

frequently slightly curved, usually inwards, twice as thick as basal ray; length inconstant, varying from 0·025 mm. to 0·12 mm.

*Colour.*—White.

*Habitat.*—Station 163, April 4, 1874; lat. 36° 56' S., long. 150° 30' E.; depth, 120 fathoms; off Twofold Bay, Australia.

*Heteropegma*, n. gen.

Syconidæ with articulated tubar skeleton, the supporting skeleton of whose strongly developed cortex consists of triradiate and quadriradiate spicules, quite different in size from those of the parenchyma.

*Heteropegma nodus gordii*, n. sp. (Pl. I. fig. 7; Pl. IV. figs. 1a–1d).

This species, represented in the Challenger collection by two specimens, forms colonies of a rather Asconoid appearance. The tubes, sometimes standing vertically, sometimes lying horizontally, ramify and interlace, thus constituting a kind of knot in which neither beginning nor end can be discerned. The individuality of the tubes is expressed only by oscula, these latter being naked. In one specimen, from Australia, the oscula are numerous, while, if present at all, they seem to be much more scanty in the other, from Bermudas. It must be said, however, that this latter specimen was quite crushed and crumpled.

The size of the oscula is inconstant, varying from 0·25 to 1 mm. in diameter. Both the surfaces are rough. The average thickness of the walls is 1 mm., the diameter of the inner cavity 1 mm. in the Australian specimen, 2 mm. in that from Bermudas. The radial tubes are of irregular outline, and show a great tendency to ramify (Pl. IV. fig. 1a).

The specimen from Bermudas proved to be sterile; but in the radial tubes of that from Australia I found some Amphiblastulæ.

*Skeleton.*—The skeleton consists of minute tubar and gastric quadriradiate, of much larger triradiate and quadriradiate cortical, and of triradiate oscular, spicules.

*Skeleton of the parenchyma.*—The typical modifications of the tubar and gastric quadriradiates are represented on Pl. IV. fig. 1a; there are also amongst them triradiate spicules of the same outlines and size, but they are not numerous. The tubar quadriradiate spicules are regular, their rays either tapering from the base to a sharp point, or of cylindrical form with truncated ends; in both cases the proportion between the length and the thickness of the rays at their base remaining the same (30 : 1), their length being 0·06 mm., their diameter 0·002 mm. These regular spicules of the radial tubes are connected by all possible intermediate stages with sagittal and irregular quadriradiate spicules supporting