

distinct depressions along the median line, but sometimes bear some foramina on the upper portion. The oral plates are axe- or chisel-shaped. The abradial muscular area is of moderate size, or small and entire. The adradial area, which is also entire, is sometimes large and elongate, or elongate sigmoid, but is sometimes small, elliptical or arc-shaped, and set low down on the plate.

Included Subfamilies: OPHIOLEPIDINAE
OPHIURINAE

Family 15. OPHIOLEUCIDAE

The dental plates are somewhat bell-shaped, with a vertical series of rather distinct depressions along the median line. The oral plates are somewhat chisel-shaped; the abradial and adradial muscular areas are of small size and entire.

Suborder C. AGMATOPHIURINA Murakami, 1947

The dental plates are divided into several subequal pieces by transverse fissures. The oral plates are axe- or wing-shaped.

Family 16. OPHIODERMATIDAE

The dental plates are provided with a vertical series of depressions along the median line, generally one on each piece. The abradial and adradial muscular areas of oral plate are more or less developed; both of them are entire.

Included Subfamilies: OPHIARACHNINAE
OPHIODERMATINAE

V. INTERRELATIONSHIPS

Though little work has so far been done on the interrelationships of the Ophiuroidea, Matsumoto (1915, 1917), set a far-reaching interpretation of their phylogeny based on the internal structures of recent forms. I now give here a discussion of his theory from the standpoint of the evidence provided by the dental and oral plates.

According to Matsumoto, the Ophiomyxinae and certain genera of Ophiacanthidae with horizontally flexible arms are archetypal because they resemble the palaeozoic Myophiuroida in many respects. Further, he considered that the Ophiomyxinae are more archetypal than the Ophiacanthidae because in the arm plates and arm vertebrae, from the Laemophiuroida onwards, there are two distinct lines of specialization. One line forming the Gnathophiuroida is characterized essentially by having the radial shield and genital plate articulating with each other by means of one large, conspicuous socket on the former and one large, ball-like condyle on the latter. The other line, forming the Chilophiuroida, is characterized essentially by having the radial shield and genital plate articulating with each other by means of two condyles and one pit on either plate.

Of the numerous forms of dental and oral plates in ophiurans, which are we to consider archetypal? With respect to the oral plates, those which are quadrilateral or elongated or chisel-shaped or wing-shaped may be regarded as specialized. The rest are axe-shaped, and such forms are widely observed throughout all orders of the Ophiuroidea, and must be considered more archetypal than any others. Further, I consider that among such axe-shaped oral plates, those which are a little longer than higher and bear the moderate abradial and rather small adradial muscular areas are the most archetypal. Those of Ophiomyxinae, Ophiacanthidae pars, Amphilepididae, Ophiochitonidae and Ophiodermatidae pars belong to this category. Indeed the oral plates of