

It is about 50 mm. in length, but being bent in the form of a shepherd's crook, its tunnel is much longer. The diameter is about 6 mm. It is firm and rounded, coated externally with greyish sandy mud, and internally by a tough whitish secretion. The ventral curve of the tube is comparatively smooth externally, but the rest of the surface, and especially the posterior curve, is furnished with a series of long, slightly bent elastic spines, in length three or four times the diameter of the tube, or about 25 mm. These stiff elastic spines (Pl. XLI. figs. 5, 6) are composed of layer upon layer of a hyaline secretion, probably the same forming the lining of the tube, a well-marked central cavity, moreover, giving the process a resemblance to a large sponge-spicule.

The central region, indeed, appears to be plaited or folded in some parts towards the tip, the distal region being veined like a piece of finely marked pitch-pine. It is filled with an opaque mass of granules towards the base, which is greatly enlarged at the point of attachment to the tube, and is there coated by the sandy mud of the general investment. When a spine is torn out a deep pit remains in the wall of the tube, for the bulbous base of the spine forms a hard solid mass. In their complete state the tips of the spines are acutely pointed.

An examination of the sections of the body-wall of *Nothria willemoesii* (Pl. XXXVA. fig. 1) shows that the comparative size and disposition of the great longitudinal muscles is a feature of some value, and not altogether dependent on the degree of distention of the perivisceral chamber. In proportion to its size the body is supplied with powerful muscles. The dorsal longitudinal are massive and characteristically reniform, the internal hilum being occupied by a large blood-vessel. The ventral are ovoid, and two or three fasciculi of vertical fibres branch from their upper margins obliquely downward and inward. The nerve-area is well marked, and the cords attain considerable size. Their investment lies on the circular coat, and the powerful vertical muscles from the middle line of the dorsal wall bound them at each side. A neural canal occurs rather below the middle of the united cords. The vertical fibres pass from the mid-dorsal region between the longitudinal muscles, support the wall of the intestine on each side, and are attached ventrally as before mentioned. The conspicuous strength of these bands must exercise an important influence on the canal. Fibres of attachment, moreover, occur between their inner surface and the digestive tract. Other vertical fibres proceed from the dorsal wall outside each longitudinal muscle, and are directed slightly inward inferiorly, so as to send fasciculi into the ventral longitudinal. The circular muscular layer is equally developed dorsally and ventrally, and the narrow hypoderm is densely granular dorsally, and thickened in the median line ventrally. A cavity dorsally at the base of each foot contains the large glandular mass, probably connected with the special function of tube-secretion.

A fragment of the tube of this species occurs in the British Museum, from the collection made by H.M.S. "Alert,"¹ lat. 34° 11' N., long. 136° 33' E.; depth, 71 fathoms.

¹ I may here bear testimony to the extent and value of the Annelida collected by the "Alert."