

Different as the forms of these spines may be, their minute structure is always the same, and, I think, quite identical with that of any other spine. The cuticle is perforated at the place where the spine is inserted, and a thin and flexible part of this cuticle keeps the spine in its place; a socket is thus formed in which the spine easily moves. The spine itself is, near its insertion, cylindrical and hollow, and its cavity is entirely or partly filled with a protoplasmic substance, which is in continuity with the epithelium of the integument. Towards the extremity the spine is flattened, chitinous, and no longer hollow; the exterior margin of this flattened part is serrated (*Nymphon*), or provided with extremely small teeth (*Colossendeis*). Originally I considered these spines as being of a sensory nature; but afterwards, as I was convinced of their chitinous composition, I changed my opinion. However, as it is not difficult to trace a nerve, at least in some of the more transparent species, penetrating these spines, they may still be considered as, to a certain extent, organs of feeling. On the other hand there are, perhaps, far more important functions to be fulfilled by the ovigerous legs with the aid of these denticulate spines, viz., those of seizing the food, and, last, not least, of holding the animal of the other sex during the act of copulation. In most species where denticulate spines occur the four last joints of the ovigerous legs often lie rolled up spirally, with the rows of denticulate spines turned inwards. These joints if wound round one of the legs or any other part of the body of the animal with which it copulates, would necessarily secure a very strong adhesion in consequence of the rows of spines.

In close relation with the integument are the glands, which occur in different appendages of the body.

1. The glands of the palpi. These I observed in *Discoarachne brevipes*, where they occur in the third joint of the palpi, and probably their secretion is poured out through a sieve-like perforated spot at the end of the second joint (Pl. VII. fig. 10). In the palpus of *Ascorhynchus* such a gland is also present. It is situated in the fifth joint, and has the form of a long sack, whose wall is lined by small and very numerous glandular cells. It is attached to the wall of the joint of the palp by means of numerous threads of connective tissue, and it opens towards its distal extremity by means of a rounded pore. In *Ascorhynchus orthorhynchus* this pore is placed at the tip of a small conical excrescence; but in *Ascorhynchus glaber* I did not observe this knob. Probably the same glands occur also in other genera—e.g., in *Colossendeis*—but I could not ascertain their presence.¹

2. The glands of the ovigerous legs. These I observed in *Nymphon*, but their minute structure can only be studied in fresh specimens. They open into a small pore, not far from the beginning of the fourth joint of the leg. Each gland seems to consist of the

¹ The glands of the palpi are mentioned in Dohrn's paper of 1879. He says of the nerve of the palpus: "Er umfasst auf seinem Laufe ein sonderbares, bisher unbekannt giblebenes Excretionsorgan" (*loc. cit.*, p. 31).