

LIPONEMIDÆ, Hertwig.

Hexactiniæ with numerous perfect septa and with marginal tentacles transformed by retrograde formation into short tubes or into stomidia.

Among the Actiniæ of the Challenger material there were some forms in which the tentacles had undergone a greater or less degree of retrograde formation. One part of these, *i.e.*, all the true hexamerous Actiniæ, I have united in the family of the Liponemidæ. I shall discuss the others afterwards in the tribe of the Paractiniæ, as they are distinguished from the Liponemidæ by the principle of arrangement of the septa, and I attach more importance to this characteristic than even to the peculiar constitution of the tentacles.

If this retrograde formation of the tentacles is therefore to be regarded as a process which is carried on repeatedly and independently, the question may justly be raised if it would not be advisable to distribute the Actiniæ without tentacles among the other families. In this case the genus *Polysiphonia* ought to be placed among the Paractidæ, the genus *Polystomidium* among the Antheadæ, as the former has a mesodermal circular muscle, and the latter a weak endodermal circular muscle.

Polysiphonia. n. gen.

Liponemidæ with tentacles, transformed by retrograde formation into short tubes with wide terminal mouths; circular muscle mesodermal, slightly developed.

In the genus *Polysiphonia* we find the first stage of the retrograde formation of the tentacles; they have become short, stiff-walled tubes, which have only a weak set of muscles, are, at any rate, only capable of a small amount of contraction, and are therefore of no great value, either for groping about or for seizing upon prey. But as the terminal opening is very much enlarged and appears to remain permanently open, they have become inhaling tubes, through which the animal can draw in water and the nourishment suspended in it.

Polysiphonia tuberosa, n. sp. (Pl. II. figs. 7-9; Pl. VI. fig. 3; Pl. IX. figs. 1-10).

Body stiff and thick-walled, shaped like a stemless chalice, the surface beset with roundish knobs; oral disk, twelve lobed; tentacle tubes thickened to a swelling at the base, of different sizes, placed in two alternating rows; the larger tentacles correspond to the archings inwards, the smaller to the archings outwards of the oral disk.

Habitat.—Station 235. June 4, 1875. Lat. 34° 7' N., long. 138° 0' E. Depth, 565 fathoms. Twenty specimens.

Dimensions.—Diameter of the pedal disk, 3-4 cm.; diameter of the oral disk, 8-10 cm.; height, 5-8 cm.

Numerous specimens of a beautiful large Actinia, *Polysiphonia tuberosa*, were all dredged on the same spot from the bottom of the sea, at a depth of 565 fathoms. To judge from the nature of the material, part of them had been placed at once in spirit, part