

when disturbed." He refers to the method, mentioned by Sp. Bate, adopted by species of *Amphithoë* of wrapping themselves about with sea-weed. This he observed in the case of *Amphithoë penicillata*, Costa, and also in Heller's two species of *Podocerus*, which he names *Amphithoë longicornis* and *Amphithoë largimana*. (See Note on Kossmann, 1880.) The Corophiinae adopt a third mode of using their secretion, in lining the walls of the channels which they burrow in the mud.

The second section treats of the unicellular glands in the genus *Orchestia*. Here the gland-cells are distributed in different places over the whole body, but principally "in the coxal-plates and the analogously formed lamellar expansions which are found on the basos of the three hinder pereopods of both sexes and on that of the second pair of gnathopods of the female." Small groups are found in the other joints of the legs, and in small numbers the cells are found in the antennæ, mandibles, maxillipeds, last uropods, and elsewhere; in the last pleon-segment they form a large dorsal complex, reaching into the telson. The outlets are not as in the Corophiidae by numerous tubes of various lengths, often uniting into a bundle before reaching the common exit, but by short courses to independent pores opening in the chitinous walls of various parts of the body. They are found in both sexes of *Orchestia*, of terrestrial habit, but in *Nicea*, more attached to the water, they are wanting, and may hence have the function of preventing too rapid exhalation of moisture.

Comparing his own observations with those of others, Nebeski concludes "that in the *Phronimidæ* and *Caprellidæ* three to five or more gland-cells are united in the formation of a secretory element and from this proceeds a cuticular emission-duct, while in the *Crevettina* this formation of a complex does not occur, inasmuch as the secretory element coincides with the histological, that is with the cell, and so a special cuticular passage belongs to each cell. The *Hyperidæ* seem to possess both types of glands, so that in this respect they occupy an intermediate position; at least Paul Mayer mentions that in these Amphipoda 'in opposition to the *Phronimidæ* the complex-formation only occurs in a limited degree or is entirely wanting,' which would consequently betoken a nearer approach to the *Crevettina*."

The section on the renal glands attached to the intestine of the *Crevettina* is of considerable interest. Nebeski cannot confirm Spence Bate's view that in *Gammarus* and *Mæra* there is but one gland-tube, at least he himself always found two in *Gammarus marinus* and *Gammarus locusta* as well as in *Mæra brevicaudata*, and with this the statements of Wrzeńskiowski on *Gammarus pulex* agree, although in *Goplana polonica* the right gland suffers degradation in course of development. In *Melita* Nebeski found the gland unpaired. In all the Corophiidae, he says, we have two small tubular or vesicular structures which rise obliquely from the intestine. Among the Gammaridae they are small in *Mæra*, but in most they stretch in adult specimens through more than three segments. For these the peculiarity is characteristic, that at their origin they bend forwards, and, lying close to the intestine, run forwards more or less far. In *Cyrtophium* they pass backwards through the long fourth, to the beginning of the fifth, pleon-segment. In *Nicea* to begin with they turn backwards, but again bend forwards and end just over the place of origin. In *Orchestia* they differ both in size and position. While in all other forms, where the rectum quite uniformly occupies the three last pleon-segments, the tubes are placed on the intestine at the boundary between the third and fourth pleon-segments, in *Orchestia* they arise in the seventh pereon-segment at the sides of the intestinal canal, and with gradual elevation run backwards; between the third and fourth pleon-segments they lie dorsally on the intestine and here form the same flexure which *Nicea* exhibits. The difference between *Nicea* and *Orchestia* is shown to depend on the modification which the rectum has undergone in *Orchestia*. That the glands belong to the mid-gut is a point on which Nebeski is in agreement with Mayer, 1882, and Baldwin