

The introduction, pages 3 to 29, comprises eight sections, as follows:—

1. Allgemeine Charaktere. Among these are noted the very striking differences presented by the antennæ in the two sexes, the absence of palp-appendages from the maxillæ as well as the maxillipeds, and the limitation of the triarticulate mandibular palp to the male sex.
2. Aeussere Erscheinung und Körperform. Claus knows of no instance in this group in which the epimera or side-plates are absorbed in the segment as in the *Phronima*-group. The fifth and sixth pleon-segments are always coalesced, and sometimes the telson is united to them without suture.
3. Gliedmassen. The upper or front antennæ never have an accessory flagellum; observers have been misled by the produced peduncle in *Phorcus* to regard the principal flagellum as accessory. The second or hinder antennæ have the peduncle and flagellum not sharply defined the one from the other. In almost all cases the first or coxal joint is absorbed into the integument of the head. Claus notices that there are fine setæ along all the joints except the first of the folding antennæ of the male, but of their function he is not quite certain. The left mandible has a tooth-like process of considerable size, which is either absent or as a rule very weakly indicated on the right mandible. The first joint of the mandibular palp, which is generally small in the Gammarina, is generally large, and sometimes enormous, in the Platyscelidæ. For the terminal part of the gnathopods various expressions are used, *Greifhand (Zange)* for a subchelate, *Scheere* for a chelate, hand and finger, *doppelte Scheere* when the chelate hand and finger are applied against an immovable process of the wrist, and *zusammengesetzte Scheere* when the chela is formed by a simple hand and finger applied against the process of the wrist. The marsupial plates of the female are generally lanceolate, yet widening at the free end, and occasionally so much so as to be like a stalked leaf.
4. Integument und Hautdrüsen.
5. Nervensystem und Sinnesorgane. The ganglia of the first two peræon-segments are drawn together and taken up into the group of the subœsophageal ganglion. The last peræon-ganglion is relatively small and united with the preceding, while the fourth pleon-ganglion, which provides for the hinder section of the pleon and in the Gammarina remains separate, is much reduced, united with the third ganglion, and placed in the third pleon-segment. In the more elongate species lateral nerves issue not only from the ganglion-masses, but also from the longitudinal commissures in the peræon-part of the ganglionic chain. In the genera *Eutyphis*, *Thamyris*, *Simorhynchus*, and the Oxycephalidæ there are centrally from the origin of the great front antennary nerves two short nerves, each of which provides for a sense-organ lying just in front of the brain, which is evidently an organ of hearing. The contents of the vesicle in question are a clear watery fluid and what is obviously an otolith.

Of the eyes Claus says:—“Eine Facettenbildung der Cuticularbekleidung habe ich in keinem Falle beobachtet, vielmehr bildet, wie bei *Phronima*, die zarte durchsichtige Körperdecke über dem Auge eine gleichmässige Cornea. Immerhin tritt bei tiefer Einstellung eine sechseckige facettenähnliche Felderung hervor, bedingt durch den optischen Querschnitt der paarigen Krystallkegelzellen, deren zwei grosse Kerne erhalten bleiben. Oberhalb der Krystallkegelzellen breitet sich eine deutlich nachweisbare Hypodermis als Matrix der Cornea aus, welche der schon von *Claparède* vertretenen und von *Grenacher* aufrecht erhaltenen Auffassung entgegensteht, nach welcher überall die Bildungszellen der Krystallkegel (mit den Semper'schen Kernen) zugleich die Matrixzellen der Chitinhaut seien.”

On the Spürfäden or Riechhaare he says that here and there the end is open in consequence of the breaking off of the point, and that this may have led to the erroneous view “als besässen die Riechhaare an der Spitze Oeffnungen.” For the latter view see Note on Leydig, 1878, with whom Hoek, 1879, agrees.