

a less extent. The ovaries of the Pentacrinidæ are likewise long and fusiform, some of them appearing to present somewhat anomalous characters. For in some sections which were made for Sir Wyville Thomson by Dr. Stirling, the ovary appears in the arm, occupying the usual position between the subtentacular and the cœliac canals where the sterile genital cord is normally found. This is also the case in the lower parts of the arms of *Holopus* (Pl. Vc. fig. 2, *ov*), but I have not yet succeeded in discovering which species of *Pentacrinus* or *Metacrinus* is distinguished by this peculiarity; for the sections above mentioned were not labelled with any name or reference number. I have cut sections of the arms of all the more common Pentacrinidæ, but in none of them have I found any such departure from the type of the ordinary *Antedon* as is presented by the ovaries of this unknown species.

Many years since it was discovered by Prof. Semper,¹ during his residence in the Philippine Islands, that the ovaries of *Actinometra parvicirra* (= *Actinometra armata*, Semper, M. S.) are not attached to the genital cord by their ends in the usual way. For a backward process is given off at the point where the short branch of the sterile genital cord expands into the fertile portion of the gland; and it lies within the ventral perisome of the arm on the proximal side of the pinnule attachment. This is as fertile as the rest of the gland which is actually within the pinnule, so that the whole structure appears to be attached to the genital cord at some little distance from its end; and it comes right down into the arm at the sides of the subtentacular and cœliac canals, being attached almost directly to the genital cord (the so-called rachis), the lateral branches of which are quite short. In most sections of the arms, therefore, an ovary is to be seen on either side of the central genital cord (Pl. LXI. fig. 3).

This condition also occurs in *Metacrinus angulatus*, and in other Philippine Comatulæ, e.g., *Actinometra nobilis* and *Actinometra dissimilis*;² and so far as one can judge from the appearance of the ventral perisome, without cutting sections, I suspect that it is tolerably common in the larger tropical Comatulæ.

Although I have examined the ovarian pinnules of a large number of species, I have never met with definite openings for the discharge of the ova; and I must therefore, like Ludwig, leave undecided the question of the origin of the relatively large openings which occur on the inner side of the pinnules of *Antedon rosacea* at the time of sexual maturity. On the other hand, I have found male individuals in which the testicular openings are evident enough (Pl. LIV. fig. 3). In *Antedon acoela* and *Antedon angusticalyx*, for example, the fertile part of the gland is short, thick, and rounded. It only extends over four or five of the pinnule segments, and is protected by the tolerably regular pavement of plates already described. At about the middle of its length one or two small conical projections rise from it towards the ventral surface of the pinnule, and

¹ *Arb. zool.-zootom. Inst. Würzburg., loc. cit., fig. 1, p. 261.*

² The specific formula of this type is— $a. 3. \frac{2}{3}. 3. 3. \frac{a}{1}$.