

A REVISION OF THE AUSTRALIAN GRYLLOIDEA

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Text. figs. 1-89.

THE Grylloidea of Australia are known from a certain number of species formerly described by Francis Walker and Henri de Saussure, and more recently by the list which I gave in 1925, following the study of the collections brought back by Dr. Mjöberg's Swedish scientific expeditions (Ark. f. Zool., 18A, No. 6). Since that time, I have received much important material from the South Australian Museum, Adelaide, the Australian Museum, Sydney, and the Queensland Museum, Brisbane. I wish to express my deep appreciation to the Directors and Entomologists of these Museums for their generous assistance.

Unfortunately the study of this material has been long delayed owing to the difficult conditions in Europe during the years 1940-45. It is only now that I am able to bring forward the result of the examination of these important collections of Australian Grylloidea. The number of known species in this group is now 138, that is about 40 more than in my report of 1925; most of the species new to Australia are also new to science and are described in this paper. In spite of the relative importance of these collections, it must be emphasized that the Australian fauna is still far from being completely known. Very likely a number of Papuan species will be found in Queensland and the Northern Territory and an equally important number of new species probably remain to be discovered, mainly in the less known parts of Australia.

It seems, however, possible to draw preliminary conclusions from the characteristics of the known species. Although the fauna is not a very rich one as compared with that of Indo-Malaisia, almost all the families are represented and no striking negative feature can be noted. It is not surprising to note that the Australian fauna contains a large number of endemic species and genera. More than ten genera are at present known from Australia only, the more remarkable of which are *Scapanonyx*, *Cyrtoprosopus*, *Mjöbergella*, *Dictyonemobius*, *Eurygrylloides*, *Endotaria*, *Hemiphonus*, *Hemiphonoides*.

In the family Gryllidae and the subfamily Gryllinae, the genus *Gryllulus* is best represented with 17 species, mostly of small size and forming a rather special group related to *G. blennus* Sauss., from Java. The genera *Loxoblemmus* and *Gryllopsis*, so abundantly represented in the Indo-Malaisian fauna, are represented by one species only. *Landreva* does not occur in Australia but is replaced by the endemic genera *Copholandrevus* and *Mjöbergella*, the latter

being strongly specialized for digging. In the same subfamily, the group *Brachytrypites* is well represented by the genera *Apterogryllus*, *Scapanonyx* and *Cephalogryllus*; in their powerful legs, armed with strong, flattened tibial apical spurs, these are particularly adapted for digging. *Brachytrypes portentosus*, so common in all the Oriental region, has not reached Australia and there is no true *Gymnogryllus* in the Australian fauna. The Nemobiinae are not very numerous but are represented by the rather characteristic genus *Dictyonemobius*.

In the family Pentacentridae, the genus *Pentacentrus*, which is one of the characteristic elements of the Indo-Malaisian and Papuan faunas, is represented in Australia by one species only; but the very special endemic genus, *Eurygryllodes*, is most probably a member of this family.

The Phalangopsidae are mainly represented by the genus *Endacusta* with about 10 species and the neighbouring genus *Endotaria* which is an apterous form probably derived from the former.

Among the Oecanthidae, we note the presence of a *Xabea*, a genus very characteristic of the Indo-Malaisian fauna.

The small Grylloids of the family Trigoniidiidae are represented by a certain number of species, chiefly of the genus *Metioche*; their affinities are evidently with the Papuan and Indo-Malaisian faunas; the only interesting type is the endemic *Dolichoxipha gracilipes*.

The genus *Eurepa* of the Encopteridae is restricted to the Australian fauna; this family is also represented by *Cardiodactylus*, so common in all the islands of the Oriental Region, and *Lebinthus*, also known from the Philippine Islands and Amboina.

Lastly, the large family Podoscirtidae is well represented by species of *Madasumma*, *Mundeicus*, *Aphonoides* and *Euscyrtus*, more or less closely related to the Malayan species of the same genera; but the family also contains a few remarkable endemic genera such as *Hemiphonus*, *Hemiphonoides* and *Adenopterus*.

The following forms are particularly worth mentioning:

Anurogryllus australis Sauss. which seems unquestionably to belong to this South American genus has never been found again since its description.

Eugryllodes diminutus Walk. although presenting a few special features, shows no important difference from the species of this Mediterranean genus which is also represented by a Patagonian species. Such a geographical distribution is rather unusual and may simply be due to an insufficient knowledge of this genus.

A third very remarkable form is the genus *Cacoplistes*, a most extraordinary type of Grylloid, completely different from any other insect of the whole group; it deserves a special family for one or two Australian species and a third from Kashmir. It is obviously an archaic group now restricted to a few relics.

To sum up, with the exception of these special cases, we may say that the Australian Grylloidea are closely related to those of the Indo-Malaisian fauna with an important number of endemic genera. Unfortunately, the Papuan Grylloidea are so very insufficiently known that it is not possible to establish the exact relations between them and the Australian species.

Our knowledge of the Australian Grylloidea is still too fragmentary to allow any attempt at localization of species in this enormous continent with its different climates. The Queensland and Northern Territory seem pretty well known as also do New South Wales and Victoria. The case is quite different in South Australia and Western Australia, and in the deserts which are practically unknown.

Finally, it is not yet possible to speak of the ecological distributions of the Australian Gryllids. The material existing in the collections of the different Museums is mostly composed of old collections and provides very little information on this subject. Much remains to be done in this country, where such different biotopes may be encountered. We can only point out the presence of digging forms, the most remarkable of which is *Scapanonyx* with especially powerful spurs on the anterior tibiae adapted for this action. As usual in the Grylloidea, the majority of the species are rather hygrophilous insects.

The families Trigonidiidae and Oecanthidae and the genera *Ornebius* and *Euscyrtus* will be restricted in their choice of habitat as they must lay their eggs in the presence of those bushes and plants which grow in moist places.

KEY TO THE FAMILIES OF *GRYLLOIDEA*.

- | | |
|--|-----------------|
| 1. Second segment of tarsi compressed, minute | 2 |
| Second segment of tarsi depressed | 10 |
| 2. Posterior femora strongly swollen; general shape of body short, oval. | |
| Small myrmecophilous insects | Myrmecophilidae |
| Posterior femora moderately swollen; body more elongate | 3 |
| 3. Posterior tibiae with serrulated margins, bearing no spines | 4 |
| Posterior tibiae armed with spines | 7 |
| 4. Facial shield subquadrate, inserted between the antennal sockets; | |
| frontal rostrum wide | 5 |
| Facial shield transverse; frontal rostrum narrow | 6 |

5. Facial shield strongly convex; small species with body more or less covered with scales; elytra of males membranaceous, short; females apterous Mogoplistidae
 Facial shield almost flat; body feebly pubescent, without scales; males and females with fully developed elytra Scleropteridae
6. Lateral margins of pronotum carinate. Posterior femora very slender. Ovipositor of female long, slender Cacoplistidae
 Lateral margins of pronotum rounded. Posterior femora less slender. Ovipositor of female wide, compressed Pteroplistidae
7. Posterior tibiae without denticles between the spines 8
 Posterior tibiae serrulate between the spines 9
8. Head globular; antennae inserted above the middle of the face Gryllidae
 Head flattened in front; antennae inserted beneath the middle of the face Pentacentridae
9. Head lengthened, horizontal; general shape slender; posterior femora long and feebly swollen Oecanthidae
 Head short, vertical; general shape more robust; posterior legs usually long with rather strongly swollen femora Phalangopsidae
10. Posterior tibiae non-serrulate, armed with 3 spines on each margin; small delicate insects Trigonidiidae
 Posterior tibiae serrulate between the spines 11
11. Posterior tibiae with long apical spurs, the externo-median longer than the other two; posterior metatarsi long 12
 Posterior tibiae with very short, nearly equal external spurs; posterior metatarsi short Podoscirtidae
12. Head big with wide frontal rostrum Eneopteridae
 Head small with narrow frontal rostrum Itaridae

All the families except the Scleropteridae and Pteroplistidae are represented in the Australian fauna.

In this paper, I have not dealt with the Gryllotalpidae as these have been very carefully treated by Mr. Norman B. Tindale ("Australasian Mole-crickets of the family Gryllotalpidae (Orthoptera)", *Rec. S. Austr. Mus.*, IV, 1928, No. 1, 42 p.).

The Tridactyloidea (Trydaetylidae, Cyclindrachaetidae) have been recently recognized as having no direct affinities with the Grylloidea but are related more to the Acridioidae.

1. FAMILY GRYLLIDAE.

The family Gryllidae can be divided into two subfamilies, the Gryllinae in which the posterior tibiae are armed with strong, non-movable spines, and the Nemobiinae in which these spines are long, movable and hairy.

Subfamily GRYLLINAE.

The Gryllinae represent the most generalized type of gryllids; their general shape is rather stout with moderately long legs. The armature of the posterior tibiae is composed of long and strong spines which are not movable; there may be some small denticles before the spines but never between them; the second segment of the tarsi is small, compressed.

The number of species of Gryllinae is rather large and they are often difficult to separate. The genera themselves are not easily characterized and a certain number of species are more or less intermediate between two genera.

KEY TO GENERA OF GRYLLINAE.

- | | |
|---|-----------------------|
| 1. Both sexes completely apterous | 2 |
| Elytra more or less developed | 3 |
| 2. Apical spurs of anterior tibiae much flattened, with cutting edges;
ovipositor very short | <i>Scapanonyx</i> |
| Apical spurs of anterior tibiae not so wide; ovipositor rather long .. | <i>Apterogryllus</i> |
| 3. Posterior tibiae serrulate at base | 4 |
| Posterior tibiae non-serrulate | 5 |
| 4. Anterior tibiae perforated with a small internal tympanum; head very
big; elytra of male without distinct mirror but with numerous oblique
veins | <i>Mjöbergella</i> |
| Anterior tibiae non-perforated; head normal; elytra of male with very
confused venation, showing no mirror or oblique veins .. | <i>Copholandrevus</i> |
| 5. Face flattened, chiefly in male | <i>Loxoblemmus</i> |
| Face convex in both sexes | 6 |
| 6. Face strongly swollen; elytral venation very similar in both sexes .. | <i>Cyrtoprosopus</i> |
| Face regularly convex | 7 |
| 7. Posterior femora longer than tibia and tarsus together | 8 |
| Posterior femora shorter than tibia and tarsus together | 9 |
| 8. Head very big, rounded | <i>Cephalogryllus</i> |
| Head normal | <i>Anurogryllus</i> |

9. Body depressed; elytra of male truncated at apex, without an apical field; elytra of female lateral; frontal rostrum rather narrow .. *Gryllodes*
 Body more or less rounded; elytra of variable length, those of the male never truncated, with always visible apical field, even when reduced; frontal rostrum wider 10
10. Body strongly rounded; elytra of female short, often reduced to lateral pads *Gryllopsis*
 Body less rounded; elytra of female more or less developed; never reduced to lateral pads 11
11. Elytra of male not remarkably ample; colouration more or less brownish *Gryllulus*
 Elytra of male abnormally ample; colouration pale testaceous *Eugryllodes*

Gen. *APTEROGRYLLUS* Saussure 1877.

This genus is composed of two Australian species, one of which is described below. Both are apterous, with nearly cylindrical body and strong legs. They are allied to *Brachytrypes*.

KEY TO THE SPECIES OF *APTEROGRYLLUS*.

- General shape more slender; pronotum smooth; labial palpi normally developed 1. *pedestris*
 General shape more robust; pronotum rugose; labial palpi abnormally developed 2. *rugosus*

1. *APTEROGRYLLUS PEDESTIS* Walk.

Brachytrypes pedestris Walker, 1869, Cat. Derm. Salt. Br. M., i, p. 13.

Apterogryllus brunnerianus Saussure, 1877, Mem. Soc. Geneve., xxv, p. 109, pl. 14 (xxi), fig. 1-4.

Queensland: Mt. Tambourine (A. M. Lea). (S.A.M.). First described from North Australia, without exact locality.

2. *APTEROGRYLLUS RUGOSUS* sp. n.

♂ *Holotype*. A large and strong species, rufous brown with yellowish legs. Head a little narrower than pronotum in front, rounded; occiput and forehead rufous with a few tiny punctations; frontal rostrum about twice as large as first antennal segment. Face short and wide, yellowish; cheeks yellow. Antennae and palpi yellow; fourth segment of maxillary palpi shorter than third, fifth long, scarcely widened at apex which is slightly truncated; labial palpi very long, particularly the third segment, which is provided with long

bristles. Eyes small, very feebly projecting. Ocelli small, placed almost in a straight line, encircled with a rather large yellow spot.

Pronotum scarcely wider than long, rather strongly widened in front; anterior margin concave, bordered and slightly projecting through the presence of a rather deep furrow running along it; posterior margin also concave and bordered; disk rather strongly convex; depressed along the median line and the posterior margin, with two deep impressions in front of the usual piriform impressions; nearly its whole surface is rendered rugose by a tiny net of small crooked ridges; lateral lobes rather high, yellowish, also somewhat rugose, their inferior margins narrowly brownish, slightly ascending backwards; anterior angle rounded, posterior one quite obliterated. Meso-,metanotum and first abdominal tergite wrinkled. Abdomen rufous above, a little shining with darkened median line; sides and inferior part yellowish; superior anal valve long, a little narrowing towards the apex which is truncated; sub-genital plate compressed. Cerci yellow, long and slender.

Legs short and strong, yellowish, a little pubescent. Anterior tibiae non-perforated, armed with 3 apical spurs; tarsi short, particularly the metatarsus. Median tibiae armed with 4 apical spurs. Posterior femora long but rather thick; tibiae short, armed with 5 spines on each superior margin, the internal ones much the longer; apical spurs strong, the supero-internal one much longer than the median. Metatarsi rather long, strong, compressed, furrowed above and armed with 5-6 denticles on each margin, their apical spurs strong but rather short.

♀ *Allotype*. Absolutely similar to the male except for the pronotum which is less widened in front. Ovipositor long and slender, with very narrow apical valves; these are strongly carinated, the superior ones feebly acute, the inferior shorter and slightly truncated at apex.

Length of body 33 mm.; pronot. ♂ 9 mm., ♀ 8 mm.; post. fem. 21.5 mm.; post. tib. 12 mm.; ovipositor 25 mm.

This species is much more robust than the preceding one and differs from it in numerous characters, particularly in the wrinkles of the pronotum and the very long labial palpi which remind one of *Scapanonyx palpatus*. It is intermediate between both genera, but the spurs of the anterior tibiae are not especially flattened and the shape of the ovipositor is very different.

Northern Territory: Darwin 2 ♂, 2 ♀; Groote Eylandt (N. B. Tindale), 1 ♀ (S.A.M.).

Types: Northern Territory, Darwin, 1 ♂, 1 ♀.

Gen. SCAPANONYX Chopard, 1925.

This genus was erected for a remarkable species allied to *Apterogryllus* but differing from it in the strongly flattened and widened apical spurs of the anterior tibiae.

SCAPANONYX PALPATUS Chopard, 1925.

Scapanonyx palpatus Chopard, 1925, Ark. f. Zool., 18 A, No. 6, p. 10, fig. 12-17.

South Australia: Ooldea (A. M. Lea), 2 ♀; Lake Callabonna (Lake Mulligan), 1 ♀ larva. (S.A.M.).

This species was previously known from the type only, which was described from Derby, N.W. Australia, and belongs to the Stockholm Museum.

Northern Territory: Darwin, 1 ♂ larva (S.A.M.).

Gen. CEPHALOGRYLLUS Chopard, 1925.

This genus belongs also to the *Brachytrypes* group; the head is very big, rounded; the posterior femora long and feebly swollen at base, the posterior tibiae relatively short, with supero-internal apical spur longer than the median; the male elytra are shorter than abdomen, with very short apical area, mirror usually reduced to a large transverse cell.

This genus can be considered as the Australian representative of the Indo-Malaysian genus *Gymnogryllus*.

KEY TO THE SPECIES OF *CEPHALOGRYLLUS*.

- | | |
|--|-----------------------|
| 1. Mirror rather large, rounded; apical area of male elytra moderately developed | 1. <i>australicus</i> |
| Mirror small, strongly transverse; apical area very much reduced .. | 2 |
| 2. Size medium; head brown; 5 oblique veins on the male elytron | 2. <i>laeviceps</i> |
| Size smaller; head rufous; 2 oblique veins | 3. <i>ruficeps</i> |

1. CEPHALOGRYLLUS AUSTRALICUS sp. n.

Fig. 1, 17.

♂. Size rather large; brownish, a little pubescent. Head as wide as pronotum in front, rounded, shining brown with a longitudinal yellow band behind each eye; frontal rostrum wide; ocelli circled with yellow. Face rather long, rufous; clypeo-frontal suture very feebly convex in the middle; cheeks rufous. Antennae and palpi brown; fourth segment of maxillary palpi shorter than third, fifth very large, feebly enlarged at apex which is strongly and obliquely truncated.

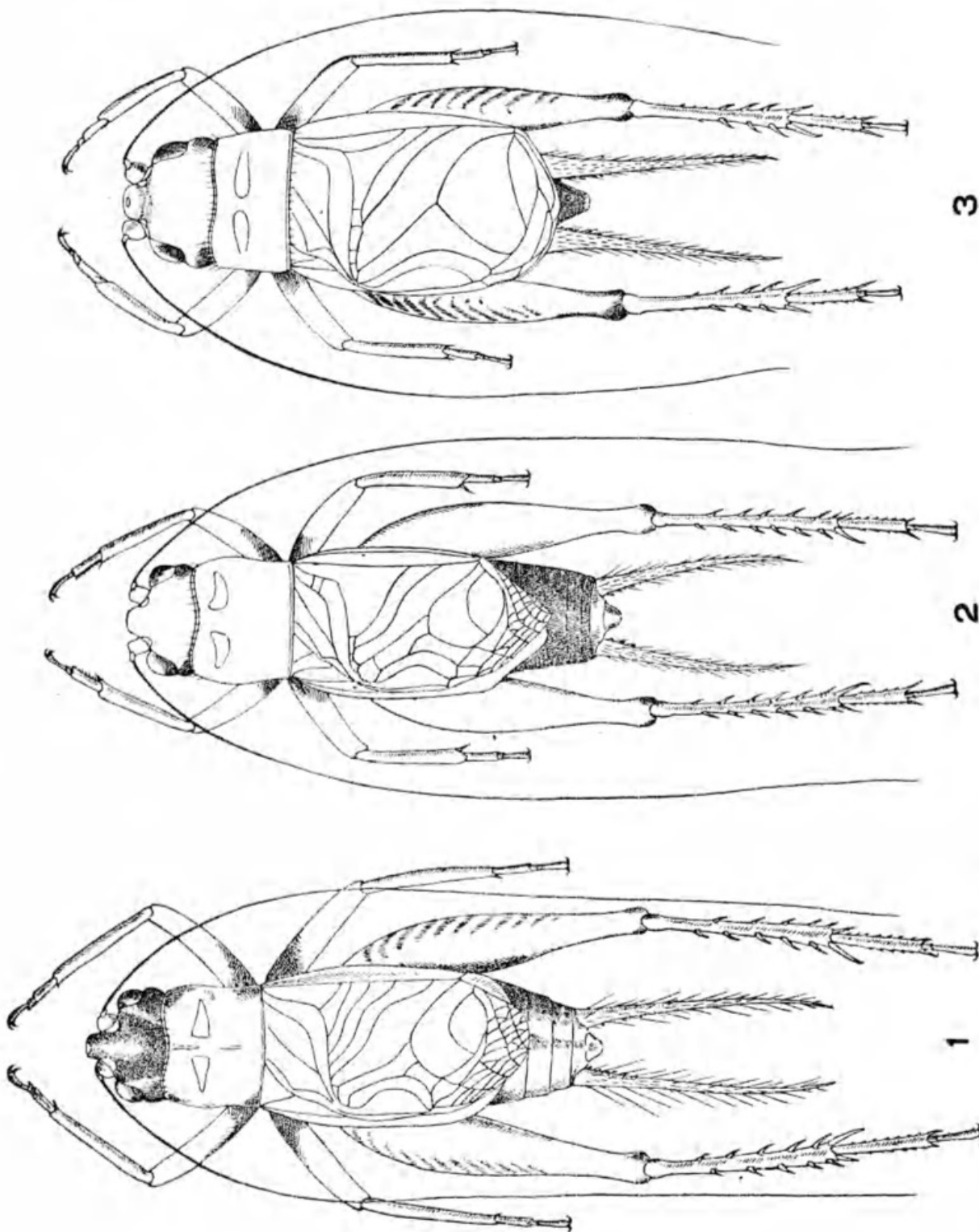


Fig. 1. *Cephalogryllus australicus* sp. n. ♂. Fig. 2. *Anurogryllus australis* Sauss., ♂.

Fig. 3. *Eugryllodes diminitus* Walk., ♂.

Pronotum with parallel sides; anterior margin concave; posterior one straight; disk feebly convex, brown, pubescent, the piriform impression rufous; lateral lobes yellowish with brown inferior margin; this margin is straight with rounded angles. Abdomen rufo-testaceous with a median brown band above. Cerci long, rufous. Genitalia forming a wide superior bridge without any median projection, the angles rather projecting, somewhat rounded at apex (fig. 17).

Legs rather long, rufous, with darkened tibiae. Anterior tibiae perforated on external face only with a large oval tympanum. Posterior femora relatively long, but rather strong, with external face striated with brown. Posterior tibiae rather short, armed with 5 short, curved spines on each margin; apical spurs strong but short, the supero-internal one longer than the median; metatarsi long, armed with 8 denticles on each margin.

Elytra a little shorter than abdomen, brownish, finely pubescent; mirror obliquely oval, divided beneath the middle by a curved vein; 5 rather regularly spaced oblique veins; chords strongly curved, united to the mirror by a small vein; apical field with 3 sectors, rather regularly reticulated in long narrow cells. Wings very short.

Length of body 22 mm.; pronot. 4.5 mm.; post. fem. 16 mm.; post. tib. 9.5 mm.; elytra 11.5 mm.

This species is not so characteristic as the other two species of the genus; it could as well be considered as a *Gymnogryllus* with shortened elytra; the shape of the genitalia is very similar to that of the following species showing that they are narrowly related.

Type: Queensland, Kuranda (Hale and Tindale, Dec. 1926), 1 ♂ (S.A.M.).

2. *CEPHALOGRYLLUS LAEVICEPS* Chopard, 1925.

Cephalogryllus laeviceps Chopard, 1925, Ark. f. Zool, 18 A, No. 6, p. 12, fig. 18.

Fig. 18.

This male is a little smaller than the type (length of body 15 mm.), its head is smaller and the elytral mirror is not divided. The genitalia are very much like those of the preceding species, the angles of the superior bridge being a little longer and narrower (fig. 18).

Queensland; Mt. Tambourine, Herberton, 1 ♂ (S.A.M.).

3. *CEPHALOGRYLLUS RUFICEPS* sp. n.

A rather small rufous brown species. Head big, round, rufous, shining; frontal rostrum short and very wide. Face rather short, wide, yellowish;

elypeo-frontal suture low but slightly angulate; cheeks yellowish, very finely wrinkled beneath the eyes. Eyes flattened, round; ocelli small, yellow, disposed in a straight line. Antennae and palpi yellowish; fourth segment of maxillary palpi equalling the third, fifth longer, scarcely enlarged at apex, which is obliquely truncated.

Pronotum transverse, feebly enlarged in front, with anterior margin a little concave, posterior margin straight; both are provided with brown bristles; disk weakly convex, rufous brown, darker than the head, furnished with a whitish recumbent pubescence; lateral lobes yellowish, with inferior margin straight, anterior angle nearly a right angle, posterior one rounded. Abdomen brown above, yellowish beneath. Cerci rufous.

Legs light rufous, rather short. Anterior tibiae perforated at external face with a rather large long oval tympanum; their apices armed with 3 spurs, of which the two internal are strong; metatarsi rather long, compressed, armed beneath with two rows of spinules. Posterior femora long and rather narrow; tibiae rather short, armed with 6 spines on each margin; infero-external and supero-external apical spurs shorter than the external, the two long ones nearly equal in length; metatarsi long, compressed, armed with 7 to 8 denticles on each superior margin and two rather strong apical spurs.

Elytra greyish, extending to the apex of abdomen, rounded; mirror quite reduced to a long and narrow cell formed by the prolongation of the diagonal vein; behind this cell, there is a short apical area comprising a few very large, irregular cells; chords long and close, very near to the diagonal vein; 2 oblique veins, the first of which strongly bent at a right angle, second almost straight; lateral fields light, with 4 plain, regularly spaced veins. Wings quite atrophied.

Length of body 10 mm.; post. fem. 7 mm.; elytra 5.5 mm.

By the shape of the much reduced mirror, this species is related to *laeviceps*, but the oblique veins are 2 only in number and the apical field is divided into very large cells. The size seems rather variable as an example from Port Darwin, in the British Museum collections, is 14 mm. long.

Northern Territory: Port Darwin (Br. M.); Adelaide River (Br. M.).

Type: Northern Territory: Darwin (G. F. Hill), 1 ♂. (S.A.M.).

Gen. ANUROGRYLLUS Saussure 1877.

This genus is characterized by the extreme shortness of the ovipositor. It is an American genus in which Saussure placed an Australian species only known from a single male. Although this insect looks really very much like an *Anurogryllus*, it is difficult to ascertain its generic position until the female is known. I leave it temporarily in the present genus.

ANUROGRYLLUS AUSTRALIS Saussure, 1877.

Anurogryllus australis Saussure, 1877, Mem. Soc. Geneve, xxv, p. 285.

Fig. 2, 19.

The type specimen is in the Paris Museum; it is labelled "Nouvelle Hollande" without any exact locality. It looks rather like *Anurogryllus muticus* from South America, but its elytra are shorter. It is quite different from the other Australian species of the group *Brachytrypes*. The genitalia are long and narrow, acute and divided at apex (fig. 19).

Gen. GRYLLULUS Uvarov, 1935.

This genus comprises species of Gryllids with the following features: body more or less convex, but not rounded above, pubescent; elytra as long as the abdomen or more or less reduced, but never lateral, pad-like; posterior femora shorter than the tibia and tarsus together; supero-internal apical spur of posterior tibiae usually shorter than the median; ocelli disposed in a triangle.

The species of the genus *Gryllulus* are numerous and very difficult to name with certainty. As a matter of fact this is almost impossible in the female sex; in the males, the elytral venation and the shape of the copulatory organs give very good characteristics. The following key, based in part on characters of colouration, is to be considered only as an attempt in the study of this difficult genus.

KEY TO THE SPECIES OF *GRYLLULUS*.

- | | | |
|--|---------|----------------------|
| 1. Size medium or large (14-30 mm.) | .. .. . | 2 |
| Size smaller (10-12 mm.) | .. .. . | 14 |
| 2. Head and pronotum uniformly rufous brown | .. .. . | 3 |
| Head and pronotum of a different colour | .. .. . | 4 |
| 3. Clypeo-frontal suture angulate; apical field of male elytron present, finely reticulated; elytra of female long | .. .. . | 6. <i>fulviceps</i> |
| Clypeo-frontal suture bent; apical field of male elytron almost absent; elytra of female very short | .. .. . | 18. <i>laticaput</i> |
| 4. Head with a yellow band between the eyes; pattern usually very obvious | .. .. . | 5 |
| Head without a yellow band between the eyes (sometimes a rufous line); pattern very weakly marked | .. .. . | 7 |
| 5. General colouration testaceous; occiput without longitudinal light lines | .. .. . | 1. <i>domestica</i> |
| General colouration darker; occiput presenting usually short light lines | .. .. . | 6 |

- | | |
|--|------------------------|
| 6. Head large; clypeo-frontal suture low, feebly angulate .. | 5. <i>lineiceps</i> |
| Head small; clypeo-frontal suture angulate, extending higher than the inferior level of antennary sockets | 4. <i>lepidus</i> |
| 7. Large or rather large species (15 to 30 mm.) with head and pronotum dark brown; clypeo-frontal suture nearly straight; male elytra with 3-4 oblique veins | 8 |
| Smaller species, no more than 14-16 mm. in length | 9 |
| 8. Larger (20-30 mm.) | 2. <i>commodus</i> |
| Smaller (15-20 mm.) | 3. <i>oceanicus</i> |
| 9. Elytra extending to the apex of abdomen | 10 |
| Elytra strongly shortened | 11 |
| 10. Clypeo-frontal suture reaching the anterior ocellus; forehead strongly swollen | 8. <i>scutellatus</i> |
| Clypeo-frontal suture not over-reaching the middle of antennary sockets; forehead normal | 7. <i>comparatus</i> |
| 11. Mirror of male rhomboid | 12 |
| Mirror of male subtriangular | 13 |
| 12. Head comparatively long; clypeo-frontal suture nearly straight .. | 10. <i>flavispina</i> |
| Head shorter, orbicular in shape; clypeo-frontal suture angulate .. | 9. <i>fistulator</i> |
| 13. Mirror of male not divided | 11. <i>diminuens</i> |
| Mirror of male divided; elytra short and wings long | 12. <i>curtipennis</i> |
| 14. Head with very distinct pattern | 15 |
| Head uniformly blackish or with indistinct pattern | 17 |
| 15. Clypeo-frontal suture feebly arched | 13. <i>parvulus</i> |
| Clypeo-frontal suture rather strongly bent | 16 |
| 16. General colouration testaceous brown | 14. <i>minusculus</i> |
| General colouration black | 15. <i>subniger</i> |
| 17. Clypeo-frontal suture very low, scarcely arched | 16. <i>mediocris</i> |
| Clypeo-frontal suture very strongly angulate | 17. <i>kempii</i> |

1. *GRYLLULUS DOMESTICUS* (L.).

Gryllus (Acheta) domesticus Linné, 1758, Syst. Nat. ed. x, i, p. 428.

This species can now be recorded from Australia, where it seems to have been introduced recently. The special conditions in which it was found are not surprising as they had been previously observed in England and in

France. Such conditions allow this very thermophilous species to breed out of doors under relatively cold climates.

South Australia: Adelaide (Commonwealth Inst. Ent.); from rubbish dump.

2. *GRYLLULUS COMMODUS* (Walk.).

Gryllus commodus Walker, 1869, Cat. Derm. Salt. B.M., i, p. 45; Chopard, 1925, Ark. f. Zool., 118A, No. 6, p. 13.

Gryllus fuliginosus Serville (*nec* Stoll), 1839, Ins. Orth., p. 334.

Gryllus Servillei Saussure, 1877, Mem. Soc. Geneve, xxv, p. 156.

Fig. 20, 21.

This is the most common species of *Gryllulus* in Australia. The head and pronotum are blackish, usually without any ornament; the male genitalia (fig. 20-21) are hollowed above in the shape of a groove.

Queensland: Brisbane, Ebor, 4,000 ft. (Q.M.), Cooktown (Br. M.); North West Is., (A.M.); Glen Laminton, Bellenden Ker, Brisbane, Yarrabah (Stockholm M.); Dunk Is., Mt. Tambourine, Kuranda, Magnetic Is., Cape Yorke Pen., Cairns Dist., Bellenden Ker, (S.A.M.).

Northern Territory: Groote Eylandt, Daly River, Port Darwin, Koolpinya, Tennants Creek, (S.A.M.); Groote Eylandt (A.M.).

Western Australia: Wyndham (S.A.M.).

South Australia: Wittunga (Blackwood), swarming in pasture April, 1948 (Commonwealth Inst. Ent.); Grange, Lake Mulligan (Callabonna), Patawalonga, Croydon, Blakiston, Willunga, Hindmarsh Valley, Dawlingville, Mt. Laffer, Torrens Creek, Stirling North, Pt. Pirie, Kangaroo Is., (S.A.M.).

New South Wales: Nowra (Br. M.); W. Sydney, Homebush, Eastwood, Brooklana, E. Dorrig, (A.M.); Clarence R., Sydney, (S.A.M.).

Tasmania: Table Cape (S.A.M.).

Norfolk Is.: Lord Howe Is. (S.A.M.); Capricorne Is. (Br. M.).

3. *GRYLLULUS OCEANICUS* (Le Guil.).

Gryllus oceanicus Le Guillou, 1841, Rev. Zool., p. 293.

Gryllus innotabilis Walker, 1870, Cat. Derm. Salt., i, p. 92.

This species is perhaps mainly an insular race of the preceding one; it does not appear to occur commonly in Australia but is very widespread in Oceania.

South Australia: Glenelg, Blakiston, Patawalonga, Kangaroo Island (S.A.M.).

Northern Territory: Melville Island (S.A.M.).

4. GRYLLULUS LEPIDUS (Walk.).

Gryllus lepidus Walker, 1869, Cat. Derm. Salt. Br. M., i, p. 40; Chopard 1925, Ark. f. Zool, 18A, No. 6, p. 13.

Gryllus kimberleyensis Mjöberg, 1913, Ent. Tidskr., xxxiv, p. 32.

Gryllus lepidoides Chopard, 1915, Nova Caledonia, Zool., ii, 8, p. 138.

Fig. 22.

This species is smaller than the preceding ones; it is characterized by its shining aspect, head always adorned with a narrow transverse yellow band and 5 lines of the same colour on the occiput; the clypeo-frontal suture is angulate, extending to the inferior margin of antennal sockets. In the male the elytra has 2 oblique veins. Genitalia with rounded superior lobes, inferior ones denticulated (fig. 22). The average size is 15 mm. but some individuals reach 18 mm. As in many species of the genus a short-winged and a long-winged form are found.

Very common in Australia and in Oceania.

South Australia: Ardrossan, Lake Mulligan (Callabonna), Mt. Lofty, Devon Downs, Kangaroo Island, Adelaide, Owieandana, Northern Flinders Ranges, Largs Bay, Murray Bridge, Oodnadatta, Cooper's Creek, Wookooloo, Innamincka, Red Cliffs, Wilpena Pound, Minnie Downs, Mt. Bryan, Semaphore, Stirling North, Kingoonya, Renmark, (S.A.M.); Mt. Lyndhurst Station, Farina (A.M.); Avenue (Browning, ii, 1949), (Com. Inst. Ent.); Alexandria (Br. M.).

Queensland: Mt. Tambourine (Q.M.); Cunnamulla, Powella Aramack, Michaelmas Cay off Cairns (A.M.); Mt. Tambourine (S.A.M.).

Northern Territory: Tennant Creek, Darwin, Charlotte Waters, Alice Springs, Batchelor (S.A.M.).

Central Australia: Hermannsburg (Br. M.); Carawena (S.A.M.).

Western Australia: Derby (Stockholm Mus.); Fitzroy and Margaret Ranges Area; Derby, Darling Ranges, Beverley (S.A.M.); Noonkanbah (Stockholm Mus.).

New South Wales: Nowra (Br. M.); Wentworth, Clarence River (S.A.M.); Taree, Eastwood, Florida North Moree, Myall Lakes, Sydney (A.M.).

Norfolk Island (S.A.M.).

5. *GRYLLULUS LINEICEPS* (Walk.).

Gryllus lineiceps Walker, 1869, Cat. Derm. Salt. Br. M., i, p. 44.

Fig. 23.

Although this species was described from an immature female the special ornamentation of the head allows us to recognize it with certainty.

The description may be completed as follows:

♂. Head big, adorned with 6 yellow lines on the occiput, the two external ones uniting on each side in the ocular angle; a rather narrow yellow band unites the eyes above the antennal socket; frontal rostrum very wide. Face rather short, brownish; clypeo-frontal suture subangular but rather low, not exceeding the inferior level of antennal sockets. Palpi yellowish; fifth segment of maxillary palpi brownish, with very obliquely truncated apex. Pronotum slightly enlarged in front; disk nearly flat, brownish with a few testaceous spots; lateral lobes yellowish. Abdomen brown above, yellowish beneath; tenth tergite and anal valves rufous. Genitalia with trilobate superior piece, the median lobe shorter than the lateral ones, convex at top (fig. 23). Legs short, yellowish brown, pubescent. Anterior tibiae non-perforated at internal face. Posterior femora thick, with external face striated with brown; tibiae armed with 5 spines on each side. Elytra extending to the apex of sixth abdominal tergite; mirror in the shape of a transverse lozenge; diagonal vein long, a little sinuated; 2 oblique veins; chords rather strongly sinuated, the first one sending out a veinlet near the angle of the mirror; apical field very short, divided into long, narrow cells; lateral field dark brown in its superior part, with 5 regularly and feebly spaced veins, Sc with one branch. Wings quite abortive.

Length of body 16 mm.; post. fem. 10.5 mm; elytra 8 mm.

♀. Similar to the male, with smaller head. Ovipositor rather short, with apical valves flat, blunt. Elytra extending only to the apex of the first abdominal tergite, brown with a yellow band on the edge; dorsal field with 4 veins and the cubital which is furcate.

Length of body 14.5 mm.; post. fem. 9.5 mm.; elytra 3.5 mm; ovipositor 8 mm.

6. *GRYLLULUS FULVICEPS* (Mjöb.).

Gryllodes fulviceps Mjöberg, 1913, Ent. Tidskr., xxxiv, p. 33; Chopard 1925, Ark. f. Zool., 18A, No. 6, p. 15, fig. 21-22.

Fig. 24.

This species is well characterized by its uniformly rufous colouration and its silky whitish pubescence. The head presents no ornamentation; clypeo-

frontal suture strongly angulate, extending to the middle of the antennal sockets; frontal rostrum wide, with carinate sides. Disk of pronotum a little darkened in the middle and near the anterior margin; lateral lobes yellow with a brown band in the superior part, which does not reach the anterior margin. Elytra of male extending to the apex of abdomen, somewhat rufous, lateral field with a narrow brown band along the superior edge, and showing traces of division in its posterior part; 2 oblique veins; apical field short, rounded, rather irregularly reticulated; lateral field with parallel, close veins; Sc plain. Genitalia of the same type as in *lepidus*, the inferior part forming two long teeth crossing on the median line (fig. 24). In the female, the elytra are brownish above, a little shorter than abdomen, rounded at apex; dorsal field with a dozen veins which are feebly oblique, regularly and weakly spaced; transverse veinlets numerous, forming small areolae. Ovipositor rather short (10 mm.), with feebly acute, wide apical valves. Wings long, whitish with anterior part brown in both sexes.

Queensland: Winton (S.A.M.).

South Australia: Lake Mulligan (Callabonna), (S.A.M.); Alexandria (Br. M.).

New South Wales: Moree (A.M.).

North Western Australia: Noonkanbah, W. Kimberley (types in the Stockholm Museum).

7. *Gryllulus comparatus* (Walk.).

Gryllus comparatus Walker, 1869, Cat. Derm. Salt. Br. M., i, p. 44.

Fig. 25.

This species is of medium size (14–15 mm.), blackish, shining. Head with 6 short yellow lines on the occiput; a very narrow interocular band; clypeo-frontal suture subangulate but rather low, extending only to the inferior level of antennal sockets. Anterior tibiae with internal tympanum small or absent; posterior tibiae armed with 5 spines on each margin. Elytra of male extending to the apex of abdomen, testaceous; mirror a little transverse, with rounded angles, not divided; 3 oblique veins (2 only in Walker's type); apical field long, with irregular, rather close reticulation; lateral field for the most part whitish, with close veins. Genitalia with a wide median projection, long, narrow lateral lobes (fig. 25). Elytra of female as long as in male, testaceous with feebly oblique veins, rather regular, close reticulation. Ovipositor rather long (11 mm.) with flat, little acute apical valves. Wings caudate in both sexes.

South Australia: Lake Mulligan (Callabonna), Callington, Cooper's Creek (S.A.M.).

Queensland: Powella Aramack (A.M.); Ebor, 4,000 ft. (Q.M.).

Northern Territory: Groote Eylandt (Br. M.); Charlotte Waters (S.A.M.).

Victoria: Wimmera, Healesville (Q.M.).

New South Wales: Jenolan (A.M.).

Lady Musgrave Island (Br. M.).

8. *GRYLLULUS SCUTELLATUS* sp. n.

Fig. 26.

Medium sized species, shape somewhat depressed. Head chestnut brown or blackish with 6 yellowish lines on the occiput; these lines are more or less united by a transverse band; there exists also a narrow interocular band which is sometimes completely obliterated in the middle. Face short and wide, with remarkably swollen facial shield, with a weak longitudinal median furrow; clypeo-frontal suture strongly angulate, extending as far as the anterior ocellus. Anterior tibiae perforated on external face only; posterior tibiae armed with 5 spines on each margin. Elytra extending to the apex of abdomen, light yellowish brown; mirror of the male nearly square, with right angles, not divided; 2 oblique veins; apical field rather large, with 2 sectors only and a rather wide reticulation; lateral field nearly black, with close veins. Genitalia with superior part trilobate, the median lobe short with rounded apex (fig. 26). Elytra of female with rather regular venation; Cu trifurcate. Ovipositor with flat, little acute, apical valves. Wings caudate in both sexes.

Length of body 14 mm.; post. fem. 9.5 mm.; elytra 9 mm.; ovipositor 8.5 mm.

This species is very close to *comparatus* but easily distinguished by the shape of the facial shield. The colouration is somewhat variable, some individuals being lighter with wider interocular band and the occipital lines more or less united. The male genitalia are quite of the same type as in *comparatus* but in this species, the median lobe is wider with acute angles at top and the inferior lobes are rounded without a small apical tooth (fig. 26).

South Australia: Lake Mulligan (Callabonna), (S.A.M.), type ♂ and ♀).

Central Australia: Higgin Dam (S.A.M.).

9. *GRYLLULUS FISTULATOR* (Sauss.).

Gryllodes fistulator Saussure, 1877, Mem. Soc. Geneve, xxv, p. 212.

Size medium (14–16 mm.). Head dark brown, with no distinct ornamentation except a yellow spot between the eyes and the ocellus; clypeo-frontal suture strongly bent, subangular, reaching the inferior level of antennal sockets.

Elytra of male extending to the apex of the sixth abdominal tergite; mirror in the shape of a wide lozenge, with obtuse anterior angle, not divided; 2 oblique veins; no veinlet between the first chord and the mirror; apical field very short (Saussure). Elytra of female extending to the apex of third abdominal tergite, with oblique internal margin; dorsal field with 4 veins and the cubital which is bifurcate; transverse veinlets close and more or less anastomosed; veins of the lateral field close. Ovipositor rather long (10 mm.) with flat, little acute apical valves.

This species is a little depressed with short lateral lobes of the pronotum; the macropterous form is not known. I have seen no male specimen.

Victoria: Melbourne (Saussure's type in Brunner's collection); Healesville distr. (Q.M.).

South Australia: Hindmarsh Valley, Murray R., Nuriootpa (S.A.M.).

10. *GRYLLULUS FLAVISPIA* (Sauss.).

Gryllodes flavispina Saussure, 1877, Mem. Soc. Geneve, xxv, p. 213.

According to Saussure's description, this is very close to the preceding species but with more lengthened head; mirror of the male nearly triangular with very acute anterior angle, the posterior part a little reticulated; there is a veinlet between the first chord and the diagonal vein and two between the chord and the mirror; lateral field with veins more spaced. I may add that the clypeo-frontal suture is almost straight. Prahamtown (Saussure's type in Brunner's Collection).

Northern Territory: Port Darwin, vii (Br. M.).

11. *GRYLLULUS DIMINUENS* (Walk.).

Gryllus diminuens Walker, 1869, Cat. Derm. Salt. Br. M., i, p. 43.

This species, 14 mm. long, seems close to the preceding ones. It is shining black, the head almost without any ornamentation; pronotum black with a narrow brownish band in front. Elytra a little more than half the abdomen in length, almost straightly truncated; mirror of male a little transverse, not divided; 2 oblique veins. The type is a micropterous specimen with no internal tympanum on anterior tibiae.

Tasmania (Walker's type).

12. *GRYLLULUS CURTIPENNIS* (Mjöb.).

Gryllodes curtipennis Mjöberg, 1913, Ent. Tidskr., p. 33; Chopard, 1925, p. 14, fig. 29.

A little larger than the preceding species (17 mm.); elytra of male a little shorter than the abdomen (8.5 mm.) with well developed apical field; mirror rhomboidal, a little longer than wide, divided by a strongly bent vein.

This species, of which the macropterous form only is known, is remarkable by its long wings and relatively short elytra, with nevertheless a comparatively large apical field.

North West. Australia: W. Kimberley, Noonkanbah, Derby (Mjöberg's type in the Stockholm Museum).

13. *GRYLLULUS PARVULUS* (Walk.).

Gryllus parvulus Walker, 1869, Cat. Derm. Salt. Br. M., i, p. 43.

Fig. 27, 31.

This species is smaller than the preceding ones (11 mm.). Head rather large, shining brown, with a rather narrow but very neat yellow band between the eyes; frontal rostrum wide, feebly projecting. Face wide; clypeo-frontal suture feebly bent, rounded in the middle. Elytra of male (fig. 31) scarcely reaching the abdominal extremity, with very short apical field, composed of a few large cells; mirror small, in the shape of a rather regular oblique parallelo-piped; 2 oblique veins; diagonal vein long, close to the chords which are rather strongly bent. Wings very short. Genitalia with superior part trilobate, the median lobe with somewhat notched apical edge (fig. 27). According to Walker, the elytra of the female cover two-thirds of the abdomen; they present a testaceous band on the edge; ovipositor as long as the abdomen.

New South Wales: Upper Williams R. (S.A.M.).

14. *GRYLLULUS MINUSCULUS* (Walk.).

Gryllus minusculus Walker, 1869, Cat. Derm. Salt. Br. M., i, p. 47.

Fig. 28, 32.

Very close to the preceding species; general colouration lighter, head chestnut brown with a yellow band between the eyes and 6 lines of the same colour on the occiput, the two median of which are short, the others uniting near the eye; frontal rostrum very wide, short. Face short and wide, rather

strongly swollen; clypeo-frontal suture exceeding the inferior level of the antennal sockets. Palpi yellow; 5th segment of maxillary palpi a little darkened at apex. Legs yellowish varied with brown; anterior tibiae perforated on the external face only; posterior tibiae armed with 5 spines on each margin; posterior metatarsi with 6 denticles on each superior margin. Abdomen brownish. Cerci yellow. Genitalia of the same type as in the preceding species but with much more slender median lobe (fig. 28). Elytra (fig. 32) a little shorter than the abdomen, with short apical field, reticulated in small cells; mirror larger than in *parvulus*, with more rounded angles; 2 oblique veins; lateral field with rather close veins. Wings wholly abortive. In the female the ovipositor is rather long (10 mm.) with somewhat flat but acute apical valves.

Length of body 12 mm.; post. fem. 7.5 mm.; elytra 7 mm.

This species has a macropterous form. Its general aspect is somewhat that of a small *Gryllulus domesticus*.

South Australia: Murray River, under stones (S.A.M.).

Queensland: Bunya Mts. (Q.M.).

Northern Territory: Adelaide River (Br. M.).

15. *Gryllulus subniger* sp. n.

Holotype: ♂. Very close to *nannus* in the general shape, size, elytral venation and genitalia, but quite different in colouration. Head black shining, with a narrow, very neat, yellow band between the antennae; occiput with 6 very short and feebly marked yellow lines; cheeks with a yellow spot behind the eye. Face short and wide; clypeo-frontal suture strongly bent, subangular, somewhat overreaching the inferior level of the antennal sockets. Pronotum black, shining, very feebly enlarged in front, with anterior margin very feebly convex, posterior margin straight; disk almost flat; lateral lobes black spotted with yellow in the anterior angle. Abdomen black, finely pubescent. Legs blackish; posterior femora short and stout, a little striated with yellow on the external face; internal face yellow at base and towards the inferior margin; tibiae armed on each margin with 5 rather strong, rufous spines. Elytra extending to the apex of the 7th abdominal tergite, black, rounded at apex; mirror a little transverse, with rounded posterior angle; 2 oblique veins; apical field very short; lateral field partly whitish, with 5 close veins and one branch to the Sc. Wings very short.

Allotype: ♀. Very similar to the male in general shape and colour; a little larger; head with transverse yellow band and occipital lines almost completely obliterated. Elytra short, extending to the apex of the 2nd abdominal

tergite, with internal margin oblique; dorsal field brown with a light humeral band; 5 longitudinal, rather irregular and anastomosed veins; lateral field whitish for the greater part, with 5 regularly spaced veins; Sc plain. Ovipositor rather short and stout, with apical valves depressed, blunt at apex.

Length of body ♂ 12 mm., ♀ 14 mm.; pronot. ♂ 2.6 mm.; ♀ 3 mm.; post. fem. ♂ 7.6 mm., ♀ 8.2 mm.; elytra ♂ 5.1 mm., ♀ 4 mm.; ovipositor 8.5 mm.

Types: South Australia: Avenue (T. O. Browning, 29, ix, 1949), 1 ♂; Glen Osmond (T. O. Browning, 29, ii, 1949), 1 ♀ (Commonwealth Inst. Ent.).

16. *GRYLLULUS MEDIOCRIS* (Mjöb.).

Grylloides mediocris Mjöberg, 1913, Ent. Tiskr., p. 33.

Gryllus mediocris Chopard, 1925, Ark. f. Zool., p. 15, fig. 19.

Fig. 29.

Close to *parvulus*; rather dark brown; head smaller, shining black with feebly marked ornamentation, consisting of 6 short yellow lines on the occiput; clypeo-frontal suture very low, scarcely bent. Genitalia wide and short, the superior part trilobate (fig. 29). The elytra can be shortened as in Mjöberg's type or extending to the apex of abdomen. Ovipositor rather long (7.5 mm.) with narrow acute apical valves.

Queensland: Cape Yorke, Cedar Creek, Bellenden Ker, Atherton, Yarrabah, Laura, Alice River (Mjöberg); Kuranda, Magnetic Is., Cairns Dist. (S.A.M.).

North West. Australia: Noonkanbah, W. Kimberley (Mjöberg's types), (Stockholm Mus.).

Northern Territory: Roper River (S.A.M.).

Karamula Is., Russell Group (S.A.M.).

17. *GRYLLULUS KEMPI* sp. n.

Fig. 30, 33.

Holotype. ♂. Small; uniformly chestnut brown. Head round, shining, with only traces of yellow lines on the occiput. Face rather long; clypeo-frontal suture very strongly angulate, extending to the middle of antennal sockets. Palpi yellowish. Pronotum transverse, with feebly concave anterior margin; lateral lobes with yellowish anterior angle. Abdomen brown above, yellowish beneath. Ovipositor with apical valves little acute, somewhat depressed. Legs yellowish varied with brown; anterior tibiae perforated on external face with a large oval tympanum. Posterior tibiae armed with 6

external, 5 internal spines. Elytra (fig. 33) dark testaceous, scarcely reaching the apex of abdomen, rounded at apex; dorsal field with somewhat irregular, rather close veins; lateral field brown, with 5 close veins. Wings long, whitish. Genitalia with superior part trilobate, the lobes long and narrow (fig. 30).

Length of body 10 mm.; length with wings 15.5 mm.; post. fem. 6 mm.; elytra 6.2 mm.; ovipositor 6 mm.

Allotype: ♀. Elytral mirror lozenge-shaped, a little longer than wide, with anterior and internal angles straight or nearly so; posterior angle acute but somewhat rounded, exterior angle obtuse; infero-internal side longer than the others; 2 oblique veins; chords parallel, separated to the base; apical field rather long, with 5 sectors and a rather irregular, wide reticulation; lateral field brown, with close veins, Sc furcate. Genitalia of the same type as the preceding species, with median lobe long and narrow (fig. 30).

This species is close to *mediocris*, but smaller with less acute ovipositor, strongly angulate clypeo-frontal suture.

Types: Queensland: Normanton (R. Kemp), 1 ♀ (A.M.). North West. Australia: (Dr. H. Basedow), 2 ♂, Derby (Plesiotype).

18. *Gryllulus laticaput* sp. n.

Holotype: ♂. Medium sized species, of light rufous general colouration. Head wide; occiput shining chestnut brown; frontal rostrum short, wide; a rather narrow yellow band between the ocelli. Face yellow, especially short and wide, the cheeks strongly projecting; clypeus very wide, short on the sides; clypeo-frontal suture extending to the inferior level of the antennal sockets. Antennae and palpi yellow. Pronotum somewhat widening in front, with rather concave anterior margin; disk almost flat, rufous brown with yellowish anterior and posterior margins; lateral lobes yellow with brown inferior margin. Abdomen brownish above, yellowish beneath. Cerci yellowish. Genitalia of the *comparatus* type with very short, truncated median lobe (fig. 25).

Legs yellowish; anterior tibiae armed with 3 long and slender apical spines, perforated with a large external tympanum. Posterior femora thick, feebly striated with brown at external face; tibiae armed with 6 internal, 7 external long spines; apical spurs long, the medio-external one quite twice as long as the other two, the two large internal ones subequal in length; posterior metatarsi long, armed with 7-8 denticles above.

Elytra extending nearly to the apex of abdomen, brownish with a yellow band on the edge, very feebly pubescent. Mirror small, strongly transverse, with obtuse anterior angle, posterior angle rounded, lateral angles acute; divid-

ing vein situated much before the middle, almost parallel to the anterior margins; 2 oblique veins; diagonal vein long, curved; chords long, close, a little nearer in the middle; apical field very short, with 2 sectors and few very small irregular cells. Lateral field yellow, with close veins, Sc simple. Wings abortive.

Allotype: ♀. Elytra very short, with strongly oblique apical margins; dorsal field with 5 irregular veins which are feebly visible near the base; lateral field wide, yellow. Ovipositor long with somewhat flattened, little acute apical valves.

Length of body 16 mm.; post. fem. 10.5 mm.; elytra ♂ 8.5 mm., ♀ 3 mm.; ovipositor 11.5 mm.

This species has very much the general aspect of *Gryllulus fulviceps*. It is more shining, the male with much shorter apical field of the elytra and a quite different type of genitalia; the female has much shorter elytra. This last character somewhat resembles that of the next genus, but the rather depressed shape of the body is that of *Gryllulus*.

Types: Queensland: 23 miles S.W. of Dajarra (T. Hodge-Smith, Sept., 1930), 1 ♂, 1 ♀ (A.M.).

NOTES.

1. A species, common in Indomalaya and Papua, *Gryllulus blennus* Saussure is also found in North Australia. It is close to *mediocris*, with head and pronotum uniformly chestnut brown and veins of the lateral field of elytra more distant; the genitalia of the male are also somewhat different.

2. The species described by Walker as *Gryllus nanus* (Cat. Derm. Salt. Br. M., i, p. 214) is an immature specimen which can be ascribed with sufficient certitude to *Gryllodes sigillatus* Walk.

3. P. P. King has described in 1826 (Narrative of a survey of the inter-tropical and western coasts of Australia, vol. ii, p. 456) a species of *Gryllus* which is impossible to recognize without the type. This description is as follows:

Gryllus regulus, n. sp.—*G. ferrugineo-fuscus antennis filiformibus nigris, elytris obscure nebulosis, alis fusco-hyalinis, thoracis lateribus postice testaceis, corpore subtus rufo-testaceo, tibiis posticis testaceis spinis dorsalibus rufis apicibus nigris.*

Gen. GRYLLOPSIS Chopard, 1927.

The species of this genus are very close to *Gryllulus*; they can be separated by their general shape which is more rounded; in the male, the elytra are usually shorter than the abdomen, in the female they are very short, often reduced

to lateral pads. The anterior tibiae are never perforated on the internal face but this condition is also found in micropterous forms of the genus *Gryllulus*.

One Australian species only can be ascribed to this genus.

GRYLLOPSIS ARMATIPES sp. n.

♀. Rather large, brown with transverse yellowish bands on the head and thorax; nearly glabrous, shining. Head large, globular, shining brown above with a yellow band between the ocelli and a little before the apex of frontal rostrum; the rostrum is very short, wide, a little rounded. Face short and wide, yellow; clypeo-frontal suture bent, extending a little above the inferior margin of antennal sockets. Eyes rounded, very feebly projecting; lateral ocelli large, round, anterior one small, a little before the apex of frontal rostrum. Antennae and palpi yellow; the three last joints of maxillary palpi subequal in length, slender, the last one scarcely widening at apex. Pronotum one and a third times as wide as long, a little widening in front, with anterior margin feebly concave, posterior margin straight; disk feebly convex, shining, brownish with two yellowish bands along the anterior and posterior margins; lateral lobes yellow with inferior margin a little ascending backwards, anterior angle rounded. Mesonotum rufous brown with posterior margin strongly convex. Metanotum dark brown with a narrow yellow posterior band. Abdomen rufo-testaceous with a median and two lateral longitudinal bands of brown spots; tenth tergite and anal valves yellowish; subgenital plate small, a little notched at apex. Ovipositor long, straight with depressed, slightly acute apical valves.

Legs rather long, yellowish, a little pubescent. Anterior tibiae presenting on external face a long and narrow oval tympanum. Posterior femora thick; posterior tibiae armed with strong and very close spines, the two rows of which are nearly in touch on the median line; they are 6 internal, 8 external in number; apical spurs long, yellow with brown tip; infero-internal a little shorter than the external, median and superior ones subequal in length; supero-external spur as long as the inferior, the median one almost twice as long. Posterior metatarsi long, a little compressed, armed with 5 internal, 7 external denticles; apical spurs rather short.

Elytra extending to the middle of metanotum; dorsal field triangular, shining brown with a yellow band on the edge; 7 longitudinal, somewhat irregular veins; lateral field high, yellow, presenting 5 parallel veins. Wings abortive.

Length of body 18 mm.; pronot. 4 mm.; post. fem. 12 mm.; elytra 3 mm.; ovipositor 18 mm.

Type: South Australia: Alexandria (W. Stalker, Jan., 1908), 1 ♀ (Br. M.).

Gen. GRYLLODES Saussure, 1874.

The genus *Grylloides* is restricted to one or two species of rather depressed general shape and narrow frontal rostrum. The elytra are usually rather short and truncated in the male, quite lateral in the female.

GRYLLODES SIGILLATUS (Walk.).

Gryllus sigillatus Walker, 1869, Cat. Derm. Salt. Br. M., i, p. 46.

Grylloides sigillatus Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 14.

Gryllus nanus Walker, 1869, l. cit., p. 214.

This species is widely spread in tropical countries; it is often found in houses.

North West. Australia: Broome, Kimberley Distr., Noonkanbah (Stockholm Mus.).

Gen. EUGRYLLODES Chopard, 1927.

This genus is composed of semi-desert species, light testaceous in colour, the male with very ample elytra; the females are similar to *Gryllulus*.

EUGRYLLODES DIMINUTUS (Walk.).

Gryllus diminutus Walker, 1869, Cat. Derm. Salt. Br. M., i, p. 45.

Fig. 3, 34.

This species is known only from Walker's description to which the following may be added.

Light brown, varied with yellow. Head rather large, rounded, shining brown; occiput showing 6 narrow yellow lines, the two median of which are short, the other united behind the eye; frontal rostrum rather wide but long, with a basal furrow uniting the ocelli. Face short and wide, brown; facial shield projecting, yellow; cheeks yellow. Antennae slender, yellowish brown. Maxillary palpi brownish, slender; 3 last segments subequal in length, the fifth very slightly enlarged at apex. Eyes rather small, slightly projecting; ocelli very small, the anterior one in the middle of the rostrum. Pronotum strongly transverse, with parallel sides; anterior and posterior margins nearly straight; disk almost flat, a little pubescent, brownish with light yellow impressions; lateral lobes yellowish, with straight inferior margin. Abdomen brown above, yellowish beneath; subgenital plate large, rounded. Genitalia wide and short, the superior part without median lobe (fig. 34).

Legs rather short, yellowish. Anterior tibiae a little flattened, perforated with a rather large oval tympanum on both sides; metatarsi short, compressed, spinulose beneath. Posterior femora short and rather strong; tibiae armed with 3 spines on each margin, and small variable denticles at base; these are 2 or 3 on the external margin, 1 or none on the internal margin; apical spurs rather long, pubescent, the supero-internal one a little longer than the median; metatarsi long, a little compressed, armed with 7 denticles on each margin. Elytra translucent, extending to the apex of abdomen, rounded; mirror large, almost triangular, with feebly convex margins, divided after the middle by a feebly bent vein; diagonal vein long, straight; chords feebly bent, a little diverging; 2 oblique veins; apical field almost nil; lateral field yellowish, with 4 regular, close veins, besides Sc which is furcate near the base. Wings very short.

Length of body 11.5 mm.; pronot. 2 mm.; post. fem. 7.2 mm.; elytra 7 mm.

This species differs from the others of the genus by rather important characters such as the presence of two large tympana on the anterior tibiae and the armature of the posterior tibiae which resembles that of the Gryllomorphi group with the small basal denticles.

South Australia: Mt. Lofty (J. G. O. Tepper), Kangaroo Is. (S.A.M.).

Queensland: Stapleton (S.A.M.).

Gen. CYRTOPROSOPUS nov.

κυρτός curved; πρόσωπον face).

On the armature of the legs, this genus belongs to the Gryllinae but a very wide frontal rostrum, swollen into a voluminous protuberance is suggestive of the Mogoplistinae. The elytra are short, wings very long; the elytral venation is very similar in both sexes, the male with no mirror but a very distinct anal vein.

Type: *Cyrtoprosopus stramineus* sp. n.

CYRTOPROSOPUS STRAMINEUS sp. n.

Holotype: ♂. Rather small size; yellowish, nearly glabrous on the body, the legs finely pubescent. Head a little wider than pronotum; between the eyes with a badly defined brown band, almost obliterated in the middle; forehead flattened, frontal rostrum much wider than first antennal segment rounded, smooth. Face very short, wholly covered by the big protuberance formed by the facial shield and the rostrum which are united, with a median longitudinal furrow. Eyes rounded, slightly projecting; ocelli small, the anterior one almost invisible. Palpi short, yellow; third and fourth segments of maxillary

palpi short, equal in length, fifth longer, a little enlarged and very obliquely truncated at apex. Antennae yellow. Pronotum strongly transverse, with feebly concave anterior margin, posterior margin straight; disk almost flat; lateral lobes short, with inferior margin slightly ascending backwards, anterior angle widely rounded. Abdomen brownish above, yellow beneath; supero-anal valve rounded; subgenital plate large with posterior margin rounded, a little notched in the middle.

Legs yellow; anterior one very short; femora rather thick, compressed; tibiae short, armed with 3 rather weak apical spurs, external face perforated with a large, oval tympanum; tarsus almost as long as the tibia, the first two segments provided beneath with two rows of spinules. Middle legs with the same general shape but a little longer. Posterior femora long and rather narrow; tibiae short, armed with 4 internal, 5 external spines, the first of which is very short; supero-external and infero-external spurs short, median twice as long; infero-internal spur a little shorter than the external, the two others long, equal in length, ciliated; metatarsi long, armed with 4-5 denticles on each margin above.

Elytra extending no farther than the middle of abdomen, rounded at apex, scarcely overlapping on the median line; colour light yellow, almost transparent; anal field very small, the anal vein quite distinct but nearly straight, sending an oblique vein to the median; the remainder of the dorsal field occupied by 5 veins, 2 having their origin on the anal knot, the others from the radial vein; the first one furcate, the second represents the diagonal vein, but there is no trace of a mirror; transverse veinlets scarce, forming large areolae. Wings very long.

Allotype: ♀. Quite similar to the male; veins of the dorsal field of elytra almost the same but more regularly oblique. Ovipositor rather long, straight, with apical valves lanceolate, flattened, as in the species of *Gryllulus*.

Length of body 9 mm.; length with wings 15 mm.; post. fem. 5 mm.; post. tib. 3 mm.; elytra 4 mm.; ovipositor 6 mm.

This very remarkable species is represented in the collection of the South Australian Museum by a number of individuals from different localities.

South Australia: Owieandana (Rev. A. P. Burgess), 1 ♂, North Flinders Ranges (Hale and Tindale), 1 ♀ (types); also Strzlecki Creek, Yeelanna, Murray River, Minnie Downs, Devon Downs (December), Farina (S.A.M.), Lake Mulligan (Callabonna), (S.A.M.).

Central Australia: Caravena (S.A.M.).

Gen. LOXOBLEMMUS Saussure, 1877.

The species of this genus are distinguished from those of *Gryllulus* in the shape of the head of the male, which is flattened in front, the forehead being more or less produced between the antennae. They are numerous in Indo-Malaysia; one species only is found in North Australia.

Gen. LOXOBLEMMUS PALLENS Serv.

Gryllus pallens Serville, 1839, Ins. Orth., p. 344.

Fig. 35.

The type specimen of this species exists in the collection of the Paris Museum; it is labelled "Nouvelle Hollande" without exact locality. The description may be amplified as follows:

♂. Vertex very wide, regularly but feebly arched, lined with a yellow band; occiput adorned with 6 short yellow lines. Face wide, strongly flattened, even slightly concave with median line very little projecting and feebly carinated, sides curved inwards. Anterior ocellus inserted near the superior fourth. First segment of antennae with a very short process. Elytra not extending over the fifth abdominal tergite, rounded at apex; mirror a little wider than long, forwardly angulate, backwardly rounded, not divided; diagonal vein rather long, a little curved; 1 oblique vein, first and second chords rather feebly curved, parallel; apical field very short, with a few large cells disposed on two rows; lateral field brown with 4 regularly spaced veins, Sc plain. Wings short. Genitalia widely notched at apex with very narrow lobes (fig. 35).

Length of body 17.5 mm.; post. fem. 11 mm.; elytra 8.5 mm.

This species differs from other *Loxoblemmus* in the very wide and short forehead and in the presence of only one oblique vein. The female is very similar to that of *L. detectus* Serv. with a little wider forehead.

Queensland: Kuranda (F. P. Dodd), (A.M.).

Gen. MJÖBERGELLA Chopard, 1925.

This genus was erected for a very remarkable species belonging to the group Gryllomorphites, which is characterized by the presence of small denticles before the spines of the posterior tibiae.

Mjöbergella macrocephala Chopard.

Mjöbergella macrocephala Chopard, 1925, Arch. f. Zool., 18A, No. 6, p. 18, fig. 29.

This species, known from the type specimen only, is easily recognizable by its colour, its very large head and the elytral venation.

Queensland: Malanda (Stockholm Mus.).

Gen. CPHOLANDREVUS Chopard, 1925.

This genus belongs to the same division as the preceding; it is close to the Malaisian genus *Landreva* but with non-perforated anterior tibiae and obscure mirror in the male elytra.

CPHOLANDREVUS AUSTRALICUS Chopard.

Copholandrevus australicus Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 15, fig. 23-28.

This species can be easily recognized by the armature of the posterior tibiae presenting on each margin 6 or 7 denticles before the spines; the elytra in the male are short, not extending farther than the metanotum, truncated at apex with a very feeble venation; in the female they are very short, separated on the median line.

Queensland: Cedar Creek, Malanda (types in the Stockholm Mus.).

Subfamily NEMOBIINAE.

This subfamily is composed of rather small species which have the posterior tibiae armed with long, movable, hairy spines. They have many common features with the Gryllinae.

KEY TO THE GENERA OF NEMOBIINAE.

1. Mirror of male filled with a close reticulation; female completely apterous *Dictyonemobius*
 Mirror of male usually perfectly distinct; female with elytra and wings, or at least elytra present 2
2. Posterior tibiae armed with 3 spines on each superior margin .. *Nemobius*
 Posterior tibiae with 4 spines on each margin, or on the internal margin only, in both sexes or at least in the male *Pteronemobius*

Gen. *PTERONEMOBIUS* Jacobson and Bianchi, 1904.

The species of this genus are typically fully alate, though a micropterous condition can prevail in certain of them. In the male the first internal spine of the posterior tibiae is very short, tuberculiform.

KEY TO THE SPECIES OF *PTERONEMOBIUS*.

1. Posterior tibiae with 4 spines on each margin in both sexes 2
 Posterior tibiae with 3 external, 4 internal spines in the male, 3-3 or
 3-4 in the female 3
2. Lateral lobes of pronotum nearly black 1. *truncatus*
 Lateral lobes of pronotum scarcely darker than the disk 2. *unicolor*
3. Mirror of male reticulated, more or less confounded with the apical
 area (fig. 36); female with 3 internal spines on the posterior tibiae ..
 3. *regulus*
 Mirror of male well separated from the apical area (fig. 37); female
 with 4 internal spines on the posterior tibiae 4. *ornaticeps*

1. *PTERONEMOBIUS TRUNCATUS* (Sauss.).

Nemobius truncatus Saussure, 1877, Mem. Soc. Geneve, xxv, p. 91.

Nemobius laparinthae Tepper, 1896, Horn Exp. Centr. Austr., ii, p. 378.

Pteronemobius mjobergi Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 9, fig. 8-9.

The type of *truncatus*, in the Paris Museum, is in rather poor condition but it can nevertheless be identified with *laparinthae*; the first name has priority.

Small; rather uniform light brownish. Head with 4 very short, feeble light bands on the occiput; face and cheeks brown. Palpi brownish, with fourth segment very short, fifth segment large, in the shape of a long triangle. Pronotum with anterior and posterior margins straight, sides parallel; disk nearly flat, light brown with feebly darkened sides; lateral lobes dark brown, almost black. Legs yellowish brown, a little spotted with brown. Posterior femora slightly striated with brown. Anterior tibiae perforated at external face with a rather large oval tympanum.

♂. Posterior tibiae armed with 4 spines on each side, the first internal spine short, strongly swollen, curved at base, very long; inferior spurs subequal in length. Elytra extending to the apex of abdomen; mirror divided backwards by two large cells, of which the internal extends along the whole length of the internal margin; apical area a little lengthened; chords separated almost to the base. Wings short.

♀. Similar to the male. Posterior tibiae armed with 4 spines on each margin, the first internal spine very short, the last very long. Elytra somewhat shortened, light brown, with 4 rather regular veins on the dorsal field, and with very scarce transverse veinlets; the first two veins are united only a little beyond the base; lateral field concolorous with parallel veins. Wings short. Ovipositor short, nearly straight, with feebly denticulated apical valves.

Length of body ♂ 6 mm., ♀ 7 mm.; post. fem. ♂ 4 mm., ♀ 4.8 mm.; elytra ♂ 4.5 mm., ♀ 3.0–3.5 mm.; ovipositor 2.5–3.0 mm.

Queensland: Brisbane (Q.M.); Cairns Distr. (S.A.M.); Colosseum (type of *mjöbergi*); Malanda, Alice River, Chillagoe (Stockholm Mus.).

Central Australia: Finke Gorge, Reedy Hole (type and cotype ♀ of *laparinthae* (S.A.M.)).

Northern Territory: Darwin, G. F. Hill (S.A.M.).

South Australia: Wilpena Pound, Magill on and under water, Murray River, Kewell East (S.A.M.).

New South Wales: Wallacia (Hale and Tindale), (S.A.M.); Shaw's Creek Valley, Warrumbungle Range (A.M.).

2. *PTERONEMOBIUS UNICOLOR* Chopard.

Pteronemobius unicolor Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 9, fig. 10–11.

This species is very close to the preceding, of which it might be the macropterous condition, although differing from it in certain characters such as the more uniform colouration and the longer elytra.

Queensland: Cedar Creek (type in the Stockholm Mus.).

3. *PTERONEMOBIUS REGULUS* (Sauss.).

Nemobius regulus Saussure, 1877, Mem. Soc. Geneve, xxv, p. 87 (♀).

Nemobius pulex Saussure, 1877, l. cit., p. 96 (♂).

Nemobius biguttatus Mjöberg, 1913, Ent. Tidskr., p. 32.

Pteronemobius parallelus Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 6, fig. 3–4 (micropterous condition).

Fig. 36.

This small species is fulvous-brown with two light bands on the pronotum; head adorned with 4 light bands on the occiput; lateral lobes of pronotum very dark. Elytra of male extending to the apex of abdomen, with rather obscure mirror, diagonal vein markedly sinuate; elytra of female extending to apex

of fourth abdominal tergite, with somewhat oblique apical margin, dorsal field dark brown, shining, with 4 quite longitudinal veins. Posterior tibiae armed in the male with 3 external, 4 internal spines, of which the first is very short and tuberculiform; in the female there are 3 spines on each margin. Ovipositor nearly smooth at apex.

Length of body ♂ 3.5 mm., ♀ 4.5 mm.; post. fem. ♂ 2.8 mm., ♀ 3.2 mm.; elytra ♂ 2.1, ♀ 1.6 mm.; ovipositor 2.4 mm.

Queensland: Atherton, Malanda (types of *biguttatus*), Cape Yorke Peninsula, Bellenden Ker (types of *parallelus*); Colosseum, Mt. Tambourine (Stockholm Mus.); Brisbane, Cairns Distr., Stewart River, Rockhampton, Stradbroke Island (S.A.M.); Brisbane (Q.M.).

North West. Australia: Noonkanbah (type of *biguttatus*), (Stockholm Mus.).

Northern Territory: Without exact locality (type of *pulex* in Brunner's collection); Daly River, Groote Eylandt (S.A.M.).

New South Wales: Nepean River, Curlewis, Penrith (A.M.); Wallacia, Port Hacking (S.A.M.).

Tasmania: Galston, Dumbrell (S.A.M.).

South Australia: N.E. of S. Aust., Mt. Lofty, Adelaide, Murray River (S.A.M.); Adelaide (type of *regulus* Leyden Mus.).

4. *PTERONEMOBIUS ORNATICEPS* Chopard.

Pteronemobius ornaticeps Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 7, fig. 5-7.

Fig. 37.

A little larger than the preceding species; fulvous-brown; head adorned with 7 light bands. Armature of the posterior tibiae as that of *regulus* in the male, in the female 4 internal spines. Elytra of the male extending to apex of abdomen, shining brown, with transverse mirror, with two large cells. Wings aborted.

The pattern of the head is more or less visible in this species but the elytral venation in the male and the tibial armature in the female separate it from *regulus*.

Length of body ♂ 5.5 mm., ♀ 6 mm.; post. fem. 4 mm.; elytra 3.5 mm.; ovipositor 3 mm.

Queensland: Bellenden Ker (types in the Stockholm Mus.); Illingworth, Gordon Vale (Q.M.); Cairns Distr. (S.A.M.).

Northern Territory: Darwin, Groote Eylandt (S.A.M.).

North West. Australia: Fortescue River, Hammersley Range, Derby (S.A.M.).

New South Wales: Port Hacking (Tindale, March, 1927). (S.A.M.).

Moa Island, Torres Straits (J. W. Schomberg). (S.A.M.).

This species is also found in Fiji and N.E. Papua, Mount Lamington (S.A.M.).

Gen. NEMOBIUS Serville, 1839.

The species of this genus differ from *Pteronemobius* in the tibial armature, there being never more than 3 spines, even in the male; the first internal spine is not differentiated.

NEMOBIUS BIVITTATUS Walk.

Nemobius bivittatus Walker, 1869, Cat. Derm. Salt. Br. M., i, p. 59.

Nemobius australianus Mjöberg, 1913, Ent. Tidskr., p. 32; Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 6, fig. 1-2.

Nemobius femoratus Saussure, 1877, Mem. Soc. Geneve, xxv, p. 92, pl. 11 (vii), fig. 2-4.

Nemobius annulipes Saussure, *l. cit.*, p. 77.

Head black with two wide yellow bands behind the eyes and two much narrower ones near the middle. Face black; shining; cheeks rufous. Eyes big, rounded; ocelli, small, round, disposed as a triangle. Antennae blackish. Maxillary palpi with first 3 segments black, the apex of the third, the fourth and the base of the fifth fulvous; the last segment rather long, triangular, blackish in its apical half and along the superior margin. Pronotum transverse, with parallel sides, anterior and posterior margins straight; disk black with two wide fulvous bands; lateral lobes black; abdomen blackish above, grey beneath. Legs blackish; anterior and median tibiae with two yellowish rings; posterior femora with external face yellowish. Posterior tibiae on each margin armed with 3 rather long spines; yellowish at base; inferior spurs equal in length; metatarsi with proximal half yellow.

♂. Elytra extending nearly to the apex of abdomen, rounded at top, dorsal field greyish yellow, translucent; mirror rather large, oblique, almost quadrangular, somewhat widening backwards, divided by a small vein extending to the middle of the internal margin; first and second chords long, parallel, curved only towards the apical fourth chord, sometimes approaching each other in the middle; apical field practically nil; lateral field nearly black, with 3 regularly spaced veins. Wings wanting.

♀. Elytra not exceeding apex of third abdominal tergite; dorsal field almost triangular, with strongly oblique internal margin; colour yellowish brown with a small brown spot at base; with 4 parallel veins, the first and second of which are united at base; transverse veinlets very scarce, forming a few large, lengthened areolae; lateral field almost black with 4 veins. No wings. Ovipositor long, very straight, with very finely denticulated apical valves.

Length of body ♂ 6 mm., ♀ 6.5 mm.; post. fem. ♂ 4.5 mm., ♀ 5.5 mm.; elytra ♂ 3 mm., ♀ 2 mm.; ovipositor 5.5 mm.

Western Australia: Perth (type of *australianus*, in the Stockholm Mus.); Perth (Br. M.); Cape Leeuwen, Warren River (S.A.M.).

South Australia: Penola, iii, 47, entering house and attacking food (Comm. Ins. Ent.); Snuggery on pasture, iv, 1949, Waterfall Gully, Mitcham, Second Creek, Magill, Blakiston, Waranda Eyrie, Adelaide, Kangaroo Island, Karalla, Wilpena Pound, Nairne (S.A.M.).

New South Wales: Dorrigo (S.A.M.); Kosciusko 6,000 ft., Banksia (A.M.).

Victoria: Healesville (Q.M.); Melbourne (S.A.M.).

Tasmania: Hobart (S.A.M.); Bridgetown, Mrs. Lindsay (Br. M.).

Gen. *DICTYONEMOBIUS* nov.

Elytra of male with ill defined mirror, this being completely filled with a close reticulation extending even between the chords. Female completely apterous. Posterior tibiae armed with 4 spines on each margin, the first internal not differentiated in the male, and 6 apical spurs. Anterior tibiae perforated at external face.

Type: *Dictyonemobius lateralis* sp. n.

DICTYONEMOBIUS LATERALIS sp. n.

Fig. 4.

♂. Rufous brown with a black lateral band extending from the head to the apex of elytra. Head as wide as pronotum, with 4 brown lines on the occiput; vertex bearing 4 rows of long bristles; frontal rostrum wide, rounded. Face short, with a λ-shaped mark on the facial shield; cheeks black. Eyes rounded, rather big; ocelli small, the anterior one almost at the apex of the rostrum. Antennae yellowish, ciliated. Palpi brownish; fourth segment of maxillary palpi much shorter than the third, fifth in the shape of a very long triangle. Pronotum with feebly convex sides, straight anterior and posterior margins, anterior margin bordered with long bristles; disk almost flat with the

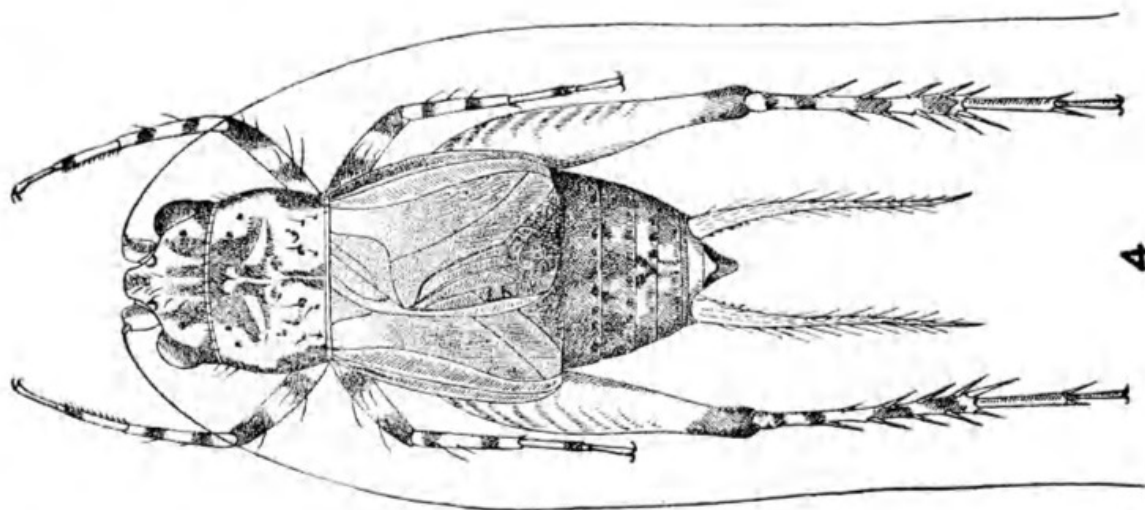


Fig. 4. *Dictyonemobius lateralis* sp. n. ♂.

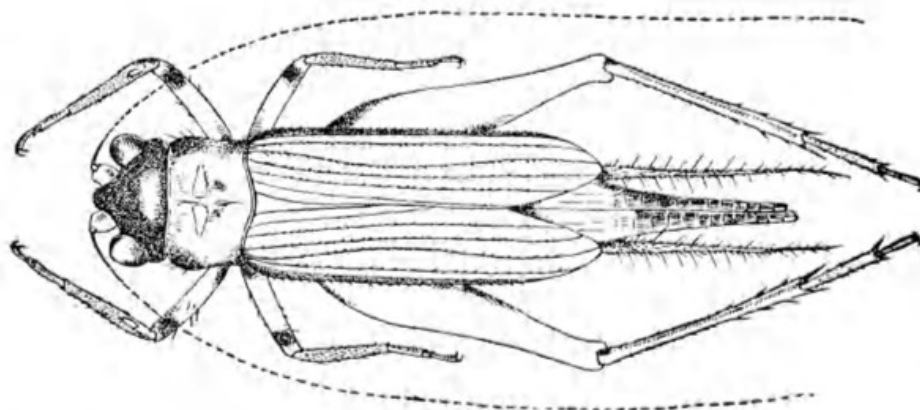


Fig. 5. *Pentacentrus australianus* sp. n. ♂.

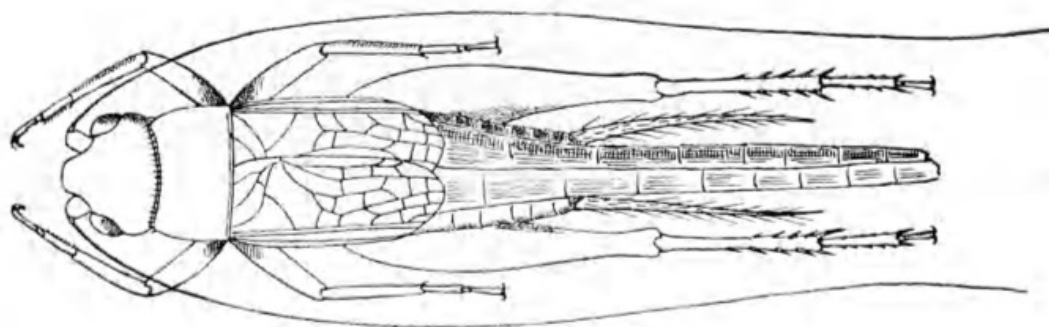


Fig. 6. *Cyrtoprosopus stramineus* sp. n. ♂.

median line somewhat deepened, yellowish rufous with two brown spots near the anterior margin and small spots of the same colour, each bearing a bristle, disposed in 5 rows of 4 spots; lateral lobes completely black, with weakly sinuated inferior margin, rounded posterior angle. Abdomen brown, pubescent; posterior margin of each tergite rufous with a row of about ten small brown spots; supero-anal valve rounded; subgenital plate compressed. Legs yellowish rufous, mottled with brown. Anterior and median femora with 2 brown rings, one at base the other at apex; tibiae also with two brown rings, the anterior perforated with a large, oval tympanum; apical spurs long and slender; metatarsi long, yellowish, a little darkened at apex. Posterior femora short and thick, striated with brown at external face; tibiae with two brown rings, one at base the other near apex; 4 long slender spines on each margin, the first internal spine is small but not swollen; inferior spurs equal in length, the two large internal ones very long, ciliated; supero-external spur very similar to the last spine, the median spur almost twice as long; metatarsus long and slender, armed with two apical spurs of which the internal is much the longer. Elytra extending to middle of fifth abdominal tergite, almost truncated at apex; disk rather dark brown with strong, yellow veins; mirror quite indistinct, lost in a net of small, rather irregular cells; diagonal vein long, almost straight; chords almost straight, parallel, united towards their extremity by that same reticulation which fills the mirror; oblique vein feebly sinuated; lateral field black with 4 regularly spaced veins. Wings very short.

♀. Apterous, similar to the male in shape and colouration. Ovipositor rather short and thick, with apical valves scarcely wider than the stem, with feebly concave, very finely denticulated superior margin, apex acute. Subgenital plate wide, angularly notched.

Length of body 7.5 mm.; post. fem. 4.6 mm.; elytra ♂ 3 mm.; ovipositor 4.2 mm.

Types: Norfolk Island, A. M. Lea, 1 ♂, 1 ♀ (S.A.M.).

Lord Howe Island, 2 immature specimens almost certainly belonging to the same species.

DICTYONEMOBIUS (?) HETEROPUS (Walk).

Nemobius heteropus Walker, 1869, Cat. Derm. Salt. Br. M., i, p. 60.

This species, described from Australia, without exact locality, may perhaps be ascribed to this genus. It would differ from the preceding in the whitish maxillary palpi. The original description is as follows:

“*Female*. Black, tomentose, rather stout. Head and prothorax setose. Head short, as broad as the prothorax. Eyes transversely elongated, rather large, slightly prominent. Maxillary palpi whitish; third segment slightly

securiform, much longer than the second. Antennae slender. Oviduct as long as the abdomen. Legs rather stout; hind femora testaceous at the base and beneath; hind tibiae with four long slender spines on each side, these spines testaceous towards the base. Wings entirely wanting. Length of body $3\frac{1}{2}$ lines."

Note. *Nemobius australis* Walker (*loc. cit.*, p. 59) of which I have seen the type, is not a *Nemobius* but a larva of a species of Eneopterinae.

FAMILY MYRMECOPHILIDAE.

The small Grylloids of this family are very remarkable both in shape and in their habits as they live with ants of numerous species. The family comprises two genera only of which one is represented in Australia.

Gen. MYRMECOPHILA Latreille, 1829.

The characters are those of the family.

KEY TO THE SPECIES OF MYRMECOPHILA.

- | | |
|---|---------------------|
| 1. Posterior tibiae armed with 2 internal spines | 1. <i>australis</i> |
| Posterior tibiae armed with 3 or 4 internal spines | 2 |
| 2. Posterior tibiae armed with 3 internal spines of which the second is very short | 2. <i>testacea</i> |
| Posterior tibiae armed with 4 internal spines, the first and third of which are short | 3. <i>mjöbergi</i> |

1. MYRMECOPHILA AUSTRALIS Tepper.

Myrmecophila australis Tepper, 1896, Trans. R. Soc. S. Austr., xx, p. 149; Chopard, 1925, p. 19, fig. 31-32.

The male of this species is pale brownish ochraceous, with meso-metanotum and abdominal segments with dark posterior borders; base of antennae hirsute. Posterior tibiae with 1 external, 3 internal spines; hind tarsi longer than tibia, very slender, metatarsus with 3 minute spines and a longer terminal spur. The female is a little larger and darker; the ovipositor is of the same type as *M. acervorum*, the apical valves being truncated and feebly notched at apex.

Length of body 3 mm.; post. fem. 2 mm.; ovipositor 2 mm.

New South Wales: Sydney (A. M. Lea), (A.M.).

Queensland: Herberton (Stockholm Mus.).

South Australia: Hillsides near Adelaide, under stones with ants (type in S.A.M.).

2. MYRMECOPHILA TESTACEA Chopard.

Myrmecophila testacea Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 20, fig. 33-37.

A little larger than the preceding species, differing in its very pale colouration and the armature of posterior tibiae which are provided with 3 spines on the internal margin, of which the second is very short.

Length of body 4 mm.; post. fem. 2.5 mm.; ovipositor 2 mm.

Queensland: Atherton, Herberton (types in the Stockholm Mus.).

3. MYRMECOPHILA MJÖBERGI Chopard.

Myrmecophila mjöbergi Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 21, fig. 38.

Quite similar to the preceding species, from which it differs only in the armature of the posterior tibiae.

Queensland: Evelyne (type in the Stockholm Mus.).

FAMILY MOGOPLISTIDAE.

This group is also composed of small species with posterior tibiae deprived of spines, their superior margins being only serrulated. Their body is often covered with scales which tend to fall very easily; the elytra are short or absent in the males, always wanting in the females.

KEY TO THE GENERA OF MOGOPLISTIDAE.

Anterior tibiae not perforated; both sexes apterous *Arachnocephalus*
 Anterior tibiae bearing an internal small tympanum; males provided with
 elytra *Ornebius*

Gen. ORNEBIUS Guerin, 1844.

Small species with rather slender shape. Head small, flattened, face forming a strong protuberance. Pronotum produced backwards above the metanotum, with convex posterior margin; elytra short, partly covered by the pronotum. Female apterous.

This species of this genus are numerous in all tropical countries.

KEY TO THE SPECIES OF ORNEBIUS.

MALES.

1. Process of anal valves furcate; tenth abdominal tergite notched
1. *mjöbergi*
- Process of anal valves plain; tenth abdominal tergite truncated .. 2

- | | | |
|----|---|--------------------------|
| 2. | Elytra blackish with a large milky spot in the middle | 11. <i>hackeri</i> |
| | Elytra yellowish or light brownish with more or less darkened posterior margin | 3 |
| 3. | Posterior femora adorned with a large brown spot; size rather large (length 10 mm.) | 14. <i>fascipes</i> |
| | Posterior femora unicolorous (length 6-8 mm.) | 4 |
| 4. | Process of the anal valves black | 5 |
| | Process of the anal valves rufous or yellowish | 7 |
| 5. | Process of the anal valves flattened | 7. <i>brevithorax</i> |
| | Process of the anal valves cylindrical | 6 |
| 6. | Pronotum feebly enlarged backwards; mirror not divided; size very small (5.5 mm.), slender, pale testaceous | 4. <i>pallidus</i> |
| | Pronotum distinctly enlarged backwards; mirror divided; a little larger (6.5 mm.), rufo-testaceous with brownish scales | 5. <i>australicus</i> |
| 7. | Fifth segment of maxillary palpi much longer than wide (fig. 41 and 42) | 2. <i>nigromaculatus</i> |
| | Fifth segment of maxillary palpi almost as wide as long (fig. 42) | 8 |
| 8. | Process of the anal valves thin at top (fig. 38 and 43) | 6. <i>curtipalpis</i> |
| | Process of the anal valves a little swollen at top (fig. 39) | 3. <i>howensis</i> |

FEMALES.

- | | | |
|----|--|--------------------------|
| 1. | Apical valves of ovipositor smooth | 2 |
| | Apical valves of ovipositor more or less finely denticulated beneath (fig. 45) | 8 |
| 2. | Last segment of maxillary palpi much longer than wide | 3 |
| | Last segment of maxillary palpi almost as wide as long | 6 |
| 3. | Large size (11.5 mm.); head with a brown band behind the eyes | 9. <i>laevicauda</i> |
| | Smaller species (7.5 mm.-10 mm.); head without brown band behind the eyes | 4 |
| 4. | Frontal rostrum slightly wider than the first segment of antennae | 2. <i>nigromaculatus</i> |
| | Frontal rostrum almost twice as wide as the first segment of antennae | 5 |
| 5. | Ovipositor longer (4.5 mm.) | 5. <i>australicus</i> |
| | Ovipositor shorter (3 mm.) | 7. <i>brevithorax</i> |
| 6. | Ovipositor longer (4.5 mm.) | 4. <i>pallidus</i> |
| | Ovipositor shorter (3 mm.) | 7 |

- | | |
|--|------------------------|
| 7. Pronotum longer than wide | 6. <i>curtipalpis</i> |
| Pronotum almost square | 3. <i>howensis</i> |
| 8. Fifth segment of maxillary palpi obliquely truncated, subsecuriform;
legs fasciated with brown | 14. <i>fascipes</i> |
| Fifth segment of maxillary palpi triangular | 9 |
| 9. Size very small (5 mm.) | 13. <i>parvus</i> |
| Size larger (7.5 mm.) | 10 |
| 10. Frontal rostrum very wide; general shape narrow | 12. <i>latifrons</i> |
| Frontal rostrum a little wider than the first antennal segment;
general shape not so narrow | 11 |
| 11. Pronotum almost square | 10. <i>parvithorax</i> |
| Pronotum distinctly longer than wide | 12 |
| 12. Last segment of maxillary palpi as wide as long | 11. <i>hackeri</i> |
| Last segment of maxillary palpi longer than wide | 8. <i>denticauda</i> |

1. ORNEBIUS MJÖBERGI (Chop.).

Hoplosphyrum mjobergi Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 21, fig. 39, 41, 42.

This species is very distinct in its varied blackish and yellow colouration, in the frontal rostrum not being wider than the first antennal segment, blackish, shining, non divided, and in the very peculiar shape of the anal valves.

Queensland: Cedar Creek (type in the Stockholm Mus.).

2. ORNEBIUS NIGROMACULATUS (Chop.)

Liphoplus nigromaculatus Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 22, fig. 40, 43-46.

Fig. 41, 42.

The male of this species is rufous with elytra completely freed from pronotum, testaceous, a little whitish and spotted with blackish at base and near the apical margin. Pronotum rather strongly narrowing in front. Process of the anal valves erect (fig. 41), long, very slender, feebly flattened on internal face. Female rufous with pronotum almost as wide as long, slightly narrowing in front; ovipositor rather short, straight, with apical valves smooth, acute at apex.

Length of body ♂ 8.5 mm., ♀ 8-10 mm.; ovipositor 4 mm.

Queensland: Cairns Distr., Mt. Tambourine (S.A.M.); Mt. Tambourine (A.M.); Brookfield (Q.M.); Mt. Tambourine, Yarranbah, Bellenden Ker (Stockholm M.).

dunkensis, ssp. nov.—Dunk Island (H. Hacker, Aug., 1927), 1 ♂, 1 ♀ (Q.M.).

Very similar to the type but process of the anal valves of the male not at all flattened, very slender, almost acute or feebly rounded at apex.

3. ORNEBIUS HOWENSIS sp. n.

Fig. 39.

♂. Extremely close to the preceding, but with pronotum less narrowing in front, elytra with three blackish spots along the posterior margin instead of a complete band, process of the anal valves rounded and somewhat swollen at apex. In both sexes the last segment of maxillary palpi is shorter than in the preceding species.

Length of body ♂ ♀ 7 mm.; pronot. ♂ 2.8 mm., ♀ 2.2 mm.; elytra ♂ 2.2 mm.; ovipositor 4 mm.

Types: Lord Howe Island (A. M. Lea), 1 ♂, 1 ♀ (S.A.M.).

4. ORNEBIUS PALLIDUS (Chop.).

Liphoplus pallidus Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 23, fig. 47, 56.

Liphoplus griseus Chopard, 1925, *l. cit.*, p. 25, fig. 51.

Male smaller and more slender than in the preceding species; pale testaceous with brown scales on the legs and abdomen. Elytra covered by pronotum to the anterior angle of the mirror which is large, undivided; apical margin of the elytra darkened. Process of the anal valves erect, cylindrical, black. Pronotum feebly narrowing in front. Last segment of maxillary palpi short. In the female, pronotum a little longer than wide, ovipositor rather long, with smooth apical valves.

Length of body ♂ 5.5 mm., ♀ 6.5 mm.; pronot. ♂ 2 mm., ♀ 2 mm.; elytra ♂ 1.5 mm.; ovipositor 4.5 mm.

Queensland: Herberton (type); Atherton, Yarrabah (Stockholm Mus.); Bathurst Head (S.A.M.); Cape Yorke (type of *griseus*, Stockholm Mus.).

New South Wales: (*griseus*), Upper Williams River (S.A.M.).

5. ORNEBIUS AUSTRALICUS (Chop.).

Liphoplus australicus Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 26, fig. 52, 53, 57.

The male is close to the preceding species but with pronotum narrowing more in front, elytral mirror divided by a sinuate vein. Process of the anal

valves erect, blackish, subacute at apex. Female rufous, with pronotum a little longer than wide; ovipositor short with apical valves scarcely wider than the stem, smooth, acute.

Length of body ♂ 6.5 mm., ♀ 6.5 mm.; elytra ♂ 2.5 mm.; ovipositor 4.5 mm.

Queensland; Yarrabah (types in the Stockholm Mus.); Bathurst Head (S.A.M.).

6. *ORNEBIUS CURTIPALPIS* sp. n.

Fig. 38, 43.

Very similar to the preceding, but larger. Frontal rostrum a little wider than the first antennal segment, yellowish. Maxillary palpi yellowish, spotted with brown at external face, with short and wide fifth segment. Antennae yellow with a few weak brown rings.

♂. Pronotum rufous with whitish scales, rather strongly narrowing in front, posterior margin convex, covered with white scales, lateral lobes concolorous. Abdomen rufous brown with white and grey scales; tenth tergite with truncated posterior margin; process of the anal valves erect, feebly curved, rather slender with apex slightly narrowing but rounded (fig. 38). Legs yellowish, tibiae vaguely ringed with grey. Elytra well freed from pronotum, with large mirror, posterior margin irregularly darkened, the dark part forming three vague spots; lateral field rufous brown.

♀. Pronotum a little longer than wide, with feebly convex posterior margin. Ovipositor rather short with apical valves feebly enlarged, lanceolate, with smooth margins.

Length of body ♂ ♀ 7.5 mm.; pronot. ♂ 3.1 mm., ♀ 2 mm.; post. fem. 4.5 mm.; elytra ♂ 3 mm.; ovipositor 3.8 mm.

This species differs from the preceding in the shorter apical segment of the maxillary palpi. It is close to *pallidus*; the male differs in the yellowish process of the anal valves, the female is smaller with relatively longer ovipositor.

Types: New South Wales: Dorrigo (W. Heron), 1 ♂, 1 ♀ (S.A.M.), Sydney, Cooper Park (K. C. McKeown, Feb., 1932), (A.M.).

7. *ORNEBIUS BREVITHORAX* sp. n.

Fig. 40.

♂. Small; testaceous covered with grey scales. Head a little flattened; frontal rostrum a little wider than the first antennal segment, furrowed. Face yellowish. Antennae and palpi yellowish; fourth segment of maxillary palpi

short, wide, fifth as long as the third, triangular in shape. Pronotum feebly narrowing in front, remarkably short, with anterior margin feebly concave, angles rounded, posterior margin widely rounded but weakly convex. Abdomen blackish, covered with grey scales; process of the anal valves blackish, a little obliquely erected, compressed in the shape of a small, rather wide lamella, subacute at apex (fig. 40). Cerci very long, yellowish. Legs short, of the same colour as the body. Anterior tibiae perforated with a small round tympanum; anterior and median tarsi very short. Posterior tibiae a little curved; metatarsi armed with 5-6 strong denticles above on each margin. Elytra feebly whitish with rufous brown posterior margin; mirror large with wholly rounded anterior margin.

♀. Anterior part of the body yellowish testaceous; posterior half of the abdomen blackish brown. Head as in the male. Pronotum a little longer than wide, feebly narrowing in front, with straight anterior and posterior margins, rounded anterior angles. Cerci long, pale yellowish. Ovipositor rather short and thick; apical valves feebly enlarged, lanceolate with straight superior margin, smooth, the superior ones bearing 4 long bristles near the apex of the inferior margin.

Length of body ♂ 7 mm., ♀ 7.5 mm.; pronot. ♂ 2.2 mm., ♀ 1.8 mm., post. fem. ♂ 4 mm., ♀ 4.2 mm.; elytra ♂ 1.8 mm.; ovipositor 3 mm.

The male of this species is remarkable in its short pronotum and also in the elytra which are not much longer than the pronotum itself; the female is close to that of *australicus* but with a very short ovipositor.

Torres Straits: Murray Is., Yorke Is., Coconut Is., Darnley Is., Thursday Is. (S.A.M.).

Type: Torres Straits, Murray Island (A. M. Lea), 1 ♂ (Q.M.); allotype

8. ORNEBIUS DENTICAUDA sp. n.

Fig. 45.

♀. Very close to *nigromaculatus*; rufous with apex of abdomen a little darker; legs yellowish, anterior and middle tibiae feebly annulated with brown. Frontal rostrum brown, a little wider than the first antennal segment. Antennae yellow with a few small brown rings; palpi feebly mottled with brown, last segment of maxillary palpi longer than wide. Ovipositor rather long, straight, the margin of the inferior apical valves with 6 small denticulations (fig. 45).

Length of body 7 mm.; pronot. 2.1 mm.; post. fem. 5.4 mm.; ovipositor 4.6 mm.

A male from the same locality might belong to this species; unfortunately the abdominal extremity is damaged with partly destroyed processes of the anal valves. As a whole it is very close to, if not identical with *nigromaculatus*.

Type: Queensland: Brookfield (H. Hacker, 16, iii, 1927), 1 ♀ (Q.M.).

9. ORNEBIUS LAEVICAUDA sp. n.

♀. Large for the genus; rufo-testaceous with grey and white scales. Head a little flattened with frontal rostrum a little wider than first antennal segment, furrowed; face yellowish; cheeks covered with white scales with a brown band behind the eye. Antennae yellowish with pale brown rings. Maxillary palpi with segments 3–5 spotted with brown on the external face, fifth segment large, triangular, longer than wide. Pronotum a little longer than wide, feebly narrowing in front; lateral lobes with a brown band in the prolongation of the postocular band; beneath this brown band there is a whitish space following the white cheeks. Abdomen long and narrow; tenth tergite with posterior angles projecting but rounded, straight posterior margin. Ovipositor straight, rather long, with feebly enlarged apical valves, the superior ones narrow, with rounded basal angle, the inferior ones smooth. Legs moderately long, yellowish with a few spots of brown scales.

Length of body 11.5 mm.; pronot. 2.5 mm.; post. fem. 6.8 mm.; ovipositor 6 mm.

Type: New South Wales: Ulong, East Dorrigo (W. Heron, iv, 1933), 1 ♀ (A.M.).

This species is characterized by its large size and smooth ovipositor.

10. ORNEBIUS PARVITHORAX (Chop.).

Liphoplus parvithorax Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 24, fig. 48–49.

Male unknown. Female rather large, rufous brown, covered with grey scales; pronotum nearly square. Ovipositor rather short, a little curved downwards, with apical valves acute, the superior ones very finely denticulated, the inferior ones with 7 stronger denticles.

Length of body 10 mm.; ovipositor 6 mm.

Queensland: Christmas Creek (type in the Stockholm Mus.).

11. *ORNEBIUS HACKERI* sp. n.

This species is a little larger than the medium size. Head with frontal rostrum of the same width as the first antennal segment, shining dark brown, very finely furrowed. Maxillary palpi yellowish with a brown line on the external face of each segment; fourth segment very short, fifth equally short and wide. Antennae yellowish with the first two segments brown and a number of distal brown rings.

♂. Pronotum rufous, feebly narrowing in front with posterior margin convex, covered with white scales; lateral lobes concolorous. Abdomen brownish with grey scales; tenth tergite dark brown, very wide, with straight posterior margin, rounded angles. Process of the anal valves testaceous, flattened with narrow but not acute apex. Cerei yellowish. Femora yellowish with a few brown scales; tibiae brown. Elytra blackish brown with a large whitish spot in the middle; mirror as long as wide with posterior margin very feebly convex, very obtuse anterior angle.

♀. Head and legs as in male. Pronotum a little longer than wide, feebly narrowing in front, rufo-testaceous with grey scales. Abdomen of the same colour as the pronotum; tenth tergite darker, transverse with posterior margin feebly convex. Ovipositor rather long, straight, with weakly enlarged, lanceolate apical valves; their superior margin smooth, the inferior valves with 6 rounded, feebly projecting teeth.

Length of body 8.5 mm.; pronotum ♂ 3 mm., ♀ 2.1 mm.; post fem. ♂ 5.2 mm., ♀ 5.6 mm.; elytra ♂ 2.4 mm.; ovipositor 6.5 mm.

Types: Queensland: Brisbane (H. Hacker, 24, v, 1925), 1 ♂, 1 ♀ (Q.M.).

12. *ORNEBIUS LATIFRONS* sp. n.

♀. Size medium; rufous brown. Head with very wide frontal rostrum, nearly twice as wide as first antennal segment, finely furrowed, rounded at top. Face short and wide, adorned with a brown band on the mandibles and the cheeks, and two crescent-shaped spots on the facial shield. Antennae yellow with the two first segments brown and a few distal brown rings. Palpi short; fourth segment of maxillary palpi very short, enlarged at top, fifth segment as long as third, in the shape of a wide triangle, somewhat obliquely truncated at apex; the first 4 segments adorned with an external brown band, the fifth wholly brown. Pronotum a little shorter than wide, very feebly narrowing in front. Ovipositor short, feebly curved, with apical valves lanceolate, their inferior margin with a dozen very small teeth. Tibiae annulated with brown; posterior metatarsi yellow with brown top.

Length of body 7.5 mm.; post. fem. 4 mm.; ovipositor 3.5 mm.

Type: South Australia: Waterfall Gully (Tepper, 23, vi, 1884), 1 ♀ (S.A.M.).

This species, although close to the preceding, is distinguished by the very wide frontal rostrum and by the ovipositor with apical valves finely denticulated beneath and superior margin a little convex.

A second example from Third Creek, S. Aust., J. Jennings, 29, viii, 1900 (S.A.M.).

13. *ORNEBIUS PARVUS* sp. n.

♀. Very small; rufo-testaceous, covered with brown and white scales. Frontal rostrum long, a little wider than the first antennal segment. Antennae yellow with a few distal small brown rings. Maxillary palpi with fourth segment a little shorter than third, fifth rather long, triangular in shape. Pronotum almost square, very weakly narrowing in front, with straight margins, angles rounded. Abdomen narrow; tenth tergite narrowing backwards, with feebly concave posterior margin. Ovipositor rather short, with lanceolate, smooth apical valves; the basal angle is well marked and both margins are provided with stiff bristles. Anterior and medium tibiae feebly ringed with brown.

Length of body, 5 mm.; post. fem. 3 mm.; ovipositor 2.5 mm.

Type: Melville Island (W. D. Dodd), 1 ♀ (S.A.M.).

This is the smallest of the Australian species of *Ornebius*.

14. *ORNEBIUS FASCIPIES* sp. n.

Fig. 44.

♂. Rather large size; rufous with darker head and apex of abdomen; legs fasciated with brown. Head very dark brown; frontal rostrum as wide as first antennal segment, furrowed; facial protuberance projecting. Antennae yellowish. Palpi yellowish brown; fourth segment very short, fifth large, subsecuriform, obliquely truncated at apex (fig. 44). Pronotum very feebly narrowing anteriorly, with posterior margin slightly convex; disk rufous, provided with silvery scales forming a narrow white band along the anterior and posterior margins; lateral lobes wholly covered with white scales. Abdomen covered above with whitish scales to the seventh tergite, the three last tergites covered with bright black scales; beneath the basal scales are rather yellowish. Subgenital plate wide, triangular with posterior margin feebly convex, with long

bristles; superior anal valves transverse, with straight apical margin. Process of the inferior anal valves cylindrical, obliquely erect and very weakly curved at apex which is blunt. Anterior and middle legs rather short; femora covered with silver scales with near the apex a large brown band; tibiae with a similar but less distinct band at base, anterior tibiae perforated on internal face with a rather large round tympanum. Posterior femora rather thick, darkened at apex and with a large brown oblique spot above and on the superior part of the external face; tibiae short, strongly denticulated; metatarsi compressed, rather stout, bearing on each superior margin 5-6 denticles, the apical spurs short and strong. Elytra covered by pronotum nearly to the angle of the mirror, yellowish with very dark apical band; mirror very large, as long as wide, with feebly arched posterior margin, anterior angle rounded; lateral field yellow.

♀. Head and legs as in the male. Pronotum a little longer than wide, with anterior and posterior margins straight, sides a little convex; disk rufous with white scales chiefly numerous along the posterior margin. Abdomen blackish with rufous base; subgenital plate black, rather strongly notched at apex. Cerei long, yellowish at base, vaguely annulated with white and brown towards their apex. Ovipositor rather long, straight with apical valves ovato-lanceolate, their inferior margin very finely denticulated, pubescent.

Length of body ♂ 10 mm.; ♀ 10.5 mm.; pronot. ♂ 3.5 mm., ♀ 2.8 mm.; post. fem. ♂ 5.3 mm., ♀ 5.5 mm.; ovipositor 6 mm.

A rather large species, well characterized by its colouration and by the shape of the maxillary palpi.

Types: Queensland: Bathurst Head (Hale and Tindale, i, 1927), 1 ♂, 1 ♀ (S.A.M.).

Gen. ARACHNOCEPHALUS Costa, 1855.

The species of this genus differ from the preceding in being completely apterous in both sexes and in having the anterior tibiae not perforated by a tympanum.

The genus comprises a fairly large number of species in the Malay and Papuan regions; only one occurs in Australia.

ARACHNOCEPHALUS AUSTRALICUS Chopard.

Arachnocephalus australicus Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 27, fig. 54, 55, 57.

West, Australia: Broome (types in the Stockholm Mus.).

FAMILY PENTACENTRIDAE.

This family comprises a small number of species which vary considerably in their general habitus but have in common a distinctive insertion of the antennae, i.e. very low on the face, beneath the middle.

KEY TO THE GENERA OF *PENTACENTRIDAE*.

1. General shape long and rather slender; male without distinct mirror
Pentacentrus
General shape wide; elytra of male very ample with distinct mirror
Eurygryllodes

Gen. *PENTACENTRUS* Saussure, 1878.

The small species of this genus are very well characterized by their narrow general shape with long elytra; the venation is almost similar in both sexes. The species of *Pentacentrus* are numerous in the Malay Archipelago and in Papua. One species only is known from South Australia.

PENTACENTRUS AUSTRALIANUS sp. n.

Fig. 5.

Uniformly brown; finely pubescent. Head dark brown, very finely punctated; frontal rostrum with parallel sides, a little narrower than first antennal segment. Face short, brown. Ocelli very small, particularly the anterior one. Antennae and palpi yellowish brown; maxillary palpi short, with fourth segment a little shorter than third, fifth triangular, wide, with almost equal sides. Pronotum lighter than head, of a somewhat rufous brown; feebly narrowing in front, anterior margin straight, posterior strongly sinuated; lateral lobes a little darker than the disk, with rounded angles. Abdomen brown above, yellowish beneath; subgenital plate small, narrowing towards apex which is slightly truncated. Ovipositor rather short, feebly curved upwards, with narrow, lengthened apical valves, their apex a little rounded, their external faces finely granulated. Legs yellowish, pubescent. Anterior and middle femora with a weak apical brown tinge; anterior tibiae perforated with a large internal tympanum. Posterior femora rather thick, uniformly yellowish brown; tibiae armed with 3 spines on each margin; metatarsi long, compressed, denticulated on both superior margins. Elytra light brown, with a feeble lighter humeral band, finely pubescent; dorsal field with 4 longitudinal, almost parallel veins, the first only slightly sinuate; transverse veinlets scarce and feebly

visible, lateral field with 4 longitudinal veins, the third of which is abbreviated. Wings much longer than the elytra, darkened at apex.

Length of body 7.5 mm.; length with wings 11 mm.; post. fem. 4.9 mm.; elytra 5.7 mm.; ovipositor 3 mm.

Type: South Australia: Burnside (Handschin, May, 1931), 1 ♀ (S.A.M.).

This species is very close to *Pentacentrus unicolor* Chop., from Java; it differs from it in the wider fifth segment of maxillary palpi, in the more pubescent elytra, with more regular veins and in the shorter, stouter ovipositor, the apical valves of which are a little rounded.

Gen. EURYGRYLLODES nov.

Head with wide frontal rostrum; forehead long, sloping; face short, with facial shield convex. Antennae inserted beneath the middle of the face. Pronotum strongly transverse. Legs short; anterior tibiae perforated either side; posterior tibiae armed with a few denticles at base and 3 long and slender spines on each margin; 6 apical spurs, the inferior spurs very small, externo-median longer than the superior; the two large internal spurs very long. Elytra of male wide, rounded, with quite transverse apical mirror, divided behind the middle; 3 oblique veins; anal field with very weak veins.

Type: *Eurygrylodes latipennis* sp. n.

EURYGRYLLODES LATIPENNIS sp. n.

Fig. 7.

Size medium; yellowish; general habitus somewhat suggestive a *Eugrylodes*. Head wider than pronotum in front; vertex strongly sloping, ending in a short truncated rostrum, about twice as wide as the first antennal segment. Face very short and wide; clypeus strongly swollen, with convex superior margin, extending nearly to the top of the face, so that the facial shield is practically formed by it. Antennae and palpi yellow; maxillary palpi lacking the last segment; the third and fourth equal in length. Eyes small, little prominent, rounded; ocelli very small. Pronotum markedly wide and short, narrowing a little in front, with anterior margin feebly notched in the middle, posterior margin straight; disk feebly convex, a little furrowed in the middle; lateral lobes rather high, with sinuated inferior margin, rounded anterior angle. Abdomen yellowish; supra-anal valve triangular, rounded at apex; subgenital plate narrowing at apex. Genitalia composed of a superior bridge, ending on each side in a rather long, rounded process; near the middle there are two small rounded prolongations; the inferior parts are a little longer,

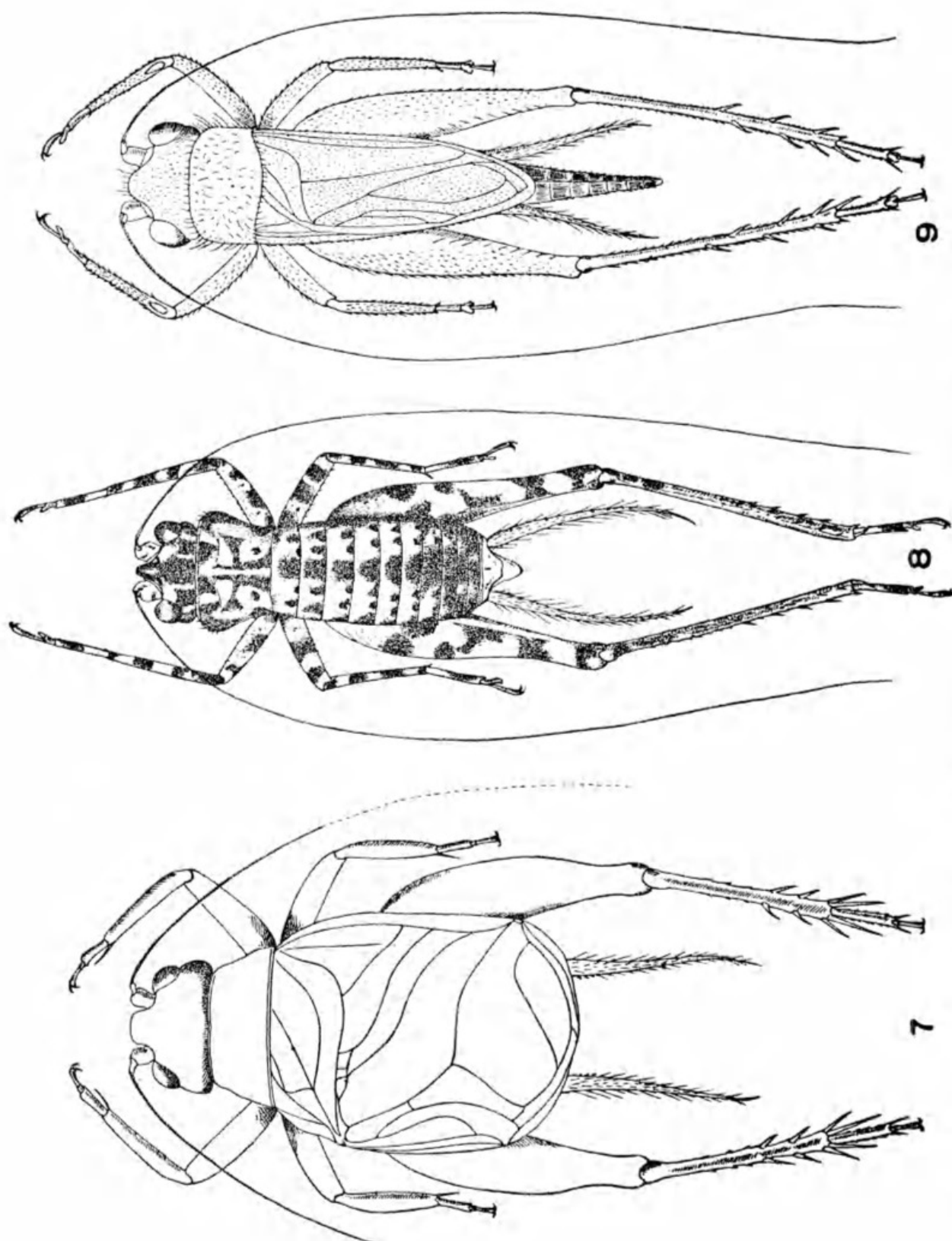


Fig. 7. *Eugryllodes latipennis* sp. n. ♀. Fig. 8. *Endotaria aptera* sp. n. ♂. Fig. 9. *Cyrtoxiphoides leai* sp. n. ♂.

sinuated, contiguous on the median line. Elytra very wide, a little longer than the abdomen, rounded at apex; mirror nearly twice as wide as long, weakly angulated in front, divided behind the middle by a sinuate vein; diagonal vein long, a little curved very close to the first chord; the two first chords long, parallel, curved, the third one straight; apical field practically nil; lateral field with 4 parallel veins, Sc simple. Wings very short.

Length of body 8 mm.; length with elytra 9.5 mm.; post. fem. 5.6 mm.; post. tib. 3.8 mm.; elytra 6.5 mm.

Type: Killalpaninna, 100 miles E. of Lake Eyre (H. G. Hillin, 1905), 1 ♂ (Br. M.).

This very peculiar species could be taken for one of the Gryllidae were it not for the low insertion of the antennae. It is quite different from other forms of Pentacentridae, even to the shape of the genitalia which are also rather like those of Gryllidae.

FAMILY CACOPLISTIDAE.

This family includes one genus only but this genus is one of the most extraordinary types of Grylloids.

Gen. CACOPLISTES Brunner, 1873.

Head very small with narrow, sloping frontal rostrum. Pronotum square, hollowed and embossed above, with strongly elevated sides in the shape of a crest. Tibiae quadrangular, the anterior ones perforated with a small internal tympanum. Posterior femora very slender, not at all swollen at base; tibiae serrulated, without spines, armed with 6 apical spurs. Elytra of male with mirror divided by two veins, numerous oblique veins; mediastinal vein bearing many branches. Elytra of female corneous, convex, rugose. Ovipositor long, slender with acute apical valves.

The species of *Cacoplistes* are rather large Grylloids which have a certain resemblance with the Phalangopsidae; but their small head, their very peculiar pronotum and their slender posterior legs gives them a quite different appearance to all the other Grylloids.

One species of this interesting genus is known from India and one or two from Australia.

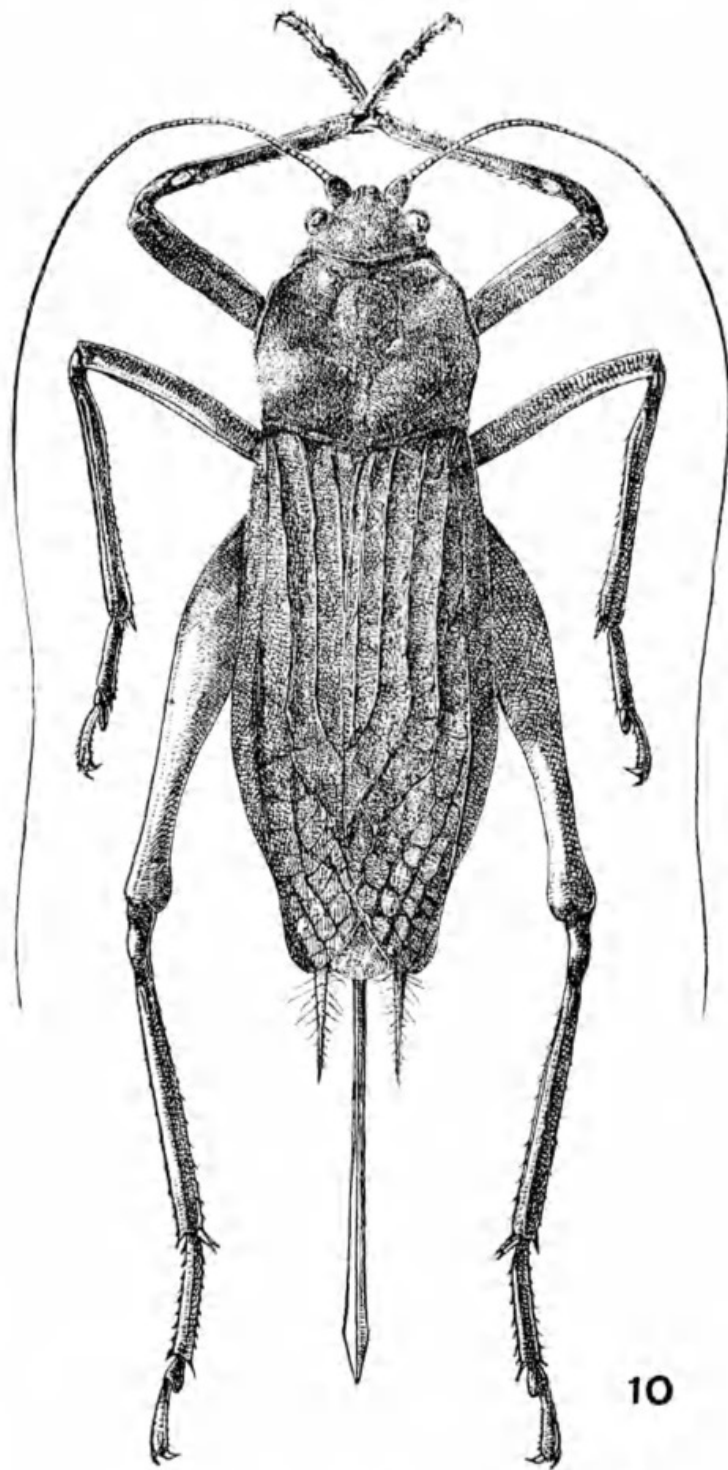


Fig. 10. *Cacoplistes brunnerianus* Sauss. ♀.

CACOPLISTES BRUNNERIANUS (Sauss.).

Cachoplistus brunnerianus Saussure, 1877, Mem. Soc. Geneve, xxv, p. 327, pl. 15 (xxxii), fig. 1-1a, b, t, c, i, s.

Fig. 10.

Black, glabrous; finely punctate. The female only is known; the veins on the elytra are somewhat elevated and there exists between them a very fine net of small veins besides the transverse veinlets. Wings very short.

Length of body 32 mm.; pronot. 8 mm.; post. fem. 16 mm.; elytra 24 mm.

This species is known only from the type specimen in the Brunner collection, labelled Australia, without exact locality.

A second species of this extraordinary genus is cited by Saussure with doubt from Australia, under the name of *Cachoplistus* v. *westwoodianus*. It is close to the preceding one but with longer, half membranous elytra, longer ovipositor, wings longer than the elytra, anterior angles of the pronotum more rounded.

FAMILY PHALANGOPSIDAE.

This family is composed of rather large species with long legs, posterior tibiae serrulated between the spines. The elytra are often reduced, chiefly in the female sex. Most of the species of Phalangopsidae are hygrophilous; they live in the forests and a certain number inhabit caves.

The family is not very well represented in the Australian fauna, there being two genera only.

KEY TO THE GENERA OF PHALANGOPSIDAE.

- | | | | | | | | |
|----------------------------|----|----|----|----|----|----|------------------|
| 1. Apterous in both sexes | .. | .. | .. | .. | .. | .. | <i>Endotaria</i> |
| Elytra present in the male | .. | .. | .. | .. | .. | .. | <i>Endacusta</i> |

Gen. ENDACUSTA Brunner, 1874.

This genus comprises rather slender species with vertical head; forehead excavated, forming a narrow rostrum. Pronotum transverse with straight posterior margin. Legs rather long; anterior tibiae perforated with an internal tympanum; posterior femora usually with apical third narrow; posterior tibiae armed with 4-5 spines on each margin, serrulated between the spines; supero-internal apical spur as long or longer than the median; supero-external as long or longer than the inferior spine but shorter than the median. Elytra of male shorter than the abdomen, square, with small, triangular mirror, numerous

oblique veins, apical field almost absent; lateral field with few veins. Wings abortive. Female wholly apterous.

KEY TO THE SPECIES OF *ENDACUSTA*.

MALES.

1. Elytra extending to the apex of abdomen, widening somewhat posteriorly with rounded posterior margin; legs rather short 11. *amplipennis*
Elytra shorter than the abdomen, square, with almost straight posterior margin 2
2. Mirror small, occupying about the apical third of the elytron; internal spurs of the posterior tibiae short 7. *pilipennis*
Mirror occupying half the length of the elytron 3
3. Frontal rostrum very wide at base; posterior ocelli separated by a space equalling three times their width 4
Frontal rostrum narrower; posterior ocelli separated by a space equalling at most twice their width 7
4. Elytra with 2 or 3 oblique veins only 5
Elytra with 6 to 8 oblique veins 6
5. Mirror rather large, triangular, divided by a transverse vein and with a very wide reticulation in its posterior part (fig. 46); lateral field with 4 veins 10. *oligoneura*
Mirror small, strongly transverse; lateral field very much reduced, without veins 9. *cycloptera*
6. Legs rather short; posterior femora without apical filiform part; frontal rostrum wide at base but very narrow at apex; elytra not longer than wide 8. *angulifrons*
Legs longer; posterior femora with distinct apical filiform part; frontal rostrum almost as wide at apex as at base 6. *irrorata*
7. General colour very dark; elytra almost black; genitalia in the shape of a trident; frontal rostrum rather wide, rounded above 5. *mjöbergi*
General colour testaceous brown varied with brown; elytra testaceous; genitalia notched at apex; frontal rostrum compressed 8
8. Mirror one and a half times as wide as long; oblique veins quite straight and parallel (fig. 49) 3. *major*
Mirror scarcely as wide as long; 5 or 6 sinuated and more or less diverging oblique veins (fig. 50) 9
9. Larger (14–16 mm.); frontal rostrum very narrow, compressed; mirror in the shape of an equilateral triangle 1. *australis*
Smaller (11–12 mm.); frontal rostrum a little wider, not so strongly compressed; internal margin of the mirror a little longer than the other two 4. *minor*

FEMALES.

- | | |
|---|-----------------------|
| 1. Frontal rostrum very narrow | 2 |
| Frontal rostrum wider | 5 |
| 2. Ovipositor much longer than the body; apical valves smooth .. | 3 |
| Ovipositor no longer than the body; apical valves punctated .. | 4 |
| 3. Larger (16 mm.); apical valves of the ovipositor wider .. | 1. <i>australis</i> |
| Smaller (12 mm.); apical valves of the ovipositor narrow .. | 4. <i>minor</i> |
| 4. Subgenital plate rather deeply notched at apex with subangulate lobes. | |
| Ovipositor as long as the body | 2. <i>pardalis</i> |
| Subgenital plate scarcely notched at apex with rounded lobes. Ovi- | |
| positor shorter than body | 3. <i>major</i> |
| 5. Frontal rostrum as wide at apex than at base | 7. <i>pilipennis</i> |
| Frontal rostrum narrowing at apex | 6 |
| 6. Frontal rostrum much narrower at apex than at base, nearly triangu- | |
| lar | 8. <i>angulifrons</i> |
| Frontal rostrum distinctly narrower at apex than at base but much | |
| less than the preceding | 7 |
| 7. Apical valves of ovipositor punctated | 6. <i>irrorata</i> |
| Apical valves of ovipositor smooth | 8 |
| 8. Internal apical spurs of posterior tibiae long; posterior metatarsi | |
| armed with about 10 denticles above | 5. <i>mjöbergi</i> |
| Internal apical spurs of posterior tibiae short; posterior metatarsi | |
| armed with 5 or 6 small denticles above | 9 |
| 9. Frontal rostrum rounded above | 10. <i>oligoneura</i> |
| Frontal rostrum very wide, flat above | 9. <i>cycloptera</i> |

1. ENDACUSTA AUSTRALIS SAUSS.

Endacusta australis Saussure, 1878, Mem. Soc. Geneve, xxv, p. 437, pl. 16 (xlii), fig. 1-5.

Fig. 50, 52.

Fulvo-testaceous varied with brown; pubescent. Frontal rostrum very narrow, compressed. Elytra of male (fig. 50) shorter than the abdomen; mirror triangular; 5 or 6 oblique veins; apical field almost nil; lateral field without any vein. Legs rather long; posterior femora adorned with oblique brown bands. Genitalia of male (fig. 52) long and narrow, roundly notched at apex. Ovipositor much longer than the body with apical valves scarcely wider than the stem, smooth.

Length of body 14–16 mm.; post. fem. 13–15 mm.; ovipositor 24–27 mm.

Victoria: Melbourne (Saussure's type).

Queensland: Brisbane (Q.M.); Almaden, Chillagoe Dist. (W. D. Campbell), (A.M.); Cape Yorke Peninsula (S.A.M.).

South Australia: Salisbury, Grange, Pt. Vincent, Marino, Callington, Pt. Wakefield, Adelaide, Gawler (S.A.M.).

Northern Territory: Darwin (S.A.M.).

Central Australia: Winnecke Coll. (S.A.M.).

2. *ENDACUSTA PARDALIS* (Walk.).

Zaora pardalis Walker, 1869, Cat. Derm. Salt. Br. M., i, 0, 90 (1).

The description of the genus *Zaora* is based on the female sex only; it is difficult to conceive why W. F. Kirby chose as type of the genus a species known from the male sex only, leaving aside the only species in which the female was described.

This species is very close to the preceding; its colour is strongly mottled with brown but these markings seem very variable in the different species of *Endacusta*. The frontal rostrum is very narrow; the ovipositor is not longer than the body; the subgenital plate of the female is rather deeply notched, with subangulate lobes.

Length of body 15 mm.; ovipositor 14 mm.

Northern Australia: Victoria River (Walker's type).

3. *ENDACUSTA MAJOR* sp. n.

Fig. 49, 54.

♂. Large species; light testaceous with small, but quite distinct brown spots. Frontal rostrum very narrow, carinate; posterior ocelli rather big, separated by a space scarcely equalling their width; anterior ocellus situated a little before the apex of the rostrum. Face yellow with 4 narrow brown bands, 2 beneath the eyes and 2 shorter ones along the antennal sockets. Maxillary palpi with very long fifth segment scarcely widening at apex and a little darkened. Pronotum transverse, very light with 4 brown spots, 2 along the anterior margin and 2 longer ones near the posterior margin; lateral lobes yellowish with a brown spot in front and another one along the inferior margin; this margin ascending backwards. Abdomen testaceous, mottled with brown; supero-anal valve with rounded posterior margin; subgenital plate very long and narrow at apex, bicarinated. Third abdominal tergite with concave posterior

margin; fourth with a faint thickening in the middle bearing two tufts of rather long hairs. Genitalia rather wide, deeply notched at apex with narrow lobes (fig. 54).

Legs long, ringed with brown. Posterior tibiae armed with 3 internal, 4 external sines; supero-external apical spur shorter than the inferior one. Posterior metatarsi feebly armed, chiefly in the internal margin, which bears 3 to 5 denticles.

Elytra (fig. 49) feebly pubescent, with posterior margin truncated, somewhat sinuated, external apical angle rounded, a little expanded. Mirror large, triangular, a little wider than long, with straight posterior margin, with 2 or 3 small incomplete dividing veins; wrapping vein in the middle between the posterior margin of the mirror and the apical margin of the elytron; diagonal vein short, sinuated; 3 chords, the second being united to the third towards the middle; 7 or 8 oblique veins which are parallel, regularly spaced; lateral field translucent, showing 2 or 3 branches of the subcostal vein, which is furcate at apex.

♀. Apterous; head, pronotum and legs as in the male. Subgenital plates scarcely notched at apex, with rounded lobes. Ovipositor short, solid, with short, wide, rugose apical valves.

Length of body ♂ 21 mm., ♀ 16–20 mm.; pronot. 3.5 mm.; post. fem. ♂ 18.5 mm., ♀ 17 mm.; elytra ♂ 6.8 mm.; ovipositor 9–11 mm.

Types: South Australia: Innaminka, 1 ♂, 1 ♀ (S.A.M.).

This species, large for the genus, is of a pale general colour with rather sparse pubescence. The elytral venation of the male is rather variable, particularly in the number of oblique veins and the disposition of the chords; in one curious individual variation, the first chord is united to the mirror by a small vein, forming a large, rectangular cell. It also differs from the preceding in the supero-external apical spur of posterior tibiae being no longer than the inferior.

South Australia: Cooper's Creek, Chinchilla, Minnie Downs, Marree, Oodnadatta, Magill, Booleroo Centre, Mt. Painter (S.A.M.).

Western Australia: Coolgardie, Alexandria (W. Stalker, iii, 06) (Br. M.); Bowerly (F. W. du Boulay), Mullewa (Miss F. May), Beverley, Coolgardie (S.A.M.).

Central Australia: Hermannsburg (H. J. Hillier, 1911), (S.A.M.).

Northern Territory: Tennant Creek (S.A.M.).

4. *ENDACUSTA MINOR* sp. n.

Fig. 51, 56.

♂. A rather small species; testaceous brown, varied with more or less marked darker spots. Frontal rostrum a little wider than in the preceding species; anterior ocellus nearly at apex of the rostrum; lateral ocelli separated by a space almost as wide as their width. Face testaceous with a rather narrow brown band beneath each eye and two such bands in the middle of the facial shield, along the antennal sockets. Pronotum transverse with feebly marked brown spots. Abdomen yellowish, mottled with brown; supero-anal valve with rounded posterior margin; subgenital plate rather short, a little notched at apex. Genitalia of the same type as those of *australis*, the lobes formed by the apical notch wider, rounded (fig. 56).

Legs ringed with brown. Posterior tibiae bearing 4 spines on each margin; supero-external apical spur longer than the inferior one.

Elytra (fig. 51) feebly pubescent, with weakly convex posterior margin; mirror large, triangular with sides almost of the same length; diagonal vein feebly sinuate, almost horizontal; wrapping vein almost touching the apical margin of the elytron; chords rather variable in length and disposition; 5 or 6 oblique veins; lateral field with very weak veins; Sc bearing 3 branches.

♀. Subgenital plate scarcely notched at apex, with rounded lobes. Ovipositor very long and slender with apical valves scarcely wider than the stem, smooth.

Length of body ♂ 11 mm., ♀ 12 mm.; post. fem. ♂ 11 mm., ♀ 12 mm.; elytra ♂ 3 mm.; ovipositor 18 mm.

Types: South Australia: Talia, 1 ♂; Denial Bay, 1 ♀ (S.A.M.).

In the shape of the genitalia and the male elytral venation this species is close to *australis*; but it is much smaller.

South Australia: River Murray, Minnipa, Murat Bay (S.A.M.).

5. *ENDACUSTA MJÖBERGI* Chopard.

Endacusta mjobergi Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 28, fig. 61-63.

Fig. 48, 55.

In this species, the dark markings are especially important, sometimes covering almost completely the pronotum. Frontal rostrum wider than in the preceding species. Antennae ringed with yellow. Legs rather long; posterior tibiae armed with 4 spines on each margin; supero-external apical spur shorter

than the inferior one. Elytra of male (fig. 48) nearly black, glabrous; mirror large, triangular; diagonal vein short; 7 or 8 oblique veins. Genitalia in the shape of a trident (fig. 55). Ovipositor almost as long as the body, slender, with short, smooth, acute apical valves.

Length of body ♂ 12 mm., ♀ 13 mm.; post. fem. ♂ 11 mm., ♀ 11.5 mm.; elytra ♂ 4.5 mm.; ovipositor 11 mm.

Queensland: Glen Lamington, Colosseum (types in Stockholm Mus.); Stradbroke Is. (Q.M.).

6. *ENDACUSTA IRRORATA* SAUSS.

Endacusta australis Saussure, 1878, Mem. Soc. Geneve, xxv, 8.

Fig. 53.

This species is very similar to *australis* but with wider frontal rostrum and shorter metatarsi of the anterior and median legs; as in this species, the supero-external apical spur of posterior tibiae is longer than the inferior one. The elytral venation of the male is very similar to the preceding species but the genitalia are a quite different shape, being very similar to *major* (fig. 53). The ovipositor is rather short and stout with scabrous apical valves, as in *major*.

Length of body 14–16 mm.; post. fem. 13–15 mm.; elytra ♂ 5 mm.; ovipositor 9–10 mm.

Queensland: (Saussure's type).

South Australia: Brinkworth, Oodnadatta (S.A.M.).

7. *ENDACUSTA PILIPENNIS* CHOPARD.

Endacusta pilipennis Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 28, fig. 58–60.

This species is close to *irrorata*, with still wider frontal rostrum, very small elytral mirror in the male; shorter internal apical spurs of posterior tibiae. Male elytra strongly pubescent; ovipositor of female as long as body, slender with smooth, acute apical valves.

Length of body 13–14 mm.; post. fem. 9.5–10 mm.; elytra ♂ 3.5 mm.; ovipositor 13 mm.

Queensland: Malanda (types in the Stockholm Mus.), Atherton, Cedar Creek, Bellenden Ker (Stockholm Mus.); Cairns Distr. (S.A.M.).

Western Australia: Kimberley Distr. (Stockholm Mus.).

8. *ENDACUSTA ANGULIFRONS* sp. n.

Fig. 47, 57.

♂. Rather large and stout species; colouration rather dark testaceous brown with feebly marked brown spots; finely pubescent. Head as wide as pronotum; vertex strongly convex, separated from the rostrum by a depression; frontal rostrum wide at base but very narrow at apex, flat above; anterior ocellus a little before the apex of the rostrum; lateral ocelli small, wide apart. Face yellowish with a large brown spot beneath the antennal sockets and a little band of the same colour along their internal margin. Antennae brown with a few yellowish rings. Palpi yellowish; fourth segment of maxillary palpi much shorter than the third, fifth very long, feebly enlarged at apex.

Pronotum a little wider than long, with feebly concave anterior and posterior margins; disk convex with four deep furrows delimiting a large, lozenge-shaped median area; lateral lobes for the most part brown, with inferior margin strongly ascending backwards; anterior angle straight but rounded. Abdomen testaceous brown with small darker spots, covered with a yellowish, silky pubescence; supero-anal valve with rounded posterior margin; subgenital plate rather short, deeply notched at apex, with rounded lobes. Genitalia short and wide, rather different from the other species, composed of a superior part, weakly sclerified, roundly notched at apex, and a strongly sclerified inferior part in the shape of a forceps (fig. 57).

Legs rather short and strong. Anterior and median femora thick at base, the anterior ones especially swollen; their colour is brownish with the apex and an ante-apical ring yellowish; tibiae brown with two yellow rings, the anterior ones perforated on internal faces with a small round tympanum; apices armed with two inferior spurs of which the internal is much longer than the external; metatarsus a little longer than the other two segments, brown with yellow base, their inferior margin non carinated, pubescent. Posterior femora rather short and stout with almost no apical filiform part; colour brownish with yellowish apex and pre-apical ring; tibiae annulated with brown, armed with 4 rather short spines on each margin; external apical spurs short, especially the superior one which is much shorter than the last spine and than the inferior one; medio-internal apical spur much longer than the superior; metatarsi long, not carinated beneath.

Elytra (fig. 47) scarcely surpassing the apex of second abdominal tergite, glabrous; internal and external margins convex, apical margin almost straight; anal field short, the anal vein curved; mirror large, incompletely delimited and partly invaded by large, irregular cells; diagonal vein very sinuate and almost

horizontal; chords quite indistinct, lost in the reticulation occupying the space between the mirror and the internal margin of the elytron; 7 parallel oblique veins; lateral field rather high, dark brown, with an irregular venation.

♀. Head and pronotum quite similar to the male; apterous. Ovipositor broken.

Length of body 17.5 mm.; pronot. 3.5 mm.; post. fem. 12.5 mm.; elytra ♂ 5.2 mm.

Types: Lord Howe Is., 1 ♂, 1 ♀ (S.A.M.).

A species very distinct in the shape of the frontal rostrum.

9. *ENDACUSTA CYCLOPTERA* sp. n.

Fig. 59.

♂. Size medium; rather uniform testaceous brown; finely pubescent. Head rufous brown, without any ornamentation; frontal rostrum short and very wide, flattened above, rounded at top; anterior ocellus a little before the apex; lateral ocelli small, widely separated. Face testaceous with a strongly marked brown band beneath the eyes. Antennae and palpi testaceous; fourth segment of maxillary palpi a little shorter than third, fifth long slender up to the middle then suddenly widening in the shape of a funnel. Eyes piriform.

Pronotum wide, with feebly sinuated anterior margin, a little concave posterior one; disk feebly convex, uniformly rufous brown; lateral lobes very low, a little expanding externally, with slightly ascending backwards inferior margin. Abdomen rufo-testaceous, a little mottled with brown; third tergite with posterior margin rather strongly notched in the middle; supero-anal valve transverse, with truncated posterior margin, rounded angles, lateral margins a little swollen; subgenital plate long, strongly narrowing towards the apex which is roundly notched. Genitalia formed of a superior part rather strongly sclerified, in the shape of a rounded plate, feebly notched at apex, and an inferior part divided at apex into one rounded lobe and the other feebly forked (fig. 59).

Legs rather short, very feebly annulated with brown. Anterior tibiae perforated with a small round tympanum at base of the internal face; tarsi as long as the tibiae. Posterior femora thick at base, with very short apical filiform part; external face feebly striated with brown; tibiae armed with 5 external, 4 internal spines; external apical spurs short, the superior one shorter than the last spine and than the inferior; internal spurs rather long, the superior a little shorter than the median one.

Elytra extending no farther than the apex of third abdominal tergite, finely pubescent, with internal and apical margins rounded; mirror small, strongly transverse with convex posterior margin; chords short; 2 or 3 oblique veins; lateral field reduced, without any vein. Wings abortive.

♀. Apterous; similar to the male but with a little darker colouration; the third abdominal tergite is not notched. Ovipositor broken.

Length of body 14 mm.; pronot. 2.5 mm.; post. fem. 11 mm.; elytra 3 3.9 mm.

Types: New South Wales: Nepean River (A. Musgrave, 6, iii, 1920), 1 ♂, 1 ♀ (A.M.).

This species is very distinct from the other species of the genus in its feebly depressed shape and especially in the elytral venation.

10. *ENDACUSTA OLIGONEURA* sp. n.

Fig. 46, 60.

♂. *Holotype*. Rather small with well defined brown markings. Head with a median brown band above; frontal rostrum rather wide, rounded above. Face brown with a wide yellow band in the middle and another one under each eye. Eyes projecting, strongly narrowing in their inferior part; ocelli small, the posterior ones separated by a distance at least double their width. Antennae brown with small yellow rings. Palpi brownish; fourth segment of the maxillary palpi much shorter than the third, fifth longer than the third, rather strongly enlarged at apex, with superior margin feebly concave. Pronotum nearly twice as wide as long; disk feebly convex, furrowed in the middle and with two brown rounded prominences; lateral lobes dark brown with inferior margin slightly ascending backwards. Abdomen brown, marbled with yellowish; supero-anal valve transverse with feebly notched apical margin; subgenital late long, narrowing before the apex, with two lateral valves in the shape of a forceps and a superior part tridentated (fig. 60).

Legs rather short, annulated with brown. Posterior femora thick, without apical filiform part; spines of the tibiae short, 3 internal, 4 external; external apical spurs short, the median a little longer than the other two, the superior a little shorter than the inferior; median and superior internal spurs rather long, pubescent, the superior slightly exceeding the median. Metatarsi long, feebly compressed, armed above with 5 small external spines, 1 apical internal one.

Elytra (fig. 46) rounded at apex, nearly glabrous, brown with light veins; mirror rather large, triangular with convex posterior margin, with a very wide

irregular reticulation extending nearly to the middle; chords almost straight; 2 or 3 oblique veins; diagonal vein rather low, brown, Sc vein thick, bearing 4 rather distinct branches.

♀. *Allotype*: New South Wales: National Park, The Cabin (A. Musgrave, April, 1933), (A.M.).

Similar to the male; apterous. Ovipositor with apical valves narrow ovoid-lanceolate, acute. Subgenital plate with straight posterior margin.

Length of body 11–11.5 mm.; pronot. 2–2.1 mm.; post. fem. 9–9.2 mm.; elytra ♂ 5.5 mm.; ovipositor 8 mm.

Type: New South Wales: Dorrigo (W. Heron), 1 ♂ (S.A.M.).

Like the preceding, this species differs from the other species of *Endacusta* in the small number of oblique veins in the elytral venation; the elytra are relatively very large and almost glabrous whereas in *cycloptera* they are finely pubescent.

11. *ENDACUSTA AMPLIPENNIS* (Chop.).

Parendacusta amplipennis Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 30, fig. 64, 66.

This species differs markedly from the other species of the genus in the shape of the male elytra which are very wide and extend to the apex of abdomen with a very transverse mirror, divided by a curved vein. The legs are rather short; interno-apical spurs of the posterior tibiae short, the two large ones sub-equal in length.

Length of body 8.5 mm.; post. fem. 7.5 mm.; elytra 6 mm.

Queensland: Cedar Creek (type in the Stockholm Mus.).

Gen. *ENDOTARIA* nov.

Both sexes apterous. Head with short, rather wide frontal rostrum. Legs rather long, anterior tibiae perforated on internal faces, posterior femora rather thick, with almost no apical filiform part; posterior tibiae armed with 4 short spines on each margin; externo-apical spurs short, the superior shorter than the inferior, the median the longest; internal spurs also rather short, the superior only a little shorter than the median.

This genus is completely apterous like *Arachnopsis* Sauss. but with perforated anterior tibiae and shorter legs; it seems rather close to *Endacusta*.

Type: *Endotaria aptera* sp. n.

ENDOTARIA APTERA sp. n.

Fig. 8, 61, 62.

♂. Dark brown, varied with testaceous; pubescent. Head scarcely as wide as pronotum, adorned with 4 yellow lines, uniting two by two posteriorly; frontal rostrum short, feebly convex above, rather wide; anterior ocellus almost at apex of the rostrum; lateral ocelli separated by a distance equalling thrice their width. Face shining brown with a yellow median band, widening towards the clypeus; genae adorned with two yellow spots. Eyes piriform, feebly projecting. Antennae brownish with a few feebly marked light rings; their first segment brown, shining. Palpi brown; fourth segment of the maxillary palpi a little shorter than third, fifth large, feebly widening at apex.

Pronotum transverse widening a little in front, with straight anterior margin, posterior feebly notched in the middle; disk feebly convex, furrowed in the middle, mostly testaceous with a few brown spots, two large rounded ones near the middle of the anterior margin; lateral lobes black, their inferior margin ascending backwards, anterior angle rounded, somewhat projecting outwards. Abdomen almost wholly brownish, the posterior margin of the first tergites tinged with yellow and adorned with rounded brown spots; supero-anal valve light brown, rounded at apex; subgenital plate rather short, rounded at apex, not carinated. Genitalia with a narrow long superior plate and two inferior pieces curved outside (fig. 61).

Legs rather short, strongly annulated with brown. Anterior and middle femora somewhat swollen; anterior tibiae with a small round tympanum near the base of internal face; metatarsi a little longer than the other two segments, brown in their apical half, carinated beneath on their whole length. Posterior femora swollen at base, gently narrowing towards the apex, striated with brown externally and adorned with three oblique brown bands; tibiae adorned with 3 brown rings; metatarsi armed with 6-7 denticles on the supero-external margin, 2 or 3 only on the internal one.

Length of body 12.5 mm.; pronot. 2.4 mm.; post. fem. 9.5 mm.

Type: New South Wales: Upper Williams River (Lea and Wilson, Oct. 1926), 1 ♂ (S.A.M.).

FAMILY OECANTHIDAE.

The Oecanthidae differ from the other Grylloidea in so many features that they can be as well considered as a distinct family. They are very slender insects with a long, almost horizontal head; elytra of the male wide, almost

transparent, with a large mirror divided by a transverse vein; posterior legs very slender, the tibiae serrulated along their whole length, armed or not with small spines.

KEY TO THE GENERA OF *OECANTHIDAE*.

Posterior tibiae armed with small spines in addition to the general denticulation *Oecanthus*
 Posterior tibiae serrulated but without spines *Xabea*

Gen. *OECANTHUS* Serville, 1831.

Generic diagnosis as for the family; the genus is cosmopolitan.

KEY TO THE SPECIES OF *OECANTHUS*.

Large; elytral mirror of the male one and a half times as long as wide; elytra of female wider with somewhat oblique veins 1. *rufescens*
 Smaller; elytral mirror of male nearly twice as long as wide; elytra of female very narrow, with parallel longitudinal veins 2. *angustus*

1. *OECANTHUS RUFESCENS* Serville.

Oecanthus rufescens Serville, 1839, Ins. Orth., p. 361; Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 31.

Rather large, whitish with almost transparent wings; elytra narrow at base but rather strongly widening backwards. Wings longer than the elytra. Length of body 14.5–16 mm.; length with wings 20–23 mm.; elytra 12–14 mm.; ovipositor 7.5–9 mm.

This species is widely distributed in the Indo-Australian region.

Queensland: Yarrabah (Stockholm Mus.); Stradbroke Island (Q.M.).

South Australia: Minnie Downs, Mt. Lofty (S.A.M.).

Torres Straits: Moa Island (S.A.M.).

2. *OECANTHUS ANGUSTUS* Chopard.

Oecanthus angustus Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 32, fig. 65.

Smaller than the preceding and much more narrow. Pronotum with parallel sides; elytra of male with mirror nearly twice as long as wide, divided by a transverse vein at about the anterior third; elytra of female forming an almost cylindrical case, with 6 longitudinal, parallel veins. Ovipositor short, straight, with tridentate apical valves.

Length of body 11 mm.; length with wings 18 mm.; elytra 11 mm.; ovipositor 5 mm.

Western Australia: Kimberley Distr. (type in the Stockholm Mus.).

Central Australia: Storm Creek, Urimilla Springs (S.A.M.).

South Australia: Minnipa, Hermannsburg (S.A.M.); Killalpaninna, 100 miles E. of Lake Eyre (H. Hillier, 1905), (Br. M.).

Gen. *XABEA* Walker, 1869.

The species of this genus have exactly the same aspect as those of *Oecanthus* from which they differ only in the armature of the posterior tibiae. The genus is represented by a few Malaisian species and the new Australian species described below.

XABEA LEAI sp. n.

Rather small, slender. Head as long as the pronotum, testaceous with 4 brown longitudinal lines above, of which the two median are the longest, united forwards by a transverse band; frontal rostrum a little narrower than the first antennal segment. Face triangular, widening at base of mandibles. Eyes lengthened, projecting. Antennae and palpi testaceous; fifth segment of maxillary palpi very long and slender.

Pronotum long, a little narrowing in its anterior half; anterior margin convex, posterior almost straight; disk rather strongly swollen behind the middle, adorned with two longitudinal brown bands; lateral lobes with strongly sinuated inferior margin. Abdomen yellowish; tenth tergite with sinuate posterior margin; supero-anal valve truncate at apex; subgenital plate with posterior margin rounded and darkened. Cerci relatively short, sinuate, with a swelling towards the middle, a little rounded at apex, ending in a dainty spine.

Legs long, yellowish; posterior femora somewhat reddish at apex. Elytra narrow, transparent, with 3 brown spots, one on the anal knot, the other two in front and back of the mirror, which is longer than wide, strongly angulate in front, rounded behind and on the sides, divided in the middle by a vein which is strongly bent towards the external end; first chord almost straight, united to the diagonal vein by a small vein near the base; second chord united to the first at base, ending on the third a little after the middle; in addition, it is united to this same third chord by a veinlet; 4 oblique veins; anal vein broken at right angle; lateral field rather high; Sc bearing 4 branches; at the junction of the dorsal and the lateral fields; the median vein is strongly sinuate at base so that there is a very large space between this and the cubital vein. Wings longitudinally caudate, somewhat darkened.

♀. Head, pronotum and legs as in the male. Elytra narrow, yellowish testaceous; dorsal field with rather confused venation, forming areolae which are rather irregular, most of them pentagonal in shape; cubital vein bearing 5 branches, almost lost in the general reticulation; lateral field transparent; Sc bearing 4 branches. Subgenital plate small, angulate, furrowed in the middle. Ovipositor short, straight; superior apical valves oval, adorned with concentric ridges; inferior valves longer, bidentate.

Length of body 11 mm.; length with wings ♂ 15 mm., ♀ 16 mm.; post. fem. 8 mm.; elytra 8 mm.; ovipositor 5.5 mm.

Types: Cairns Distr. (A. M. Lea), 1 ♂, 1 ♀ (S.A.M.).

FAMILY TRIGONIDIIDAE.

This family is composed of a considerable number of small species, having a very characteristic general aspect with long posterior legs, tibiae armed with 3 long, movable spines on each margin and 5 apical spurs only. The elytral tympanum of the male presents a large, rhomboid, undivided mirror and a single oblique vein; but the venation is very often similar in both sexes, the male elytron with no mirror. The ovipositor is short, strongly compressed and curved upwards.

KEY TO THE GENERA OF *TRIGONIDIIDAE*.

- | | |
|---|----------------------------------|
| 1. Elytra glabrous | 2 |
| Elytra covered with a fine pubescence | 7 |
| 2. Elytral mirror well developed in male | 3 |
| Elytral mirror incomplete or absent in male | 5 |
| 3. Pronotum narrowing in front | <i>Homoeoxipha</i> |
| Pronotum with almost parallel sides | 4 |
| 4. Elytra of male transparent, those of the female horned and strongly convex | <i>Paratrigonidium</i> |
| Elytra of similar texture in both sexes, those of the female feebly convex | <i>Anaxipha</i> |
| 5. Pronotum rounded in front; anterior and median legs very slender; anterior tibiae not perforated; elytra shorter than the abdomen | <i>Dolichoxipha</i> ¹ |
| Pronotum with anterior margin not so strongly convex; anterior and middle legs not so slender; anterior tibiae perforated with at least an external tympanum; elytra usually extending to the apex of abdomen | 6 |

¹ Although the male of this species is unknown, it is very probable that it belongs to this section.

- | | |
|---|------------------------|
| 6. Elytral venation somewhat different in both sexes .. | <i>Trigonidomorpha</i> |
| Elytral venation quite similar in both sexes | <i>Metioche</i> |
| 7. Elytra of male with distinct mirror | <i>Cyrtorhophoides</i> |
| Elytra of male without mirror | 8 |
| 8. Elytral veins longitudinal, parallel; fifth segment of maxillary palpi very short; eyes lengthened antero-posteriorly. Vertex flattened .. | <i>Metiochodes</i> |
| Elytral veins more or less oblique, usually a little anastomosed; fifth segment of maxillary palpi long; eyes rounded; vertex convex .. | <i>Amusurgus</i> |

Gen. ANAXIPHA Saussure, 1874.

Fig. 64.

Elytra of male membranaceous, with a large mirror; those of the female with longitudinal veins. Pronotum narrowing feebly in front with an almost straight anterior margin.

The species of this genus are rather numerous in the tropical countries of the world; three only have been found as yet in Australia.

KEY TO THE SPECIES OF ANAXIPHA.

- | | |
|--|------------------------|
| 1. Eyes lengthened anteriorly and posteriorly | 3. <i>anaxiphoides</i> |
| Eyes globular, feebly lengthened dorsally and ventrally | 2 |
| 2. Elytral mirror of the male almost twice as long as wide .. | 1. <i>longipennis</i> |
| Elytral mirror of the male one and a half times as long as wide .. | 2. <i>mjöbergi</i> |

ANAXIPHA LONGIPENNIS (Serv.)

Trigonidium longipennis Serville, 1839, Ins.

This very small species is a uniform pale yellow; in the male the elytral mirror is very large but rather narrow; in the female the elytral venation is composed of 5 straight veins with few transverse veinlets; the ovipositor is rather slender with apical valves occupying half the total length. Wings very elongately produced.

Length of body 5 mm.; length with wings 9.5 mm.; ovipositor 1.8 mm.

This species occurs throughout the whole Indo-Malaysian region.

Queensland: Cairns Distr., Home Hill (S.A.M.); Home Hill (Q.M.).

2. ANAXIPHA MJÖBERGI Chopard.

Anaxipha mjöbergi Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 41, fig. 86.

This species is a little larger than the preceding and is a little more brown-

ish in colour, instead of pure yellow; the elytral mirror of the male is very large and wider.

Length of body 6.5 mm.; length with wings 11.5 mm.; post. fem. 5 mm.
Queensland: Bellenden Ker (type in the Stockholm Mus.).

3. ANAXIPHA ANAXIPHOIDES (Chop.).

Cyrtoxipha anaxiphoides Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 43, fig. 88-89.

This species is very similar to *longipennis* in general shape and colouration; but differs from it in the shape of the eyes, which are not globular but distinctly elongated antero-posteriorly. This character is suggestive of the genus *Cyrtoxipha* and for that reason, the species had been ascribed to this genus. But the other characters are rather those of a true *Anaxipha* so that it seems more correct to remove it to this genus.

Length of body 6 mm.; length with wings 10.5 mm.; post. fem. 4 mm.; ovipositor 2 mm.

Queensland: Bellenden Ker (types in the Stockholm Mus.).

Gen. HOMOEOPHILA Saussure 1874.

The species of this genus are very similar to those of the preceding, but differ in the shape of the pronotum which is strongly narrowing in front with very convex anterior margin. The elytra of the female shows false veins between the principal veins.

HOMOEOPHILA LYCOIDES (Walk.).

Phyllopalpus lycoides Walker, 1869, Cat. Derm. Salt. Br. M., i, p. 71; Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 40.

Queensland: Bellenden Ker (Stockholm Mus.); Cairns Distr. (A. M. Lea), (S.A.M.).

Northern Territory: Groote Eylandt (Br. M.).

This species is common in the Indo-Malaysian region.

Gen. PARATRIGONIDIUM Brunner, 1893.

The principal differences between this genus and the preceding lie in the shape of the pronotum and in the more convex elytra of the female, without false veins between the principal veins.

PARATRIGONIDIUM FUSCOCINCTUM Chopard.

Paratrigonidium fuscocinctum Chopard, 1925, Treubia, vi, p. 151.

Queensland: Dunk Is. (H. Hacker, Aug. 1927), (Q.M.); Cairns (S.A.M.).

This species was described from Java and is found in the Malay Archipelago.

Gen. TRIGONIDOMORPHA Chopard, 1925.

In this genus, the male elytron has no distinct mirror but the veins are not regular as in the female; they form large cells and the anal vein is well differentiated.

TRIGONIDOMORPHA SJÖSTEDTI Chopard.

Trigonidomorpha sjöstedti Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 40, fig. 83-85.

This small species is black with testaceous legs; the elytra are black, shining. The general shape is almost the same in both sexes but in the male the elytral veins show a very distinct anal vein; in the female they are somewhat irregular, oblique, 4 in number, with few transverse veinlets.

The single male from Stradbroke Is. represents the macropterous condition; its elytra are longer, lighter in colour but with similar venation; as is usually the case in macropterous specimens, the anterior tibiae are perforated on both sides.

Queensland: Cedar Creek, Yarrabah (types in the Stockholm Mus.); Evelynne, Malanda, Colosseum (Stockholm Mus.); Stradbroke Is. (S.A.M.); Brisbane (Q.M.).

Lord Howe Is. (S.A.M.).

Gen. METIOCHE Stål, 1877.

The genus *Metioche* comprises those species in which the elytral venation is absolutely similar in both sexes and the male elytron shows no trace of differentiation in the veins in most of the species.

KEY TO THE SPECIES OF *METIOCHE*.

- | | |
|---|-----------------------|
| 1. Black with yellow legs | 4. <i>australiana</i> |
| Colouration not as above | 2 |
| 2. Posterior femora adorned with two brown bands; elytra with most longitudinal veins approximated in pairs | 5. <i>parinervis</i> |
| Posterior femora unicolorous; elytral venation different | 3 |

- | | |
|---|-------------------------|
| 3. Elytral veins of male tending to form small areolae and a very rudimentary stridulating apparatus | 9. <i>areolata</i> |
| Elytral venation much more regular in both sexes | 4 |
| 4. Elytral veins strong and quite parallel | 10. <i>rectinervis</i> |
| Elytral veins not so strong and more or less oblique | 5 |
| 5. Testaceous with a dark lateral band | 6 |
| Testaceous or brown without very distinct dark lateral band or with a light band | 7 |
| 6. Pronotum narrowing in front | 6. <i>angusta</i> |
| Pronotum with parallel sides | 7. <i>infuscata</i> |
| 7. Dark brown with a white opaque lateral band | 8. <i>albovittata</i> |
| Testaceous more or less varied with brown or dark brown varied with testaceous | 8 |
| 8. Wings usually longer than the elytra; anterior tibiae perforated .. | 9 |
| Wings abortive; anterior tibiae without tympana | 2. <i>flavipes</i> |
| 9. Head black with small yellow line along the eyes; pronotum blackish; legs yellow; elytra and anterior part of the wings very dark brown .. | 3. <i>bicolor</i> . |
| Head and pronotum dark brown varied with testaceous; elytra and anterior part of wings usually testaceous | 1. <i>vittaticollis</i> |

1. METIOCHE VITTATICOLLIS (Stål).

Trigonidium vittaticolle Stål, 1860, Freg. Eugen. Resa, Ins., p. 317.

Metioche vittaticollis Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 32, fig. 68, 70.

The colouration of this small species is rather variable and some specimens are almost as dark as those of *M. bicolor*; it can be distinguished by the first two segments of the antennae being black and by the elytral venation being a little more regular.

This is a typically Malaisian species which is common in all the islands of the Malay Archipelago and in Oceania.

Northern Territory: Groote Eylandt (J. H. Wikins, i, 1925), (Br. M.).

Queensland: Cape Yorke (Stockholm Mus.); Blackall River, Cairns Distr., Rockhampton, Dunk Is. (A. J. Turner), (Q.M.); Cairns Distr., Rockhampton (S.A.M.).

METIOCHE VITTATICOLLIS INSULARIS Sauss.

Homoeoxiphus insularis Saussure, 1878, Mem. Soc. Geneve, xxv, p. 470.

Metioche vittaticollis insularis Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 32, fig. 67, 70, 71.

I consider this insect as the micropterous condition of the preceding; it is found in the same localities.

Queensland: Bellenden Ker, Malanda (Stockholm Mus.).

2. *METIOCHE FLAVIPES* (Sauss.).

Trigonidium flavipes Saussure, 1878, Mem. Soc. Geneve, xxv, p. 465, pl. 16, fig. xlvii.

Metioche vittaticollis flavipes Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 33, fig. 72-73.

This species has the same general shape and colouration as the preceding from which it differs only in that the anterior tibiae are not perforated and the elytra are a little shorter and more convex. It may be a second form of the micropterous condition of *vittaticollis*.

Queensland: Bellenden Ker, Yarrabah, Rockhampton (Stockholm Mus.); Gayndah (S.A.M.).

New South Wales: Dorrigo (S.A.M.).

3. *METIOCHE BICOLOR* (Stål).

Trigonidium bicolor Stål, 1860, Eugenie's Resa, Ins., p. 317.

Metioche bicolor Chopard 1925, Ark. f. Zool., 18A, No. 6, p. 33, fig. 75.

As previously pointed out, this species is very close to the preceding and sometimes difficult to differentiate from the dark forms of *vittaticollis*. It also has a Malayan origin.

Queensland: Evelyne (Stockholm Mus.); Brisbane (Q.M.); Stradbroke Is. (S.A.M.).

4. *METIOCHE AUSTRALIANA* Chopard.

Metioche australiana Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 36, fig. 77, 80.

This small species is again very close to the preceding ones but it is quite black with yellow legs; the elytra are black or brown; the anterior tibiae are not perforated in the type specimens but there may be a winged condition with tympana.

Queensland: Herberton (types in the Stockholm Mus.).

5. *METIOCHE PARINERVIS* Chopard.

Metioche parinervis Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 34, fig. 76, 79.

Although similar to the preceding, this species differs from them in the colouration which is not so uniform and chiefly in the disposition of the elytral

veins which are almost straight, parallel, the first and second and the third and fourth closer together than the distance between the two groups thus formed.

Queensland: Herberton (type); Atherton, Bellenden Ker, Alice River, Cape Yorke (Stockholm Mus.).

var. *ornata* Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 36.

Differing from the type in its more varied colouration; head with two large brown spots and 2 or 3 smaller ones; pronotum with wide brown bands; posterior femora with well marked transverse brown bands.

Queensland: Bellenden Ker, Cedar Creek, Malanda (Stockholm Mus.).

6. *METIOCHE ANGUSTA* Chopard.

Metioche angusta Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 37, fig. 81.

A little larger than the preceding ones, this species is long, narrow, testaceous brown with a dark lateral band extending from the head to the extremity of the elytra; these are brownish with lighter veins which are rather regularly spaced, almost longitudinal. Wings very long.

Length of body 6 mm.; length with wings 10 mm.; elytra 5 mm.; post. fem. 4.5 mm.; ovipositor 2 mm.

Queensland: Herberton (type in the Stockholm Mus.).

7. *METIOCHE INFUSCATA* Chopard.

Metioche infuscata Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 37, fig. 82.

This species has almost the same colouration as the preceding; it differs from it in the disposition of the elytral veins which are somewhat like those of *parinervis*.

Length of body 5.5-6 mm.

8. *METIOCHE ALBOVITTATA* sp. n.

♀. Brownish, shining, with a white opaque band along the elytral edge. Head brown with the sides of the frontal rostrum yellowish. Face dark brown, shining, with a transverse yellow band going from one eye to the other. Antennae and palpi brown; last segment of the maxillary palpi in the shape of a very long triangle. Eyes slightly lengthened anteriorly and posteriorly; ocelli very small. Pronotum transverse with almost parallel sides, anterior margin straight, posterior feebly convex; disk slightly convex, a little furrowed in the middle; brownish with a somewhat irregular yellowish band on each side; surface finely pubescent; lateral lobes dark brown with inferior margin slightly

ascending backwards. Abdomen brownish; subgenital plate yellowish, large, markedly narrowing backwards with apex almost acute. Ovipositor short, with apical valves occupying nearly half the total length, the superior ones strongly denticulated. Legs yellowish, pubescent. Anterior and medium femora with a weak brown ring before the apex. Posterior femora rather stout, uniformly rufous; tibiae a little darkened at base of the spines; these are rather short, yellowish at base, brown at apex. Elytra a little longer than the abdomen, dark brown, shining with an ivory white opaque band along the edge, narrowing towards the apex; dorsal field with 5 almost longitudinal veins, the 2 internal veins uniting towards the middle, the third and fourth curled at apex, fifth a little more apart, especially near the end; transverse veinlets scarce, forming large, long alveolae; lateral field blackish brown with 4 veins, one of which is incomplete. Wings caudate, brown.

♂. Similar to the female but with short wings (micropterous condition of the species); elytra not longer than the abdomen; subgenital plate somewhat notched at apex.

Length of body ♂ 4.2 mm., ♀ 5 mm.; length with wings ♀ 9 mm.; post. fem. 3.5 mm.; elytra ♂ 3 mm., ♀ 4 mm.; ovipositor 2 mm.

Type: South Australia: Lucindale (A. M. Lea), 1 ♀; Western Australia 1 ♂ (S.A.M.).

This small species has a very characteristic colouration. In addition to the types, there is one male in the South Australian Museum collection from Hobart (C. Cole).

9. *METIOCHE AREOLATA* Chopard.

Metioche areolata Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 38, fig. 78.

This is a light brown, elongate species, with head adorned with two longitudinal brown bands; the elytral venation differs somewhat from the usual *Metioche* type; in the male the dorsal field has 4 veins, the first is sutural, furcate at base; the second is also divided at base, then forming a small square cell, again divided and forming another long cell, finally almost straight to the apex; the anal vein is rather distinct and curved, somewhat suggestive of those species in which the mirror is normally developed.

Length of body 5 mm.; elytra 4 mm.

Queensland: Mt. Tambourine (type in the Stockholm Mus.).

10. *METIOCHE RECTINERVIS* sp. n.

♀. Yellowish with a few brownish and reddish spots; almost glabrous. Head adorned above with 4 reddish lines, of which the two median are produced

to the apex of the rostrum; vertex convex; frontal rostrum short, rounded. Face yellow with two reddish spots beneath the eyes and two small lines of the same colour on the facial shield. Antennae and palpi yellowish brown; fourth segment of maxillary palpi a little shorter than third, fifth large, in the shape of a lengthened triangle. Pronotum transverse, with parallel sides, straight anterior and posterior margins; disk feebly convex, yellow, with two large, irregular light brown spots; there are a few setigerous reddish points near the median line and along the posterior margin; lateral lobes light brown, with feebly concave inferior margin and rounded angles. Abdomen yellow with blackish extremity; cerci yellow. Ovipositor short, with rather strongly denticulate valves, occupying nearly half the total length.

Legs yellow, pubescent, rather long. Posterior femora short and stout, with two feebly distinct brown spots above and a small spot near the apex of internal face; tibiae bearing long and slender spines. Elytra extending to the apex of abdomen, light brown with yellow longitudinal, projecting veins; transverse veinlets few in number and feeble; lateral field dark brown. Wings aborted.

Length of body 5 mm.; post. fem. 4.3 mm.; ovipositor 2.9 mm.

Type: Queensland: Mount Glorious (H. Hacker), 24, v, 1930, 1 ♀ (Q.M.); Gold Creek (H. Hacker, 10, vi, 28), 1 ♀ paratype (Paris Mus.).

This species is placed tentatively in the genus *Metioche*; the male may possess an elytral mirror, in which case it would be an *Anaxipha*. On the other hand, the disposition of the elytral veins is suggestive of the genus *Rhichogryllus*, although these veins are not so prominent as in this genus.

Gen. DOLICHOXIPHA nov.

I erect this new genus for a species which I described in 1925 as an *Anaxipha*, pointing out its very remarkable features; pronotum rounded in front, legs very long, especially the anterior and median tibiae which are very slender, the anterior ones not perforated; elytra much shorter than the abdomen with parallel veins on the dorsal field. The male is unknown but it is improbable that it possesses an elytral mirror.

DOLICHOXIPHA GRACILIPES (Chop.).

Anaxipha gracilipes Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 41, fig. 87.

Yellow, glabrous, shining. Ovipositor rather long, feebly curved, with apical valves shorter than half the total length.

Length of body 6 mm.; post. fem. 4.5 mm.; elytra 3 mm.; ovipositor 3 mm.

Queensland: Bellenden Ker (type in the Stockholm Mus.).

Gen. CYRTOXIPHOIDES nov.

Fig. 63.

General shape rather short; elytra pubescent; wings slightly exceeding the elytra. Vertex flattened. Eyes horizontally lengthened; fifth segment of maxillary palpi very short. Type: *Cyrtoxiphoides leai*, sp. n.

The species of this genus show, as in *Anaxipha*, a well developed mirror on the male elytra but these are covered with a fine pubescence and the shape of the head is different (fig. 63); the fifth segment of the maxillary palpi is very short and funnel-like as in the American genus *Cyrtoxipha* in which the elytra are glabrous.

KEY TO THE SPECIES OF CYRTOXIPHOIDES.

Edges of the frontal rostrum thickened, callous; fifth segment of maxillary palpi securiform; face wider than high; elytra of female extending nearly to the apex of the ovipositor, with parallel veins .. 2. *planifrons*

Edges of the frontal rostrum smooth; fifth segment of maxillary palpi triangular; face as high as wide; elytra of female extending to the apex of abdomen, with somewhat irregular veins 1. *leai*

1. CYRTOXIPHOIDES LEAI sp. n.

Fig. 9.

♂. Small; yellow, pubescent. Head wide; vertex flattened, sloping; frontal rostrum a little narrower than the first antennal segment. Face triangular, short and wide, yellow, shining. Eyes a little lengthened anteriorly and posteriorly; ocelli very small, the anterior one at apex of the rostrum. Antennae and palpi yellow; maxillary palpi with fourth segment shorter than third, fifth very short, triangular, with inferior angle a little more acute than the superior one. Pronotum strongly transverse, with parallel sides, anterior margin convex, posterior one straight; disk nearly flat, pale yellow, sprinkled with rufous bristles; lateral lobes concolorous, with straight inferior margin, rounded angles. Abdomen yellow; subgenital plate strongly notched at apex. Cerci yellow, a little thickened and flattened at base, showing traces of segmentation. Legs light yellow, finely pubescent. Anterior tibiae perforated both sides, with an oval tympanum, the internal one larger. Posterior femora

rather long and slender; tibiae with rather short spines, a little hooked at apex and feebly darkened above. Elytra hardly overreaching apex of abdomen, narrow, yellow, very pubescent; mirror very long and narrow, with very acute anterior angle; diagonal vein rather short and almost straight; chords long, almost straight, united at base; lateral field almost transparent, with 3 regularly spaced veins. Wings a little longer than the elytra, marginal field pubescent with a few brown spots.

♀. Similar to the male. Dorsal field of the elytra with 4 oblique, somewhat irregular veins; transverse veinlets rather numerous, forming large, nearly square areolae. Ovipositor long, narrowing before the apical valves which occupy half the total length, their margins being parallel and denticulate at apex only.

Length of body 5.5 mm.; length with wings 9 mm.; post. fem. 4.8 mm.; elytra 4.8 mm.; ovipositor 3.2 mm.

Types: Queensland: Cairns Distr. (A. M. Lea), (S.A.M.).

This species resembles very closely the American *Cyrtoxipha* in the shape of the eyes and of the maxillary palpi; the width of the pronotum and the large head give this insect a special habitus.

2. CYRTOXIPHOIDES PLANIFRONS sp. n.

Fig. 65.

♀. Yellowish, pubescent. Head a little wider than pronotum, strongly depressed above; frontal rostrum rather wide, bordered with a yellow, slightly callous line. Face short and very wide, yellow. Eyes a little lengthened anteriorly and posteriorly; ocelli very small. Antennae and palpi yellow; fourth segment of maxillary palpi much shorter than third, fifth short, strongly enlarged at apex with longitudinally oval section, the superior margin much shorter than the inferior. Pronotum transverse, with sinuated posterior margin; lateral lobes with straight inferior margin, and slightly rounded angles. Abdomen yellow; subgenital plate wide with feebly notched posterior margin. Ovipositor long with apical valves occupying half the total length, the superior ones coarsely denticulate towards the apex (fig. 65). Legs of the same colour as the body. Posterior femora rather short, thick at base; tibiae armed with short spines. Elytra extending to the apex of ovipositor, yellow, pubescent; dorsal field with 5 almost parallel, feeble oblique veins, of which the second is furcate in about the apical fourth; lateral field with 4 veins, of which one is incomplete. Wings just surpassing the elytra.

Length of body 5.5 mm.; length with wings 9.5 mm.; post. fem. 5 mm.; elytra 5.5 mm.; ovipositor 2.9 mm.

Type: Queensland: Dunk Is. (H. Hacker, Aug., 1927), 1 ♀ (Q.M.).

Although very similar to the preceding, this species is easily distinguished by the longer elytra with more regular veins, the strongly securiform apical segment of maxillary palpi.

Gen. AMUSURGUS Brunner, 1893.

The species of this genus as in *Cyrtoziphoides* have the elytra covered with a fine pubescence but the male never possesses a distinct tympanum; nevertheless, the elytral veins are not parallel but more or less anastomosed, forming a few large cells. The eyes are rounded, not at all lengthened anteriorly and posteriorly.

One Australian species only can be ascribed to this genus.

AMUSURGUS FASCIFRONS sp. n.

Fig. 11.

♂. Shape narrow and long; colour testaceous brown with a dark lateral band; finely pubescent. Head a little wider than pronotum in front; vertex convex, spotted with reddish brown; frontal rostrum short, as wide as first antennal segment; face triangular, rather long, with two small brown bands between the antennae and on the clypeus, and a wide slightly curved fascia going from the inferior point of one eye to that of the other. Antennae yellow, with small brown rings, the first segment spotted with brown on internal face. Palpi yellowish with darkened last segment; fourth segment of maxillary palpi slightly shorter than third, fifth triangular, long. Eyes rounded; ocelli rather large, circled with brown, the anterior a little before apex of rostrum. Pronotum transverse, a little narrowing in front; disk convex, yellowish with two large reddish brown spots along the anterior and posterior margins; these two spots united by a very narrow line of the same colour; along the posterior margin a row of brown spots each bearing a long bristle; lateral lobes brown with much rounded anterior angle. Abdomen yellow; cerci very long. Legs rather long, yellow, pubescent. Anterior and medium tibiae adorned with an apical brown spot and a small ante-apical band; tibiae with two brown rings, anterior tibiae perforated with a large internal tympanum. Posterior femora long and narrow, adorned with two small brown spots near the apex; tibiae spotted with brown at base of the spines; these are brownish, the internal long and slender, the external a little stouter; metatarsi with apical half brown. Elytra long and narrow, covered with a fine pubescence; dorsal field with 4 feebly oblique and irregular veins, the second bearing 3

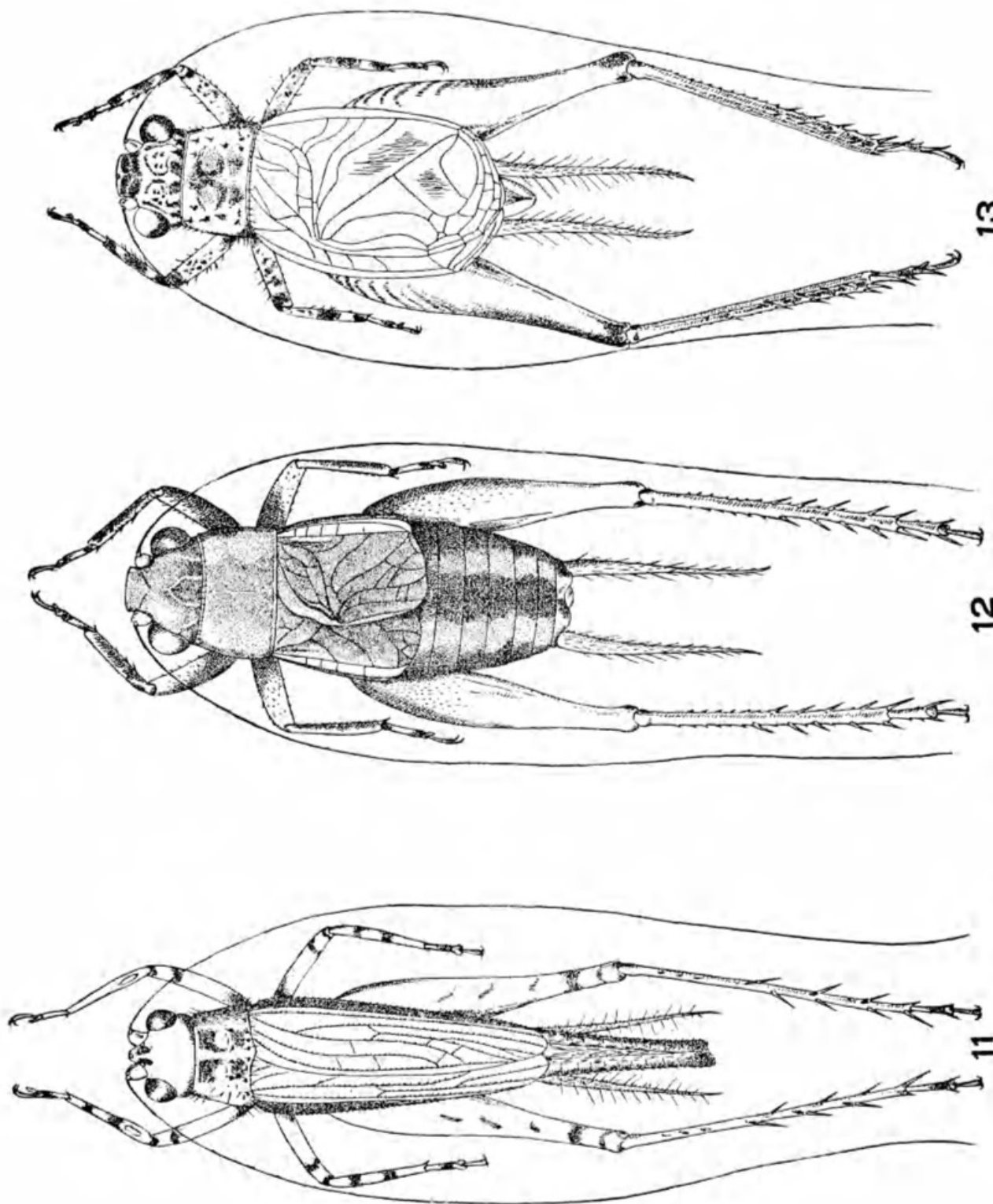


Fig. 11. *Amusurgus fascifrons* sp. n. ♂. Fig. 12. *Lebinthus bifasciatus* sp. n. ♂.

Fig. 13. *Salmanites obscurifrons* sp. n. ♂.

branches, the third and fourth unite at about the apical fourth; lateral field brown with 4 veins, one of which is incomplete. Wings longitudinally produced, with brown, pubescent anterior field.

Length of body 5.8 mm.; length with wings 10 mm.; post. fem. 5 mm.; elytra 5 mm.

Type: Queensland: Cairns Distr. (J. F. Illingworth), 1 ♂ (S.A.M.).

The type of this pretty little species is unique; it has very much the general shape and colour of *Metioche angusta*, from which it differs in the pubescent elytra, the forehead adorned with a brown transverse band, the longer posterior femora and the less regular elytral venation.

Gen. METIOCHODES Chopard.

The species of this genus present the same shape of the head and maxillary palpi as *Cyrtoxiphoides*, from which they differ markedly in the elytral venation which is similar in both sexes, the male with no distinct mirror. The genus is also close to *Amusurgus*, but differs in the shape of the head, which is in this last genus rounded above, not flattened as in *Cyrtoxiphoides*, and in the rounded eyes, which are not all lengthened. The elytral venation is more regular, the veins being usually straight and parallel.

KEY TO THE SPECIES OF *METIOCHODES*.

1. Anterior and medium tibiae with two small black spots near the base of internal face 1. *hackeri*
Legs yellow, without spots 2
2. Elytra with 4 quite parallel veins; ovipositor with a very strong notch at base of the apical valves 2. *australicus*
Elytra with 5 veins which are not regularly parallel, but slightly oblique, the two internal veins unite a little after the middle 3. *tindalei*

1. *METIOCHODES HACKERI* sp. n.

♀. Shape rather long; pale yellowish, pubescent. Head as wide as pronotum, a little flattened above; frontal rostrum as wide as first antennal segment. Antennae and palpi yellow; fourth segment of maxillary palpi a little shorter than third, fifth large, in the shape of a long triangle, somewhat obliquely truncated at apex. Eyes a little lengthened anteriorly and posteriorly; ocelli very small. Pronotum transverse, narrowing very feebly in front with sinuate posterior margin; disk convex, feebly pubescent; lateral lobes with anterior angle much rounded. Abdomen pale yellow; subgenital plate

wide at base, narrowing and rounded at apex. Legs rather long, pubescent. Anterior and medium tibiae with two small black spots near the base of internal face, the internal faces perforated with a large tympanum; median femora with also a small black spot near the apex, on internal face. Posterior femora long and narrow, without any design; tibiae with a small blackish spot near the base, armed with small, slender spines. Elytra with yellowish brown background, light veins, finely pubescent dorsal field with 5 veins which are feebly oblique, almost regularly spaced; the cubital vein is trifurcate near the base and the fourth and fifth veins (the most internal) are united about their apical third; the covered part of the left elytron is smooth, glabrous, transparent; lateral field transparent with 4 veins, three of which are long, straight, the fourth short and curved. Wings lengthily produced, with yellow, pubescent anterior field.

Length of body 6 mm.; length with wings 11.5 mm.; post. fem. 5.5 mm.; elytra 5.5 mm.

Type: Queensland: Dunk Is. (H. Hacker, Aug., 1927), 1 ♀ (Q.M.).

This species is quite recognizable by the small spots on the legs but it is also very different from the other species of *Metiochodes* in the shape of the maxillary palpi, the last segment of which is much larger than usual in the genus and triangular in shape, not at all securiform. In this respect, it somewhat resembles the genus *Amusurgus*, from which it differs in the almost parallel, not anastomosed elytral veins.

2. *METIOCHODES AUSTRALICUS* sp. n.

♀. Small, yellow, pubescent. Head slattened above; frontal rostrum with sides converging forwards, the apex much narrower than the first antennal segment; face short and wide, very pale yellow. Eyes a little lengthened anteriorly and posteriorly; ocelli very small. Antennae and palpi yellow; maxillary palpi with fourth segment shorter than third, fifth short, strongly widening at apex, slightly securiform in shape; third segment of the labial palpi also very wide. Pronotum transverse, with parallel sides, posterior margin rather strongly sinuated; lateral lobes with straight inferior margin, angles rounded. Abdomen yellow; subgenital plate wide, with rounded posterior margin. Ovipositor rather short with strongly denticulated apical valves, occupying almost half the total length. Legs yellow, the posterior ones wanting. Elytra long with parallel sides, yellow, pubescent, the covered part of the left elytron transparent; dorsal field with six almost longitudinal veins, the second one furcate near the apex; the fifth and sixth united about the middle of the internal margin; lateral field with 4 veins, one of which is not complete.

Wings somewhat longer than the elytra, their anterior margin with a row of small long brown spots.

Length of body 5.5 mm.; length with wings 11 mm.; ovipositor 2.2 mm.; elytra 6 mm.

Type: Queensland: Bathurst Head (Hale and Tindale, Jan., 1927), 1 ♀ (S.A.M.).

As the male of this species is unknown, it is difficult to ascertain whether it belongs to the genus *Metiochodes* or to *Cyrtoxiphoides*; yet the shape of the ovipositor suggests rather the first genus.

3. *METIOCHODES TINDALEI* sp. n.

Fig. 66.

Yellow, pubescent. Head with somewhat flattened vertex; frontal rostrum narrower than the first antennal segment. Face short and wide. Eyes a little lengthened anteriorly and posteriorly; ocelli very small. Antennae and palpi yellow; fourth segment of maxillary palpi much shorter than third, fifth short and wide, rather markedly securiform in shape, truncated at apex (fig. 66). Pronotum transverse, a little narrowing in front, with straight anterior margin, strongly sinuated, posterior subangulate; disk feebly flattened; lateral lobes a little high, with convex inferior margin and much rounded angles. Abdomen and cerci yellow; subgenital plate rather large, feebly notched at apex. Ovipositor rather long, curved, with apical valves notched at base, superior valves strongly crenellated (fig. 66). Legs yellow; anterior tibiae enlarged at base and perforated with a large oval tympanum on internal face. Posterior legs wanting. Elytra lengthened, parallel, pubescent; dorsal field with 4 longitudinal veins, almost straight and regularly spaced; transverse veinlets numerous, forming square areolae; the covered part of the left elytron is smooth and glabrous; lateral field with 3 veins. Wings rather lengthily produced, yellow, pubescent.

Length of body 7 mm.; length with wings 12 mm.; elytra 7 mm.; ovipositor 2.8 mm.

Type: Northern Territory: Groote Eylandt (N. B. Tindale), 1 ♀ (S.A.M.).

This species is remarkable in the shape of the ovipositor; it looks like a species of *Cyrtoxipha* but differs from that genus in the pubescent elytra; as the preceding, it might belong to *Cyrtoxiphoides* if the male elytron is provided with a distinct mirror.

FAMILY ENEOPTERIDAE.

The Eneopteridae are rather large Grylloids with depressed tarsi, posterior tibiae serrulated between the spines, and the head with a very wide frontal rostrum, the eyes being big, rounded and laterally projecting. The posterior tibiae are armed with 6 long apical spurs, of which the median is the longest, both on the internal and external faces.

KEY TO THE GENERA OF *ENEOPTERIDAE*.

1. Elytra extending to the apex of abdomen in both sexes, with well developed apical field *Cardiodactylus*
Elytra shorter than abdomen, with almost no apical field 2
2. Frontal rostrum about one and a half times as wide as the first antennal segment *Eurepa*
Frontal rostrum almost thrice as wide as the first antennal segment, which is very small 3
3. Elytra of male with complete mirror, almost extending to the apex of abdomen *Salmanites*
Elytra of male very short, with indistinct mirror; elytra of female short *Lebinthus*

Gen. *CARDIODACTYLUS* Saussure, 1878.

The species of *Cardiodactylus* are large Grylloids with rather short and strong legs. The frontal rostrum is about as large as the first antennal segment; pronotum almost square; elytra long, with in the male a small mirror, often more or less divided by a wide reticulation; the wings are always caudate.

The species of this genus are known from the Malayan and Australian regions.

KEY TO THE SPECIES OF *CARDIODACTYLUS*.

1. Wings exceeding the elytra by half their length 4. *rufidulus*
Wings exceeding the elytra by at most a third of their length, often much less 2
2. General shape short; colouration more uniform; ocelli larger 2. *gaimardi*
General shape more lengthened; colouration usually brightly varied with brown and yellow; ocelli smaller 3
3. Anterior tibiae but feebly enlarged; ovipositor long and slender
1. *novae-guineae*
Anterior tibiae strongly dilated near the base; ovipositor rather short
3. *canotus*

1. *CARDIODACTYLUS NOVAE-GUINEAE* (Haan.).

Gryllus (Platydictylus) Novae-Guineae Haan, 1842, Temminck, Verhandel. Orth., p. 233.

Rufous-testaceous; head with 4 light lines on the vertex; frontal rostrum a little wider than the first antennal segment. Elytra of male adorned with yellow spots; mirror narrow, acute backwards, divided by a transverse vein; its posterior part often reticulated; chords variable. Elytra of the female greyish or brownish with a yellowish spot in the middle; ovipositor straight, as long as the posterior femora.

Length of body 18–23 mm.; post. fem. 15–17·5 mm.; elytra 14–19 mm.; ovipositor 20–26 mm.

This large species is common in the Malayan islands; it has also been recorded from a few Australian localities.

Queensland: Cairns, Kuranda (S.A.M.); Stacey Is., South Cape (A.M.); Dunk. Is. (Q.M.).

Papua: Misima Island (Rev. R. J. Andrew), (S.A.M.).

2. *CARDIODACTYLUS GAIMARDI* (Serv.).

Platydictylus Gaimardi Serville, 1839, Ins. Orth., p. 366.

Very close to the preceding species but differing in the shorter ovipositor and the more regular elytral reticulation.

Australia: (Serville's type in the Paris Museum).

3. *CARDIODACTYLUS CANOTUS* Saussure.

Cardiodactylus canotus Saussure, 1878, Mem. Soc. Geneve, xxv, p. 522.

Differing from *novae-guineae* in the anterior tibiae being strongly swollen at base and in the shorter ovipositor.

Australia: (Saussure). The type, in the Paris Museum, comes from the Solomon Islands.

4. *CARDIODACTYLUS RUFIDULUS* Saussure.

Cardiodactylus rufidulus Saussure, 1878, Mem. Soc. Geneve, xxv, p. 523.

This species is also very similar to the preceding ones; its colouration is rather uniformly brown, the elytra with a yellow tinge at base with two brown spots; the wings are relatively longer than the other species. Australia: without exact locality (Saussure's type).

Gen. LEBINTHUS Stål, 1877.

The species of this genus are smaller than those of *Cardiodactylus* with abbreviated elytra in both sexes and wings completely abortive. They are known from the Philippine Islands and Malaya; one new species from Australia is described below.

LEBINTHUS BIFASCIATUS sp. n.

Fig. 12, 68.

♂. Small; brown with two light bands extending from the anterior margin of pronotum to the apex of elytra. Head as wide as pronotum in front; occiput shining brown, feebly shagreened, adorned with a rather weak W-shaped yellow line; frontal rostrum very wide, truncated, a little convex at apex. Face short, brown marbled with yellowish; facial shield convex but not swollen, furrowed in the middle, joining the vertex in a much rounded angle. Eyes rounded, rather projecting; ocelli very small, the anterior one at top of the frontal rostrum. Antennae very slender, with first segment small, brown. Palpi rather short with three last segments subequal in length; third and fourth segments with basal half brown, apex yellow; fifth segment widening a little at apex, yellow with base and apex brown. Pronotum transverse, with feebly concave anterior margin, posterior straight, narrowing feebly in front; disk convex, brownish with a wide yellowish irregular band on each side; anterior margin also pale yellowish; lateral lobes brown, with inferior margin ascending backwards. Abdomen testaceous brown with a darker median band; inferior part yellowish; supero-anal valve square, truncated at apex; subgenital plate large, wide at base, narrowing and a little truncated at apex. Genitalia wide, feebly notched at apex, with a round impress at base (fig. 68). Legs short and stout; anterior and middle femora brownish apex yellow; tibiae brown, vaguely annulated with yellow; anterior tibiae perforated with a large external tympanum; metatarsi yellow with base and apex brown, carinated beneath; second segment small, flattened brown, third yellow with apex brown. Posterior femora very wide, rufo-testaceous; tibiae armed with 4 spines on each margin, serrulated at base and with 1 denticle between the spines amongst a few long bristles; supero-external and infero-external spurs short, particularly the first one, the median much longer; internal spurs long, particularly the median, the superior a little longer than the inferior; metatarsi short, armed above with 3 external denticles and 1 internal denticle at apex, the apical spurs long; second segment brown, relatively long, a little depressed at apex; third segment slender, scarcely longer than the second, yellow with apex brown. Elytra glabrous, extending only to the middle of abdomen, blackish brown with

a yellow humeral band, truncated at apex; mirror rudimentary, composed of a triangular cell, at apex of the elytron, divided into three parts; diagonal vein long; chords a little curved, extending to the apex of the elytron; 2 veinlets unite the first chord and the mirror; 2 oblique veins only, of which one is long and the other, in the anal vein, is shorter; lateral field blackish, with 4 veins; Sc not divided.

♀. A little larger than the male; elytra reduced to very small lateral scales; light band of the pronotum prolonged on the metanotum. Subgenital plate small, a little notched at apex. Ovipositor very long, slender, with narrow, lanceolate apical valves.

Length of body ♂ 10 mm.; ♀ 13 mm.; pronot. ♂ 2 mm., ♀ 2.6 mm.; post. fem. ♂ 7.3 mm., ♀ 10 mm.; elytra ♂ 3.5 mm.; ovipositor 25 mm.

Types: Northern Territory: Daly River (H. Wesselman), 1 ♂; Port Darwin, 1 ♂ (S.A.M.); Mary River (G. F. Hill), 1 ♀ (Q.M.).

This species is very close to *L. leopoldi* Chop., from New Guinea; in the male, the anal knot is not swollen; the female is almost apterous and its ovipositor with narrower, more lengthened apical valves.

Gen. SALMANITES nov.

Frontal rostrum very wide; first segment of antennae very small. Posterior femora short and stout; tibiae serrulated, armed with 4 spines on each margin. Elytra of male extending almost to apex of abdomen, with a well developed mirror divided by a curved vein; apical field very short. Female unknown

SALMANITES OBSCURIFRONS sp. n.

Fig. 13, 69.

♂. Rather small, greyish brown, finely pubescent. Head as wide as pronotum, a little mottled with brown above; frontal rostrum short, very wide, truncated. Face blackish, shining, glabrous; top of the frontal shield with a narrow yellow line at the point where it joins the vertex. Eyes rather strongly projecting, rounded; lateral ocelli very small. Antennae very slender, yellowish, with first segment small, brown. Palpi blackish; fourth segment of maxillary palpi a little shorter than third, fifth rather large, triangular, obliquely truncated at apex. Pronotum transverse, narrowing slightly in front, with anterior and posterior margins straight; disk feebly convex, greyish with a few small brown spots, very finely pubescent; lateral lobes black with narrow yellow band in the superior part; inferior margin ascending backwards, anterior angle 90°. Abdomen brown above, yellowish beneath; subgenital plate

long, very narrow at apex. Cerci moderately long, brownish with a dark band at internal face. Genitalia very long, almost tubular, notched at apex (fig. 69). Legs short, dark brown, a little annulated with yellowish, strongly pubescent. Anterior tibiae provided with a rather large oval tympanum at external face; metatarsi compressed, yellow with brown tip. Posterior femora short and stout; their external face yellowish with dark brown superior third; internal face a little striated with brown; tibiae armed with 4 spines on each margin; internal apical spurs long, chiefly the median one, the other two equal in length; externo-superior spur shorter than the inferior one, the median much the longest; metatarsi short, armed with 3 external and 1 internal denticle; apical spurs long, particularly the internal. Elytra wide, extending to the apex of abdomen, rounded at apex; colouration light grey with rufous veins; mirror rather large, very angulate in front, rounded behind, divided beneath the middle by a strongly arched vein; diagonal vein long; chords lengthened, the first almost straight, the second much sinuated, the third simply a little undulated; sutural vein quite distinct; 4 oblique veins of which 2 are long, sinuated, parallel, and 2 shorter in the angle of the anal vein; apical field very short with only two rows of irregular cells; lateral field dark brown; Sc bearing 6 branches. Wings very short.

Length of body 9 mm.; pronot. 2 mm.; post. fem. 12.5 mm.; elytra 6 mm.

Type: Queensland: Byfield near Yeppoon (A. Musgrave, Oct., 1924), 1 ♂ (A.M.).

Gen. *EUREPA* Walker, 1869 (p. 71).

(= *Salmania* Walker, 1869, p. 73).

The species of this genus have rather the aspect of a small *Cardiodactylus* with somewhat shortened elytra; in the female sex, the ovipositor is very long, sometimes exceedingly so. They are known from Australia and the Malay Archipelago.

KEY TO THE SPECIES OF *EUREPA*.

1. Frontal rostrum a little wider than the first antennal segment, truncate at apex, flat above; forehead feebly projecting 2
 Frontal rostrum twice as wide as the first antennal segment, rounded at apex, more or less convex above, the forehead in the shape of a projecting protuberance 3
2. Frontal rostrum with parallel margins; ovipositor as long as the body 1. *sordida*
 Frontal rostrum with margins rather strongly diverging backwards; ovipositor extremely long 2. *marginipennis*

3. Elytra of female very short, separated along the median line 6. *subaptera*
 Elytra of female extending at least to the middle of abdomen, somewhat overlapping in the median line 4
 4. *unicolor*
4. Head and pronotum wholly blackish; elytra brown with yellow veins
 Face yellowish, more or less spotted with brown; head and pronotum above testaceous, more or less widely mottled with brown 5
5. Lateral lobes of pronotum yellowish; elytra of the female with parallel, longitudinal veins 3. *mjöbergi*
 Lateral lobes of pronotum black; elytra of the female with oblique, somewhat irregular veins 5. *curvatifrons*

1. EUREPA SORDIDA (Walk.).

Salmania sordida Walker, 1869, Cat. Derm. Salt. Br. M., i, p. 73.

Piestodactylus brevipennis Saussure, 1878, Mem. Soc. Geneve, xxv, p. 527.

A medium sized species; colour dark rufous, covered with a fulvous pubescence. In the male, the elytra extend almost to the apex of abdomen; the mirror is longer than wide, very acutely angulate in front, rounded posteriorly, divided before the middle by an angulate vein which is almost parallel to the anterior sides of the mirror; 2 oblique veins; first chord united to the angle of the mirror by a rather long veinlet, almost parallel to the diagonal vein; apical field short, rounded, with 4 sectors and a rather wide, regular reticulation. Elytra of the female short, extending to the fifth segment of abdomen; dorsal field rufous brown with a yellow humeral band, lateral field very dark. Wings a little longer than the elytra in the male, very short in the female. Ovipositor as long as body.

Length of body 19 mm.; pronot. 3 mm.; post. fem. 12 mm.; elytra ♂ 11 mm., ♀ 8 mm.; ovipositor 16–17 mm.

This species seems rather variable; the elytra of the male may be more or less spotted with brown in the anal field, between the chords and near the anterior angle of the mirror; the dividing vein of the mirror may be rather more curved than angulate as in the type; the length varies from 16 to 19 mm.

North Australia: (Walker's type; Saussure's type of *brevipennis*).

Queensland: Almaden, Chillagoe Distr. (W. D. Campbell, v., 1926), (A.M.); Endeavour River (Paris Mus.); Inkerman, near Townsville (W. Stalker, 1908), (Br. M.); Magnetic Island, Kuranda (S.A.M.).

Northern Territory: Darwin, Koolpinya (S.A.M.).

South Australia: Palmiston, Mt. Bryan (S.A.M.).

2. *EUREPA MARGINIPENNIS* (White).

Acheta (?) *marginipennis* White, 1841, Grey, Journ. Exp. Austr., ii, p. 467.

Piestodactylus longicauda Saussure, 1878, Mem. Soc. Geneve, xxv, p. 529.

Very close to the preceding but smaller; in the male the elytra extend to the abdominal extremity, their apices rounded; mirror rather large, as long as wide, anterior angle a little obtuse, posterior margin rounded, divided in the middle by a curved vein; diagonal vein rather long, straight; chords long, feebly curved; 3 oblique veins, two of which are long, sinuate, almost parallel, and the third very short in the angle of the anal vein; apical field rather short with 3 sectors and a wide reticulation; lateral field with 11 rather regularly spaced veins, of which 8 are branches of Sc. Wings not longer than the elytra. Ovipositor of the female about twice as long as the body.

Length of body ♂ 10-13.5 mm., ♀ 13-16 mm.; post. fem. 9-12 mm.; elytra ♂ 7.5-9.5 mm.; ♀ 8-8.5 mm.; ovipositor 20-32 mm.

Western Australia: Lawlor (A.M.); Busselton (S.A.M.); King George's Sound (Walker), (Br. M.).

South Australia: Kangaroo Is., Riverton, Yeelanna, Penong, Mt. Barker, Karoonda to Peebinga, Owieandana, Buckleboo, Murat Bay, Eyre Pen., Mt. Lofty Ranges, Parrakie, Tanunda, Adelaide, Darkes Peak (S.A.M.); Kingscote, K.I. (A.M.).

New South Wales: Binnaway (A.M.).

Victoria (Paris Museum).

3. *EUREPA MJÖBERGI* Chopard.

Eurepa mjöbergi Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 44, fig. 90-94.

Very close to the preceding from which it differs in the wider frontal rostrum, the yellow lateral lobes of pronotum and the shorter ovipositor.

Western Australia: Derby, Kimberley Distr. (types in the Stockholm Mus.).

4. *EUREPA UNICOLOR* sp. n.

Fig. 70.

♂. Rather large species, colouration a uniform dark brown, very finely pubescent. Head as wide as pronotum; vertex sloping and even a little excavated at base of rostrum; this is twice as wide as the first antennal segment, with parallel margins, flat above, rounded apex. Face blackish brown, smooth; facial shield forming a projecting, finely furrowed protuberance. Eyes rounded.

feebly projecting laterally; ocelli small, the anterior one much before the apex of the rostrum. Antennae and palpi brown; third and fourth segments of the maxillary palpi equal in length, fifth a little longer, scarcely enlarged at apex, with superior margin little concave. Pronotum a little wider than long, with slightly concave anterior margin, posterior straight. Disk feebly convex, a little irregular; lateral lobes concolorous, with inferior margin ascending backwards. Abdomen dark brown, feebly pubescent; supero-anal valve a little truncated at apex; subgenital plate rather long, strongly narrowing towards the apex which is slightly truncated. Cerci long; lighter than the body. Legs rather short. Genitalia less tubular than those of *sordida*, more angulately notched at apex (fig. 70). Legs rather short, of a somewhat rufous brown colouration. Anterior tibiae perforated on external face with an oval tympanum. Posterior femora thick, unicolorous; tibiae armed with 4 spines on each margin, strongly serrulate at base and between the spines; apical spurs compressed, the median one the longest on each side; metatarsi rather short, a little compressed, armed with 4-5 external, 2 internal denticles. Elytra extending almost to the apex of abdomen, brown with lighter veins; apex rounded; mirror longer than wide, subangulate in front, rounded behind, divided in the middle by a curved vein; diagonal vein short; chords rather strongly curved, parallel; 4 oblique veins; apical field rather large, with 5 sectors and a rather close, regular reticulation; lateral field concolorous with 5 precostal veins and 6 branches of the subcostal. Wings very short.

♀. Similar to the male in general shape and colouration. Elytra extending to the apex of the fifth abdominal tergite, rounded at apex; veins yellow on a brown background, slightly oblique, rather regularly spaced; Cu bearing 3 branches; transverse veinlets forming rather regular, lengthened areolae, except at base where they are very close; Sc bearing 3 branches. Ovipositor very long, with narrow, lanceolate apical valves.

Length of body ♂ 17 mm., ♀ 19 mm.; pronot. ♂ 3.5 mm., ♀ 3.8 mm.; post. fem. ♂ 12.5 mm., ♀ 14 mm.; elytra ♂ 10 mm., ♀ 8 mm.; ovipositor 42 mm.

Types: South Australia: Ooldea (A. M. Lea), 1 ♂, 1 ♀ (S.A.M.).

This species is relatively large, of a dark brown, uniform colouration with the veins of elytra lighter; the frontal shield is strongly swollen, the superior face of the frontal rostrum flattened, the ovipositor of the female is extremely long.

Besides the 3 males and 4 females from the type locality, the South Australian Museum collection contains a female from Kingoonya, S.A. (R. Harvey).

Western Australia: Lawlers (W. O. Mansbridge), (Br. M.).

5. *EUREPA CURVATIFRONS* sp. n.

♀. Colouration yellowish grey with brown spots; finely pubescent. Head a little wider than pronotum in front, feebly flattened above; occiput adorned with 5 short brown bands; frontal rostrum about twice as wide as first antennal segment, with parallel margins, apex rounded. Face yellowish, feebly marbled with brown; facial shield markedly swollen, finely furrowed in the middle; cheeks yellowish with a brown spot behind the eye. Eyes a little lengthened dorsally and ventrally, rounded, protruding; ocelli very small, the anterior a little before the apex of the rostrum. Antennae slender, brownish, lighter at base. Palpi short, yellowish, spotted with brown; the three last segments of the maxillary palpi subequal in length, the last rather markedly enlarged at apex, with feebly concave superior margin, apex a little convex, bordered with brown. Pronotum transverse; narrowing a little in front, with almost straight anterior and posterior margins; disk very slightly convex, yellowish marbled and spotted with brown, especially about the middle; lateral lobes blackish with a small yellow spot in the anterior angle, inferior margin ascending backwards. Abdomen yellow beneath, yellowish spotted with brown above with a median brown band. Ovipositor long and slender, with apical valves oval, lanceolate, scarcely wider than the stem. Legs yellowish spotted with brown, the posterior ones wanting. Elytra extending no farther than the apex of the third abdominal tergite, yellowish with darker, thick veins, the two cubital veins being furcate; transverse veinlets irregular; lateral field blackish with a light band between Sc and M; Sc bearing 2 branches; 3 precostal veins of which the third lies along the margin.

Length of body 12 mm.; pronot. 2.3 mm.; ovipositor 23 mm.; elytra 4 mm.

Type: South Australia, 1 ♀ (S.A.M.)

This species is close to *mjöbergi* but with the lateral lobes of pronotum darker, less regular elytral venation and much longer ovipositor.

6. *EUREPA SUBAPTERA* Chopard.

Eurepa subaptera Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 45, fig. 95-96.

This species differs from all the others of the genus in its short elytra which are separated on the median line.

Known only from the type specimen in the Stockholm Museum, without exact locality.

FAMILY ITARIDAE.

The insects of this family differ from the preceding in the smaller head with narrow frontal rostrum; in the male, the elytra are very wide with numerous oblique veins. They are very characteristic of the Malay region with a few African species and one in Australia.

Gen. TREMELLIA Stål, 1877.

This genus has been placed amongst the Phalangopsidae because of the hardly depressed second tarsal segment but most of the characters and especially the elytral venation of the male are more characteristic of the Itaridae.

TREMELLIA AUSTRALIS sp. n.

Fig. 14, 71.

Testaceous brown with a few darker spots. Head a little wider than the pronotum in front; vertex sloping, ending in a short rostrum, wide at base with strongly converging margins, narrow feebly rounded apex. Antennal sockets with a strong angular prominence on internal margin. Face lengthened, yellowish with brown superior part, the two colours separated by a straight line joining the inferior margins of the antennal sockets; the brown part is divided by a fine median yellow band; cheeks with a brown arched band behind the eye. Eyes rounded, markedly projecting; ocelli very small, disposed as a triangle. Antennae slender, annulated with yellow and brown. Palpi yellow; fourth segment of the maxillary palpi much shorter than third, fifth long and narrow, triangular. Pronotum a little wider than long, with anterior margin convex, a little notched in the middle; posterior margin straight; disk weakly convex, irregular; lateral lobes adorned with two brown bands, the superior one the widest. Abdomen brownish; subgenital plate triangular. Genitalia short and wide, deeply notched at apex, each lobe ending in a small tooth (fig. 71). Legs long and slender, annulated with brown. Anterior tibiae with internal foramen only; anterior metatarsi long, yellow with brown top, second and third segments blackish, the third very long and slender. Median legs a little shorter than anterior. Posterior femora feebly dilated at base, with a very long filiform apical part, adorned on external face with an oblique brown band; tibiae very long and slender, armed with 2 external and 3 internal short, slender, yellow spines; serrulation reduced to a few very small denticles on the external margin; external apical spurs very short, median and particularly supero-internal ones very long; metatarsi very long, compressed; second seg-

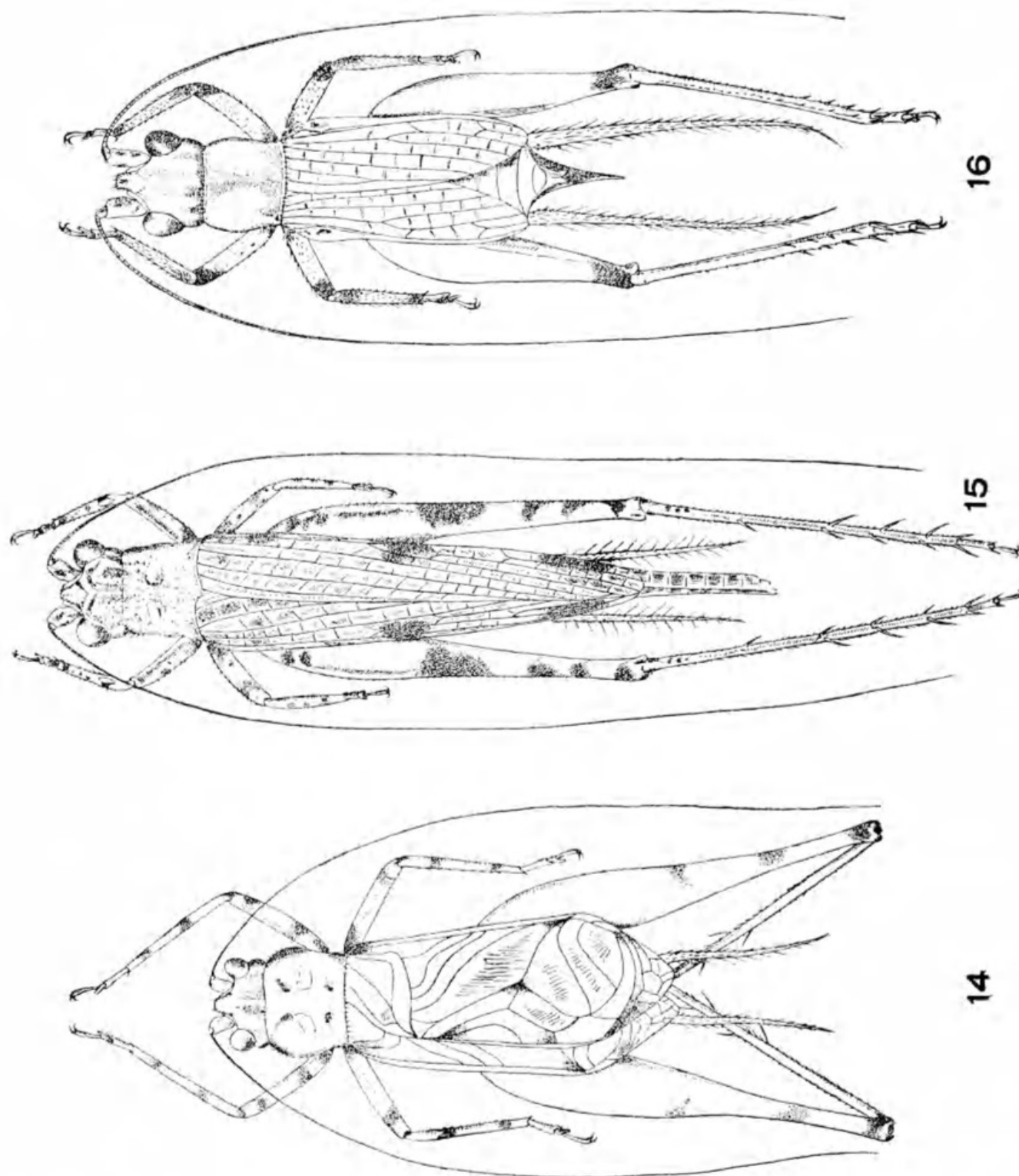


Fig. 14. *Tremellia australis* sp. n. ♂. Fig. 15. *Aphonoides hackeri* sp. n. ♂. Fig. 16. *Adenopterus norfolkensis* sp. n. ♂.

ment small, depressed, third long and slender. Elytra extending a little beyond the apex of abdomen, a little widening backwards, testaceous brown with a few brown spots; mirror as long as wide, angulate in front, rounded behind, divided by two parallel veins, the median part narrower than the other two; diagonal vein and chords rather short, the first chord subangulate, united to the mirror by two veinlets; 4 oblique veins, nearly parallel; apical field short with 3 sectors and a very wide reticulation; lateral field dark brown in its superior part; Sc with numerous branches; the space between Sc and R with about 10 parallel small veins. Wings not longer than elytra.

Length of body 10.5 mm.; pronot. 2 mm.; post. fem. 13 mm.; elytra 9 mm.

Type: Queensland: Cairns Distr. (A. M. Lea), 1 ♂ (S.A.M.).

This species is easy to recognize as it is the only Australian Grylloid with mirror divided by two veins. Besides the type specimen I have seen two other males of this species.

Queensland (F. P. Dodd), 1 ♂ (Br. M.).

Papua: Misima Is., Louisiade Arch. (Rev. R. J. Andrew), 1 ♂ (S.A.M.).

FAMILY PODOSCIRTIDAE.

This family contains a great number of species which are rather different in general shape but always have the posterior tibiae serrulated between the spines, their external apical spurs being very short and the metatarsi short. The Australian genera may be distinguished with the following key.

KEY TO THE GENERA OF *PODOSCIRTIDAE*.

- | | |
|--|-----------------------|
| 1. Elytral venation different in both sexes | 2 |
| Elytral venation similar in both sexes | 5 |
| 2. Elytra of male with a perfect mirror | 3 |
| Elytral mirror of the male incomplete | 4 |
| 3. Body, legs and antennae covered with an abundant pubescence; frontal rostrum very narrow, with converging sides; first segment of antennae somewhat depressed; last segment of maxillary palpi securiform | <i>Dolichogryllus</i> |
| Pubescence short and not so abundant; first segment of antennae not depressed, frontal rostrum wider | <i>Madasumma</i> |
| 4. Elytra of male with, in addition to the anal vein, the diagonal, the chords and an incomplete mirror (fig. 77, 78); veins rather irregular and oblique; posterior femora without spines | <i>Hemiphonus</i> |
| Elytra of male without any trace of the mirror; veins very regular and parallel; posterior femora armed with a very strong spine on the infero-external margin | <i>Hemiphonoides</i> |

5. Body of very slender shape; head flattened above; ovipositor acute without apical valves *Euscyrtus*
 Body more robust, with convex sides; ovipositor with well defined apical valves 6
6. Anterior tibiae perforated with two tympana; elytra of male with a large glandular pit *Adenelytron*
 External tympanum of the anterior tibiae obliterated; elytra of male without glandular pit *Aphonoides*

Gen. *MADASUMMA* Walker, 1869.

The males in the species of this genus have a perfect elytral tympanum with a large mirror, divided by a straight vein; 5 to 7 oblique veins; lateral field of the elytra with numerous branches of the Sc. The pronotum is rounded above; the legs are moderately long, more or less pubescent; anterior tibiae furrowed above, with two foramina, the internal often slit-like. The genitalia show very good specific characters in the male sex. Unfortunately, most of the Australian species are known only from the female sex.

The species of *Madasumma* are numerous in the Indo-Malayan region and in Madagascar; only a few have been recorded from Australia and there are some certainly remaining to be discovered.

KEY TO THE SPECIES OF *MADASUMMA* (FEMALES).

1. Face shining with a wide black band, cut by three transverse yellow lines 1. *australis*
 Face testaceous or brownish without black band 2
2. Ocelli very big, contiguous; size large, colouration dark brown 3. *ocellata*
 Ocelli smaller, more or less separated 3
3. External tympanum of the anterior tibiae reduced to a small round opening; colouration dark brown 4. *obscura*
 External tympanum of the anterior tibiae oval 4
4. Last segment of maxillary palpi long, triangular, slightly enlarged at apex (fig. 72) 5
 Last segment of maxillary palpi rather wide, somewhat securiform (fig. 73) 6
5. Frontal rostrum almost as wide as first antennal segment, which is small, scarcely longer than wide 5. *affinis*
 Frontal rostrum very narrow at apex 2. *aperta*
6. Posterior tibiae not serrated 9. *continua*
 Posterior tibiae serrated at base and between the spines 7

7. Venation quite irregular, the principal veins hardly distinct from the reticulation (fig. 74) 8. *reticulatus*
 Venation more regular, the principal veins well separated from the reticulation 8
 8. Venation quite regular with only one row of cells between the principal veins; 7 or 9 oblique sectors in the dorsal field (fig. 75); pubescence very short and weak 6. *planiceps*
 Venation not so regular with two rows of cells between the principal veins; 6 sectors in the dorsal field (fig. 76); pubescence longer 7. *hornensis*

1. MADASUMMA AUSTRALIS (Walk.).

Platydictylus australis Walker, 1869, Cat. Derm. Salt. Br. M., i, p. 87.

This species was described from the male sex; from Walker's description the following features help to characterize it:

Head as broad as the prothorax, prominent between the sockets, forepart shining, with a broad black band, including three transverse yellow lines. Fore-wings testaceous-cinereous, extending to the tip of the abdomen; space towards the tip reticulated; subcostal space with twelve oblique slightly curved veins, those towards the base very near each other, the twelfth forked. Hind-wings extending much beyond the fore-wings. Length of the body 12 lines.

Australia: (type in the British Museum).

2. MADASUMMA APERTA (Sauss., 1878).

Calypotrypus apertus Saussure, 1878, Mem. Soc. Geneve, xxv, p. 576; Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 49, fig. 101.

♀. Large species of a fulvo-testaceous colour; frontal rostrum very narrow between the antennae; ocelli rather large, separated by a space equal to their own width; last segment of the maxillary palpi twice as long as fourth, enlarged and rounded at top. Elytra with 10-11 oblique veins.

Length with elytra 30 mm.; post. fem. 14 mm.; elytra 25 mm.; ovipositor 12 mm.

Queensland: Rockhampton (Saussure's type in Brunner's collection, Wien. Mus.); Alice River (Stockholm Mus.).

3. MADASUMMA OCELLATA sp. n.

Large species of a pale brownish colouration; finely pubescent. Head as wide as pronotum, testaceous above with a dainty brownish network W-like and a spot of the same colour; base of the rostrum in front of the antennae

darkened; frontal rostrum narrow, with almost parallel margins; face short, yellow with 3 narrow transverse bands, the first along the antennal sockets, the second in the middle of the facial shield, the third along the superior margin of the clypeus and of the mandibles; clypeus with almost straight superior margin, the superior part (postclypeus) very narrow. Eyes rounded, rather projecting forwards; ocelli very big, contiguous. Antennae brown. Palpi yellowish; fourth segment of the maxillary palpi shorter than third, fifth long, feebly enlarged at apex. Pronotum one and a half times as wide as long, with feebly concave anterior margin, posterior convex; disk almost flat, a little embossed and varied with brown; lateral lobes rather high, concolorous, with straight inferior margin, rounded angles. Abdomen brown; subgenital plate widely notched with rounded lobes. Ovipositor rather long, straight; apical valves oval, finely granulate, inferior margin with 5 rounded teeth. Anterior legs wanting. Middle tibiae testaceous with 5 longitudinal brown lines at external face; tibiae thick, a little flattened above. Posterior tibiae striated with brown on the external face; tibiae armed with 5 external, 6 internal spines, serrulated at base and between the spines; apical spurs short, the supero-internal one a little longer than half the metatarsus; the latter is short, armed with 2 apical denticles and 2 on the external margin; apical spurs long, the internal equalling the long tibial spur. Elytra brown, finely pubescent, with veins a little darker than the background; dorsal field with 6 sectors rather regularly spaced, a little oblique; reticulation rather regular except towards the base where there are often two rows of very irregular cells between the veins; Sc with 10 branches. Wings a little longer than the elytra.

Length of body 21 mm.; length with wings 40 mm.; pronot. 4 mm.; post. fem. 15.5 mm.; elytra 31 mm.; ovipositor 17.5 mm.

Type: Queensland: Chillagoe Distr., Almaden (W. D. Campbell), 1 ♀ (S.A.M.).

This large species is close to the preceding but with the frontal rostrum less narrow at apex, and with very big, contiguous ocelli.

4. MADASUMMA OBSCURA Chop. 1925.

Madasumma obscura Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 48, fig. 100.

♀. Long and narrow, dark brown. Head adorned with a brown band on the occiput prolonged on to the vertex; frontal rostrum flat, rather narrow at apex; fifth segment of maxillary palpi rather long, slightly enlarged. Anterior tibiae flattened above, a long furrow on their internal face and a rather large, oval tympanum; on the external face, the tympanum is obliterated, reduced to

a very small round opening. Elytra brown with dark veins, bordered with rufous, with two feebly marked light spots along the edge. Wings extending very little beyond the elytra.

Length of body 16 mm.; length with wings 22 mm.; pronot. 3 mm.; elytra 17 mm.

This species differs from the other species of the genus in its colouration and by the external tympanum of the anterior tibiae which is hardly indicated.

Western Australia: Laura (type in the Stockholm Mus.).

5. *MADASUMMA AFFINIS* Chop. 1925.

Madasumma affinis Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 47, fig. 97.

Testaceous, feebly pubescent; face rufo-testaceous; fifth segment of maxillary palpi hardly dilated at apex. Ocelli big in both sexes, but not so much as in *ocellata*. Elytra of male light brown with a yellow humeral band; 8 oblique veins; mirror almost one and a half times as long as wide; elytra of female of the same colour, with 10 very regular, oblique sectors.

Length of body 19 mm.; length with wings 29 mm.; pronot. 3.5 mm.; post. fem. 12.5 mm.; elytra 20 mm.; ovipositor 11.5 mm.

This species seems close to *australis* Walk., but the face does not show a black band.

Queensland: Stewart River, Burdekin Distr. (S.A.M.); Mitchell River, Almaden, Chillagoe Distr., Belyanda River (A.M.); Alice River (types); Cooktown (Stockholm Mus.); Endeavour River (Paris Museum).

Northern Territory: Darwin (S.A.M.); Groote Eylandt (Br. M.).

Western Australia: North West. Aust. (A.M.); Broome, Derby, Kimberley Distr., Noonkanbah (Stockholm Mus.).

6. *MADASUMMA PLANICEPS* (Sauss.).

Calypotrypus planiceps Saussure, 1878, Mem. Soc. Geneve, xxv, p. 572, pl. 18 (lxii), fig. 9.

Yellowish; head small, flattened; frontal rostrum narrow; last segment of maxillary palpi somewhat enlarged at apex. Pronotum flattened above, narrowing in front; insertion of lateral lobes almost angular.

Length of body 26 mm.; elytra 21 mm.; post. fem. 11.5 mm.; ovipositor 13 mm.

This species rather differs from the preceding in the shape of the pronotum, which is almost that of the Indo-Malay genus *Calypotrypus* with which it constitutes a distinct link.

Queensland: Cape Yorke (Saussure's type in Brunner's collection); Cairns Distr. (A. M. Lea), (S.A.M.).

Northern Territory: Darwin (G. F. Hill), (S.A.M.).

7. *MADASUMMA HORNENSIS* sp. n.

Rather large, long, testaceous, a little pubescent. Head with 6 whitish lines; frontal rostrum very narrow between the antennae, almost triangular; face short, yellow. Eyes rounded; ocelli rather big, the anterior one in the middle of the rostrum. Antennae and palpi testaceous; fourth segment of the maxillary palpi much shorter than third, fifth feebly securiform. Pronotum with anterior and posterior margins spotted with small, brown, setigerous points; anterior margin straight, posterior one subangular, disk almost flat, covered with a white pubescence; insertion of the lateral lobes almost angulate; these lobes are concolorous with straight inferior margin. Abdomen yellowish; subgenital plate transverse with straight posterior margin. Ovipositor straight, rather long; apical valves with 6 projecting, concentric lines. Legs of the same colour as the body, covered with an abundant white pubescence. Anterior tibiae thick, perforated with two oval tympana, the internal the larger. Elytra long, narrow, testaceous with 5 brown spots on the edge; 5 branches of the cubital vein, rather distant from one another, with between them two rows of irregular cells; lateral field a little lighter than the dorsal field; Sc bearing 6 branches. Wings much exceeding the elytra.

Length of body 19 mm.; length with wings 29 mm.; post. fem. 11 mm.; elytra 19.5 mm.; ovipositor 13.5 mm.

Type: Horn Island, Torres Straits, 1 ♀ (S.A.M.).

This species differs from *planiceps* in that the elytral venation is much less close and less regular; in *planiceps* between the branches of the cubital vein there is only one row of cells.

8. *MADASUMMA RETICULATUS* sp. n.

Very close to the preceding; general colouration a little more rufous. Pronotum with insertion of the lateral lobes a little more angular; disk with a narrow yellow band on each side (the continuation of a similar band on the head behind each eye); lateral lobes with inferior margin feebly sinuated. Subgenital plate with a wide angular notch; ovipositor a little shorter and stouter, the apical valves similar to those in *hornensis*. Elytra with venation even less clear than the preceding, the principal veins being feebly visible in the middle of a wide and irregular reticulation; 6 branches to the cubital vein, the two first of which are united at base; the cells between the veins are very

irregular, but most of them are large and disposed on a single row; Sc with 6 branches.

Length of body 18 mm.; length with wings 28 mm.; elytra 20.5 mm.; ovipositor 12 mm.

Type: South Australia: Karoonda, 1 ♀ (S.A.M.).

9. *MADASUMMA CONTINUA* (Walk.).

Platyductylus continuus Walker, 1869, Cat. Derm. Salt. Br. Mus., i, p. 87.

The description of this species which I have not seen is as follows:

“*Female*. Testaceous, slender, pubescent. Head slightly elongate, very prominent between the sockets of the antennae, three blackish stripes on the vertex, united in front. Eyes dark reddish, elongated, slightly prominent. Third segment of the palpi clavate, excavated beneath, longer than the second. Antennae blackish, pale and with blackish rings towards the base; first segment slightly dilated on the inner side. Prothorax longer than broad, slightly narrower in front, with a few black speckles and with two black stripes; sides straight. Cerei a little longer than the oviduct, which is straight and has a black tip and is as long as the abdomen. Legs rather short and stout, speckled with brown; hind tibiae setose and not serrated on each side, four spines on one side alternate with the same number on the other. Fore-wings reticulated, extending much beyond the abdomen; transverse sectors oblique; a brown stripe along the scapular vein including various small pale marks, subcostal space cinereous, with irregular transverse sectors and with ten very slanting branches of the mediastinal vein, the tenth forked. Hind wings extending much beyond the fore-wings. Length of body 9 lines.”

From this description, it seems that this species must be rather close to the preceding; the denticulation of the posterior tibiae is particularly weak and this character could help to recognize the species, the type of which is not in the British Museum and is probably lost.

North Australia: In Mr. Saunder's collection.

Gen. *DOLICHOGRYLLUS* Bolivar, 1910.

DOLICHOGRYLLUS BRUNNEOVARIEGATUS sp. n.

Large species, greyish, varied with dark brown, pubescent. Head dark brown above with two narrow yellow lines behind the eyes and two other similar, but less visible lines near the middle; frontal rostrum depressed at base, very narrow at apex. Face yellowish; superior margin of the clypeus darkened. Eyes almost triangular in shape; ocelli small, the anterior one

scarcely visible in the bottom of a gutter in the middle of the rostrum. Antennae brown annulated with yellow; first segment large, depressed, brown above with a wide yellow longitudinal band, yellow beneath with brown base and apex. Palpi yellowish, brown above; fourth segment of maxillary palpi short, fifth longer than third, subsecuriform, rather wide with rounded apical angle. Pronotum transverse with convex posterior margin; disk flat with two deep impressions forwards, the median line impressed, and with two big tuberculiform protuberances on the shoulders; colouration blackish brown with a fine silvery pubescence and a lateral yellow line following the one which is on the head behind the eyes; lateral lobes concolourous with inferior margin slightly convex, anterior angle right, slightly rounded, posterior angle completely obliterated. Abdomen brown; subgenital plate widely notched, almost in a half circle, with rounded lobes. Cerci marbled with brown and yellow. Ovipositor long, rather stout, a little curved upwards, with apical valves lengthily oval, finely wrinkled and with 4 concentric ridges; their inferior margin has only the basal tooth. Legs short, pubescent, blackish spotted with yellow; anterior tibiae stout, almost quadrangular, with external tympanum rather small, almost round, internal one larger, oval with anterior margin somewhat overlapping; metatarsi very short, second segment of tarsi flattened, very wide. Posterior femora rather slender, blackish striated with yellow on external face and the inferior part yellow almost to the apex; tibiae blackish with 5 spines on each margin, denticulate at base and between the spines; metatarsi short, armed with 2 external, 1 internal denticle, the apical spurs rather long, subequal in length. Elytra long and rather narrow, finely pubescent, dorsal field greyish with yellow veins, with numerous small brown spots in the areolae and 4 large spots behind the branches of the cubital vein; transverse veinlets somewhat projecting but rather obsolete and irregular; 6 branches to Cu; lateral field blackish; Sc bearing 8 branches. Wings greyish, extending little beyond the elytra.

Length of body 20 mm.; length with wings 33 mm.; pronot. 3.8 mm.; post. fem. 13 mm.; elytra 23.5 mm.; ovipositor 15.5 mm.

Type: South Australia: Marree (L. Reece), 1 ♀ (S.A.M.).

A second female of the same species comes from Emerald (T. R. Smith); it is larger and a little darker, there is a wide black band on its face extending to the cheeks. (Length of body 23 mm.; length with wings 39 mm.; post. fem. 14 mm.; elytra 27.5 mm.; ovipositor 17 mm.).

The genus *Dolichogryllus* was erected for an African species; it is very close to *Madasumma* and probably has the same wide geographical distribution in the Old World.

Gen. HEMIPHONUS Saussure, 1878.

With the genus *Hemiphonus* we get to those species in which the elytral venation differs little in the two sexes, the tympanum of the male being more or less incomplete; the general shape is long and rather slender. The described species are from Australia and Oceania.

KEY TO THE SPECIES OF *HEMIPHONUS* (MALES).

- | | | |
|--|---------|--------------------------|
| 1. Mirror completely absent, the elytral venation consisting only of the anal vein and the oblique veins (fig. 77) | .. .. . | 2 |
| Mirror distinct although partly lost in the venation (fig. 78) | .. .. . | 3 |
| 2. Subgenital plate acute at apex | .. .. . | 1. <i>vittatus</i> |
| Subgenital plate rounded at apex | .. .. . | 2. <i>vicinus</i> |
| 3. Face smooth, yellowish | .. .. . | 5 |
| Face blackish with yellow tubercles | .. .. . | 4 |
| 4. Frontal rostrum subtruncate at apex; facial callosities weak. | | 6. <i>callosifrons</i> |
| Frontal rostrum subspinose at apex; facial callosities very strong | | 7. <i>tuberculifrons</i> |
| 5. Lateral lobes of pronotum yellowish | .. .. . | 6 |
| Lateral lobes of pronotum blackish | .. .. . | 3. <i>frontalis</i> |
| 6. Frontal rostrum with feebly converging sides; head without long hairs | .. .. . | 4. <i>gracilis</i> |
| Frontal rostrum very narrow at apex; occiput provided with a tuft of very long hairs | .. .. . | 5. <i>villosiceps</i> |

1. HEMIPHONUS VITTATUS Saussure, 1878.

Hemiphonus vittatus Saussure, 1878, Mem. Soc. Geneve, xxv, p. 621, pl. 18 (lxvii), fig. 1-6.

Fig. 77, 80.

Testaceous with a dark lateral band extending from the apex of vertex to the extremity of the elytra. Frontal rostrum very narrow in front, almost angulate. Elytral venation of male rather variable but never with a distinct mirror; on the contrary, the anal vein and the oblique veins are more or less perfectly distinct. Subgenital plate very long, ending in a point. In the female, the ovipositor is rather short and stout, its apical valves black, strongly denticulated.

North Australia: (Saussure's type).

Queensland: Brisbane (H. Hacker, ii, 1915), Rockhampton (A. M. Lea), (S.A.M.).

Polynesia: Viti Island (Saussure).

2. *HEMIPHONUS VICINUS* sp. n.

Fig. 81.

♂. In shape and general aspect close to the preceding, with very neat dark lateral bands; head almost completely blackish above. Frontal rostrum very narrow, subangulate at apex. Pronotum with very neat blackish bands which are a little undulated and lined with a whitish external line. Subgenital plate of male long but slightly rounded at apex; genitalia of the same type as *vittatus* but with the superior piece a little more denticulated, the left inferior piece short (fig. 81). Elytra with anal vein markedly sinuate but not extending to the internal edge; no indication of a mirror; 5 oblique veins.

♀. Subgenital plate strongly notched at apex with slightly rounded lobes. Ovipositor straight, thick, with oval apical valves; their external face is striated and with 4 ridges in the inferior portion, apex rounded.

Length of body ♂ 18.5 mm., ♀ 23 mm.; length with wings ♂ 27.5 mm., ♀ 32 mm.; post. fem. ♂ 12 mm., ♀ 14 mm.; elytra ♂ 19 mm., ♀ 23 mm.; ovipositor 13 mm.

Types: Queensland: Brisbane (H. Hacker, 2, iv, 1918), 1 ♂, 1 ♀ (S.A.M.)

Although very close to the preceding, this species is quite distinct by the shape of the subgenital plate of the male.

3. *HEMIPHONUS FRONTALIS* (Walk.).

Laurepa frontalis Walker, 1869, Cat. Derm. Salt. Br. M., i., p. 99.

I have seen the type of this species in the British Museum and can add some details to Walker's description:

Testaceous, slender, shining; head blackish above; abdomen with short black bands; lateral lobes of pronotum blackish. Elytral mirror of male small but quite distinct, divided by a transverse vein; apical field very long, with 5 veins, two of which are in the prolongation of the chords; diagonal vein distinct; 4 oblique veins. Length 8 lines.

North Australia: (type in the British Museum).

4. *HEMIPHONUS GRACILIS* sp. n.

Fig. 78.

♂. Rather small, slender, testaceous. Head with 6 longitudinal yellow lines; frontal rostrum short, almost as wide at top as at base, truncated at apex; face testaceous, smooth, with only a small yellow callosity under each eye,

which is succeeded posteriorly along the eye, by a narrow yellow band. Antennae thick, the first segment with internal margin thin, feebly angular. Palpi short; fourth segment of maxillary palpi very short, brown, fifth wide, securiform, yellow. Pronotum with a rather irregular yellow band on the edge; lateral lobes a little darker than the disk. Subgenital plate rather short, narrowing towards the apex which is rounded and slightly truncated. Elytra translucent; anal vein well marked, angulate; mirror rather large, angulate in front, truncated behind, divided in the middle by a straight vein; 5 oblique veins, the first of which is straight; chords short; apical field long with 4 rather distant, somewhat irregular veins; reticulation sparse and rather irregular.

Length of body 15 mm.; length with wings 22 mm.; post. fem. 8 mm.; elytra 14.5 mm.

Type: Northern Territory: Darwin (G. F. Hill), 1 ♂ (S.A.M.).

This species is characterized by its frontal rostrum which narrows somewhat in front and is truncate, by the well defined mirror, and the veins of the apical field are less close to and less regular than in the other species of the genus.

5. *HEMIPHONUS VILLOSICEPS* sp. n.

♂. Wholly brownish testaceous. Head on the occiput with a tuft of long erect hairs; vertex feebly concave, shagreened; frontal rostrum triangular, subacute at apex, with somewhat thickened margins, feebly concave surface. Face testaceous, with a yellow callosity under each eye; top of the facial shield with two deep impressions; clypeus with superior margin carinated in the shape of a Λ . Antennae thick, yellowish, with first segment large, somewhat depressed towards the internal margin. Ocelli large, the anterior in the bottom of a gutter nearly at base of rostrum. Maxillary palpi short, yellowish; fourth segment very short, fifth very wide, securiform. Pronotum transverse, with anterior margin concave, a little thickened and in the middle with a tuft of long hairs, corresponding to that of the head; lateral lobes concolorous. Abdomen yellowish; subgenital plate rather long but obtuse at apex. Elytra translucent with yellowish veins covered with very fine hairs; anal vein well marked, angulated; mirror rather well defined, strongly angulate anteriorly and posteriorly, longer than wide, divided behind the middle by a straight vein; 5 oblique veins, of which 1 is straight and 4 are curved, parallel; chords short, the two internal ones curved, parallel apical field long with 6 regularly distant longitudinal veins; Sc with 10 brown branches. Wings a little longer than the elytra.

Length of body 15.5 mm.; length with wings 22 mm.; pronot. 2.4 mm.; elytra 15 mm.

Type: Northern Territory: Groote Eylandt (N. B. Tindale), 1 ♂ (S.A.M.).

Very close to the preceding but distinct in that the frontal rostrum is almost acute at its apex, and the presence of the peculiar pubescence of the head and anterior margin of pronotum; the elytra are more pubescent, the mirror more acute posteriorly and the veins of the apical field more regular.

6. *HEMIPHONUS CALLOSIFRONS* Chopard.

Hemiphonus callosifrons Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 49, fig. 102.

This species differs from the preceding in the elytral mirror being not completely closed behind and by the face being blackish brown, shining, with yellow callosities.

Queensland: Cooktown (type in the Stockholm Mus.); Townsville (J. E. Young, ix, 1923), (Br. M.); Brisbane (H. Hacker, xii, 1917), (Q.M.); Brisbane (S.A.M.).

Northern Territory: Darwin (S.A.M.).

7. *HEMIPHONUS TUBERCULIFRONS* Chopard.

Hemiphonus tuberculifrons Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 51.

Fig. 79.

Very close to the preceding but with frontal rostrum almost acute and the facial callosities replaced by small very prominent tubercles. In the male elytron, the chords are more strongly bent but this character seems rather variable.

Western Australia: Kimberley Distr. (type in the Stockholm Mus.).

North Australia: Alexandria, W. Stalker, iv, 1906 (Br. M.).

Central Australia: Horn Exploration, 1894, camp. 23, Hermannsburg, (H. A. Heinrich), Deep Well (K. Johannsen), (S.A.M.).

Northern Territory: Alice Springs, G. Barrett, 1929, McDonnell Downs (S.A.M.).

Gen. *HEMIPHONOIDES* nov.

Shape very long and narrow; elytral venation as in *Hemiphonus* without trace of a mirror; posterior femora armed with strong tooth on the infero-external margin.

Type of the genus: *Hemiphonoides armatus* sp. n.

HEMIPHONOIDES ARMATUS sp. n.

Fig. 82.

♂. Rather large, very long, colouration of a rather uniform testaceous brown, finely pubescent. Head small, cubital, adorned with 4 yellowish lines on the occiput; vertex sloping, with a wide brown band between the eyes; frontal rostrum very narrow with parallel margins, with a faint brown longitudinal furrow. Face lengthened, yellow. Eyes lengthened dorsally and ventrally; lateral ocelli very big, at base of rostrum, the distance between them scarcely equalling their length; anterior ocellus absent. Antennae and palpi yellowish; maxillary palpi with fourth segment a little shorter than third, fifth rather narrow, securiform. Pronotum as long as wide, with feebly concave anterior margin, posterior margin a little sinuated; disk convex, yellowish brown with a few dark spots near the anterior and posterior margins, with an abundant recumbent pubescence; lateral lobes rather low, with straight inferior margin, much rounded anterior angle. Abdomen brownish above, yellowish beneath; supero-anal valve small, truncated at apex; subgenital plate long, triangular, a little rounded at apex. Genitalia very long, in the shape of a narrow tongue with two processes obliquely directed downwards (fig. 82). Anterior and median legs short, yellowish. Anterior tibiae strongly dilated at base, perforated with a narrow foramen, situated in the bottom of a deep depression, with swollen anterior margin; metatarsus very short, second segment of the tarsus widely flattened. Posterior femora long and narrow, a little spotted with brown at external face; infero-external margin finely denticulated and armed about the apical third with a large, feebly curved tooth; internal margin also finely denticulated; inferior face with a rounded swelling a little before the apex. Posterior tibiae armed with 7 internal, 5 external spines, denticulate between the spines, external spurs very short; internal spurs a little longer, particularly the superior one; metatarsi short, armed with 2 apical denticles and a small one on the external margin, the apical spurs rather long, particularly the internal one. Elytra long and narrow, testaceous brown, finely pubescent; anal vein and axillaries well marked, the anal vein curved at right angle; there is no trace of a mirror, the dorsal field being occupied by 7 almost longitudinal and equidistant veins, of which 4 are branches of the cubital vein and the other 3 are united at base on the anal knot; transverse veinlets rather scarce, forming very long areolae; lateral field rather low; Sc bearing 10 branches. Wings extending little beyond the elytra.

Length of body 21 mm.; length with wings 30 mm.; pronot. 3.2 mm.; post. fem. 13 mm.; elytra 20.5 mm.

Type: Bisiatabu, Pt. Moresby, N.G. (W. N. Lock), 1 ♂ (S.A.M.).

Although evidently allied to *Hemiphonus*, this insect is very remarkable in the armature of the posterior femora, a character which is quite exceptional in the Grylloidea. It is possible that the female sex be without the strong tooth of the external margin but it is almost certain that the unusual denticulation of both inferior margins of the femora exists in this sex.

Gen. MUNDEICUS nov.

The species of this new genus are characterized by the anterior tibiae being perforated both on the internal and the external face; maxillary palpi with last segment rather large, securiform; subcostal vein of elytra with several oblique branches inserted along the whole length of the vein. This last character differentiates this genus from *Anisotrypus* Sauss. and *Munda* Stål, in which the branches of the subcostal vein are few, parallel to the vein and inserted near the base. From *Podoscirtus* Serv., it differs in the shape of the last segment of maxillary palpi which is much broader and more or less securiform; the type of this last genus is the enormous Grylloid *Podoscirtus crocinus* Serv., from Madagascar.

Type of the genus: *Podoscirtus longifemur* Chop.

KEY TO THE SPECIES OF *MUNDEICUS*.

- | | |
|--|----------------------|
| 1. Last segment of maxillary palpi strongly securiform, nearly as wide as long; general shape rather short; frontal rostrum not very narrow at top | 2. <i>brevicauda</i> |
| Last segment of maxillary palpi feebly securiform, distinctly longer than wide; general shape more slender; frontal rostrum very narrow at apex | 2 |
| 2. Light testaceous brown with a lateral yellow band; pronotum transverse; Sc of elytra bearing 12 branches | 1. <i>longifemur</i> |
| Yellowish brown with a brown lateral band; pronotum almost as long as wide; Sc of elytra bearing 6 branches | 3. <i>tindalei</i> |

1. *MUNDEICUS LONGIFEMUR* (Chop.)

Podoscirtus longifemur Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 51, fig. 104-105.

Rather slender; light testaceous brown with opaque yellow band on the sides of the pronotum and along the humeral edge of elytra. Occiput with 4

very narrow light lines; frontal rostrum almost triangular; face short, whitish. Lateral lobes of pronotum light yellow, disk rufous yellow, pubescent, with a lateral, yellow, somewhat callous band, bordered inside with brown. Abdomen yellowish; subgenital plate of male very long, triangular. Legs yellowish; posterior tibiae armed on each margin with 5 small spines, black at apex.

Length of body 13 mm.; length with wings 19 mm.; post. fem. 8.5 mm.; elytra 12 mm.

Western Australia: Broome (type in the Stockholm Mus.).

2. MUNDEICUS BREVICAUDA (Chop.).

Podoscirtus brevicauda Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 52, fig. 106-107.

Very close to the preceding; lateral yellow bands of the pronotum not so well marked. Maxillary palpi shorter with four segment very short, fifth scarcely longer than wide. Posterior femora not so slender. Elytra rufous without lateral yellow band. Ovipositor very short, straight with apical valves rounded, with 3 projecting ridges.

Length of body 15 mm.; length with wings 21 mm.; post. fem. 8 mm.; elytra 14 mm.; ovipositor 5.2 mm.

Western Australia: Kimberley Distr. (type in the Stockholm Mus.).

3. MUNDEICUS TINDALEI sp. n.

Fig. 53.

♂. Rather large, yellowish brown with a rather well defined brown band on the head, behind the eyes and on the sides of the pronotum and elytra; covered with a rather abundant white pubescence. Head rather long; frontal rostrum very narrow at apex, feebly furrowed. Face very short, triangular, yellow. Eyes rounded; lateral ocelli rather large, oval, anterior one very small, in the middle of the rostrum. Antennae rather stout, yellowish with a few brown rings; first segment large, a little depressed, adorned above with two small brown lines, uniting in front. Palpi yellow, short; fourth segment of maxillary palpi shorter than third, rather strongly widening at apex, fifth a little longer than third, feebly securiform. Pronotum a little wider than long, anterior margin straight, posterior feebly convex, both mottled with small brown spots; disk almost flat, feebly furrowed in the middle, yellowish brown with two lateral brown bands and a weak brown tinge along the median furrow; insertion of the lateral lobes subangular; these lobes yellow with very

small brown spots, their inferior margin straight. Abdomen brownish above, yellow beneath; subgenital plate long, subacute at apex. Cerci yellow. Genitalia long and narrow; superior piece lamellate, gently narrowing towards the apex which is feebly truncated with a median short point (fig. 83); the inferior pieces are as long as the superior ones, united in a lamellate piece which is overlapped by the decumbent sides of the superior plate. Legs yellow, pubescent, feebly mottled with brown. Anterior and medium legs rather short; femora feebly compressed; anterior tibiae a little dilated at base, perforated with two large, oval tympana; tarsi very short, the metatarsi almost equalling the third segment. Posterior femora slender, feebly enlarged at base, adorned with two weak brown longitudinal lines on the external face; tibiae depressed above, serrulated and armed on each margin with 5 very small spines, scarcely longer than the denticles; external apical spurs very short; internal spurs a little longer, particularly the superior; metatarsi very short with short and stout apical spurs, armed above with 2 small external denticles, 1 internal. Elytral rather narrow, lengthened, light brownish with a feeble brown humeral band, feebly pubescent; dorsal field with 8 rather regular, oblique veins, 5 of which emerge from the cubital vein; transverse veinlets numerous, irregular, more or less anastomosed, forming narrow, long areolae; lateral field a little lighter than the dorsal field; Sc with 6 oblique branches, which are regularly spaced. Wings rather exceedingly surpassing the elytra.

Length of body 14 mm.; length with wings 21 mm.; post. fem. 9.5 mm.

Type: Queensland: Stewart River (Hale and Tindale, Jan., 1927), 1 ♂ (S.A.M.).

Gen. *APHONOIDES* Chopard, 1940.

This genus differs from *Aphonomorphus* in the shape of the last segment of the maxillary palpi which is long, rather narrow, with apex truncated, instead of short and strongly securiform. They are numerous in the Austro-Malay region; only a few have been recorded from Australia and there certainly remains quite a number to be discovered.

KEY TO THE SPECIES OF *APHONOIDES*.

- | | |
|--|-------------------|
| 1. General shape very much lengthened, elytra at least five times as long as wide, with straight sides | 2 |
| General shape much shorter, elytra hardly four times as long as wide, with feebly convex sides | 4. <i>brevis</i> |
| 2. Face black | 5. <i>hackeri</i> |
| Face yellow | 3 |

- 1.
- APHONOIDES AUSTRALIS*
- (Walk.).

Aphonomorphus debilis Chopard, 1925, Ark. f. Zool, 18A, No. 6, p. 54, fig. 108-109.

Fig. 84.

Length of body 12 mm.; length with wings 19 mm.; post. fem. 9 mm.; elytra 12.5 mm.; ovipositor 8 mm.

Queensland: Malanda (types of *debilis* in the Stockholm Mus.); Atherton, Yarrabah, Cedar Creek, Cape Yorke (Stockholm Mus.); Cairns, Normanton (S.A.M.); Brisbane (Q.M.); Almaden, Chillagoe Dist. (A.M.).

Northern Territory: Roper River, Groote Eylandt (S.A.M.).

2. *APHONOIDES* *ANGUSTISSIMUS* (Chop.).

Aphonomorphus angustissimus Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 55, fig. 110.

Extremely slender, yellowish; fifth segment of maxillary palpi rather large and wide. Abdomen narrow; subgenital plate of the male rather large, much

rounded at apex. Ovipositor short, almost straight, with small, rounded apical valves, the superior ones almost smooth, with 2 rounded teeth on inferior margin and 2 acute teeth at apex. Posterior femora long and slender. Elytra very narrow; dorsal field with 4 straight veins, the 4th being twice furcate. Wings rather exceedingly surpassing the elytra.

Length of body 11.5 mm.; length with wings 14 mm.; post. fem. 8 mm.; elytra 10.5 mm.; ovipositor 5 mm.

Queensland: Yarrabah (types in the Stockholm Mus.), Cape Yorke, Alice River (Stockholm Mus.); Cairns (S.A.M.).

Northern Territory: Groote Eylandt (N. B. Tindale), (S.A.M.).

3. *APHONOIDES LIVIDUS* sp. n.

♂. Size medium; rather slender; colouration very pale with a brown band near the external edge of the dorsal field of elytra; covered with a whitish pubescence. Head pale yellow, a little flattened above; frontal rostrum with feebly projecting sides, strongly converging forwards, apex very narrow. Face yellow with a few small brown spots in the superior part of the facial shield. Eyes a little lengthened dorso-ventrally, projecting feebly forwards; ocelli small, almost of the same size, the anterior one in the middle of the rostrum. Antennae yellow, even the two first segments. Palpi yellow; fourth segment of maxillary palpi short, fifth large, rather narrow, feebly securiform in shape. Pronotum one and a quarter times as wide as long, with anterior margin straight, posterior sinuate; disk feebly convex, yellowish with a whitish, close pubescence; lateral lobes long, whitish, with inferior margin almost straight, anterior angle strongly rounded. Abdomen and cerci pale yellow; subgenital plate short, widely rounded at apex. Legs yellowish, pubescent; anterior tibiae feebly dilated, perforated with a larger oval tympanum on the internal face. Posterior femora moderately long, rather strongly dilated at base, tibiae armed with 5 external, 6 internal, yellow with black top spines; the external margin bears numerous denticles before the first spine, and 1 or 2 such denticles between the spines; on the internal margin, they are much less numerous at base and one only between the first and the second spines; metatarsi short, with long apical spurs and 3 external, 1 internal denticle above. Elytra long and narrow, yellowish with a brown humeral band which is interrupted in the middle; dorsal field finely pubescent, with 6 feebly oblique, very regularly spaced veins; lateral field whitish, almost translucent; Sc with 6 branches between which there are a few transverse, yellow veinlets. Wings rather longly caudate.

Length of body 10 mm.; length with wings 16.5 mm.; elytra 11 mm.; post. fem. 7 mm.

Type: Western Australia (Dr. H. Basedow), 1 ♂ (A.M.).

This species is close to the preceding but is not so narrow and has a different colouration; it is also very close to a Bornean species *A. pallens* Chop., in which the subgenital plate is very long.

4. *APHONOIDES BREVIS* sp. n.

General shape shorter than in the preceding species; testaceous brown with the transverse veinlets of elytra yellow, somewhat thickened. Head as wide as a pronotum; vertex declivous, a little flattened; frontal rostrum somewhat darkened, feebly narrowing in front, with apex truncated, a little narrower than first antennal segment. Face short, triangular, yellow. Eyes rounded, moderately projecting; ocelli small, disposed in a triangle. Antennae yellowish with a few small brown rings. Palpi yellowish; fourth segment of maxillary palpi shorter than third, fifth equalling third, feebly securiform with convex superior margin. Pronotum a little wider than long, narrowing very weakly in front, with anterior margin straight, posterior rather convex, subangulate; disk convex, yellowish brown; lateral lobes with slightly convex inferior margin, angles rounded, yellowish, lighter than the disk. Abdomen yellowish brown. Cerci yellow. ♂. Subgenital plate rather short, almost rounded at apex. Genitalia very short, forming a triangular piece, deeply and widely notched at apex. ♀. Subgenital plate short and wide, with feebly notched apex. Ovipositor rather short and stout; apical valves narrow, lengthened, rugulose at external face, ending in 3 strong, rounded teeth. Legs yellowish, pubescent; anterior tibiae short, rather strongly swollen at base, perforated on the internal side with a rather large, oval tympanum; tarsi very short. Posterior femora moderately dilated at base, gently tapering to the apex; tibiae armed with 5 external, 6 internal spines, rather strongly denticulated at base and between the spines; apical spurs short. Elytra a little longer than the body, rather wide, finely pubescent, greyish testaceous with more or less yellowish transverse veinlets; principal veins very feebly oblique, regularly spaced, 7 in number of which 3 are free and 4 are branches of the cubital vein; transverse veinlets forming long, rather regular areolae; lateral field almost translucent; Sc with 5 branches.

Both sexes are quite similar, the male being only a little more slender than the female.

Length of body ♂ 11.5 mm., ♀ 12 mm.; length with wings ♂ 16 mm.,

♀ 17 mm.; post fem. 7.4 mm.; elytra ♂ 10.2 mm.; ♀ 10.8 mm.; ovipositor 5.6 mm.

Types: Queensland: Cairns Distr. (A. M. Lea), 1 ♂; Nanango Distr. (H. Hacker, 26, iii, 1928), 1 ♀ (Q.M.).

This species looks very much like *australis* but it is not so slender.

5. *APHONOIDES HACKERI* sp. n.

Fig. 15, 85-86.

♂. Long and slender; greyish varied with light brown, rather pubescent. Head as wide as pronotum in front, short, adorned above with 5 irregular, brown bands, the median being wide; frontal rostrum feebly concave, very narrow at apex; face dark brown, shining with a yellow spot at top of the facial shield; cheeks yellow with two narrow, parallel, brown bands behind the eye. Antennae brown, annulated with yellow; first segment large, yellowish, with irregular brown lines above. Palpi yellow; maxillary palpi short, particularly the fourth segment; fifth segment equalling the second and third together, feebly enlarged at apex, with convex superior margin, apex obliquely truncated. Pronotum a little wider than long, narrowing feebly in front; anterior margin feebly convex, posterior margin subangulate; disk yellowish grey, spotted with brown, the median line yellow bordered with brown; anterior margin adorned with a few larger brown points; lateral lobes not very high, with straight inferior margin, with a brown band on the edge and numerous small brown points. Abdomen yellowish grey; subgenital plate rather large, rounded at apex. Genitalia very short, notched at apex (fig. 85, 86). Anterior and median legs short, pubescent, yellowish grey, spotted with brown; inferior face of the tibiae wholly brown. Posterior femora long and narrow, spotted with brown; posterior tibiae pubescent, armed with 4 external, 5 internal spines, finely serrulated between the spines, brown with whitish spots above; external apical spurs very short; internal spurs of medium size, the superior one the longest; metatarsi short; compressed. Elytra long and narrow, greyish spotted with brown in the areolae; dorsal field with 3 free veins and 4 branches of the cubital vein; Sc with 7 branches. Wings speckled with brown, rather longly surpassing the elytra.

Length of body 12.5 mm.; length with wings 19 mm.; post. fem. 10 mm.; elytra 12 mm.

Type: Queensland: Brisbane (H. Hacker, 13, iii, 1918), 1 ♂ (Q.M.).

A very distinctive species in its colouration and the abundant pubescence on the legs.

Gen. *ADENOPTERUS* nov.¹

General shape short; frontal rostrum narrow at apex but feebly truncated; fifth segment of maxillary palpi rather wide but scarcely wider at apex than at base. Anterior tibiae perforated on both sides; posterior femora short and stout. Elytra scarcely extending to the apex of abdomen; venation similar in both sexes; radial vein of the male with at base a strong glandular deformation. Wings scarcely exceeding the elytra in length.

Type of the genus: *Adenopterus norfolkensis* sp. n.

This genus differs from *Aphonoides* not only in the presence of two tympana on the anterior tibiae and of a glandular pit on the male elytra, but also in the shorter general shape and the wings which are hardly longer than the elytra. It is also close to *Mundecius* from which it differs by the short general shape, the specialized elytra and the branches of Sc which are only 2 or 3 in number.

ADENOPTERUS NORFOLKENSIS sp. n.

Fig. 16, 87, 88, 89.

♂. Small, general shape short and wide; uniformly rufo-testaceous. Head as wide as pronotum, testaceous with 5 darker bands on the occiput; vertex sloping, a little flattened, narrow at top, almost triangular. Antennae and palpi rufo-testaceous; the three last segments of the maxillary palpi almost equal in length, the last one wide, feebly securiform. Eyes rounded; ocelli very small, the anterior one in the middle of the rostrum, in the bottom of a furrow. Pronotum a little wider than long, with parallel sides, anterior margin very slightly concave, posterior margin straight; lateral lobes darker than the disk, with feebly convex inferior margin, posterior angle rounded, anterior a little more than 90°. Abdomen brown above, shining, rufous beneath; subgenital plate large, ending in a long triangular, plate bearing at apex a small, narrow projection (with parallel sides). Genitalia formed of a large tectiform superior piece, ending in a small erected tooth, and two inferior slender hooks (fig. 89). Cerci rather long, testaceous. Legs rather long; anterior and medium femora a little compressed, yellowish with feebly darkened apex; anterior tibiae perforated with a small, oval tympanum on the external face and a smaller one partly obliterated on the internal face; tarsi very short, the metatarsi hardly longer than the second segment, which is strongly depressed. Posterior femora short and stout; tibiae slender, armed with 6 small spines on each superior margin, finely serrulated at base and between the spines;

¹ From ἀδην, gland, owing to the glandular specialization on the male elytra.

external apical spurs short, median a little longer than the other two; internal spurs also short but the longest is the superior; metatarsi short, armed above with 2 internal, 3 external denticles. Elytra scarcely extending to the apex of the abdomen, of a translucent greyish; dorsal field rather narrow; cubital vein with two branches, Cu 1 a little thickened and strongly curved at base; anal and axillary veins almost longitudinal, parallel; transverse veinlets few in number, yellow, with 4 oblique branches; radial vein with at base a strong flexure in the middle of which is placed a small glandular cupule (fig. 87, 88); between R and Sc, there is a series of yellow, thick veinlets. Wings not longer than the elytra.

♀. A little larger than the male with the brown parts of the head, pronotum and femora more rufous. Subgenital plate a little narrowing at apex, which is feebly notched. Ovipositor rather long, slender, slightly bent upwards; apical valves long and narrow, subacute at apex, with external face finely grained, inferior margin feebly undulated with a strong basal tooth. Elytra with venation very similar to that of the male, except for the radial vein which is simply deviated at base, without glandular pit; Sc also less strongly undulated.

Length of body ♂ 9.6 mm., ♀ 11 mm.; post. fem. ♂ 6.5 mm., ♀ 7.6 mm.; elytra ♂ 6.8 mm., ♀ 8 mm.; ovipositor 9 mm.

Types: Norfolk Island (A. M. Lea), 1 ♂, 1 ♀ (S.A.M.).

A small series from the same locality as the types, composed of 4 males, 3 females, shows that the species is very constant in its characters.

Gen. *EUSCYRTUS* Guérin, 1844.

The species of this genus are easy to recognize by their very slender shape and by the ovipositor of the female which is completely without specialized apical valves. A few species only are known inhabiting the Indo-Australian region, Madagascar and Africa; it is interesting to note that one species has been described by Saussure from Mexico.

KEY TO THE SPECIES OF *EUSCYRTUS*.

- | | |
|---|------------------------------|
| 1. Frontal rostrum wider than the first segment of antennae, almost square; elytra much shorter than the abdomen | 1. <i>hemelytrus</i> |
| Frontal rostrum narrower than the first antennal segment of antennae; much longer than wide; elytra extending almost to the apex of abdomen | 2 |
| 2. Size smaller (12 mm.); ovipositor strongly curved | .. 2. <i>concinus</i> |
| Size larger (15 mm.); ovipositor almost straight | .. 3. <i>australicus</i> |

1. *EUSCYRTUS HEMELYTRUS* (Haan).

Gryllus (*Encoptera*) *hemelytrus* Haan, 1842, Temm. Verhandl., Orth., p. 231, pl. 20, fig. 2.

Euscyrtus hemelytrus Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 56.

Small and slender with a very distinct pattern. Head brown above, adorned with 4 light lines; pronotum dark brown with two lateral yellow bands. Elytra greyish with a yellow humeral band, covering only the four first abdominal tergites; exposed portion of abdomen with two submedian brown lines, sixth tergite with two brown spots.

Length of body 9 mm.; post. fem. 7 mm.; elytra 3 mm.; ovipositor 8 mm. Queensland: Bellenden Ker (Stockholm Mus.).

Northern Territory: Darwin (G. F. Hill); Groote Eylandt (N. B. Tindale), (S.A.M.).

This species is very common and widely distributed in India, the Malay Archipelago and as far as Japan.

2. *EUSCYRTUS CONCINNUS* (Haan).

Gryllus (*Encoptera*) *concinus* Haan, 1842, Temm. Verhandl., Orth., p. 231, pl. 20, fig. 3.

A little larger than the preceding but with a much less distinct pattern, often almost completely testaceous; very distinct from *hemelytrus* in the shape of the frontal rostrum.

I have not seen an example of this species from Australia but I think it will be found in Queensland, as it is common and as widely spread as the preceding.

3. *EUSCYRTUS AUSTRALICUS* Chopard.

Euscyrtus australicus Chopard, 1925, Ark. f. Zool., 18A, No. 6, p. 56.

This species is close to the preceding, being of a rather uniform testaceous colouration with a very narrow frontal rostrum. The elytra extend almost to the apex of abdomen; they are almost transparent with the lateral field a little darker and the veins rufous brownish; wings longer than the elytra. But the shape of the ovipositor is very different from both preceding species; this organ is a little flattened, almost straight, only feebly curved downwards near the extremity.

Length of body 15 mm.; length with wings 16 mm.; post. fem. 9.5 mm.; elytra 9 mm.; ovipositor 14 mm.

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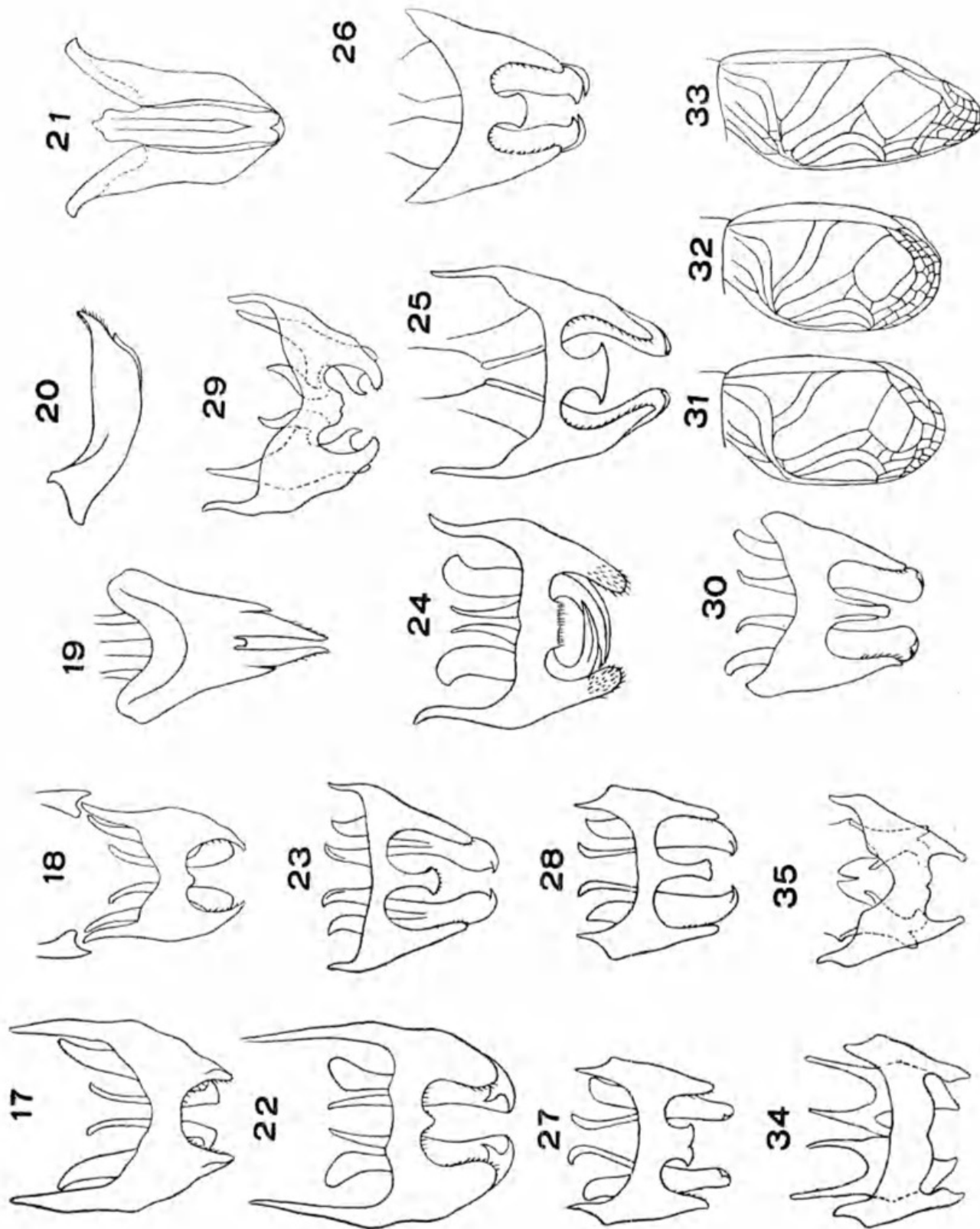


Fig. 17-35. Genitalia; 17. *Cephalogryllus australis*; 18. *C. laeviceps*; 19. *Anurogryllus australis*; 20. *Gryllulus communis*, side view; 21. Same, dorsal view; 22. *G. lepidus* (from Beverley, W.A.); 23. *G. lineiceps*; 24. *G. fulviceps*; 25. *G. comparatus*; 26. *G. scutellatus*; 27. *G. parvulus*; 28. *G. minusculus*; 29. *G. mediotarsis*; 30. *G. kempi*; 31. Right elytron of *G. parvulus*; 32. Same of *G. minusculus*; 33. Same of *G. kempi*; 34. Male genitalia of *Eugrylloides diminutus*; 35. Same of *Loxoblemmus pallens*.

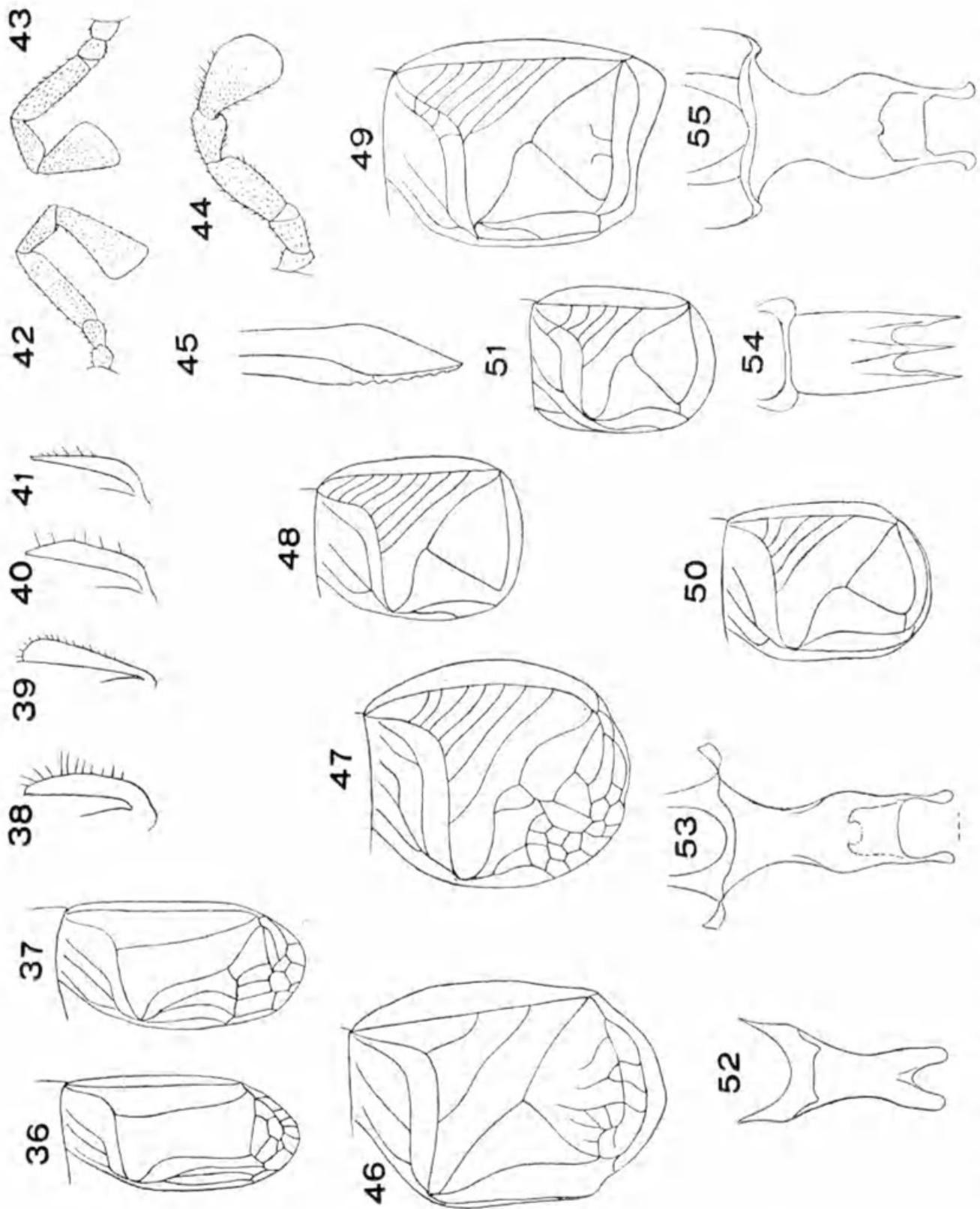


Fig. 36-45. 36. Elytron of *Pteronemobius regulus* O; 37. Same, *Pt. ornaticeps*; 38. Process of anal valves (paraprocts) *Ornnebius curtisipalpis*; 39. Same, *O. howensis*; 40. Same, *O. brevithorax*; 41. Same, *O. nigromaculatus*; 42. Maxillary palpus, *O. nigromaculatus*; 43. Same, *O. curtisipalpis*; 44. Same, *O. fascipes*; 45. Apex of ovipositor, *O. denticauda*. Fig. 46-51: Elytra of males of *Endacusta*: 46. *oligoneura*; 47. *angulifrons*; 48. *mjobergi*; 49. *major*; 50. *australis*; 51. *minor*. Fig. 52-55: Genitalia of males of *Endacusta*: 52. *australis*; 53. *irrorata*; 54. *major*; 55. *mjobergi*.

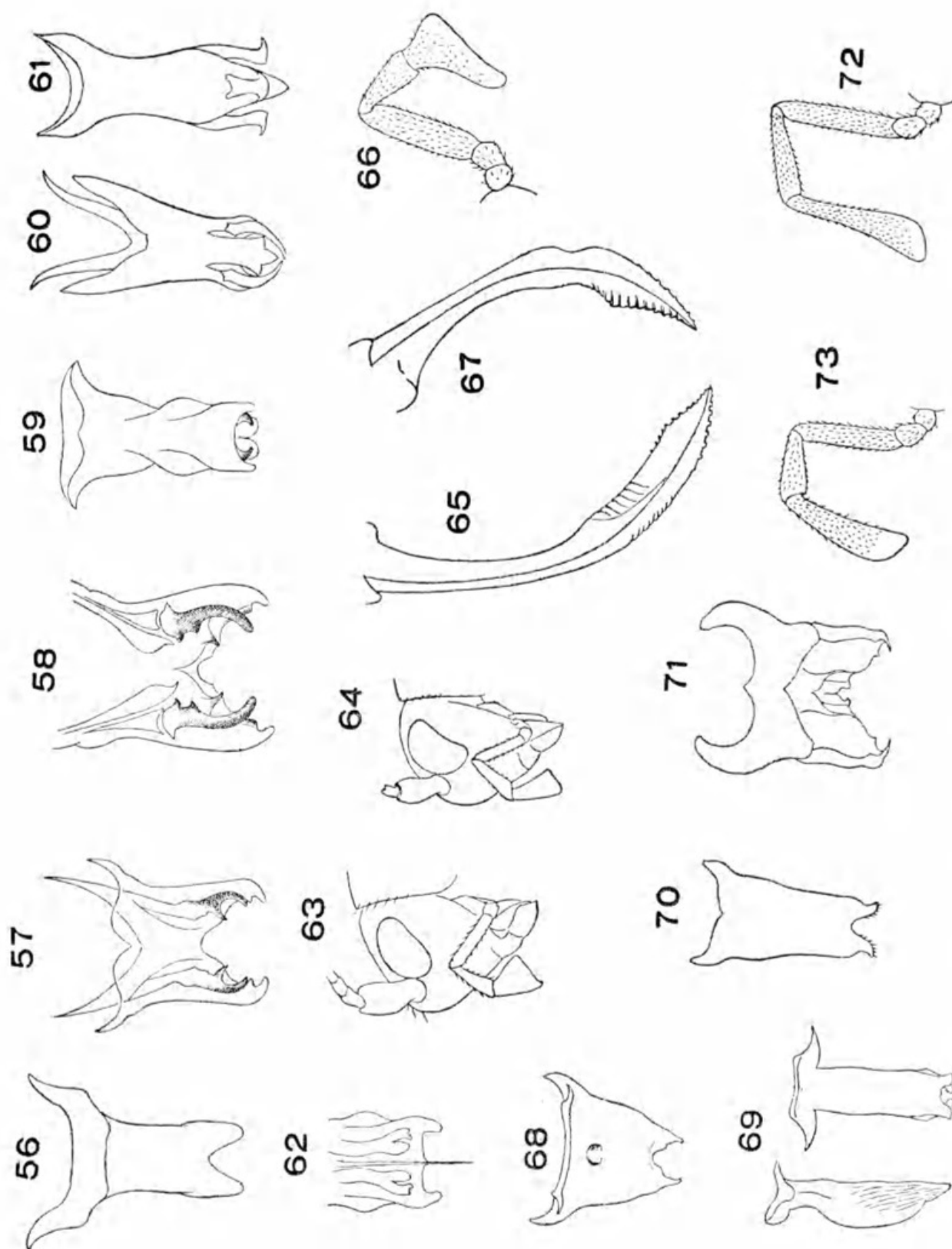


Fig. 56-73. Genitalia of males of *Endacusta*: 56. *minor*; 57. *angulifrons*; 58. Extremity of same from beneath; 59. *cycloptera*; 60. *oligoneura*; 61. *Endotaria aptera*; 62. Extremity of same from beneath; 63. Head of *Cyrtorhophoides*; 64. Head of *Anaxipha*; 65. Ovipositor, *Cyrtorhophoides planifrons*; 66. Maxillary palpus of *Metiochodes tindalei*; 67. Ovipositor of same; 68. Male genitalia of *Lebinthus bifasciatus*; 69. Male genitalia of *Salmanites obscurifrons*, from above and lateral view; 70. Same of *Europea unicolor*; 71. Same of *Tremellia australis*; 72. Maxillary palpus of *Madasumma affinis*; 73. Same of *M. hornensis*.

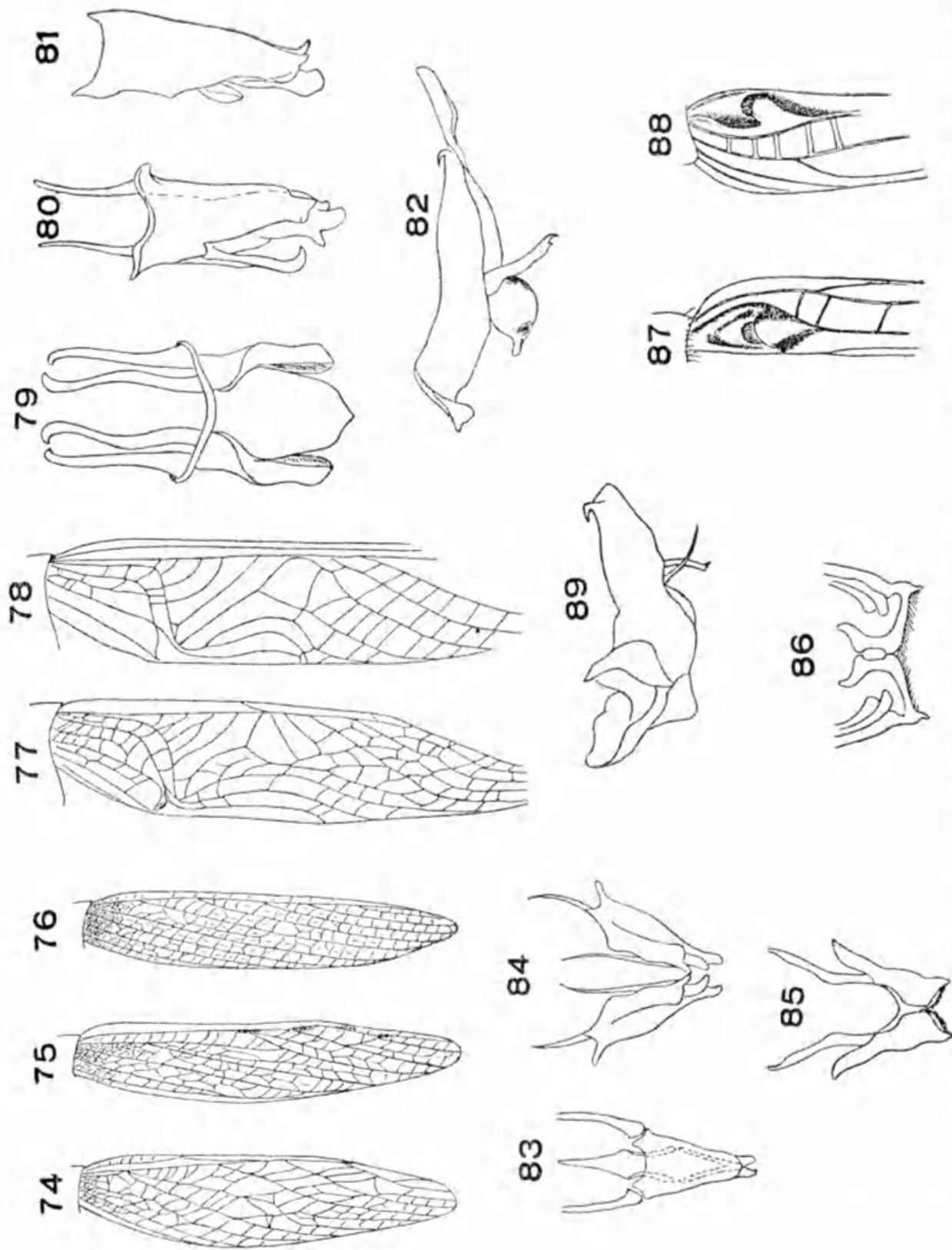


Fig. 74-89. Right elytron of *Madasumma reticulata*; 75. Same of *M. planiceps*; 76. Same of *M. hornensis*; 77. Same of *Hemiphonus vittatus*; 78. Same of *H. gracilis*; 79. Genitalia of *H. vittatus*, lateral view; 80. Same of *H. vittatus*; 81. Same of *H. vittatus*, lateral view; 82. Same of *H. vittatus*; 83. Male genitalia of *Mundicicus tindalei*; 84. Same of *Aphonoides australis*; 85. Same of *A. hackeri*; 86. Extremity of same from beneath; 87. *Adenopterus norfolkensis*, base of right elytron from above; 88. Same of left elytron, lateral view; 89. Genitalia of *Adenopterus norfolkensis*.

APPENDIX.

DESCRIPTIONS OF PAPUAN SPECIES.

The collections of the various Australian Museums contain a certain number of new species from New Guinea, which are described below. Some of these species probably occur in North Australia.

XABEA PODOSCIROIDES sp. n. (Oecanthidae).

♀ *Holotype*. Size medium, rather slender; yellowish white. Head long, depressed between the eyes. Antennae and palpi yellowish white. Pronotum a little longer than wide backwards; disk strongly embossed, the median line furrowed except near the anterior margin where it has a small carina; on each side of this carina 6 or 7 small elevated ridges are visible; lateral lobes with a lobiform enlargement a little behind the middle. Abdomen yellowish. Cerci short and rather stout. Ovipositor short, straight, with apical valves oval, subacute at apex; their external face with 4 strong prominent ridges. Legs whitish; anterior tibiae strongly dilated at base, perforated with two tympana, the internal very large, the external smaller; posterior tibiae without spines. Elytra whitish, almost transparent, rather wide; dorsal field with a very wide, rather irregular reticulation; Cu with 4 branches; lateral field rather wide, Sc with 4 branches; R very distant from Sc, the space between them occupied by rather regular transverse veinlets. Wings rather markedly surpassing the elytra.

♂ *Allotype*. Head and pronotum as in the female; head adorned with a few small rufous spots behind the eyes and a small band of the same colour between them. Elytra rather narrow, adorned with 7 very light brown spots, 3 in the angles of the triangle formed by the first chord, the diagonal vein and the antero-internal margin of the mirror, the other 4 in the mirror itself; this is a little longer than wide, with right anterior margin, divided in the middle by a straight vein. Cerci short.

Length of body ♂ 10.5 mm., ♀ 11 mm.; length with wings ♂ 16 mm., ♀ 17.5 mm.; elytra ♂ 8 mm., ♀ 9.5 mm.; post. fem. ♂ 5.5 mm., ♀ 6 mm.; ovipositor 5.5 mm.

Types: N.E. Papua: Mt. Lamington, 1,300–1,500 ft. (C. T. McNamara), 1 ♀ (S.A.M.); Torres Straits, Murray Island (A. M. Lea), 1 ♂ (S.A.M.).

This species is remarkable in the shape of the lateral lobes of pronotum and particularly in the ovipositor of the female, the apical valves of which

differ from the other Oecanthidae and are quite similar to those of the Podocirtidae.

PENTACENTRUS NIGRESCENS sp. n. (Pentacentridae).

♂ *Holotype*. Blackish, feebly pubescent. Head almost flat above, with fine transverse ridges between the eyes and two longitudinal punctate bands on the occiput; frontal rostrum almost as wide as the first antennal segment at apex; face very short, blackish. Eyes transversally lengthened; ocelli small, subequal. Palpi black; fourth segment of maxillary palpi shorter than third and fifth, the last one triangular in shape. Pronotum one and a quarter times as wide as long, with anterior margin straight, posterior strongly rounded disk very weakly convex, blackish, unicolorous; lateral lobes strongly rounded in front. Abdomen and cerci black. Genitalia formed of a thick superior piece which is deeply notched at apex, forming two lobes almost quadrangular in shape with smooth superior margin; in the bottom of the notch a small projection arises, divided at apex into two sharp points. Legs blackish; anterior tibiae with a large internal tympanum. Posterior femora unicolorous, finely pubescent; tibiae with rufous spines; posterior metatarsi very long with finely serrulated superior margin. Epiproct (supero-anal valve) subrectangular in shape, rather strongly narrowing backwards, nearly smooth, furrowed in the middle; subgenital plate large, a little narrower at apex, with rounded angles. Elytra of a very dark brown above, with almost black lateral field. Wings smoky, somewhat iridescent.

Length of body 7.5 mm.; length with wings 10.5 mm.

Type; N.E. Papua: Mt. Lamington, 1,300–1,500 ft. (C. T. McNamara), 1 ♂ (S.A.M.).

PENTACENTRUS SOROR sp. n.

♂ *Holotype*. Very close to the preceding; larger. Ocelli larger; antennae thick, with the first two segments brown; the remainder yellow with a wide brown portion about the middle. Legs and cerci yellowish. Epiproct almost square, with apical margin a little sinuated and thickened; its surface finely and regularly punctuated with two oblique prominent lines near the base, with a tuft of stiff bristles. Genitalia of the same type as the preceding species, strongly sclerified, in the shape of two large triangular plates, the superior margin of which is armed with three small teeth; apical part divided into two small acute teeth. Elytra with anal vein not quite so straight as in *nigrescens*; cubito-anal space relatively narrower, with less numerous, not so regular and less sinuated transverse veinlets.

Length of body 9.5 mm.; length with wings 13 mm.

Type: N.E. Papua: Mt. Lamington (C. T. McNamara), 1 ♂ (A.M.).

PENTACENTRUS PAPUANUS sp. n.

♂ *Holotype*. Blackish with translucent spots on the elytra. Head black; flattened, declivous above, feebly punctate and provided with long, rufous, sparse hairs; frontal rostrum a little narrowing at apex, nearly as wide as the first antennal segment. Face black, short and wide. Eyes rounded, projecting; lateral ocelli rather big, round, anterior very small, in the middle of the rostrum. Antennae broken. Palpi black; fifth segment of maxillary palpi triangular, obliquely truncate. Pronotum a little wider than long, black, shining with rufous, erect hairs; posterior margin sinuate; disk feebly convex, furrowed in the middle; lateral lobes blackish, with convex inferior margin, much rounded anterior angle. Abdomen blackish; epiproct almost square with rounded angles. Genitalia feebly chitinized, composed of two large rectangular plates, with rounded angles, with at their apical margin 5 or 6 long recumbent bristles and 3 still longer, obliquely erect bristles near the internal margin; between the two plates, at base, there is a small furcate projection. Anterior and median legs rufous; anterior tibiae perforated with a large internal tympanum. Posterior legs wanting. Elytra blackish brown with translucent spots; a large spot at base between Sc and M; several smaller spots in the same space, farther from the base; another rather large spot near the base between the cubital and anal veins, and 3 small ones towards the apex of the same space. The veins separated by very irregular distances, R rather markedly sinuate and remote from M; this last vein very close to the cubital, which is furcate a little before the apex; An also very remote from Cu, curved at base; the whole surface of the elytron is filled with very small tubercles, some times very distant from one another, except along the principal veins, where they are very close. Wings longer than the elytra, blackish.

♀ *Allotype*. Similar to the male; elytral venation almost the same with anal vein not so strongly curved at base. Ovipositor rather short, with apical valves long, scarcely wider than the stem, lanceolate.

Length of body ♂ 7.5 mm., ♀ 8 mm.; length with wings 12 mm.

Types: N.E. Papua: Mt. Lamington (C. T. McNamara), 1 ♂, 1 ♀ (S.A.M.)

ORNEBIUS LEAI sp. n. (Mogoplistidae).

♂ *Holotype*. Small; testaceous covered with grey and brown scales. Head with frontal rostrum as wide as first antennal segment; face very short, testaceous marbled with brown. Maxillary palpi yellow with a few brown spots;

fourth segment very short, fifth short and wide, triangular, a little darkened at apex. Pronotum as long as wide backwards, feebly narrowing in front, with anterior margin straight, posterior margin feebly convex. Abdomen brown above, yellow beneath. Cerci yellow, spotted with brown; process of the anal valves yellow, oblique, feebly flattened, rounded but not thickened at apex. Anterior and median femora covered with white and brown scales; tibiae with two rather neat brown rings; posterior tibiae spotted with brown, metatarsi brown at apex. Elytra widely discovered, whitish, a little milky, with 3 large brown spots along the posterior margin and one in the internal angle of the mirror; this one is as long as wide, almost regularly rounded on the external and posterior margins, with widely open anterior and internal angles; diagonal vein rather long.

Length of body 6 mm.; pronot. 2 mm.; post. fem. 3.2 mm.; elytra 2 mm.

Rather close to *O. angustifrons* Chop., from Sarawak, but with shorter pronotum and elytra more completely freed.

Type: Fiji: Ovalau (A. M. Lea, June, 1924), 1 ♂ (S.A.M.).

ANAXIPHA PAPUANA sp. n. (Trigonidiidae).

♀ *Holotype*. Size relatively large for the genus; wings very long; colouration light testaceous brown. Head wider than the pronotum in front, very convex above; frontal rostrum short, rounded, almost as wide as the first antennal segment. Face yellow with a median longitudinal brown band. Eyes rounded, rather projecting. Antennae and palpi yellowish; fourth segment of the maxillary palpi shorter than third, fifth equalling the third in length, in the shape of a long triangle. Pronotum a little narrowing in front, convex above, provided with long brown bristles; lateral lobes concolorous, with strongly rounded anterior angle. Abdomen brownish, pubescent. Ovipositor short, feebly curved, with apical valves wide, occupying almost half the total length, limited at base by two transverse ridges, rather strongly denticulated towards the apex. Legs of the same colour as the body, pubescent; anterior tibiae perforated with two tympana; posterior femora adorned with a longitudinal brown band. Elytra testaceous; veins of the dorsal field almost longitudinal, weakly prominent; lateral field strongly widening at base, with 4 veins, the third and fourth of which are strongly curved. Wings much longer than the elytra, a little darkened.

Length of body 5.5 mm.; length with wings 12 mm.; post. fem. 5.5 mm.; elytra 4 mm.; ovipositor 2.2 mm.

Type: N.E. Papua: Mt. Lamington, 1,300–1,500 ft. (C. T. McNamara), 1 ♀ (S.A.M.).

This species is rather close to *A. bifasciata* Chop., from New Guinea but with longer wings and posterior femora, adorned with one longitudinal band only. It is also close to *longealata* Chop., from Sarawak, which is smaller with concolorous legs.

Gen. GRYLLAPHONUS nov. (Podoscirtidae).

Shape rather short; head flattened above, strongly punctuated; frontal rostrum very narrow at apex; fifth segment of maxillary palpi large and rather wide, securiform. Pronotum very strongly punctuated. Anterior tibiae perforated on the internal face with an oval tympanum, external face non-perforated. Elytra with almost longitudinal, close veins, finely striated between the veins; Sc with two branches emerging from the base.

Type of the genus: *Gryllaphonus striatipennis* sp. n.

GRYLLAPHONUS STRIATIPENNIS sp. n.

♀ *Holotype*. Rather uniformly brown. Head as wide as pronotum; vertex sloping, flat with a strong punctation and a small Y-shaped carina, uniting the ocelli; frontal rostrum very narrow at apex, which is feebly rounded. Face very long, brown, smooth. Eyes dorso-ventrally lengthened, narrowing downwards; ocelli small, disposed in a triangle, the anterior one in a small depression in the middle of the rostrum. Antennae yellowish, with first segment large, a little flattened, brownish. Palpi yellow; fourth segment of the maxillary palpi much shorter than third, fifth large, rather wide, with regularly convex superior and apical margins. Pronotum brown, strongly and regularly punctuated; anterior margin very feebly concave, posterior margin sinuated, both strongly lined; disk weakly convex, the punctuation almost regular except on the usual impressions which are feebly visible; lateral lobes concolorous with inferior margin slightly ascending forwards; the punctuation is replaced by a dainty reticulation. Abdomen brown above, yellowish beneath; subgenital plate small, narrowing and a little truncated at apex. Ovipositor rather short, straight; apical valves punctuated at their external face with a denticulated ridge near the apex. Legs short. Anterior femora testaceous brown; tibiae darkened above, perforated on their internal face with rather large, oval tympanum; external face feebly depressed without a tympanum; median femora a little darker than the anterior ones. Posterior femora wide, brown with a yellow ring a little before the apex; tibiae serrulated, armed with 3 external, 4 internal spines; external apical spurs very short; median and superior internal spurs a little longer, subequal in length; metatarsi short, yellow with apex brown, armed above with 2 apical spines and 3 on the external margin. Elytra rather long, testaceous brown, shining; dorsal field with

very close veins, Cu with 4 branches, Cu p divided at base, 5 anal and axillary veins; between the principal veins, there are rather weak false veins and a fine transverse striation; transverse veinlets forming very long areolae. Lateral field high, with the same aspect as the dorsal field; Sc with two branches rising from the base. Wings feebly surpassing the elytra, brown, finely pubescent.

♂ *Allotype*. Similar to the female. Subgenital plate long, feebly narrowing towards the apex which is rounded, deeply furrowed. Genitalia long and narrow, weakly notched at apex.

Length of body 10 mm.; length with wings 14 mm.; post. fem. 6.2 mm.; elytra 10 mm.; ovipositor 6.5 mm.

Types: Fiji: Taveuni (A. M. Lea), 1 ♀, 1 ♂ (S.A.M.).

This species has quite a number of characteristic features: dense punctuation, close veins and striation of the elytra, short and stout posterior femora. The new genus in which it belongs can be placed close to *Munda* and *Aphonoides*.

MUNDA PUNCTIPES sp. n.

♀ *Holotype*. Rather large, testaceous brown, a little spotted with yellow, finely pubescent. Head adorned with 4 yellowish, feebly visible bands on the occiput; vertex sloping, feebly concave; frontal rostrum truncated, a little narrower than the first antennal segment. Face brown, shining; clypeus spotted with yellow. Eyes a little lengthened dorsally and ventrally, narrowing downwards; ocelli very small, disposed as a triangle, the anterior one in the middle of the rostrum in the bottom of a small gutter. Antennae testaceous with a few small yellow rings. Palpi yellowish; maxillary palpi with fourth segment a little shorter than third, fifth equalling the third, rather narrow, feebly securiform with superior and apical margins almost regularly convex. Pronotum a little wider than long, narrowing feebly in front; anterior margin slightly convex, posterior margin a little sinuated; disk weakly convex, testaceous brown with a few yellow spots, chiefly along the anterior margin; lateral lobes concolorous with inferior margin convex, rounded angles. Abdomen brown above, yellowish beneath; subgenital plate large, with posterior margin truncated, angles rounded. Ovipositor slender with superior valves short, oval, rounded at apex, their inferior margin with 3 rounded teeth, their external face finely tuberculated with a strong ridge before the apex; inferior apical valves much longer than the superior, bidentate at apex and with a tooth before the basal furrow. Legs rather short, pubescent. Anterior and median femora pale brown with yellowish base and three feebly distinct bands of the same colour; tibiae brownish with two rows of 3 or 4 yellow spots on the

superior face; anterior tibiae with two oval tympana; metatarsi very short. Posterior femora yellowish with two wide transverse brown bands, apex also darkened. Elytra brown, finely pubescent, with a series of irregular yellow spots along the humeral edge; transverse veinlets yellow, particularly near the base; veins almost longitudinal and equidistant; Cu divided near the apical third, its internal branch divided at base; Au and two Ax regularly distant; transverse veinlets rather numerous, forming rather long areolae; lateral field with Sc giving off two longitudinal branches, rising very near the base. Wings feebly surpassing the elytra.

♂ *Allotype*. Very similar to the female; head darker without light bands on the occiput. Subgenital plate very long, very narrow at apex, covered with long hairs.

Length of body 12.5 mm.; length with wings 20 mm.; post. fem. 9.5 mm.; elytra 13.5 mm.; ovipositor 9 mm.

Types: N.E. Papua: Mt. Lamington, 1,300–1,500 ft. (C. T. McNamara), 1 ♀ (S.A.M.); Stephansort, Astrolabe Bay, Biro, 1897, 1 ♂ (Paris Mus.).

This species is very close to *M. javana* Sauss., with frontal rostrum narrowed and more regularly convex supero-apical margin of the fifth segment of maxillary palpi.

MUNDA QUADRIMACULATA sp. n.

♂ *Holotype*. Size medium; black with 4 callous yellow spots on the elytra. Head cubiform, black with scarce white hairs; frontal rostrum a little narrowing at apex, narrower than first antennal segment. Face dark brown, shining. Eyes very large, projecting, lengthened dorsally and ventrally; ocelli small, the anterior one in the middle of the rostrum. Antennae black. Maxillary palpi with first three segments dark brown, fourth shorter than third, widening, yellowish brown, fifth large, securiform, yellowish. Pronotum rather strongly narrowing in front, as long as wide in front, with anterior margin almost straight, sinuate, posterior margin yellow; disk irregularly convex, blackish, feebly punctate and pubescent; lateral lobes higher than long, black with yellowish inferior margin, angles rounded. Abdomen black above, yellow beneath, except the subgenital plate, which is brown. Cerci rather thick, brown with a wide yellow ring near the base. Elytra dark brown with whitish extremity, finely pubescent, with two large callous yellow spots on the humeral edge, near the base, and two other such spots near the middle; veins almost longitudinal, equidistant; transverse veinlets few in number; lateral field black with almost straight veins, Sc with 3 branches; surface between the veins finely striated. Wings long, slightly iridescent. Legs blackish with a

yellow spot at apex of the femora; anterior tibiae strongly swollen, perforated with two large, oval tympana. Posterior femora with a large, basal spot, yellow striated with brown on the external face; a little before the apex, there is an oblique yellow spot covering both external and internal faces.

♀ *Allotype*. A little larger than the male, general colouration lighter, pronotum feebly spotted with rufous. Subgenital plate feebly notched at apex. Ovipositor rather long, a little curved upwards; apical valves almost rounded, with tuberculated external face, with 3 small teeth towards the apex of the inferior margin.

Length of body ♂ 9 mm., ♀ 11 mm.; length with wings ♂ 13 mm., ♀ 15.5 mm.; post. fem. ♂ 5.7 mm., ♀ 7.2 mm.; elytra ♂ 9 mm., ♀ 10.5 mm.; ovipositor 7.5 mm.

Types: N.E. Papua: Mt. Lamington (C. T. McNamara), 1 ♂, 1 ♀ (S.A.M.).

This species is a little more slender than the preceding and very easy to recognize by its colouration.

MUNDA PUNCTATA sp. n.

♂ *Holotype*. Rather long and narrow; shining dark brown with head, pronotum and legs rather strongly punctate. Head flattened above, vertex and frontal rostrum very strongly punctate; frontal rostrum triangular with very narrow, but rounded top. Face as long as wide, rufous brown, shining. Maxillary palpi yellowish brown, with fourth segment short, fifth rather large and wide, securiform. Eyes big and projecting; ocelli very small. Pronotum narrowing rather strongly in front, with anterior margin straight, posterior margin subangulate; disk feebly convex, furrowed on the median line, shining, finely punctate; lateral lobes long, with slightly convex inferior margin, angles rounded, colour and punctuation as on the disk. Abdomen light brown above, yellowish beneath. Subgenital plate long, narrowing and rounded at apex. Genitalia with superior part deeply notched at apex and a tooth between the sides of the notch; inferior part formed of two acute points turned inwards. Anterior and median legs a little lighter than the body; anterior tibiae strongly swollen, perforated with a large oval tympanum either side. Elytra a little longer than the abdomen, rather narrow; veins longitudinal and equidistant; transverse veinlets scarce, forming very long areolae; lateral field low with close, longitudinal veins; Sc giving off one branch only rising from the base. Wings extending a little farther than the elytra, brown.

♀ *Allotype*. Similar to the male; general colour a little lighter, the head and pronotum tinged with rufous, femora rather strongly darkened; frontal

rostrum not so narrow at apex and not so coarsely punctuated. Posterior femora short and thick, with a rather strong punctuation, forming oblique streaks on the external face; metatarsi short with a large denticle before the apical spur on each superior margin. Subgenital plate with rounded posterior margin. Ovipositor rather long, a little curved; supero-apical valves rounded, rather strongly tuberculated and armed with 2 inferior teeth; inferior valves longer than the superior ones, denticulated.

Length of body ♂ 9 mm., ♀ 11 mm.; length with wings ♂ 12.5 mm., ♀ 15 mm.; elytra ♂ 8.5 mm., ♀ 10.5 mm.; post. fem. ♀ 6 mm.; ovipositor 10.5 mm.

Types: N.E. Papua: Mt. Lamington (C. T. McNamara), 1 ♂, 1 ♀ (A.M.).

This species has almost exactly the same aspect, colour, punctuation and shape of the vertex as *Gryllaphonus striatipennis* but with a less close elytral venation and with anterior tibiae perforated with two large tympana.

MUNDA BASIMACULATA sp. n.

♂ *Holotype*. Size medium, rather wide; colouration brown with a large whitish spot at base of the elytra. Head cubical, brownish with 6 short yellowish lines on the occiput; vertex flat; frontal rostrum with rather strongly converging sides, apex truncated, much narrower than the first antennal segment. Face shining brown with darker spots on the facial shield along the margins of the clypeus and of the antennal sockets (in the paratype, the face is wholly black). Eyes large, rounded; ocelli rather large, almost equal, the anterior in the middle of the rostrum. Antennae light brown with a few small yellow rings, the first two segments brown, the first with a longitudinal yellow line in the middle above. Palpi yellowish with a slight brown tinge above; fourth segment of the maxillary palpi shorter than third, fifth equalling third, rather narrow, feebly securiform. Pronotum one and a quarter as wide as long, with straight anterior margin, posterior sinuate; disk rather strongly convex, uniformly rufous brown, pubescent; anterior and median femora with a few light spots; anterior tibiae perforated with two oval tympana. Posterior femora rather short and thick, a little darkened at apex, their external face striated and with a vague brown, transverse median band; posterior tibiae strongly hairy, armed with 4 spines on each margin; metatarsi very short. Elytra a little longer than the abdomen, rather wide, finely pubescent; their colour a light brown with a large basal whitish spot and another spot of the same colour about the middle on the humeral edge; dorsal field with 6 feebly oblique, very regularly separated veins; lateral field high, of the same colour as the dorsal field; Sc with 3 branches. Wings a little longer than the elytra.

♀ *Allotype*. As the male but a little larger. Subgenital plate wide, rather widely notched at apex. Ovipositor rather long, straight, with apical valves small, oblong, the superior ones rugulous, with 2 wide, rounded inferior teeth, the inferior valves denticulate, not surpassing the superior ones.

Length of body ♂ 12.5 mm., ♀ 15.5 mm.; length with wings ♂ 18.5 mm., ♀ 22 mm.; post. fem. ♂ 8.6 mm., ♀ 10 mm.; elytra ♂ 12 mm., ♀ 15.5 mm.; ovipositor 10.2 mm.

Types: New Guinea: Erinna, Astrolabe Bay (Biro, 1896), 1 ♂, 1 ♀ (Paris Mus.); Paratype: British New Guinea: Koitaki (E. A. Packley, 5-12, v, 1921), 1 ♂ (A.M.).

This species has the same general shape as *M. javana* (Sauss.) but with a different colouration.

MUNDA MELANOCEPHALA sp. n.

♂ *Holotype*. Rather small and slender; light brown with head nearly black. Head short, rather strongly flattened between the eyes; frontal rostrum with strongly converging sides, very narrow at apex. Face short, blackish, shining. Eyes big, projecting; ocelli very small, the anterior one scarcely visible in the bottom of a gutter at base of rostrum. Antennae broken, the first two segments brown, base of the flagellum yellow. Palpi yellowish; fourth segment of the maxillary palpi short, fifth rather wide, securiform. Pronotum light brown, with anterior margin straight, yellowish, a little thickened; posterior margin sinuate, also lighter than the disk; lateral lobes long, with inferior margin almost straight, very dark brown except for the light margins. Abdomen brownish above, yellowish beneath; subgenital plate long, narrowing, subangulate at apex. Cerci yellowish. Anterior and median femora yellowish; tibiae darkened on the superior face; anterior tibiae perforated with two oval tympana, the internal one very large. Posterior legs wanting. Elytra rather narrow, light brown above, with very dark sides; dorsal field with 5 oblique, regularly spaced veins; Sc with 2 branches, rising from the base.

♀ *Allotype*. Similar to the male but a little less slender; head and lateral field of the elytra not so dark. Ovipositor rather long and slender; apical valves oval, finely ridged on their external face, apex with 2 rounded teeth.

Length of body ♂ 8 mm., ♀ 9 mm.; length with wings ♂ 13 mm., ♀ 15.5 mm.; elytra ♂ 8.5 mm., ♀ 10 mm.; ovipositor 7.5 mm.

Types: N.E. Papua: Mt. Lamington (C. T. McNamara), 1 ♂, 1 ♀ (S.A.M.)

MUNDA FLAVOLINEATA sp. n.

♂ *Holotype*. Size medium; shape rather long. Head short; frontal rostrum with strongly converging margins, very narrow at apex, scarcely half as wide as the first antennal segment; head blackish above with a wide yellow band between the eyes, on the occiput; another yellow band, V-shaped, on the frontal rostrum. Eyes big, projecting; ocelli small, the anterior one in the bottom of a depression, in the middle of the rostrum. Face black, shining. Antennae rufous with first two segments blackish. Palpi yellowish; fourth segment of maxillary palpi short, fifth large, securiform. Pronotum one and a fifth times as wide as long, very feebly narrowing in front; anterior margin weakly convex, posterior margin sinuate; disk yellowish, darkened along the posterior margin; lateral lobes long, yellow. Abdomen brown above, yellow on the sides and beneath. Subgenital plate long, rounded at apex. Cerci yellow. Genitalia short, deeply notched at apex. Anterior and median legs yellowish with tibiae darkened above; anterior tibiae perforated with two tympana. Posterior legs wanting. Elytra finely pubescent, dark brown above with a yellow band on the humeral edge; veins almost longitudinal, very regularly spaced; lateral field brown, Sc with 2 branches rising from the base. Wings longer than the elytra.

Length of body 11 mm.; length with wings 16 mm.; elytra 10 mm.

Type: N.E. Papua: Mt. Lamington Distr. (C. T. McNamara), 1 ♂ (A.M.).

This species is close to *M. javana* (Sauss.) but more slender. The colouration is rather characteristic, particularly on the head, but it must be very variable, as in all the species of this group. I have seen three specimens of the species, one of which is darker than the type with head and pronotum almost black, elytra of which is darker than the type with head and pronotum almost black, elytra very dark with a well defined humeral yellow band and a basal spot of the same colour divided by small black veins.

APHONOIDES BICOLOR sp. n.

♂ *Holotype*. Rather slender; head and pronotum rufous, elytra very dark brown. Head a little flattened; frontal rostrum as wide as first antennal segment. Eyes feebly projecting; ocelli small. Antennae and palpi rufous; fifth segment of the maxillary palpi short, securiform. Pronotum much wider than long, with posterior margin sinuated, wholly rufous; disk feebly convex, pubescent. Abdomen brownish above, rufous beneath; subgenital plate rather long, subacute at apex. Legs rufous; anterior tibiae rather strongly dilated at base, perforated with a large oval tympanum on the internal face;

posterior femora relatively long and slender. Elytra long, dark brown above, yellowish on the lateral field; dorsal field finely pubescent, with 7 regularly spaced, feebly oblique veins; 4 of these veins are branches of Cu; transverse veinlets rather regular, forming lengthened areolae; lateral field rather low; Sc with 8 branches which are regularly disposed along the whole length. Wings feebly surpassing the elytra.

Length of body 11 mm.; length with wings 17 mm.; post. fem. 8.5 mm.; elytra 13 mm.

Type: N.E. Papua: Mt. Lamington (C. T. McNamara), 1 ♂ (S.A.M.).

This species has rather characteristic colouration; it differs from most of the species of the genus *Aphonoides* in the shape of the fifth segment of the maxillary palpi which is short, subsecuriform.

PHISIS BREVIPENNIS sp. n. (Tettigonioidea, Conocephalidae).

♂ *Holotype*. Rather small, greenish. Head rounded, smooth; vertex ending in a sharp point. Face long; forehead large, smooth, feebly convex. Eyes strongly projecting, rounded. Antennae and palpi yellowish. Maxillary palpi long and slender, with fifth segment longer than fourth, feebly enlarged and obliquely truncated at apex. Pronotum a little depressed with truncated anterior margin, posterior convex; disk with two feebly marked longitudinal yellow bands and a deep furrow towards the anterior fourth; lateral lobes very low with straight inferior margin, rounded angles. Abdomen feebly compressed; tenth tergite convex, with posterior margin roundly notched in the middle; epiproct very small; paraprocts vertically lengthened with rounded superior margin. Subgenital plate narrowing backwards, feebly notched; no styles. Cerci curved, strongly enlarged at base, very narrow in the middle, again widening and depressed in their apical half. Legs long and slender, of the same colour as the body. Anterior femora armed on their inferior margins with 5 external, 4 internal very long spines; genicular lobes with a small spine; tibiae armed with 7 spines on each inferior margin, the three apical of which decrease in length; tympana in the shape of a split with strongly dilated margins. Middle femora with 3 external spines, and 1 internal spine at base; tibiae armed above with 2 internal spines, beneath with 5 internal and 6 external spines. Posterior femora strongly dilated at base but with a long, filiform, apical part; infero-external margin with 6 small spines in the apical half, internal margin without spines; genicular lobes armed with a small spine; posterior tibiae long and slender, armed above with 18–20 spines on each margin, beneath with 12 external, 7 or 8 internal spines. Elytra very narrow,

extending only little beyond the abdominal extremity; anterior margin sinuated, posterior margin straight; Sc and R veins very close, a little sinuated; M and Cu shortly united at base, the median vein straight; transverse veinlets rather numerous and regular. Wings as long as the elytra.

♀ *Allotype*. Similar to the male. Elytra very narrow, subacute at apex, with longitudinal veins; M and Cu united rather lengthily at base. Ninth abdominal tergite large, feebly dilated, with concave posterior margin; tenth short, deeply notched at apex. Cerci close at base, a little depressed, slightly curved. Subgenital plate narrowing and feebly notched at apex. Ovipositor long, compressed, straight as far as the middle, rather strongly curved after; superior valves strongly dilated at base.

Length of body ♂ 12 mm., ♀ 16 mm.; pronot. ♂ 3 mm., ♀ 3.5 mm.; ant. fem. ♂ 6.5 mm., ♀ 6.8 mm.; post. fem. ♂ 11 mm., ♀ 11.5 mm.; post. tib. ♂ 12.2 mm., ♀ 13.6 mm.; elytra ♂ 11 mm., ♀ 13.5 mm.; ovipositor 9 mm.

Types: Dunk Island (H. Hacker, Aug. 1927), 1 ♂, 1 ♀ (Q.M.).

This species is quite distinctive with its short elytra and can be compared only with *P. africana* Karny, from the Cameroons.



Chopard, L. 1951. "A revision of the Australian Grylloidea." *Records of the South Australian Museum* 9, 397–533.

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