

The Dermaptera of the Naturhistoriska Riksmuseum, Stockholm

Part IV

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Abstract

Although a preliminary inspection of the collection of Dermaptera from the Naturhistoriska Riksmuseum suggested that it could be dealt with in about three parts of the present series (Brindle, 1966), the collection has proved to be much richer and more varied than expected, and it is now thought that the series can be completed in five parts. Eleven new species have been described in the first three parts, and these parts included the species most easily determined. The rest of the collection contains the more difficult species, and descriptions of further new species will be necessary.

One difficulty in the taxonomy of the Dermaptera is due to some descriptions of new species giving no clear indication of how these species can be distinguished from closely related species. Another difficulty is the lack of adequate generic keys, which can lead to closely related species being placed in widely separated genera. A third difficulty is the varying interpretation placed on some species by various authors, this being due to inadequate descriptions or lack of figures, and this difficulty can, finally, only be resolved by an examination of the types, if these are still in existence. In the present series of papers the interpretations are largely those of Burr and Hincks, both former authorities on the order, except where recent research has shown that these interpretations are incorrect. For the reasons given above, any new species described in the present series of papers are separated from closely related species by means of keys, or the distinguishing characters clearly stated; figures are given; species are based on males; and additional keys are included where desirable so that the results of recent research can be shown.

In the present paper an opportunity has been taken to re-describe and figure certain types of the species described by Stål and by Mjöberg, which are in the main collection of the Naturhistoriska Riksmuseum. Five new species are described. Keys are also given to all the species of the New World Carcinophorinae, in connection with the description of certain new species, and a key to the genera of the Indo-Australian Labiidae is included. Keys to some Australian Labiidae are also given. These keys are almost entirely new,

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and represent the only adequate means of identification for the genera and species included; the keys to genera have been considerably modified from those in Burr (1911) since additional genera have now been described, and the characters used in Burr (1911) are not now satisfactory. The key to Group 4 of the New World Carcinophorinae forms part of the key to the genus *Carcinophora* in Brindle (1967 b).

CARCINOPHORIDAE

Carcinophorinae

In the present collection are a number of specimens of this subfamily from the Neotropical Region, but there are no complete keys to the species of the various genera, except that to the genus *Carcinophora* in Brindle (1967 b). This key is provisional since there is some doubt about the identity of some species, together with the synonymy. The uncertainty regarding the identity of many species of this subfamily is mainly due to lack of details regarding the male genitalia, which are the only certain means of distinguishing many species. Burr (1915) re-defined the World genera of this subfamily on the bases of the male genitalia, so that from this date it is not strictly possible to assign any new species to a genus, unless the male genitalia are known. In spite of this, most new species have been described, since 1915, without details of the male genitalia being given, and a number have been described from single female specimens. The assignment of these species to genera has obviously been based on external characters, which are not usually adequate, and as a result there has been some confusion about the identity of the species subsequently.

Until the male genitalia of the types of these species have been described, and males associated with those species of which the types are females, the assignment of these species to genera can only be provisional. In the meantime, identification of these species can be attempted only by using external characters. The generic arrangement of this subfamily in Popham and Brindle (1966) is provisional, pending the examination of the genitalia of more species. In the present paper the generic assignments of the New World Carcinophorinae follows Reichardt (1968) unless a more recent examination of the male genitalia has shown that certain species have been incorrectly assigned.

The three new species of this subfamily described in the present paper have been incorporated in a key, based on external characters, to all the known species of the Carcinophorinae from the New World. The species whose male genitalia are known, and thus are correctly assigned to genera, are indicated by means of an asterisk (*): the other species are not necessarily in their correct genus. A key to the genera based on the male genitalia is also given. The terminology of the parts of the genitalia follows that of Hincks (1956). The female type of *peregrina* Mjöberg, is re-described and associated with a male, whose description is also given. The synonymy of the various species is not included but this is given in Reichardt (1968).

The Carcinophorinae includes the majority of the species of the Carcinophoridae, and the genera are not too well defined externally. Many external characters occur only in males, and include the presence or absence of

dorsal longitudinal ridges on the last tergite; the number of distal abdominal tergites bearing lateral longitudinal ridges; and the degree of puncturation of the abdominal tergites. The females lack the dorsal and the lateral ridges, and the puncturation of the abdominal tergites is usually much less than in males of the same species. The antennal segments are remarkably uniform in relative lengths and structure, and the most useful external characters of both sexes include the shape of the pronotum, and the degree of development of the elytra and wings. This development is not thought to be subject to much variation in general; although the African species, *Euborellia cincticollis* (Gerstaecker) has been reported to be variable in this respect, present studies suggest that more than one species is involved. Colour is useful only in a few species, since most are uniformly dark, and the size can be useful as a guide, but since shrinkage occurs during drying, this character must be used with reserve. Species described from fresh specimens will always be recorded as being longer than if the same species was described from dried material — *Euborellia peregrina* is a good example of this feature. The recorded sizes of the species are given in the keys, the first measurement being the body length, and the second measurement which is preceded by the letter "f", being the length of the forceps. Finally the recorded distribution of the species is useful, and the country or countries from which the original material was described, or was subsequently accurately recorded, are included.

Key to genera, based on male genitalia

1. Parameres short and broad (figs. 2. 7—10); virga not visible; distal lobes usually with denticulated pads (fig. 2) *Euborellia* Burr
- Parameres much longer than broad (fig. 6) 2
2. Virga short, associated with sclerites; parameres acuminate or membranous at tips *Metalabis* Burr
- Virga long, sometimes not visible, not associated with sclerites 3
3. Virga slender, not indurated, sometimes not visible; species always without elytra, or these very rudimentary *Anisolabis* Fieber
- Virga broader, indurated; species always with elytra and often with wings *Carcinophora* Scudder

Although some species listed in the last genus at present have no elytra (Group 1) it is nearly certain that these will really belong to the other genera when the male genitalia is known. *Euborellia cincticollis* (Gerstaecker), mentioned above, is recorded as an adventive in North America by Gurney (1950), but is not included in the following keys.

Keys to the species of the New World Carcinophorinae, based on external characters

Key to groups

1. Eyes completely absent; small yellowish earwigs *Anisolabis caeca* Borelli (Argentine)
- *Anophthalmolabis leleupi* Brindle (Galapagos Islands)

- Eyes present 2
- 2. Elytra and wings completely absent Group 1
- At least elytra present, even though rudimentary 3
- 3. Elytra rudimentary, represented by lateral flaps, well separated from each other
..... Group 2
- Elytra at least touching in the mid-line 3
- 3. Elytra short, wings absent or concealed Group 3
- Elytra and wings normally developed 4

Group 1

1. Pronotum longer than broad (fig. 1); 13—14 mm., f. 2.5. Brazil
..... *Euborellia peregrina* (Mjöberg)*
- Pronotum quadrate or transverse (fig. 3) 2
2. Pronotum strongly transverse 3
- Pronotum quadrate or almost so (fig. 3) 5
3. Length 11 mm., f. 2 mm; male parameres long, membranous at tips. Surinam
..... *Metalabis ecarinata* Brindle*
- Length 14 mm or more; male parameres long, tips not membranous 4
4. At least head reddish or dark red; thoracic nota usually yellowish-brown;
abdominal tergites punctured; male parameres without a distinct narrowed
apical part; 16—19 mm, possibly smaller, f. 3—4 mm. Ecuador
..... *Anisolabis festae* Borelli*
- Unicolorous, usually blackish, abdominal tergites impunctate or almost so;
male parameres with a distinct narrowed apical part (fig. 6); 14—17 mm.,
f. 2.5—3.5 mm. Cosmopolitan, widely distributed in the New World
..... *Anisolabis maritima* (Bonelli)*
5. Length 15 mm., f. 2.5 mm; male last tergite with two very prominent dorsal
longitudinal ridges; male parameres pointed distally. Surinam
..... *Metalabis carinata* Brindle*
- Length 12 mm or less; male last tergite without or with much less prominent
dorsal longitudinal ridges 6
6. Body shining black, legs yellow femora usually with a blackish ring; 8—11 mm.,
f. 1.5—2 mm. Cosmopolitan, widely distributed in the New World
..... *Euborellia annulipes* (Lucas)*
- Body dark reddish or blackish-brown, legs yellowish, femora not ringed .. 7
7. Last tergite of male with dorsal longitudinal ridges; 8—10 mm., f. 1.5—2 mm.
Surinam *Metalabis saramaccensis* (Zacher)*
- Last tergite of male without dorsal longitudinal ridges 8
8. Abdominal tergites mainly weakly punctured, basal tergites impunctate; male
tergites with lateral ridges on 7—9 or 8—9 9
- Abdominal tergites strongly punctured, basal tergites more weakly punctured;
male tergites with lateral ridges on 6—9 or 7—9 10
9. Pronotum as broad as long; male with lateral ridges on tergites 8—9; male
paramere fig. 9. Monte Video *Euborellia uruguayensis* sp. n.*
- Pronotum slightly transverse (fig. 3); male with lateral ridges on tergites 7—9;
male paramere fig. 7. Mexico *Euborellia mexicana* sp. n.*
10. Male with lateral ridges on tergites 7—9; 11—12 mm., f. 1.5—2 mm. Surinam
..... *Anisolabis surinamensis* Boeseman

- . Male with lateral ridges on tergites 6—9; 11—12 mm., f. 2 mm. Brazil
 *Carcinophora deplanata* (Rehn)

A. surinamensis was described from an immature male, and this species may belong to *Metalabis* (Brindle, 1968c). Although Hebard (1917) regarded *antoni* Dohrn as distinct from *annulipes* Lucas, the characters given are comparative, and these names are regarded as synonymous, pending further studies.

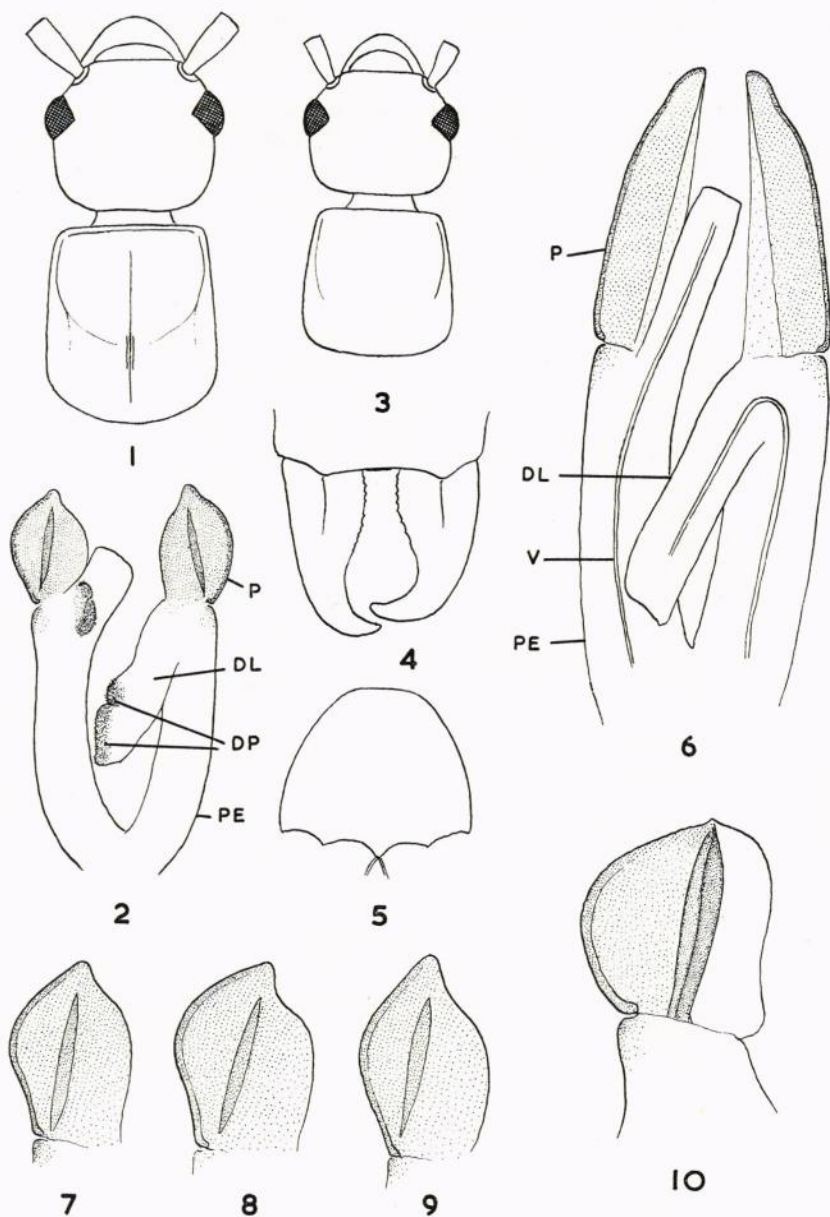
Group 2

1. Blackish, including legs; pronotum strongly transverse; 18 mm., f. 4.5 mm. Peru
 *Carcinophora peruviana* (Bormans)
- . Legs partly or entirely yellowish or brown 2
2. Pronotum strongly transverse; legs yellow, femora darkened; head and thoracic nota dark reddish, abdomen blackish-brown; tergites 5—9 of male with lateral longitudinal ridges; 20 mm., f. 3.5 mm. Costa Rica .. *Euborellia armata* (Borelli)
- . Pronotum quadrate or longer than broad 3
3. Pronotum quadrate or almost so 4
- . Pronotum longer than broad 7
4. Legs yellow, darker at "joints"; head dark reddish-brown, body blackish; 15—16 mm., f. 5 mm. Colombia. *Carcinophora apolinari* (Hebard)
- . Legs entirely yellow or with femora partly darker 5
5. Legs entirely yellow, body blackish; 20 mm., f. 5 mm. Brazil
 *Euborellia maxima* Moreira
- . Legs yellow, femora darkened 6
6. Legs yellow, femora darker on anterior and posterior surfaces; 19 mm., f. 3 mm. Brazil
 *Carcinophora spitzi* (Menozzi)
- . Legs yellow, femora with brown rings; 14—17 mm., f. 2 mm. Brazil
 *Euborellia brasiliensis* (Borelli)
7. Larger species, 18 mm., f. 3 mm. Brazil *Euborellia nitida* Moreira
- . Smaller species, 10 mm or less 8
8. Pronotum parallel-sided, posterior margin strongly convex; legs yellow, femora not ringed with black; 10 mm., f. 2 mm. Brazil *Euborellia flavipes* Moreira
- . Pronotum widened posteriorly, posterior margin not strongly convex; legs yellow, femora with dark rings; 8—9 mm., f. 1.5 mm. Circumtropical, widely distributed in the New World *Euborellia stâli* (Dohrn)*

Euborellia inermis Moreira seems to be identical with *stâli* from the original description.

Group 3

1. Elytra with a median yellow spot; 18—23 mm., f. 3.5 mm. Brazil; Venezuela
 *Carcinophora festiva* (Burr)
- . Elytra unicolorous 2
2. Small species, 7.4 mm. Martinique *Carcinophora waddyi* (Burr)
- . Larger species, 10 mm or more 3
3. Abdomen more or less parallel-sided, scarcely wider than pronotum or elytra . 4
- . Abdomen strongly widened medially, much wider than pronotum or elytra .. 8



Euborellia peregrina (female type) — fig. 1, head and pronotum.

Euborellia mexicana (male type) — fig. 2, genitalia; fig. 3, head and pronotum; fig. 4, forceps; fig. 5, penultimate sternite.

Anisolabis maritima — fig. 6, male genitalia.

Euborellia — parameres of male genitalia — fig. 7, *mexicana* (type); fig. 8, *peregrina*; fig. 9, *uruguayensis* (type); fig. 10, *boliviana* (type).

(DP=denticulated pads; DL=distal lobe; P=paramere; PE=penis).

4. Larger, shining black, 15—17 mm. Venezuela . *Carcinophora venezuelana* Brindle
 - Smaller, dark brown or blackish, 12 mm or less 5
5. Tergites 6—8 of male each with a well defined lateral longitudinal ridge. Bolivia
 *Euborellia boliviana* sp. n.
 - Tergites 6—9 or 7—9 of male with lateral longitudinal ridges 6
6. Tergites 7—9 of male each with a weak lateral longitudinal ridge; legs unicolorous, yellow. Florida; Costa Rica *Euborellia ambigua* (Borelli)
 - Tergites 6—9 of male each with a well defined lateral longitudinal ridge 7
7. Antennae unicolorous, without distal whitish segments. West Indies
 *Euborellia caraibea* Hebard
 - Antennae brown or darker, with one or more distal segments whitish or yellow. South America *Euborellia janeirensis* (Dohrn)
8. Posterior margin of elytra straight; elytra about equal in length to pronotum; larger species, 18 mm or more *Carcinophora robusta* (Scudder)
 - Posterior margin of elytra obliquely truncate; elytra shorter than pronotum; smaller species, 12—18 mm. *Carcinophora burri* (Borelli)

The synonymy of the last two species as given in Brindle (1967 b) and in Reichardt (1968) is provisional, pending more study on these species.

Group 4

1. Elytra not entirely unicolorous, median part of each elytron at least, lighter in colour 2
 - Elytra unicolorous, dark brown or blackish 5
2. Each elytron black, with a median and a lateral yellowish stripe; 17 mm., f. 2.5. Ecuador *Carcinophora haenschi* (Burr)
 - Each elytron black or dark brown, with a rounded or transverse yellowish mark, the mark sometimes obscure 3
3. Each elytron with a central large yellowish patch, the patch sometimes obscure, but median part of each elytron always lighter in colour than rest; 20—38 mm., f. 4—6 mm. South and Central America .. *Carcinophora americana* (Beauvois)*
 - Each elytron with a small yellow spot towards anterior margin 4
4. Elytral spot more than its own width away from anterior margin; wings with basal part yellow, apices dark; head usually reddish; legs entirely yellow; antennae variegated in colour; 13—18 mm., f. 2—3 mm. South and Central America *Carcinophora percheron* (Guerin and Percheron)*
 - Elytral spot usually nearer to the anterior margin; wings diagonally yellow, exterior angle dark; head dark brown; legs yellow, femora banded with black; antennae unicolorous; 10—15 mm., f. 1.5—2.5 mm. Ecuador *Carcinophora rosenbergi* (Burr)*
5. Very small species, body length, including forceps, only 4.7 mm. Brazil
 *Carcinophora minima* Moreira
 - Larger species, at least 10 mm in length 6
6. Wings obscurely yellow, either at base or medially 7
 - Wings entirely dark 8
7. Wings obscurely yellow at base; Paraguay, Peru
 *Carcinophora scudderi* (Bormans)

- Wings obscurely yellow medially: Trinidad *Carcinophora nigra* (Caudell)
- 8. Larger, body length 18 mm or more; legs blackish, at least in part. Puerto Rico
..... *Carcinophora gagathina* (Klug)
- Smaller, body length 12 mm 9
- 9. Wings strongly projecting; 12 mm., f. 1.5 mm. Brazil
..... *Carcinophora brasiliensis* (Moreira)
- Wings with only tips projecting; 12 mm., f. 2 mm. Ecuador
..... *Euborellia tatei* Hebard

Due to many descriptions not giving more definite characters, many characters in the above keys are not satisfactory. However, these keys may assist in the recognition of some species and may avoid unnecessary new names being given to already described species. *Psalis croceipes* Moreira, from Brazil, described from a single female, appears to be a species of *Vostox* (Labiidae) from the description and figure, but this is to be investigated.

Euborellia peregrina (Mjöberg)

Anisolabis peregrina Mjöberg, 1904, *Ent. Tidskr.* 25 : 131.

Euborellia peregrina (Mjöberg), Hebard, 1920. *Proc. Acad. nat. Sci. Philad.* 1920 : 339.

Dark reddish-brown, shining; pronotum yellow on lateral margins; legs yellow; antennae with only the first segments remaining, yellow.

Female: head transverse, tumid, posterior angles well rounded; eyes small (fig. 1); first antennal segment shorter than distance between the antennal bases, remainder of segments missing. Pronotum longer than broad, surface smooth, depressed just beyond midpoint transversely, dividing the pronotum into an anterior prozona and a posterior metazona. The pronotum has a median longitudinal furrow, the furrow being bordered across the depression, so that two short narrow longitudinal ridges occur across the depression, the ridges close together and separated by the furrow (fig. 1). Meso- and meta-nota transverse, the latter with concave posterior margin. Cuticle of head and thoracic nota coriaceous, almost impunctate. Legs with femora broad, tibiae shorter and much less broad than femora; tarsal segments cylindrical, segments with numerous short yellow hairs ventrally, and, on the basal segment of posterior tarsi, a row of yellow chaetiform processes along each ventro-lateral edge.

Abdomen broad, depressed, basal tergites impunctate, distal tergites lightly punctured, tergites 7—8 showing puncturation most strongly. Last tergite transverse, irregularly punctured, and with a prominent deep median longitudinal furrow. Forceps trigonal basally, cylindrical distally, inner margin of each branch dentated, branches contiguous and more or less straight except at tips which are incurved.

Length: body 14 mm., forceps 2.5 mm.

Male: Similar to female, but abdominal tergites more strongly punctured, sides of tergites 7—9 rugose and with lateral ridges. Last tergite transverse, irregularly punctured, and with a lateral longitudinal ridge, which ends before posterior margin. Near the posterior margin the cuticle is rugose, and there is a deep and wide longitudinal median furrow. Penultimate sternite broadly triangular, but with apex truncate (as fig. 5). Forceps with branches

as in female, but branches wider separated basally, more strongly curved, and assymetrical (as fig. 4). Pygidium small, apex bifid. The antennae of the male are 17-segmented, possibly some distal segments having been broken off. The first three segments are yellow, segments 4—13 dark brown, 14—15 yellow, and 16—17 dark brown; segments narrowed evenly towards base, pubescent, hairs yellow, except first two segments which are almost glabrous. Ratio of antennal segments 1—6 as follows=13:3 (slightly transverse): 9:5:6:8.

Length: body 14 mm., forceps 2.5 mm.

The female described above is considered to be the holotype of *peregrina*, although the present size is much smaller than in the original description, which gave the total length as 23 mm., and the forceps 3 mm. The body has therefore shrunk from 20 to 14 mm., which could occur if the species was described from a fresh, extended specimen. Mr Gunnar Hallin informs me that the type of *peregrina* is not in the main collection of the Riksmuseum, and the labels on the present specimen seem to be conclusive. These consist of the following — (1) spec.typ. (2) Sthlm (3) 19 29/9 03 (4) Mjöberg. These are printed. The fifth label, in handwriting, reads "*peregrina* Mjöberg".

The male, described above, is from Rio Negro, 7 Maj, Sv. Amaz. Exp. Roman, and is associated with the female on external characters described. Hebard (1920) correctly transferred this species to *Euborellia*, but it is not certain if he had the exact species before him — there are no doubt a number of undescribed species of *Euborellia* in South America.

Euborellia mexicana sp.n.

Dark reddish-brown; antennae mainly dark brown, but first segments and segments 12—13 yellow. Very similar to *peregrina*, but differs as below.

Male: pronotum slightly transverse, widened posteriorly (fig. 3); abdominal tergites 1—3 impunctate, tergite 4 lightly punctured on basal half; tergites 5—9 more strongly punctured on basal half of each, lightly punctured distally; tergites 7—9 rugose laterally, with a well marked lateral ridge on each side of tergites 7—8, the ridges on tergite 9 being irregular and incomplete. Last tergite with a shallow median longitudinal furrow and a lateral ridge on each side. Penultimate sternite truncate at apex (fig. 5). Forceps trigonal basally, cylindrical distally, inner margin of each branch irregularly dentated, branches well separated at base, strongly curved and assymetrical (fig. 4); pygidium truncate at apex, small. Genitalia with two basal penes, united at base, each with a distal lobe, in which are denticulated pads (fig. 2); paramere, enlarged, fig. 7.

Length: body 11 mm., forceps 1.75 mm.

Female: similar to male, but abdominal tergites less punctured, tergites not rugose laterally, nor with lateral ridges; last tergite without a lateral ridge and median longitudinal furrow only present in middle. Forceps as male but branches almost straight, incurved only at apices, and contiguous.

Length: body 11 mm., forceps 2.25 mm.

Material examined: Mexico (Salle) (♂ holotype, ♀ allotype)
(Naturhistoriska Riksmuseum).

This seems to be the only species of *Euborellia* recorded from Mexico, although the identity of *azteca* Dohrn is rather doubtful. This Mexican species was placed in *Idolopsalis* (Carcinophoridae; Parisolabiinae) in Burr (1914), and a male specimen named as this species in the British Museum (Natural History) has the male genitalia similar to other species of *Idolopsalis* and much different to those of *Euborellia*.

Euborellia uruguayensis sp.n.

Dark reddish-brown; legs yellow; antennae dark brown, segments 12—13 yellow. Similar to the above species but differs as below.

Male: pronotum quadrate, not greatly widened posteriorly; abdominal tergites 1—3 impunctate; tergites 4—9 lightly punctured distally, more strongly on basal half of each tergite; tergites 8—9 rugose laterally, and with a lateral longitudinal ridge; last tergite with lateral ridge and a median longitudinal furrow, the latter faint anteriorly, becoming deeper posteriorly. Penultimate sternite evenly rounded posteriorly; forceps similar to those of *mexicana*. Paramere fig. 9.

Length: body 10.5 mm., forceps 1.75 mm.

Female: unknown.

Material examined: Monte Video (♂ holotype) (Naturhistoriska Riksmuseum).

Euborellia boliviana sp.n.

Yellowish-brown anteriorly, dark brown posteriorly, shining; legs yellow; antennae brown to dark brown, but segments 1, 12, 13 and base of 14 yellow.

Male: head tumid, depressed along sutures, posterior angles well rounded; eyes small; antennae with first segments short, much shorter than distance between the antennal bases. Ratio of basal antennal segments as in the other species of this genus described — 1st. 12 : 2nd. 3 (transverse) : 3rd. 6 : 4th. 4 : 5th. 4.5 : 6th. 5.25, (fourth almost quadrate). Pronotum quadrate, slightly widened posteriorly, median longitudinal furrow almost obsolete. Elytra very short, about half the length of pronotum, meeting in the mid-line; wings absent. Legs with femora broadened, tarsi with numerous ventral yellow hairs.

Abdominal tergites 1—3 impunctate, 4—9 lightly punctured; tergites 6—8 not rugose laterally, but with a well defined lateral longitudinal ridge on each side, the ridge curving slightly dorsally towards the posterior tip; the ridge of tergite 9 weakly indicated; last tergite with lateral ridge on each side but the ridge small. Penultimate sternite broadly rounded, apex slightly truncate. Forceps trigonal basally, cylindrical distally, branches almost symmetrical and not strongly curved nor widely separated at base, inner margin scarcely dentated. Paramere (fig. 10) with a large membranous lobe on the inner side; distal lobes without prominent denticulated pads.

Length: body 9 mm., forceps 1.25 mm.

Female: unknown.

Material examined: Mojos, Bolivia (N. Holmgren) (♂ holotype) (Naturhistoriska Riksmuseum).

Three other species of *Euborellia* are represented in the present collection, together with specimens referred to one species of *Anisolabis*.

Euborellia stali (Dohrn)*Forcinesila stali* Dohrn, 1864, *Stettin. ent. Ztg.* 25 : 286.*Euborellia stali* (Dohrn): Burr, 1911 *Genera Insect.* 122 : 31.

Distribution: Circumtropical.

Material examined: St. Barthelemy (1 ♂, 1 ♀); Long Navang, O. Borneo (Mjöberg) (2 ♀); Bah Lias, Sumatra (Mjöberg) (1 ♀).

Euborellia moesta (Géné)*Forcinesila moesta* Géné in Serville, 1839, *Hist. nat. Ins., Orth.* : 28.*Euborellia moesta* (Géné): Burr, 1911, *Genera Insect.* 122 : 31.

Distribution: West Palaearctic Region.

Material examined: Mallorca, Balearic Islands (2 ♀).

Euborellia annulipes (Lucas)*Forcinesila annulipes* Lucas, 1874, *Ann. Soc. ent. Fr.**Euborellia annulipes* (Lucas): Burr, 1915, *J. R. micr. Soc.* 1915 : 545.

Distribution: Cosmopolitan.

Material examined: Corvo, Azores (K. Bystrom) (1 ♀).

Anisolabis festae Borelli*Anisolabis festae* Borelli, 1904, *Boll. Musei Zool. Anat. comp. R. Univ. Torino* 19 : 3.

Distribution: Ecuador.

Material examined: Pelotas, Brazil (6 ♀).

These are doubtfully referred to this species, to which they would key out in the keys given previously: they probably represent a new species, either of *Anisolabis* or *Euborellia*, but males are necessary to settle the identity.

LABIIDAE

Strongylopsalinae

The present subfamily is very distinctive: the species all have short smooth elytra, each elytron having a well marked lateral longitudinal ridge; wings are absent. The species are restricted to South America and show well marked distributional patterns. A revision of the genus has recently been published (Brindle, 1968b), and there is one additional new species, the description of which is in course of publication (Brindle, in press (b)). The species described below is the only species of this genus from Bolivia, and is distinguished from all other species by the large and deeply excised pygidium of the male.

Strongylopsalis boliviana sp.n.

Reddish to yellowish-brown; antennae, legs, and margins of pronotum yellow.

Male (figs. 11, 12): head transverse, tumid, sutures scarcely visible; eyes very small; first antennal segment shorter than distance between the antennal bases (only first segment remaining in type). Pronotum slightly transverse, widened posteriorly, all margins straight, posterior angles rounded. Elytra short, nearly equal in length to pronotum, measured along lateral margins; obliquely truncate, sutural margins short. Cuticle of head coriaceous, shining; cuticle of pronotum and elytra shining and smooth, except for a number of small circular, very shallow depressions irregularly arranged, diameter of depressions varying. Lateral margin of each elytron with a well defined longitudinal ridge or rim. Legs relatively short, femora broad, tibiae less broad than femora but equal in length to femora, in posterior pair of legs; tarsi cylindrical, first (basal segment) longer than both second and third segments in posterior pair of legs, tarsal segments with yellow hairs ventrally and laterally, and with yellow setae; claws long and evenly curved.

Abdomen broad, depressed; tubercles on third tergite scarcely visible; those on fourth larger but represented only by a swelling of the cuticle; cuticle of tergites 1—4 smooth and shining, tergite 5 lightly and irregularly punctured, tergites 6—7 more strongly punctured, tergite 8 less strongly punctured, tergite 9 less strongly punctured than tergite 8. Last tergite mainly smooth, but irregularly punctured near posterior margin, and punctured on a median and two latero-median longitudinal bands; posterior margin thickened. Each branch of forceps trigonal basally, cylindrical distally, evenly curved, ventral edges of branches with small isolated teeth directed medially; pygidium declivent, dorsal surface small and sloping into the very large ventral surface which is deeply excised medially, forming two large triangular lobes (fig. 12).

Length: body 9 mm., forceps 3.8 mm.

Female: Similar to male in general features, but smaller, the abdomen of allotype being rather shrunken. Pronotum and elytra without depressions, smooth and shining. Abdomen widened medially, tergites shining and almost impunctate; last tergite confusedly punctured on two dorsal longitudinal bands extending from the posterior margin above the centre of the base of each branch of the forceps; forceps trigonal basally, cylindrical distally, short, branches contiguous (fig. 13).

Length: body 7 mm., forceps 2 mm.

Material examined: Sicari, Bolivia (N. Holmgren) (σ holotype, ρ allotype) (Naturhistoriska Riksmuseum) Quiaca (N. Holmgren) (σ paratype) (Manchester Museum).

A revision of the Labiidae of the New World has been completed by the present author (Brindle, 1968b, and in press (a) (b)), and a study of the Old World Labiidae is in progress. The keys to the subfamilies and genera of the Labiidae in Burr (1911) are not now entirely satisfactory; the main difficulty lies in the separation of the subfamilies Spongiphorinae and Labiinae. It is evident that these two subfamilies are very closely related, and since Boesman (1954) showed that the eyes of *Marava arachidis* (Yersin), vary in size, the character of the eye size to separate the Spongiphorinae from the Labiinae is no longer valid. If these two subfamilies have to be separated, then other characters must be found. Brindle (1968b, and in press (a)), has used the relative lengths of the third and fifth antennal segments to separate

these subfamilies, together with the texture of the elytra, and the use of these characters has resulted in the transference of some genera from the Spongiphorinae to the Labiinae. If such characters are used for the Indo-Australian Labiidae, certain changes in the allocation of the genera are necessary. The following keys separate the subfamilies according to the characters mentioned above, and are an attempt to provide adequate keys for identification purposes, since the use of the only other keys in Burr (1911) will lead to mis-identification of a number of genera.

Key to subfamilies of the Indo-Australian Labiidae

1. Each elytron with a well defined lateral longitudinal ridge 2
- Elytra without lateral longitudinal ridges 3
2. Body, including forceps, with long stiff hairs Physogastrinae
- Body, including forceps without such hairs Nesogastrinae
(one genus only — *Nesogaster* Verhoeff)
3. First antennal segment longer than distance between the antennal bases; pronotum narrowed anteriorly, forming a distinct neck; body flattened .. Sparattinae
(one genus only — *Auchenomus* Karsch)
- First antennal segment usually shorter than the distance between the antennal bases; pronotum not narrowed anteriorly to form a distinct neck; body not flattened, strongly depressed only in *Chaetospania* 4
4. Tarsal claws with an arolium between them Geracinae
(one genus only — *Pseudovostox* Borelli)
- Tarsal claws without arolia 5
5. Third antennal segment short, shorter than the fifth or almost so; eyes usually smaller, large in *Irdex* and *Argusina*; elytra often punctured and pubescent
..... Labiinae
- Third antennal segment longer than the fifth; eyes usually large; elytra usually smooth and glabrous, or only finely pubescent Spongiphorinae

Key to genera of the Physogastrinae

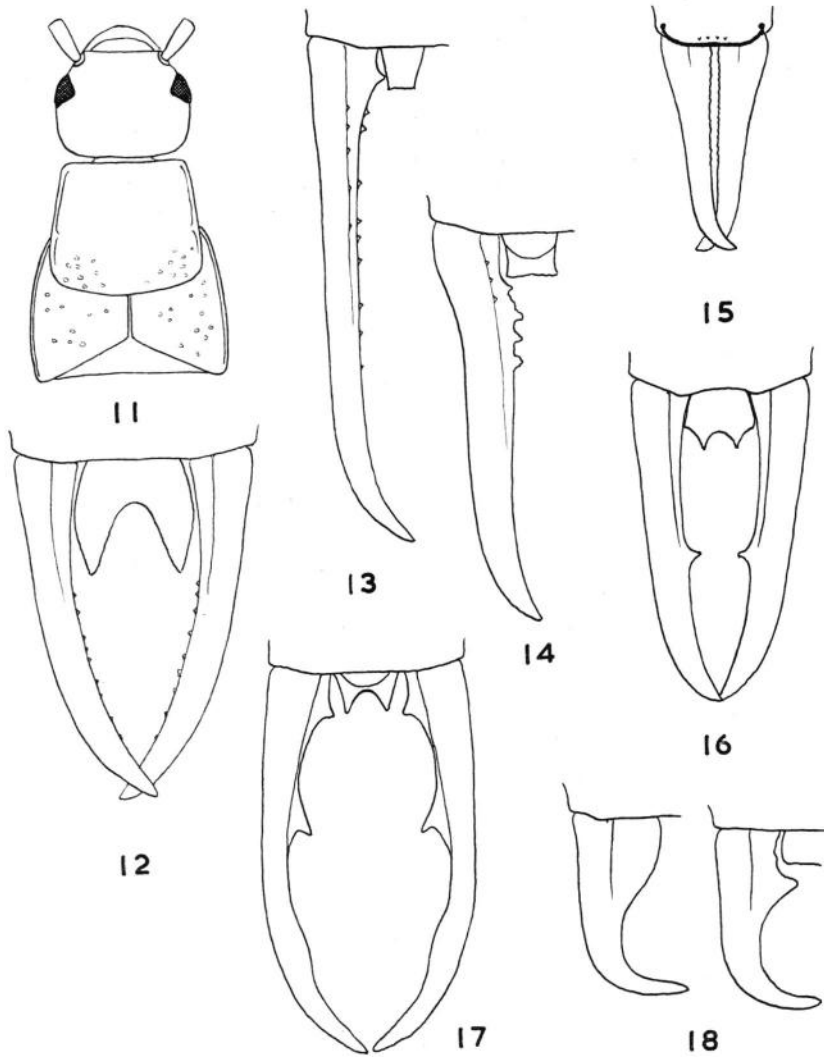
1. Elytra rugose *Parapericomus* Ramamurthi
- Elytra not rugose *Physogaster* Ramamurthi

Key to genera of the Spongiphorinae

1. Antennal segments strongly moniliform; segments 3—5 almost conical
..... *Marava* Burr
- Antennal segments cylindrical or almost so; segments 3—5 cylindrical or narrowed only at base 2
2. Antennal segments with long hairs *Homotages* Burr
- Antennal segments short-haired *Spongovostox* Burr

Key to genera of the Labiinae

1. Eyes large or very large, as long as or longer than the length of head behind eyes 2



Strongylopsalis boliviana (male type) — fig. 11, head, pronotum, and elytra; fig. 12, forceps.
Irdex nitidipennis — fig. 13, branch of male forceps; fig. 14, branch of female forceps.
Auchenomus arcuatus — fig. 15, female forceps.
Chaetospasia bakeri — fig. 16, male forceps.
Chaetospasia mjöbergi (male type) — fig. 17, forceps.
Labia curvicauda — fig. 18, two forms of branches of male forceps.

- Eyes small, shorter than length of head behind eyes 3
- 2. Eyes very large, twice as long as length of head behind eyes
..... *Argusina* Hebard
- Eyes large, rather longer than length of head behind eyes
..... *Irdeax* Burr (*Apovostox* Hebard)
- 3. Forceps glabrous, or at least without numerous setae *Labia* Leach
- Forceps strongly setulose 4
- 4. Head flattened, body strongly depressed *Chaetospania* Karsch
- Head convex dorsally, body not strongly depressed *Sphingolabis* Bormans

Spongiphorinae

Amongst the collection of the Naturhistoriska Riksmuseum have been a number of specimens of the Labiidae from Australia, some of which have been recorded in Parts 2 and 3 of the present series, and some generic assignment are now changed in accordance with the keys given previously. The following key is given to facilitate identification; in the summary which follows, records previously given in this series are noted, and followed by the number of the particular part concerned, and the page number, for example (part 2, p. 159).

Key to Australian species of the Spongiphorinae

- 1. Antennal segments strongly moniliform (*Marava*) 2
- Antennal segments cylindrical or almost so (*Spongovostox*) 3
- 2. Pronotum blackish, widely yellow or white laterally and posteriorly, elytra and wings usually fully developed; general colour of anterior part of insect black; male forceps strongly curved, blackish, often reddish at base, male pygidium concave on posterior margin (fig. 28) *M. feae* (Bormans)
- Pronotum blackish, narrowly yellow laterally only; wings often absent; general colour of anterior part of insect reddish-brown, sometimes darker; male forceps not so strongly curved, uniformly coloured, male pygidium not concave on posterior margin (fig. 26) *M. arachidis* (Yersin)
- 3. Pronotum as long as broad; wings entirely yellow or almost so; each branch of male forceps with inner margin irregularly dentated, pygidium small with a tooth at each postero-lateral angle (fig. 22) *Sp. nigroflavida* (Rehn)
- Pronotum transverse, wings brown or only partially yellow; male forceps not irregularly dentated on inner margins 4
- 4. Elytra unicolorous, brown; male forceps with branches smooth, pygidium very long (fig. 25) *Sp. doddi* (Burr)
- Elytra partly yellow; male pygidium short 5
- 5. Elytra with a very narrow lateral yellow stripe, otherwise brown; each branch of male forceps smooth or with an inner tooth about mid-point; pygidium not produced medially (fig. 23) *Sp. hackeri* (Burr)
- Elytra with a larger yellow lateral patch, otherwise brown; each branch of male forceps with an inner tooth towards base, pygidium produced medially (fig. 24) *Sp. victoriae* (Burr)

Marava feae (Bormans) comb.nov.

Labia feae Dubrony 1879, *Annali Mus. civ. Stor. nat. Giacoma Doria* 14 : 368.
Spongovostox feae (Dubrony); Brindle, 1967, *Ark. zool.* 20 : 159

Distribution: New Guinea and Australia.

Material examined: Cedar Creek, Queensland (Mjoberg) 1 ♀ (also from Malanda, Queensland, 12 ♂, 8 ♀ (part 2, p. 159).

Marava arachidis (Yersin)

Forficula arachidis Yersin 1860, *Ann. Soc. ent. Fr.* 8 : 509.
Marava arachidis (Yersin); Brindle, 1968, *Ark. zool.* 20 : 539.

Distribution: Cosmopolitan.

Material examined: Cape York (1 ♂, 1 ♀); Malanda, Queensland (Mjoberg) (1 ♂, 1 ♀); Queensland (1 ♀).

The males from Malanda and the last record from Queensland have short elytra and are without visible wings. The other specimens have normally developed elytra and wings and are very dark in general colouration. Also recorded from the Oriental Region in part 3, p. 539.

Spongovostox nigroflavida (Rehn) comb.nov.

Labia nigroflavida Rehn 1905, *Proc. U. S. natn. Mus.* 29 : 507.
Labia nigroflavida Rehn; Brindle, 1967, *Ark. zool.* 20 : 159.

Distribution: Australia (Queensland).

No further material of this species has been examined; recorded from Malanda and Bellenden Ker in part 2, p. 159.

Spongovostox doddi (Burr) comb.nov.

Marava doddi Burr, 1914, *Ann. Mag. nat. Hist.* (8) 8 : 75.

Distribution: Australia (Queensland).

Not represented in the present collection.

Spongovostox hackeri (Burr) comb.nov.

Marava hackeri Burr, 1914, *Ann. Mag. nat. Hist.* (8) 8 : 76.

Distribution: Australia (Queensland).

Previously recorded from Mt. Tambourine (type locality) and from Malanda, Queensland, in part 3, p. 539.

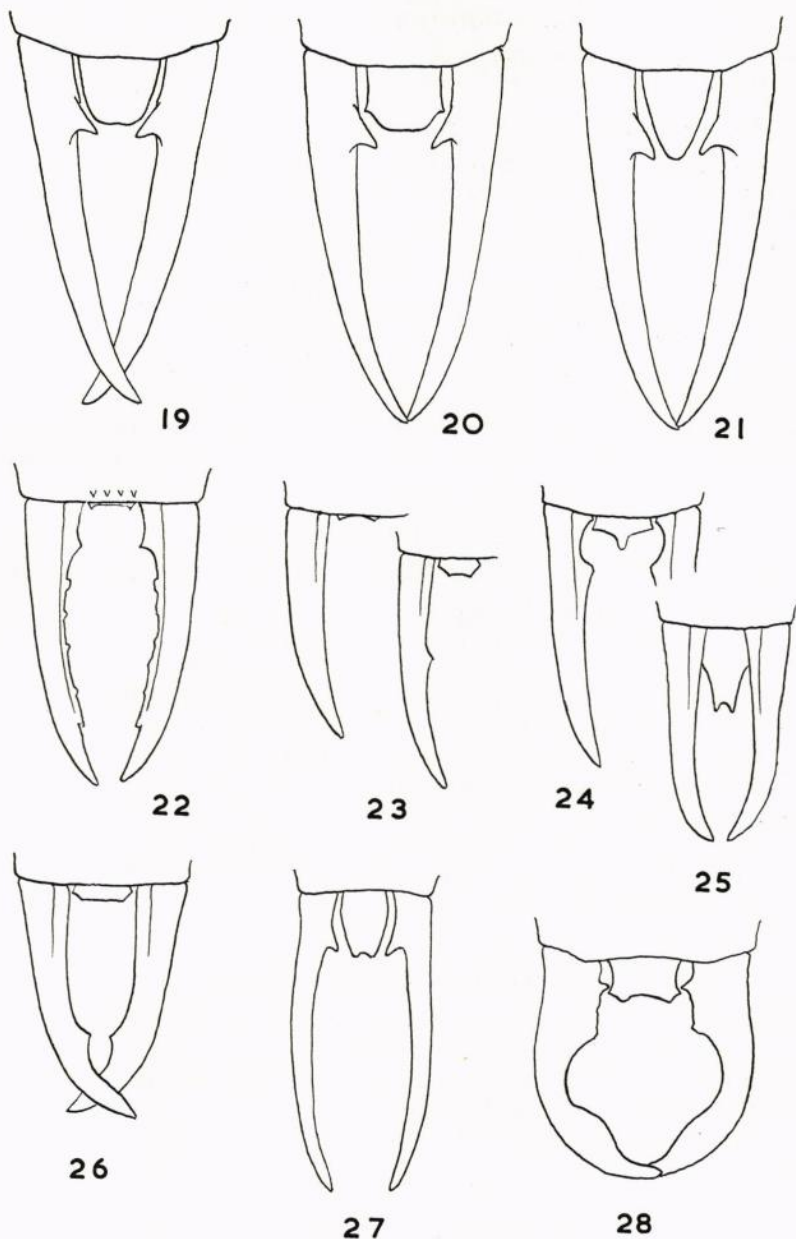
Spongovostox victoriae (Burr) comb.nov.

Marava victoriae Burr, 1914, *Ann. Mag. nat. Hist.* (8) 8 : 77.

Distribution: Australia (Victoria).

Not represented in the present collection.

Specimens of *mucronatus* Stal, from various countries tend to have differently shaped pygidia, and an opportunity has been taken to examine the type of this species which is in the Naturhistoriska Riksmuseum. In accordance with the keys given previously, this species has been transferred to the genus *Spongovostox* from *Labia* (Brindle, in press).



Spongovostox and *Marava* — male forceps — fig. 19, *S. mucronatus* (type); fig. 20, *S. mucronatus* (Ceylon); fig. 21, *S. mucronatus* (Thailand); fig. 22, *S. nigroflavida*; fig. 23, *S. hackeri*; fig. 24, *S. victoriae* (after Burr 1914); fig. 25, *S. doddi* (after Burr 1914); fig. 26, *M. arachidis* (Cape York); fig. 27, *S. gracilis*; fig. 28, *M. feae*.

Spongovostox mucronatus (Stål)

Forficula mucronata Stal, 1860, *Eug. Resa, Ins.* : 303.

Labia mucronata (Stål), Burr, 1911, *Genera Insect.* 122 : 56; — Brindle, 1968, *Ark. zool.* 20 : 538.

Spongovostox mucronatus (Stål), Brindle, in press.

This is a distinctive species, blackish in colour with a yellow lateral stripe along each elytron and wing; the legs are yellow as are the forceps, and the latter have a thorn-like tooth on the inner margin of each branch near the base. The cuticle is smooth, shining, and glabrous.

Burr (1910) figures the pygidium of this species as being narrowed posteriorly, which is the form found in specimens from India, Burma, and Thailand (fig. 21); Hincks (1947) figures the pygidium as being broad at the apex, with postero-lateral spines, a form which occurs in Ceylon (fig. 20) and Sumatra, as well as in Mauritius. The type of *mucronatus* is a male, not a female as stated by Stål in the original description, and this specimen has the pygidium as in fig. 19, a form which is possibly restricted to Java.

Spongovostox gracilis Borelli

Spongovostox gracilis Borelli, 1916, *Boll. Musei Zool. Anat. comp. R. Univ. Torino* 31 : 2.

Distribution: Philippine Islands.

Material examined: Buranen, Luzon (1 ♂); Basilan, Philip. (3 ♀); Kolambugao, Mindanao (1 ♀).

This species is almost identical to *mucronatus*, from which it differs by having the cuticle pubescent, the hairs on the elytra, wings, and abdomen being yellow; the branches of the male forceps are more slender, and the pygidium is narrowed distally, with the apex slightly concave (fig. 27). The body length varies from 5—6 mm., and the length of the forceps of both sexes from 1.5—2.75 mm. The forceps of the female are, as usual, simple, the branches contiguous and slender. The species seems to be widely distributed in the Philippine Islands.

Spongovostox ghiliani (Dohrn)

Labia ghiliani Dohrn, 1864, *Stettin. ent. Ztg.* 25 : 424; — Burr, 1911, *Genera Insect.* 122 : 56.

Spongovostox ghiliani (Dohrn); Brindle, in press (b).

Distribution: Brazil; Venezuela; French Guiana; Dominica.

Material examined: Bahia, Iguassu, Sv. Amaz. Exp. Roman (1 ♂, 1 ♀).

The male has been compared to a male type of this species from the Vienna Museum.

Spongovostox pygmaeus (Dohrn)

Psalidophora pygmaeus Dohrn, 1864, *Stettin. ent. Ztg.* 25 : 421.

Labia pygmaea (Dohrn); Burr, 1911, *Genera Insect.* 122 : 56.

Spongovostox pygmaeus (Dohrn); Brindle, in press (b).

Distribution: Brazil.

Material examined: Charubamba, Bolivia (N. Holmgren) (1 ♂).

This represents the first record from a country other than Brazil.

Vostox recurrens (Burr)

Spongovostox recurrens Burr, 1912, *Annln naturh. Mus. Wien* 26 : 337.

Vostox recurrens (Burr); Brindle, in press (b).

Distribution: Brazil.

Material examined: Bahia, Iguassu, Sv. Amaz, Exp. Roman (1 ♀).

Labiinae*Labia pilicornis* (Motschulsky)

Forficesila pilicornis Motschulsky, 1863, *Bull. Soc. nat. Moscou* 36 : 2.

Labia pilicornis (Motschulsky); Burr, 1911, *Genera Insect.* 122 : 56.

Distribution: Oriental Region.

Material examined: Long Navang, O. Borneo (Mjöberg) (1 ♂); Medan, Sumatra (Mjöberg) (1 ♀).

Labia curvicauda (Motschulsky)

Forficesila curvicauda Motschulsky, 1863, *Bull. Soc. nat. Moscou* 36 : 2.

Labia curvicauda (Motschulsky); Burr, 1911, *Genera Insect.* 122 : 56.

Distribution: Cosmopolitan.

Material examined: Calapan, Mindanao (1 ♂, 1 ♀).

This is the uniformly brown form of this species, which is also known from Ceylon. The male forceps of this form (fig. 18. left) are much different in shape to those of the usual form, in which the broad basal part of each branch is produced into a tooth, and with the large pygidium prominent (fig. 18, right). There are intermediate forms of the forceps however, as well as some variation in colour, and at present these all seem to be conspecific.

Irdex nitidipennis (Bormans)

Spongophora nitidipennis Bormans, 1894, *Annali Mus. civ. Stor. nat. Giacoma Doria* 14 : 382.

Irdex nitidipennis (Bormans), Burr, 1911, *Genera Insect.* 122 : 52.

Distribution: Oriental Region.

Material examined: Pajan River, O. Borneo (Mjöberg) (1 ♂, 1 ♀).

This is apparently a widely distributed and rather variable species; the colour is not variable, being more or less uniformly reddish-brown, but the exact form of the male forceps and the pygidia show a good deal of variation. The present specimens have the forceps of the sexes as in figs. 13 and 14.

Chaetospania bakeri Borelli

Chaetospania bakeri Borelli, 1916, *Boll. Musei Zool. Anat. comp. R. Univ. Torino* 31 : 3.

Distribution: Philippine Islands.

Material examined: Los Banos, Luzon (3 ♂).

Apart from the yellowish-brown legs, this species is almost entirely blackish in colour. The male forceps and pygidium are not unlike those of some

species of the *stella* group of the genus, the species of which are not well defined. The present species however seems to be quite distinct on account of the very dark coloration. Originally described from a single male from Baguio, Benguet.

Chaetospania mjobergi sp.n.

Blackish; antennae brown; mouthparts yellowish-brown; legs yellow, femora with basal two-thirds dark brown; distal abdominal tergites dark red, sides of last tergite and forceps yellowish-brown, apices of pygidium yellowish-brown.

Male: head tumid, sides slightly converging posteriorly, posterior margin concave; eyes small; antennae with first segment shorter than distance between the antennal bases, second segment transverse, third segment about twice as long as broad, fourth equal in length to third, fifth longer than third, broader, narrowed basally; eight segments remaining in type; segments pubescent, hairs brown. Pronotum quadrate, slightly widened posteriorly, lateral and posterior margins more or less straight, posterior angles rounded; prozona tumid, almost smooth, very sparsely punctured and pubescent, metazona more strongly and closely punctured and pubescent. Elytra and wings normally developed, closely punctured and pubescent, hairs blackish. Legs with femora broad, pubescent, hairs mainly yellow, dark brown on basal two-thirds of femora.

Abdomen rather short, somewhat shrunken, basal tergites punctured and pubescent, distal three tergites less strongly punctured, and tergites with marginal setae laterally. Last tergite transverse, almost smooth. Forceps trigonal at base, cylindrical on distal half; ventral edge of basal half with two thorn-like teeth, one near the base, the second near the mid-point (fig. 17); pygidium declivent, ventral surface elongated, apex deeply excised, so that two large triangular projections are formed (fig. 17).

Length: body 5 mm., forceps 2 mm.

Female: unknown.

Material examined: Malanda, Queensland (Mjöberg) ♂ holotype) (Naturhistoriska Riksmuseum). A hand-written label on the pin of the specimen reads "♂ *Labia*, n.sp." — possibly written by Mjöberg.

I am very pleased to be able to name this species after Dr. Mjöberg in recognition of his extensive entomological work.

The Australian species of the genus *Chaetospania* can be separated as follows:—

1. Elytra and wings pubescent and punctured; a small blackish species, body length 5 mm; male forceps arcuate, each branch with two inner teeth (fig. 17) *mjobergi* sp.n.
- Elytra and wings glabrous, more or less impunctate; at least pronotum and abdomen reddish or yellow 2
2. Dark reddish-brown, elytra and wings darker but not blackish; larger species, body length 9—12 mm.; Male forceps with branches long, each branch with a small inner tooth about mid-point, 4—5.75 mm in length; female forceps shorter, without a ventral inner tooth near base, 3—4 mm in length *australica* (Bormans)

- Head, elytra and wings blackish; smaller, body length 9 mm or less; each branch of male forceps shorter, with a single very large tooth on inner margin of each branch; female forceps with a ventral inner tooth near base of each branch . . . 3
- 3. Branches of male forceps very strongly curved, pygidium deeply excised posteriorly; smaller, body length 6.5—7.5 mm., forceps. 75—1.25 mm. *pygmaea* Mjöberg
- Branches of male forceps strongly curved or almost straight, pygidium not deeply excised posteriorly; larger, body length 7—9 mm., forceps 1.5—2.5 mm. Apparently a variable species *brunneri* (Bormans)

The pygidia of specimens of *brunneri* examined show a good deal of variation; usually the forceps have straighter branches than in *pygmaea*, but some specimens have the forceps as strongly curved.

Sparattinae

Auchenomus arcuatus Brindle

Auchenomus arcuatus Brindle, 1968, *Ark. zool.* (2) 20 : 543.

Distribution: Philippine Islands.

Material examined: Momungan, Mindanao (1 ♀).

This species was originally described from two male specimens from Luzon. The present specimen is referred to this species on account of its size, which corresponds to that of *arcuatus*; it is smaller than *fulvus* Borelli or *menozzii* Borelli, both of which are known from single males (see key in Brindle, 1968a, p. 545). The forceps of the female are shorter than those of the male and contiguous; the main distinctive feature seems to be the blackened ridge which occurs by the posterior margin of the last tergite (fig. 15). The length of the body of the female is 8.5 mm., and the forceps measure 1.25 mm.

Prosparatta incerta (Borelli)

Sparatta incerta Borelli, 1905, *Boll. Musei Zool. comp. R. Univ. Torino* 20 : 11.

Prosparatta incerta (Borelli), Burr, 1911, *Genera Insect.* 122 : 61.

Distribution: South and Central America.

Material examined: Manaos, Amazon (Huebner) (1 ♀).

CHELISOCHIDAE

Proreus simulans (Stål)

Forficula simulans Stål, 1860, *Eug. Resa, Ins:* 302.

Proreus simulans (Stål), Burr, 1911, *Genera Insect.* 122 : 64.

Due to some doubt concerning the wide interpretation of this species, the type has been examined; the description of this specimen is given below.

Yellowish to brown; head blackish; pronotum yellowish-brown, anterior part reddish; elytra and wings yellow, brown on sutural and lateral margins; legs yellow; abdomen blackish-brown; forceps dark reddish-brown.

Male: head smooth, slightly depressed along sutures; eyes small; first antennal segment longer than distance between antennal bases (only the first two segments remaining in type). Pronotum longer than broad, widened posteriorly, lateral margins sinuate (fig. 32). Elytra and wings normally developed. Cuticle of head, pronotum, elytra, and wings smooth, impunctate. Abdomen depressed, tergites punctured; lateral tubercles on third tergite very small, those on fourth prominent. Last tergite with four tubercles near posterior margin medially, the outer two broader, the inner two more narrow (fig. 33). Forceps ovate-cylindrical in cross-section; only the left branch remaining in type; branch with one median tooth and a smaller tooth distally, inner margin slightly dentated (fig. 33).

Length: body 8 mm., forceps 4 mm.

Material examined: Java (Mellb.) (δ holotype) (Naturhistoriska Riksmuseum). Other specimens examined: Long Navang, Borneo (1 δ); Medan, Sumatra (1 δ , 1 ♀); Ins. Philip. (1 δ); Sibolangit, Sumatra, (1 ♀); Albay, Luzon (1 δ). The last specimen is larger, the body length being 10.5 mm., and the forceps measuring 4.75 mm.

Other specimens from Borneo, Vietnam, and the Philippine Islands have been recorded in part 2, p. 160.

Proreus coalescens (Borelli)

Chelisoches coalescens Borelli, 1927, *Suppl. Ent.* 15 : 75.

Proreus coalescens (Borelli), Popham, 1968, *Entomologist* 101 : 133.

Distribution: Philippine Islands.

Material examined: Manila, Philip. (2 δ).

A rather large, uniformly dull yellowish or reddish-brown species, similar in general features to large specimens of *simulans*; the pronotum however is quadrate, and the posterior margin strongly convex. The male forceps are similar in size to those of *simulans*, but each branch is broadened basally, this basal part forming an inner ridge which is dentated; no distal teeth occur on the branches. The body length of the present specimens is 12 mm., whilst the forceps measure 4 mm. The specimens have been compared to specimens in the Manchester Museum which have been determined by Borelli.

Proreus ludekingi (Dohrn)

Lobophora ludekingi Dohrn, 1865, *Stettin. ent. Ztg.* 26 : 73.

Proreus ludekingi (Dohrn), Burr, 1911, *Genera Insect.* 122 : 64.

Distribution: Sumatra.

Material examined: Sumatra, Medan (Mjöberg) (1 ♀).

This specimen corresponds with specimens determined by Burr in the British Museum (Natural History); this is a large brown or reddish-brown species with the sutural and lateral margins of the elytra darker.

Hamaxas nigrorufus (Burr)

Spongiphora nigrorufa Burr, 1902, *Term. Füz.* 25 : 480.

Spongovostox nigrorufus (Burr), Burr, 1911, *Genera Insect.* 122 : 52.

Hamaxas nigrorufus (Burr), Popham, 1968, *Entomologist* 101 : 135.

Distribution: New Guinea; Philippine Islands.

Material examined: Nya Guinea, Sorong (Sten Bergman) (1 δ , 1 ♀).

FORFICULIDAE

Forficulinae

Forficula cavallii (Borelli)

Apterygida cavallii Borelli, 1906, *Boll. Musei Zool. Anat. comp. R. Univ. Torino* 21: 4.
Forficula cavallii (Borelli), Hincks, 1950, *Entomologist's mon. mag.* 84: 179.

Distribution: Tanzania; Uganda.

Material examined: Brit. O. Afr. (Lonnburg) (1 ♀).

This appears to be the first record for Kenya.

Forficula lucasi (Dohrn)

Forficula lucasi Dohrn, 1865, *Stettin. ent. Ztg.* 26: 98.

Distribution: Syria, Israel, Egypt, Saudi Arabia.

Material examined: Mombasa, Brit. O. Afr. (Loven) (1 ♀).

This is a Middle East species, and does not appear to have been recorded so far south as Kenya previously.

Elaunon bipartitus (Kirby)

Sphingolabis bipartitus Kirby, 1891, *J. Linn. Soc.* 23: 526.

Elaunon bipartitus (Kirby), Burr, 1911, *Genera Insect.* 122: 79.

Distribution: India, Ceylon, and rather sporadically to Australia.

Material examined: Queensland (1 ♀).

Opisthocosmiinae

Timomenus flavocapitatus (Shiraki)

Apterygida flavocapitatus Shiraki, 1906, *Trans. Sapporo nat. Hist. Soc.* 1: 10.

Timomenus flavocapitatus (Shiraki), Burr, 1911, *Genera Insect.* 122: 93.

Distribution: Formosa.

Material examined: Taipeh, Formosa (H. Sauter) (1 ♂).

This specimen has a reddish, not yellowish head as normal in this species, but otherwise agrees well with other specimens examined. *T. flavoguttatus* (Shiraki) is evidently very similar to *flavocapitatus*, but the former species has a large yellow spot on each elytron.

Timomenus komerovi (Semenoff)

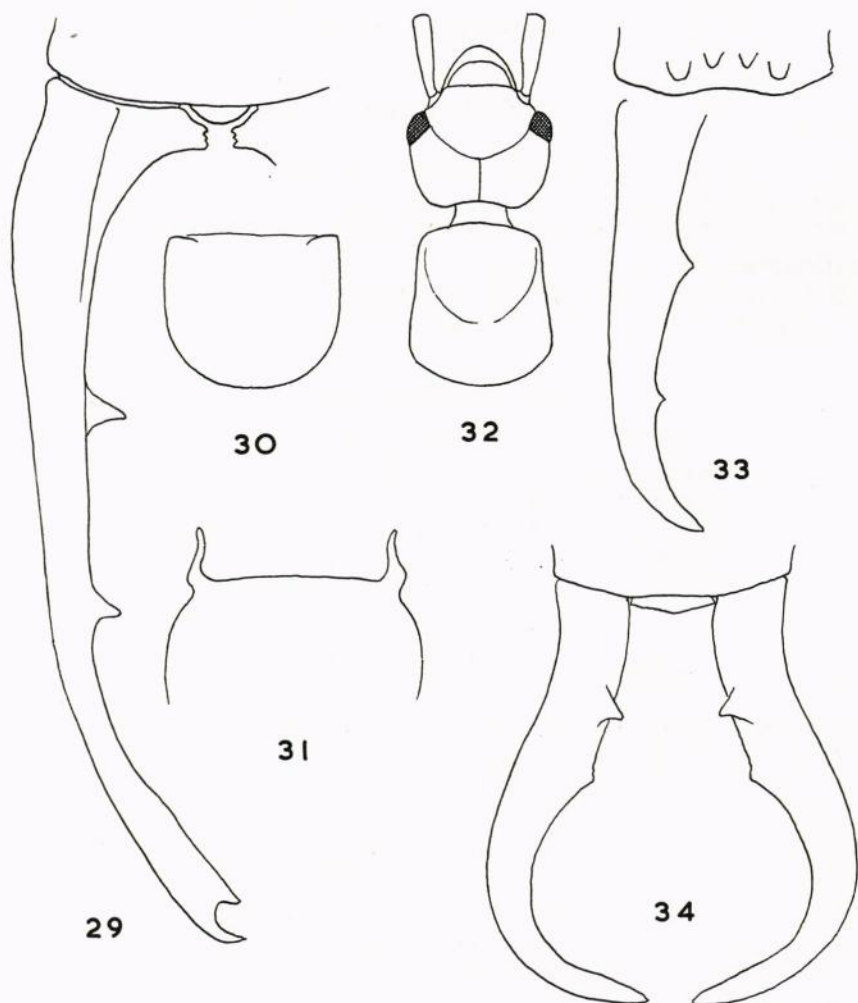
Opisthocosmia komerovi Semenoff, 1901, *Russk. ent. Obozr.* 1: 98.

Timomenus komerovi (Semenoff), Burr, 1911, *Genera Insect.* 122: 93.

Distribution: Korea; China.

Material examined: Imugan, Luzon (3 ♂).

These specimens are so similar to a male specimen named as *komerovi* in the British Museum (Natural History); that in spite of the difference in localities, they are referred to this species. The present specimens would



Ancistrogaster insignis (male type) — fig. 29, branch of forceps; fig. 30, pronotum; fig. 31, posterior margin of penultimate sternite.

Proreus simulans (male type) — fig. 32, head and pronotum; fig. 33, posterior part of last tergite and branch of forceps.

Timomenus komerovi — fig. 34, male forceps.

run down to *komerovi* in the key to the species of this genus in Brindle (1969). If this species is correctly assigned, it is a large, mainly blackish species, with the elytra reddish-brown, darkened on the sutural, lateral and apical margins. The male forceps are strongly curved, each branch with a dorsomedian tooth near the base, the base being widened and ending sharply (fig. 34). The length of the body of the present specimens varies from 10—13 mm., and the forceps vary in length from 4—5 mm. This is the first

record from the Philippine Islands, and rests on the correctness of the named specimen mentioned above.

Kosmetor intermedius Borelli

Kosmetor intermedius Borelli, 1918, *Boll. Musei Zool. Anat. comp. R. Univ. Torino* 33 : 4.

Distribution: Philippine Islands.

Material examined: Imugan, Luzon (3 ♀).

This species is blackish and shining, with the antennae dark brown except for the yellow basal segments; elytra very dark brown, with a large yellow patch covering the basal half of each elytron, except for the suture; wings broadly yellow at base; legs yellow, femora with a pre-apical dark ring. Forceps of female long, slender, simple, more or less contiguous.

The present specimens vary in size from 9—10 mm in body length, whilst the forceps vary from 3.75—4 mm in length; they correspond excellently with details in the original description, based on a single male from "Imugin, N. Viscaya" (=Luzon), except that the legs of the latter specimen were described as being entirely yellow. As far as the present author is aware, this is the first record of a female of this species.

Sarcinatrix anomalia Rehn

Opisthocosmia (Sarcinatrix) anomalia Rehn, 1903, *Proc. Acad. nat. Sci, Philad.* 1903 : 308.
Sarcinatrix anomalia Rehn, Burr, 1911, *Genera Insect.* 122 : 87.

Distribution: Costa Rica; Panama.

Material examined: S. Fermin, Bolivia (N. Homgren) (1 ♂).

This is a most distinctive species in the male. Slender and brownish or reddish-brown in colour; the penultimate sternite of the male is produced at each postero-lateral angle into a curved process which can be seen from a dorsal viewpoint; the forceps are slender, the branches simple and contiguous. This is the first record of this species from South America, except a record in Burr (1911) for Brazil: it is not yet known from where this record was obtained.

Eparchus tenellus (de Haan)

Forficula tenella de Haan, 1842, *Verh. Nat. ges. Nederl. Oversitt. Bezitt., Orth.* 243.
Eparchus tenellus (de Haan), Burr, 1911, *Genera Insect.* 122 : 94

Distribution: Oriental Region.

Material examined: Medan (Mjöberg) (1 ♀); Long Navang, Borneo (Mjöberg) (1 ♀).

A common Oriental species with apparently a very wide distribution.

Ancistrogastriinae

Ancistrogaster insignis (Stål) comb.nov.

Psalidophora insignis Stål 1855, *Öfvers. K. Vetensk. Akad. Forh.* 12 : 349.
Spongiphora insignis (Stål): Kirby, 1904, *Syn. Cat. Orth.* 1 : 31.
Vostox insignis (Stål): Burr, 1911, *Genera Insect.* 122 : 51.
Vostox brunneipennis (Serville): Brindle, 1968, *Ark. zool.* 20 : 540 (partim).

In connection with a revision of the New World Labiidae, it was thought desirable to check on the type specimen of *insignis*, to check if this was really synonymous with *brunneipennis* or if it was distinct. An examination of the type, however, shows that it belongs to the Forficulidae, not the Labiidae, and is a species of the genus *Ancistrogaster*. A re-description of the type is given below:—

Head reddish-yellow; antennae brown; pronotum dark brown medially, yellow laterally; elytra dark brown, shading into blackish-brown laterally and apically, the darker colour being vaguely defined; wings blackish-brown, yellow at the base; legs yellowish; abdomen dark yellowish-brown; forceps brown.

Head broad; eyes small; antennae with first segment much longer than distance between antennal bases, not, or scarcely dilated, and more or less cylindrical; second segment quadrate. Proportions of antennal segments 1—5 as follows — 2.5 : .5 : 1 : 1.5 : 2.1. Pronotum quadrate or rather transverse, posterior margin strongly convex (fig. 30); elytra long, wings normally developed. Cuticle coriaceous, moderately shining; elytra with lateral longitudinal ridges well marked but narrow and fading just before apex of each elytron.

Abdomen rather broad, depressed, tubercles on fourth tergite relatively large: the abdominal segments are rather displaced, but the lateral part of the apparent fifth tergite is rugose laterally and produced into a short lobe on each side; tergites slightly punctured. Penultimate sternite striated, postero-lateral angles with narrow process (fig. 31). Forceps with each branch broad at extreme base, long, arcuate, with two inner teeth, besides the basal tooth-like projection. Of the two inner teeth, the one nearest to the base is directed ventro-medially, whilst the more distal tooth is directed medially; apex of branch bidentate, the dorsal tooth larger than the ventral tooth (fig. 29). Pygidium small, rounded.

Length: body 10.5 mm., forceps 8 mm.

The holotype bears a label "Antioquia, Colombia" and a second (written) "*Psalidophora insignis* Stål"; with a type label, and the green label of the Naturhistoriska Riksmuseum.

Diaperasticinae

Diaperasticus bonchampsii (Burr)

Apterygida bonchampsii Burr, 1904, *Trans. ent. Soc. Lond.* 1904 : 317.

Diaperastics bonchampsii (Burr), Burr, 1911, *Genera Insect.* 122 : 96.

Distribution: Abyssinia; Tanzania; Kenya.

Material examined: N'Gami, Africa (1 ♀).

Much less common than *D. erythrocephalus*, and with a restricted distribution towards the eastern part of Central Africa.

Diaperasticus sansibaricus (Karsch)

Sphingolabis sansibaricus Karsch, 1886, *Berl. ent. Z.* 30 : 90.

Diaperasticus sansibaricus (Karsch), Burr, 1911, *Genera Insect.* 122 : 96.

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Distribution: Central and East Africa south to the Cape.

Material examined: Belg. Congo (1 ♀).

Although much more common than *bonchampsii*, this is another species with a predominantly eastern distribution.

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