Pacific Insects 17(1): 99-138 1 October 1976

STUDIES ON THE DERMAPTERA OF THE PHILIPPINES[1]

By G. K. Srivastava[2]

Abstract: This paper includes the description of 18 new species belonging to the genera *Diplatys, Epilandex, Chaetospania, Auchenomus, Apachyus, Allostethus, Proreus, Adiathella, Kosmetor* and *Timomenus.* Besides these, 2 species are reported for the first time from the Philippine Islands.

Our knowledge of the fauna of the Philippine Islands is largely based on the works of Caudell (1904), Borelli (1915a, b, 1916, 1917, 1918, 1921, 1923, 1926), Brindle (1966, 1967) and Ramamurthi (1967). Recently, Srivastava (in press) has studied a collection of earwigs belonging to the Field Museum of Natural History, Chicago, which has resulted in the description of 14 new species.

The present paper contains an account of some Dermaptera recently received for study from the Bishop Museum, Honolulu, Hawaii. The collection comprises 55 species (excluding 22 represented by either females or nymphs, identified up to generic level only) belonging to 28 genera, of which 18 species are new to science and 2 others are reported for the first time from the Philippines. The genus *Apachyus* Serville, hitherto unknown from the Philippine Islands, is represented by a new species.

For some species that are represented by a large series in the collection it has been possible to study in detail the range of variations. A few females and nymphs could not be identified because the taxonomy of the whole order is based mainly on males, which often makes identification difficult.

The fauna of the Philippine Islands appears to be not only rich in the number of species but also in the multiplicity of individuals for some species. The presence of several unique females and nymphs in the present material and of such similar records by the earlier workers suggests that many more species are likely to be discovered in the future.

All types are deposited in the collections of the B. P. Bishop Museum, Honolulu, Hawaii, except as otherwise stated.

PYGIDICRANOIDEA

PYGIDICRANIDAE

PYGIDICRANINAE

Cranopygia sp.

Material examined: LUZON: Camarines Sur, Mt Iriga, 500–600 m, 1 nymph, 24.IV.1962; Mountain Prov., Mayoyao, Ifugao, 1200–1500 m, 2 nymphs, 12.VII–9.IX.1966; Ifugao Prov., Liwo, 8 km E of Mayoyao, 1000–1300 m, 1 ♀, 1 nymph, 21, 30–31.V.1967; Albay Prov., Libon,

[1]Part of the specimens examined are results of field work supported by a grant to Bishop Museum from the U.S. National Institutes of Health (AI-01723).

[2]Zoological Survey of India, Calcutta.

Caguscos, 200 m, 1 nymph, 11.V.1965; Mountain Prov., Abatan, Buguias, 60 km S of Bontoc, 1800–2000 m, 1 ♀, 1 nymph, 5.IV–7.V.1964, H. M. Torrevillas. MINDANAO: Misamis Or., Mt Empagatao, 1050–1200 m, 1 nymph, 19–30.IV.1961; Mt Balatukan, 15 km SW of Gingoog, 1 nymph, 1000–2000 m, 27–30.IV.1960, H. Torrevillas.

Cranopygia sp.

Build stout; general color dark brownish black but head, pronotum and elytra variegated.

Material examined: MINDANAO: Zamboanga del Norte, Masawan to Buenoswerte, 1290–1300 m, 1 ♀, 1 nymph, 5.VII.1958, in rain forest, H. E. Milliron. NEGROS OR.: L. Balinsasayao, 1 ex. (abdomen missing), 1–7.X.1959, L. W. Quate.

Tagalina sp.

Material examined: LUZON SUR: Mt Isarog, Pili, 600–900 m, 1 ♀, 2 nymphs, 30.V., 12, 13.IV.1965; Mt Iriga, 500–600 m, 2 ♀♀, 1 nymph, 1,18,28.IV.1962, H. M. Torrevillas. MINDANAO: Agusan, 10 km SE of San Francisco, 1 nymph (abdomen missing), 13.XI.1959, L. W. Quate & C. Yoshimoto; Bukidnon, Mt Katanglad, 1250 m, 1 nymph, 26.X.1959, L. W. Quate.

ECHINOSOMATINAE

Echinosoma philippinense Hincks

Echinosoma philippinense Hincks, 1959, *Syst. Mon. Derm.* 2: 156.

Pygidium in males is generally concave posteriorly but in the present material in some specimens it is either truncate or very slightly produced in middle.

Distribution: Philippine Is.

Material examined: LUZON: Camarines Sur, Mt Isarog, Pili, 600 m, 1 ♀, 4 nymphs, 4.IV.1965; Mt Iriga, 1 ♂, 7 ♀♀, 3 nymphs, 26.IV.1962, H. M. Torrevillas; Mt Montalban, Rizal, Wa-Wa Dam, 150–200 m, 1 ♂, 2 ♀♀, 5 nymphs, 27, 28.II, 27, 24.III.1965; Ifugao Prov., Liwo, 8 km E of Mayoyao, 800–1300 m, 1 ♂, 2 nymphs, 27–29.IV, 30–31.V.1967, Mountain Prov., Abatan, Buguias, 60 km S of Bontoc, 1800–2000 m, 1 ♂, 2 nymphs, 4–7.V, 5.IV, 1–4.VI.1964, H. M. Torrevillas; Los Banos, 2 ♀♀, IX.1915, F. Muir; 1 ex. (abdomen missing), III, VI.1952, Pemberton. MINDANAO: Zamboanga del Norte, 25 km S of Manucan, 500 m, 1 ♂, 18.X.1959; Agusan, 10 km SE of San Francisco, 1 nymph, 14.XI.1959, L. W. Quate; Misamis Or., Mt Balatukan, 15 km SW of Gingoog, 1 ♂, 1 ♀, 1 nymph (head missing), 1 ex. (exuviae), 1–5.V.1960; Minubanan, 1 ♂, 2 nymphs, 5–9.IV.1961, H. Torrevillas. BUSUANGA IS.: 4 km N of San Nicolas, 1 ♂, 20.V.1962, 1 ♀, 23–24.V.1962, light trap, H. Holtmann. NEGROS OR.: Dumaguete City, 1 ♂, 4.I.1961; Palinpinon, Olcoy R., 1 ex. (abdomen missing), 1 ♂, 28.VII.1958, H. M. Torrevillas; Bayawan, Basay, 2 nymphs, 14–17.XII.1959, L. W. Quate. PALAWAN: Mantalingajan Range, Pingisan, 620 m, 1 ♀, 10.IV.1962, H. Holtman.

DIPLATYIDAE

DIPLATYINAE

Diplatys sublobatus Borelli

Diplatys sublobatus Borelli, 1923, *Boll. Mus. Zool. Anat. Comp. Torino* 38 (N. S.): 3.

Distribution: Philippine Is.

Material examined: LUZON: Los Baños, 1 ♂, 1.VII.1930, F. C. Hadden.

Diplatys sp.

This is a brachypterous specimen.

Material examined: MINDANAO: Mis. Or., Mt Pomalihi, 21 km W of Gingoog City, 800–1000 m, 1 ♀, 16–18.X.1965, H. M. Torrevillas.

Diplatys sp.

General body color tawny with head and elytra dark blackish brown. Pronotum testaceous, gently contracted posteriorly with margin rounded. Wings well developed.

Material examined: LUZON: Mt Montalban, Rizal, Wa-wa Dam, 150–200 m, 1 ♀, 6.III.1965, L. M. Torrevillas.

Diplatys torrevillasi Srivastava, **n. sp.** FIG. 1–4

♂: Head dark brownish; antennae brownish but segments 2nd to 4th testaceous yellow. Pronotum blackish brown, testaceous yellow in posterior 1/3; legs yellow but femora in apical 1/2 and tibiae blackish brown only at base. Elytra and wings blackish brown; abdomen somewhat lighter in color and forceps testaceous yellow with apical 1/2 blackish. Pubescence fine. Head triangular, smooth, frons raised, transverse suture obsolete and median suture represented by a fine groove, hind margin concave, post-ocular carina distinct. Eyes prominent, longer than genae. Antennae partly broken (only 14 segments remaining), 1st shorter than eye in length and the distance between the antennal bases, stout, clavate; 2nd small; 3rd long, cylindrical, slightly longer than 4th but equal to 5th, remaining segments slightly longer. Pronotum about as long as broad, convex anteriorly, sides almost straight, with a few thick hairs, converging posteriorly, hind margin subtruncate, median sulcus distinct; prozona raised and well differentiated from flat metazona. Elytra and wings normal, a triangular scutellum visible. Legs typical of the genus. Abdomen long, cylindrical, slightly expanded posteriorly. Penultimate sternite with posterior margin concave in middle. Ultimate tergite about as long as broad, disc moderately raised, smooth, hind margin trisinuate. Forceps short, depressed, a short vertical ridge present at base, tapering with apices pointed and gently hooked; internally subcontiguous at base for a short distance, afterwards gradually diverging, finely crenulate. Genitalia as in FIG. 4.

Length: body, 8.2 mm; forceps, 1 mm.

♀: Unknown.

Material examined: Holotype ♂ (BISHOP 10,219), Mindanao: Misamis Or., Minubaban, 1050–1200 m, at light, H. Torrevillas.

This species belongs to the *greeni*-group (Hincks 1955: 96) and appears to be closely related to *D. adjacens* Hincks from South India but differs by the shape of posterior margin of penultimate sternite and genitalia, especially in the details of structure of parameres and virga.

Diplatys sp.

The present specimen is dark brown, finely pubescent and head sutures are deep and distinct.

Material examined: PALAWAN: 11–13 km SE of Tarumpitao Pt., 150 m, 1 ♀, 20.V.1958. light trap in rain forest, H. E. Milliron.

Diplatys sp.

Material examined: LUZON: Mountain Prov., Abatan, Buguias, 60 km S of Bontoc, 1800–2000 m, 5 nymphs, 9–17.VI.1964, H. M. Torrevillas.

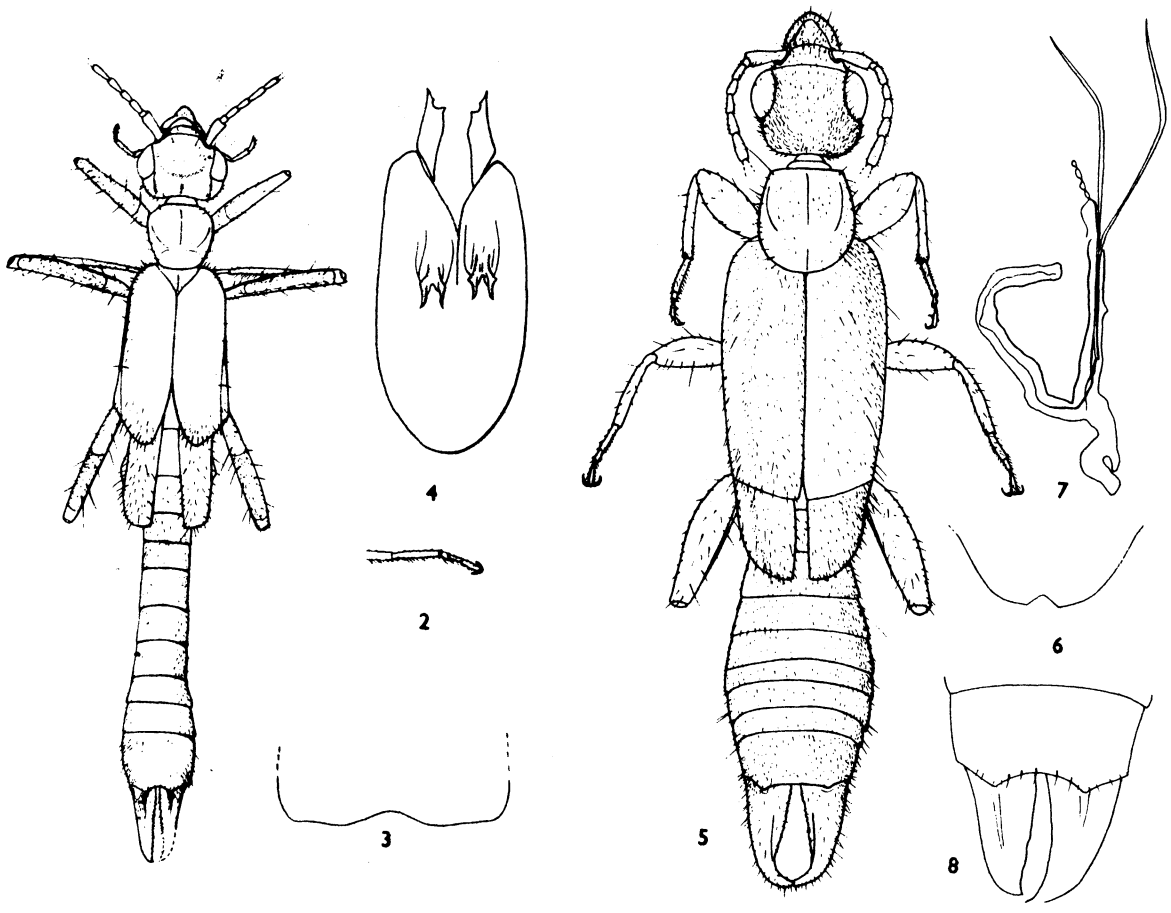

FIG. 1–8. *Diplatys torrevillasi,* n. sp. Holotype ♂: (1) Dorsal view; (2) Hind tarsi; (3) Hind margin of penultimate sternite; (4) Genitalia. *Epilandex gressitti,* n. sp. Holotype ♂: (5) Dorsal view; (6) Hind margin of penultimate sternite; (7) Genitalia. Paratype ♀: (8) Utimate tergite and forceps.

LABIOIDEA

CARCINOPHORIDAE

CARCINOPHORINAE

Euborellia plebeja (Dohrn)

Labidura plebeja Dohrn, 1864, *Stettin. Ent. Ztg.* **24**: 322.

Euborellia plebeja: Hebard, 1927, *Proc. Acad. Nat. Sci. Philad.* **79**: 27.

Distribution: Widely distributed in the Oriental Region.

Material examined: LUZON: Albay Prov., Libon, Caguscos, 200 m, 1 ♂, 1 ♀, 18–19.V.1965, H. M. Torrevillas; Philippine Is. (without further data), 1 ♀, 1958, H. E. Milliron.

Euborellia stali (Dohrn)

Forcinella stali Dohrn, 1864, *Stettin. Ent. Ztg.* **25**: 286.

Euborellia stali: Burr, 1911, *Gen. Insect.* **122**: 31.

Distribution: Originally described from Java. This species is widely distributed in the Oriental Region. Also known from Madagascar, the Comoro Is. and the Pemba, off the east coast of Africa.

Material examined: LUZON: Los Baños, 1 ♀, 20.IX.1959 L. W. Quate; Manila, 1 ♂, 1.IX.1945, H. E. Milliron; Mountain Prov., Ifugao, Mayoyao, 1000–1500 m, 1 ♂, 4 ♀♀, 27,29.IV, 29.VIII, 3–5.VIII, 2.IX.1966, H. M. Torrevillas; Camarines Sur, Mt Iriga, 1 ♀, 500–600 m, MINDANAO: Zamboanga del Norte, 25 km S of Manucan, 500 m, 1 ♀, 18.X.1959; Agusan, Los Arcos, 1 ♂, 19–23.XI.1959, L. W. Quate; Sulu Jolo I., Talipo, 15–30 m, 1 ♂, 31.VIII.1958, grass foothills, jungle, H. E. Milliron.

This species is characterized by having elytra as narrow, lateral ovate flaps on the mesonotum. In *E. plebeja* elytra and wings are perfect.

Hebard (1927) has treated *E. stali* as a synonym of *E. plebeja,* whereas Boeseman (1954) treats both of these as valid species, which action seems to be fully justified in total absence of any intermediary forms.

Euborellia annulipes (Lucas)

Forficesila annulipes Lucas, 1847, *Ann. Soc. Ent. Fr.* **15**: 84.

Euborellia annulipes: Burr, 1915, *J. Roy. Micr. Soc.* **1915**: 545.

Distribution: Cosmopolitan.

Material examined: LUZON: Manila, 3 ♂♂, 1 ♀, 2 nymphs, 1.IX.1945, H. E. Milliron; Rizal, Montalban bat cave, 1 ♂, 23.IX.1959, C. M. Yoshimoto; Mountain Prov., Mayoyao, Ifugao, 1200–1500 m, 1 ♀, 22–26.VIII.1966, H. M. Torrevillas.

The male from Rizal, Montalban bat cave differs from the other specimens in having the legs yellow, pronotum about as long as broad, hardly dilated posteriorly and the abdomen more heavily punctate.

The genitalia, however, show no variation.

Anisolabis sp.

The genus *Anisolabis* Fieber is represented in the Philippines by *A. recurvus* Borelli. As the male genitalia for this species has not been described, its taxonomic status is uncertain.

The present female comes close to it in having almost the same size and coloration but differs by the smooth body and 20-segmented antennae which are brown.

Material examined: MINDANAO: Agusan, 10 km SE of San Francisco, 1 ♀, 13.XI.1959, L. Quate & C. Yoshimoto.

Anisolabis sp.

The present female is blackish brown and slightly less stout than the preceding one. Abdomen parallel sided; ultimate tergite quadrate, faintly punctate. Length: body, 12.7 mm, forceps, 2.25 mm.

Material examined: LUZON: Mountain Prov., Mayoyao, Ifugao, 1200–1500 m, 1 ♀, 22–26.VIII.1966, H. M. Torrevillas.

Anisolabis sp.

General color light to dark brown, smooth, antennae 17-segmented.

Material examined: NEGROS OCC.: Mt Canlaon, 2100 m, 3 ♀♀, 21–25.XII.1959, L. W. Quate.

In the absence of males, even the generic assignment of these females should be treated as purely provisional.

Genus **EPILANDEX** Hebard

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

Landex Burr, 1915, *J. Roy. Micr. Soc.* **1915**: 445 (pars).

This genus is mainly characterized by the presence of very long and narrow parameres which are occasionally incurved at apices. The virga is always distinct; in some species it attains a great length and is thread-like. Preputial sacs are often provided with chitinous plates.

Altogether only 5 species are so far known, of which 3, *E. burri* (Borelli), *E. handschini* Hincks and *E. undulata* Ramamurthi, occur in the Oriental Region. Of the other 2, *E. peterseni* Ramamurthi is known from the Bismarck and Philippine Islands and *E. solomonensis* Brindle is found in the Solomon Islands. Two more species are described here as new. They can be seperated from other species of the genus by the following key.

Key to the species of the genus *Epilandex* Hebard (based on ♂♂ only)

1 (6). Forceps internally at base incised or concave
2 (3). Parameres very long and narrow ..... **handschini** Hincks
3 (2). Parameres comparatively shorter and broad
4 (5). Apex of parameres blunt, preputial sacs with chitinous plates ..... **burri** (Borelli)
5 (4). Apex of parameres pointed, preputial sacs without chitinous plates ..... **undulata** Ramamurthi
6 (1). Forceps internally at base entire (not concave or incised)
7 (8). Strongly pubescent, sides of abdominal segments rounded, ecarinate ..... **gressitti, n. sp.**
8 (7). Not strongly pubescent, sides of certain abdominal segments acute, carinate
9 (12). Penultimate sternite usually with a faint or distinct median longitudinal carina and posterior margin produced in middle in the form of a minute point
10 (11). Forceps unarmed internally ..... **peterseni** Ramamurthi
11 (10). Forceps serrated internally ..... **serrata, n. sp.**
12 (9). Penultimate sternite without a median longitudinal carina, posterior margin obtuse in middle ..... **solomonensis** Brindle

Epilandex gressitti Srivastava, **n. sp.** FIG. 5–8

♂: General color testaceous brown. Thickly pubescent. Head triangular, slightly longer than broad, frons

tumid, sutures obsolete, hind margin almost straight. Eyes black, prominent, slightly longer than the genae. Antennae 19-segmented, stout, 1st clavate, long; 2nd small; 3rd long, cylindrical; 4th and 5th subequal but both shorter than 3rd; 6th equal to 3rd and remaining segments longer. Pronotum longer than broad, gently widened posteriorly, sides almost straight, hind angles and margin broadly rounded, median sulcus distinct; prozona weakly raised and poorly demarcated from metazona. Elytra and wings well developed. Legs normal. Abdomen somewhat depressed, gently dilated in middle, thickly pubescent, more so on sides; sides of segments rounded, ecarinate. Penultimate sternite rounded posteriorly with a deep emargination in middle. Ultimate tergite transverse, depressed in middle posteriorly with margin trisinuate. Forceps almost symmetrical, trigonal and remote at base, tapering, curved in apical 1/3 with tips pointed and gently hooked; inner margin serrulate in basal 2/3 only. Genitalia as in FIG. 7. Length: body, 6.7 mm; forceps, 0.8 mm.

♀: Agrees with ♂ in most characters except that the penultimate sternite rounded posteriorly, slightly sinuate laterally; ultimate tergite narrowed posteriorly and forceps simple, subcontiguous and almost straight. Length: body, 6.4 mm; forceps, 0.6 mm.

Material examined: Holotype ♂ (BISHOP 10,220), Mindanao: Lanao, Lake Lanao, Gurain Mts., 1380 m, 16.VI.1958, H. E. Milliron; 1 ♀ paratype, Misamis Or., Mt Balatukan, 15 km SW of Gingoog, 1000–2000 m, 27–30.IV.1960, H. Torrevillas.

This interesting species can be easily distinguished from all other known species of the genus in having strongly pubescent body; sides of abdominal segments rounded, ecarinate and the penultimate sternite deeply emarginate in middle posteriorly. Moreover, the virga is about 3x longer than the whole genital armature and is thread-like; it tends to break off when the genitalia are dissected out.

Epilandex serrata Srivastava, n. sp. FIG. 9–12

♂: General color blackish brown; a few distal antennal segments and the legs yellow. Head triangular, about as long as broad, sutures faint, frons weakly convex, hind margin emarginate in middle. Eyes prominent, slightly longer than the genae. Antennae 17-segmented, 1st long, clavate; 2nd small; 3rd long and cylindrical; 4th and 5th subclavate, almost equal in length, both shorter than 3rd; remaining narrowed at base, gently expanded apically, slightly longer than 5th. Pronotum weakly transverse, gently expanded caudad, sides straight, gently reflexed, hind angles and margin broadly rounded, median sulcus faint; pro- and metazona little differentiated. Elytra well developed, smooth, humeral angles rounded, hind margin obliquely truncate. Wings normal, of the same texture as the elytra. Legs typical of the genus. Abdomen moderately depressed, smooth, gently dilated posteriorly, pubescence more pronounced laterally, sides of abdominal segments 7th to 9th acute, a longitudinal carina present on the sides of segments 8 and 9 only. Penultimate sternite transverse, rounded posteriorly, with a sharp point in middle; manubrium slightly shorter in length than the sternite, of uniform width. Ultimate tergite transverse, rectangular, a transverse depression present in middle posteriorly and striate, at the anterior border of the depression, the area above slightly raised, laterally a sharp carina present, hind margin trisinuate. Forceps stout, remote, weakly asymmetrical, faintly trigonal above at base, then depressed and tapering, left branch almost straight, right branch gradually curving from basal 1/3 to apex where it crosses over the left branch, apices pointed, gently hooked, internal margin finely serrated. Genitalia (FIG. 11) with parameres long and narrow, apices thread-like and hooked. Length: body, 9.3–9.5 mm; forceps, 1.8–2.1 mm.

♀: Agrees with ♂ in most characters except that the sides of abdominal segments rounded; penultimate sternite triangular, obtusely rounded posteriorly; ultimate tergite narrower posteriorly, lateral longitudinal carina weak and forceps straight, contiguous. Length: body, 8.6–9.1 mm, forceps, 1.6 mm.

Material examined: Holotype ♂ (BISHOP 10,221), Luzon: Camarines, Sur, Mt Isarog, Pili, 600 m, 6.IV.1965. Paratypes: 1 ♂, same data, 800–900 m, 21.IV.1965; 1 ♀, same data, 750–850 m, 13–15.V.1963; 1 ♂ (without head); 1 ♀, Mt Iriga, 500–600 m, 18.IV.1962; 1 ♀, Ifugao Prov., Liwo, 8 km E of Mayoyao, 1000–1300 m, 30–31.V.1967, light trap, H. M. Torrevillas. One ♂ paratype is retained in the collection of the author.

This species closely resembles *E. burri* (Borelli), but differs by the absence of the median longitudinal ridge of the penultimate sternite; the forceps with inner margin entire at the base (not incised) and crenulate; the parameres comparatively longer, apices thread-like and hooked; preputial sacs lacking the chitinous plates.

It can be, however, differentiated from *E. peterseni* Ramamurthi in having the internal margin of the forceps serrated, and distinctive parameres. In *E. serrata,* n. sp. the carina in the caudal 1/2 of penultimate sternite is wanting and the margin in middle is produced into a sharp, minute point, whereas in *E. peterseni* the carina is weakly developed.

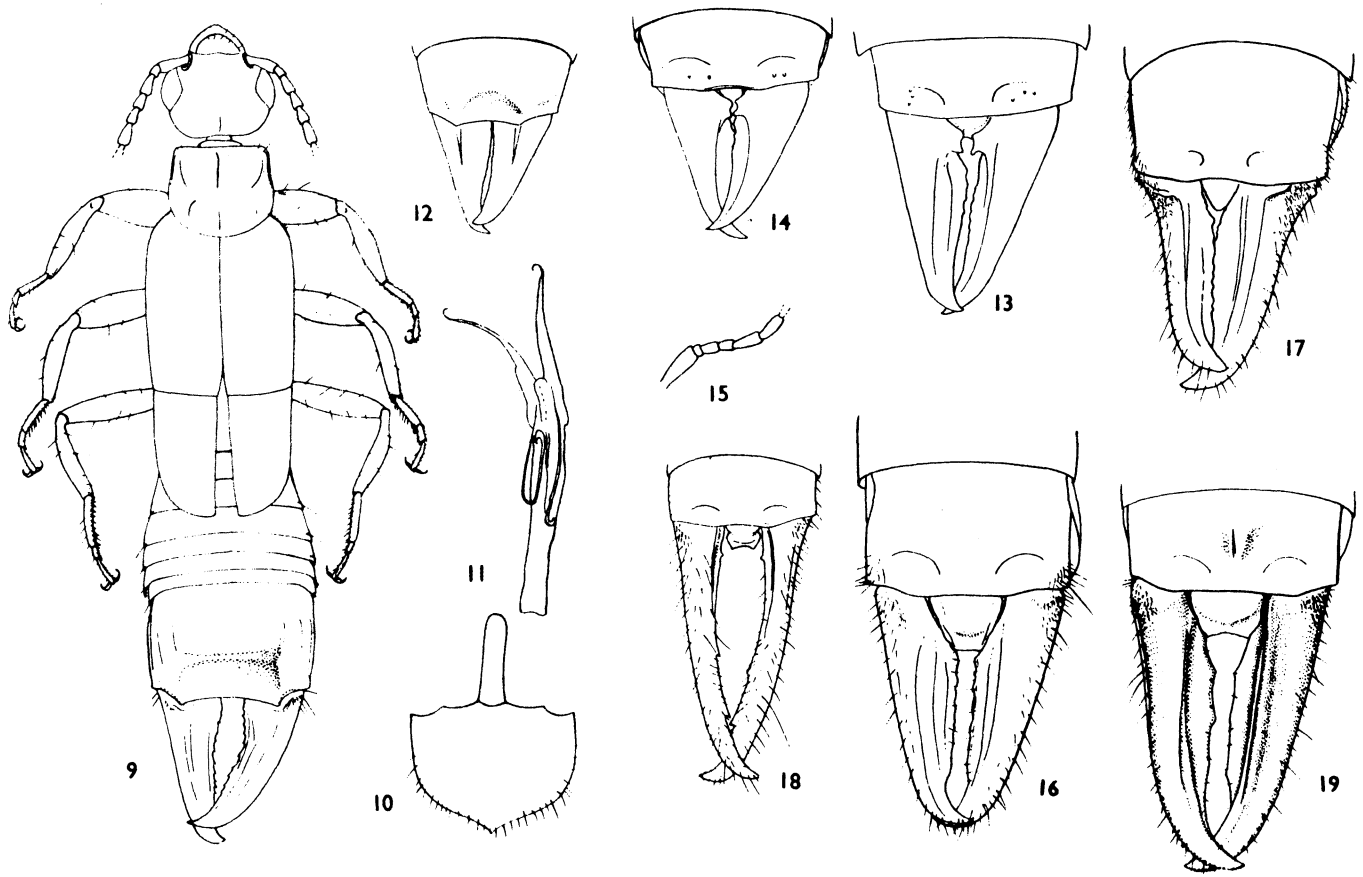

FIG. 9–19. *Epilandex serrata,* n. sp. Holotype ♂: (9) Dorsal view; (10) Penultimate sternite with manubrium; (11) Genitalia. Paratype ♀: (12) Ultimate tergite and forceps. *Nesogaster aculeatus* (Bormans), ♀: (13) Ultimate tergite and forceps. *Nesogaster* sp., ♀: (14) Ultimate tergite and forceps. *Marawa* sp., ♀: (15) Antennal segments; (16) Ultimate tergite and forceps. *Chaetospania stella* Burr, ♀: (17) Ultimate tergite and forceps. *Chaetospania lanceolata* Borelli, ♂: (18) Ultimate tergite and forceps. *Chaetospantia kurseongae* Hebard, ♀: (19) Ultimate tergite and forceps.

LABIIDAE

NESOGASTRINAE

Nesogaster aculeatus (Bormans) FIG. 13

Labia aculeata Bormans, 1900, *Ann. Mus. Stor. Nat. Genova* **20**: 456.

Forficula miranda Bormans, *In* Burr, 1903, *Ann. Mag. Nat. Hist.* ser. **11**: 269.

Nesogaster aculeatus: Burr, 1908, *Ann. Mag. Nat. Hist.* ser. 8, **1**: 46.

Nesogaster atrops Rehn, 1946, *Proc. Acad. Nat. Sci. Philad.* **98**: 231.

Nesogaster apoensis Rehn, 1946, *Proc. Acad. Nat. Sci. Philad.* **98**: 235.

Distribution: Philippines, Lombok, Bismarck Is., Buru, Caroline Is., Samoa, New Hebrides and New Guinea.

Material examined: LUZON: Mt Makiling, Laguna P., 1 ♀, 18.XII.1936, O. H. Swezey; Ifugao Prov., Jacmal Bunhian, 24 km E of Mayoyao, 800–1000 m, 1 ♀, 30.IV.1967. MINDANAO: Zamboanga del Norte, Masawan to Buenoswerte, 1290–3000 m, 1 ♀ (macropterous), 5.VII.1958, rain forest to low jungle, H. E. Milliron; Bukidnon, Mt Katanglad, 1480 m, 1 ♀, 27–31.X.1959; 1 nymph, 4–9.XII.1959, C. M. Yoshimoto. NEGROS OR.: L. Balinsasayao, 1 ♂, 2 ♀♀, 3 nymphs, 1–7.X.1959, C. M. Yoshimoto.

Nesogaster sp. FIG. 14

General color shining testaceous brown. Eyes prominent, slightly longer than genae; antennae with a few distal segments yellow; wings with a broad yellow spot apically; ultimate tergite black posteriorly; pygidium short; forceps with basal lamellation bilobed, internally crenulate.

Material examined: MISAMIS OR.: Minubanan, 1050–1200 m, 1 ♀ (macropterous), 5–9.IV.1961, at light, H. Torrevillas.

GERACINAE

Pseudovostox bicolor Borelli FIG. 20

Pseudovostox bicolor Borelli, 1926, *Res. Biologicae* **1**: 66.

Eyes fairly prominent, longer than the genae. Whole body thickly pubescent. Length: body, 4.9 mm, forceps, 0.6 mm.

Distribution: Philippine Islands (Mindanao) and Borneo.

Material examined: MINDANAO: Misamis Or., Mt Kibungol, 20 km SE of Gingoog, 700–800 m, 1 ♀, 9–18.IV.1960, at light, W. Torrevillas.

The present female agrees so well with the original description of the species that there can be hardly any doubt of its correct assignment.

Pseudovostox sp. FIG. 21, 22

♀: Head, antennae and abdomen black; pronotum and legs blackish brown; elytra black, with a brownish humeral spot extending in a little less than anterior 1/2, a thin brownish stripe present along the sutural margin. Wings black, inner margin with a thin brownish stripe. Pubescent; small size. Head triangular, slightly longer than broad, moderately convex, hind margin straight, sutures obliterated. Eyes smaller than genae in length. Antennae partly broken, only 7 segments on the right remaining, segments comparatively longer than those of *P. bicolor;* 1st segment shorter than the distance between the antennal bases; 3rd slightly longer than 4th but equal to 5th, remaining segments slightly longer. Pronotum about as long as broad, anteriorly slightly narrower than head, sides straight, parallel, gently reflexed, hind margin broadly rounded, median sulcus distinct; prozona weakly raised and little differentiated from flat metazona. Elytra and wings well developed,

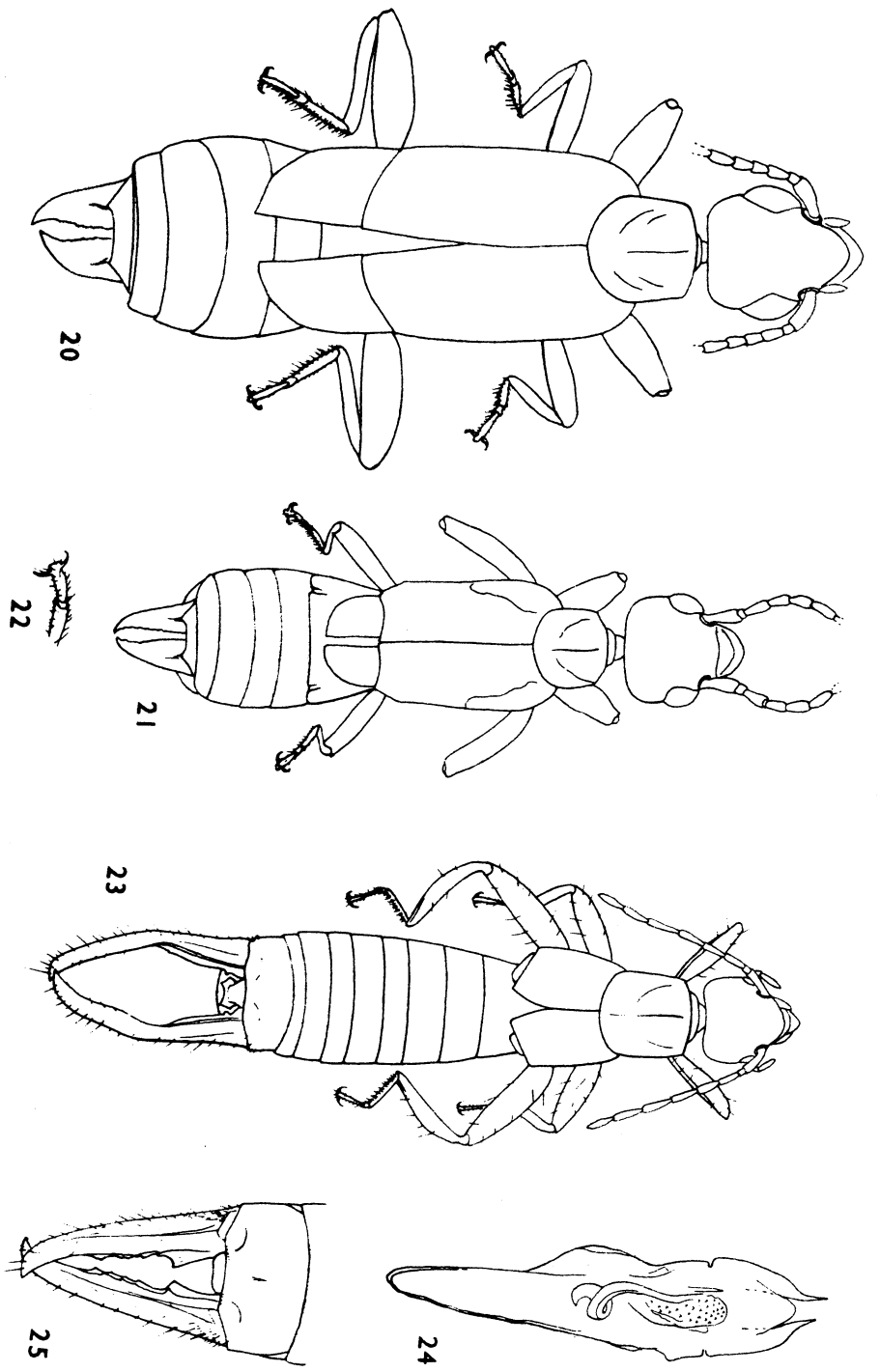

FIG. 20–25. *Pseudovostox bicolor* Borelli, ♀: (20) Dorsal view. *Pseudovostox* sp., ♀: (21) Dorsal view; (22) Hind tarsi. *Chaetospania siva*, n. sp. Holotype ♂: (23) Dorsal view; (24) Genitalia. Paratype ♀: (25) Ultimate tergite and forceps.

pubescent, smooth. Legs typical of the genus; tarsal claw with a distinct arolium. Abdomen convex, pubescent. Forceps simple and straight. Length: body, 3.8 mm; forceps, 0.5 mm.

Material examined: NEGROS OR.: Mt Talinas, 1000 m, 1 ♀, 29–31.XII.1960, H. Torrevillas.

This specimen differs from the only known Oriental species of the genus, *P. bicolor* Borelli found in Philippines and Borneo, in general body coloration, especially of elytra and the shape of pronotum.

Undoubtedly a new species is represented but in the absence of a male it is left unnamed.

SPONGIPHORINAE

Marawa sp. FIG. 15, 16

General color dark brown. Antennae dark brown with a few apical segments yellow; 3rd–5th conical. Eyes black, much shorter than genae in length. Pronotum yellow, about as long as broad, gently narrowed, posteriorly. Legs testaceous yellow. Elytra and wings black, pubescent. Abdomen smooth, with long pubescence on sides, gently contracted posteriorly. Ultimate tergite, pygidium and forceps as in FIG. 16. Length: body, 7.5 mm, forceps 1.9 mm.

Material examined: MINDANAO: Z. del Sur, 24 km NW of Milbuk, nr. Lebak, 450–900 m, 1 ♀, 6–7.VIII.1958, H. E. Milliron.

The genus *Marawa* Burr is represented in the Philippines by 3 species, *M. nigrella* (Dubrony), *M. luzonica* (Dohrn) and *M. arachidis* (Yersin).

The present female differs from the first 2 in being larger and from the last one in having a fine pubescence all over the body; the pronotum gently contracted posteriorly and wings extending beyond the elytra.

Spongovostox semiflavus (Bormans)

Spongophora semi-flava Bormans, 1894, *Ann. Mus. Stor. Nat. Genoa* ser. 2, **14**: 385.

Spongiphora semiflava: Bormans, 1900, *Das Tierreich* **11**: 59.

Spongovostox semiflavus: Burr, 1911, *Gen. Insect.* **122**: 52.

Distribution: India, China (Yunnan), Ceylon, Burma, Vietnam, Sumatra, Simalur, Java, Philippines and Bismarck Islands.

Material examined: LUZON: Camarines Sur, Mt Iriga, 1 ♀, 500–600 m, 6.IV.1962, H. M. Torrevillas. MINDANAO: Z. del Sur, 3.2 km NW of Mulbuk, 1 ♀, 4.VIII.1958, light trap in jungle; Sulu, Jolo Is., Jolo, 1 ♀ (forceps missing), 24.VIII.1959, H. E. Milliron. PALAWAN: Tarumpitao Pt., 1 ♀, 29.V.1958, in jungle, H. E. Milliron; Eran Pt., 8 km SW of Tarumpitao Pt., 1 ♀, 31.XII.1959–4.I.1960, at light, L. W. Quate. Philippines (no further data), 4 ♀♀, 1 ex. (abdomen missing), 1958, H. E. Milliron.

LABIINAE

Labia curvicauda (Motschulsky)

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

Labia curvicauda: Dohrn, 1864, *Stettin. Ent. Ztg.* **25**: 428.

Distribution: Almost cosmopolitan.

Material examined: LUZON: Mountain Prov., Abatan, Buguias, 60 km S of Bontoc, 1800–2000 m, 3 ♀♀, 11–13.VI.1964, H. M. Torrevillas; Albay Prov., Libon, Caguscos, 200 m, 1 ♂, 15.V.1965, L. M. Torrevillas. MINDANAO: Bukidnon, Mt Katanglad, 1250 m, 1 ♂, 4–9.XII.1959, L. W. Quate.

Labia pilicornis (Motschulsky)

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

Labia pilicornis: Dohrn, 1864, *Stettin. Ent. Ztg.* **25**: 437.

Distribution: SE Asia, Lebanon, West Africa, Europe, North America (U.S.A.: Rhode Island).

Material examined: LUZON: Los Baños, 1 ♂, XI.1921, F. X. Williams.

Labia sp.

Glabrous, smooth. Head blackish, occiput orange; antennae and legs yellow, tibiae blackish. Elytra black with a yellow stripe externally. Wings yellow with a black stripe along the sutural margin. Eyes small, shorter than genae in length. Pronotum quadrate, weakly transverse, sides convex, slightly contracted posteriorly with margin convex.

Material examined: NEGROS OR.: L. Balinsasayao, 1 ♀, 1–7.X.1959, L. W. Quate.

Labia sp.

General color dark brown. Pronotum slightly longer than broad, sides straight, hind angles and margin broadly rounded. Elytra and wings ample, punctate. Antennal segments 3rd to 5th of the left side sub-conical whereas those of the right side normal.

Material examined: LEYTE: Palo, 1 ♀, 16.VI.1931 (no further data).

Irdex nitidipennis (Bormans)

Spongophora nitidipennis Bormans, 1894, *Ann. Mus. Stor. Nat. Genova* ser. 2, **14**: 382.

Spongiphora nitidipennis: Bormans, 1900, *Das Tierreich.* **11**: 58.

Irdex nitidipennis: Burr, 1911, *Gen. Insect.* **122**: 56.

An extremely variable species as far as the shape of pygidium and inner armarture of forceps are concerned.

Distribution: India, Burma, Sumatra, Java, Bali, Borneo and the Philippines.

Material examined: LUZON: Camarines Sur, Mt Isarog, Pili, 1 ♀, 800 m, 28.IV.1965, light trap, H. M. Torrevillas. MINDANAO: Agusan, 10 km SE of San Francisco, 1 ♀, 14.XI.1959, L. W. Quate; Misamis Or., Minalwang, 1050 m, 6 ♂♂, 7 ♀♀, 24.III-4.IV.1961, at light, H. M. Torrevillas; Mt Empagatao, 1050–1200 m, 1 ♀, 19–30.IV.1961, light trap, H. M. Torrevillas; Mt Kibungol, 20 km SE of Gingoog, 700–800 m, 2 ♂♂, 9–18.IV.1960, at light, W. Torrevillas; Hindangon, 20 km S of Gingoog, 1 ♀, 500–700 m, 20–24.IV.1960, H. Torrevillas. NEGROS OR.: Mt Talinas, 1000 m, 6 ♂♂, 12 ♀♀, 5 exs. (abdomen missing), 29–31.X.1960, at light, H. Torrevillas; 1020 m, 3 ♂♂, 28.VI.1958, rain forest, H. E. Milliron; L. Balinsasayao, 2 ♀♀, 1–7.X.1959, C. Yoshimoto.

Irdex pygidiatus (Dubrony)

Labia? pygidiata Dubrony, 1879, *Ann. Mus. Stor. Nat. Genova.* **14**: 364.

Labia pygidiata: Bormans, 1894, *Ann. Mus. Stor. Nat. Genova* ser. 2, **14**: 387.

Spongovostox pygidiatus: Burr, 1911, *Gen. Insect.* **122**: 52.

Apovostox pygidiatus: Hebard, 1927, *Proc. Acad. Nat. Sci. Philad.* **79**: 31.

The genus *Apovostox* Hebard (type-species: *Labia pygidiata* Dubrony) has been rightly synonymized with the genus *Irdex* Burr, by Brindle (1970).

This species externally resembles *Irdex nitidipennis* (Bormans) but it can be easily differentiated by its uniform brown color; comparatively less pubescent body and the distinctive parameres. As the shape of pygidium and the inner armature of forceps in the latter species vary greatly, these characters are of little value in separating the 2.

The general color in *I. nitidipennis* appears to be constant in being dark brown with traces of black on certain body parts.

Distribution: Burma, China (Yunnan), Sumatra, Java, Borneo, Celebes Is. First record from the Philippines.

Material examined: MINDANAO: Agusan, 10 km SE of San Francisco, 1 ♂, 14.XI.1959, L. W. Quate.

Chaetospania feae Bormans

Chaetospania feae Bormans, 1894, *Ann. Mus. Stor. Nat. Genova* ser. 2, **14**: 390.

Distribution: India, China (Yunnan), Burma, Ceylon, Sumatra, Java, Lombok, Borneo and the Philippines.

Material examined: LUZON: Mountain Prov., Ifugao Mayoyao, 1000–1500 m, 1 ♂, 6.VII.1966, H. M. Torrevillas.

Chaetospania stella Burr FIG. 17

Chaetospania stella Burr, 1902, *Termész. Füz.* **25**: 7.

Chaetospania confusa Burr, 1905, *Ann. Mag. Nat. Hist.* ser. **16**: 489; 1911, *Gen. Insect.* **122**: 54.

Pygidium in the present ♂ narrowed at base, gradually expanding up to middle where a small point present on each side, afterwards gradually contracted posteriorly, hind margin deeply emarginate with a minute point in middle and angles produced into sharp points. Forceps stout, depressed, internally with a sharp tooth situated a little beyond middle.

In ♀, the pygidium slightly produced apically and branches of forceps stout, contiguous; internal margin finely serrated with a small tooth at about middle.

Distribution: Malaya; Sumatra (Mentawai & Sipora Is.); first record from the Philippines.

Material examined: LUZON: Albay Prov., Mt Mayon (volc.), 16 km NW of Lagaspi, 900–1000 m, 2 ♀♀, 18.V.1962, H. M. Torrevillas. MINDANAO: Misamis Or., Minalwang, 1050 m, 1 ♂, 1 ♀, 24.III.–4.IV.1961, H. Torrevillas.

Chaetospania lanceolata Borelli FIG. 18

Chaetospania lanceolata Borelli, 1926, *Res. Biologicae* **1**: 72.

In the present specimen, pygidium is slightly concave posteriorly.

Distribution: Philippine Is.

Material examined: NEGROS OR.: Mt Talinas, 900–1200 m, 1 ♂, 8.VI.1958, rain forest, H. E. Milliron.

Chaetospania siva Srivastava, **n. sp.** FIG. 23–25

♂: General color varies between light to dark brown. Head longer than broad, convex above, glabrous, sutures obliterated, hind margin faintly emarginate. Eyes black, much smaller than genae in length. Antennae 13-segmented; segments: 3rd shorter than 5th but longer than 4th; remaining segments long and slender gradually increasing in length distally, excepting the ultimate one slightly shorter than preceding. Pronotum slightly longer than broad, smooth, glabrous, anteriorly as wide as head, side straight, gently reflexed, slightly diverging posteriorly with angles broadly and margin briefly rounded; median sulcus faintly marked; prozona weakly tumid. Elytra short, about as long as the pronotum, pubescent, hind margin obliquely truncate. Wings of same color and texture as the elytra, abbreviated, scarcely extending beyond elytra. Legs normal, hind metatarsal segment slightly longer than the remaining 2 togehter. Abdomen sparsely pubescent on sides, lightly punctate, somewhat depressed, gently expanded posteriorly. Ultimate tergite transverse, glabrous and smooth, faintly tumid above the bases of forceps, hind margin in middle almost straight, median sulcus short and deep. Penultimate sternite broadly rounded posteriorly with a very faint emargination in middle. Pygidium distinct, declivient, gradually

contracted from base up to middle, then suddenly expanded in apical 1/2, laterally obtuse in middle, hind margin broadly emarginate with angles produced into minute points. Forceps strongly pubescent, branches long, cylindrical, trigonal and straight in basal 1/2, afterwards lightly incurved with apices gently hooked, pointed and crossing, internal margin below with a sharp edge and provided with a tubercle at base. Genitalia as in FIG. 24. Length: body, 6.3–6.8 mm; forceps, 2.35–2.4 mm.

♀: Agrees with ♂ in most characters except that it is blackish in parts; ultimate tergite weakly transverse, narrower posteriorly. Pygidium convex, hind margin straight; forceps stout, internally at base with large ventral tooth, otherwise irregularly dentate dorsally as well as ventrally. Length: body, 7.7–8.1 mm; forceps, 2.0–2.3 mm.

Material examined: Holotype ♂ (BISHOP 10,222), paratypes, 1 ♂, 2 ♀♀ Luzon: Mountain Prov., Abatan, Buguias, 60 km S of Bontoc, 1800 m, 11–12.VI.1964, 1 nymph, same data, 9–12.V.1958, H. M. Torrevillas.

This species is close to *Chaetospania lanceolata* Borelli from the Philippines in size and general coloration but differs by the shape of the forceps and in the details of structure of the genitalia.

Chaetospania kurseongae Hebard FIG. 19

Chaetospania kurseongae Hebard, 1923, *Mem. Dept. Agr. India, Ent.* ser. 7: 215.

Labia ridens (nec Bormans) var. *nitens:* Borelli, 1923, *Boll. Mus. Zool. Anat. Comp. Torino* **13**: 8.

General color dark brown with traces of black on certain body parts. Head and pronotum blackish brown; elytra and wings dark brownish black. Abdomen and forceps brownish, former slightly darker on sides and the latter with apices black. Length: body, 7.3 mm; forceps, 2.2 mm.

Distribution: Originally described from Kurseong, Dist. Darjeeling, West Bengal (India). It has since been recorded by Borelli (1926) from the Philippine Islands (Luzon, Mindanao, Mindoro and Leyte).

Material examined: LUZON: Albay Prov., Mt Mayon, 16 km NW of Lagaspi, 900–1000 m, 1 ♀, 18.V.1962, H. M. Torrevillas.

Generally it is difficult in Dermaptera to place isolated females but the present female agrees so well with the original description and illustration of the species (Hebard 1923: pl. 19, fig. 11), that its assignment here seems to be fully justified.

Chaetospania fallax (Bormans)

Platylabia fallax Bormans, 1894, *Ann. Mus. Stor. Nat. Genova* ser 2, **14**: 380.

Chaetospania fallax: Hebard, 1927, *Proc. Acad. Nat. Sci. Philad.* **79**: 37.

Distribution: India, Burma, China (Yunnan).

Matieral examined: LUZON: Montalban, Rizal, Wa-wa Dam, 150–200 m, 2 ♀♀, 26.II.1965, L. Torrevillas; Lacon, 20 miles (32 km) SW of Baguio, 1 ♀, 6.X.1945, H. E. Milliron. NEGROS OR.: nr. Mt Talinas, 1020 m, 1 ♀, 27.VIII.1958, rain forest, H. E. Milliron.

Chaetospania sp.

General color shining black with pronotum and legs testaceous brown. Pubescent. Size small (length: body, 5.8 mm, forceps, 1.5 mm). Pygidium distinct, posterior margin truncate. Forceps straight, trigonal above, inner flange slightly oblique near base and partly covering the pygidium on sides, afterwards straight, narrowing towards the apex, faintly undulate.

Material examined: MINDANAO: Surigao, L. Mainit, 1 ♀, 23.XI–1.XII.1959, C. M. Yoshimoto.

It approaches *Chaetospania kurseongae* Hebard, but differs in being slightly smaller in size and darker in color.

Chaetospania sp.

Material examined: MINDANAO: Z. del Sur, 11 km NW of Milbuk, 390 m, 1 nymph, 5.VIII.1958, logged area, light trap, H. E. Milliron.

SPARATTINAE

Genus **AUCHENOMUS** Karsch

Auchenomus Karsch, 1886, *Berl. Ent. Zs.* **20**: 89 (type-species: *Auchenomus logiforceps* Karsch).

The members of this genus have a very characteristic appearance due to their strongly depressed body and the pronotum narrowed anteriorly, forming a sort of neck. Legs are short; tarsi short and broad with 1st segment almost equal to 3rd.

Brindle (1968) gave a key to 5 species of the genus from the Philippines in which *A. javanus* (Bormans) was not included, although it has been reported from there by Borelli (1916). Moreover, *A. fulvus* Borelli, though synonymized by its author (1921) under *A. setelosus* (Burr), has been referred to as a valid species in the key.

Recently, Srivastava (in press) has recorded *A. angusticollis* (Dubrony) from the Philippines. Besides the above, 3 more new species are described in the present work, thus bringing the total to 5, which can be separated by the following key.

Key to the species of the genus *Auchenomus* Karsch from Philippine Islands (based on ♂♂ only)

1 (12). Penultimate sternite smooth laterally (not rugose or striate).
2 (7). Ultimate tergite with a row of 6 sharp tubercles posteriorly.
3 (6). Tubercles at hind margin of ultimate tergite of uniform size.
4 (5). Head black; forceps internally at base with 2 cylindrical spines, followed by several smaller spines. ..... **vicinus** Borelli
5 (4). Head yellow; forceps internally at base with a rectangular lamina, afterwards finely denticulate and with a sharp triangular spine a little before apex. ..... **setelosus** (Burr)
6 (3). Tubercles at hind margin of ultimate tergite of unequal size. ..... **arcuatus** Brindle
7 (2). Ultimate tergite generally devoid of tubercles posteriorly (only in some species a pair of spiniform tubercles in the posteromedian depression are present which often extend beyond the hind margin).
8 (9). Penultimate sternite with a faint median longitudinal fold. ..... **angusticollis** (Dubrony)
9 (8). Penultimate sternite without a median longitudinal fold.
10 (11). Ultimate tergite laterally with minute tubercles; pygidium short, transverse, dorsally provided with numerous small tubercles, ventrally a little produced, bi-lobed apically; forceps with a pair of teeth internally. ..... **pallidus** Brindle
11 (10). Ultimate tergite smooth, with a pair of compressed folds present on the sides of posteromedian depression and extending beyond the hind margin; forceps internally at base with a sharp triangular tooth followed by another smaller one, finely serrated in middle for a short distance then a little before apex a short tooth present. ..... **javanus** (Bormans)
12 (1). Penultimate sternite rugose or striate laterally.
13 (14). Penultimate sternite rugose laterally; forceps internally at base with a tridentate lobe. ..... **menozzii** Borelli
14 (15). Penultimate sternite striate laterally; forceps internally at base variously armed (but not as above).
15 (16). Size slightly larger (16.8-18 mm); ultimate tergite posteriorly with a row of 6 spiniform tubercles; pygidium rectangular, flat; forceps long, cylindrical internally with large and small teeth. ..... **striatus, n. sp.**

16 (15). Size slightly smaller (11.2-12.6 mm); ultimate tergite without spiniform tubercles posteriorly (sometimes only a pair of minute points visible); pygidium small, rounded; forceps comparatively shorter and robust.

17 (18). Ultimate tergite almost parallel sided with low tumid elevations, corresponding to bases of forceps; forceps straight, depressed, inner margin ventrally at base flattened with small teeth, afterwards smooth except for a small tooth below at about apical 1/3. ..... **dentatus, n. sp.**

18 (17). Ultimate tergite expanded posteriorly, generally with a well developed transverse fold in middle; branches of forceps robust, depressed, gently curved in middle, internally above dentate, below with strong, conical tooth at about basal 1/3, directed backwards. ..... **albayiensis, n. sp.**

Auchenomus striatus Srivastava, **n. sp.** FIG. 26–29

♂: General color testaceous yellow. Eyes black; antennae dark blackish brown. Elytra and wings yellow with a trace of dull grayish green. Hind margin of ultimate tergite and apical 1/2 of forceps black. Pubescent. Head somewhat pentagonal, flat, a trifle longer than broad, widest at the region of eyes, transverse suture obsolete, median suture represented by a deep groove, dividing the occiput into 2 halves, occiput slightly raised, hind margin deeply emarginate in middle. Antennae partly broken (only 7 segments remaining), 1st long and slender, slightly shorter than 2nd to 4th together; 2nd small, remaining long and thin, gradually increasing in length distally. Pronotum a little more than 1-1/2x longer than broad, anteriorly narrowed with angles distinct, sides gently reflexed, hind angles and margin broadly rounded, median sulcus faint. Elytra and wings well developed, smooth, former with hind margin lightly concave and anal angles rounded off, thus showing a small triangular scutellum. Legs typical of the genus. Abdomen depressed, faintly punctate, gradually enlarging from base to apex, 8th sternite with a faint longitudinal ridge laterally. Penultimate sternite rounded posteriorly, with a slight emargination in middle, laterally with an oblique longitudinal ridge extending from base to a little beyond middle. Ultimate tergite smooth, quadrate, about as long as broad, gently expanded posteriorly, hind margin trisinuate with angles projecting, faintly tumid above the bases of forceps and depressed in middle, provided with a row of 6 tubercles, a little before the posterior margin. Pygidium distinct, flat, rectangular, hind margin lightly concave, angles with minute point; ventrally convex, posteriorly in middle with a minute point. Forceps with branches long and slender, depressed, tapering, gradually curving from base to apex which meet, internal margin ventrally as well as medially provided with several minute but sharp teeth up to basal 2/3 where a large triangular tooth directed ventrad is present, afterwards unarmed except for a minute pointed tooth a little before apex and directed backwards; very long and short hairs present. Genitalia as in FIG. 28. Length: body,12.1–13.3 mm; forceps, 4.1–4.7 mm.

♀: Agrees with ♂ in most characters except that penultimate sternite devoid of lateral ridges; pygidium trapezoidal, convex above at base, gently contracted posteriorly, sides faintly serrulate; forceps with branches almost straight, trigonal with a sharp ridge in basal 1/2, afterwards depressed, tapering with apices pointed, gently hooked, internally below near base with a flange, inner margin of which dentate, afterwards margin sharp, faintly wavey up to middle. Length: Body, 12.3 mm; forceps, 2.2 mm.

Material examined: Holotype ♂ (BISHOP 10,223), Luzon: Camarines Sur, Mt Isarog, Pili, 600–800 m, 1.V.1965. 1 ♂ paratype, same data, 5.IV.1965; 1 ♂ paratype, same data, 5.IV.1965, H. M. Torrevillas; 1 ♀, Mindanao: Surigao, L. Mainit, 23.XI–1.XII.1959, C. M. Yoshimoto.

One ♂ paratype is retained in the collection of the author.

This species is close to *A. setelosus* Burr (= *A. fulvus* Borelli) but differs in having a lateral ridge on the 8th and 9th sternites and forceps at base without a rectangular lamina.

It, however, can be separated from *A. vicinus* Borelli by the color of head and 8th and 9th sternites.

The female from Mindanao is referred here on account of its similar coloration and the shape of the ultimate tergite, which is provided with a row of small tubercles close to hind margin. In any case, its identification should be treated with some reserve as the females of many species of the genus occurring in the Philippines are not yet known.

Auchenomus javanus (Bormans) FIG. 30–32

Platylabia javana Bormans, 1883, *Ann. Soc. Ent. Belg.* **27**: 65.

Auchenomus javanus: Burr, 1911, *Gen. Insect.* **122**: 59.

The present ♂ agrees well with the original description of the species except that elytra is reddish brown but blackish on sides. Penultimate sternite rounded posteriorly, slightly emarginate in middle. Forceps and genitalia as in FIG. 31, 32. Length: body, 9.9 mm; forceps, 1.7 mm.

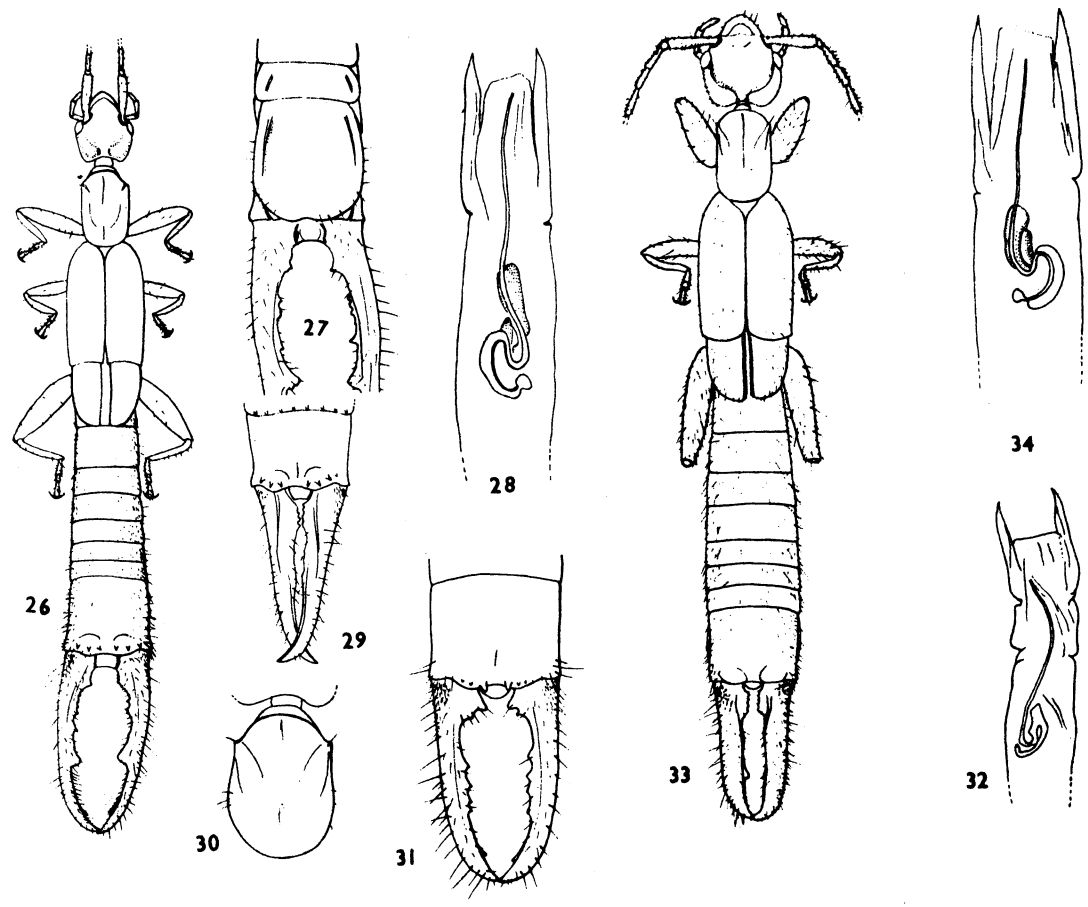

FIG. 26–34. *Auchenomus striatus*, n. sp. Holotype ♂: (26) Dorsal view; (27) 8th and 9th sternites with a portion of forceps; (28) Genitalia. Paratype ♀: (29) Ultimate tergite and forceps. *Auchenomus javanus* (Bormans), ♂: (30) Pronotum; (31) Ultimate tergite and forceps. (32) Genitalia. *Auchenomus dentatus*, n. sp. Holotype ♂: (33) Dorsal view; (34) Genitalia.

Distribution: Java, Philippines, Kei I., Sebesis I. and New Guinea.

Material examined: NEGROS OR.: L. Balinsasayao, 1 ♂, 1–7.X.1959, C. M. Yoshimoto.

This species closly resembles *A. menozzii* Borelli, 1926 from the Philippines but differs in having the penultimate sternite smooth laterally and forceps with an obtuse tooth at base, followed by another similar but slightly smaller tooth. In the latter species the penultimate sternite is rugose laterally and forceps internally at base armed with a tridentate tooth.

Auchenomus dentatus Srivastava, **n. sp.** FIG. 33–34

♂: General color testaceous brown; antennae dark blackish brown except basal segment testaceous brown in proximal 2/3; elytra testaceous brown (elytra translucent, thus black color of wings visible beneath elytra, making them look blackish brown in middle and testaceous brown on all margins. In the preceding species the blackish shade on elytra is also probably due to the color of wings). Ultimate tergite black posteriorly. Feebly pubescent. Head smooth, depressed, occiput gently raised, a trifle longer than broad, widest in the region of eyes, gently contracted posteriorly with hind margin deeply emarginate in middle, sutures obsolete but in place of transverse suture a fine depression present and median suture represented by a broad groove dividing the occiput into 2 halves. Eyes black, smaller than genae in length. Antennae partly broken (only 12 segments remaining), segments long and thin. Pronotum longer than broad, anteriorly narrower than the head with angles distinct and margin convex, sides gently reflexed, slightly widened posteriorly with angles and margin broadly rounded, 2 oblique folds at anterior angles present, median sulcus distinct but obsolete in apical 1/4. Elytra and wings well developed, smooth, former with anal angles rounded off, thus showing a small triangular scutellum and hind margin convex. Legs normal. Abdomen smooth, depressed, almost parallel sided, sides of segments broadly rounded. Penultimate sternite broadly rounded posteriorly with a very faint emargination in middle, smooth laterally. Ultimate tergite slightly broader than long, smooth, slightly depressed in middle posteriorly, weakly tumid above the roots of forceps, hind margin trisinuate with angles distinct. Pygidium declivient, slightly contracted posteriorly with apex rounded. Forceps about as long as the elytra, stout, almost straight, slightly tapering posteriorly, with apices gently incurved and pointed, trigonal above in basal 1/3, afterwards depressed, internally at base below deplanate and dentate, afterwards unarmed except for sharp ventral tooth, directed posteriorly, at about apical 1/3. Genitalia as in FIG. 34. Length: body, 9.5 mm; forceps, 2.0 mm.

♀: Unknown.

Material examined: Holotype ♂ (BISHOP 10,224), Mindanao: Bukidnon, Mt Katanglad, 4–9.XII.1959, L. W. Quate.

This species comes close to *A. javanus* (Bormans) but differs by the shape of the pronotum in being slightly narrower than head at the region of anterolateral angles (vs gently broader in *A. javanus*); elytra convex posteriorly with inner angles rounded off (vs hind margin obliquely concave with angles acute); ultimate tergite tumid above the bases of forceps with hind margin faintly trisinuate (vs hind margin deeply trisinuate with a pair of spiniform tubercles in the middle) and distinctive forceps, especially the inner armature.

Auchenomus albayiensis Srivastava, **n. sp.** FIG. 35–39

♂: General color testaceous yellow. Eyes black; antennae blackish brown excepting the 1st segment, testaceous yellow in basal 1/2. Elytra and wings dull greenish yellow; former yellowish laterally. Hind margin of ultimate tergite and apical 1/2 of forceps brownish black. Pubescent. Head and pronotum the same as in the preceding species. Elytra and wings well developed, smooth, former with anal angles rounded off, thus showing a very small triangular scutellum, hind margin faintly concave. Legs normal. Abdomen long, cylindrical, gradually enlarging posteriorly, smooth, with long pubescence laterally, sides of segments convex. Penultimate sternite broadly rounded, posteriorly with slight emargination in middle, laterally in basal 2/3 with 5 oblique ridges. Ultimate tergite slightly broader than long, disc convex, gently depressed in middle posteriorly and with raised transverse folds above the bases of forceps, gently widened posteriorly, hind margin trisinuate and angles distinct. Pygidium strongly declivous, gently contracted posteriorly, with margin convex or obtuse. Forceps stout, depressed above, remote at base, gently curved in middle, tapering to hooked apices, dorso-internal margin serrated, undulate; ventrointernal margin sharp, unarmed in a little more than basal 1/2 except for a sharp, strong tooth, directed backwards, at about basal 1/3 afterwards dentate for a short distance and again smooth a little before apex. Genitalia as in FIG. 39. Length: body, 9.5–10.4 mm; forceps, 2.0–2.25 mm.

♀: Agrees with ♂ in most characters except that the ultimate tergite quadrate; pygidium gently pointed posteriorly; forceps almost straight, ventro-internal margin in basal 1/3 dilated and crenulate. Length: body, 8.3 mm; forceps, 2.0 mm.

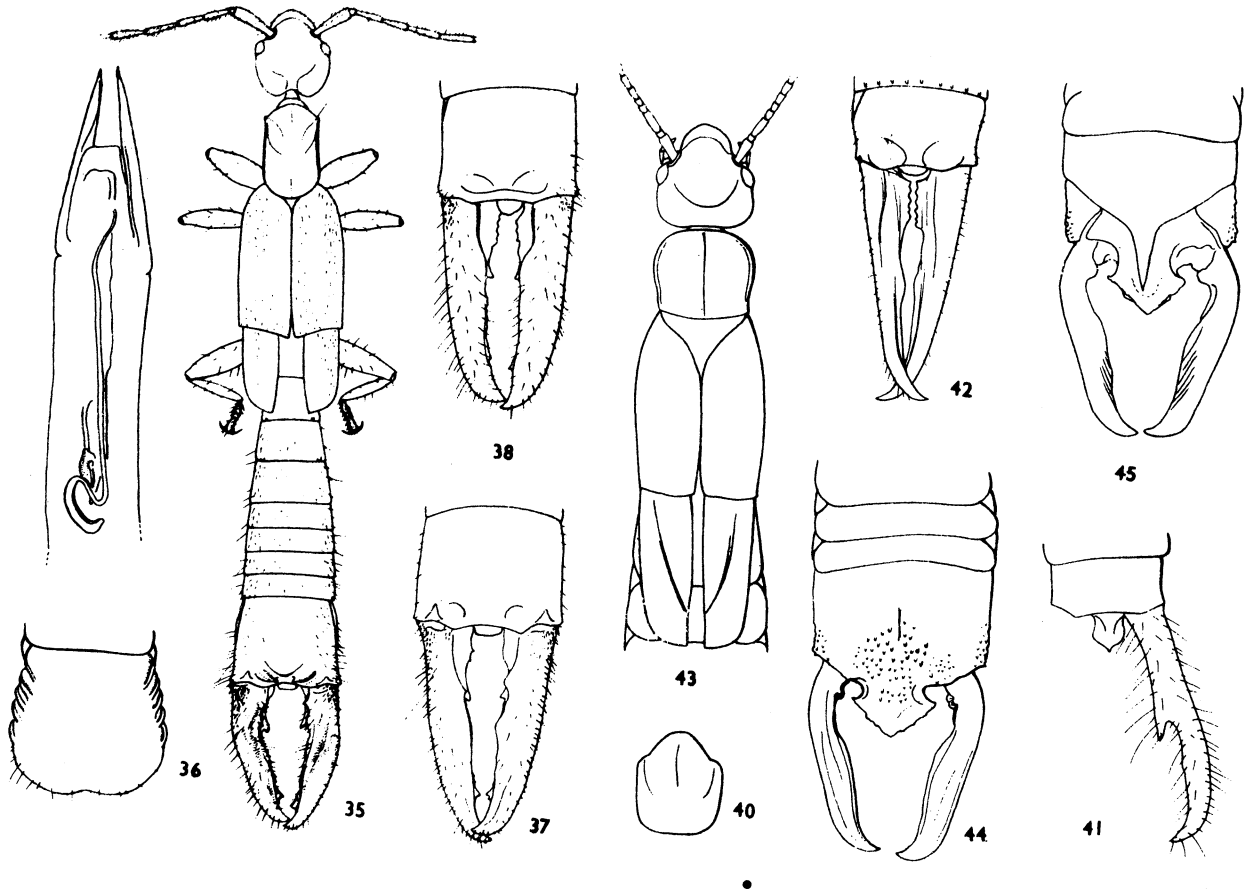

FIG. 35–45. *Auchenomus albayiensis,* n. sp. Holotype ♂: (35) Dorsal view; (36) Penultimate sternite; (39) Genitalia. Paratype ♂: (37) Ultimate tergite and forceps. Paratype ♀: (38) Ultimate tergite and forceps. *Auchenomus* sp., ♀: (40) Pronotum; (41) Ultimate tergite and forceps. *Auchenomus* sp., ♀: (42) Ultimate tergite and forceps. *Apachyus philippinensis,* n. sp. Holotype ♀: (43) Anterior portion of body in dorsal view; (44) Hind portion of body in dorsal view; (45) Hind portion of body in ventral view.

Material examined: Holotype ♂ (BISHOP 10,360), Luzon: Albay Prov., Mt Mayon (volc.), 16 km NW of Lagaspi, 900–1000 m, 17.V.1962; 1 ♂ paratype, same data, 7.IV.1962; 1 ♀ paratype, same data, 10.V.1962; 2 ♂♂ paratypes, same data, 11.V.1962; 1 ex. (abdomen missing), same data, 900–1500 m, 4.V.1962; 1 nymph, same data, 1200–1800 m, 15.V.1962, H. M. Torrevillas. One ♂ paratype retained in collection of the author.

The males in this species show great variation in the development of transverse folds of the ultimate tergite and the inner armature of forceps. In the holotype ♂, transverse folds of the ultimate tergite are well developed whereas in 1 ♂ paratype these are not so prominent and in another totally absent. The inner dentation of forceps, dorsally as well as ventrally, varies but the large ventro-internal tooth, situated at basal 1/3, is constant in all the specimens.

It is interesting to note that the female presents 10 visible tergites and the forceps are suggestive of a male. Moreover, there is no trace of genitalia. This species is very close to *A. intermedius* Borelli from Sumatra and *A. robustus* Borelli from Borneo but differs from both in having sharp, oblique lateral ridges on the penultimate sternite and distinctive inner armature of forceps.

Auchenomus pallidus Brindle

Auchenomus pallidus Brindle, 1968, *Ark. Zool.* **20**: 543.

The present material agrees well with the original description of the species except for the following minor differences.

General color dark blackish brown except apical 1/2 of pronotum. Elytra and wings testaceous yellow. Color of abdomen ranges from light brown to blackish. Ultimate tergite transverse, laterally with numerous tiny tubercles, hind margin sinuate in middle. Pygidium with numerous tiny tubercles dorsally. Forceps short, stout, inner teeth distinct or weak. Length: body, 10.5–11.5 mm; forceps, 1.9–2.6 mm.

Distribution: Philippine Islands.

Material examined: MINDANAO: Lanao, Lake Lanao, Gurian Mts., 1380 m, 3 ♂♂, 16.VI.1958, H. E. Milliron.

Auchenomus sp. FIG. 40–41

Head, pronotum, elytra and wings dark blackish brown. Antennae, legs, abdomen, pygidium and forceps testaceous brown. Antennal segments stout; pronotum about as long as broad; elytra and wings well developed. Pygidium distinct. Forceps armed internally with a sharp, backward-pointed tooth, at a little beyond middle. Length: body, 4.7 mm; forceps, 2.1 mm.

Material examined: MINDANAO: Agusan, Los Arcos, 1 ♀ (left branch of forceps missing), 19–23.XI.1959, L. W. Quate.

The shape of pygidium and forceps have some resemblance to *A. minutus* Boeseman known from Sumatra from a single male. Probably, a new species is represented which is being left unnamed owing to the absence of a male.

Auchenomus sp. FIG. 42

General color testaceous brown; wings and forceps slightly darker; hind margin of ultimate tergite blackish. Antennae blackish brown. Pronotum about 2x as long as broad. Elytra and wings well developed, smooth. Length: body, 11.2 mm; forceps, 3.4 mm.

Material examined: NEGROS OR.: Mt Talinas, 900–1200 m, 1 ♀, 9.VI.1958, in rain forest, H. E. Milliron.

Auchenomus sp.

Material examined: LUZON: Mountain Prov., Abatan, Buguias, 60 km S of Bontoc, 1800–2000 m, 1 nymph, 31.V–1.VI.1964, H. M. Torrevillas.

FORFICULOIDEA
LABIDURIDAE
LABIDURINAE

Nala lividipes (Dufour)

Forficula pallipes Dufour, 1820, *Ann. Gener. Sci. Phy. Bruxelles* **4**: 316.

Forficula lividipes Dufour, 1828, *Ann. Sci. Nat.* **13**: 340 (new name proposed).

Nala lividipes: Zacher, 1910, *Ent. Rdsch.* **27**: 29.

Distribution: Almost cosmopolitan.

Material examined: LUZON: San Jose, Nueva Ecija, 1 ♂, 26.VIII.1945, on fresh fermenting wood, J. L. Gressitt. MINDANAO: Agusan, 10 km SE of San Francisco, 1 ♀, 14.XI.1959, L. W. Quate; Misamis Occ., Ozamis City, 1 ♂, 22.X.1959, C. M. Yoshimoto.

Labidura riparia (Pallas)

Forficula riparia Pallas, 1773, *Reise Russ. Reichs.* **2**: 727.

Labidura riparia: Burr, 1911, *Gen. Insect.* **122**: 37.

Distribution: Cosmopolitan.

Material examined: LUZON: Albay Prov. Libon, Caguscos, 200 m, 1 ♀, 22.V.1965; Mt Montalban, Rizal, Wa-wa Dam, 150–200 m, 1 ♀, 23.II.1965, H. M. Torrevillas. MINDANAO: Misamis Or., Hindangon, 20 km S of Gingoog, 600–700 m, 1 ♂, 20–24.IV.1960, light trap, H. Torrevillas. PALAWAN: Tarumpitao Pt., 1 ♂, 1 nymph, 16.V.1958, 27.V.1959, at light in jungle, H. E. Milliron.

Forcipula banksi Borelli

Forcipula banksi Borelli, 1915a, *Boll. Mus. Zool. Anat. Comp., Torino* **30** (697): 3.

General color dark blackish brown excepting elytra yellowish along the sutural margin. Eyes prominent, only slightly shorter than genae in length. Female forceps subcontiguous and straight, internal margin irregularly dentate in basal 1/2, afterwards faintly wavey. Wings in the majority of specimens well developed; in 1 ♀ concealed below the elytra.

Distribution: Philippine Is.

Material examined: LUZON: Mountain Prov., Abatan, Buguias, 60 km S of Bontoc, 1800–2000 m, 1 nymph, 1.IV.1964, Mt Montalban, Rizal, Wa-wa Dam, 150–200 m, 1 ♂, 1 ♀, 25.II.1965, 12.III.1965, Mayoyao, Ifugao, 1200–1500 m, 4 ♂♂, 1 ♀, 28–29.VII.1966, same data; 1 nymph, 2–3.VIII.1966; Ifugao Prov., Jacmal, Bunhian, 24 km E of Mayoyao, 800–1000 m, 5 ♀♀, 1 ♂, 22–24, 25–27.IV.1967, H. M. Torrevillas; same data, Liwo, 8 km E of Mayoyao, 1000–1300 m, 1 nymph, 30–31.V.1967, L.M. Torrevillas; Camarines Sur, Mt Isarog, 800–900 m, 5 ♀♀ (in 1 ex. abdomen missing), 20, 23, 25, 28.IV.1965, same data, Mt Iriga, 500–600 m, 1 ♂, 1.IV.1962, H. M. Torrevillas. MINDANAO: Misamis Or., Minubanan, 1050–1200 m, 1 ♂ (hind portion of abdomen missing), 5–9.IV.1961, at light, H. Torrevillas.

It appears to be closely related to *Forcipula quadrispinosa* (Dohrn).

Forcipula quadrispinosa (Dohrn)

Labidura quadrispinosa Dohrn, 1863, *Stettin. Ent. Ztg.* **24**: 311.

Forcipula quadrispinosa: Bolivar, 1897, *Ann. Soc. Ent. Fr.* **66**: 283.

Distribution: Widely distributed in Oriental Region.

Material examined: LUZON: Ifugao Prov., Jacmal, Bunhian, 24 km E of Mayoyao, 800–1000 m, 2 ♂♂, 1 nymph, 22–24, 25–27.IV.1967, H. M. Torrevillas, same data, 1 ♀, 22–24.IV.1967,

same data, Liwo, 8 km E of Mayoyao, 1000–1300 m, 1 ♂, 1 ♀, 30–31.V.1967, L. M. Torrevillas; Mountain Prov., Abatan, Buguias, 60 km S of Bontoc, 1800–2000 m, 1 ♀, 1.IV.1964; Mayoyao, Ifugao, 1200–1500 m, 1 ♂, 28–29.VII.1966, same data, 1 ♂, 1 ♀, 2–3.VIII.1966, H. M. Torrevillas.

This species can be easily distinguished from *Forcipula banksi* Borelli by the shape of the lateral abdominal spines and the forceps, in males.

Female forceps are provided with a small tooth internally, at apical 1/3 which is absent *F. banksi.*

APACHYINAE

Apachyus philippinensis Srivastava, **n. sp.** FIG. 43–45

♂: Unknown.

♀: General color shining dark blackish brown except mouth parts, frons apically, middle of 6th, whole of 7th abdominal tergites and ultimate tergites, and forceps shining reddish brown. Head about as broad as long, depressed, hind margin straight, sutures fine but distinct, occiput slightly raised. Eyes smaller than genae in length. Antennae partly broken, only 8 on the left side remaining, 1st segment stout, narrowed at base, slightly shorter than distance between antennal bases; 2nd transverse; 3rd long, cylindrical, almost equal to 1st; remaining short, gradually increasing in length distally. Pronotum semicircular anteriorly, sides broadly convex but posteriorly gently contracted, hind margin subtruncate. Elytra long, smooth, and angles rounded off to show a small triangular scutellum. Wings and legs normal. Abdomen strongly depressed, sparsely and faintly punctate. Penultimate sternite triangular with an acuminate median process posteriorly. Last dorsal segment transverse, with numerous tiny tubercles in posterior 1/2, anal process triangular. Forceps with branches depressed, incurved in basal 1/3, slightly converging posteriorly, internally at base with a small tubercle above, a slightly larger tubercle below also, margin dorsally as well as ventrally undulate, enclosing a somewhat pear-shaped space. Length: body (from tip of head to the apex of ultimate tergite), 18.8 mm; forceps, 4.75 mm.

Material examined: Holotype ♀ (BISHOP 10,225), Luzon: Mountain Prov., 1829 m (6000 ft), 1.VII.1932, J. O. Perry.

In Brindle's key (1965) to the species of the genus, it comes close to *A. sumatranus* Boeseman from Sumatra (known by males only) but differs in being much larger in size, and distinctive general body coloration; pronotum slightly contracted posteriorly and smooth elytra and wings.

Although only a female is present, it provides sufficient characters to establish its identity.

This constitutes the first record of the genus from the Philippine Islands.

ALLOSTETHINAE

Allostethus vicinus Srivastava

Allostethus vicinus Srivastava, *Eos* (in press).

The present series agrees well with the original description of the species.

Distribution: Philippine Is.

Material examined: MINDANAO: Mt Pomalihi, 21 km W of Gingoog City, 800–1000 m, 1 ♀, 16–18.X.1965, H. M. Torrevillas; Bukidnon, Mt Katanglad, 2 nymphs, 4–9.XII.1959 L. W. Quate; Zamboanga del Norte, Masawan-Gundawan, 1260–1350 m, 1 ♀, 1 nymph, 3.VII.1958, rain forest, H. E. Milliron; Misamis Or., Minalwang, 1050 m, 2 ♀♀, 24.III–4.IV.1961, H. Torrevillas; same data, 1 ♀, 24.III–4.IV.1961, W. Torrevillas; Minubanan, 1050–1200 m, 1 ♀, 5–9.IV.1961; Mt Balatukan, 15 km SW of Gingoog, 1 ♂, 1–5.V.1960, same data, 1 nymph, 27–30.IV.1960, H. Torrevillas; Balason, 1 nymph, 4–5.IV.1960, H. M. Torrevillas.

Allostethus setiger Verhoeff

Allostethus setiger Verhoeff, 1904, *Arch. Naturg.:* 117.

Allostethus martensi Verhoeff, 1904, *Arch. Naturg.:* 117.

Allostethus indicum (Burmeister) var. *setiger:* Boeseman, 1954, *Zool. Verh.* **21**: 24. – Brindle, 1965, *Ann. Mag. Nat. Hist.* ser. 13, **8**: 587.

Agrees with the original description of the species except for the following minor differences.

Antennae 14-segmented, dark brown, excepting a few pre-apical segments yellow. Femora and tibiae in apical 1/2 yellow. Abdomen on sides with long pubescence.

Distribution: Thailand, Java and Sumatra.

Material examined: MINDANAO: Agusan, 10 km SE of San Francisco, 1 ♀, 1 ex. (abdomen missing), 12.XI.1959, L. W. Quate; Misamis Or., Minubanan, 1050–1200 m, 3 ♀♀, 5–9.IV.1961, H. M. Torrevillas.

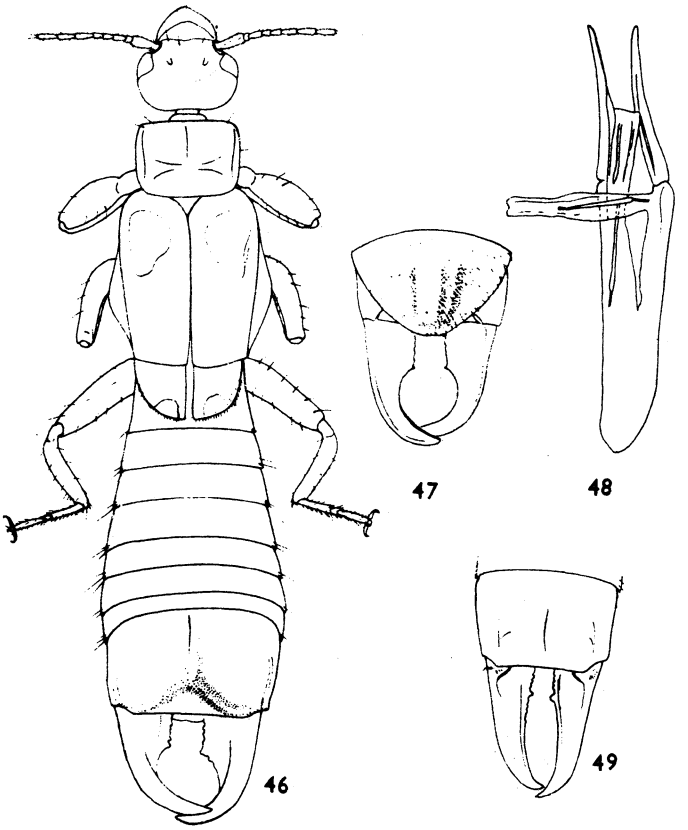

FIG. 46–49. *Allostethus punctatum*, n. sp. Holotype ♂: (46) Dorsal view; (47) Hind portion of body in ventral view; (48) Genitalia. Paratype ♀: (49) Ultimate tergite and forceps.

Allostethus punctatum Srivastava, **n. sp.** FIG. 46–49

♂: General color shining dark brown or blackish brown. Elytra dark reddish brown with a broad yellow spot near shoulders. Wings yellow, slightly dark brown in middle apically. Femora and tibiae in a little less than apical 1/2 and whole of tarsi yellow. Head slightly longer than broad, convex, glabrous, smooth, hind margin almost straight, sutures fine but distinct. Antennae partly broken (only 9 segments remaining), stout, 1st segment narrowed at base, clavate, slightly longer than 2nd to 4th together; 2nd transverse; 3rd slightly longer than 4th and 5th and almost equal to 6th, remaining segments gradually increasing in length distally. Eyes black, prominent, about as long as genae. Pronotum smooth, rectangular, transverse, anterior and lateral margins straight, latter gently reflexed, hind margin subtruncate, median sulcus distinct in apical 1/2 only; prozona weakly raised. Elytra well developed, smooth, humeral angles prominent, hind margin obliquely truncate; a small triangular scutellum visible. Wings normal, a fine pubescence present on borders. Legs stout, hind metatarsal segment about as long as 3rd; 2nd segment small; claw provided with an arolium. Abdomen somewhat depressed, strongly punctate, punctation sparse in the posterior 1/2 of each tergite; gradually enlarging posteriorly, sides of segments convex, with striations on 8th and 9th, finely pubescent, a few long hairs on sides also. Penultimate sternite triangular, finely pubescent, posteriorly in middle obtuse, a faint, glabrous, median longitudinal ridge present. Ultimate tergite rectangular, transverse, with numerous punctate longitudinal stripes, median sulcus distinct, posteriorly in middle depressed, hind margin in middle straight, laterally oblique and concave. Pygidium scarcely visible from above, vertical posteriorly in middle with a minute tubercle. Forceps with branches remote at base, stout, depressed, tapering backwards, strongly curving from basal 1/3 to pointed apices which cross; internally dilated in basal 1/3 with border irregularly serrated, afterwards abruptly attenuate, with faint serrations. Genitalia as in FIG. 48. Length: body, 21.8 mm; forceps, 3.5 mm.

♀: Agrees with ♂ in most characters except wings brown; abdomen more strongly pubescent, weakly enlarged posteriorly; penultimate sternite broadly rounded posteriorly and without the median longitudinal ridge; ultimate tergite weakly transverse; forceps less stout, almost straight, strongly dentate in basal 1/3, afterwards faintly serrated, apices gently hooked and crossing. Length: body, 18.1 mm; forceps, 4.2 mm.

Material examined: Holotype ♂ (BISHOP 10,226), Luzon: Camarines Sur, Mt Isarog, Pili, 600 m, 4.IV.1965; 1 ♀, paratype, same data, 800 m, 30.V.1965; 1 nymph, same data, 3.IV.1965; 1 nymph, Camarines Sur, Mt Iriga, 500–600 m, 14.IV.1962, H. M. Torrevillas.

This species is close to *A. indicum* (Burmeister) but differs in having the elytra dark brown with a broad diffused yellow spot close to humeral angles; wings yellow with a dark brown median spot at tip; femora and tibiae yellow in a little less than apical 1/2; forceps stout, strongly curved in apical 1/2; internally dilated in basal 1/3 with margin dentate and parameres gently sinuate externally in middle and comparatively more slender with apices somewhat blunt.

It is likely that the female referred to *A. indicum* var. *maculatum* by Boeseman (1954) may belong to the described species.

CHELISOCHIDAE

Proreus dentatus Srivastava, **n sp.** FIG. 50–52

♂: General color shining blackish brown or reddish black. Head, antennae, pronotum, elytra, wings and legs dark blackish brown, pronotum testaceous brown laterally. Abdomen reddish, blackish on sides; ultimate tergite reddish black and forceps reddish. Form depressed; glabrous except forceps, provided with short, fine pubescence. Head flat, occiput weakly raised, glabrous, slightly broader than long, sutures obsolete, hind margin emarginate. Eyes smaller than genae in length. Antennae partly broken (only 14 segments remaining), 1st segment stout, strongly narrowed at base, about as long as 2nd to 4th together; 3rd stout, gently expanded apically, slightly longer than 4th and equal to 5th; 4th subclavate; 5th slightly less so, remaining slender, narrowed at base and gradually increasing in length distally, finely pubescent. Pronotum slightly longer than broad, anteriorly convex, sides straight, gently diverging posteriorly with margin rounded, median sulcus faint; prozona weakly raised, metazona flat. Elytra about 2x as long as pronotum, sparsely punctate, hind margin obliquely concave. Wings about 1/3 of elytra in length, of same texture. Abdomen depressed, parallel sided, faintly punctate. Penultimate sternite transverse, punctate, broadly rounded posteriorly, hardly emarginate in middle. Ultimate tergite with transverse, longitudinal stripes of smooth and punctate areas alternating, faintly raised above bases of forceps and depressed in middle; provided with 2 pairs of compressed tubercles, inner pair larger, placed in middle and a little apart; outer pair much smaller, situated close to inner border of raised areas, hind margin trisinuate, angle a little distinct. Pygidium scarcely visible from above, vertical, rectangular, hind margin gently convex. Forceps remote at base, stout, faintly trigonal

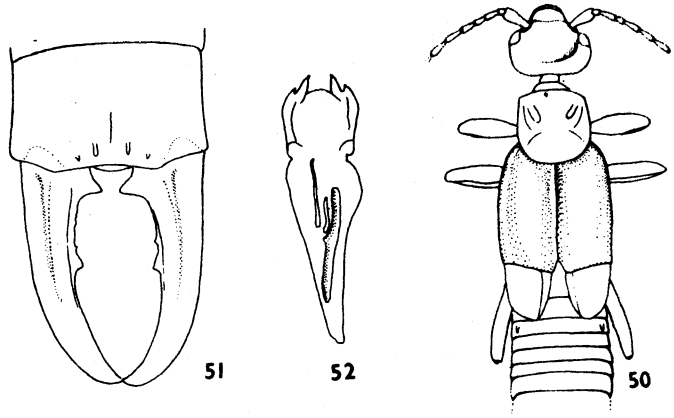

FIG. 50–52. *Proreus dentatus,* n. sp. Holotype ♂: (50) Anterior portion of body in dorsal view; (51) Hind portion of body in dorsal view; (52) Genitalia.

in basal 1/4, then depressed, tapering and gradually curving to gently hooked and pointed apices which meet, internal margin ventrally, at base with large, triangular tooth, followed by another similar but smaller tooth at about middle and the area between these 2 finely crenulate, afterwards margin smooth. Genitalia as in FIG. 52. Length: body, 6.9 mm; forceps, 1.8 mm.

♀: Unknown.

Material examined: Holotype ♂ (BISHOP 10,227), Leyte, Palo, 17.VI.1957 (no further data).

Remarks: This species is close to *Proreus pusillus* Borelli from the Philippines and *Proreus delicatulus* Burr from Ceylon.

From *P. pusillus* it differs by the shape of the pronotum in being rounded posteriorly; ultimate tergite with 2 pairs of tubercles in middle posteriorly and forceps with a large tooth at base and another, slightly smaller, at about middle.

It can be separated from *P. delicatulus* by the shape of the pronotum; punctate elytra and wings; ultimate sternite with 2 pairs of tubercles in middle posteriorly of which inner pair is larger, compressed and widely separated. The chitinous plates of the male genitalia are also distinctive in *P. dentatus,* n. sp.

Proreus torrevillasi Srivastava, **n. sp.** FIG. 53–56

♂: Head reddish testaceous, frons dark brown, occiput with 2 oblique brownish stripes. Eyes black; antennae dark blackish brown. Pronotum and forelegs testaceous yellow, former slightly lighter laterally and posteriorly. Middle and hind pair of legs, elytra and wings blackish brown. Abdomen reddish brown above, blackish laterally and slightly darker at hind margin of each tergite. Ultimate tergite and forceps reddish brown, former at hind margin and the latter with inner tooth and apices black. Head slightly longer than broad, smooth, glabrous, depressed, occiput very slightly raised, sutures obliterated, hind margin emarginate, with a few stout, thick hairs. Eyes black, about 1/2 as long as genae in length. Antennae partly broken (only 8 segments on left and 1st segment on right remaining); 1st stout, strongly narrowed at base, slightly longer than the 2nd to 4th together, 2nd small; 3rd and 5th almost equal; 4th subclavate; remaining segments

slender, gradually increasing in length distally. Pronotum about as long as broad, convex anteriorly, sides straight, very slightly divergent posteriorly, hind angles and margin broadly rounded, median sulcus distinct; prozona and metazona poorly demarcated. Elytra about 1-1/2x longer than pronotum, smooth, glabrous, laterally convex, hind margins concave. Wings a little more than 1/3 of elytra in length, of same texture. Legs normal, tibiae sulcate above at extreme apices only. Abdomen moderately convex, faintly punctate, parallel sided, lateral tubercles on 3rd tergite weakly and on 4th strongly developed. Penultimate sternite broadly rounded posteriorly with slight emargination in middle. Ultimate tergite transverse, longitudinal stripes of punctate and smooth areas alternating, depressed in middle posteriorly with 2 pairs of minute tubercles, inner pair slightly larger, situated in middle on either side of median sulcus, faintly tumid above roots of forceps with 2 small tubercles. Pygidium scarcely visible from above, vertical, square, weakly convex at base, hind margin slightly convex with angles produced into minute points. Forceps stout, short, depressed, faintly punctate, tapering, gradually curving from base to pointed apex which meet; internally unarmed except for a heavy blunt tooth at basal 1/4. Genitalia as in FIG. 55. Length: body, 8.3 mm; forceps, 1.4 mm.

♀: Agrees with ♂ in most characters except that legs, elytra, wings and abdomen slightly darker; head with frons and occiput not differentiated; ultimate tergite slightly narrowed posteriorly; pygidium strongly declivient, convex, narrowed posteriorly with an obtuse tubercle in middle; forceps comparatively longer, less stout, inner ventral margin dentate. Length: body, 8.4 mm; forceps, 2.3 mm.

Material examined: Holotype ♂ (BISHOP 10,361), Mindanao: Misamis Or., Mt Empagatao, 1050–1200 m, 19–30.IV.1961, H. M. Torrevillas. 1 ♀, Leyte: Tacloban, 25.IV.1957, (without further data).

This species is close to *Proreus fuscus* Borelli from Sumatra but differs in the coloration of head and pronotum; in lacking the small compressed tubercles along the hind margin of various abdominal tergites; the ultimate tergite with tubercles, more in number, on the tumid elevations corresponding to the bases of the forceps and in the postero-median depression.

The ultimate tergite, in the female of the described species, possesses several small, compressed tubercles in the median depression posteriorly and on the tumid elevations above the roots of the forceps whereas in *P. fuscus* these are absent. Moreover, the inner armature of forceps in *P. torrevillasi,* n. sp. is also distinctive.

Proreus simulans (Stål)

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

Proreus simulans: Burr, 1907, *Trans. Ent. Soc. Lond.:* 131.

Distribution: Widely distributed throughout the Oriental Region.

Material examined: LUZON: Rizal Prov., Wa-wa Dam, Mt Montalban, 150–200 m, 4 ♂♂, 1 ♀, 5–19.III.1965, Albay Prov., Libon, Caguscos, 200 m, 1 ♂, 22.V.1965, H. M. Torrevillas; Los Baños, 1 ♀, 17.XII.1936, sugarcane, O. H. Swezey. MINDORO: 2 ♂♂, XII.1921, F. X. Williams. NEGROS OR.: L. Balinsasayao, 1 ♀, 1–7.X.1959, L. W. Quate. LEYTE: Palo, 2 ♀♀, 1 nymph, 22–28.VI.1967 (without further data); Calamba, 2 ♀♀, 2.I.1937, O. H. Swezey. MINDANAO: Zamboanga del Norte, 8 km S of Manucan, 420 m, 1 ♂ (right branch of forceps missing), 12.X.1959, grasses, L. W. Quate; Davao, Genitalan, 8 km NW of Mt Apo, 690 m, 1 ♂, 17 VIII.1958, in jungle, H. E. Milliron; Agusan, Esperanza, 2 ♂♂, 3 ♀♀, 4–11.XI.1959, 10 km SE of San Francisco, 2 ♀♀, 12, 13.XI.1959, C. M. Yoshimoto, same data, 3 ♂♂, 12, 13, 18.XI.1959, L. W. Quate. PALAWAN: Eran Pt., 8 km SW of Tarumpitao Pt., 1 ♂, 31.XII.1959–4.I.1960, at light, L. W. Quate; Tarumpitao Pt., 1 ♂, 29.V.1958, in jungle, light trap, H. E. Milliron.

Chelisoches morio (Fabricius)

Forficula morio Fabricius, 1775, *Syst. Ent.:* 270.

Chelisoches morio: Scudder, 1876, *Proc. Boston Soc. Nat. Hist.* **18**: 308.

Distribution: Widely distributed in the Oriental, Ethiopian and Australian Regions.

Material examined: LUZON: Camarines Sur, Mt Isarog, 700–850 m, 1 ♀, 8–12.V.1963, same data, Pili, 600–800 m, 1 ♂, 2 ♀♀, 1 ex. (hind portion of abdomen missing), 5, 7, 14.VI.1965,

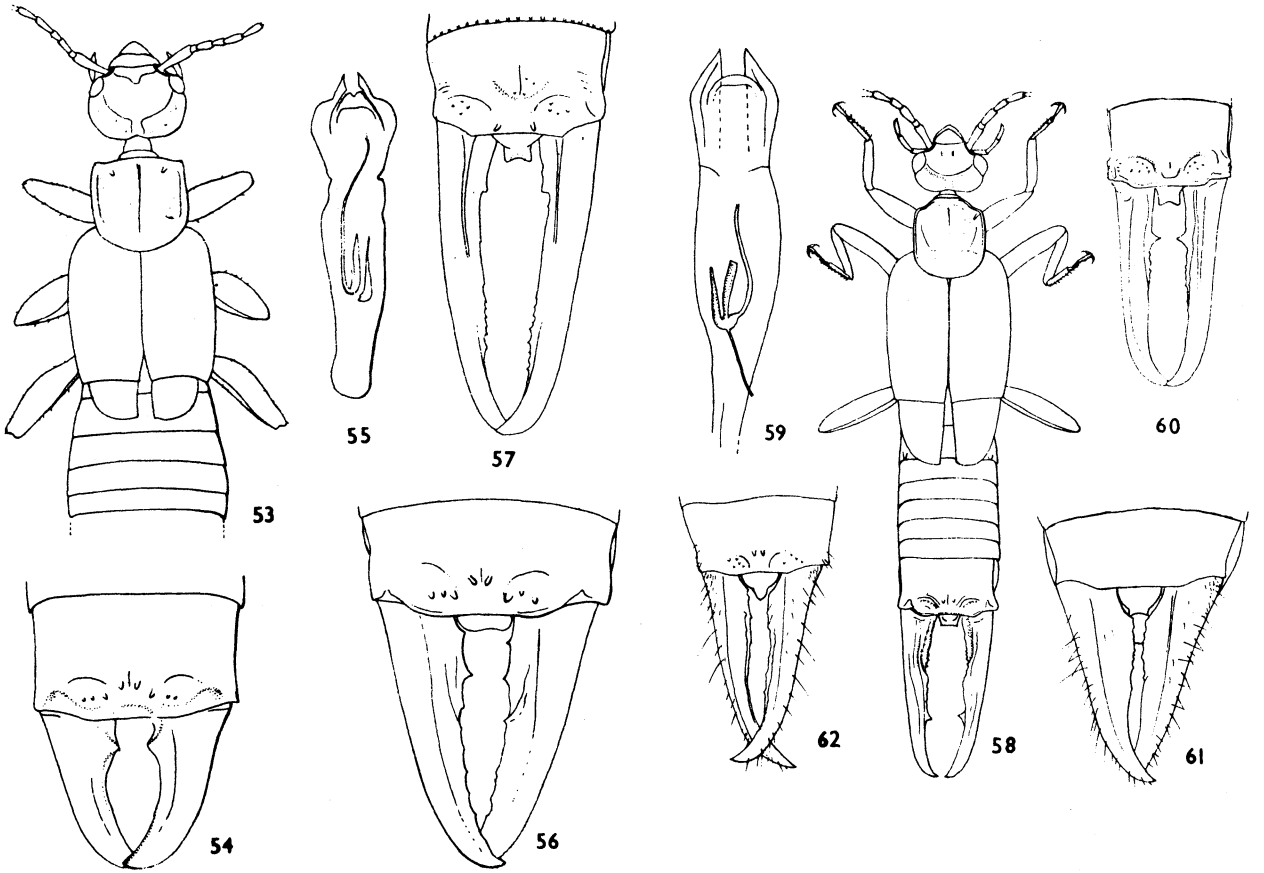

FIG. 53–62. *Proreus torrevillasi,* n. sp. Holotype ♂: (53) Anterior portion of body in dorsal view; (54) Ultimate tergite and forceps; (55) Genitalia. Paratype ♀: (56) Ultimate tergite and forceps. *Chelisoches* sp., ♀: (57) Ultimate tergite and forceps. *Adiathella philippinensis,* n. sp. Holotype ♂: (58) Dorsal view; (59) Genitalia. Paratype ♀: (60) Ultimate tergite and forceps. *Hamaxas versicolor* Borelli, ♀: (61) Ultimate tergite and forceps. *Hamaxas* sp., ♀: (62) Ultimate tergite and forceps.

1.V.1965, NEGROS OR.: L. Balinsasayao, 3 ♀♀, 1 nymph, 1–7.X.1959, L. W. Quate; C. M. Yoshimoto. LEYTE: Baybay Mts., 1 ♂, 10.VIII.1957, (without further data). MINDANAO: Zamboanga del Norte, Masawan to Buenoswerte, 1290–3000 m, 1 ♂, 5.VII.1958, in jungle, H. E. Milliron; Surigao, L. Mainit, 1 ♂, 1 nymph, 23, 24.XI–1.XII.1959, L. W. Quate; Sulu, Jolo I., Talipao, 15–30 m, 1 ♂, 31.VIII.1958, grass foothills and jungle clearing, H. E. Milliron. PALAWAN: Tarumpitao Pt., 1 ♀, 1 ex. (abdomen missing), 24.V.1958, jungle clearing, H. E. Milliron.

The present series shows the usual variations in color ranging from black to dark blackish or reddish brown. Forceps vary as far as the inner armature is concerned.

In the male from Mindanao (Zamboanga) the branches of the forceps possess a small tooth at base, followed by faint serrations, and in another male from Luzon (Mt Isarog) branches are unarmed except for a bifid tooth at base.

Chelisoches sp. FIG. 57

General color dull black; tarsi and wings brownish. Elytra and wings faintly punctate, latter rugose also. Abdomen deeply punctate, hind margin of each tergite with a row of minute, compressed tubercles. Ultimate tergite and forceps in FIG. 57. Length: body, 17.5 mm; forceps, 6.5 mm.

Material examined: LUZON: Camarines Sur, Mt Isarog, 750–850 m, 1 ♀, 8–9.V.1963, H. M. Torrevillas.

A new species is probably represented.

Adiathella philippinensis Srivastava, **n. sp.** FIG. 58–60

♂: Head and forceps brownish orange; pronotum blackish brown, in the centre brownish orange; elytra and wings dark blackish brown; legs blackish brown with apical part of femora, tibiae and whole of tarsi yellowish brown. Abdomen reddish brown with sides and hind margin of ultimate tergite black. Head triangular, slightly broader than long, sutures deep, frons raised, well differentiated from tumid occiput, hind margin emarginate in middle. Antennae partly broken (only 6 segments on the right remaining), stout, 1st segment clavate, almost equal to distance between antennal bases and slightly shorter than 2nd and 3rd together; 3rd longer than 4th but equal to 5th; 4th globular; 6th slightly longer than 5th. Eyes prominent, distinctly longer than genae. Pronotum longer than broad, sides straight, parallel, gently reflexed, hind angles and margin rounded, median sulcus faint; prozona tumid, well differentiated from flat metazona. Elytra 2x as long as pronotum; smooth, glabrous, humeral angles prominent, sides slightly convex in middle, hind margin truncate. Wings a little more than 1/3 of elytra in length, of same texture. Legs with tibiae smooth above, except at extreme apices faintly sulcate. Abdomen elongate, convex, impunctate, parallel sided, sides of segments rounded. Penultimate sternite transverse, broadly rounded posteriorly with slight emargination in middle. Ultimate tergite transverse, smooth, with a median depression posteriorly and tumid above roots of forceps, a pair of compressed tubercles in middle of depression and several minute ones present on the tumid elevations, hind margin straight in middle, laterally obliquely concave, hind angles deflexed and separated from the tumid elevations by a vertical groove. Pygidium vertical, gently narrowed posteriorly, sides and hind margin lightly concave, Forceps stout, remote at base, tapering to gently hooked apices, trigonal at base, internally with several minute tubercles dorsally as well as ventrally up to the apical 1/3 where a small, sharp, conical tooth is present, afterwards unarmed, in profile branches gently undulate posteriorly. Genitalia as in FIG. 59. Length: body, 12.8 mm; forceps, 4.3 mm.

♀: Antennae partly damaged, only 16 segments remaining. Agrees with ♂ in most characters except that pygidium is longer than broad and forceps provided with small tubercles all along the internal margin and with a sharp, triangular spine a little before middle. Length: body, 12.8–12.9 mm; forceps, 4.6–4.7 mm.

Material examined: Holotype ♂ (BISHOP 10,228), Mindanao: Misamis Or., Balason 1.IV.1960; 1 ♀ paratype, Mt Kibungol, 20 km SE of Gingoog, 700–800 m, 9–18.IV.1960, at light, H. Torrevillas; 1 ♀ paratype, nr. base of Mt Malindang, 1800 m, 13.VII.1958, light trap; 1 ex. (hind portion of abdomen missing), Z. del Sur, 3.2 km NW of Milbuk, 150 m, 4.VIII.1958, light trap in jungle, H. E. Milliron.

The assignment of the described species to the genus *Adiathella* Brindle (1970) seems to be justified on account of the smooth, glabrous elytra and wings, rather than to the genus *Adiathetus* Burr (1907), which according to Brindle 1970 should contain only the type-species of the latter, namely *Adiathetus shelfordi* (Burr) from Borneo, as it differs from the other species, now included in this genus, in having granulose and pubescent elytra and wings.

The genus *Adiathella* was erected by Brindle (1970) for the reception of 3 new species, namely *A. lingua, A. spinosa* and *A. incisa.* The described species comes close to *A. incisa* in having the pronotum quadrate but differs by the shape of the pygidium and forceps.

It has a great resemblance to *Adiathetus proreoides* Ramamurthi (1967) from the Bismarck Islands but it can be easily separated by the impunctate abdominal tergites which lack compressed tubercles along the posterior margin and the distinctive ultimate tergite and forceps.

Hamaxas versicolor Borelli FIG. 61

Hamaxas versicolor Borelli, 1923, *Boll. Mus. Zool. Anat. Comp. Torino* 38 (N.S. 13): 14.

Distribution: Philippine Islands.

Material examined: LUZON: Los Baños, 1 ♂, 19–20.IX.1959, at light, L. W. Quate; Mt Montalban, Rizal, Wa-wa Dam, 150–200 m, 1 ♀, 23.II.1965, H. M. Torrevillas; Laguna de Bay nr. Taytay, 1 ♂, 16.IX.1945, H. E. Milliron. MINDANAO: Agusan, 10 km SE of San Francisco, 1 ♂, 2 ♀♀, 12, 18.XI.1959, L. W. Quate, Esperanza, 1 ♀, 4–11.XI.1959, C. M. Yoshimoto. NEGROS OR.: L. Balinsasayao, 1 ♂, 1–7.X.1959, C. M. Yoshimoto; Mt Talinas, 900–1200 m, 1 nymph, 8.VI.1958, rain forest, H. E. Milliron.

The above material agrees well with the original description of the species except that the pygidium in males is gently narrowed apically, hind margin in middle and angles produced into minute points.

Hamaxas sp. FIG. 62

Head reddish black; antennae and legs testaceous brown; pronotum, elytra and wings black; pronotum yellow laterally; abdomen blackish. Strongly pubescent. Head triangular, moderately depressed, sutures faint, hind margin sinuate. Antennae partly broken (only 13 segments remaining). Eyes black, smaller than genae in length. Elytra and wings well developed. Abdomen punctate, gently widened in middle. Ultimate tergite transverse, gently contracted posteriorly, tumid above the roots of forceps and gently depressed in between, provided with several small tubercles; median sulcus short, distinct. Pygidium projecting, dilated, convex above at base, apically drawn out into a short rod-like structure. Forceps almost straight, tapering, gently incurved apically, tip pointed. Length: body, 10.3 mm; forceps, 2.7 mm.

Material examined: LUZON: Between Banang and Baguio, 1 ♀, 6.X.1945, H. E. Milliron.

The present specimen is close to *Hamaxas versicolor* Borelli, but differs by the shape of the ultimate tergite and the pygidium.

FORFICULIDAE

ANECHURINAE

Allodahlia scabriuscula (Serville)

Forficula scabriuscula Serville, 1839, *Hist. Nat. Inst. Orth.:* 38.

Allodahlia scabriuscula: Verhoeff, 1902, *Zool. Anz.* 25(665): 194.

The general color ranges from pitch black to brownish black. In some specimens head sutures are deep.

Distribution: Widely distributed in the Oriental Region. Also known from Taiwan and Japan.

Material examined: LUZON: Ifugao Prov., Liwo, 8 km E of Mayoyao, 1300 m, 1 ♀, 30.V.1967, L. M. Torrevillas. MINDANAO: Agusan, Esperanza, 1 ♀, 4–11.XI.1959, C. M. Yoshimoto; Misamis Or., Minalwang, 1050 m, 1 ♂, 2 nymphs, 24.III–4.IV.1961; Mt Balatukan, 15 km SW of Gingoog, 1000–2000 m, 1 ♀, 27–30.IV.1960; Balason, 1 ♂, 7–8.IV.1960, H. Torrevillas.

Allodahlia spinosa Brindle

Allodahlia spinosa Brindle, 1966, *Ark. Zool.* ser. 2, **18**(18): 444.

Distribution: Philippine Islands.

Material examined: MINDANAO: Zamboanga del Norte, 20 km S of Manucan, 400 m, 1 nymph, 16.X.1959, L. W. Quate; Zamboanga del Sur, Lemesahan, 600 m, 1 ♀ (branches of forceps missing), 7.IX.1959, in jungle, H. E. Milliron; Misamis Or., Mt Balatukan, 15 km SW of Gingoog, 1000–2000 m, 2 ♀♀, 1–5.V.1960, H. Torrevillas.

The above material agrees well with the original description of the species, except 3 specimens which possess black legs with femora red in basal 1/3 only.

It greatly resembles *Allodahlia macropyga* (Westwood) but differs in having the head punctate with sutures deep and pronotum gently contracted posteriorly.

In *Allodahlia macropyga* (Westwood), the head is smooth, shining, convex, with very fine sutures; pronotum is transverse, of uniform width, with sides gently reflexed and convex.

EUDOHRNINAE

Kosmetor intermedius Borelli FIG. 63–68

Kosmetor intermedius Borelli, 1918, *Boll. Mus. Zool. Anat. Comp. Torino* **33**(726): 4. – Brindle, 1971, *Ent. Tidskr.* **92**(1–2): 25.

The general color ranges from testaceous brown to black; wings and legs normally yellow, sometimes darker. Pygidium transverse, occasionally with a slight protuberance in middle posteriorly. Ultimate tergite and forceps vary greatly, and can be placed under the following categories:

(1) Ultimate tergite slightly narrowed posteriorly, tumid elevations above the roots of forceps almost obsolete, hind margin gently reflexed and emarginate in middle. Forceps compressed, gradually curving from base to apex, internal margin, ventrally, provided with minute tubercles (FIG. 64, 65).

(2) Ultimate tergite not narrowed posteriorly, distinctly tumid above the bases of forceps and the area in between depressed, provided with fine striations, hind margin in middle almost straight. Forceps almost straight in basal 2/3, afterwards gently arcuate with apices pointed and crossing, remote at base, trigonal above with ridge extending in basal 1/3 only, afterwards depressed, internally in basal 1/2 provided with minute teeth ventrally and at about middle a large, triangular tooth (FIG. 66).

(3) Ultimate tergite not narrowed posteriorly, tumid elevations corresponding to bases of forceps prominent, posterolateral angles projecting with an oblique ridge, hind margin straight in middle. Forceps representing an intermediate stage between the former 2 forms, armed internally at middle with a sharp tooth, basal 1/2 ventrally provided with several minute teeth (FIG. 67).

Length ♂: body, 6.7–11.1 mm; forceps, 2.5–4.0 mm.; Length ♀: body, 8.4–9.0 mm; forceps, 3.4–2.9 mm.

Material examined: LUZON: Albay Prov., Mt Mayon, 16 km NW of Lagaspi, 900–2000 m, 2 ♂♂, 1 ♀, 1 nymph, 5–17.V.1962; Camarines Sur, Mt Isarog, 1 ♀, 21–22.V.1963, H. M. Torrevillas. MINDANAO: Bukidnon, Mt Katanglad, 1250–1480 m, 3 ♂♂, 1 nymph, 26.X, 4–9.XII.1959, L. W. Quate; Misamis Or., Balason, 1 ♂, 4–5.IV.1960 W. Torrevillas; Minubanan, 1050–1200 m, 1 ♂, 5–9.IV.1961, at light; Mt Kibungol, 20 km SE of Gingoog, 700–800 m, 1 ♀, 9–18.IV.1960, H. Torrevillas.

This species can be separated from *K. tegalensis* Borelli by the shape of the pronotum which is a little broader than long with sides gently diverging posteriorly. In *K. tegalensis* the pronotum is rectangular, slightly longer than broad with sides parallel.

This species is close to *K. brahma* Burr, known from India (Darjeeling), in having the legs yellow and somewhat identical forceps but differs by the transverse pronotum and the forceps internally with a sharp tooth at middle (when present), directed inwards. In *K. brahma* the pronotum is about as long as broad with sides parallel and the inner tooth is directed posteriorly.

From *K. vishnu* Burr from India (Darjeeling), it differs mainly by the shape of pronotum.

Kosmetor punctata Srivastava, n. sp. FIG. 69–71

♂: Head dull black; antennae black with a few basal and apical segments testaceous yellow; pronotum black with an oily luster; elytra dark brownish black with a broad testaceous yellow humeral spot; wings testaceous yellow with an apical brownish black spot; legs testaceous yellow, femora and tibia with a broad brownish black band in middle, apical portion of metatarsal segment and whole of 2nd segment brownish black. Abdomen, ultimate tergite and forceps brownish black, abdomen slightly lighter. Sparsely pubescent. Head about as long as broad, smooth, moderately depressed, sutures fine but distinct, gently contracted posteriorly with margin lightly concave. Eyes smaller than genae in length. Antennae 13-segmented; 1st long and clavate; 2nd small; 3rd and 4th sub-equal but shorter than 5th, remaining segments gradually increasing in length and each narrowed at base and gently expanded at apex. Pronotum as long as broad, sides gently reflexed, diverging posteriorly or parallel sided, hind margin rounded, median sulcus distinct; prozona raised, well differentiated from flat metazona. Legs normal. Elytra well developed, smooth, humeral angles prominent, hind margin concave. Wings slightly less than 1/2 of pronotum in length, of same texture as the elytra. Abdomen convex, deeply and densely punctate, expanded posteriorly, lateral folds on 3rd tergite weakly and on 4th strongly developed, sides of segments punctate, broadly convex, with a small tubercle in middle posteriorly. Penultimate sternite strongly pubescent, punctate, broadly rounded posteriorly. Ultimate tergite transverse, almost smooth, elevations corresponding to bases of forceps weak and faintly depressed in between, hind margin incrassate, raised, straight in middle, laterally gently oblique and emarginate. Pygidium transverse, subvertical,convex, hind angles produced into triangular point. Forceps long, cylindrical, punctate, gently arched from base to apex which meet; internally at base dorsally with a short, conical tooth, ventral margin serrated in basal 1/2. Genitalia as in FIG. 70. Length: body, 10.2–11.6 mm; forceps, 3.6–3.9.

♀: Agrees with ♂ in most characters except that ultimate tergite is slightly narrowed posteriorly; pygidium small, rounded; forceps somewhat depressed, tapering, subcontiguous in basal 2/3, in apical 1/3 gently arched with apices pointed and meeting or crossing; internal margin ventrally serrated throughout. Length: body, 8.8–12.9 mm; forceps, 4.2–4.7 mm.

Material examined: Holotype ♂ (BISHOP 10,229), Luzon: Mountain Prov., Mayoyao, Ifugao, 1200–1500 m, 3.IX.1966; paratypes 1 ♀, 4 nymphs, same data, 900–1500 m, 4.V.1966; 1 ♂, same data, 1800 m, 6.V.1966; 1 ♀, same data, 900–1000 m, 9.V.1966; 2 nymphs, 900 m, 10.V.1966; 2 ♀♀, 3 nymphs; same data, 1200–1800 m, 15.V.1966; 1 ♀, same data, 900 m, 17.V.1966; 1 ♀, same data, 6.VI.1966; 2 ♀♀, same data, 1000–1500 m, 6.VII.1966; 1 ♀, same data, 1200–1500 m, 5–9.VIII.1966; 1 ♀, same data, 1200–1500 m, 13–15.VIII.1966; 1 ♂, same data, 1200–1500 m, 29.VIII.1966; 1 ♂, same data, 1200–1500 m, 13.IX.1966, H. M. Torrevillas.

One ♂ and 1 ♀ paratype retained in the collection of the author. In having spotted elytra and wings, the described species is close to *Kosmetor maculata* Bey-Bienko from China (Yunnan), but differs in having the head black, sutures fine and distinct; wings yellow with a brownish black spot apically; legs yellow but femora banded with brownish black, metatarsal segment apically and whole of 2nd segment black; abdomen dark brownish black; pygidium transverse with posterolateral angles produced into minute, sharp points and forceps dark blackish brown, internally with a vertical tooth above and margin below toothed in basal 1/2.

OPISTOCOSMINAE

Opisthocosmia centurio Dohrn

Opisthocosmia centurio Dohrn, 1865, *Stettin. Ent. Ztg.* **26**: 79.

In the present series elytral and wing spots are highly variable. In extreme cases these are totally absent. The forceps, in the ♂ from Zamboanga Del Norte (Mindanao), are comparatively shorter and more robust than others.

Distribution: Sumatra, Java, Borneo, Philippine Islands.

Material examined: LUZON: Mountain Prov., Mayoyao, Ifugao, 1200–1500 m, 1 ♀, 19–21.VII.1966; Camarines Sur, Mt Isarog, Pili, 600–800 m, 2 ♂♂, 1 ♀, 13, 14.IV.1965, H. M. Torrevillas; Los Baños, 1 ♀, I.1922, F. X. Williams. NEGROS OR.: L. Balinsasayao, 2 ♂♂, 9 ♀♀, 2 nymphs, 1–7.X.1959, C. M. Yoshimoto; Mt Talinas, 1000 m, 2 ♀♀, 29–31.XII.1960, H. Torrevillas. MINDANAO: Bukidnon, Mt Katanglad, 1250 m, 2 ♀♀, 1–2.XI.1959, L. W. Quate;

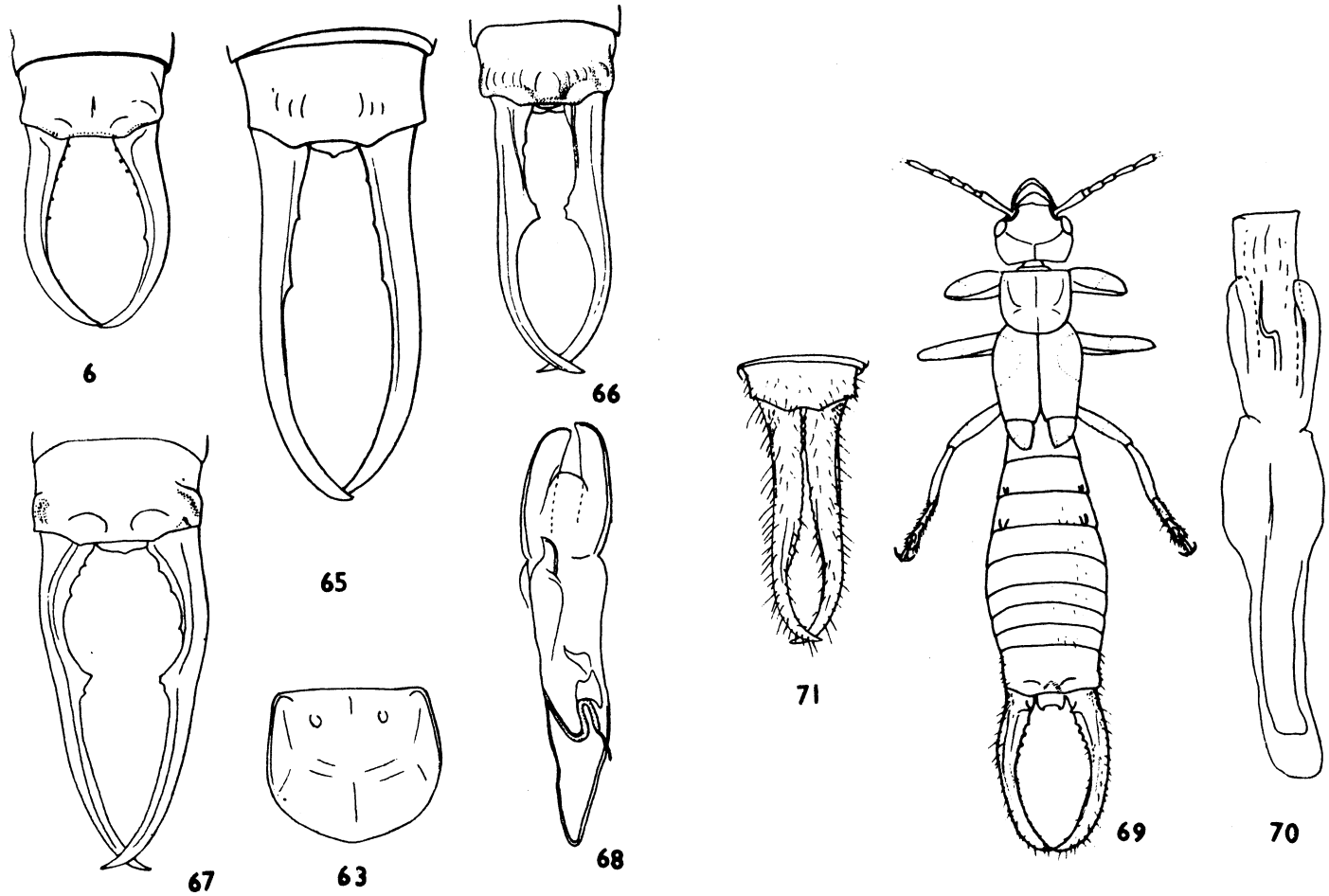

FIG. 63–71. *Kosmetor intermedius* Borelli, ♂: (63) Pronotum; (64–67). Ultimate tergite and forceps; (68) Genitalia. *Kosmetor punctata,* n. sp. Holotype ♂: (69) Dorsal view; (70) Genitalia. Paratype ♀: (71) Ultimate tergite and forceps.

Zamboanga Del Sur, Lemesahan, 600 m, 2 ♀♀, 8.IX.1958, in jungle; Zamboanga Del Norte, Masawan trail to Mt Malindang, 1290 m, 1 ♂, 1 nymph, 4, 5.VII.1958, in rain forest, H. E. Milliron; Misamis Or., Mt. Balatukan, 15 km SW of Gingoog, 1000–2000 m, 1 ♀, 27–30.IV.1960, at light, H. M. Torrevillas.

Hypurgus uniformes Borelli

Hypurgus uniformes Borelli, 1923, *Boll. Mus. Zool. Anat. Comp. Torino* 38 (N.S. 13): 18.

Distribution: Malaya, Philippine Is.

Material examined: MINDANAO: Mt Pomalihi, 21 km W of Gingoog City, 800–1000 m, 2 ♀♀, 16–18.X.1965, H. M. Torrevillas.

The present specimens agree well with the original description of the species in having yellowish orange humeral spot on the elytra and another similar one on wings at basal 2/3.

Recently, Srivastava (in press) has reported a male from Mindanao which lacks elytral and wings spots.

In the absence of a male, this identification should be treated with some reserve.

Genus **Timomenus** Burr

Timomenus Burr, 1907, *Trans. Ent. Soc. Lond.:* 96 (type-species: *Opisthocosmia oannes* Burr, 1900).

It has been observed that the members of this genus generally possess peculiar luster which is of great aid in the determination of species. The general color is usually constant except that of elytra and wings. The shape of pronotum appears to be most stable. Legs are rather short with anterior femora thick. Tarsi are short; hind metatarsal segment is equal to remaining 2 together. Second tarsal segment is always dilated with hind margin either entire or emarginate.

Distribution: Oriental Region.

Key to species of the genus *Timomenus* Burr from Philippine Islands (based on ♂♂ only)

1 (6). Pronotum slightly longer than broad or about as long as broad.
2 (3). Size smaller (16.9 mm), build slender, abdomen strongly punctate, ultimate tergite with smooth and punctate stripes alternating. ..... **simulans, n. sp.**
3 (2). Size larger (22 mm), build comparatively stouter, abdomen obscurely punctate, ultimate tergite smooth.
4 (5). Sides of abdominal segments 6 and 7 with a longitudinal ridge; forceps in basal 1/2 subcontiguous, strongly bowed in apical 1/2, internally crenulate in basal 1/2 with a small tooth at about middle. ..... **haddeni, n. sp.**
5 (4). Sides of abdominal segments without ridge; forceps almost straight, only slightly incurved at apices; internally with a dorsal tooth at basal 1/3, followed by another median tooth at about basal 2/3. ..... **sinuatus, n. sp.**
6 (1). Pronotum with greatest width slightly more than the greatest length.
7 (8). Build slender; abdomen strongly punctate; forceps long and slender, straight, contiguous in basal 3/4, abruptly bowed in apical 1/4. ..... **elongatus, n. sp.**
8 (7). Build comparatively stouter, abdomen smooth or obscurely punctate; forceps not contiguous
9 (10). Pronotum with sides converging posteriorly, hind margin briefly rounded ..... **komarowi** (Semenow)
10 (9). Pronotum with sides diverging posteriorly, hind margin broadly rounded.
11 (12). Second tarsal segment entire posteriorly; sides of abdominal segments devoid of any ridge; branches of forceps horizontal, armed internally at basal 1/3 with a dorsal tooth, followed by another median tooth at basal 2/3. ..... **robustus, n. sp.**
12 (11). Second tarsal segment emarginate posteriorly; sides of abdominal segments with a faint ridge; branches of forceps, in profile, a little raised in middle, internally with a strong dorsal tooth at about middle ..... **longiforceps** Srivastava (in press).

Timomenus haddeni Srivastava, **n. sp.** FIG. 72–74

♂: Head, pronotum, elytra and wings shining dark blackish brown, pronotum lighter on sides; abdomen shining reddish black, darker on sides; ultimate tergite posteriorly and forceps black. Head triangular, convex, very slightly depressed in middle, smooth, sutures fine but fairly distinct, hind margin straight. Eyes whitish with a black spot in middle, triangular, shorter than genae in length. Antennae partly broken (2 segments on right and 8 segments on left remaining), segments long, slender, 2nd small; 3rd and 4th subequal but shorter than 5th; remaining segments gradually increasing in length distally. Pronotum with anterior margin straight, gently contracted posteriorly, sides convex, converging posteriorly, gently reflexed, hind margin rounded, median sulcus faint, on either side of it a faint depression close to anterior angles present; prozona tumid and metazona less so, both demarcated by a transverse depression. Elytra smooth, about 3x longer than the head, humeral angles prominent, straight laterally and concave posteriorly. Wings projecting well beyond the elytra. Legs normal, anterior femora swollen, hind metatarsal segment almost equal to 3rd; 2nd segment enlarged, rounded posteriorly. Abdomen gradually enlarging from base up to 7th tergite, then gently contracted, convex, weakly punctate in anterior 1/2 of each tergite, lateral folds on 3rd tergite weakly and on 4th strongly developed, side of segments 5th to 7th obtuse, with a faint oblique ridge. Penultimate sternite transverse, triangular, hind margin obtusely rounded, faintly punctate. Ultimate tergite transverse, smooth, declivient, contracted posteriorly, weakly tumid above bases of forceps and depressed in between, hind margin sinuate in middle, oblique laterally, posterolateral angles a little projecting. Pygidium almost rounded, convex. Forceps long, slender, tapering, almost straight, contiguous, depressed in basal 1/2, then strongly incurved leaving an oblong space, compressed, apices pointed and crossing; internally with faint dorsal ridge, ventrally faintly crenulate in basal 1/2 where a small, pointed tooth is present, afterwards branches unarmed. Genitalia as in FIG. 74. Length: body, 14.8 mm; forceps, 7.5 mm.

♀: Unknown.

Material examined: Holotype ♂ (BISHOP 10,230), Luzon: Mt Makiling, 152 m (500 ft), 6.VI.1932, F. Hadden.

This species is close to *Timomenus aeris* Shiraki from Taiwan and *T. pieli* Hincks from Hainan I. in having somewhat identical forceps but differs mainly by the pronotum being narrowed posteriorly and the sides of abdominal segments 5th to 7th provided with a faint, oblique ridge.

In *T. aeris* and *T. pieli* the pronotum is about as long as broad, not narrowed posteriorly and the sides of abdominal segments 6 and 7 provided with a distinct tubercle.

From *T. unidentatus* Borelli known from Kiau-Tschow (China), the described species can be easily separated by the black pronotum (not yellow on sides) and the distinctive forceps.

Timomenus sinuatus Srivastava, **n. sp.** FIG. 75–77

♂: General color dark brownish black. Antennae testaceous brown; a few posterior abdominal tergites with a shade of red. Head about as long as broad, smooth, convex, sutures obliterated, hind margin almost straight. Antennae partly broken (1st segment on right and 10 segments on left remaining), segments long and slender; 2nd short; 3rd and 4th almost equal but slightly shorter than 5th, remaining segments gradually increasing in length distally. Eyes black, about 1/2 as long as genae. Pronotum about as long as broad, anteriorly convex, sides gently reflexed and feebly converging posteriorly with margin rounded, median sulcus faintly marked; prozona tumid and metazona weakly so. Elytra ample, smooth, humeral angles prominent, hind margin faintly concave. Wings normal, of same texture as the elytra. Legs typical of genus, 2nd tarsal segment enlarged with slight emargination in middle posteriorly. Abdomen gradually enlarging from base to a little beyond middle, then gently contracted, convex, tergites faintly punctate in basal 1/2 of each tergite; lateral folds on 3rd tergite weakly, on 4th strongly developed, sides of segments 7 to 9 broadly convex. Penultimate sternite transverse, obtusely rounded posteriorly. Ultimate tergite transverse, smooth, declivient, contracted posteriorly, tumid above the roots of forceps, depressed in middle, hind margin faintly sinuate in middle and laterally oblique. Pygidium small, rounded. Forceps with branches long, cylindrical, tapering, at base separated by pygidium, almost straight in basal 2/3 afterwards gently incurved with apices pointed and hooked, which cross; internally with dorsal triangular tooth at basal 1/3 and another median one at a little beyond middle. Genitalia as in FIG. 77. Length: body, 15.2 mm; forceps, 7.7 mm.

♀: Unknown.

Material examined: Holotype ♂, (BISHOP 10231), Luzon: Camarines Sur, Mt Isarog, 750–1000 m, 1.V.1963, H. M. Torrevillas.

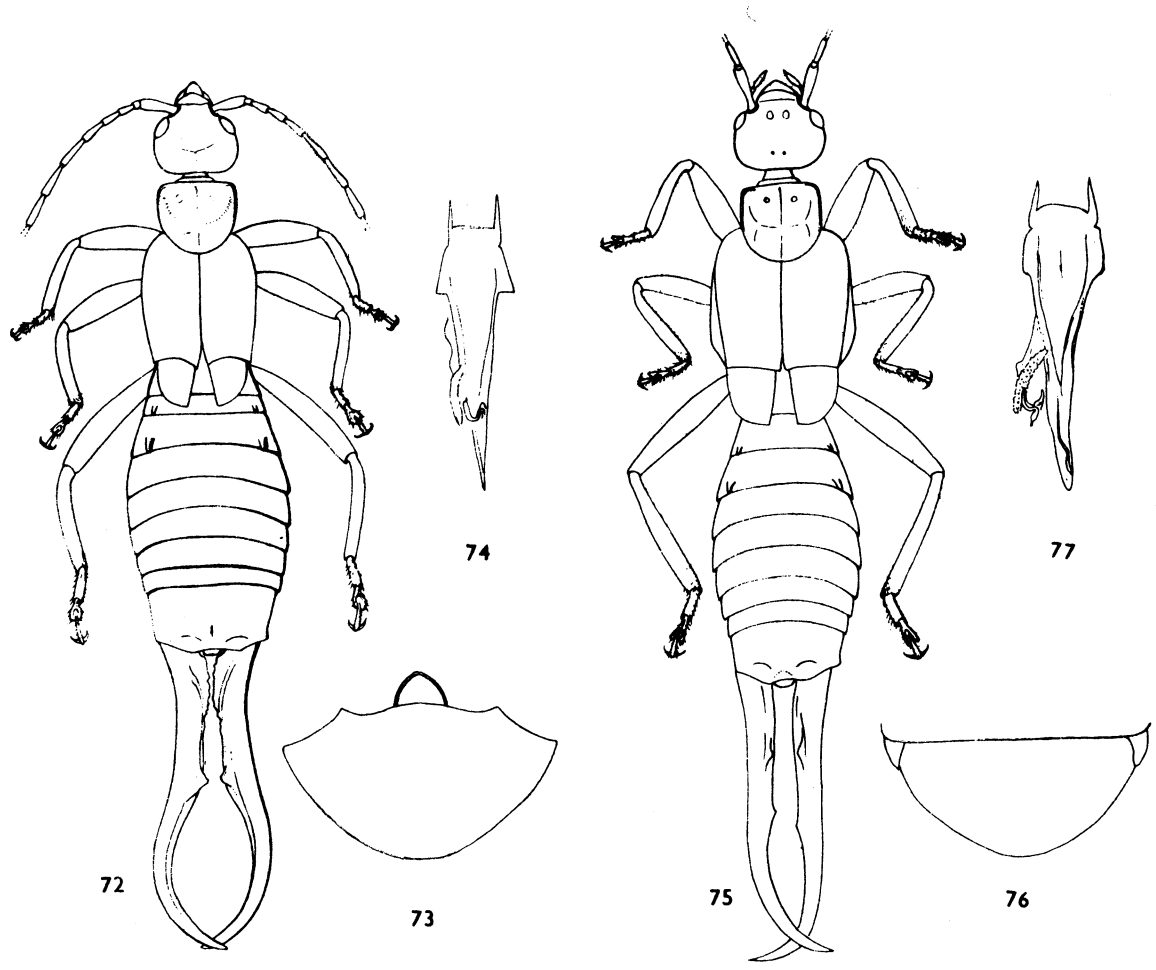

FIG. 72–77. *Timomenus haddeni*, n. sp. Holotype ♂: (72) Dorsal view; (73) Penultimate sternite; (74) Genitalia. *Timomenus sinuatus*, n. sp. Holotype ♂: (75) Dorsal view; (76) Penultimate sternite; (77) Genitalia.

With Brindle's (1969) key to the species of the genus *Timomenus* Burr, the described species runs to *T. nevilli* Burr from North India but differs in the general coloration (lacking, especially, the greenish luster) and the absence of tubercles on the sides of abdominal segments.

Timomenus robustus Srivastava, **n. sp.** FIG. 78–80

♂: General color blackish brown, abdomen and forceps a little darker. Antennae testaceous brown. Head triangular, smooth, convex, sutures obliterated, hind margin straight. Antennae same as in preceding species. Eyes small, about 1/2 as long as genae. Pronotum a little broader than long, anterior margin straight, sides lightly convex, hind angles and margin broadly rounded. Elytra and wings well developed, smooth, former concave posteriorly. Legs normal, 2nd tarsal segment lobed with hind margin entire. Abdomen convex, enlarged posteriorly, lateral folds on 3rd tergite weak and on 4th prominent, sides of segments broadly convex. Penultimate sternite broadly rounded posteriorly. Ultimate tergite strongly declivient posteriorly, faintly tumid above bases of forceps, depressed in middle, hind margin trisinuate. Pygidium rounded. Forceps stout, long, cylindrical, tapering, almost straight, only slightly arched a little before apex, tips pointed, gently hooked and crossing; internally with dorsal tooth at basal 1/3 and another median one at a little beyond middle. Genitalia as in FIG. 80. Length: body, 11.6 mm; forceps, 9.6 mm.

♀: Unknown.

Material examined: Holotype ♂, (BISHOP 10,232), Luzon: Camarines Sur, Mt Isarog, 750–900 m, 4–7.V.1963, H. M. Torrevillas.

This species closely resembles the preceding one, *T. sinuatus,* n. sp. but differs in being more robust, general color blackish brown; pronotum with sides convex and gently diverging; the 2nd tarsal segment lobed, with hind margin entire.

Timomenus elongatus Srivastava, **n. sp.** FIG. 81–84

♂: General color shining black; antennae dark brownish black; tarsi testaceous; pronotum yellow on sides; elytra and wings dark brownish black in paratypes. Glabrous above and faintly pubescent below. Head as long as broad, convex, smooth, sutures faint, hind margin straight. Antennae partly broken (only 10 segments remaining), stout, basal segment clavate; 2nd small; 3rd and 4th subequal; 5th longer than the preceding 2, remaining segments slightly longer. Eyes smaller than genae in length. Pronotum slightly broader than long, anteriorly straight, sides convex, flat, hind angles and margin well rounded, median sulcus faint; prozona tumid and well differentiated from flat metazona. Elytra and wings well developed, smooth, former with hind margin obliquely concave. Legs normal, 2nd tarsal segment enlarged with hind margin entire. Abdomen long, convex, gradually enlarging from base to 7th tergite, then gently contracted, strongly but sparsely punctate, lateral folds on 3rd tergite weak and on 4th prominent, sides of segments broadly convex, punctate. Penultimate sternite punctate, broadly rounded posteriorly. Ultimate tergite transverse, gently contracted and sloping backwards, stripes of punctate and smooth areas alternating, tumid above the roots of forceps and faintly depressed in between, hind margin incrassate and faintly trisinuate, oblique laterally. Pygidium scarcely visible from above, vertical, hind margin straight. Forceps long, straight, tapering posteriorly, subcontiguous in basal 3/4, strongly bowed in apical 1/4, apices pointed, gently hooked and crossing each other, branches depressed above in basal 1/3, internally dentate in basal 3/4, with dorsal tooth at a little beyond basal 1/3. Genitalia as in FIG. 83. Length: body, 10.8–10.9 mm; forceps, 6.7–7.5 mm.

♀: Agrees with ♂ in most characters except that sutures on head and pronotum more pronounced; ultimate tergite comparatively narrower posteriorly; pygidium vertical, short, pointed and forceps simple and straight. Length: body, 9.3 mm; forceps, 4.0 mm.

Material examined: Holotype ♂ (BISHOP 10,233), paratypes 1 ♂, 1 ♀, Negros Or.: L. Balinsasayao, 1–7.X.1959, C. M. Yoshimoto.

With Brindle's key (1969) to the species of the genus, the described species is close to *Timomenus oannes* (Burr) but differs in being smaller in size, slender in build and with distinctive forceps.

Timomenus simulans Srivastava, **n. sp.** FIG. 85–87

♂: General color shining dark brownish black, antennae and forceps a little lighter. Head smooth, triangular, sutures obsolete, hind margin straight. Antennae partly broken (only 10 segments remaining), stout, 1st clavate, longer than 2nd to 4th together; 2nd small; 3rd subclavate, equal to 4th but shorter than 5th; remaining segments slightly longer. Pronotum entirely black, straight anteriorly, sides very slightly converging posteriorly with margin rounded, median sulcus faint; prozona tumid and well differentiated from

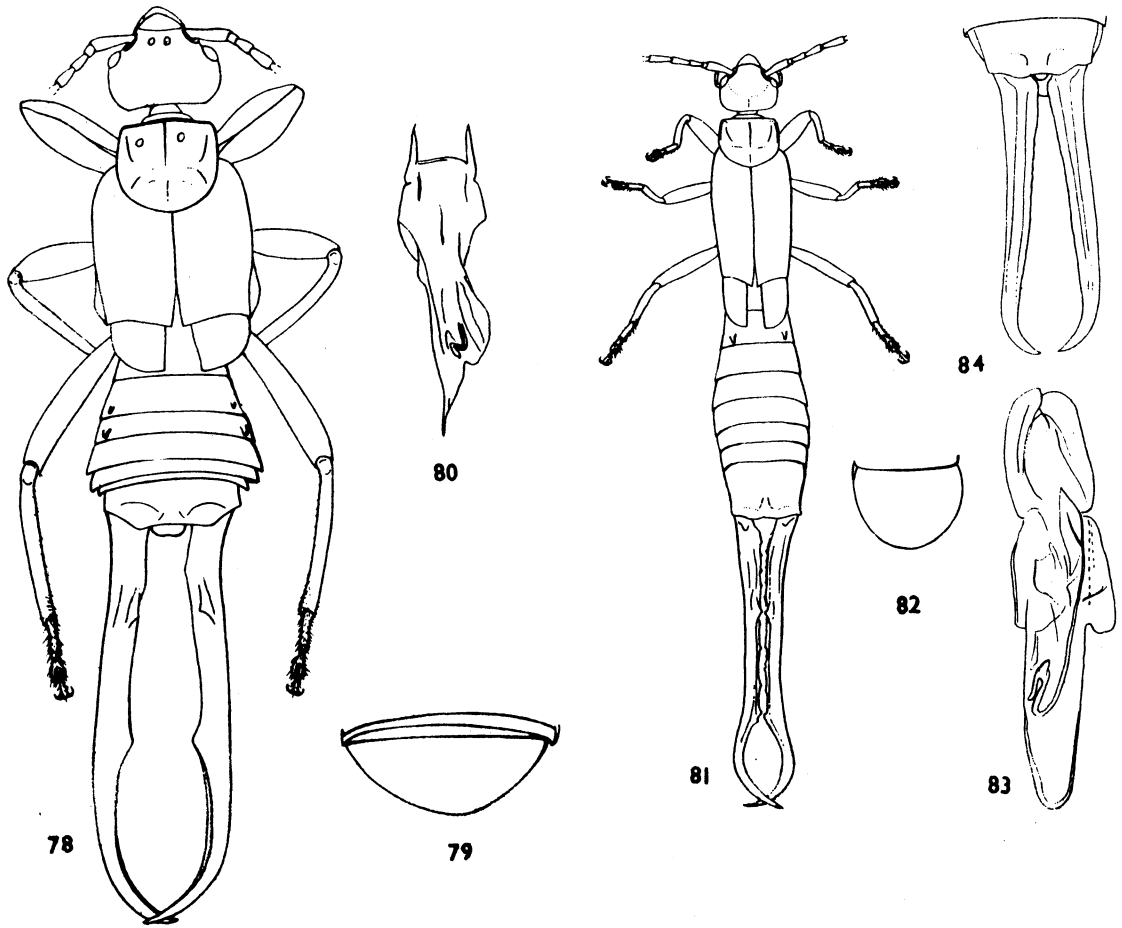

FIG. 78–84. *Timomenus robustus,* n. sp. Holotype ♂: (78) Dorsal view; (79) Penultimate sternite; (80) Genitalia. *Timomenus elongatus,* n. sp. Holotype ♂: (81) Dorsal view; (82) Penultimate sternite; (83) Genitalia. Paratype ♀: (84) Ultimate tergite and forceps.

flat metazona. Legs, elytra, wings, abdomen and ultimate tergite same as in preceding species. Penultimate sternite broadly rounded posteriorly. Pygidium vertical, hind margin faintly convex in middle with angles a little projecting. Forceps almost the same as in preceding species but dorsal tooth is almost obsolete. Genitalia as in FIG. 87. Length: body, 10.7 mm; forceps, 6.2 mm.

♀: Unknown.

Material examined: Holotype ♂, (BISHOP 10,234), Negros Or.: Mt Canlaon, 2100 m, 21–25.XII.1959, malaise trap, L. W. Quate.

This species is very similar to *Timomenus elongatus,* n. sp. but differs mainly in having the pronotum entirely black (sides not yellow), narrowed posteriorly and the dorsal tooth of forceps almost obsolete.

Timomenus komarowi (Semenow) FIG. 88

Opisthocosmia komarowi Semenow, 1901, *Rev. Russe Ent.* **1**: 98.

Timomenus komarowi: Burr, 1907, *Trans. Ent. Soc. Lond.:* 96.

General color is black. In most specimens elytra testaceous yellow or orange with sutural and humeral borders black but in some these are completely black. Pronotum convex anteriorly and on sides, latter gently converging posteriorly, weakly transverse (greatest width slightly more than greatest length). Forceps variable, either stout, a little contracted in basal 1/3, then strongly bowed or slightly less stout, gradually diverging from base to middle, afterwards curvature becomes more pronounced. The inner as well dorsomedian tooth also variable. Sides of abdominal segments 5 to 7 in ♂ obtuse, provided with a faint longitudinal ridge; absent in some specimens.

Material examined: LUZON: Mountain Prov., Mayoyao, Ifugao, 1200–1500 m, 3 ♂♂, 6 ♀♀, 19–21.VII.1966, 9–31.VIII–19.IX.1966, H. M. Torrevillas. MINDANAO: Bukidnon, Mt Katanglad, 1250 m, 1 ♀, 26.X.1959, L. W. Quate; Mt Pomalihi, 21 km W of Gingoog City, 800–1000 m, 1 ♀, 16–18.X.1965; Misamis Or., Mt Balatukan, 15 km SW of Gingoog City, 1000–2000 m, 1 ♂, 1 ♀, 1–5.V.1960, H. M. Torrevillas; Mt Empagatao, 1050–1200 m, 1 ♂, 19–30.V.1961, H. Torrevillas. NEGROS OR.: L. Balinsasayao, 2 ♀♀, 1–7.X.1959, L. W. Quate.

The above specimens agree with Brindle's (1971) remarks on the species except for some minor variations.

Semenow (1901) mentions a tubercle, in the male on the sides of the 4th and 5th abdominal segments which is absent in the above specimens.

Eparchus cruentatus Burr

Eparchus cruentatus Burr, 1909. *Ann. Mag. Nat. Hist.* ser. 8, **4**: 115.

Distribution: Sunda Islands and Philippine Is.

Material examined: MINDANAO: Bukidnon, Malaybalay, Alanib, 910 m, 1 ♂, 3 ♀♀, 1 nymph, 25.X.1959, L. W. Quate; Zamboanga Del Sur, Dumingug, 1 ♀, 21.X.1959, H. E. Milliron.

Cordax vandermeermohri Menozzi

Cordax vandermeermohri Menozzi, 1933, *Misc. Zool.* **77**: 3.

General color dark blackish brown; femora slightly darker distally. In ♂ right wing possesses a broad yellow spot at base, close to external margin and another smaller one at tip close to internal margin. In the left wing both these spots faint.

Distribution: Sumatra and Philippine Is.

Material examined: MINDANAO: Misamis Or., Hindangon, 20 km S of Gingoog, 500–700 m, 1 ♂, 2 ♀♀, 20–24.IV.1960, H. Torrevillas.

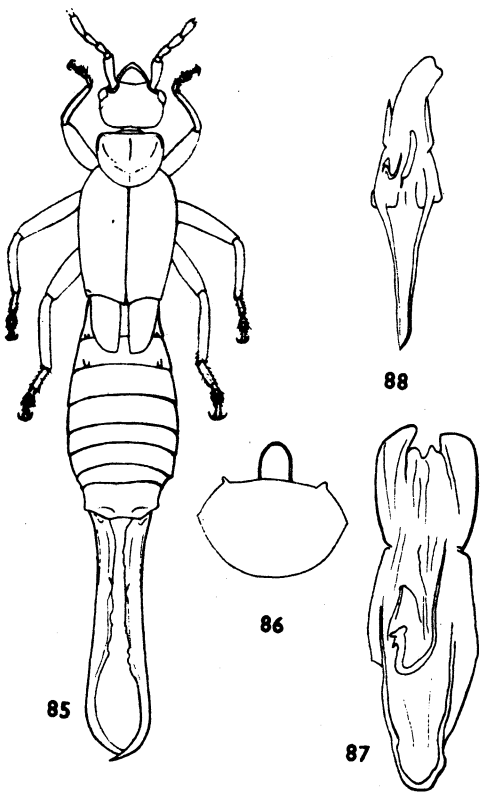

FIG. 85–88. *Timomenus simulans,* n. sp. Holotype ♂: (85) Dorsal view; (86) Penultimate sternite; (87) Genitalia. *Timomenus komarowi* (Semenow), ♂: (88) Genitalia.

Synotus simplex Srivastava

Synotus simplex Srivastava, Eos (in press).

Distribution: Philippines Is.

Material examined: NEGROS OCC.: Mt Canlaon, 2100 m, 2 ♀♀, 1 nymph, 21–25.XII.1959, light trap, L. W. Quate.

This species is known from the holotype male. The female is described below:

♀: Agrees with ♂ in most characters except that color is slightly darker; forceps comparatively thinner, faintly trigonal at base, almost straight, slightly incurved at apices.

Acknowledgments: I wish to acknowledge my indebtedness to Dr J. L. Gressitt of the Bishop Museum, Honolulu, Hawaii for placing this interesting, unidentified collection at my disposal. Thanks are due to Dr A. P. Kapur, Director, Zoological Survey of India, Calcutta for providing facilities to work on the collection.

LITERATURE CITED

Boeseman, M. 1954. The Dermaptera in Museums at Leiden and Amsterdam. *Zool. Verh.* Leiden **21:** 1–122.

Borelli, A. 1915a. Dermatteri delle Isol Filippine. *Boll. Mus. Zool. Anat. Comp. Torino* **30** (697): 1–7.

1915b. Dermatteri delle Isol Filippine. Nota II. *Boll. Mus. Zool. Anat. Comp. Torino* **30** (705): 1–7.

1916. Dermatteri delle Isol Filippine Nota III. *Boll. Mus. Zool. Anat. Comp. Torino* **31** (715): 1–6.

1917. Dermatteri delle Isol Filippine Nota IV. *Boll. Mus. Zool. Anat. Comp. Torino* **32** (721): 1–4.

1918. Dermatteri delle Isol Filippine Nota V. *Boll. Mus. Zool. Anat. Comp. Torino* **33**(726): 1–5.

1921. Di alcuni Dermatteri raccolti in Malasia dal prof. C. F. Baker. *Boll. Mus. Zool. Anat. Comp. Torino* **35**(736): 1–9, 1 fig.

1923. Dermatteri delle Isol Filippine Nota VI. *Boll. Mus. Zool. Anat. Comp. Torino* **38** N.S. (13): 1–20.,

1926. Dermatteri delle Isol Filippine Nota VII. *Res. Biol.* **1**(5): 61–79, 6 fig.

Brindle, A. 1965. A revision of Apachyinae (Dermaptera: Labiduridae). *Ann. Mag. Nat. Hist.* ser. 13, 8: 435–46.

1966. The Dermaptera of the Naturhistoriska Riksmuseums, Stockholm. Part I. *Ark. Zool.* **18:** 437–47.

1967. The Dermaptera of the Naturhistoriska Riksmuseums, Stockholm. Part II. *Ark. Zool.* **20:** 147–63.

1968. The Dermaptera of the Naturhistoriska Riksmuseums, Stockholm. Part III. *Ark. Zool.* **20:** 533–52.

1969. Notes on the genus *Timomenus* Burr (Dermaptera: Forficulidae). *Ent. Mon. Mag.* **104:** 243–49.

1970. The Dermaptera of the Solomon Islands. *Pacific Ins.* **12:** 641–700.

1971. The Dermaptera of the Naturhistoriska Riksmuseum, Stockholm. Part IV. *Ent. Tidskr.* **92:** 1–27.

Caudell, A. N. 1904. A new forficulid from the Philippines. *J. N. Y. Ent. Soc.* **12:** 108–09.

Hebard, M. 1923. Studies in Indian Dermaptera. *Mem. Dept. Agr. India Ent.* ser. 7: 195–242.

1927. Studies in Sumatran Dermaptera. *Proc. Acad. Nat. Sci. Philad.* **79:** 23–48.

Hincks, W. D. 1955. *A systematic monograph of the Dermaptera of the World based upon the material in the British Museum (Natural History). Part. I. Pygidicranidae, subfamily Diplatyinae.* p. 1–132, 167 fig. British Museum (Natural History), London.

Ramamurthi, B. N. 1967. Dermaptera collected by the Noona Dan Expedition in Philippine and Bismarck Islands. *Ent. Meddel.* **35:** 227–59.

Semenow, A. 1901. Un premier représentant paléanarctique du genre *Opisthocosmia* H. Dohrn (Orthoptera, Forficulidae). *Rev. Russe Ent.* **1:** 98–100.

Srivastava, G. K. Studies on the Dermaptera of Philippines. *Eos* **50:** (in press).