

containing prolongations of the intestinal cæca and generative glands. There exist, however, a number of transitional forms, which prove that these caudal appendages are merely peculiarly modified cirri; in several species (*Myzostoma filicauda*, *Myzostoma filiferum*, *Myzostoma quadrifilum*, *Myzostoma intermedium*) the caudal appendages are only hollowed out at the base, while the apical portion closely resembles a cirrus. In the last-mentioned species (Pl. IV. fig. 2) a transition is seen between the cirri and the caudal appendages, the outermost pair of which resemble the cirri far more closely than the inner pair. In *Myzostoma brachiatum* (Genus *Myzostoma* pl. ii. fig. 2) the cirri resemble the caudal appendages in being situated ventrally; the intestinal cæca, moreover, penetrate the bases of the larger cirri for a short distance, although in other respects they agree in structure with the small cirri; if the branches of intestine were to occupy the whole of the cirrus, it would become exactly similar to a caudal appendage. There is little doubt, therefore, that the two structures are homologous, and that both have the same conditions of growth. In consequence of which it may be that the size of the caudal appendages, as well as their presence or absence, and the length of the terminal threads, is only a sign of difference of age—as far as these conditions are proportionate to the size of the animal examined. But also the number of the caudal appendages is of doubtful value as a diagnostic character if we consider more closely the number of the true cirri.

By investigating individuals of various ages and species, and comparing all the forms that bear cirri, it is clear that with regard to the number present there are primarily two groups to be distinguished:—(1), those that possess from the very first ten pairs of these organs which do not subsequently increase in number; and (2), a second group in which their growth is unlimited, new lateral cirri appearing between the ten original ones. I am not able to state with certainty, from my examination of the material at my disposal, whether the growth of lateral cirri is at all limited, and whether there is any order or regularity of sequence in the appearance of the new ones. In any case there may be at length species in which the margin of the body is so covered that there is absolutely no room for any more (Pl. X. of this Report, and Genus *Myzostoma*, pl. x. fig. 1). There are but rarely less than ten pairs of cirri, if these organs be present at all; the encysted *Myzostoma tenuispinum* (Pl. XIII.), and *Myzostoma willemoesii* (Pl. XIV.), however, have only seven pairs. Besides the cirri there are in one species—*Myzostoma fimbriatum* (Pl. VI. figs. 5, 6)—bunches of fine threads along the margin of the body, which probably serve as tactile hairs.

Parapodia.

The parapodia have been already discussed, in so far as they influence the symmetry of the body. In some of the new species there is a new form of parapodium, in which the terminal portion is not a tube from the extremity of which protrude the hooks, but has