

In many Schizonemertea the proboscidian sheath is thus constituted; in others I find that a phenomenon, which receives its more final expression in certain Hoplonemertea, is not wholly absent—I mean the presence of varicosities, in which the inner space of the sheath is bulged out, without the musculature following. In this way more or less irregular appendages are brought about, generally along the side or the lower corners, having the aspect of accessory reservoirs. In *Cerebratulus* sp. inc. (Pl. XV. fig. 6), from Japan, it seems as if these appendages in the posterior region of the body even surpass in size the sheath itself, which is not a very significant organ in that region of the body, and, moreover, as if these two cæca are filled with a substance of the nature of which the available spirit specimens do not enable me to judge.

I do not wish to discuss here the significance of these facts, not having for the present sufficient material to study them more fully; it is only my purpose to call the attention of future investigators to the phenomenon, which may be so significant for a correct interpretation of the posterior, often semi-rudimentary portion of the proboscidian sheath.

It has been observed that in certain Hoplonemertea the phenomenon just noticed finds a more definite and more regular expression. The first observation of this is due to M'Intosh, who detected in the proboscidian sheath of *Drepanophorus* regular metamericly placed openings, by which the space inside the muscular sheath communicated with other cavities outside of it, that had no muscular walls (XX).

While M'Intosh supposed these accessory cavities to establish a communication between the cavity of the proboscidian sheath and the blood-vascular system, I have since demonstrated (VII) that no such communication exists, but that *Drepanophorus* possesses closed membranous sacs communicating with the proboscidian sheath, and probably serving as reserve spaces for the fluid contents of the proboscidian sheath during the very powerful contractions and distentions which the organ may undergo. In the Challenger specimens the same phenomenon was observed, and I have even ventured to assign all those specimens in which these regular paired appendages of the proboscidian sheath were found to the genus *Drepanophorus*, even when I have not succeeded in determining the armature of the proboscis so characteristic of the genus.

Two sections through the proboscidian sheath of Challenger *Drepanophori* are figured on Pl. X. figs. 4, 5.

The curious arrangement of circular and longitudinal fibres, having the appearance of basket-work in the transverse section, may be understood from these figures, even without any further description.

Between the musculature and the inner epithelial layer there is again a homogeneous membrane, with longitudinal folds indicative of the contracted state in which the sheath here figured was at the moment of its preservation. In neither of the two was the section quite vertical, thus only one of the lateral diverticula is cut, instead of the pair that are