

*Astrocnida.**Astrocnida*, Lym., Ann. Sci. Nat., 1872.

Disk divided into five radiating wedges by the pairs of radial shields, and, together with the arms, covered by a minute pavement of flattened granules. The arms fork a few times, but only near their ends. Teeth, tooth papillæ, and mouth papillæ all similar and spiniform. Side arm plates confined to under surface of arm and bearing several rough, cylindrical tentacle scales (or arm spines). These plates are continued upward by a double row of lumpy nodules homologous with upper arm plates, which bear minute hooks, and which are continued over the roof of the disk, as irregular, concentric circles of short, blunt spikes, or large granules bearing hooks. Two small genital openings in each interbrachial space at the outer corners.

A specimen of the rare *Astrocnida isidis* from the "Blake" dredgings afforded a chance to examine a branching star, like *Astrogomphus* in outward appearance, but resembling *Trichaster* in its few and widely-spaced arm forks. On making a vertical section through the disk (Pl. XLVI. fig. 2), a curious and quasi-intermediate structure is exposed. The digestive cavity recalls *Gorgonocephalus* in that it is more or less pleated and pouched (*St'*), and is firmly attached to the roof of the disk wall; but it is Ophiuroid in being entirely free below, and partly so on its sides, having no radiating lines of attachment, either along the arms, or in the interbrachial spaces. The only vestige of such attachments is a stout septum, such as is found in Ophiurans lying outside the wall of the stomach sphincter (*du*), and thus forming a closed ring tube (inner perihæmal canal). It may more properly be called an adhesion of the floor of the digestive cavity to the wall of the mouth where they are doubled over each other. Between the upper side of the digestive cavity and the disk wall, and on top, and on either side of each arm, lie the ovaries (δ), which consist of almost separated ovoid egg clusters, rather more than 1 mm. in length, containing round eggs about 2 mm. in diameter. They are not connected with, or surrounded by any bursa, but lie directly in the body cavity, into which penetrate the genital openings. The genital organs are therefore strictly of an *Astrophyton* type, and discharge their products into the body cavity, which is continuous and uninterrupted by radiating partitions.

Astrocnida, and behind it *Astrogomphus*, is nearest in relationship to the true *Astrophytons*. Not only does the arm covering, with its double rings of minute hooks shadow forth an affinity, but the internal structure, with a pouched digestive cavity and ovaries lying free in the general body cavity is similar; while the want of adhesions on the under side of the digestive cavity and the closed ring tube about the mouth remind us of the Ophiurans. But in reaching after some form which may bridge the way to these last, we find, as generally happens in the animal kingdom, no piece that will fit. *Ophiocreas*, which is properly a simple armed *Astrophyton*, is not intermediate. It is a synthetic form. It has the teeth of *Euryale*, the pleated digestive cavity suggestive of *Gorgonocephalus*, the genital bursa and ovarial tubes similar to, yet not the same as, those of Ophiurans in