

arm, is a genital opening which, in most of the simple armed species, passes into a sac or genital bursa; but, in the ramifying species, enters directly the main body cavity. Most of the simple armed have a mouth shield at the inner angle of each lower interbrachial space, one of which serves as the madreporic. But, the ramifying have often no mouth shields at all, and the madreporic plates, sometimes one and sometimes five in number, are found in various regions of the lower interbrachial spaces.

Astrophyton.

Astrophyton, Linck, De Stell. Mar., 1733.

Disk re-enteringly curved in the interbrachial spaces, and, together, with arms covered by thick skin. Arms extremely wide at their base, so as to occupy a large part of the disk, and branching by a series of numerous forks having between them short, and nearly equal shafts. Radial shields long and bar-like, composed of overlapping soldered plates, and extending nearly or quite to centre of disk, thus forming more or less elevated radiating ribs. A portion of interbrachial space below strengthened by numerous plates. Teeth, tooth papillæ, and mouth papillæ, all similar and spiniform. No arm spines, but the outer branches have spiniform tentacle scales, which, as well as tentacles, are wanting on the basal joints. The finer twigs only are ringed with double lines of grains bearing microscopic hooks. Under side of arm entirely covered by side arm plates. No under arm plates beyond the first; and no upper arm plates at all. Two short genital openings at the outer corners of each interbrachial space.

In order to give a comparative idea of the genera *Astrophyton*, *Gorgonocephalus*, and *Euryale*, there will be furnished some details of their skeletons.

The radial shields of *Astrophyton* (Pl. XXXV. fig. 13, *l*) are composed of soldered overlapping plates, as in *Gorgonocephalus*, but differ in being higher and less diverging. For the bracing of the broad, heavy arm there is on either side a massive, rounded genital plate, shaped like an elongated cone (*o*). Its strength recalls the same part in *Euryale*, as does the rudimentary genital scale (*n*) near its outer end. The distribution of irregular plates under the disk skin is the reverse of that in *Gorgonocephalus*, which has a compound row just along the margin, whereas in the present genus the plates, which are large and flat, fill the inner angle of the lower interbrachial space (figs. 17, 18), which thus becomes a structure more calculated to give a strong leverage to the arm. The mouth frames and jaws, broad, flattened and closely joined below (fig. 17, *c*), become much narrower above (fig. 18, *c*), where there is a swollen, oblong peristomial plate (*v*) of one piece. Their shape and massiveness recall *Euryale* (fig. 1, *c*), but the bunch of spiniform tooth papillæ is similar to that of *Gorgonocephalus*; to which also *Astrophyton* is comparable as to its small and irregular side mouth shields (fig. 17, *b*), while those of *Euryale* are of great size and thickness and nearly symmetrical (fig. 1, *b*).