ENTOMOLOGISCHE MITTEILUNGEN
aus dem
Zoologischen Museum Hamburg
Herausgeber: Professor Dr. HERBERT WEIDNER

4. Band Hamburg Nr. 82

GW ISSN 0044-5223 Ausgegeben am 15. Oktober 1973

Dermaptera in the Hamburg Museum

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(with 10 figures)

The present paper is the third based on Dermaptera in the Hamburg Museum, the previous two having been published some time ago (BRINDLE, 1966, 1967). In the present paper two new species from Costa Rica are described and figured, and notes on other specimens in the collection are included: amongst these are specimens of *Labia cyanescens* BORELLI, which appear to be the first record subsequent to the original description over sixty years ago. An opportunity is also taken to transfer the Neotropical species, *rotundata* SCUDDER and *flaviscuta* REHN, from the genus *Marava* in which they were placed in BRINDLE (1971 b) back to the genus *Labia*.

I wish to express my sincere thanks to Professor Dr. H. WEIDNER for the opportunity to examine the specimens which have been most useful in clearing up some taxonomic difficulties.

Labia nodulosa sp. n.

Blackish-brown, pronotum yellowish-brown laterally, elytra and legs dark yellowish-brown; wings, when visible, yellowish. Cuticle of head, pronotum, and elytra impunctate and glabrous; of abdominal tergites, except for the last, strongly punctured and pubescent, pubescence yellow and more prominent laterally and on basal half of forceps.

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Male (fig. 1): head transverse, almost cordiform in shape; eyes small; pronotum transverse, lateral margins almost parallel and straight, postero-lateral angles rounded, posterior margin weakly convex. Elytra short, and only tips of wings exposed, or almost hidden. Legs relatively short, femora broad. Abdomen strongly widened medially and depressed, lateral tubercles on third tergite very small, those on fourth small; last tergite transverse, broad, almost smooth. Pygidium broad, scarcely visible. Each branch of forceps more or less cylindrical, with an oblique nodular ridge on basal half. The ridge is compressed, with a convex margin, and with the basal end more dorsal than the distal end; the branch widens beyond the ridge then narrows distally, apex curved. Genitalia not examined. Length of body 6 mm., forceps 1.75 mm.

Female: similar to male; abdomen less widened, wings scarcely visible; each branch of forceps almost cylindrical, narrowed at extreme base, widest at level of tip of pygidium, narrowed distally and slightly curved; pygidium cone-shaped, yellowish-brown, lateral margins darkened and roughened, apex truncate with a short cylindrical projection at each postero-lateral angle (fig. 2). Length of body 5 mm., forceps 1 mm.

Material examined: ♂ holotype, ♀ allotype, Costa Rico, Coronado, 15-II-1931 (F. Nevermann); 4 ♂ paratypes, same data (Hamburg Museum); 1 ♂ paratype, same data (Manchester Museum).

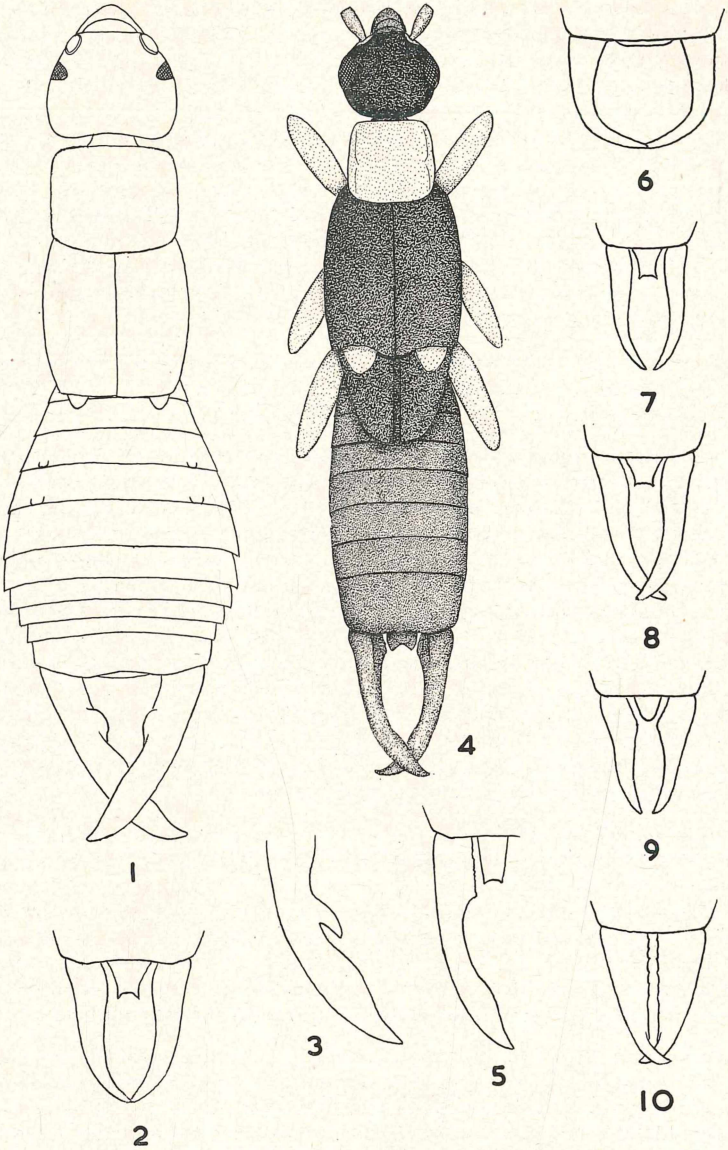
The material has been stored in alcohol and is fragile; the holotype and allotype have been dried and mounted on card, but the four paratypes remain in alcohol, and in these specimens the abdomens are separated from the anterior part of the bodies. The holotype lacks antennae and only the first right segment remains on the allotype. Apart from this, however, the material is in good condition and shows the structures well.

This species is very closely similar to *Labia conspicua* Borelli from Costa Rica, but the two species may be separated as follows:

1. Larger, body length over 8 mm., forceps 2 mm (male), 1.8 mm (female); elytra yellow, lateral and sutural margins brown or dark brown; each branch of male forceps with a large inner tooth (ifg. 3) . . . . . *conspicua* Borelli
— Smaller, body length 5—6 mm., forceps 1.75 mm (male), 1 mm (female); elytra uniformly dark yellowish-brown; each branch of male forceps with a nodular ridge (fig. 1) . . . . . *nodulosa* sp. n.

The character of the nodular ridge on the male forceps of the latter is the most distinctive one: *conspicua* was recorded from Tablazo, at 1600 metres altitude, and may be a montane species.

Specimens of *rotundata* Scudder from Mexico have recently been examined, and a re-examination of specimens of the *Labia arcuata* group has indicated that both *rotundata* and *flaviscuta* Rehn, placed in the genus *Marava* in Brindle (1971 b) should be transferred back to the genus *Labia*. The change to *Marava* was largely made on characters of the smooth elytra and the length of the third antennal segments, but further study has shown that both species really belong to the *arcuata* group of *Labia*. A partial key to this group was given in the first paper on the Hamburg Dermaptera (Brindle, 1966) which is correct, but it now appears that both



Labia nodulosa sp. n. — 1, male, dorsal; 2, female forceps. *L. conspicua* Borelli — 3, left branch of male forceps (after Borelli, 1906).
Marava elegantula sp. n. 4, male, dorsal; 10, female forceps. *M. equatoria* (Burr) — 5, left branch of male forceps. *Labia rotundata* Scudder — 6,7, male and female forceps. *L. cyanescens* Borelli — 8, female forceps. *L. dorsalis* (Burmeister) — 9, female forceps.

Labia nodulosa and *L. conspicua* belong to this group. *Labia flaviscuta* REHN should also be included, and this species is similar to *rotundata* but is distinguished by the very short fourth antennal segment. The specimens of *rotundata* recently examined are blackish anteriorly, with the pronotum yellow, and with the abdomen reddish; the elytra are brightly shining, and the branches of the male forceps have no inner teeth (fig. 6). It thus appears that the small inner tooth on each branch of the forceps mentioned in BRINDLE (1971b) may often be absent. In one specimen of *rotundata* the elytra are much shorter and only the tips of the wings are visible, and a similar variation seems to occur in other species. One female specimen of *Labia arcuata* SCUDDER, in the Hamburg Collection, from San José, Costa Rica, 10-VII-1928 (F. NEVERMANN), has the elytra short and the wings are not visible.

Consequent on the transfer of *rotundata* and *flaviscuta* from *Marava* to *Labia,* couplet 17 of the key to *Marava* in BRINDLE (1971b, p. 552) should be used in couplet 6 of the key to *Labia* in BRINDLE (1971a, p. 173).

Two female specimens of *Labia cyanescens* BORELLI in the Hamburg Collection are from the original locality, San José, Costa Rica, 10-VII-1928 (F. NEVERMANN), and this appears to be the first record of the species subsequent to the original description. The specimens correspond well with the description but the elytra has no blue sheen: this, however, may be variable as it appears to be with *L. dorsalis* (BURMEISTER). From the original description the male forceps of *cyanescens* appear to be similar in general structure to those of *dorsalis,* but the forceps of the female of *cyanescens* (fig. 8) are more slender than those of dorsalis (fig. 9) and the pygidium is rather different in shape. Both *cyanescens* and *dorsalis* resemble species of *Marava* in their brightly shining elytra but can be distinguished by the punctured and pubescent abdominal tergites. In addition the female forceps of *Marava* (fig. 10) are usually broader than those of *Labia* and the pygidium may be hidden.

Marava elegantula sp. n.

Head blackish-brown, pronotum yellow, elytra and wings very dark reddish-brown, wings with a yellow patch at bases, legs yellow, abdomen dark reddish-brown, forceps reddish-brown. Cuticle almost entirely impunctate and glabrous, shining, abdominal tergites slightly and sparsely pubescent, mainly laterally; forceps with yellow pubescence.

M a l e (fig. 4): head slightly transverse, tumid; eyes large. Antennae with first segment broadened distally, second segment transverse, third segment equal in length to fifth but broader and more moniliform, fourth shorter; distal segments two and half times as long as broad, strongly moniliform; all segments pubescent. Pronotum narrower than head, widened posteriorly, margins more or less straight. Elytra and wings fully developed. Legs relatively short, femora broad, tibiae compressed with prominent hairs near apices; first segment of anterior tarsus cylindrical, shorter than third, distal segment, but first segment of posterior

tarsus longer than third; claws long, curved, broadened basally. Abdomen almost parallel-sided, lateral tubercles absent or nearly so, last tergite transverse, more or less simple. Each branch of male forceps trigonal basally, and widened, thence narrowed and cylindrical, broader before apex, the latter with a narrow tip. Pygidium short, broad, posterior margin excised. Genitalia not examined. Length of body 5.5 mm., forceps 1 mm.

Female: similar to male but larger. Each branch of forceps trigonal at base and broad, more or less evenly narrowed distally, apex curved and narrow; inner margin dentated basally (fig. 10). Length of body 7.5 mm., forceps 1.25 mm.

Material examined: ♂ holotype, ♀ allotype, Costa Rica, San José, 10-VII-1928 (F. Nevermann) (Hamburg Museum).

M. elegantula belongs to the *equatoria* group of the Neotropical species of *Marava,* the group being characterized by the relatively small pronotum which has all the margins more or less straight, and which is widened posteriorly. The head and elytra are dark in colour and the pronotum is contrastingly yellow or mainly yellow; the cuticle is brightly shining. *M. tricolor* (Kirby) has small eyes, and the others, which have large eyes, can be separated as follows: —

1. Small species, body length 3.5—4 mm. Male forceps with simple branches, pygidium almost hidden. Northern part of South America to Central America . . . . . *championi* (Bormans)
— Larger species, body length usually well above 4 mm. Branches of male forceps not simple, pygidium well exposed 2

2. Body length 4—6 mm. Male pygidium narrow and elongated (fig. 5). South America . . . . . *equatoria* (Burr)
— Body length 5.5—7 mm. Male pygidium shorter and broader (fig. 4). Costa Rica . . . . . *elegantula* sp. n.

A single male specimen of *Marava championi* (Bormans) is in the material from the Hamburg Museum, from Costa Rica, Farm Hamburg am Reventazon, 25-V-1935 (F. Nevermann), and appears to be the first record of this species from Costa Rica.

A number of other specimens in the material are notable, and are discussed below:

Carcinophoridae

Parisolabiinae

Pseudisolabis kosswigi Burr

Pseudisolabis kosswigi Burr, 1947, Proc. R. ent. Soc. Lond. (B) **16** : 60 (Turkey).

1 ♀, Anatolien, Abant-See, 12-VIII-1964 (Zool.-Bot. Exkursion); 3 larvae, Abant, VI-1950.

The female is small but otherwise agrees well with specimens in the Manchester Museum which have been compared with the types.

Brachylabiinae

Leptisolabis aliena Borelli

Leptisolabis aliena Borelli, 1911, Boll. Musei Zool. Anat. comp. R. Univ. Torino, No. 644, **26** : 1 (Costa Rica).

1 ♀, Costa Rica.

This differs from the original description in having the pronotum more or less parallel-sided instead of being widened posteriorly: it may represent a new species but males are desirable before this can be done satisfactorily.

Ctenisolabis fernandezi (Borelli)

Brachylabis fernandezi Borelli, 1909, Boll. Musei Zool. Anat. comp. R. Univ. Torino, No. 611, **24** : 3 (Costa Rica).
Ctenisolabis fernandezi (Borelli): Burr, 1911, Genera Insectorum **122** : 42.

1 ♀, Costa Rica, Farm Hamburg am Reventazon, 28-IX-129 (F. Nevermann).

This specimen agrees with the original description in most characters.

Carcinophorinae

Euborellia peregrina (Mjöberg)

Anisolabis peregrina Mjöberg, 1904, Ent. Tidskr. **25** : 131 (introduced).
Euborellia peregrina (Mjöberg); Hebard, 1920, Proc. Acad. nat. Sci. Philad. 1920 : 339.

1 ♀, Brasil, Hamburg Freihafen, an Paranüssen, 1953; 1 ♀, mit Paranüssen aus Brasilien, Hamburg, 22-VII-1958; 1 ♀, Chile, Antofagasta (R. Paessler) (determined by Borelli as *Psalis* nymphe ♀ but appears to be mature).

This species was first described from a single female from Brazil, accidentally introduced into Sweden with orchids. Brindle (1971c) gives a re-description of the type and associates a male with it on external characters. At present *peregrina* is distinctive amongst South American species of *Euborellia* by the unusually large pronotum which is longer than broad.

Epilandex Hebard

Epilandex Hebard, 1927, Proc. Acad. nat. Sci. Philad. **79** : 26 (type species *Landex burri* Borelli 1921).

2 ♀, Indrapura Estate, East Sumatra, 1893 (Siemssen); 1 ♀, Deli, East Sumatra, 1893, (Siemssen); 1 ♀, Buitenzorg, Java (K. Kraepelin). (All determined as *Psalis plebeja* Dohrn by Borelli).

Epilandex, formerly confused with the common Oriental *Euborellia femoralis* (which was often synonymized with *plebeja)* was first recognized by Borelli (1921) and separated under the name of *Landex burri.* However since Burr (1915) had named *femoralis* as the type species of *Landex, burri* was given another generic name, *Epilandex* by Hebard (1927). The specimens cited above are nearly certainly *E. burri,* but the examination of the male genitalia is necessary to separate *Epilandex* from *Euborellia femoralis* without any doubt. The females of *Epilandex* usually have larger eyes, more moniliform antennal segments and a differently shaped

pronotum to *femoralis,* and it is these characters which have been used to name the above specimens to the genus. *Epilandex burri* is recorded from South-east Asia but a few other species are now known.

Euborellia femoralis (DOHRN)

Labidura femoralis DOHRN, 1863, Stettin. ent. Ztg. **24** : 321 (Ceylon).
Psalis femoralis (DOHRN): BURR, 1911, Genera Insectorum **122** : 31.
Euborellia femoralis (DOHRN); HINCKS, 1954, Verh. naturfr. Ges. Basel **65** : 12.

1 ♀, Tenasserim, 4000 ft., May (FRUHSTORFER); 1 ♀, 1 larva, Tandjong, S. O Borneo, 1895 (determined as *Psalis plebeja* DOHRN by BORELLI).

Records of *plebeja* usually refer to *femoralis,* but in spite of the formerly accepted synonymy of these names, the former appears to refer to a smaller species. At present *femoralis* is the name used for the common Oriental fully winged species of *Euborellia* which is easily confused with *Epilandex*. The true identity of *plebeja* is not yet established.

Euborellia annulipes (LUCAS)

Forficesila annulipes LUCAS, 1847, Ann. Soc. ent. Fr. **15** : 84 (introduced).
Anisolabis annulipes (LUCAS); BURR, 1911, Genera Insectorum **122** : 29.
Euborellia annulipes (LUCAS); BURR, 1915, J. R. micr. Soc. 1915 : 545.

1 ♂, 1 ♀, 2 larvae, Juan Fernandez, Chile, 1932 (BOCK).

Euborellia caraibea HEBARD

Euborellia caraibea HEBARD, 1922, Trans. Am. ent. Soc. **47** : 322 (West Indies).

1 ♂, St. Domingo Stadt, Haiti, 1925 (GAGZO).

This is the species of *Euborellia* endemic to the islands of the Caribbean.

Euborellia cincticollis (GERSTAECKER)

Brachylabis cincticollis GERSTAECKER, 1883, Mitt. naturw. Neu-Verpomm. **14** : 44 (Cameroon).
Psalis (?) picina KIRBY, 1891, J. Linn. Soc. **23** : 516 (Gambia).
Euborellia cincticollis (GERSTAECKER) : REHN, 1924, Bull. Am. Mus. nat. Hist. **49** : 369.

1 ♀, French Congo, 1931 (fully-winged specimen).

This species has a fully winged form and one in which the elytra are short and the wings absent or concealed.

Labiidae

Marava arachidis (YERSIN)

Forficula arachidis YERSIN, 1860, Ann. Soc. ent. Fr. **8** : 509 (introduced).
Marava arachidis (YERSIN); HINCKS, 1954, Proc. R. ent. Soc. Lond. (B) **23** : 162.

1 ♂, Hamburg, Bahrenfeld (Margarinewerke) mit Ölsamen eingeschleppt (wingless, dark form); Bengal, Bishenpur, 1927, 1 ♀ (wingless pale form).

Marava unidentata (BEAUVOIS)

Forficula unidentata PALISOT DE BEAUVOIS, 1805, Ins. rec. Afr. Amer., Orth.: 165 (Dominican Republic).
Marava unidentata (BEAUVOIS); BRINDLE 1971, J. nat. Hist. **5** : 558.

1 ♀, 2 larvae, St. Marc, Haiti, 1905 (GAGZO).

Labia pilicornis (MOTSCHULSKY)

Forficesila pilicornis MOTSCHULSKY, 1863, Bull. Soc. nat. Moscou **36** : 2 (Ceylon)
Labia pilicornis (MOTSCHULSKY); BURR, 1911, Genera Insectorum **122** : 56.

1 ♂, New Guinea, 1931 (BOREN and DIGUEL).

Sphingolabis hawaiiensis (BORMANS)

Forficula hawaiiensis BORMANS, 1882, Ann. Mus. civ. Stor. nat. Giacoma Doria **18** : 341 (Hawaii).
Sphingolabis hawaiiensis (BORMANS); BURR, 1911, Genera Insectorum **122** : 55.

1 ♀, New Guinea, 1933 (VARCO).

Vostox basalis (BURR)

Spongovostox basalis BURR, 1912, Annln. naturh. Mus. Wien **26** : 337 (El Zumbador).
Vostox basalis (BURR) : BRINDLE, 1971, J. nat. Hist. **5** : 543.

1 ♂, Costa Rica, Farm Hamburg am Reventazon, 28-I-1932, aus welken Blättern von *Castilloa costariciensis* (NEVERMANN). The pygidium is more sharply pointed in this specimen than in the type of the species, but variation in this character has been noted in various specimens from South America.

Forficulidae

Kleter devians (DOHRN)

Opisthocosmia devians DOHRN, 1865, Stettin. ent. Ztg. **26** : 79.
Kleter devians (DOHRN); BRINDLE, 1969, Entomologist's mon. mag. **105** : 113.

1 ♂, lebend eingeschleppt mit Orchideen aus Brasilien, Miñas Gerais, in São Paulo, leg. 10-V-1933 (E. BOHLMANN).

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Im Selbstverlag des Zoologischen Instituts
und Zoologischen Museums der Universität Hamburg

Gesamtherstellung: Krause-Druck - Stade