

what more distinct. Perhaps the indistinctly striated condition of the fibres is the consequence of their being nearly functionless and rudimentary.¹

From their position close to the body-wall one feels inclined to compare these muscles together with the outer wall of the body with the "Hautmuskelschlauch" of worms, as the Germans call it. The muscular fibres form a single layer only; they have an irregular oblique direction, which in some parts approaches to a transverse, in other parts to a longitudinal, position; their course is imperfectly parallel. Their structure is very simple, and can be best studied in Canada balsam preparations; when seen in oil of cloves their transverse striation is so indistinct as to be hardly visible. It is from such a preparation that the fig. 6, Pl. IV. has been made. When making a preparation of them by means of needles they present themselves like flat bundles of delicate fibrillæ, each bundle having a breadth of about 0·01 mm.; they sometimes show a clear wall as a kind of sheath, and are furnished with nuclei at intervals; the latter are elongate, and, as appears on a transverse section of the muscle, cylindrical; they have a length of about 0·02 mm. and a transverse diameter of about 0·005. In a transverse section of the wall of the body, as in all the figures of Pl. III., the nuclei of the matrix are seen between the chitinous outer wall and the transverse sections of the muscles. In these sections the latter show a very curious structure (Pl. IV. fig. 5); whereas that side of the muscle-fibre which is directed towards the anterior of the animal is smooth and arched, and shows the sheath in the form of a distinct margin; that side of the same fibre which is directed towards the exterior is deeply toothed; here the fibrillæ which compose the fibre seem to part in different ways. As I could observe this phenomenon only in very thin sections, there can be no doubt that this structure does not agree with the natural condition of the fibre. The nucleus of the muscle-fibre is sometimes placed near the outer wall, sometimes almost in the centre of the fibre. As to the development of the muscle-fibre, when comparing it with the condition of the muscular fibre in the Cypris-larva, we may suppose that the oval contractile cells which compose the larval fibre grow out into long fibres, the pointed extremities of which are no longer placed in a longitudinal row, but have been pushed along each other.

The connective tissue is composed of fibres, but also of extremely delicate and finely granulated membranous plates which form the partitions between the large meshes. Its nuclei are round and flat, and have a diameter of 0·008 mm. The fibres are more robust where they form the wall of the cavity in which the thorax is situated; we find also stronger fibres where they run in a straight direction from the organs to the wall of the little animal.

I have not observed a true body-cavity in these little males, and before I had studied the bodies of other Cirripedia by means of transverse sections, I was much

¹ Leydig (Zum feineren Bau der Arthropoden, *Arch. für Anat. und Physiol.*, 1855, p. 394) says that the muscle-fibres of young individuals of *Coccus hesperidum* are distinctly transversely striated, those of full-grown individuals which almost lost the function of locomotion are totally rudimentary (and smooth?).