

end into a very irregular network with large meshes, so that a labyrinth of hollow spaces is formed. Among the isolated siliceous spicules, in addition to the well-known *Euplectella*-floricomes, the branches of whose rays have a very fine basal portion and an unbent plate with a toothed margin at the extremity, O. Schmidt found rosettes with fine hook-like teeth, or with terminal umbels bearing four or more prongs, and other forms in which each of the six principal rays runs out into five teeth which bear on their extremities hemispherical discs with numerous strong, recurved, marginal rays. Of these five teeth with their terminal discs, the middle one is always distinctly smaller than the four surrounding it. A remarkable spiral bow-shaped spicule with transverse furrows is also mentioned by O. Schmidt, and finally the presence of many rayed stars is noted.

A small sponge with similar siliceous parts, but consisting merely of a simple tube open above, with a loose stalk, and a basal plate which resolves itself at the margin into spicules and spicular bundles, is described by O. Schmidt as a young *Rhabdoplectella tintinnus*, and he has accordingly conjectured that the larger (older) specimens are only the upper portions of similar tubes which had been lost in the dredge.

The first reports of fossil Euplectellidæ have been made during the last few years. R. P. Witefield¹ first drew attention to the fact that the structures which were described from the Chemung group of New York, the Waverley beds of Ohio and of several other places, under the name of Dictyophyton, and which were mentioned in the Sixteenth Report of the State Cabinet of Natural History of New York, p. 84, as "algæ of a peculiar form and mode of growth," present a certain resemblance to Euplectellid skeletons, since in the wall of the tube longitudinal and transverse bands of fibres are seen to be united into a network with rectangular meshes. Soon after, Witefield² confirmed this view in greater detail, and supported it by reference to a *Uphantænia dawsoni*, which had been described by T. W. Dawson, pointing out that the beams of the rectangular network consist of "fascicles of slender cylindrical rods or spicules, quite cylindrical and smooth," and that the "spaces between the bands and threads are covered by a thin fibre, which is alternately elevated or depressed in the adjoining spaces."

By this communication of Witefield, Walcott³ was induced after closer examination to announce, as a fossil Euplectellid, an organism which he had formerly described, under the name of *Cyathophycus*, as a fossil Alga, of a tube-like form, and with an enveloping coat of retiform structure. He described "horizontal and perpendicular series of narrow bands crossing each other at right angles, so as to form a network with rectangular interspaces, the narrow bands being formed of thread-like *spicula* resting on or one against the other." Of the form described as *Cyathophycus*, Walcott said:—"The striking resemblance to *Euplectella* is seen at a glance, although the convex summit of

¹ *Amer. Journ. Sci. and Arts*, July 1881; *Ann. and Mag. Nat. Hist.*, ser. 5, vol. viii. p. 167.

² *Amer. Journ. Sci. and Arts*, August 1881; *Ann. and Mag. Nat. Hist.*, ser. 5, vol. viii. p. 237.

³ *Amer. Journ. Sci. and Arts*, 1881, vol. xxii. p. 394, 395.