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Studies on Norwegian Sponges II.

BY

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SIPHONOCALYPTA n. gen.

Genotype.— *Anletta elegans* VOSMAER 1882 (Report on the Sponges dredged up in the Arctic Sea by the Willem Barents &c, Nederl. Arch. Zool. Suppl. I pp. 1—58), p. 40.

Dignosis.— Axinellidae with skeleton composed of styli of variable size; main skeleton of multispicular fibres running vertically to surface, with distal ends projecting beyond dermis, and with numerous isolated spicules scattered between; dermal and gastral skeletons of a tangential layers of spicules.

Remarks.— The genus, as judged by the available material of the genotype, resembles most closely the genus *Semisuberites* in the type of spicules present, but differs in their arrangement within the skeleton. In many respects it recalls the genus *Ciocalypta*, but differs from this in the hispid surface, and in external form. The latter has, however, little significance, and it is the hispidation of the surface and the structure of the skeleton which form the chief distinction between *Siphonocalypta* and *Ciocalypta*.

Siphonocalypta elegans (VOSMAER) (Text-fig. 1) *Anletta elegans* VOSMAER 1882, p. 40, pl. I, fig. 20, pl. III, fig. 70, pl. IV, fig. 152; 1885, p. 5.

Occurrence.— N. Norway, locality unknown.

Remarks.— The original description of this species is meagre and gives little idea of the characteristic features. The general appearance of the present specimen coincides very closely with that figured by VOSMAER, so that the species may be safely redescribed from it. This specimen is tubular with a markedly

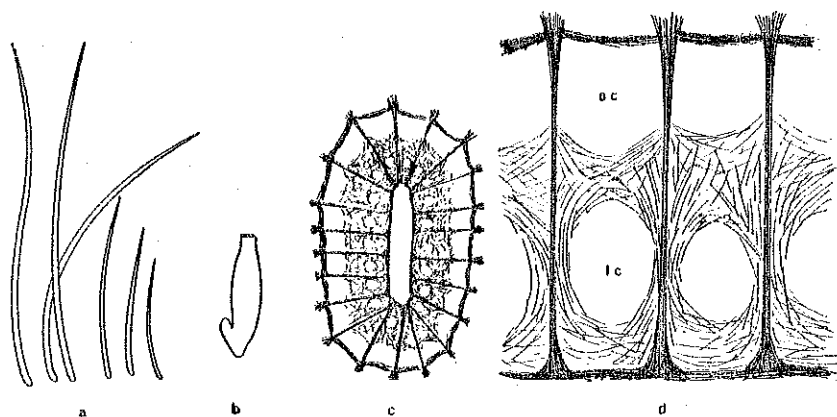


Fig. 1. — *Siphonocalypta elegans* (VOSM.). — a. Various sizes of styli, 75:1; b. The holotype, 1:2; c. Transverse section through centre of sponge showing the gastral cavity, longitudinal canals and subdermal canals; d. Portion of transverse section more highly magnified to show the gastral and dermal tangential layers of spicules, the radial fibres, and the subdermal (sc) and the longitudinal (lc) canals.

hirsute surface and, although not stipitate, there can be little doubt that it belongs to the species described by VOSMAER as *Auletta elegans*. The fact that the spicules in each case are styli strengthens the probability.

The skeleton is composed of styli only, of variable size, and these are arranged in a characteristic manner. The gastral surface is strengthened by a thick tangential layer of spicules, and, from this, radial multispicular fibres run out to the dermal surface and end in slight brushes of spicules projecting therefrom. There is also a tangential layer of spicules supporting the dermal membrane, and between this and the choanosome are capacious sub-dermal cavities (fig. 1 d: sc). Both dermal and gastral skeletons are composed of the smaller styli only. The choanosome, in addition to the radial fibres which traverse it, is filled with a halichondroid reticulation of spicules. There are no microscleres.

The whole sponge is fragile and readily compressible. Not only are large sub-dermal cavities found everywhere beneath the surface, but large longitudinal canals occur between each pair of radial fibres.

The spicules are styli, long and slender, usually slightly cur-

ved, often curved through a semi-circle, variable in size and from 0.004 to 0.008 mm thick. They are entirely smooth but frequently bear, near the base, an incipient annulus. It appears that the styli are roughly divisible into two categories, 0.22 to 0.35 mm and 0.4 to 0.6 mm long respectively, but intermediate sizes are not uncommon. VOSMAER believed *Auletta elegans* to have the same spicules as *A. sycincularia* SCHMIDT, but this is not so, as shown below. The external form in both is remarkably alike, however, and to emphasize the distinction between them a brief re-description of *A. sycincularia* is given.

GENUS AULETTA SCHMIDT (Text-fig. 2).

Genotype.— *A. sycincularia* SCHMIDT 1870 (Grundzüge einer Spongien-Fauna des atlantischen Gebietes, Leipzig, Fol. 88 pp.), p. 45, pl. IV, fig. 5. For description see also TOPSENT 1904

(Spongiaires des Açores. Rés. Camp. Sc. All. Monaco 25 pp. 1—280), p. 143.

Diagnosis.— Tubular Axinellidae with axial skeleton of flexuous strongyla and extra-axial skeleton of styli.

Remarks.— The original description of the type-species was inadequate, but TOPSENT has given a good account of the material recorded by him from the Azores. A spicule-preparation from the type, made by SCHMIDT and labelled in his handwriting, in the British Museum Collection, shows that the spicules are stout flexuous (or vermiform) strongyla, up to 0.7 by 0.02 mm, and styli of two sizes, 0.22 by 0.009 mm and 0.8 by 0.016 mm respectively. There are few,

if any, intermediates between the two sizes of styli, and both are characterised by a short flexure near the base (fig. 2 a).

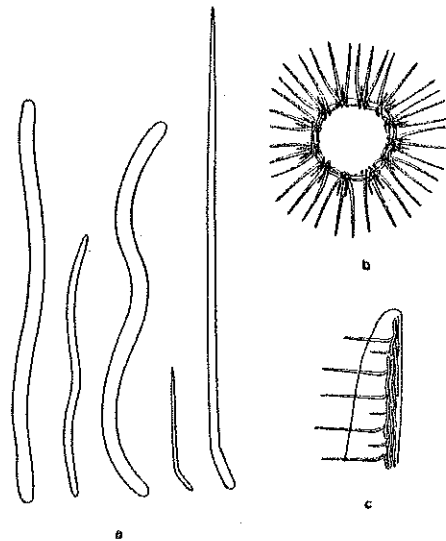


Fig. 2. — *Auletta sycincularia* SCHMIDT. a. Strongyla and styli, drawn from a type-preparation, 75:1; b. Reconstructed drawing of a transverse section through the holotype; c. Reconstructed drawing of a longitudinal section through the oscular rim in the holotype.

According to TOPSENT (l. c.) the skeleton consists of longitudinal columns of strongyla, joined by transverse strongyla, from which styli run outwards to the outer surface. In fig. 2 b---c an attempt is made to give in diagrammatic form the structure of the skeleton as suggested by TOPSENT's description.

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