

that he had been convinced of the correctness of Max Schultze's opinion by finding two large specimens of *Hyalonema* with sponge bodies but without the polype crust.

The sponges which Semper described in 1867¹ and in 1868,² under the designation of *Hyalonema schultzei*, I shall discuss when considering the genus *Semperella*.

In 1868 Gray made several communications on *Hyalonema*;³ in the first of these he added to his *Carteria japonica* a second species, *Carteria lusitanica* (= *Hyalonema lusitanicum*, Bocage). In the second he combated Max Schultze's conception of *Hyalonema*, and in the third he expressed the opinion that the sponge described a short time previously by Lovén as *Hyalonema boreale*⁴ in no way belonged to the genus *Hyalonema*, Gray (or *Carteria*, Gray), but was from the form of its simple spindle-shaped spicules to be referred to the Halichondridæ, in close relation to *Halichondria ficus*, Johnston (*Ficulina*, Gray). In his later memoir published in English,⁵ Lovén described a North Sea sponge, with a club-shaped body and a slender stalk fixed in the sand by means of root-like processes, and bearing a certain external resemblance to *Hyalonema sieboldii*. Lovén conjectured that the Japanese and Portugese *Hyalonemata* were, like his *Hyalonema boreale*, rooted in mud by means of their long tuft-like spreading spicules, and that accordingly the broad cylindrical sponge body of these forms did not represent the base, but was fixed as an upward projecting mass upon the root-tuft.

In the meantime Barboza du Bocage had also discovered, off the coast of Portugal, some sponges which resembled the *Hyalonema boreale*. In his report on these forms,⁶ which he had been at first inclined to regard as young specimens of *Hyalonema lusitanicum*, he expresses his conviction that these, along with the *Hyalonema boreale* of Lovén, should be placed in a special new genus "*Lovenia*."

Gray now announced⁷ that the Japanese collectors, who sometimes found the diverging extremity of the glassy spicular tuft covered with mud, affirmed that this free tufted extremity was embedded in the mud or sand of the sea-bottom. He was himself inclined to regard this view as correct, and figures⁸ a *Hyalonema* placed in this position. It is noteworthy that Gray now returned to the name *Hyalonema sieboldii*, which he first applied in 1835 to the supposed polypes, and thus abandoned the designation *Hyalonema mirabile*, which had been used for a longer period. For the *Hyalonema lusitanicum* described by Barboza du Bocage, he adheres to a generic name which had already been used in 1867, viz., *Hyalothrix*, and he names the specimen in question *Hyalothrix lusitanica*. Both in the case of *Hyalonema sieboldii* and of *Hyalothrix lusitanica*, he admits varieties with and without the adhering sponges.

¹ *Archiv f. Naturgesch.*, Bd. xxxix. p. 84.

² *Ann. and Mag. Nat. Hist.*, ser. 4, vol. i. p. 161, &c.

³ *Ann. and Mag. Nat. Hist.*, ser. 4, vol. ii. p. 81, 1868.

⁴ *Ann. and Mag. Nat. Hist.*, ser. 4, vol. ii. p. 271, 1868.

⁵ *Verhandl. d. phys.-med. Gesellsch. Würzburg*, 1868.

⁶ *Öfversigt k. Vetensk.-Akad. Förhandl.*, 1868, p. 105.

⁷ *Ann. and Mag. Nat. Hist.*, ser. 4, vol. ii. p. 36, 1868.

⁸ *Loc. cit.*, p. 275.