

otherwise than in fragments, and these often quite pulpy. The spirit does not seem to gain access to the middle and posterior parts of the tube, so as to counteract the softening of the animal in its own fluids or sea-water. Not more than a single *Phyllochætopterus* existed in any tube, but occasionally two examples of the *Polynoë* were found, either together, or one in front and another behind. In the latter case, however, no diaphragm was present, so that the second specimen may have entered accidentally. The *Polynoë* keeps the entrance to the tube, just in front of the tentacles, its own palpi often projecting from the aperture. In order to thrust out its tentacles the *Phyllochætopterus* must therefore glide past the *Polynoë*, the narrow, flattened body of which is specially adapted for its peculiar habitat. The Polynoidæ are remarkable for the frequency with which they haunt the tubes of Annelids as well as other organisms.

The intestinal pellets consist of a fine greyish mud rich in Diatoms, sponge-spicules, fragments of Radiolarians, and many other minute structures.

The cuticle in transverse section of the anterior third (Pl. XXXVIA. fig. 3) is only seen here and there as a firm clear margin to the hypoderm. Its development, therefore, is slight, and, indeed, it is doubtful whether it could be removed as a separate layer. The condition of the preparations (to which the spirit had gained a too tardy access in the tubes), however, is unfavourable for decision in this respect. No feature, on the other hand, is more pronounced than the great prominence of the hypoderm, which forms a dense layer, almost a third of the whole thickness of the body, on the ventral surface. The long cells are arranged in parallel rows, and the coat thus readily splits in that direction. It is coloured pure white. The hypoderm, while much thinner than on the former region, forms a considerable layer laterally and again on the dorsum, where a thickened ridge occurs on each side of the median line. The ovoid nerve-cords are widely separated, but they are of large size. They occupy a hollow below and internal to the homologues of the longitudinal ventral muscles, and have ventrally the dense layer of white hypoderm, while externally and superiorly is the pale lateral hypoderm, also of considerable depth. A thin but continuous circular muscular layer lies beneath the latter coat. The longitudinal dorsal muscles form a triangular area on each side of the upper part of the alimentary region, the superior fibres forming an arch over it and closely approaching each other in the middle line, while the inferior apparently become continuous with the longitudinal muscular coat of the alimentary sheath. As in the common *Chætopterus* of Britain, many vertical muscular bands pass through the chief mass of the longitudinal dorsal, and in the preparations these bound numerous spaces, which, however, may partly be due to rupture after immersion in spirit. The condition is diagnostic when compared with the common form just mentioned. The vertical fibres pass at intervals to join the circular coat ventrally at a point internal to the nerve-trunk. The comparatively small longitudinal