

Dental and Oral Plates of *Trichasteridae*

This family contains two subfamilies, namely *Trichasterinae* and *Sthenocephalinae*, but to my regret, I was unable to obtain any material of the latter. So I give here an account of the oral and dental plates of only the former.

The dental plate of the *Trichasterinae*, which is almost uniform in its characters, is very elongate and also divided into several pieces by transverse fissures, with a vertical series of compressed depressions along the median line. The corresponding plate of *Astroceras annulatum* is very delicate, elongate, two and a half times as long as broad and divided by transverse fissures into three subequal fragments, of which the two lower bear one indistinct depression on the centre, while the uppermost one is furnished with two such depressions along the vertical median line. The dental plate of *A. calix*, which is about four times as long as broad, is also delicate and consists of five pieces, varying in size from the uppermost (which is smallest) to the lowermost (which is largest). Of these pieces, the middle three carry a nearly rounded depression in the centre, while the lowest one is provided with two such depressions arranged vertically along the median line; the uppermost one bears no depressions (Pl. I, fig. 4). The same plate in *Trichaster elegans*, which is still longer, and nearly four and a half times as long as broad, is thick and stout, and divided into four or five pieces. Among them the middle ones are subequal and have a distinct, transversely elliptical depression on the centre respectively, while the uppermost and lowermost ones are a little larger than the foregoing, and provided with two such depressions. In one case the depressions of the uppermost fragment were seen to form a vertical row, while those of the lowest one stand side by side, but in the other case the arrangement is irregular (Pl. I, fig. 5).

The oral plate of this subfamily is somewhat divergent. That of *Astroceras* is longer than high and axe-shaped, diverging a little proximally. The articular ridges and grooves are rather indistinct on both sides. In *A. annulatum* the abradial muscular area is very small, transversely oval, and concave on the surface, being situated broadly apart from the distal margin of the abradial flank. The adradial one is rather small, obliquely elongate, gently curved like an arc, and lying low down on the plate. In *A. calix* the abradial muscular area is of moderate size, flat, roughly triangular in shape and lying near the aboral border. The adradial one is rather large, elongate, nearly vertical, distinctly enlarged at the upper portion and gently curved distally at the ventral part (Pl. III, figs. 23-26). On the other hand, the oral plate of *Trichaster elegans* is very thick, stout, somewhat quadrilateral in lateral view, about as long as high and distinctly notched at the middle of dorsal margin. The abradial and adradial articular ridges and grooves are well developed. The abradial muscular area is rather small, vertically elongate, distinctly notched in the middle of the adoral side and concave on the surface. The adradial one is very large, nearly vertical, gently curved along the proximal border of adradial articular area and also enlarged at the upper portion (Pl. III, figs. 27-28).

Dental and Oral Plates of *Asteroschematidae*

The dental plate of *Asteroschema yaéyamensis*, which is the only species studied by me among the *Asteroschematidae*, bears some resemblance to that of the *Trichasteridae*. It too is very elongate, three and a half times as long as broad, somewhat diverging downwards and irregularly divided into five fragments by transverse fissures. Each fragment has from one to four depressions, making in all about twelve in number, and arranged in a vertical, continuous series along the median line except the lowest two, which lie horizontally. These depressions