

XLVI.—On *Hyalonema Schultzei* and on *Eurete*.

By Dr. C. SEMPER\*.

*HYALONEMA SCHULTZEI*, S., has the size and form of *Euplectella aspergillum*. The fibres of the roots, which are either smooth or toothed, divide themselves towards the body of the sponge into separate tufts, which spread in the interior as well as on the surface of the sponge itself, and here bear a similar relation to its framework as the fibres of the roots of the *Euplectella*. Cruciated spicula of very varied forms then unite with those longitudinal lines of fibres, thus forming a network of a more or less compact tissue, which is crossed in all directions by the large canals of the sponge. The comparatively wide expiring oscula range irregularly around the whole sponge; near them are often tufts of fine silk-like fibres. In some parts of the somewhat injured surface there is a fine tissue forming wide rectangular meshes. The whole network of the sponge is formed, as is the case with all real species of *Hyalonema*, of unconnected fibres or cruciated spicula, though sometimes single spicula blend together, and thus point at the origin of the connected siliceous network of the *Euplectella*.

The forms of the numerous separate siliceous bodies call to mind those of *Hyalonema Sieboldii*, Gray, from Japan. At the upper end of the sponge a new species of *Æga* had settled in an enlarged canal; this species, widely differing from that of *Euplectella*, I have named *Æga hirsuta*, on account of its hairy limbs.

The genus *Eurete* was established on a coral-shaped sponge, the cylindrical and hollow branches of which grow together. The wide oscula at the extremities of its branches seem to be the expiring, the small holes between the network forming the lining of the tubes the inspiring orifices. The tissue of the lining of the tubes, being of about one millim. thickness, is formed of a rather compact net of fine siliceous tubes, which sometimes are blended irregularly, but sometimes cross each other very regularly, thus forming a network including rectangular meshes. There do not appear to exist separate cruciated spicula; but frequently the cavities of the connected cruciated fibres remain independent of each other, so that often two or three adjoining though unconnected cavities are cemented by the common siliceous mass. The extraordinary size of the cavity of the central fibres in these siliceous tubes is surpri-

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sing; for its diameter is often six times as large as the thickness of the coating. Unfortunately the only specimen known has been much bleached, so that it is impossible to say whether the almost total absence of all detached siliceous bodies may be looked on as a distinguishing character of this genus. Judging from the structure of the tissue, this sponge might perhaps be ranged in the same genus with *Farrea orca*, Bowerb.; but as only fragments are known of the latter, which possibly might belong to *Euplectella cucumer*, Owen, in whose roots they were found, for the present *Farrea orca* and *Eurete simplicissima*, S., must be considered different species. A careful examination of the tissue of *Euplectella cucumer* would settle the question. Detailed descriptions will shortly appear in the 'Zeitschrift für wissenschaftliche Zoologie.'

XLVII.—Note on *Hyalonema* Schultzei, Semper.

By Dr. J. E. GRAY, F.R.S. &c.

AFTER studying the translation of Dr. Semper's description of *Hyalonema Schultzei* made for me by his wife, Frau Anna Semper, to whom we are indebted for the beautiful figure of the Philippine *Holothuria*, and considering the additional information that Dr. Semper has most kindly communicated to me personally during his stay in London, I have come to the conclusion that it is very doubtful if *Hyalonema Schultzei* really belongs to the genus to which Dr. Semper refers it, and if it is not rather a true Sponge, a species of *Euplectella*, or, may be, of a new genus of sponges very nearly allied to *Euplectella*. Unfortunately only a single specimen has as yet been obtained, and it is without any polypes, if it ever had any, which I doubt. It certainly differs in many most important particulars from what I have given in my paper in the October Number of the 'Annals' as the character of the group *Hyalonemadæ*.

The long spicules of *H. Schultzei*, which have been compared to the spicules of *Hyalonema*, are like those of *Euplectella*; they have a cup-shaped knob or anchor at the tip, and a series of recurved spines on the part near the tip, like those figured by Owen (Linn. Trans. xxii. t. 21. f. 6 & 7.) These spicules agree with those of both the species of *Euplectella* known, and are quite unlike those of *Hyalonema*, which are always imperfect at the end, without any anchor or projecting spines, but with rings of small spines directed towards the middle of the spicules, as described in my late paper.

It is said that the upper ends of the long spicules of *H.*