

V.—On *Hyalonema boreale*. By J. V. BARBOZA DU BOCAGE.

To Dr. J. E. Gray, F.R.S.

MY DEAR FRIEND,

Lisbon, May 6, 1868.

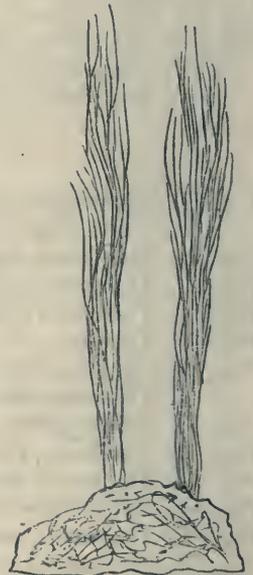
I have just received the interesting memoir of M. Lovén upon *Hyalonema boreale**. I must confess that M. Lovén's publication has caused me some vexation, as more than two months ago I prepared a similar memoir, which I have been hitherto prevented from publishing by illness. Since the 17th of February I have been in possession of two curious specimens of a Spongiad, which I immediately regarded as the young of *Hyalonema lusitanicum*.

I find some important differences between my specimens and that described by Lovén. In the first place, the sponge which forms the head has no apparent *osculum*; and then the sarcode is covered with very complicated spiny spicules, which are not noticed by Lovén.

I do not share all Lovén's ideas. I cannot admit that the sponge which accompanies several specimens of *Hyalomena* from Portugal and Japan is the *sponge-head* of the young specimens; on the contrary, I am persuaded that the sponge which persists in the adult specimens is precisely that which forms the dilatation of the base, so that it is the upper portion or extremity of the filaments which remains free. The following are my reasons:—

1. I remarked in my two young specimens that the large spicules constituting the axis all terminate below at the same level, whilst their superior extremities remain at different elevations. Now all the adult specimens present this same character: the filaments have their extremities at the same level in the part enclosed in the sponge, whilst they show their free extremities at different heights. I think therefore that this sponge is inferior, and that it corresponds to the sponge which occurs at the base of the young specimens. (As a matter of course, I regard the specimen figured by Lovén as a *young Hyalonema*.)

2. The following is another argument in favour of my opinion. I possess a very



Height 75 centims.;
diameter of the
sponge 17 centims.

* [A translation of this memoir, with which we have been kindly furnished by the author, will appear in our next Number.—Ed.]

curious example of *Hyalonema lusitanicum*, in which there are two bundles of filaments to a single sponge, nearly as in the annexed drawing (p. 36). Now I can perfectly conceive that the two bases, originally distinct, have become confounded together with increasing age; but I cannot understand this confusion if we are to assume that the natural position of *Hyalonema* is the reverse of that indicated in my sketch.

I am now convinced that *Hyalonema* is a sponge. As to the polypes (*Palythoa fatua*, Schultze), I regard them as parasites. I have several specimens of *Hyalonema* with other parasites: two are covered with an Antipatharian, three absolutely destitute of polypes and sponges, one embraced by the foot of an *Actinia* of what seems to me a new species. It is a flesh-coloured *Actinia* of enormous size.

I am still suffering from my recent illness. As soon as I am a little recovered, I shall endeavour to publish some supplementary notes upon the discovery of our learned friend Lovén.

Believe me, always your devoted friend,

J. V. BARBOZA DU BOCAGE.

MY DEAR FRIEND,

Lisbon, May 10, 1868.

After a more careful examination of our two little sponges, I have arrived at somewhat different results, which I hasten to

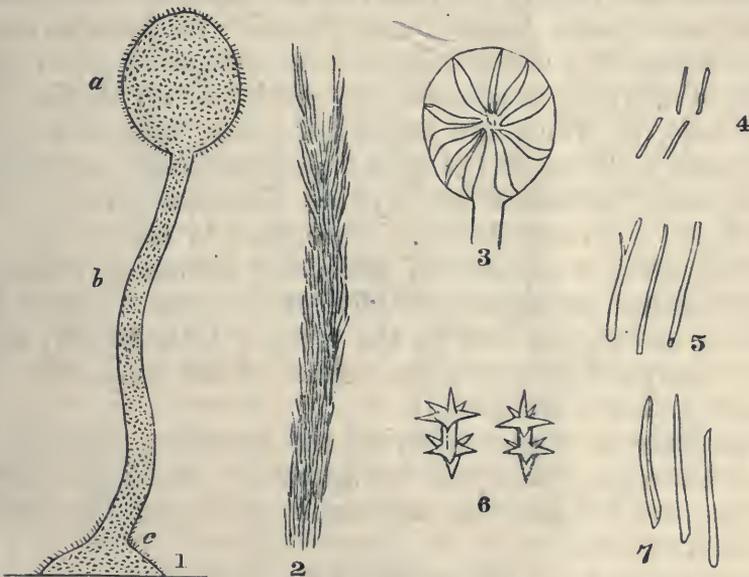


Fig. 1. *a*, head; *b*, stem; *c*, base. Fig. 2. Aggregation of linear spicules forming the stem. Fig. 3. Interior of the head to show the radiating bundles. Fig. 4. Spicules implanted perpendicularly upon the head and base. Fig. 5. Spicules of the radiating bundles. Fig. 6. Spinous spicules of the sarcodæ of the stem. Fig. 7. Spicules of the stem or axis.

communicate to you, because they completely change my first impression.

The axis or stem of the sponge is composed of an aggregation of linear spicules. I thought at first that each of these spicules extended uninterruptedly, like those of *Hyalonema*, from the base to the apex; but I have now ascertained that these spicules are, on the contrary, short in proportion to the dimensions of the axis, and that it is by their regular aggregation that this axis is formed. To make myself more intelligible, I will say that the axis does not at all resemble that of *Hyalonema*, but is constituted as in figure 2.

The axis of *Hyalonema boreale* seems to me to present an identical structure; but Lovén has not noticed all the importance of this difference as compared with the true *Hyalonemata*.

In my opinion, therefore, my two little sponges are not, as I at first thought, the young of *Hyalonema lusitanicum*; on the contrary, I am convinced that they must belong to a perfectly distinct genus, which I intend to name *Lovenia*.

To this same genus *Hyalonema boreale*, Lovén, must belong; it is perhaps identical with my two specimens. The only difference of any importance which prevents my proposing this identification is that Lovén does not seem to have detected the spiny spicules implanted in the sarcode in his two specimens, whilst the surface of mine is covered with them. Perhaps this apparent difference is only the result of an imperfect observation.

The new genus *Lovenia* will therefore be characterized by the existence of a solid axis or stem composed of an aggregation of short linear spicules, covered by a very distinct layer of sarcode, in which are implanted small defensive spicules analogous to those of the genus *Aphrocallistes*, according to the drawing published by Wyville Thomson (Ann. & Mag. Nat. Hist., February 1868). This stem is surmounted by a rounded head composed of radiating filaments, formed by linear spicules analogous to those of the stem. Other linear spicules, but shorter and in the form of little bacilli, are implanted perpendicularly to the surface of the head and in the spreading part of the base.

I am busy at present studying the structure of the sponges which accompany many of my specimens of *Hyalonema lusitanicum*, and I shall soon communicate to you the results of my observations.

The pertinacity with which Dr. Bowerbank regards the animals of the *Palythoa* as the *oscula* of a sponge, astonishes me more and more whenever I think of it!

You will soon hear from me again. Believe me, your devoted friend,

J. V. BARBOZA DU BOCAGE.