

simple and the side arm plates lie on the under surface and bear several rough, cylindrical tentacle scales (or arm spines). These plates are continued upward by a double row of large grains, homologous with upper arm plates, which bear minute hooks. Two small genital openings in each interbrachial space at the outer corners.

This genus differs outwardly from *Astrogomphus* chiefly in having no spikes on the disk, and in having disk scales of a different character.

Species of *Astrochele* not herein described.

*Astrochele lymani*, Vll., Am. Journ. Scien., vol. xvi. p. 374, 1878.

N.E. Coast of North America; 200–980 fathoms.

#### *Astrotoma*.

*Astrotoma*, Lym., Ill. Cat. Mus. Comp. Zool., No. viii. part 2, 1875.

Disk arched and traversed above by ten low radiating ridges formed by the radial shields, and closely granulated. There are no mouth papillæ, and the spiniform teeth and tooth papillæ form an irregular clump at the apex of the mouth angle, somewhat as in *Astrophyton*. The arms are simple and the side arm plates are confined to their lower surface, and bear several peg-like scarcely rough, tentacle scales (or arm spines). These plates are continued upwards by a double row of granules bearing minute hooks which are encased in thick skin bags. The annular ridges thus formed are wide and rather indistinct. Two small genital openings in each interbrachial space, at the outer corners.

*Astrotoma agassizii*, Lym., Ill. Cat. Mus. Comp. Zool., No. viii., part 2, p. 24, pl. iv. figs. 57, 58, 1875.

Straits of Magellan; 135 fathoms.

*Astrotoma murrayi*, Lym. (Pl. XXII. figs. 5–7).

*Astrotoma Murrayi*, Lym., Bull. Mus. Comp. Zool., vol. vi., pt. 2, p. 61, pl. xviii. figs. 474–476, 1879.

Large tubercles, or smooth warts, on the upper side of disk. No hooklets on belts of grains on arms, except close to their tip. Clusters of grains in interbrachial spaces next mouth.

(Type specimen from Station 194.) Diameter of disk 29 mm. Length of arm 280 mm. Width of arm near disk 7 mm. Height of arm near disk 7 mm. Apex of mouth angle, embracing all the region of the jaw plate, densely set with short, sharp, nearly equal, spine-like papillæ, thirty or more in number, and arranged in transverse rows of three or four. Lower surface and a part of the sides of the protuberant mouth angles closely set with rounded and sometimes elongated grains. One round madreporic mouth shield, 1.5 mm. in diameter, lying on the margin of the horizontal mouth region, where it is separated from the vertical interbrachial space by a fold of skin stretched between the bases of the arms. Arms high, and tapering gradually to their tips, covered