

*The Appendages.*—As far as the number and the shape of the appendages of the thorax are concerned, it has proved rather difficult to get any certainty; in the first place, because the limbs with their thin chitinous wall refract the light in the same way as the thorax, and are pressed so closely against the body of the thorax as to make it impossible, even in a well-stained preparation, to make out their respective outlines, and in the second place, because of the smallness of the parts in question. After a careful study of sections, as well as from preparations made by dissection with needles, I believe the following facts may be safely relied upon. Only four pairs of legs are relatively well-developed; these are the four posterior pairs, and each of them is composed of two branches. Of the first two pairs of cirri only one very short branch is left. Each branch of the double-branched ones is relatively long and narrow, and terminates in two or three very long spines. In a transverse section each leg is represented by its chitinous wall and by the nuclei of its matrix, which are more or less elongate (Pl. I. fig. 5).

*The Cement-Glands.*—Finally, I must describe in a few words the structure of the cement-glands. They may be best studied in a section of a not quite full-grown specimen, as shown in Pl. IV. fig. 3. Each male contains a pair of these glands; they are situated a little above the vesicula seminalis (Pl. I. fig. 1 *c. gl.*); they have an oval shape, and measure about 0.15 mm. They are composed of very large cells with granular contents and a large nucleus, kept together by an extremely delicate network of connective tissue with a single rather small nucleus here and there between its fibres. Between the large cement-cells cavities are left open here and there in the connective tissue; each cell has the shape of a wedge, and is placed so that the broader part is directed towards the periphery, the narrower, on the contrary, towards the centre of the gland. The structure of the contents of each cell is rather remarkable, since the larger granules are placed at the periphery, and the contents are much more homogeneous towards the narrower extremity of the cell. In one of the preparations the ducts which run from the gland to the antennæ were rather distinct; they are attached as thread-like appendages to one of the narrower extremities of the gland.

*Summary.*—I think I have given herewith a full description of the so-called complemental male of a species of *Scalpellum*. With this description, and with the figures on Pls. I.–IV., it is possible not only to prove that this male has a highly degenerated organisation, but also to demonstrate in what this degeneration consists, and how it affects some of the organs very greatly, whilst others suffer less from it, and some are not influenced by it at all.

The state of things in the male under consideration may be summed up as follows:—

1. The external characteristic shape of the species with its capitulum and peduncle, its valves and scales, is lost. The microscopic body consists of an elongate bag closed on