

should be included within the family Nephthyidæ, for, in spite of an external appearance widely different from *Spongodes* and *Nephthya*, which is expressed in the Gorgonid-like habit, the inner structure of the colony corresponds closely with that of the above-mentioned family. Its higher and more slender growth necessitates an increase in the strength of the colony; this has been given to it by means of a considerable development of its spicular network in the walls of the polyp tubes.

As in *Spongodes*, the branches and twigs consist of bundles of polyp tubes, four, or sometimes five, in number, terminating in the polyp heads at the end of each twig.

The tubes, consisting of thick mesodermic walls, communicate with each other by means of delicate endodermic nutritive canals. The walls of the tubes meet in the axes of the twigs so that the individual digestive cavities of the polyps are arranged around a kind of axis in a radial fashion. Fresh buds from the sides of the polyp walls arise from the system of the nutritive canals, so that in cross section their digestive cavities are always exterior to the four main canals. Also there may be distinguished, in the larger stems, four or five broader tubes in the centre, separated from one another by thick cœnenchyma. This investing cœnenchymatous layer is filled with large spicules arranged parallel to the longitudinal axis. To the outside of these there are additional longitudinal canals of various diameters, which communicate with one another, as also with the broader central canals, in a network of nutritive canals. To the outside of this network is a continuous layer of these longitudinally arranged spicules (see Pl. VI. fig. 5).

From without inwards, then, the stem consists of —

- (1) Ectoderm, as a thin layer of flattened cells.
- (2) A layer of large spicules.
- (3) A circle of polyp tubes.
- (4) Thick cœnenchyma containing large spicules.
- (5) Four or five wide central canals, the walls of which are in contact in the centre.

The polyps, in the greater number of species, consist of a calycine portion into which the alimentary and tentacular parts of the polyp may be withdrawn. On the tentacular portion is a collar of spicules arranged in a circle, and, outside of these, spicules, arranged *en chevron*, which strengthen the base of the tentacle. The spicules are continued up to the apex of the tentacle. In rest the tentacles are folded together over the mouth of the polyp.

In one species, *Siphonogorgia pendula*, n. sp., the anterior portion of the polyp can be withdrawn into the bilateral calyx only as far as the collar; the oral region, with the spicule-bearing and folded tentacles, remains outside the calyx. In this respect the form of the polyps agrees entirely with that of the polyps in *Spongodes*.