

NOTES ON VICTORIAN AND OTHER BLATTARIÆ AND DESCRIPTIONS OF NEW SPECIES.

By J. G. O. TEPPER, F.L.S., &c.

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Some time ago a collection of Victorian cock-roaches from the National Museum, Melbourne, was placed in my hands for determination; it comprised 39 species in 18 genera. Among these were a considerable proportion, viz., 13 species, which I was unable, to my surprise, to refer to any of those hitherto published, and therefore presumably new, while two new genera had to be established. Some of these are very rare, as the very able collector, Mr. Jas. A. Kershaw, assures me, and have only been found in one or a few individuals hitherto. The material being scanty, mostly in a form not permitting the study of the wings, and sometimes defective, the characterization is not quite so definite as desirable; but as the respective species differ very much in other details it was considered advisable to attach names—subject, however, to possible future corrections.

Through the study of some of the above new material I have also been induced to transfer my genus *Temnelytra* from the PHYLLODROMIDÆ to the PERIPLANETIDÆ on account of the distinctly valvular form of the inferior sexual lamina of the female, and to place it after the genus (or subgenus) DRYMAPLANETA, mihi, from which it differs in the elytra being much more developed (although not nearly so much as in the winged forms of *Periplaneta*) and in other details.

Besides the Victorian specimens a small number of others had accumulated in the Museum since my last paper, comprising new forms, or described ones from new localities, or such of which only one sex was known. Several of these, coming from Queensland and Western Australia, were kindly contributed by my friend, C. French, Esq., F.L.S.; the remainder hail from various parts of South Australia. Among these, seven species were recognised as new, and an eighth as also represented in the Victorian collection. The rare types of the latter are in the National Museum, Melbourne, when unique; the remainder also represented in the S.A. Museum.

It may be remarked that, so far as my Australian researches hitherto extend, the Blattariæ exceed every other orthopterous group in number of species and genera. As they are among the

oldest known types of insects, this fact seems to offer additional testimony of the great antiquity of the fauna of this continent.

The works consulted are those of Messrs. Brunner de Wattenwyl, Henry de Saussure, Burmeister, and Stål.

The species belonging to the Victorian collection have the numbers attached under which they were submitted; the others are unnumbered and marked by an asterisk preceding the name.

ECTOBIIDÆ.

ECTOBIA APICIFERA (*Walk.*), *Tepper*. No. 24.

Kewell, N.W. Victoria.

ECTOBIA MINIMA, *sp. nov.* No. 25.

Male. Body shining, pale beneath. Head pale tawny, a broad brownish band in front; eyes black; antennæ brownish. Pronotum subtransverse, a pale whitish median stripe as wide as the space between the eyes and of equal width throughout, on each side bordered by a piceous stripe narrow at the apex, much wider behind, lateral margins broadly pellucid. Elytra much exceeding the abdomen, lateral and sutural margins broadly pale, whitish, medial space piceous. Legs (very long), pectus and base of abdomen pale tawny, spines partly blackish; apical part of abdomen deep black. Cerci pale.

| | | | | Male. |
|--------------------|-----|-----|-----|---------|
| Length of body | ... | ... | ... | 4.3 mm. |
| Length of elytra | ... | ... | ... | 4.3 " |
| Length of pronotum | ... | ... | ... | 1.3 " |
| Width of pronotum | ... | ... | ... | 2 " |

Hab.—Mordialloc, Victoria. (Nat. Mus., Melbourne.)

The smallest species known to me.

ECTOBIA SUBLUCIDA, *sp. n.* No. 40.

Female. Body piceous, banded paler. Head brownish, eyes pale, a dark band between the latter interrupted in the middle, antennæ ferruginous. Pronotum semicircular, angles slightly rounded, lateral margins broadly brownish, disk piceous, with a brownish triangular spot adjoining the straight hind margin. Elytra piceous, lateral margins dull tawny, shorter than abdomen, apex rounded (radial and ulnar veins not separate at base). Legs pale brownish. Abdomen piceous, banded or spotted paler.

| | | | | Female. |
|--------------------|-----|-----|-----|---------|
| Length of body | ... | ... | ... | 6.5 mm. |
| Length of elytra | ... | ... | ... | 4.6 " |
| Length of pronotum | ... | ... | ... | 1.3 " |
| Width of pronotum | ... | ... | ... | 2.5 " |

Hab.—Chiltern, Victoria. (Nat. Mus., Melbourne.)

Resembling *E. lucida*, Br.; it differs from it in the parallel branches of the ulnar veins being all obliquely directed to sutural margin instead of to the apex, the pale eyes, the pale spot of the pronotum, and the smaller size.

ECTOBIA (?) MARGARITA, *sp. n.* No. 46.

Male. Pearly grey, dotted with pale brown. Face blackish, a pale band between the black eyes; vertex finely striped pale and dark; antennæ brownish. Pronotum suborbicular, pale translucent; disk impressed, laterally dotted brownish, hind margin rounded. Elytra long, narrow, of pearly lustre, longitudinal vein and the oblique parallel branches much raised, discal area dotted brown. Wings pellucid, highly iridescent. Legs very slender, banded or dotted brown. Abdomen beneath black towards apex.

| | | | | Male. |
|--------------------|-----|-----|-----|-------|
| Length of body | ... | ... | ... | 6 mm. |
| Length of elytra | ... | ... | ... | 6.7 " |
| Length of pronotum | ... | ... | ... | 1.2 " |
| Width of pronotum | ... | ... | ... | 1.5 " |

Hab.—Grampians, Victoria. (Nat. Mus., Melb.)

The slender form, structure of elytra, &c., render this form easily recognisable.

PHYLLODROMIDÆ.

LOBOPTERA CIRCUMCINCTA, *Tepper.* No. 22.

Dandenong Ranges, Victoria. Male and female. Locality new.

TEMNOPTERYX FERRUGINEA, *sp. n.* No. 7.

Female. Pale ferruginous above, legs and underside tawny. Head pale, antennæ brown, base pale. Pronotum elliptic, reddish yellow, pellucid, hind margin rather convex. Elytra attaining to penultimate segment of abdomen, uniformly ferruginous, anal vein impressed, recurved. Wings shorter than elytra. Claws with plantula and arolia distinct. Abdominal segments banded or clouded with brown, angles very little produced. Supra-anal lamina transverse, trigonal, apex rectangular. Cerci long, acuminate. Subgenital lamina very large, cucullate, entire.

| | | | | Female. |
|--------------------|-----|-----|-----|---------|
| Length of body | ... | .. | ... | 15 mm. |
| Length of elytra | ... | ... | ... | 10.5 " |
| Length of pronotum | ... | ... | ... | 5 " |
| Width of pronotum | ... | ... | ... | 6.6 " |

Hab.—Fernshaw, Victoria. (Nat. Mus., Melbourne.)

This species, with *T. deropeltiformis*, Br., might be included into a separate subgenus distinguished by the greater length of

the elytra and the presence of wings at least in the male. From *Blatta* and *Periplaneta*, although very similar in form, they are separated by the entire subgenital lamina of the female, and from the genus *Phyllodromia* by the abbreviated elytra, &c.

**PARATEMNOPTERYX AUSTRALIS*, *Sauss.*; *id.*, Tepper, Trans. Roy. Soc., S. Aust., 1894, p. 170.

A female captured by me in my house at Norwood is assigned to this species, and agrees in all respects with the original description. A male (found in the Public Library, Adelaide) with perfect wings appears to belong also here. They are easily distinguished from the common "black beetles" (*Peripl. orientalis*), which they resemble in color, by the subgenital lamina of the female not being valvular as in the latter, &c. The male being still undescribed, the following description is appended.

Male. Elytra and wings perfect—(Female. Elytra very much abbreviated, wings rudimentary or none)—exceeding the body, dull brown. Head shining, vertex dark red, face black; areoles of antennæ and the labrum yellowish, antennæ brown and white annulated. Pronotum shining, disk dark reddish, surrounded by a zone of dark piceous, which is widest behind; lateral margin deflexed, narrowly bordered with red, rotundate; hindmargin nearly straight, angles rounded. Elytra exceeding abdomen by about one-fifth, margins subparallel, apex rounded; veins much raised, branches of ulnary veins parallel, emitted towards apical border; anal vein distinctly recurved; mediastinal area red near base, remainder to first branch blackish; remainder of elytra dull dark brown. Wings as long as elytra, smoky to blackish. Pectus and legs tawny. Tarsi pale. Supra-anal lamina depressed, rather broadly trigonal, apex truncate, slightly concave, apical margin narrowly white. Cerci long, lanceolate, flat, densely ciliate, black above, beneath brown, concave; apex acute. Subgenital lamina short, broad; hindmargin rotundate, entire, black; disk red.

| | | Male. | Female. |
|--------------------|--------|----------|---------|
| Length of body | ... .. | 15.5 mm. | 16 mm. |
| Length of elytra | ... .. | 15 " | 6 " |
| Length of pronotum | ... .. | 5 " | 5 " |
| Width of pronotum | ... .. | 7 " | 7 " |

Hab.—Adelaide. (S.A. Museum.)

The following species differs from the above in its elytra being much longer with the female, the supra-anal lamina being much narrower and ovate instead of trigonal, besides being much smaller. With the male the pronotum is flatter and less rounded, the supra-anal lamina narrower and distinctly emarginate. Neither of the two species exhibits a trace of plantula or arolia.

PARATEMNOPTERYX BLATTOIDES, *sp. n.* Nos. 27, 33, 47 (larva).

Resembling *Temnopteryx deropeltiformis*, Br. Dark brown, concolorous above, underside and legs reddish. Head wholly covered. Pronotum shining, subelliptic, truncate in front, disk rather flat to convex, slightly excavated behind in the middle and with a single impressed dot on each side in front; hindmargin slightly rounded. Elytra of male exceeding the abdomen; of female abbreviate, attaining from one half to two-thirds of the abdomen; in both sexes the anal vein subflexuose, recurved; apex rotundate. Wings of male nearly as long as elytra, of female rudimentary. Supra-anal lamina narrowly trigonal, of female the lateral margin reflexed, disk tectiform. Cerci long, slender. Subgenital lamina arcuate, apex truncate, hindmargin subcrenulate.

| | Male. | Female. |
|------------------------|--------|-----------|
| Length of body ... | 13 mm. | 13-15 mm. |
| Length of elytra ... | 14 " | 8- 9 " |
| Length of pronotum ... | 4 " | 4- 4.7 " |
| Width of pronotum ... | 6 " | 6- 6.5 " |

Hab.—Narre Warren and "near" Melbourne. (National Museum, Melbourne.)

The females resemble the figure of Saussure's *Blatta Conloniana* (*Temn. pennsylvanica*, Deg.) very much in outline, but differ much in size and detail. A female specimen from "Victoria" was also previously presented by C. French, F.L.S., and is in the collection of the S.A. Museum.

*PHYLLODROMIA GERMANICA, *L.*; *id.*, Tepper, Trans. Roy. Soc., S.A., 1893, p. 41.

In the above paper it was mentioned that the reported occurrence of this European species in Australia required confirmation. In February last several specimens were received from Dr. Stirling, F.R.S., and Mr. Geo. Bednall respectively. These were captured in dwellings in the city of Adelaide, and agree perfectly with the descriptions. They were no doubt introduced by means of the shipping.

PHYLLODROMIA LITURATA, *sp. n.* No. 42.

Dark brownish. Face pale, with a black figure like the Greek capital ypsilon Υ ; vertex black, with a pale zigzag band between the eyes; antennæ setaceous, very finely ciliate, base pale, else dark brown. Pronotum transverse, much rounded in front, slightly convex behind; lateral and foremargin broadly, hindmargin narrowly, whitish; disk black, with a pale figure like some oriental letter or ornamental device, and quite symmetrical. Elytra long, costal margin broadly whitish; inframedial vein

nearly straight, much branched, discal area blackish brown. Legs pale tawny; coxæ with a few dark spots and fine black marginal lines; femora lined black below and with a dark spot near the apex; tibiæ blackish at the apex. Abdomen black or dark brown in the disk above and below, margins broadly pale, dotted black. Supra-anal lamina? Cerci banded pale and dark. Subgenital lamina large (in the specimen before me quite unsymmetrical, the left side much longer than the right), apex rounded, hindmargin flexuose, black, middle whitish. Style on left side short, slender, placed marginally near angle, on right side obsolete (bisexual?).

| | Male. | | | |
|------------------------|-------|-----|-----|--------|
| Length of body ... | ... | ... | ... | 11 mm. |
| Length of elytra ... | ... | ... | ... | 11 " |
| Length of pronotum ... | ... | ... | ... | 2.3 " |
| Width of pronotum ... | ... | ... | ... | 4 " |

Hab.—Western District, Victoria. (Nat. Mus., Melb.)

I cannot find any description fitting this well-marked insect.

APOLYTA PALLIDA, mihi. No. 16.

Hab.—Gippsland, Victoria. Locality new.

APOLYTA DECORATA, mihi. Nos. 11, 14.

Two larvæ of different ages and localities. No differences are perceptible between the typical South Australian and the Victorian specimens.

Hab.—W. Victoria (11); Tatura, Victoria (14). Localities new.

APOLYTA PELLUCIDA, *Brunner*. No. 18.

Hab.—Dandenong, Victoria. Locality new.

Besides this and another specimen presented by Mr. French a third from North Queensland reached the Museum collection. Although all these agree well with the original description, yet differ in minor details. Thus Mr. French's specimen has the black disk of the pronotum longitudinally divided by a reddish stripe, and the black apex of the elytra very small. The Dandenong specimen has the black undivided area of the disk of the pronotum distinctly quadrangular, with the hindangles truncate, and the black patch at the apex of the elytra much larger; while in the Queensland specimen the black area of the pronotum is much reduced in size and hexagonal in shape, and the black color occupies not only about one-fifth of the elytra, but also borders the whole of the sutural margins. All the three differ also in size, Mr. French's specimen being the largest, and that from Queensland the smallest. The ventral segments of the abdomen, except the two last, and the lateral margins above and beneath are bordered white.

APOLYTA PALLESCENS, *sp. n.* No. 20, and perhaps 16.

Pale tawny; abdomen brown to black. Face with a black "T"-like figure, a round brown spot between the antennæ, surrounded by a pale border; antennæ pale, hirsute, very slender. Pronotum rounded in front, slightly convex behind, disk with a short brown oblique stripe on each side, united behind by a narrow dark band. Elytra oval, concolorous, costal margin broadly pellucid, disk pale tawny. Legs and pectus pale. Abdomen black above, dark brown beneath, lateral margin broadly pale; also the cerci. Supra-anal lamina trigonal, apex pale, narrowly emarginate.

| | | | |
|------------------------|-----|-----|---------|
| Length of body ... | ... | ... | 11 mm. |
| Length of elytra ... | ... | ... | 8.5 " |
| Length of pronotum ... | ... | ... | 2.7-3 " |
| Width of pronotum ... | ... | ... | 4.5 " |

Hab.—Narre Warren, Victoria. (Nat. Mus., Melbourne.)

This species differs from *A. vestita* by the marking of the face and the pale color of legs, antennæ, &c.; from *A. pallida* in the outline of the pronotum, the marking of the face, and the veins of the elytra not being pale. It and the following species may require a separate subgenus.

APOLYTA MARGINATA, *sp. nov.* No. 29 (male), 44 (female).

Pale tawny to blackish. Antennæ dark, except basal joints. Pronotum shining, margins whitish all round, narrow in front and behind, broad laterally, dark area of disk divided by a pale median stripe into two oval or oblong spots. Elytra normal, costal margin broad, whitish; radial vein narrowly black at the base, remainder of veins and veinlets whitish. Legs tawny. Abdomen above banded indistinctly darker, beneath yellowish (male) or blackish (female). Supra-anal lamina triangular, apex acute. Subgenital lamina subcucullate, oval, apex slightly emarginate (male), or keeled and obtuse (female).

| | | Male. | Female. |
|------------------------|-----|-------|---------|
| Length of body ... | ... | 9 mm. | 8.5 mm. |
| Length of elytra ... | ... | 8 " | 8 " |
| Length of pronotum ... | ... | 2.2 " | 2.5 " |
| Width of pronotum ... | ... | 3.2 " | 3 " |

Hab.—Gippsland, Victoria. (Nat. Mus., Melbourne.)

I am not quite sure whether the two specimens represent the two sexes of the same species, but they are very similar. Type of *A. vestita*, Br., apparently.

*APOLYTA BICOLOR, *sp. n.*

Male. Vertex of head and the disk of the pronotum pale testaceous. Abdomen, legs, and pectus black; also the antennæ.

Lateral and posterior margin of pronotum pale, pellucid. Elytra narrow, costal and basal part of radial area yellow, anal area (except small part of base) and the whole sutural margin black. Lateral margin of abdomen narrowly pale; cerci pale. Subgenital lamina elongate, apex truncate.

| | | | | |
|------------------------|-----|-----|-----|-------|
| Length of body ... | ... | ... | ... | 7 mm. |
| Length of elytra ... | ... | ... | ... | 7.5 " |
| Length of pronotum ... | ... | ... | ... | 2.2 " |
| Width of pronotum ... | ... | ... | ... | 2.7 " |

Hab.—Cape York, North Queensland. (S.A. Mus.)

This species belongs to the type of *A. pellucida*. The wings are pellucid, costal margin yellow, apex and anal area (partly) blackish. The specific name refers to the characteristic marking of the elytra.

**THYRSOCERA* (?) *AUSTRALIS*, *sp. n.*

Female. Blackish above, pale beneath, shining. Head black, concolorous. Pronotum subquadrangular, a little wider behind, angles rounded; margins (all round) white, widest laterally, very narrow behind; disk black; fore and hindmargins convex. Elytra gradually attenuated towards apex along sutural margin, black in reflected, brown by transmitted light, foremargin white, scutellum black. Legs and pectus pale. Base of coxæ and foremargin of femora black, spines of tibiæ brownish. Abdomen pale dirty grey, margin whitish, ventral segments black, margin broadly whitish and divided by a brown line. Supra-anal lamina truncate. Cerci long, lanceolate, flat, above pale, with a marginal row of dark dots; below banded black and white. Subgenital lamina large, rotundate, entire, laterally broadly white.

| | | | | |
|------------------------|-----|-----|-----|-------|
| Length of body ... | ... | ... | ... | 9 mm. |
| Length of elytra ... | ... | ... | ... | 9 " |
| Length of pronotum ... | ... | ... | ... | 2 " |
| Width of pronotum ... | ... | ... | ... | 3 " |

Hab.—North Queensland. (S.A. Mus.)

The genus has not been recorded hitherto from Australia (except by Walker, whose determinations are too indefinite for identification in most cases), but being widely distributed (India, America) its occurrence is not unexpected. The described specimen differs, however, from the typical species in having the middle vein scarcely angulated. The left elytron crosses the right at rest and covers the latter completely at the apex, the line of demarcations being deeply impressed and extending obliquely from near the base of the lower elytron to near the apex, indenting all the veins. This appears to me to be rather uncommon. The wings also seem to exhibit some differences; the border is

narrowly white in front, then much wider blackish, the large remainder translucent and smoky.

ISCHNOPTERA AUSTRALIS, *Sauss.* (?). No. 8.

The two specimens fit fairly well Saussure's description—"Pale ferruginous, antennæ brownish. Pronotum discoidal, narrower in front, hindmargin (sub-?) truncate, lateral margin pellucid, deflexed; disk opaque, with two slight (oblique) sulci. Elytra very long, narrow, margin reflexed, veins much raised, transverse veinlets perspicuous," with the following variations—Color pale tawny, disk of pronotum yellowish, pectus and legs greyish tawny, abdomen brownish. Supra-anal lamina of male triangular, apex deflexed, of female truncate. Subgenital lamina of male acute, of female rotundate. Cerci long, acute.

| | | Male. | Female. |
|--------------------|--------|--------|----------|
| Length of body | ... .. | 17 mm. | 15.5 mm. |
| Length of elytra | ... .. | 22 " | 18 " |
| Length of pronotum | ... .. | 4 " | 4 " |
| Width of pronotum | ... .. | 6 " | 6 " |

Hab.—Dandenong, Victoria. (Nat. Mus., Melbourne).

The female has the left elytron aborted, it being less than half the length of the right, else quite perfect.

ISCHNOPTERA ANNULATA, *mihi.* No. 4.

Hab.—Melbourne, Victoria. Locality new. (Nat. Mus., Melbourne).

ISCHNOPTERA LONGIUSCULA (*Walk.*), *Tepp.* Trans. Roy. Soc. S. Aust., 1893, p. 51. No. 21 pars.

The male specimen before me agrees with Walker's description that I do not care to separate it (although larger), but append a description.

Pale tawny. Head brownish, eyes a little darker; antennæ pale brownish. Pronotum transversely oval, margins and median space pale, disk with dark spots and other markings. Elytra with ulnar vein much branched, rami directed obliquely towards hind margin; ulnar vein *recurved* at apex (in *Phyllodromia* directed forwards). Legs concolorous. Abdomen with dark margin. Subgenital lamina subtrigonal, apex subacuminate. Styles minute. Cerci dark brown.

| | | |
|--------------------|--------|--------|
| Length of body... | ... .. | 12 mm. |
| Length of elytra | ... .. | 12 " |
| Length of pronotum | ... .. | 2.2 " |
| Width of pronotum | ... .. | 3 " |

Hab.—Near Melbourne. Locality new. (Nat. Mus., Melb.).

ISCHNOPTERA CONTRARIA, *Tepper*. No. 21 pars.

Hab.—Near Melbourne, Victoria. Locality new. (Nat. Museum, Melb.).

ISCHNOPTERA BRUNNEONIGRA, sp. n. No. 19.

Female. Brown above, almost wholly black beneath. Head black, vertex sometimes paler; antennæ brown, base black, first joint very large, first three joints shining, remainder dull, ciliate. Pronotum suborbicular, black, disk sometimes paler (reddish brown or varied with paler patches), margins narrowly pale. Elytra brown, anal vein recurved, narrow. Pectus, coxæ, and femora black or varied paler, tibiæ brown, tarsi brown or testaceous. Abdomen dark brown, margins broadly black. (Supra-anal lamina?) Cerci black. Subgenital lamina large, entire, hindmargin elliptic.

| | | | | |
|--------------------|-----|-----|-----|----------|
| Length of body... | ... | ... | ... | 10.5 mm. |
| Length of elytra | ... | ... | ... | 12 " |
| Length of pronotum | ... | ... | ... | 3.2 " |
| Width of pronotum | ... | ... | ... | 4 " |

Hab.—Fernshaw, Victoria. (Nat. Mus. Melb.).

The species is remarkable for its dark color. The egg-case of one is protruded to some extent, but incomplete.

*ISCHNOPTERA, *sp. nov.*

Pale testaceous, head black. Pronotum brownish, with rather deep elongate and divergent impressions on each side of the raised midline extending close to the hindmargin; lateral margin and costæ of elytra pale, pellucid. Legs and underside tawny.

| | | | | |
|--------------------|-----|-----|-----|---------|
| Length of body | ... | ... | ... | 8.5 mm. |
| Length of elytra | ... | ... | ... | 10 " |
| Length of pronotum | ... | ... | ... | 2 " |
| Width of pronotum | ... | ... | ... | 3 " |

Hab.—Eucla, W. Australia (collected by Mr. Unbehaun, jun.). More material is desired before attaching a name.

EPILAMPRIDÆ.

WODONGIA, *gen. n.*

Oblong, convex. Elytra *convex, shining, shorter than the wings*, apex broadly rounded; *principal veins almost obsolete*; costal and apical branches slightly raised; anal vein subsemi-circular, impressed. Wings slightly exceeding the abdomen, anterior radial vein much and furcately branched towards the foremargin, posterior radial vein *with three parallel branches* behind, third only forked near apex; dividing vein unbranched, space between it and the anal vein unequal in width, veinless,

triangularly divided towards apex. Supra-anal lamina of female elongated, subtectiform, slightly tapering, apex truncate. Cerci slightly exceeding the lamina. Valvules acutely triangular.

The genus approximates *Paraphoraspis*, and may be placed before it, on account of the veins of the elytra not being so much obliterated. The insect differs in the venation of elytra and wings, also in their form and that of the anal appendages, from all others as far as known to me, and is easily recognisable by the promiscuous lunate spot of the pronotum and the peculiar shape and color of the elytra.

WODONGIA LUNATA, *sp. nov.* No. 30.

Female. Pale tawny. Head pale; a black band between the eyes; antennæ brownish at base, blackish beyond the middle, much longer than the body, filiform, ciliate. Pronotum smooth, shining, margin scarcely reflexed; disk with a *large lunate black spot* remote from foremargin, slightly indented in the middle anteriorly, sinuate behind, middle produced as an acuminate stripe to the hindmargin; latter subrotundate, narrowly bordered with brown in the middle. Elytra subcorneous, costal margin pale, widest at the base, thence gradually attenuated, not attaining the apex; discal area reddish brown, concolorous; anal vein impressed, curving regularly and meeting the hindmargin at right angles. Supra-anal lamina brown, margins and midline paler. Cerci lanceolate, acute, deplanate. Valvules and preceding segment brown.

| | | | | |
|--------------------|-----|-----|-----|--------|
| Length of body | ... | ... | ... | 19 mm. |
| Length of elytra | ... | ... | ... | 13.5 " |
| Length of wings | ... | ... | ... | 15 " |
| Length of pronotum | ... | ... | ... | 5 " |
| Width of pronotum | ... | ... | ... | 8 " |

Hab.—Wodonga, Victoria. (Nat. Mus., Melbourne.)

EPILAMPRA GRACILIS, *Brunner* (ZETOBORA GRANICOLLIS, *Sauss.*).
No. 5.

Hab.—Near Melbourne, Victoria.

EPILAMPRA NOTABILIS, *Walk.* No. 43. Melbourne.

EPILAMPRA PROPRIA, *Walk.* No. 32. Victoria, mallee scrub,
West District.

EPILAMPRA INQUINITA, *Stål.* No. 28. Gippsland. New locality.

EPILAMPRA (RHICNODA, *Br.?*) PERPLEXA, *sp. n.* No. 34.

Male. Greyish tawny. Face with a brown longitudinal stripe, vertex (much wider than the basal joint of the antennæ) with three black lines. Pronotum transverse, anteriorly cucul-

late, lateral margin broad, reflexed; hindmargin depressed, sinuate, middle obtusangularly produced, disk *crowded with black, impressed dots*. Elytra flat, finely dotted, veins dark towards base; anal vein gradually and much recurved. Metatarsus externally with a few spinelets, internally crowdedly spinose; pulvilli small, apical. Abdomen much depressed, convex beneath, clouded blackish in the disk, laterally with dark dots. Subgenital lamina transverse, rhomboidal. Cerci pale, rather short, acute.

| | | | |
|------------------------|-----|-----|--------|
| Length of body ... | ... | ... | 26 mm. |
| Length of elytra ... | ... | ... | 26 " |
| Length of pronotum ... | .. | ... | 5 " |
| Width of pronotum ... | ... | ... | 9.5 " |

Hab.—Western districts of Victoria. (Nat. Mus., Melb.)

In general aspect the insect resembles very much Brunner's figure of his genus *Rhcnoda* (Rev. Orth., 1893, pl. i., fig. 11*b*), but is larger and the pronotum is crowdedly impressed punctate, a character otherwise attached to the American *Phoraspinae*. From these it is, however, separated by all the remaining characteristics. Unlike the genuine *Epilampra*, the hindmargin of the pronotum is destitute of raised striae. Until more material is available and the wingless (?) female discovered its place must remain uncertain.

GEOSCAPHEUSIDÆ.

GEOSCAPHEUS ROBUSTUS, *Tepper*. No. 36. Murray River.

As pointed out by Mons. H. de Saussure (*in litteris*), these insects have most affinity with the *Panesthidae*, and are removed to their vicinity.

PERIPLANETIDÆ.

*POLYZOSTERIA VIRIDICOLOR, *Tepper*, Trans. Roy. Soc., S.A., 1893, p. 73.

Hab.—Beltana. Locality new.

A female with egg-case attached and alive was received through Mr. T. Bee in February last. The egg-case is dark brown, nearly smooth, dull colored, and bean shaped, measuring 19 x 7 x 8 mm. The posterior part is suddenly cut off, the anterior end more acute. The crest is about 1 mm. in height, straight, and shows 27 small but distinct teeth, besides two or three merely indicated, the case containing therefore about 30 ova. This is the first case seen and described.

POLYZOSTERIA OCULATA, *Tepper*, *ibid*, p. 75. No. 13.

Grampian Range, Victoria. Locality new.

POLYZOSTERIA NOBILIS, *Brunner*. No. 31.

Hab.—Grampian Range, Victoria. Locality new. Also a specimen from Yorketown (legit Mr. A. Jung), which varies slightly in the legs of the male being mostly metallic bluish black, coxæ and underside pale yellow, banded metallic greenish blue.

POLYZOSTERIA FRENCHII, *Tepper*, *ibid*, 1894, p. 178. No. 12.

Hab.—Wodonga, Victoria. Locality new.

*POLYZOSTERIA SUBREFLEXA, *sp. nov.*

Male. Resembling *P. reflexa*, Br., in form, but is smaller and *not scabrous*. Head dark greenish bronze, mouth parts pale; antennæ with first joint dark, second joint pale, remainder reddish brown. Pronotum broadly elliptical, lateral and foremargin subacutely reflexed, externally dusky yellow, upper edge reddish; disk not verrucose, with a flat, raised figure like an hourglass in the middle, and various excavations on each side, space near margin crowdedly impressed punctate, remainder with minute impressed dots, otherwise smooth and shining; hindmargin slightly concave, tuberculate, angles acutely produced. Meso- and metanotum similar, hindmargins smooth. Legs similar to those of *P. reflexa*. Abdomen concolorous, finely but indistinctly rugulose, lateral margins narrowly reflexed, rectangular, last two segments with angles produced; underside dark reddish piceous. Supra-anal lamina of male very short, transverse, hindmargin truncate, entire, narrowly and angularly deflexed. Cerci extremely short, yellow. Subgenital lamina trapezoidal, entire, hindmargin slightly convex, dark red. Styles as long or longer than cerci, red.

| | | | | |
|------------------------|-----|-----|-----|--------|
| Length of body ... | ... | ... | ... | 22 mm. |
| Length of pronotum ... | ... | ... | ... | 7 " |
| Width of pronotum ... | ... | ... | ... | 11.5 " |

Hab.—Ooldea. S.A. Museum (legit Prof. R. Tate).

The species is unlike any other, except *P. reflexa*, from which it is easily distinguished by its smooth surface and the totally different form of the anal lamina.

PLATYZOSTERIA MELANARIA, *Erichs.* No. 23.

Hab.—Western districts of Victoria. Locality new.

PLATYZOSTERIA ATRATA, *Erichson*. No. 39.

Hab.—Melbourne, Victoria. Locality new.

The specimen before me appears to agree perfectly with the short description published, except that the hind tibiæ are wholly red and the middle ones to about one-half, instead of only at the apex. The abdomen beneath is red in the middle, the supra-anal

lamina of the male rounded behind, and narrowly and angularly emarginate, the cerci broadly lanceolate, apex red; the subgenital lamina is short, truncate, and slightly emarginate, the styles rather long and acute. Length of body, 20 mm.; of pronotum, 5 mm. x 9 mm.

PLATYZOSTERIA BIFIDA, *Sauss.* No. 2, pars.

The female specimen received agrees so well with Mons. H. de Saussure's description of the male (*Mel. Orth.* II., p. 110; fig. 3) in all essential parts, that I have little doubt of the correctness of the mating, and append the supplementary description.

Female. Blackish chestnut, lateral margin of pro-, meso-, and metanotum dark red, disk smooth, shining, with very few minute impressed dots above and beneath. Head blackish, labrum and border of eyes red, ocellar spots and areoles of antennæ tawny; antennæ brown, base blackish. Pronotum with a slightly raised scutcheon-like figure in the disk with three rather prominent crenulations on each side anteriorly. Meso- and metanotum somewhat similar. Abdomen with hind margins of segments smooth, finely ciliate, angles acutely produced; underside similar, middle reddish. Coxæ black, external margins orange. Tarsi reddish to ferruginous. Supra-anal lamina subovate, emarginate, laterally serrate. Cerci short, apex pale. Subgenital valvules rather small, sutural part of apex incrassated.

| | | | | |
|--------------------|-----|-----|-----|--------|
| Length of body | ... | ... | ... | 29 mm. |
| Length of pronotum | ... | ... | ... | 7 " |
| Width of pronotum | ... | ... | ... | 11 " |

Hab.—Narre Warren, Victoria. Nat. Mus., Melb.

Walker's *P. tarsalis* appears to be somewhat similar, but is described as "sides minutely tuberculate, abdominal segments laterally tuberculate and segments 6 and 7 entirely so"—which is not the case in the above.

PLATYZOSTERIA EXASPERA, *Tepper*, l.c. 1894, p. 182. Nos. 2 (pars), 15.

Hab.—Near Melbourne (2), Berwick, Victoria. Locality new.

There were a pair from one place and a male from the other, the female with an egg-case attached. All agree well with the original types, notably in the sculpture of the surface, which affords a good criterion in allied forms.

*PLATYZOSTERIA COOLGARDIENSIS, *sp. n.*

Male. Resembling *P. latizona*, m., but larger and much broader in proportion. Yellow, banded with black, nearly smooth, moderately shining. Head testaceous, partly free. Pronotum yellow, shaded reddish laterally, with some raised black,

oblong spots around and adjoining the dark area; hindmargin rectangular, straight, angles slightly rounded. Meso- and metanotum similar, dark disk semicircular, hindmargins straight, angles slightly produced, subacute. Underside brownish tawny, lateral margin white. Coxæ brownish tawny, femora testaceous, tibiæ (except base) black, spines brown. Abdomen above narrowly banded black behind, shading into reddish medially, with some 2—4 minute black dots on each side near end of bands (behind) on segments 2—5; segments angular, 5—7 produced as a small spine; lateral and hindmargins beneath pale, last two segments with black disk. Supra-anal lamina transverse, very short, rounded, *middle deeply incised, the sutural angles produced as rather long, terete, acute spines*, base narrowly black, remainder pale yellow. Cerci nearly as long as the laminal spines, flat, black, apex dusky yellow. Subgenital lamina transverse, quadrangular, longer than the upper lamina, excepting the spines, black, hindmargin straight, entire. Styles inserted beneath the middle of the lateral margin, exceeding the hindmargin greatly.

| | | | | |
|--------------------|-----|-----|-----|--------|
| Length of body | ... | ... | ... | 24 mm. |
| Length of pronotum | ... | ... | ... | 6 " |
| Width of pronotum | ... | ... | ... | 10 " |

Hab.—Coolgardie, Western Australia. S.A. Museum; presented by Ch. French, F.L.S.

The somewhat defective specimen from the now famous Western goldfield is so distinct in its characters, that there is little hesitation in assigning its specific rank. Resembling *P. latizona* and *P. zebra* in color, it differs from them in size, texture of scutum, and the form of the anal lamina.

**PLATYZOSTERIA MACULIMARGINATA*, *sp. n.*

Female. Dark brownish red. Head brownish red; antennæ, palpi, and labrum black, anterior margin of last pale. Pronotum semicircular, lateral margin scarcely reflexed, foremargin narrowly pale yellow; lateral margin and disk concolorous, with numerous remote impressed dots; hindmargin partly with a very narrow pale border. Meso- and metanotum similar, lateral and hindmargins black, latter very narrowly bordered pale. Pectus and coxæ black, latter bordered whitish; femora and tibiæ testaceous, tarsi black above, pale beneath. Abdomen above impressed rugulose, segments acutely rectangular, segment six alone with hindangles acutely produced; posterior half of each and the lateral margins wholly black; along the latter (except the sixth) in each segment a yellow spot, decreasing in size toward the apex (sometimes more or less obsolete), and more or less distinctly reproduced beneath. Supra-anal lamina transverse, sinuate, apex

rounded. Cerci? Subgenital lamina large, middle rotundately produced, laterally sinuate, valvules not free, but suture deeply and broadly impressed.

| | | | | |
|--------------------|-----|-----|-------|-----|
| Length of body | ... | ... | 20-22 | mm. |
| Length of pronotum | ... | ... | 6-6.5 | " |
| Width of pronotum | ... | ... | 10-11 | " |

Hab.—Northern Queensland. S.A. Museum (presented by Ch. French, F.L.S.).

The species, of which two specimens are before me, appears to belong to the type of *P. trifasciata* and *picta*, m.; but is otherwise very different from any I know.

*PLATYZOSTERIA SP.

Male. Resembling *P. melanaria*. Coxæ black, bordered whitish behind; femora red. Supra-anal lamina subrotundate, margin entire or slightly emarginate. Subgenital lamina entire, with hindmargin straight, spines at the angles much shorter than the styles.

Hab.—Coolgardie, Western Australia (presented by C. French, F.L.S.).

Material insufficient for determination at present.

PERIPLANETA ORIENTALIS, L. No. 26.

Hab.—Frankston, Victoria.

PERIPLANETA AMERICANA, L. No. 38.

Hab.—Fernshaw (?), Victoria.

PERIPLANETA PROVISIONALIS, m. (Trans. Roy. Soc., S.A., 1893, p. 108) (?). No. 45.

The species was previously described from the female alone, the above, I believe, is the male, although somewhat different, and resembles *Derocalymma* in outline.

Male. Reddish brown, scabrous, elongate, convex. Head partly free, testaceous; eyes widely apart, antennæ much shorter than the body. Pronotum elliptical, disk nearly smooth, lateral margin very narrow, scarcely deflexed, hindmargin straight, angles rounded. Meso- and metanotum angular, scabrous all over with minute raised tubercles; lobes of elytra not free, very narrow. Coxæ blackish, margins broadly tawny; femora testaceous; tibiæ brown, first tarsal joint blackish, remainder reddish yellow. Abdomen minutely scabrous, segments angular, the last two with hindangles spine-like produced, segment 7, very much rounded behind; underside red. Supra-anal lamina very narrow, elongate, triangular, apex cordately emarginate. Cerci

long, stout, blackish. Subgenital lamina transverse, very short, hindmargin rounded, entire. Styles black, rather long.

| | | | | |
|------------------------|-----|-----|-----|--------|
| Length of body ... | ... | ... | ... | 15 mm. |
| Length of pronotum ... | ... | ... | ... | 4 " |
| Width of pronotum ... | ... | ... | ... | 5.5 " |

Hab.—Torrens Creek, N.S. Wales (*Froggatt*). Coll. Techn. Mus., Sydney; Fernshaw, Victoria. Localities new.

PERIPLANETA GLABRA, *Walk.* (*P. fortipes*, *Walk.* ?). No. 17. (*l.c.*, p. 107).

There being only a single female, the material is insufficient for certain determination. Color and texture agree very well, but the tarsi of the Victorian specimen are only half as long as those of the Northern Territory specimens, and less in size. I have also had two specimens from Mr. Froggatt, Sydney.

Hab.—Victoria; N.S. Wales. Localities new.

PERIPLANETA JUNGII, *sp. n.*

Male. Resembling *P. picea*, Br. *Entirely deep shining black.* Pronotum elliptical, scarcely uneven, with a few remote, impressed dots; lateral margins scarcely reflexed, hindmargin straight, angles slightly rounded. Meso- and metanotum similar, lobes of elytra not free in adult. Abdomen smooth, segments rectangular, hindmargin with minute raised points, angles of two last segments produced acutely, lateral margins entire. Supra-anal lamina of male *deeply bilobed*, apex rounded, margin ciliate. Cerci flat, lanceolate, hirsute, more than twice as long as the lamina. Subgenital lamina transverse, short, hindmargin broadly and angularly indented (like "M"). Styles as long as the supra-anal lamina, and situated on the exterior angles of the subgenital.

| | | | | |
|------------------------|-----|-----|-----|--------|
| Length of body ... | ... | ... | ... | 15 mm. |
| Length of pronotum ... | ... | ... | ... | 5 " |
| Width of pronotum ... | ... | ... | ... | 9 " |

Hab.—Yorke town, Yorke's Peninsula.

The species is easily distinguished by the body and limbs being of a uniform deep black, and the peculiar form of the supra-anal lamina. It is named after my friend and schoolmate, Mr. Aug. Jung, who from boyhood's days associated assiduously with me and others in collecting and observing insect life, and who furnished the specimens described above.

PERIPLANETA PARVA, *sp. n.*

Female. Body convex, apterous, black, shining. Head concealed, black; labrum red, palpi dark brown, antennæ brown, with

from *one to three whitish joints* at about two thirds of the length from the base, densely ciliate. Pronotum semicircular, rectangular behind, disk smooth, hindmargin straight. Meso- and metanotum similar, hindangles slightly produced. Legs brown, trochanters and tarsi yellowish red. Abdomen smooth, segments mostly rectangular. Supra-anal lamina elongate triangular, tectiform, apex slightly emarginate. Cerci broad, not much exceeding the lamina, black. Subgenital valvules small, acute.

| | | | | |
|------------------------|-----|-----|-----|--------|
| Length of body ... | ... | ... | ... | 12 mm. |
| Length of pronotum ... | ... | ... | ... | 3 " |
| Width of pronotum ... | ... | ... | ... | 5 " |

Hab.—Sydney, N.S. Wales (Techn. Mus., Sydney, No. 4).

There are two females, to one of which a mature egg-capsule was attached on receipt. The latter is dull brownish red, with 13 distinct equilateral triangular teeth and 6 mm. in length. The species is the smallest known to me, and on account of the shortness of the cerci exhibits some affinity to *Platyzosteria*.

PERIPLANETA SP.

Male nymph. Testaceous, banded black, legs tawny. Abdomen thinly ciliate. Supra-anal lamina very transverse, broad, hindmargin produced, bilobate. Cerci large, thickly hirsute. Subgenital lamina very short, transverse, hindmargin rounded, entire. Styles marginal, longer than lamina.

| | | | | |
|------------------------|-----|-----|-----|--------|
| Length of body ... | ... | ... | ... | 17 mm. |
| Length of pronotum ... | ... | ... | ... | 5 " |
| Width of pronotum ... | ... | ... | ... | 6 " |

Hab.—New Hebrides (legit Rev. A. Gray).

Material not sufficient for identification.

DRYMAPLANETA SUBMARGINATA, *Tepper, l.c.*, 1893, p. 111.

Male nymph.

Hab.—Eucla, W. Australia (legit Mr. Unbehauns, jun.).

Locality new.

GENUS TEMNELYTRA, mihi.

As the females of the species included in this genus possess subgenital valvules the genus is removed from the PHYLLODROMIDÆ, where first placed on account of general aspect, to the PERIPLANETIDÆ, as a subgenus of *Periplaneta*.

TEMNELYTRA HARPURI, *Tepper, l.c.*, 1893, p. 39. No. 6.

Hab.—Gippsland.

A single female in no respect differing from the type.

TEMNELYTRA SUBTRUNCATA, *sp. n.* No. 9.

Dark red to black. Head concealed, red; ocellar spots, base of antennæ, and *labrum pale tawny*; antennæ longer than the body, testaceous to brownish. Pronotum parabolic, convex, shining, *lateral margins broadly pale tawny*, disk reddish brown, shading into black, medial stripe more or less distinct, testaceous; hindmargin nearly straight. Elytra obliquely truncate towards sutural margin, in female extending to the metanotum, in the male to the second abdominal segment; lateral margin broadly pale tawny; sutural margins applied, narrowly testaceous. Scutellum rather large. Wings lobiform, apex exposed in male, lateral margin tawny; in the female wholly concealed and rudimentary. Metanotum of female and second abdominal segment of both sexes narrowly pale bordered. Abdomen shining, segments concolorous or hindmargins narrowly testaceous, angles acutely produced. Supra-anal lamina of male short, transverse, quadrangular, disk deeply depressed; of female trigonal, carinate, apex emarginate. Cerci of male lanceolate, flat, brown, more than twice as long as lamina; of female scarcely as long as lamina, else similar. Subgenital lamina of male nearly quadrate, convex; styles nearly as long, red; valvules of female normal.

| | | Male. | Female. |
|--------------------|--------|--------|---------|
| Length of body | ... .. | 16 mm. | 18 mm. |
| Length of elytra | ... .. | 4.5 " | 3.8 " |
| Length of pronotum | ... .. | 4.3 " | 5 " |
| Width of pronotum | ... .. | 6 " | 7 " |

Hab.—Fernshaw, Victoria, (Nat. Mus., Melbourne.)

This species apparently resembles *Platyzosteria truncata*, Br., but differs in the abdomen not being pale bordered. Of the latter species only the female has been described, the elytra of which are less abnormal in form than those of the male; it should probably be removed from the genus in which it is placed and united with *Temnelytra* on that account.

The legs of *T. subtruncata* are testaceous, but the coxa blackish, bordered with pale tawny, and the tarsi paler. The abdomen beneath is deep shining black and concolorous.

TEMNELYTRA ABBREVIATA, *sp. n.* No. 20.

Female. Resembles *Stylopyga*. Pale testaceous, concolorous. Pronotum transverse, hindmargin slightly concave. Elytra rather pale, lateral margin rotundate (angles rounded), extending to first abdominal segment; sutural margin nearly straight, much shorter; apical border concave, slightly oblique, inner angle almost square and slightly rounded. Legs and underside rather pale. Supra-anal lamina broadly trigonal, apex rotundately

emarginate. Subgenital lamina transverse, hindmargin straight. Cerci normal.

| | | | | |
|--------------------|-----|-----|-----|----------|
| Length of body | ... | ... | ... | 11.5 mm. |
| Length of elytra | ... | ... | ... | 3.3 " |
| Length of pronotum | ... | ... | ... | 3.2 " |
| Width of pronotum | ... | ... | ... | 5 " |

This species differs from all other known to me by the short, square form of the elytra with obliquely concave apical margin.

Hab.—Narre Warren, Victoria. Nat. Mus., Melbourne.

CHORISONEURIDÆ.

CHORISTIMA, *gen. n.*

Resembling *Chorisoneura*, but the elytra more or less abbreviate, and the veins very indistinct, the longitudinal being distinctly separated (not united as in *Ectobia*).

Removed from *Chorisoneura* on account of the above differences.

CHORISTIMA HYDROPHOROIDES, *Walker*, and CH. LOFTYENSIS, *n.*

Transferred from *Chorisoneura* (*l.c.*, 1893, p. 114).

CHORISTIMA KERSHAWI, *sp. n.* Nos. 3, 41.

Testaceous. Head with a black band between the eyes, sometimes more or less obsolete; antennæ reddish. Pronotum transversely oval, wider behind, lateral margin broad, reflexed; disk with two broad, transverse, black bars, sometimes almost confluent, hindmargin and angles narrowly whitish. Elytra testaceous, medial stripe black, extending from anal vein to apex, latter rotundate. Wings shorter than elytra. Pectus and legs red. Abdomen above black, indistinctly varied with red, so as to form two stripes near the middle; segments beneath with hindmargins reddish. Supra-anal lamina transverse, red, of male middle rotundately produced, of female truncate, broadly emarginate, hindmargin deflexed. Cerci long, slender, red. Subgenital lamina cucullate, hindmargin of male subtruncate, of female triangularly produced, acute.

| | Male. | Female. | Nymph. |
|-----------------------|-----------|---------|---------|
| Length of body | ... 8 mm. | 9.5 mm. | 6.5 mm. |
| Length of elytra | ... 5 " | 5 " | — |
| Length of pronotum... | 1.8 " | 2 " | 1.4 " |
| Width of pronotum | ... 3.2 " | 3.5 " | 2.5 " |

Hab.—Near Melbourne; Bunyip, Victoria. Nat. Mus., Melb.

The species (or variety?) differs from both the others in being considerably larger, and from *C. Loftiensis* in the transverse bars of the pronotum being very much wider, and deep black instead of brownish.

PANCHLORIDÆ.

ONISCOSOMA CASTANEA, *Br.* (ZETOBORA ANTICA, *Walk.*). No. 35.

Hab.—Melbourne.

PANESTHIDÆ.

PANESTHIA AUSTRALIS, *Brunner.* No. 1.

Hab.—Mordialloc, Victoria. Two males. Locality new (Nat. Mus., Melb.).

The specimens agree perfectly with the original description. The males, however, appear to have the elytra and wings perfectly developed, whilst the females, as already recorded, have them irregularly abbreviated.



Tepper, J. G. O. 1895. "Notes on Victorian and other Blattariæ and descriptions of new species." *Transactions of the Royal Society of South Australia* 19, 146–166.

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