

Genus CHLORODIELLA RATHBUN.

Chlorodiella bidentata (NOBILI).

Chlorodius bidentatus n. sp.? NOBILI, 1901, p. 15.

MATERIAL. — Banda Neira, 24-II-29, 2 ♀, 3 ♂ (only the largest with both chelipeds), Dr. H. Balss det.

REMARKS. — Balss, who identified the specimens, referred this species to the genus *Chlorodiella* and the carapace is certainly very similar to that of *Chlorodiella barbata* (Borradaile, 1900, p. 587, pl. XLI, fig. 4) for example. It differs, however, in at least two respects from typical species of that genus (e. g. *Chl. niger*). (1) The front is of the same general form but is bilobed, without any trace of the small outer lobules or of the triangular process which descends from each to meet the rather broad basal antennal segment. Instead, the narrow basal is separated by the rather long succeeding antennal segment from the front. (2) There is a distinct palatal ridge extending to the anterior boundary of the buccal cavern.

The chelipeds, which are unequal in both sexes, especially in the male, are long and rather slender being at least twice the carapace length in the female, thrice in the male (cf. Nobili, 1901, p. 15 « I chelipedi sono piuttosto corti »). The long merus, most of which projects beyond the antero-lateral border, is armed with 2 (in one instance 3) curved spines on the anterior border. The chelae are smooth, long and narrow, with short almost straight fingers; the palm is twice as long as high. The tips of the fingers are blunt and hollowed except in the case of the larger chelae of the oldest male where they are rather worn.

The sutures between segments 3-5 of the male abdomen are distinct although the three segments may not be freely movable. The last segment is only 2/3 as wide as high, with rounded apex; the penultimate is about 2/3 as high as wide. The apex of the first pleopod is represented in text-fig. 26b.

The first two antero-lateral teeth are inconspicuous, the third is rather long and spiniform; the fourth is absent in small specimens, rudimentary in the two largest specimens.

There is a wide orbital hiatus but the flagellum stands in the notch between front and inner orbital angle.

Measurements of largest male in mm. :

<i>l.</i> of carapace	4.5	<i>l.</i> of larger chela.....	7.6
<i>b.</i> of carapace	6.9	<i>h.</i> of palm of larger chela.....	2.7
<i>l.</i> of front	2.8	<i>l.</i> of smaller chela	5.2
<i>l.</i> of fronto-orbital border	5.7	<i>h.</i> of palm of smaller chela.....	1.3

***Chlorodiella niger* (FORSKAL).**

Chlorodius niger ALCOCK, 1898, p. 160.

Chlorodiella nigra MONTGOMERY, 1931, p. 441.

MATERIAL. — Banda Neira, 24-II-29, 1 ♂, 3 ♀ (2 ovigerous), all of small size.

REMARKS. — The orbital hiatus is variable, being quite wide in three of the specimens, very narrow and slit-like in the largest ovigerous female.

Genus CYMO DE HAAN.

***Cymo andreossyi* (AUDOUIN) DE HAAN.**

ALCOCK, 1898, p. 73.

MATERIAL. — Banda Neira, 2 ♀, one very small.

***Cymo melanodaetylus* DE HAAN.**

ALCOCK, 1898, pp. 73 and 74.

MATERIAL. — Banda Neira, 24-II-29, 2 ♂ (one the host of *Sacculina leopoldi* Boschma).

Genus DAIRA DE HAAN.

***Daira perlata* (HERBST) DE HAAN.**

ALCOCK, 1898, pp. 71 and 155.

STIMPSON, 1907, p. 42.

RATHBUN, 1907, p. 44.

MATERIAL. — Mansfield Eiland, 1-III-29, 1 ♂.

Eiland Weim, 28-II-29, 1 ♂.

REMARKS ON SYSTEMATIC POSITION OF THE GENUS. — Alcock (1898, pp. 137-156) referred the genus *Daira* to the subfamily Actaeinae together with *Actaea* and *Banareia*. *Daira perlata* is certainly very similar in general appearance to many species of *Actaea*, especially those with concave postero-lateral borders. The abdomen of the male is also very similar in shape to that of *e. g. A. hirsutissima* (Rüppell) being rather narrow with the apex opposite the middle of the base of the cheliped. The sutures between segments 3-5 are, however, distinct although the segments are not movable on one another. The pleopods of the

male are surprisingly different from those of *Actaea*, the second being whip-like and longer than the first (fig. 27 *a* and *b*). This type of second pleopod is characteristic of the subfamily Menippinae (section Hyperomerista) as emended by Balss (1932, p. 510) but may be found in other Xanthids although, as far as my present knowledge goes, it does not occur elsewhere in the section Hyperolissa than in *Daira*. The difference in the second male pleopod, which must be associated with some physiological difference, seems to me more important than slight differences in fronto-orbit, palatal ridges, etc. But, until a revision of the Xanthidae can be undertaken it is not possible to be dogmatic as to the

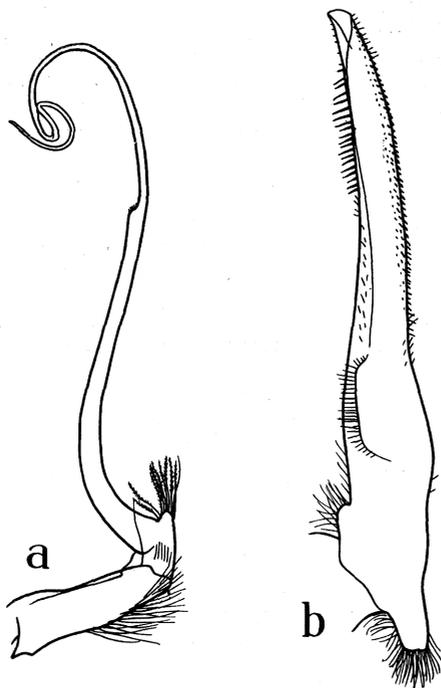


FIG. 27. — *Daira perlata* (HERBST). — *a*. Second and *b*. first pleopod of male : $\times 9$.

position of the genus. It seems to have affinities with the Menippinae, *e. g.* the structure of the front, orbit and antenna is at least as closely related to that of *Menippe* as to that of *Actaea* where the outer lobule is in contact with the basal antennal segment (*cf.* fig. 28 *a* and *b*). The fact that the endostomial ridges, though well developed posteriorly, do not extend to the anterior border of the buccal cavern need not necessarily exclude the genus from the Menippinae (*e. g.* Balss found that in the Pilumninae « die Gaumenleisten sind entweder nur schwach entwickelt oder fehlen ganz » in *Heteropilumnus*, 1933, p. 41). The male abdomen in all the Menippinae that I have examined is broader than in *Daira* and does not reach quite so far forward, the apex being opposite the anterior end of the base of the first walking-leg. *Daira* is somewhat interme-

diate between the Actaeinae and the Menippinae; Ortmann (1893, pp. 473-476) referred it to his Oziidae but placed it in his subfamily Panopaeinae with *Actumnus*, *Panopeus* and *Melia* rather than in his Oziinae with *Ozius*, *Epixanthus* and *Eurytium*. Of these six genera only *Ozius* and *Epixanthus* have the long type of second male pleopod and both are now placed in the Menippinae. Should *Daira* prove to belong to the Menippinae its position would appear to be intermediate between *Menippe* and the *Pseudozoius-Ozius-Epixanthus* group.

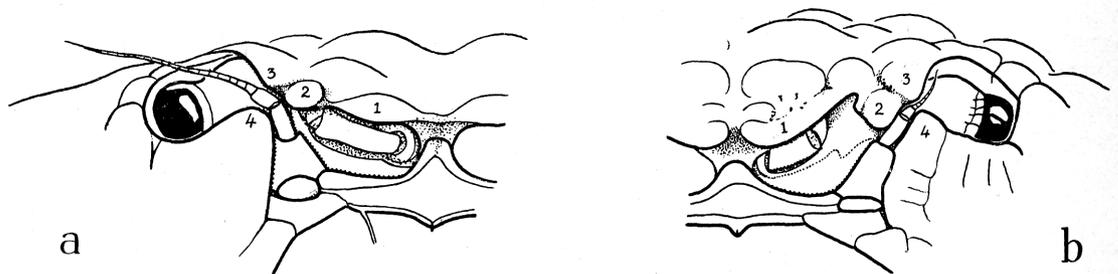


FIG. 28. — a. *Menippe bellangeri* (H. MILNE-EDWARDS). — b. *Daira perlata* HERBST.
1. Median, 2. lateral frontal lobe. 3. Upper, 4. lower inner orbital angle : \times approx. 5.

SECTION II. HYPEROMERISTA.

Genus EURÜPPELLIA MIERS.

Eurüppellia annulipes H. MILNE-EDWARDS.

Ozius (Eurüppellia) annulipes ALCOCK, 1898, p. 188.

MATERIAL. — Jefbi, 26-II-29, 1 ♀ (rather worn).

Genus ERIPHIA LATREILLE.

Eriphia laevimana LATR. EDW.

ALCOCK, 1898, p. 214.

MATERIAL. — Poelo Babi (Aroe), 21-III-29, 1 ♀.

No locality : 1♂, 1 ♀.

Eriphia laevimana var. *smithii* MACLEAY.

Eriphia laevimana var. *smithii* ALCOCK, 1898, p. 216.

Eriphia sebana smithii RATHBUN, 1910, p. 359.

MATERIAL. — Kaimana (New Guinea), 19-III-29, 1 ♀.

REMARKS. — The apices of the first and second pleopods of the male are represented in fig. 29a and b; they are very similar in the typical form *E. laevimana* Latr.

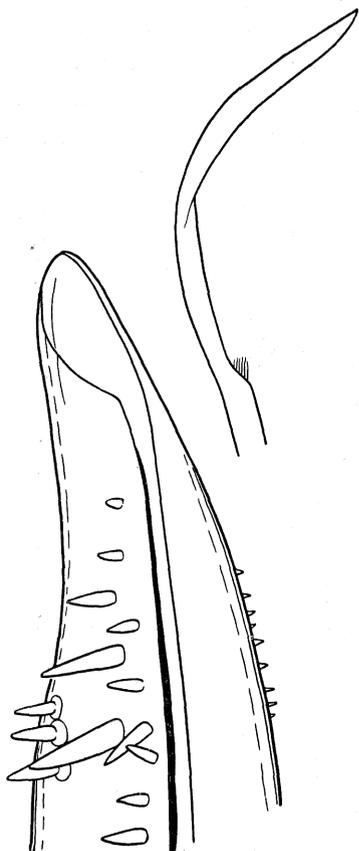


FIG. 29. — *Eriphia laevimana* var. *smithi* MACLEAY. — Apex of first and second pleopods of male respectively : $\times 60$.

Genus *PILUMNUS* LEACH (*sensu restricto*) ⁽¹⁾.

***Pilumnus laevimanus* DANA.**

KLUNZINGER, 1913, p. 267.

BALSS, 1933, p. 12 (in list of species).

MATERIAL. — Lampasing (Lampong), 12-IV-29, 1 small ♀ with *P. vesper-tillo* Fabr. (Dr. H. Balss det.).

***Pilumnus spinicarpus* GRANT and MC CULLOCH.**

GRANT and MC CULLOCH, 1906, p. 15, pl. I, fig. 2, 2a.

RATHBUN, 1923, pp. 109 and 123.

⁽¹⁾ See BALSS, 1933, p. 10.

MATERIAL. — Eiland Enoe, 24-III-2, 1 ♂ (*l.* of carapace only 5 mm.) and ♀ 2 smaller specimens.

♀ New Guinea, 1 immature ♂.

REMARKS. — The largest specimen agrees closely with the description of *P. spinicarpus* but the spine on the inner border of the carpus of the larger chela is absent; it has probably been broken off as there seems to be a definite spine base. There are two spines on the inner border of the merus of each cheliped.

The smaller specimens probably also belong to this species.

***Pilumnus vespertilio* FABR.**

BALSS, 1933, p. 21.

MATERIAL. — Lampasing (Lampong), 12-IV-29, 1 ♂.
Ambon, 21-II-29, 1 ♂.

***Pilumnus neglectus* BALSS.**

BALSS, 1933, p. 25, text-fig. 3.

MATERIAL. — Banda Neira, 24-II-29, 1 ♂, 1 ♀ (Dr. H. Balss det.).

Genus **GLABROPILUMNUS** BALSS.

***Glabropilumnus dispar* (DANA) BALSS. (= *Pseudozius dispar* DANA).**

BALSS, 1932, p. 516; 1933, p. 39.

MATERIAL. — Banda Neira, 24-II-29, 2 ovigerous ♀ (Dr. H. Balss det.).

***Glabropilumnus latimanus* nov. spec.**

MATERIAL. — Banda Neira, 24-II-29, 1 ovigerous ♀ (holotype).

DESCRIPTION. — *Carapace* convex from side to side, very convex fore and aft; smooth to the unaided eye, finely punctate under high magnification. Postero-lateral longer than antero-lateral border, the latter indistinctly 3-4 lobed (fig. 30). Front deflexed, anterior margin almost straight and passing gradually into each upper orbital border; there is a shallow V-shaped notch below the outer orbital angle and a trace of a suture near the middle of the upper border. Basal antennal segment scarcely reaching the front; the flagellum, which is rather longer than the orbit lies in the wide orbital hiatus. Palatal ridges well developed, extending to the anterior boundary of the buccal cavern.

Chelipeds very unequal and dissimilar, the meri scarcely projecting beyond the fourth antero-lateral lobule. The larger chela is of a rather unusual form with a very deep palm and a broadly triangular white immovable finger (fig. 30).

The upper and the outer surfaces of the palm, except for a narrow strip along the lower border of the latter, are covered with a very short light brown felt ⁽¹⁾ from which a few soft bristles and numerous granules project, a few of the

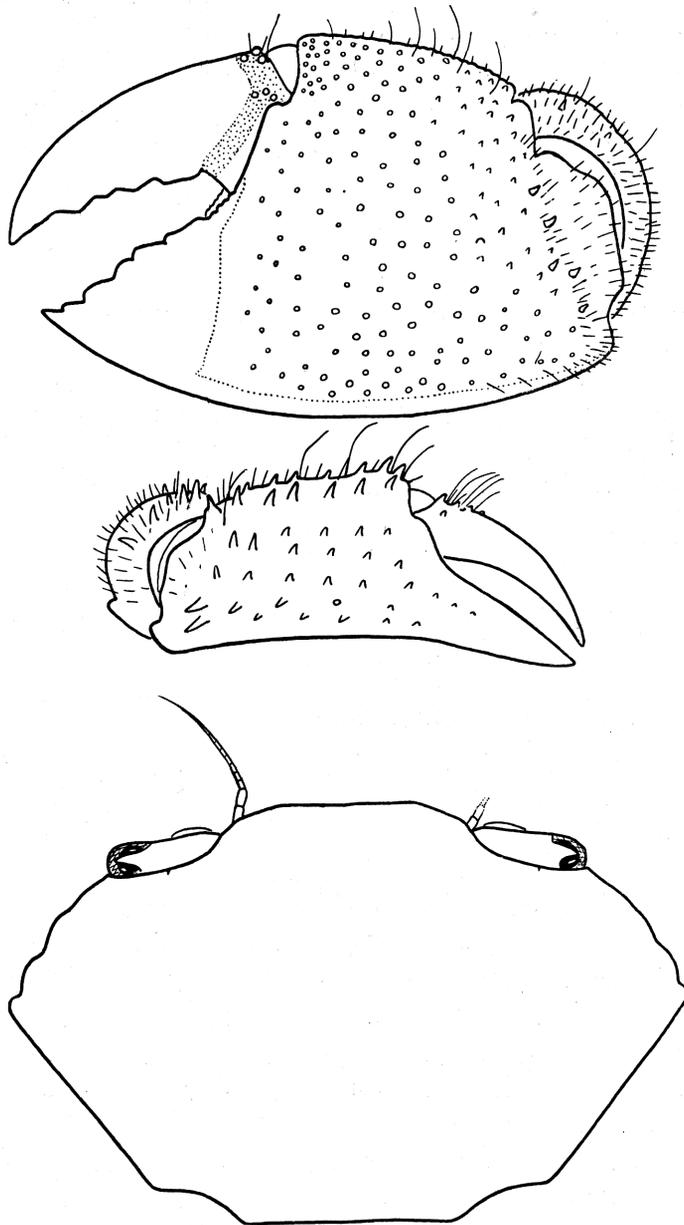


FIG. 30. — *Glabropilumnus latimanus* n. sp. — Holotype. — Carapace in dorsal aspect tilted slightly backwards to show front; $\times 12.5$. Smaller and larger chela : each $\times 15$.

granules near the carpo-propodal articulation are sharply conical. The carpus is only a little longer than broad, the blunt inner angle is beset with 4-5 round

⁽¹⁾ The felt covers the entire area within the finely dotted line in fig. 30.

granules and a number of rather stiff bristles; much shorter setae partially conceal the granules on the dorsal surface especially posteriorly and distally. The smaller chela has a longer narrower palm armed with numerous sharp teeth; the fingers are sharp pointed and more slender (fig. 30); there is a small tooth or spine near the blunt inner angle of the carpus.

The walking-legs have each a number of short and a few longer bristles on the three terminal segments and a small dorsal spine at the distal end of the carpus; the last pair are short and dorsal in position.

MEASUREMENTS. — *l.* of carapace 4.7; *b.* of carapace 7.3; fronto-orbital border 5.2 mm.

REMARKS. — Dr. Balss to whom I sent this specimen, writes that it « gehört, wie ich glaube, in die Gattung *Glabropilumnus* mihi, wenn auch der Seitenrand nicht in Zähne geteilt ist. Jedenfalls steht sie dieser Gattung, bes. *G. dispar* nahe. Ist sicher eine neue Art, schon wegen der merkwürdigen Schere » (20-III-34). This specimen differs from all the species referred to this genus by Balss (1932, p. 516) in having a much broader carapace with very indistinct antero-lateral lobules, no distinct median frontal notch and very dissimilar chelipeds.

Genus PARAPILUMNUS DE MAN.

Parapilumnus leopoldi nov. spec.

MATERIAL. — Banda Neira, 24-II-29, 1 ♀ (holotype).

DESCRIPTION. — *Carapace* convex fore and aft, slightly convex from side to side; length very nearly two-thirds of the greatest breadth and approximately equal to the length of the fronto-orbital border (fig. 31a). Front depressed, the two lobes separated by a rather wide shallow median emargination, the outer angle of each lobe separated from the inconspicuous inner orbital angle in dorsal view (fig. 31b). A short distance behind the front is a row of long delicate plumose setae. Upper orbital border granulate, with the merest indications of two sutures. Lower orbital border also granulate with a strongly developed inner angle (fig. 31b and c); the inner orbital angle on the left is narrower than that on the right side and has a single granule at the apex) and a deep but narrow fissure near the outer orbital angle.

Postero-lateral considerably longer than the antero-lateral border, the latter divided into four lobes, including the outer orbital angle, as represented in fig. 31b.

When the setae (described later) are removed from the dorsal surface of the carapace a number of granules are exposed. These granules — which give the carapace a rather rough appearance — are confined for the most part to the branchial regions, the largest being arranged in two irregular series near the antero-lateral border, on the third and fourth antero-lateral teeth and near the postero-lateral border (fig. 31a and b).

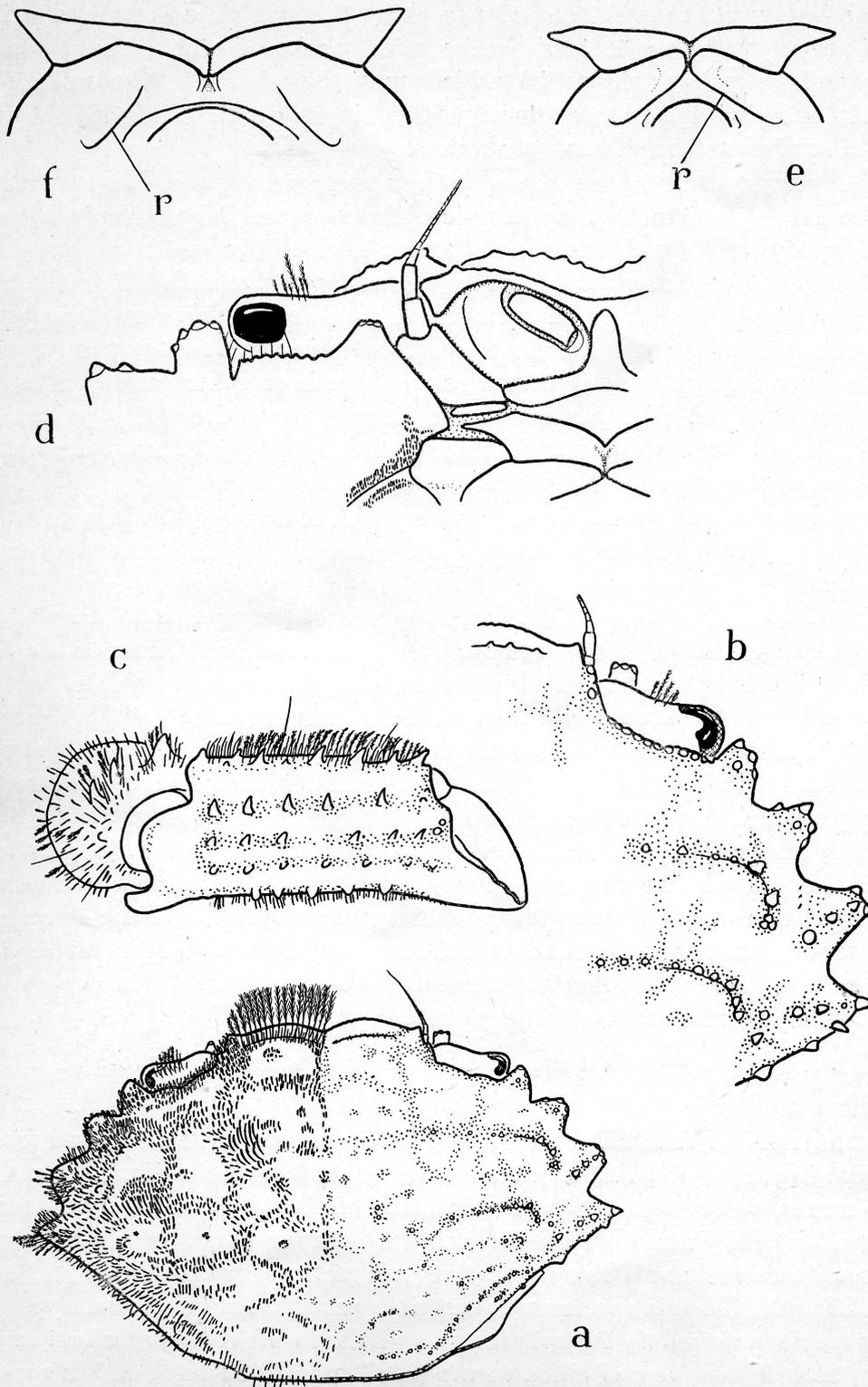


FIG. 31. — *Parapilumnus leopoldi* n. sp. — Holotype.

a. Carapace, dorsal aspect, tilted slightly backwards to show front with the setae represented diagrammatically on left half. *b.* Part of carapace farther enlarged to show antero-lateral teeth and orbit. *c.* Right chela; the dots represent the position of the setae on the outer surface. *d.* Right side of carapace, in frontal aspect, showing fronto-orbital border and epistome. *e.* Anterior portion of palate showing the very oblique ridges *r* meeting in the middle line.

Parapilumnus verrucosipes (STIMPSON). — *f.* Anterior portion of palate showing the widely separated palatal ridges *r*. (*a.* × 9.3; *b.* and *c.* × 15; *d.*–*f.* × 20.)