

are given, historical review; special classification; alphabetical table of the genera and species. These are followed by "Geographische Verbreitung." Under "Anatomie und Histologie," are given, general form of the body, segments, limbs; integument; glands; nervous system; organs of sense; muscles; connective tissue; organs of respiration; circulatory apparatus; organs of nutrition; sexual organs. Next come "Entwicklungsgeschichte," "Biologie," "Phylogenie," under which the structure of the Cyamidæ is considered, and lastly "Literaturliste." The various topics are handled with great thoroughness, and the opinions of earlier writers are minutely and carefully criticised.

Mayer thus defines the family Caprellidæ:—

"Læmodipoden mit schmalen, auf dem Querschnitt annähernd kreisrundem Körper. Kopf und 1. Brustsegment zu einem Cephalothorax verschmolzen, 2.-7. Segment frei. Epimeren fehlen. Kiemen am 2., 3. und 4. oder nur am 3. und 4. Brustfusspaare, schlauchförmig. Abdomen aus höchstens 5, wenigstens 1 Segmente zusammengesetzt, mit höchstens 3, wenigstens 2 stark rückgebildeten Beinpaaren. Vorderfüher stets länger als Hinterfüher. Füsse an Zahl verschieden; die nicht rückgebildeten siebengliedrig, ohne Schere, aber mit einschlagbarer Klaue."

Up to the date of Mayer's treatise there had been established eight genera, for the arrangement of which various useful tables are given. *Cercops*, *Proto* and *Caprellina* agree in having branchiæ on the second, third and fourth segments; the rest have them only on the third and fourth. *Proto* and *Caprellina* have more than two joints to the flagellum of the lower antennæ; the rest have only two. *Caprella* and *Podalirius* are without the mandibular palp, which is present in the rest. *Proto* stands alone in having seven pairs of complete limbs on the peræon; *Protella* has five pairs complete and two pairs rudimentary; *Cercops*, *Ægina*, *Æginella*, *Caprella*, have only five pairs; *Caprellina* and *Podalirius* have four pairs complete and one pair rudimentary. In *Cercops* the pleon has five segments, in *Protella* two, in the rest only one. In *Ægina*, the abdominal feet are jointed, in *Æginella* not jointed. But of *Cercops* and *Æginella* Mayer does not speak from his own observation.

Within the genus *Caprella*, the species may be divided, as pointed out by Haller, into two groups, those in which the lower antennæ carry "Ruderborsten," and those in which they carry "Sinnesborsten." They may be otherwise divided into two groups, according as in the male the basal joint of the second gnathopod is very long or is short.

To *Cercops* is assigned the single species "*Cercops Holbölli*, Kröyer." *Proto*, Leach, has the synonymy, *Leptomera*, Latreille; *Naupredia*, Latreille; *Naupridia*, Milne-Edwards; *Proton*, Desmarest. The species assigned to it are, *ventricosa*, O. F. Müller; *brunneovittata*, Haller; "*Novæ-Hollandiæ*," Haswell; and "*?Proto cornigera*," Haswell, for *Caprella cornigera*, Haswell. This last species has three pairs of branchiæ arranged as in *Proto*, but the first three pairs of peræopods have not been observed, only the muscles of the body going to them are so little developed, as to produce the impression that the limbs themselves may be rudimentary, in which case Mayer would place the species in a new genus, *Hircella*, a name adopted by Haswell in 1884, without further observation of the appendages in question.

The genus *Caprellina*, Thomson, has the one species *longicollis*, Nicolet, with "*Novæ-Zealandiæ*," Thomson, and *brevicollis*, Nicolet, for synonyms.

*Protella*, Dana, has the species *phasma*, Montagu; *gracilis*, Dana, with *australis*, Haswell, as a possible synonym; *echinata*, Haswell, for *Caprella echinata*, Haswell; and "*Haswelliana*," Mayer, n. s., in which the last two segments of the peræon are coalescent. Haswell, in 1885, says of his *Protella australis* that "it is a very well-marked species and quite distinct from *P. gracilis* of Dana, to which Mayer is inclined to unite it, both in the form of the head and of the gnathopoda. The gnathopoda are not unlike those of *P. dentata* [? *C. dentata*] but in other respects the two species are quite different." Mayer remarks