repeatedly constricted by vela. They exhibit no trace of a regular radiate arrangement; and can be traced continuously from the oscule to the equatorial sinus, from which they are excluded by the thinnest of membranes, and in some cases this membrane is absent, so that the excurrent canal becomes freely continuous with the incurrent sinus. It appears to me that this must be the result of accident.

The equatorial sinus is the bottom of the equatorial recess, covered in by the poriferous membrane; the floor of the sinus presents several large, more or less circular openings; the mouths of the chief incurrent canals, which, originating as wide open tubes, extend into the interior of the sponge repeatedly ramifying in their course.

The flagellated chambers (Pl. VII. fig. 2) are large; the following are measurements —0·05 by 0·035 mm., 0·067 by 0·055 mm., 0·067 by 0·063 mm., and 0·09 by 0·09 mm. The apopyle is about 0·035 to 0·04 mm. in diameter.

External gemmation (Pl. VIII. fig. 21).—Several little ovate or club-shaped bodies, about 1·25 mm. long by 0·75 mm. broad, were observed seated on the hispidating spicules of specimens from Station 73. Sometimes they form a swelling at the end of a spicule, sometimes they surround it in the middle like a bead on a needle. They closely resemble structures which Carter first alluded to as adhering to *Tisiphonia* (*Thenea*) *agariciformis*,[1] and which Vosmaer has since described in connection with *Thenea muricata* from the Arctic Seas, and which he regards as buds. Serial sections were prepared of several of them, all of which displayed the same structure. Exteriorly they are invested with epithelium in continuation with that of the rest of the sponge with which they are associated. Within this is a solid mass of collenchyma traversed by a vast number of small granular fusiform cells, which drift chiefly in a longitudinal direction, but which are also partly transverse, partly spiral in arrangement. Microscleres, plesiasters, and spirasters are also present, plentifully scattered throughout the collenchyma.

The structure figured by Hansen[2] as a new genus and species of sponge, *Clavellomorpha minima*, appears to be very similar to this, but is much larger, being as much as 5 mm. in length and proportionately wider. I was at first disinclined to regard these bodies as buds, but after an examination of the admitted buds of *Tethya*, that possess a precisely similar structure I see no room for doubt. It follows that the canal system with its lining of pinnacocytes and choanocytes is developed from solid collenchyma. There is no evidence of the migration of endodermic cells into the buds, and the collenchyma, like the mesenchyme of so many sponge-embryos, may therefore be regarded as a potential endoderm.

Young Sponge (Pl. VIII. fig. 22). Small ovate bodies occur detached from, but entangled amongst the anchoring spicules of the same specimens as furnished the buds just described. One measuring 1·68 by 1·11 mm. was sliced in serial sections.

[1] *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xviii. p. 405, 1876.
[2] Norwegian North Atlantic Expedition, vol. xxv. p. 117, pl. v. fig. 4, 1885.