

have abandoned the cyst and lost their ciliated coat, associate together in pairs, and bore their way through the arm-joints. In both the sexual development begins with the appearance of testes (*cf.*, *Myzostoma brevicirrum*, p. 43), but in the female the testes degenerate and disappear entirely, or leave but a minute rudiment (*Myzostoma cysticolum*), when the ovaries make their appearance in addition. The curious shape of the female—convex below and flat or concave above—is owing to the growth of the cyst, whose sides rise round the parapodia and press the lateral parts upwards.

Among the hermaphrodite forms, *e.g.*, *Myzostoma pentacrini* and *Myzostoma deformatum*, it is impossible to say anything for certain about the relations between the individuals enclosed in one cyst. As three, two, and sometimes only a single individual are found in a cyst, it is evident that self-fertilisation must sometimes occur; and the fact that when more than one individual is found in one cyst they are separated by partitions to a smaller (*Myzostoma deformatum*) or larger (*Myzostoma pentacrini*) extent, tends to show that it is the rule. In this case, therefore, it is by no means necessary that several individuals should be associated together in a common cyst, and the occurrence must be regarded as accidental.

Relation of Myzostomida to their Host.

The Myzostomida Cysticola are interesting to the zoologist and palæontologist, not only from their structure but also from the cysts they produce, which recall plant galls. Under the description of species, a detailed account of these structures and the frequency of their occurrence will be given. I may here briefly allude to the most important facts. The effect of the free-living Myzostomida on their host I have already discussed in my former Monograph, but I will add that I lately received from Naples, through the kindness of Dr. Spengel, a specimen of *Antedon rosacea*, bearing numerous examples of *Myzostoma cirriferum* upon its arms, and not less than sixteen large specimens of *Myzostoma glabrum* upon the disk.

Myzostoma asymmetricum is somewhat transitional between those forms that crawl freely about their host and those that are encysted. It is found attached to the ventral surface of the pinnules, which becomes slightly enlarged by the contact of the parasite, as does also the proximal arm-joint (Pl. XI. figs. 4–6). *Myzostoma willemoesii* causes a more marked malformation (Pl. XIV. figs. 6, 7); it is attached to the ambulacral surface of the pinnule, the joints of which become larger and more hollowed out, forming thus a canal; the whole pinnule is wound spirally, forming a chamber in which the parasite lives, which is closely similar to that produced by *Pemphigus bursarius* upon the stems of poplar leaves.

Myzostoma deformatum bores its way into the interior of the pinnule, which becomes swollen and pear-shaped (Pl. XII.). Another kind of malformation is produced by the two species *Myzostoma pentacrini* and *Myzostoma tenuispinum*. The former causes insignificant thickenings of the arm-joints (Pl. XI. fig. 9) and fissures between them. Much more