

fissured as in *Lepidodendron Veltheimianum*; this is seen in the fossils illustrated in figs. 5 & 13, Pls. IV. and VII.

Sigillaria Taylora, Carruthers, sp.

In form the leaf-scars in this species are essentially of the same type as those occurring in *Sigillaria discophora*, König, sp. They are small and seldom occur in so good a state of preservation as to give a clear idea of their form. I have, however, succeeded in securing several examples which afford the necessary details on this point. In fig. 6, Pl. IV. (specimen No. 16), the form of the leaf-scars is well seen. It is remarkable that on one small part of this fossil they should be so well preserved, and on all the rest of its surface be completely effaced. The upper and larger Ulodendroid scar appears to have been displaced.

The leaves of this and the previous species seem to have remained attached to the stem for a considerable time, and very often their being buried in the matrix appears to have given the outer layer of the bark a tendency to adhere to the impression side of the slab when the stones were split; when this happens there is presented to our view the form of the leaf-scars as seen on the *inner surface of the outer layer of the bark*. This condition is exhibited at the part marked *b*, fig. 10, Pl. VI., which is shown of the natural size in fig. 10 *b*. Fig. 12, Pl. VII., shows a like state of preservation.

At various parts of the specimens of *Sigillaria discophora* and *Sigillaria Taylora* are shown their decorticated conditions, for which Lindley and Hutton founded the genus *Bothrodendron* (Pl. VII. fig. 13 *b*, and Pl. VI. fig. 10 *d*).

[To be continued.]

XIX.—On a Variety of the Freshwater Sponge *Meyenia fluviatilis*, auctt., from Florida. By H. J. CARTER, F.R.S. &c.

NEXT to Mr. Ed. Potts, of Philadelphia, comes Mr. Henry Mills, of Buffalo, in the discovery of freshwater sponges in his particular locality, and in the praiseworthy desire to advance the subject by sending specimens of them to European as well as American naturalists. Of the species in the Niagara River Mr. Mills has long since forwarded to me

several handsome specimens for distribution among the museums in this country, and proposes to send more; hence I have already been able to enrich the collections of *Spongillæ* in the British and Liverpool Museums respectively to this extent.

Not confining his researches to the Niagara River, Mr. Mills has also not forgotten the subject when abroad, although engaged in other matters probably of more importance, so that during his last two visits to Florida he has been almost equally successful there in his discovery of the freshwater sponges, and equally generous in sending about specimens of them on his return to Buffalo. One of them, which he has kindly sent to me, he has, at my suggestion, designated a variety of *Meyenia fluviatilis*, under the name of "*gracilis*," and this, from his accompanying data, together with two slides and a bit of the sponge itself in spirit, I shall, at his request, presently describe for publication; the rest, including his *Meyenia Everetti*, from Massachusetts, will probably appear in Mr. Potts's forthcoming Monograph of the freshwater sponges of North America.

Meyenia fluviatilis, var. *gracilis*.

Delicate in structure, which is soft, whitish or colourless in spirit, presenting the aspect of glue or sarcodæ when dry; growing over the stem of an aquatic plant in a thin layer charged beneath with statoblasts (gemmules). Spicules of two forms, viz.:—1, skeletal, very fine and delicate, acerate, curved, cylindrical, about 34 to 36 by $\frac{1}{2}$ -6000th inch in its greatest dimensions, chiefly confined to the fibre; 2, statoblast-spicule, shaft long, cylindrical, often slightly curved, smooth, also very thin and delicate; head small, flat, radiately denticulated, the ends of the rays not recurved; often umbonated by a projecting spine or process, total length about 7-6000ths inch, head $1\frac{1}{2}$ -6000ths inch in diameter, shaft about five times longer than the diameter of the head, about $\frac{1}{4}$ -6000th inch thick; chiefly confined to the statoblast, but also loose and numerous in the tissue generally. Statoblast globular when wet, hemispherical and depressed in the direction of the aperture when dry; when fully formed about 65 to 75-6000ths inch in diameter. Aperture slightly margined, *i. e.* slightly raised above the common level, about 8-6000ths inch in diameter. Surface of statoblast rough or uneven. In a section through the centre the crust is seen to be a little thicker than the length of the birotules, which, as usual, are arranged perpendicularly to the yellow chitinous coat beneath and parallel to each other, with one head resting

on the chitinous coat and the surface of the other free at the circumference; cemented together and held in position by the microcell-structure or "float," which, projecting above the level of the outer heads of the birotules, gives rise to the roughened state of the surface of the statoblast. Chitinous coat and germinal contents the same as in the Spongillæ generally. Size of specimen sent to me about $\frac{1}{4} \times \frac{1}{4}$ inch horizontally.

Hab. Fresh water.

Loc. "Ice-Factory Lakes, De Land, Florida, near the St. John's River."

Obs. The extremely delicate character of the spiculation generally, the microspined skeletal spicules, the great length of the birotules, and the radiating portions of the head being horizontal and *not* recurved at their extremities, allies this species more to *Meyenia fluviatilis* than to the *Heteromeyenice* (e. gr., *Spongilla Baileyi*, Bk., Proc. Zool. Soc. 1863, pl. xxxviii. fig. 6) of Mr. Potts. Hence the name.

XX.—*Diagnoses of new Species of Cephalopoda collected during the Cruise of H.M.S. 'Challenger.'*—Part II. *The Decapoda.*
By WILLIAM E. HOYLE, M.A. (Oxon), M.R.C.S.,
F.R.S.E., Naturalist to the 'Challenger' Commission.

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Myopsidæ.

PROMACHOTEUTHIS, Hoyle.

Promachoteuthis, Hoyle, 1885, Narr. Chall. Exp. vol. i. p. 273, fig. 109.

The *Body* is short, rounded, with large broad *fins*, situated posteriorly. The *mantle* is free behind, as in *Rossia*. The *siphon* is short and slender and with everted margin; valve?

The *Head* is small and narrow; *eyes* not prominent.

The *Arms* are long and conical, with two series of pedunculate spherical *suckers*. The *tentacles* exactly resemble the arms at their origin; the club is absent.

The *Gladius* has not been removed from the single example.