

chitinous outer wall is easily observed. The external surface of the body-wall is clothed with microscopic spines, having a length of about 0.0235 mm., and placed in transverse rows (not quite so regularly as shown in fig. 1 of Pl. I.). As a rule, these spines are narrow and pointed at the extremity, which is attached to the wall of the body and broadest at the other extremity. Here the free margin is deeply toothed, which gives the spines a certain resemblance to the scales of the Lepidoptera. In other places the incisions of the spines are so deep as to divide the scale into two or three narrow spines. A small circular space at the peduncular pole is left free from spines, and at the other extremity the terminal part is so completely covered with minute particles of mud and sand, that it is impossible to distinguish the little spines there. This latter part of the body is the only one which is visible when the little male is in its ordinary place, viz., between the mantle or "sack" (as Darwin calls it) and the scutum of the hermaphrodite. A small rounded part at the capitular extremity of the body is covered by a chitinous membrane of greater thinness. The nuclei of the chitinogenous epithelium are placed here much more closely and are more easily visible owing to the thinness of the chitinous wall. A narrow slit-like opening (fig. 1, *o*) divides this little circular space; it corresponds with the orifice of the capitulum of the pedunculated Cirripedia. It is not easy to distinguish the edges of this slit-like opening, owing, as Darwin suggested for the same orifice of *Scalpellum vulgare*, to their extreme thinness.

The chitinogenous membrane which is found beneath the chitinous outer wall shows the ordinary structure of very flat cells with indistinct limits and with rather distant but conspicuous nuclei. These nuclei are very close to one another at the small circular part at the capitular extremity (Pl. III. figs. 2 and 3). The slit which indistinctly divides this part gives entrance to a cavity which contains the thoracic part of the little male. This cavity is not lined by an epithelium; it is only surrounded by a somewhat more solid layer of the same connective tissue, which fills up the whole interior of the body of the male. This cavity is seen in transverse section in Pl. III. fig. 4. In all the specimens of this species which I investigated the thoracic part was always retracted high up into the interior of the body, so that even the very long spines at the end of the slender limbs never reached the slit-like orifice at the capitular pole. In the males of some of the other species (*Scalpellum intermedium*, *Scalpellum tritonis*) the spines at the end of the thoracic limbs extend beyond this orifice. This was often also the case in the males of *Scalpellum vulgare* as observed by Darwin, which always showed the whole thorax forced outwards through the orifice, a circumstance which perhaps was owing, according to Darwin, to the action of the spirits of wine and consequent endosmose.

*Muscles of the body-wall.*—Under the cells of the hypodermis a well-developed layer of muscular fibres is everywhere present; these muscular fibres are indistinctly transversely striated; in some of my preparations, however, the transverse striation is some-