and the grounds on which the 'day' mentioned in the 5th verse is considered as the 'carboniferous period.' The 2nd verse indicates an immense evaporable surface from the very beginning." F. S. K. (Bromley).—We inserted E. R. J.'s letter as being a question on the subject of rain-drops, and we restricted the answer given to assigning to them their correct geological position; in doing which we necessarily not only ignored, but refuted, E. R. J.'s reading of the passage he referred to, and pointed to such an ancient extent of water as that to which F. S. K. alludes. E. R. J.'s interpretation of the 5th verse of Gen. ii. is his own, and not ours. We felt disinclined to take up the question in its religious aspect or bearings. Of course Geologists do not attempt to interpret the Bible; they have only made from time to time, in their endeavours to reconcile the proven facts of their science with the Mosaic record of the Creation, various suggestions for theologians to admit or reject, as being in harmony or discordance with the meaning and sense of the original words of the Biblical statement.

GEOLOGY OF ST. IVES.—"SIR.—Could you please to inform me (a beginner in geology) whether I can find fossils here, and what formation this town is upon or near. This would much oblige me." R. A. C., St. Ives, Huntingdonshire.—St. Ives is situated on the Kimmeridge clay. To the east of that town are some of the Portland beds over-spread by "drift" deposits; to the west, the Oxford clay immediately succeeds the Kimmeridge clay; and the whole surrounding county is greatly covered by the Boulder clay, the valleys being occupied by deep accumulations of gravel. In the valley of the Ouse, at Hemingford Abbots, the Rev. Mr. De la Condamine discovered a fresh-water deposit, an account of which was read before the Geological Society in 1853. Fossils are to be found in all these deposits; those of the Kimmeridge and Oxford clays are abundant, and beautifully preserved. Mammalian remains are, at all times, likely to be met with in the gravels, and, as a good many extraneous fossils are commonly obtained from the Boulder drift in other localities, they are also likely to be met with in that deposit in the neighbourhood of St. Ives.

NEREITES FROM THE IRISH COAL FORMATION.—"DEAR SIR,—Can anybody inform me whether any Nereites (such as the *Nereites Cambrensis* of the Lower Silurian) have been found in the coal-measures at all—and if so, what is its name, and where is the description to be found? I have some idea of one being found, and described, from Ireland. I have a fine impression from the 'hard rock' between the coal measures, and should be glad to know if it is a unique fossil." G. P. BEVAN, M. D., Beaufort.—The querist probably refers to Professor Harkness' description and figure of *Nereites carbonarius* from the Millstone grit of Clare, given in the Edinburgh New Philosophical Journal, 1855, Vol. I., p. 278.

POTATO-STONES.—"SIR,—It may be useful to such of your readers as are visiting this part of the country, to learn that the 'potato stones,' alluded to in your answer to E. A. W., are only found in a field at the foot of Sandford Hill, and not generally upon the Mendip range. A stranger will readily be directed to the place by enquiring for the 'potato-stone-field.' Will you oblige by telling me the scientific name of these curious bodies? How are they supposed to have been formed? Are they known to have been found in any other part of England? No geologist ought to visit Somersetshire without having a view of the remarkable collection of fossil bones, the property of Mr. Beard, of Wint Hill, who is always

pleased to show them to strangers. I am, &c., FRANK DYMOND (Weston-super-Mare).—Will our correspondent furnish us with information as to the rock in which the "potato stones" he refers to are embedded, so as to enable us to explain the circumstances of the concretion of the siliceous and calcareous materials of those geodes probably in cavities in the rock.

WORK ON PETROLOGY.—"SIR,—In the last number of the 'Quarterly Journal of the Geological Society of London' there is an abstract of what seems to be a good German work, by Dr. Senft, on the *Classification and Description of Rocks*; and for this abstract we are apparently indebted to Professor Morris. Permit me, through your very useful periodical, to enquire whether Professor Morris, or any other of our English Geologists, intends to put that excellent work in an English dress. I believe I am far from being alone, when I say that there is no work so much needed among English Geologists, as a good one on Petrology. So far as I am aware there is no separate English treatise on this subject, except the useful work of Dr. Macculloch, which, having been so long out of print, cannot now be obtained for love or money. May I, therefore, ask whether the above work, translated into English, or any other separate treatise on this subject, is known to be forthcoming, to fill up that blank in our geological literature, or whether there does already exist any good English work which may be unknown to me. I am, Sir, &c., J. SIMPSON. (Mary Kirk, by Montrose.)"—We cannot answer our correspondent's enquiry. We are quite aware of the necessity of some good work or translation of the kind referred to, but we do not know of the existence of any. A series of papers will shortly be commenced in this Journal on the mineralogical structure and conditions of rocks, which we hope will do much towards remedying this deficiency in our geological literature.

THE DISPROVED HUMAN FOOTPRINTS.—"SIR,—I do not know whether your attention has been called to a little work lately published, entitled 'Voices from the Rocks,' in which the anonymous author deals very summarily with the conclusions of modern geologists. He produces proof of man's existence during the earlier deposits, and gives an engraving of human foot-prints in the old red sandstone. Is there any authentic account of such a discovery, and what is it? Can you enlighten your readers, and amongst the rest a subscriber?" E. G.—The fossil character of these so called human foot-prints was suspected at the time of their discovery, and their artificial origin has long been known. We have received the book for review; and beg to refer our correspondent to Mr. Rupert Jones's letter on this point, in the present number, where the whole history of this affair is detailed.

GEOLOGY OF ALDERSHOTT.—"DEAR SIR: Will you kindly inform me the nature of the strata of the district about Aldershott and Ash, and to what operation its peculiar conformation can be attributed, and oblige one of your readers?" J.H.B.—The Aldershott district has a foundation of London clay, which rises up against the chalk-hills of Guildford. At Ash begin the Bagshot sands, which extend northward to East Hampstead, and to the east and west for several miles. The lower Bagshot strata, about 130 feet thick, lying on the London clay, are seen at Woking, Sunning-hill, East Hampstead, &c. A band of about forty feet of green and clayey sands forming the Middle Bagshots, occur at Worplesdon, Goldsworthy-hill, Finchampstead, and Farnborough, and in these a few fossils were found at the cutting of the Southampton Railway at Goldsworthy-hill. The upper Bagshot sands, 150 feet thick, form the flat-topped ridges of Chobham, Aldershott, East Hampstead, Bagshot, and the Heaths, being capped with the Pleistocene gravels, which, combined with these sands, are the cause of the wild character of the scenery of those districts.

PRESERVATION OF PYRITOUS FOSSILS.—"SIR,—Taking advantage of your department of Notes and Queries, I shall be glad of information as to the best mode of preserving specimens containing pyrites. I have several, of some curiosity, which are daily decomposing." X Y.—There is nothing so destructive to fossils as pyrites; and the wood of drawers in which such specimens have been kept becomes impregnated with the sulphuric acid generated in the decomposition, and are thus rendered unfit for future service, especially for chalk-fossils. The pyritous fossils of

the London clay are notoriously difficult to keep; the great thing seems to be the entire exclusion of moist air, either by varnishing or by putting the specimens in close-stoppered glass bottles. Total immersion in oil, naphtha, and even in water, has been found in some cases effective. Glycerine is worthy of trial.

LOCALITIES FOR FOSSILS AROUND LONDON.—“SIR,—My reason for troubling you with this note is that I am anxious to obtain some information respecting the best localities near London for obtaining fossils. Your reply would much assist me in the study of geology—a science of which I am particularly fond. Apologising for intruding upon your valuable time and space, I am, &c., AMATOR NATURÆ, Cavendish-square.”—The following are the chief localities around London:—For the chalk, Gravesend, Purfleet, Charlton, Erith, and Grays; for London clay, Highgate, Hampstead, Southend Cliff, and Isle of Sheppey; for other Tertiaries, Woolwich, Charlton, Erith, Bromley, Loam-pit Hill, Lewisham, and Sydenham—especially the railway-cuttings near the Crystal Palace; for (mam-maliferous) brick-earth and gravel, Ilford, Brentford; for northern drift, Muswell-hill.

FIRST APPEARANCE IN EXISTING ANIMALS AND PLANTS.—“SIR,—Can you inform me at what period EXISTING SPECIES of the four vertebrate classes first appear? Also when we first meet with existing plants. Yours, &c., C. EVANS” (Hampstead).—Some geologists will not hear of the presence at the present period of animal-species older than the Pleistocene. Others think it quite possible existing species may be traced farther back in the series of geological ages. Indeed, as examples, amongst some few others, *Terebratula caput-serpentis* of our seas is quoted as being the same species as *T. striata* found in the London clay, and as probably identical with *T. striatula* of the chalk. But we must always recollect that in shells we have to do with the covering only, and not the animal. (Of plants we cannot say much in this respect. The remains usually known in the fossil slate, namely, leaves and wood, are of no use in the determination of species; the really essential parts of specific value, the fruits and flowers, are comparatively rare. In the case of some of the simple Diatomaceæ, it seems to be, however, absolutely proven that, as in the case of Foraminifera, some of the same species or varieties now living have existed through enormous periods of time; some of the latter being found in the Tertiary, Cretaceous, Liassic, and even in the Mountain Limestone beds. This subject has been illustrated by Messrs. Parker and Rupert Jones, in the “Annals of Nat. Hist., 1857.” Of the species of mammals, all those determined as being specifically the same in the recent and the fossil state are of Pleistocene age, such as the *Felis catus*, from Grays, *Felis leo*, from Brentford, *Meles taxus*, from Kent’s Hole. Remains of many existing animal forms are constantly met with also in turbaries and peat-bogs, in the still older gravels of Brentford, Grays, &c., and in the cavern-deposits, probably also of the same age as the last; but beyond the Pleistocene Tertiaries no existing species, to our knowledge, has been recognized. Some bird-remains from the cavern accumulations have been referred to lark, duck, falcon, &c. The singular recent fish *Mallotus villosus*, or Capellan, is found abundantly in clay-nodules on the coast of Greenland and in New Hampshire. Not much is known of the formation to which these nodules belong, but it is referred to the Pleistocene clays. We do not know any other example. Of reptiles we remember only the Gangetic crocodile or gavia, and the land-turtle of the Sub-Himalayan deposits, which, it is said, cannot be distinguished from the species now existing in India. These reptilian remains appear to be commingled with Miocene animals.

OAK TREE FOUND IN THE TYNE.—The conservators of the river Tyne were, for some years, actively engaged in deepening the river, and removing obstructions to the shipping; one of the most formidable bars which had long defied their exertions, was Cockrane Sand, opposite to Heaton Drop, about five miles below Newcastle. In November, 1848, in the removal of this sand-bank, under the direction of Mr. Brooks, engineer, it was discovered that the cause of obstruction arose from the presence in the bed of the river of a stupendous oak tree, which, after being skilfully and securely chained to two barges at low tide, was, at high water, weighed up and carried to Newcastle, where, by means of a powerful crane,

this oak tree, which measured sixteen feet six inches in circumference, and eighteen feet in length, was raised and laid on the quay. It is conjectured that it must have weighed at least fifteen tons. A tree of such dimensions, for this must be considered but a portion of the length of the stem, must lead us back to a very early period, and certain it is, from the appearance of decay, that it must have been many centuries in its last position, and that before it bowed its lofty head, it must have been of at least 400 or 500 years' growth. The surface of the side on which it reposed was covered with a metallic deposit of iron-pyrites, which, with another scaly covering of pyrites, formed a kind of gallery, in some parts a half to one and a half inches apart, having in many places the intermediate space filled up with beautiful crystals of pyrites of minute size, like fine needles. It appears clear that this tree must have fallen and remained in the position in which it was found, for below it, and embedded with it, were quantities of small pieces of branches and hazel-nuts, most of which were perforated at the top, and empty. The wood or bark, beneath the pyrites, appeared to the extent of three quarters of an inch completely charred, and, for three or four inches further, the wood, although it had not changed its colour (the laminæ being quite distinct), was yet quite decayed; after this part was removed, the rest was found to be quite sound. The magistrates directed this monument of so early a stage in the history of that part of the country to be preserved, and, having had it cut up, a part was forwarded to the *Coal Exchange* in London, then being erected in Lower Thames Street; and it now forms the dark part of the ornamental centre of the floor of that building.

J. JAMESON.

38 Arlington-square. April, 1848.

THE S. H. H. ADVERTISEMENT.—“10 St. Vincent's Parade, Clifton, near Bristol, 23 March, 1858.—SIR,—Your account for an advertisement in the February number of the *Geologist*, did not reach me till the last delivery on Saturday, the address being omitted. This was the first intimation I received of the insertion of the advertisement, and I instantly sent to the post-office to enquire if there were any letters for S. S. H. I find there have been many; but they have been sent to the Dead Letter Office, as they were not claimed. To those who have answered the advertisement, the return of the letters must have been very annoying, and they will suspect a trick has been played upon them. I have been confined to my house, by ill health, for nine weeks, and have not seen the *Geologist*; and as I received no reply to my note, I supposed both the note and the advertisement to have been thrown aside. Some explanation must now be given, and I think it will be necessary to re-insert the advertisement, with the notice enclosed, in your next number. The Editor will decide whether it is desirable to give any explanation in his ‘Notices to Correspondents.’ I am, Sir, your obedient servant, WM. HIGGINS.”—We received the above note from the late proprietor, Mr. Parsons, of Kenilworth, after going to press with our last number.

ON SEEDS AS A SOURCE OF BITUMEN. BY MR. G. WILSON, of Wakefield.—Many have been struck with the thickness of some of our modern peat-bogs, and have hence regarded them as incipient coal-beds. Be this as it may, it is difficult to account for the quantity of bitumen in these deposits, and I offer the suggestion that the seeds of the plants growing in such places, may be one of the sources of its production. How far the seeds of the ling or of the heaths may conduce to its supply in some peats has never been properly tested, but as peat contains mineral oil—from which, of late years, candles have been manufactured—and as all seeds contain more or less oily matter, might it not be worth considering whether any evidence exists in our heaths, peat-bogs, or coal-seams, of the derivation of any portion of the bituminous matter from such a source?

FOSSIL SPONGES, CLINOMETER, &c.—*φιλοζήτητης*, MANCHESTER.—“SIR,—I am glad to find a source of information open in your ‘Notes and Queries,’ to which I at once resort. I should be glad of information on the following questions:—1. Have any sponges been found in the fossil state? I ask this because I have a specimen which was found among the *débris* of mountain-limestone in Swaledale which I can assign to no other class than sponge. Yet in looking

over the collection in the Manchester Natural History Museum I find no sponge—nor anything corresponding to my specimen, but I may have overlooked what I sought for. If fossil sponges are known—which I should expect—in what book are they described, or where shall I get information respecting them? 2. Mr. Page, in his *Advanced Text-book*, pp. 290-1, refers to the Clinometer and Aneroid. Professors are guilty of giving students too much credit in what they suppose them to know, so I presume Mr. Page supposes the two instruments mentioned above are well-known. Will some contributor to the *GEOLOGIST* describe the instruments, and give a few hints as to the best mode of using them, or give reference to some not very expensive book with the needed information? 3. Is there any article or treatise on Palmacites from which an amateur might gather the distinctive features of the different species? 4. What is the Etymology of Ulodendron? If from ὕλη and ροιδειδ is the word ὕλη used in a generic sense, as a forest-tree, or has it some specific meaning? I leave my enquiries to the kindness of yourself and contributors to the *GEOLOGIST*—hoping they are not beneath a notice in your 'Notes and Queries.'—Yours, &c."

FERN REMAINS FROM FOREST OF DEAN, FROM SAURUS, GLOUCESTER.—We acknowledge this communication, with pen-and-ink outlines of the specimens, from which, they being without the slightest indication of structure, &c., we cannot determine the species. From casts, or careful drawings, of specimens, we might assist our correspondents; but, even with the actual specimens before one, it is very difficult, if not impossible, to determine specimens from fossil-leaves alone. There are no other good or cheap works on fossils than those popular treatises by Lyell, Mantell, Phillips, Ansted, &c., to which we have, in answer to other correspondents, already referred.

GEOLOGY OF ROSS.—"SIR,—Will any of your readers give me the names of the localities in the neighbourhood of Ross, in Herefordshire, that possess interest for the geological student. Will you also inform me the best method of extricating the fossils from the rocks in which they are contained."

PALATAL TEETH OF FISH, BRISTOL.—"Bristol Institution, April 10, 1858.—SIR,—If your correspondent who signs 'W. S., Bristol,' will pay a visit to our museum, I shall have much pleasure in showing him the collection of 'Palates' from the Mountain Limestone, and I shall be glad to assist him in naming the 'twenty different kinds' which he has collected. I am, Sir, yours obediently,

"WM. SANDERS."

## REPORTS OF THE PROCEEDINGS OF GEOLOGICAL SOCIETIES.

GEOLOGICAL SOCIETY OF LONDON.—March 24.—1. "On a protrusion of Silurian Rock in the North of Ayrshire." By J. C. Moore, Esq., F.R.S., F.G.S.

The author described the coast-section of a part of North Ayr, from Ardrossan to Goldenberry Hill, north of Portencross Castle, altogether about five miles in length; and he showed that the red sandstones (of Devonian age) that succeeded the coal-measures of Ardrossan, from which they are cut off by a trap-dyke, dip southwardly for upwards of two miles, then form a low anticlinal, and are then vertical for a short distance; after which they are abruptly succeeded by a contorted and arched mass of purple, green, and black schists of Silurian age. The schists are immediately succeeded on the north by unconformable red sandstones and conglomerates, dipping northward, cut through by greenstones, and apparently belonging to a lower stage than that of the red sandstones of the south of the axis; sandstones similar to the latter succeed, with a conformable dip, and are traversed by a porphyry which forms a massive covering above them, and constitutes the picturesque hill of Goldenberry.

The author remarked that an axis of elevation has disturbed the Old Red sand-