

vesicula seminalis is no doubt only a dilatation of the vas deferens at the place where it corresponds with the testis. The vesicula seminalis in all the larger specimens was filled with a dense mass of very small spermatozoids; they have the shape of threads, each having a length of about 0.02 mm., and each furnished at the extremity with a very small vesicle (Pl. I. fig. 6). Between the spermatozoids in the vesicula seminalis small empty vesicles are seen, as also others which quite resemble the very small cells of the contents of the testis, probably each one of them contains a spermatozoid.

The length of the canal acting as a vas deferens is not very considerable; it passes freely through the connective tissue for about 0.25 mm. and then enters into that part of the body which represents the thorax of the Cirriped. Figs. 10 and 11 on Pl. III. show sections of the duct before it reaches the thorax, but in the figs. 5 to 8 of Pl. III. the same canal is represented in the middle of each transverse section of the thorax. In fig. 9 the form of the section of the thorax is nearly quadrangular; this is its shape near the place where the vas deferens enters it; in the sections, however, which more approach the other extremity of the canal the thorax is exactly cylindrical, and then its wall is parallel to the wall of the genital canal. The diameter of the thorax itself is about 0.08 mm.; the canal which runs through it longitudinally has a width of 0.03 mm. Whether it be preferable to designate the cylindrical terminal portion of the thorax as "penis" is, I think, difficult to say; morphologically it is hardly to be distinguished from the appendix of that name in the hermaphrodite Cirriped, which is called by some authors a penis, by others an abdomen.

The nuclei of the cells which surround this canal (Pl. I. fig. 5) are slightly larger than those of the connective tissue placed between the canal and the chitinous wall of the thorax; as far as I could distinguish in any of the sections, these cells of the wall of the canal have no distinct shape and do not compose a true epithelium. From the place where it enters into the thoracic part of the body the vas deferens is seen in all the sections which pass transversely through the thorax; it may be traced for about half a millimetre; it then ends abruptly; probably, though this could not be distinctly observed, it now opens into the cavity (Pl. III. fig. 4 *ca*) lined by the connective tissue, which has an outward opening at the capitular pole of the body. The communication with this cavity must be about at the height of the supracæsophageal ganglion. The whole thoracic part of the body can be stretched forward in a direction towards the capitular pole; though I do not believe that the opening of the vas deferens ever reaches the opening at the surface of the body, this stretching forward of the thorax is no doubt brought about in order to approach the opening of the vas deferens as much as possible to the slit at the extremity of the body. Well-developed muscoli retractores serve for the retraction of the thorax within the body of the male. I have figured one of them on Pl. I. fig. 1, *mr*. In the transverse section figured on Pl. III. fig. 10 these muscles are also represented.