

The brown coal of the neighbourhood, whose natural distillation has most probably yielded the hydrocarbon in the shales, contains:—

Carbon	49·2	per cent.
Hydrogen	1·1	„
Water, combined	30·2	„
Water, hygroscopic	19·5	„
		100·00	

The beds containing these coals have been invaded by eruptive porphyry and trachytic rocks, of which the former contains $75\frac{1}{2}$ and the latter 61 per cent. of silica.

The clays from which the shales were originally formed contain abundance of marine Diatomaceæ and Foraminifera (chiefly Nummulites), as also species of *Ostrea*, *Cyrena*, *Cerithium*, *Voluta*, and *Nautilus*, together with the remains of Placoid and Teleostean fishes.

CORRESPONDENCE.

WATER-BEARING NODULES IN THE LOWER GREENSANDS.

SIR,—The brilliant and varied colouring of the Lower Greensands at the Great Northern Railway at Sandy Junction, and at Flitwick Station on the Midland line, must be familiar to every one who has travelled those districts. At Sandy, the cutting is a deep one and nearly all in clean sand, varying through shades of green, grey and yellow, the yellow predominating, to almost pure white. At Flitwick, the colouring is still more varied; beautifully tinted bands of a fleshy pink or salmon tint, merging into violet, appear near the bottom of the pit from which Mr. Franklin, of Bedford, obtains his sand. The parti-coloured bands are more numerous at this place than I recollect seeing elsewhere in Bedfordshire, although the white and yellow sand at Heath and Reach, makes very picturesque openings amongst the woods and ferns. The sands at Flitwick remind one of the assemblage of colours met with in the sands,¹ from which the well-known sand pictures are made in the Isle of Wight.

But besides the varied colouring, ironstone nodules, associated with hard lumps of ferruginous rock, like the carstone quarried at Snettisham in Norfolk, are very general in the Greensand. Being of all shapes and sizes and in every stage of growth, they are curious to look upon, and still more interesting to crack for the fossils and sparry crystals that are sometimes found inside them. An abundance of these concretions occurs both at Sandy and Flitwick, some spherical, others tabular, and many other forms.

With Rhodes, the fossil collector, I have lately obtained a number of these nodules from Flitwick,² some of which, for description sake, and from the fact of their having water in them, I have designated water-bearing nodules. These are readily distinguished from others inclosing phosphatized fossils (principally the internal casts of some

¹ Bagshot Sands.

² From the peat at Flitwick I picked out, last year, a small flint implement.

species of oyster), by being audibly full of water when shaken. Many contain only sand, lime or earthy matter, perhaps the residue of fossils destroyed.

Collecting the water-bearing nodules is somewhat akin to choosing cocoa-nuts at the greengrocer's. We pick up one after the other from the ground, rejecting the light ones, and those that give forth no sound, in favour of those which, like the cocoa-nuts with milk, bear unmistakable evidence of containing liquid.

What the nature of this liquid may be,¹ or what duration of time has elapsed since it was sealed up in these portable reservoirs, is not for me at present to say, having as yet made no minute examination. The specimens contained water when we picked them up, as did others when split with the hammer. Since bringing them home, they have been in a warm room, and the water from some reason, probably increased temperature, has evaporated or disappeared. The iron pan which forms the walls of the cavity may be porous, and I have placed them in a vessel of water, expecting them to become water-bearing nodules again; the phenomenon would then be probably explained, by supposing that during periods of wet these nodules absorb the water percolating through the Greensand.

It then becomes a question whether these nodules may not be a cause of diminution in the water supply? in districts where they are largely developed. But against the absorption theory, remains the fact that the weather was very warm and fine when the nodules were gathered, and the recent heavy rains had not set in.²

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ON THE TERM NEOCOMIAN.

SIR,—In writing his article upon the above subject, in the last Number of the *GEOLOGICAL MAGAZINE*, my friend Mr. Jukes-Browne appears to have been labouring under a curious and very unfortunate misconception. He says:—

“For many years English geologists were content with the nomenclature employed by the earlier students of the Cretaceous system—Webster, Murchison, Mantell and Fitton. In 1864, however, the French term Neocomian was introduced by Prof. Judd, who adopted it for the Cretaceous portion of the Speeton Clay, and Sir Charles Lyell subsequently used it as a synonym for the whole Lower Cretaceous series in England, as distinct from the Upper Cretaceous series or the beds lying above the Lower Greensand.”

Through the whole of the following pages, the writer of the article enlarges upon this text, treating myself as responsible for the error,

¹ Since writing the above, it has been suggested to me that an analysis of the water might be made. This would of course be a valuable guide to the source of supply.—A. G. C.

² For a description of the mode of formation of the ironstone concretions, see Penning, *GEOL. MAG.* Dec. II. Vol. III. p. 218. *Geology of Cambridge*, Geological Survey Memoir, p. 12, Penning and Jukes-Browne.