

***Atheta* and Its Allies of Southeast Asia**

(Coleoptera; Staphylinidae)

II. Reexamination of the Species Mainly from Borneo¹⁾

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Rich material of *Athetae* brought by the Kyoto University Expedition to Sabah, North Borneo are before me. As may be imagined easily the large island of Borneo with its rich rainfalls and dense vegetation is the ideal place for the fauna of *Athetae* and the collection includes various forms, a large complex of species peculiar to Southeast Asia. Their research is now going on, but before giving full descriptions of each of the species of the collection it is necessary to check those species which have been already described from the island together with those, whose range of distribution is known to be extended in the wide range in tropical Asia. A part of them is already published, and this article is the second one in which the known Bornean species are treated. After the chlonological order, they may be as listed below. The exact names after the conception are attached to each of them and the species in thick letters are treated in the subsequent pages. The species belonging to the genus *Pelioptera* Kraatz, 1857 were treated separately as the group must be handled with special attention.

Kraatz, G. A., 1857. Beiträge zur Kentniss der Termitophilen, Linnaea Ent., 11: 44-56.

Pelioptera micans Kr.....***Pelioptera micans*** Kr.
Pelioptera opaca Kr.....***Pelioptera opaca*** Kr.

Motschulsky, T. Victor von, 1858. Énumération des nouvelles espèce de coléoptères rapportes de ses voyages, Bull. Soc. Imp. Nat. Moscou, 31(3): 204-264.

Homalota testaceipennis Motsch.....***Pelioptera testaceipennis*** (Motsch.)
Homalota dilutipennis Motsch.....***Pelioptera opaca*** Kr.

Kraatz, G., 1859. Die Staphyliniden-Fauna von Ostindien, insbesondere der Insel Ceylan, 196 pp. Berlin.

Homalota pelioptera Kr.....***Pelioptera testaceipennis*** Motsch.
Homalota dubia Kr.....***Pelioptera dubia*** (Kr.)

Sharp, D., 1899. A new genus of termitophilous Staphylinidae from Borneo, Ent. Monthly Mag., 35: 205-206.

Dioxeuta microps Shp.....***Dioxeuta microps*** Shp.

Fauvel, A., 1904. Staphylinides de l'Hindoustan et de la Birmanie, Rev. d'Ent., 23: 43-70.

Atheta nilgiriensis Fv.....***Pelioptera nilgiriensis*** (Fv.)

1) Part I (Reexamination of some species from Borneo and Singapore) appeared in Pacific Insects, 21 (4): 333-354 (1980).

Bernhauer, M., 1911. Zur Staphylinidenfauna Ostindiens und der Sundainseln (3. Beitrag), Ent. Blätter, 7: 55–62, 86–93.

Strabocephalum mirabile Bh.....*Strabocephalum mirabile* Bh.

Bernhauer, M., 1915. Zur Staphylinidenfauna des indo-malischen Gebietes, insbesondere der Philippinen (8. Beitrag). Col. Rundsch., 4: 21–32.

Atheta (Aloconota) peguana Bh.....*Pelioptera peguana* (Bh.)

Atheta (Taxicera) sarawakensis Bh.....*Hylodesina sarawakensis* (Bh.)

Atheta (Taxicera) hewitti Bh.....*Hylodesina hewitti* (Bh.)

Bernhauer, M., 1915. Neue Staphyliniden der indo-malaiischen Fauna, insbesondere der Sunda-Insel Borneo (9. Beitrag), Verh. zool.-bot. Ges. Wien, 65: 134–158.

Coenonica vulnerata Bh.....*Coenonica vulnerata* Bh.

Tachyusa opaca Bh.....*Tachyusa opaca* Bh.

Termitobaena bryanti Bh.....*Termitobaena bryanti* Bh.

Bernhauer, M., 1916. Neue Staphyliniden des indo-malaiischen Faunengebietes, besonders der Philippinen, Verh. zool.-bot. Ges. Wien, 66: 418–431.

Atheta (Philhygra) luzonica Bh.....*Pelioptera luzonica* (Bh.)

Cameron, M., 1920. New Species of Staphylinidae from Singapore, III, Trans. Ent. Soc. London, 1920: 212–284.

Atheta (Microdota) vulgaris Cam.....*Atheta (Badura) vulgaris* Cam.

Atheta (Dimetrota) xylophila Cam.....*Pelioptera xylophila* (Cam.)

Atheta (Colpodota) ruparia Cam.....*Atheta (Chaetida) ruparia* Cam.

Atheta (Acrotoma) rufiventris Cam.....*Acrotoma (Acrotoma) rufiventris* Cam.

Mimacrotona cingulata Cam.....*Mimacrotona cingulata* Cam.

Cameron, M., 1928. New Species of Staphylinidae from Borneo, II, Sarawak Mus. Journ., 3: 413–422.

Atheta (Acrotoma) mjobergi Cam.....*Placusa mjobergi* (Cam.)

Cameron, M., 1933. Staphylinidae of Japan, Ent. Monthly Mag., 1933: 208–219.

Atheta (Liogluta) luchuensis Cam.....*Pelioptera testaceipennis* (Motsch.)

Cameron, M., 1933. Staphylinidae from Mt. Kinabalu, Journ. Fed. Malay St. Mus., 17: 338–360.

Paroxyppodinus pendleburyi Cam.....*Paroxyppodinus pendleburyi* Cam.

Gnypeta (?) abdominalis Cam.....*Gnypeta abdominalis* Cam.

Atheta (s. str.) borneensis Cam.....*Pycnota borneensis* (Cam.)

Atheta (s. str.) pendleburyi Cam.....*Taxicera pendleburyi* (Cam.)

Atheta (Dimetrota) aprilis Cam.....*Atheta (Notothecta) aprilis* Cam.

Atheta (Acrotoma) horrida Cam.....*Acrotoma (Acrotoma) horrida* Cam.

Atheta (Datomicra) morbida Cam.....*Codoglossa morbida* (Cam.) n.g.

Pelioptera monticola Cam.....*Pelioptera monticola* Cam.

Bernhauer, M., 1936. Results of the Oxford University Expedition to Borneo, 1932: Neue Staphyliniden (Coleoptera) (33. Beitrag zur indo-malayischen Staphylinidenfauna), Proc. Roy. Ent. Soc. London, ser B, 5: 214–216.

Hylodesina moorei Bh.....*Hylodesina moorei* Bh.

Cameron, M., 1950. New Species of Staphylinidae from the Malay Peninsula, Ann. Mag. Nat. Hist. (London) 12, 3(1): 1-131.

Atheta (Microdota) pseudocoprophi Cam.....*Codoglossa pseudocoprophi* (Cam.)

***Atheta (Notothecta) aprilis* Cameron, 1933**

Fig. 1

Atheta (Dimetrota) aprilis Cameron, 1933: 358

♂. Dark brown in ground colour and shining; head nearly black, pronotum slightly paler; elytra pale yellowish brown except for dark scutellum and dark lateral margin; abdomen uniformly dark brown; antennae blackish leaving a little paler basal segments; legs uniformly paler. Body flat above, nearly parallel. Head is rounded, small for corpus, and with a narrow median depression; surface provided with numerous coarse punctures except for smooth frontal region between antennae. Eyes large, their diameter is a little longer than the post-genae. Antenna normally long, weakly dilated distally, with long macrosetae; segment I, II robust, subequal in length; IV as long as broad; V much larger than IV, fairly longer than wide; X apparently broader than long; XI elongate. Labrum (Fig. A) feebly emarginate in front; *d-2* is on level of *m-1*; *m-2* reaching the distal row of setae; *p-2*, *m-2* similarly situated on vertical line; proximal row very short in relation to others; 2+2 secondary setae are present. *a*-sensilla of labral margin (Fig. B) setaceous, strongly reduced; *b* well defined, and truncate apically; *c* quite obtuse. Mandibles long, produced to form a large hook; right mandible bears a robust, basally situated molar tooth. Maxillary palpus 4-segmented, narrowly elongate; segment II distally dilated; III much longer than II, and with macrosetae associated with conspicuous secondary setae; IV (Fig. C) rather long compared to III, and with well developed basal sensillae. Lacinia gradually dilated basally, with 2 isolated teeth, they are well defined, but not surpassing the teeth of the distal comb in length. Galea is normal form and with shortly ciliated distal lobe. Labial palpus (Fig. E) apparently 3-segmented; β close to *tp*; γ posterior to *b*; δ is same level with *h*; *b* is on level of *a*, much longer than that; *e* is anterior to level of *f*. Median area of prementum (Fig. D) fairly broad, with up to 12 large and small pseudopores; the lateral area has 2 real pores distant from the border of the median area. Mentum (Fig. F) broadly emarginate in front, obtuse at antero-lateral corner, where there are 2 long and 1 minute setae to be designated as *u* and *v*; *w* is reduced. Pronotum as long as wide, weakly narrowed posteriorly, with a shallow median sulcus, which is going to be deeper to form a flat basal depression; sides are nearly straight and the hind corner is well defined; lateral erect setae long, delicate; secondary setae along the middle line are directed posteriorly. Scutellum granulate throughout. Tarsal formula as 4, 5, 5. Meso- and metatibiae (Fig. G) have conspicuous macrosetae, fully 2 time the width of the tibia. Metatarsus with similarly elongate basal segments. Macrochaetal arrangement as 01-12-12-12-13-35. Elytron normally long, fairly large compared to the pronotum, not emarginate postero-externally; surface covered with very fine, dense punctures as in the pronotum. Abdomen is parallel; tergite VII is much longer than others. Tergite VIII (Fig. H) not modified, covered with dense, short secondary setae;

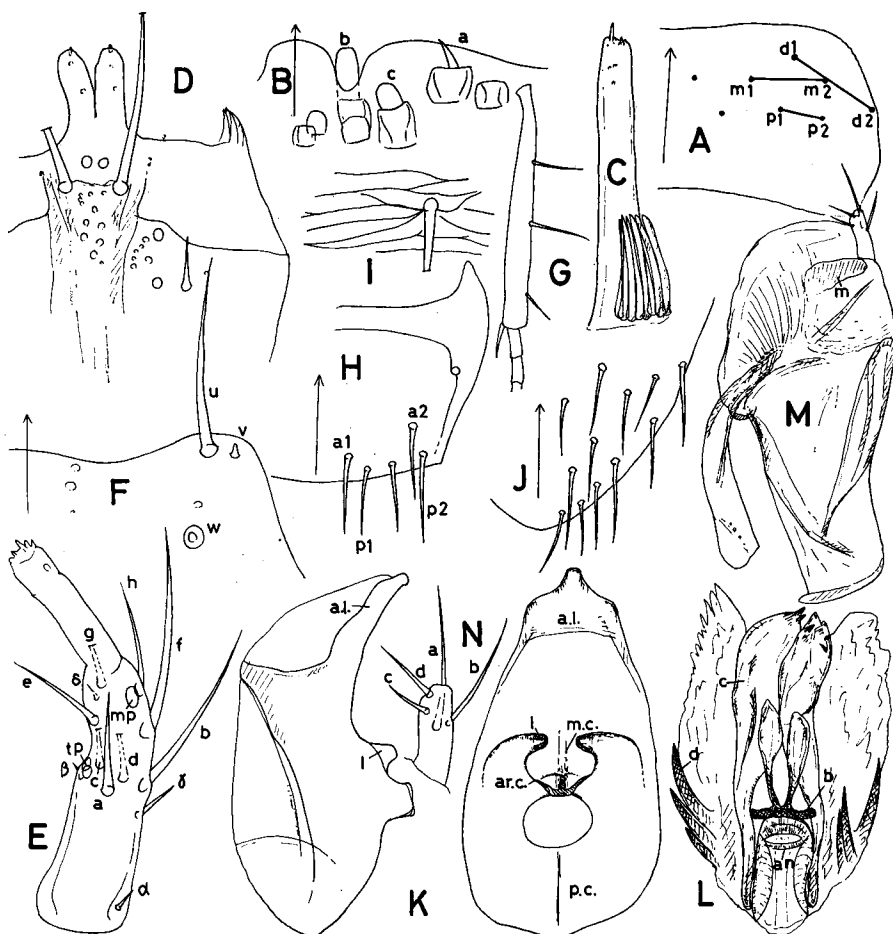


Fig. 1. *Atheta (Notothecta) aprilis*. holotype ♂: A, labrum; B, labral margin; C, segment IV of maxillary palpus; D, glossa & prementum; E, labial palpus; F, mentum; G, mesotibia; H, I, tergite VIII & its microsculpture; J, sternite VIII; K, median lobe; L, inner armature of aedeagus; M, N, lateral lobe & its distal segment.

among 5+5 major setae *a-2* is widely remote from the stigma; *a-1* posterior to *a-2*; microsculpture of the middle (Fig. I) transversely reticulate pattern. Sternite VIII (Fig. J) fairly produced behind; 12+12 long macrosetae are occurred in contrast with 5-7 in number in usual cases. In lateral view the median lobe of aedeagus (Fig. K) is uniformly bent downwards, with a pair of obtuse projection (*I*) in the middle; in ventral view this projection is directed to each other, forming a concave space behind them. Costa *m. c.* and *ar. c.* are absent. Inner armature of aedeagus (Fig. L) is complicated; copulatory piece is ending in a large annellus (*an*) and a well pigmented bar (*b*) is present; anterior to it a paired elongate sclerites or lobes which are more or less dilated distally and constricted proximally are attached to the bar; lateral to the lobes there is a large mass (*c*), whose anterior extremity is densely spinulate; basal to the mass there are

3 black teeth (*d*). Lateral lobe (Fig. M) is broad, sinuate laterally. Vellum is large; middle apodeme (*m*) is broad; proximal segment is parallel to the margin of the median segment. Distal segment is short for corpus; among 4 macrosetae *a*, *b* are on the middle of the segment; *c*, *d* are relatively long and unequal in length.

Length. ca. 4.0 mm.

♀. Unknown.

Material examined. Borneo: Holotype ♂, Kamborangah, Mt. Kinabalu, 2400 m alt., (4 IV. 1929).

Strongly reduced *a*-sensilla of labrum, multisetose sternite VIII, 5+5 major setae of tergite VIII and peculiar aedeagus as may be seen in *Philhygra* are the characters of the present species. Prementum and the chaetotaxy of labial palpus reminds us of a *Liogluta*, but the lateral area of prementum has pseudopores.

Distribution. Borneo.

***Codoglossa*, new genus**

Type species: *Atheta morbida* Cameron, 1933

The glossa (Fig. C) is muthroom-shaped; the basal part is constricted and then, abruptly widened apically to form the campanulate dilation, whose anterior margin has a pair of setulae. The median area of prementum (Fig. C) is narrow and without pseudopores; lateral area has 2 real and 1 setal pores together with a few pseudopores. Distal comb of lacinia consists of 6 long and short teeth and with a row of additional lateral teeth. Anterior margin of labrum (Fig. B) is entirely arcuate in full length and without emargination in the middle; *a*-sensilla of labral margin is reduced to a setula. Labial palpus (Fig. D) is 3-segmented and with short segment I.

By the absence of the anterior row of macrosetae of abdominal tergites and by the bisetose glossa this new genus is a near relative of *Pycnota* Mulsant et Rey, 1873, but prementum and labrum are different.

***Codoglossa morbida* (Cameron, 1933), new combination**

Fig. 2 A-H

Atheta (*Datomicra*) *morbida* Cameron, 1933: 359

♀. Black in ground colour and shining; head and pronotum similarly pigmented; elytra a little paler than others; legs paler leaving infusate femora. Body small. Head is small, without depression in the middle. Eyes moderate in size. Post-genae is long. Antenna is normally long; segment III slightly shorter than II; IV small, equal to V in form; X transverse; XI short. Labrum (Fig. A) subtruncate in front; seta *m*-2 is laterally dislocated and over the distal row, which is longer and nearly parallel to the proximal row; 2+2 secondary setae are present. Labral margin (Fig. B) is neither sinuate nor emarginate; *a* reduced to a setula; *b* is obtuse; *c* rounded and inconspicuous; all sensillae are close to the anterior margin. Mandibles are normally hooked distally and with a small molar tooth on the middle of the inner margin. Maxillary palpus is 4-segmented, reduced; segment II normal, but III is dilated in the middle; IV elongate as usual. Lacinia is dilated behind, with indistinct isolated teeth. Galea with reduced

distal lobe. From labial palpus (Fig. D) setula β is minute and close to tp ; γ is short and on level of b ; δ on level of g ; a is posterior to level of b , close to tp ; e posterior to level of mp , on the same level with f ; g is anterior to level of h ; segment I short compared to II; III dilated distally. Glossa (Fig. C) is transformed to a campanulate dilation with broad, feebly arcuate anterior margin with a curved setula on each side. On prementum (Fig. C) the median area is narrow and without pseudopores; lateral area is with 1

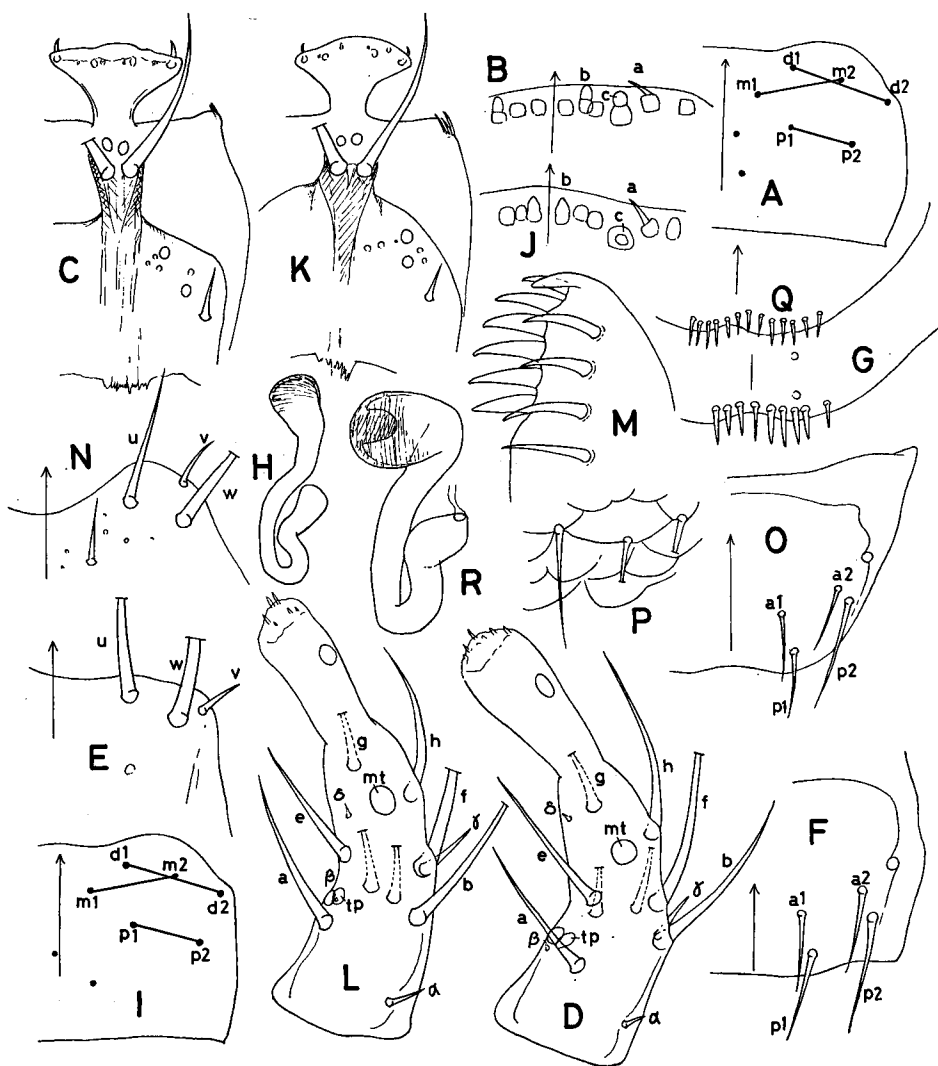


Fig. 2. *Codoglossa morbidula*. holotype ♂: A, labrum; B, labral margin; C, glossa & prementum; D, labial palpus; E, mentum; F, tergite VIII; G, posterior margin of sternite VIII; H, spermatheca. *Codoglossa pseudocrophila*. syntype ♀: I, labrum; J, labral margin; K, glossa & prementum; L, labial palpus; M, distal comb of lacinia; N, mentum; O, P, tergite VIII & its microsculpture; Q, posterior margin of sternite VIII; R, spermatheca.

setal and 2 real pores, the former is lateral in position, and the latter are remote from the border of the median area; some 4 pseudopores are present. From mentum (Fig. E) the anterior margin is faintly emarginate in the middle; *v* is normally short, on level of *u*; *w* is close to *v* in position. Cervical carina is diverged. Pronotum broad, weakly narrowed behind; the hind corner well defined; secondary setae along the middle are directed posteriorly; lateral erect setae inconspicuous. Mesosternum acuminate behind, there is no trace of median carina. All legs are short; macrosetae on tibiae are mixed with the secondary setae around them. Tarsal formula as 4, 5, 5; meso- and metatarsi have subequally short basal segments. Elytron is short for corpus, not emarginate behind; surface more roughly granulated than pronotum; humeral corner has an indistinct erect seta. Abdomen is nearly parallel, with indistinct lateral erect setae. Macrochaetotaxy as 01-01-01-02-12-33. Tergite VIII (Fig. F) is not modified and only faintly emarginate in the middle of the posterior margin; from 4+4 major setae *a-1* is on same level with *p-2*; microsculpture is transversely imbricate. Sternite VIII is lightly emarginate at the apex (Fig. G) and there is a row of some 8 subequally short marginal setae. Spermatheca (Fig. H) is elongate, turned over distally; bursa nearly as usual; umbilicus seems to be absent.

Length. 1.35 mm.

♂. Unknown

Material examined. BORNEO: Holotype ♀, Tenompok, Pass 1,400 m alt. nr. Mt. Kinabalu, (18 III, 1929).

***Codoglossa pseudocoprophila* (Cameron, 1950), new combination** Fig. 2 I-R

Atheta (*Microdota*) *pseudocoprophila* Cameron, 1950: 110

♀. Ground colour dark brown, weakly shining; head more intensively pigmented; pronotum and elytra similarly infusate; abdomen, antennae are uniformly dark brown, while legs are paler. Body is very small. Head normal in size, evenly convex above, without depression in the middle; microsculpture is almost invisible. Eyes are large. Post-gena is short. Antenna weakly dilated toward extremity; segment I longer than II; III apparently shorter than II; IV is small, moniliform; XI short. Labral chaetotaxy (Fig. I) nearly as in *C. morbida* (Cam.), but *m-2* is slightly anterior to level of *m-1*. Labral margin (Fig. J) evenly arcuate in full length; *a* strongly reduced; *b* ovate; *c* inconspicuous. Mandibles shortly hooked distally; right mandible has a small molar tooth. Maxillary palpus is 4-segmented; segment III much broader than II; IV fully as much as the half of segment III. Lacinia (Fig. M) gradually dilated basally, and with a distal comb consisting of 6 regular teeth and up to 4 additional teeth. On labial palpus (Fig. L) *β* is concealed by *tp*; *γ* is on same level with *f*; *δ* is on level of *mp*; *a* just behind *tp*; *f* a little posterior to level of *e*; *h* on the same level with *mp*; segment I broad and short in relation to II. Glossa (Fig. K) is fairly campanulate and its anterior margin is gently produced bearing a curved setula bilaterally. Prementum (Fig. K) weakly sclerotized; median area narrowed behind; lateral area has 2 real and 1 setal pores, the former are close together; up to 5+5 small pseudopores are present.

Cervical carina diverged. Pronotum evenly convex above, with an obsolete median depression; sides evenly arcuate and scarcely narrowed behind; lateral erect setae completely mixed with the secondary setae; those along the midline directed posteriorly. Elytron not emarginate behind. Macrochaetotaxy on abdomen as 01-01-02-02-12-33. Abdomen is indistinctly granulate and with short lateral erect setae. Mentum (Fig. N) is deeply emarginate in front; *u* is separated from *v*; *w* a little posterior to level of *u*. Tergite VIII (Fig. O) gently emarginate on the middle of the posterior margin; among 4+4 major setae *a*-2 is posterior to the level of the stigma; *p*-2 longer than others and close to *a*-2 in position; microsculpture of the middle (Fig. P) is irregularly imbricate. Sternite VIII (Fig. Q) is broadly produced behind and lightly emarginate at apex where there is a row of some 7+7 similarly short marginal setae. Spermatheca (Fig. R) elongate, distally turned over ending in a broad tip; bursa relatively large, bears an obtuse, robust umbilicus.

Length. ca 1.30 mm (head 0.25 mm long $\times$ 0.30 mm wide; pronotum 0.25 mm $\times$ 0.36 mm; elytra 0.23 mm $\times$ 0.41 mm).

♂. Unknown.

Material examined. Malaya: Syntype ♀, Bukit Kutu, Selangor, (BMNH)

Compared to *C. morbida* (Cam.) the glossa is rounded distally, real pores on the prementum are more closely located and spermatheca is different in shape.

Distribution. Malaya.

***Pycnota borneensis* (Cameron, 1933), new combination**

Fig. 3

Atheta (*s. str.*) *borneensis* Cameron, 1933: 357

♀. Brown in ground colour and shining; head a little darker than pronotum; elytra bright yellowish brown; abdomen darker distally; antennae with pale basal segments; legs bright in colour. Body small and narrowly elongate. Head small for corpus, nearly orbicular in outline; a faint median depression is present. Eyes large and with subequally long post-genae. Antenna feebly dilated distally; segment I subequal to II; III long in relation with II; VIII-X transverse; XI short. Labrum (Fig. A) not emarginate in front; *m*-1 anterior to level of *m*-2; proximal row of setae nearly parallel to the distal row; 2+2 secondary setae are present. Labral margin (Fig. B) is evenly rounded; *a* setaceous as usual; *b* is also setaceous and short; *c* obtuse. Mandibles are narrowly elongate distally forming a strong hook; right mandible (Fig. C) is with a stout molar tooth, serrulate in front of the tooth. Maxillary palpus 4-segmented; segment II fairly dilated; III similarly broad as II; IV short. Lacinia gradually dilated proximally, with some 12 similar teeth along the inner margin. Galea with distal lobe bearing long cilia throughout. Labial palpus (Fig. D) indistinctly 3-segmented; β is long compared to *a*; γ concealed by *b*; δ as long as β and on level of *f*; *a* is close to *tp* and on level of β ; *mp* on the level of *e*. Glossa (Fig. E) broad, distally forked to 2 obtuse arms, where there is a pair of short setulae. Prementum (Fig. E) is peculiar; median area is broad, provided with a distinct median seta near the anterior margin of the lateral area, beside the normal one setal pore, one more longer seta is present. Mentum

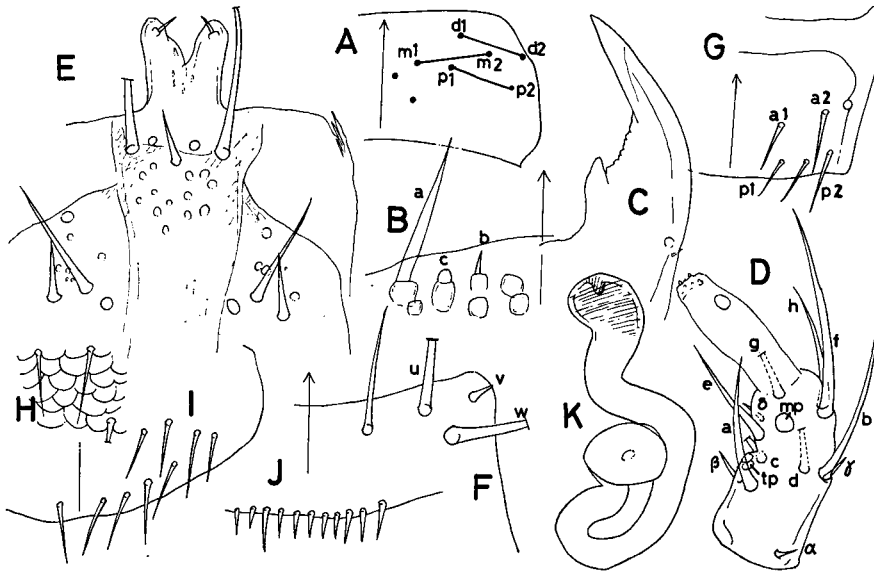


Fig. 3. *Pycnota borneensis*. holotype ♀: A, labrum; B, labral margin; C, right mandible; D, labial palpus; E, glossa & prementum; F, mentum; G, H, tergite VIII & its microsculpture; I, J, sternite VIII & its posterior margin; K, spermatheca.

(Fig. F) is broadly emarginate in front, with a well-defined lateral corner; *u* on same level with *v*; *w* is close to *u*. Cervical carina diverged. Pronotum evenly convex above, slightly narrowed behind, with very narrowly rounded posterior corner; lateral erect setae are normally long; secondary setae on the middle are directed posteriorly in anterior half, and in posterior half anteriorly directed. Mesosternum briefly pointed behind. Elytron not emarginate behind, with inconspicuous humeral seta. Flabellum with up to 5 long setae. Macrochaetotaxy as 01-03-13-13-13-23. Tergite VIII (Fig. G) not modified; among 5+5 major setae *a*-2 is close to level of the stigma; microsculpture in the middle (Fig. H) is imbricate pattern. Sternite VIII (Fig. I) is broadly rounded behind; there are up to 8+8 similar macrosetae as well as a row of some 10+10 short marginal setae (Fig. J). Meso- and metatibiae have erect macrosetae apparently shorter than the secondary setae around them. Tarsal formula as 4, 5, 5; the metatarsus is with segment I-IV similarly long. Spermatheca (Fig. K) elongate as a while; bursa is normal in shape, with a small umbilicus; duct recurved and ending in a bulb.

Length. 2.56 mm (head 0.35 mm long×0.44 mm wide; pronotum 0.37 mm×0.51 mm; elytra 0.34 mm×0.62 mm).

♂. Unknown.

Material examined. BORNEO: Holotype ♀, Mt. Kinabalu, 3,800 ft. (27 IV. 1929) (BMNH).

Only as a rescue the species is tentatively placed in *Pycnota* by the similarity of the broad median area of prementum, setae of labial palpus and labral margin. But glossa is rather slender and more alike to *Atheta* and with additional number of setae

on prementum. In future a new genus may be established to accommodate this species.

Distribution. Borneo.

***Gnypeta abdominalis* Cameron, 1933**

Fig. 4

Gnypeta (?) *abdominalis* Cameron, 1933: 357

♂. Bright yellowish brown in ground colour and shining; head a little darker than pronotum; elytra infusate in the posterior half; abdomen brownish and with dark distal segments; antennae dark brown leaving basal segments and the last segment; legs evenly yellowish. Body very narrowly elongate. Head too small for corpus, plainly convex above, and without depression in the middle. Eyes strongly convex but small in relation to long post-genae, which are suddenly constricted basally. Antenna long, not dilated distally; segment I-III (Fig. A) subequally long; IV much shorter than III; X about as long as wide; XI long. Cervical carina not diverged. Labrum (Fig. B) broadly emarginate in front; *m-2* close to level of *d-2*; *p-1* is on same level with *p-2*; all rows of setae are similar in length; 5+5 secondary setae are present. *a*-sensilla of labral margin (Fig. C) spiniform and converging; *b* acute at tip; *c* is obtuse. Mandibles are briefly hooked and suddenly dilated proximally; right mandible (Fig. D) has a small sharp molar tooth. Maxillary palpus (Fig. E) is 4-segmented; segment III is longer, much broader, than II; IV is short, with broad basal portion. Galea with an elongate distal lobe bearing short and long cilia. Lacinia abruptly dilated in the inner margin palpus (Fig. F) is 3-segmented; *a* is inside the margin; *β* is mostly reduced, close to *tp*; *γ* is long, anterior to *b*; *δ* is alike to *β*, close to level of *g*; *a* on same level with *b*; *c* clearly posterior to *d*; *e* on level of *mp*. Segment III very short compared to I, while III fairly long, dilated at apex. Glossa (Fig. G) is elongate, forked from the middle to 2 arms. Median area of prementum is broad, with some 3 pseudopores; the lateral area has 1 setal, 2 real and up to 8 pseudopores; they are confined to the anterior portion of the area. Mentum (Fig. H) subtruncate in front and with an angulate lateral corner; *v*-setula is unusually long and on level of *u*; there are some stout secondary setae on the disc. Pronotum broadly rounded anteriorly and abruptly narrowed behind to form a well-defined basal corner and with a median sulcus along the middle, which is becoming deeper toward the base, and disappears at about the middle; lateral erect setae are very short; surface is similarly subrugose to the head. Mesosternum is normally pointed behind; metasternum is broad. Elytron fairly broad compared to the pronotum, gently convex above, and not emarginate behind; macrosetae are completely mingled with long secondary setae. Flabellum of hind wing bears 5 long setae. Macrosetae on each tibia are very short. Protarsus has some spatulate setae; metatarsus with segment I short compared to others. Macrochaetal arrangement of abdominal segment as 01-02-02-02-33. Abdomen is markedly narrow, subparallel; segment III-IV (Fig. I) are each with a deep basal sulcus, and a fine carina along the lateral margin. Tergite VIII (Fig. J) not modified, but gently emarginate behind, with vestigial microsculpture. Median lobe (Fig. K) is 0.36 mm long; in ventral view the corpus is oblong, narrowed distally and with an obtuse apical

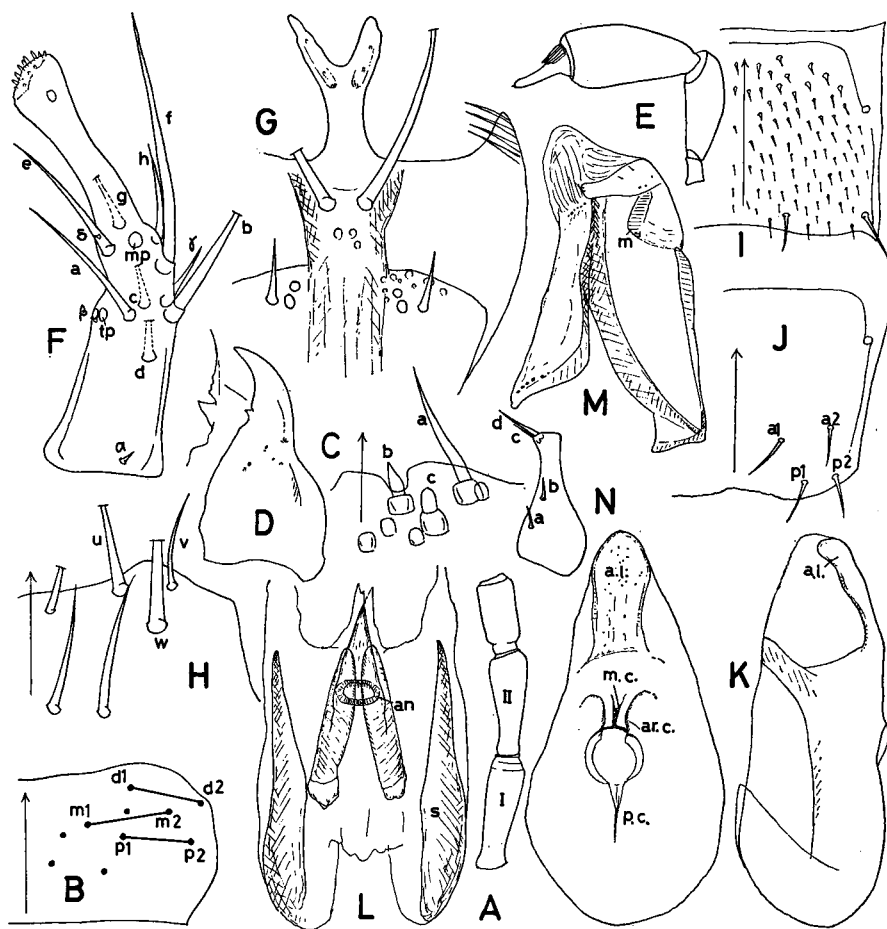


Fig. 4. *Gnypeta abdominalis*. holotype ♂: A, antenna; B, labrum; C, labral margin; D, right mandible; E, maxillary palpus; F, labial palpus; G, glossa & prementum; H, mentum; I, J, tergites III, VIII; K, median lobe; L, inner armature of aedeagus; M, N, lateral lobe & its distal segment.

lobe; in lateral view the apical lobe is bent upwards. Costa *m. c.* is short; *ar. c.* inconspicuous; *v. ap.* is not differentiated. Copulatory piece (Fig. L) is short, acuminate and with the annellus in the middle; suspensorium is replaced by narrowly elongate, large lobe (*s*), which is standing side by side. Distal apodemes are not developed. Lateral lobe (Fig. M) is as usual; middle apodeme (*m*) is broad; the medial segment is produced to form a rectangular basal corner. Distal segment (Fig. N) narrowed anteriorly, broadly dilated basally; *a*, *b* are very short, situated near the inner margin; *c*, *d* are close together at apex.

Length. ca 2.80 mm (head 0.39 mm long $\times$ 0.45 mm wide; pronotum 0.42 mm $\times$ 0.48 mm; elytra 0.49 mm $\times$ 0.63 mm).

♀. Unknown.

Specimen examined. Borneo: Holotype ♂, Kamborangah, Mt. Kinabalu,

2,400 m alt. (26 III, 1929) (BMNH).

Distribution. Borneo.

***Dioxeuta microps* Sharp, 1899**

Fig. 5

Dioxeuta microps Sharp, 1899: 206

♀. In dried condition the ground colour is brownish and strongly shining; head a little paler on the anterior portion; pronotum similarly pigmented to the head, with faintly brighter lateral margin; elytra with yellowish tings, while abdomen is uniformly reddish brown; antennae brown entirely and legs with slightly infusate femora. Body fragile as a whole, with physogastric abdomen. Head narrow for corpus, sub-parallel sided, fairly flat above. Eyes small, proceeded anteriorly. Post-gena is long, with some 4 macrosetae. Antenna is long, stout; segment I narrowly elongate; III (Fig. A) as much as II; IV-VII clearly longer than wide; XI short. In labrum (Fig. B) the proximal- and medial rows of setae are subequally long, but the distal row is characteristically short; *m*-2 is far remote from the distal row, on the same level with *p*-2; no secondary setae are present. *a*-sensilla of labral margin (Fig. C) is long, setaceous; *b* is similar to *a*, but much shorter; *c* indistinct. Mandibles narrowly produced to form an elongate distal hook; right mandible (Fig. D) with an obtuse dilation in the inner margin. Maxillary palpus (Fig. E) narrowly elongate; segment III nearly

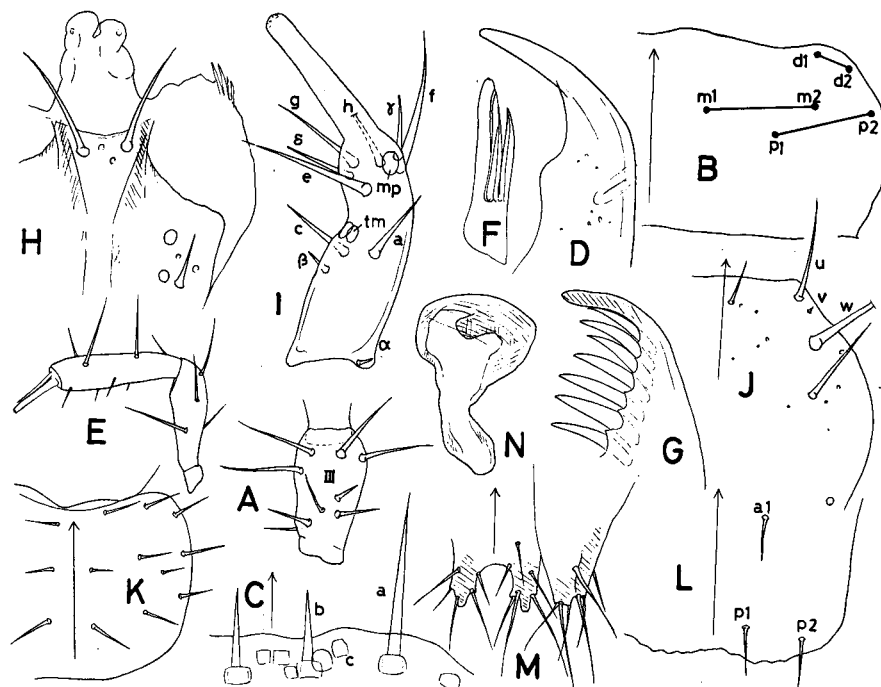


Fig. 5. *Dioxeuta microps*. holotype ♀: A, antennal segment III; B, labrum; C, labral margin; D, right mandible; E, F, maxillary palpus & its segment IV; G, distal comb of lacinia; H, glossa & prementum; I, labial palpus; J, mentum; K, pronotum; L, M, tergite VIII, IX; N, spermatheca.

parallel; IV (Fig. F) is short, with long filamentous sensillae. Galea with short distal lobe, where there are long and short cilia throughout. Lacinia (Fig. G) gradually dilated posteriorly, with the distal comb consisting of a long apical hook, and shorter subsequent teeth. Labial palpus (Fig. I) indistinctly 3-segmented; *a* is placed on the corner; *β* is separated from *tp*; *γ* is on level of *f*, placed distal to segment II; *δ* is fairly long, setaceous; *a* lateral to *tp*; *b*, *d* absent; *e* close to level of *mp*; *f* on same level with *mp*; segment III fairly long compared to others. In labium the glossa (Fig. H) is broad, apically forked to 2 obtuse lobes but without setulae. In prementum the median area is fairly broad, with 2 pseudopores, consequently the paired distal setae are widely distant, not surpassing the apex of the glossa. In lateral area 1 setal, 2 real and up to 2 small pseudopores are present. The suture delimiting the mentum from the gular plate (Fig. J) is completely fused together. Pronotum small for corpus, narrowed behind, transversely depressed before the base; sides are deplanate, with stout erect setae. Surface nearly glabrous except for some 10 macrosetae (Fig. K) which tend to be arranged in a transverse line. Prosternum is very short; mesosternum produced to a short triangular process; metasternum is broad. Legs long; macrosetae on the tibiae are mingled fairly with long secondary setae. Tarsal formula as 4, 5, 5 in which the meso- and metatarsi have very long segment I which is as long as 3 receding together. Elytron is rather small compared to the large physogastric abdomen, and not emarginate behind; sides have several erect black setae; surface is glabrous as in the pronotum. Macrochaetotaxy as 02-02-03-03-03-?. Abdomen is physogastric, broadly convex above, with thick lateral margin; the posterior margin of each tergite is obsoletely crenulated; secondary setae on the tergites are much larger than usual. Tergite VIII (Fig. L) broadly produced behind, lightly emarginate in the posterior margin, where it is obsoletely crenulated; among 4 major setae *a-2* is missing. Thus, 3+3 similarly short major setae are present; *a-1* fairly far from *p-1*; microsculpture in the middle is almost vanishing. Tergite IX (Fig. M) has 2 short, setigerous processes at apex, the margin between them is roundly emarginate. Spermatheca (Fig. N) is modified; bursa is rounded, incrassate, bearing a robust umbilicus within, whereas the duct is strongly reduced.

Length. 2.90 mm (head 0.27 mm long $\times$ 0.32 mm wide; pronotum 0.33 mm $\times$ 0.44 mm; elytra 0.26 mm $\times$ 0.63 mm).

♂. Unknown.

Material examined. BORNEO: Holotype ♀, Sarawak, Haviland leg. (28 VIII, 1894 From nest of *Termes malayanus*) (BMNH)

Remarks. By the glossa without setulae, by the presence of pseudopores on the prementum, and by the absence of the anterior rows of setae on the tergites this species must be placed near of *Gnypteta* Thomson, 1858 sensu Yosii et Sawada, 1976: 130. But the prementum has broad median area and the macrochaetal arrangement is as 02-02-...

Distribution. North Borneo.

***Termitobaena bryanti* Bernhauer, 1915**

Fig. 6

Termitobaena bryanti Bernhauer, 1915: 156

♂. Pale reddish yellow in ground colour, well shining; head uniformly pigmented, with black eyes; pronotum similar to the head, but elytra are dark brown; abdomen is fairly infusate compared to the pronotum; antennae are evenly brownish; legs paler. Body small, cylindrical in appearance. Head nearly glabrous leaving some black erect setae scattered on the middle, without depression in the middle. Eyes moderate in size. Post-gena is long. Antenna is short; segment I (Fig. A) fusiform, with some long macrosetae; II, III are similarly short; IV-X nearly rectangular in shape; XI is short. Cervical carina shortly diverged. Labrum (Fig. B) broadly rounded laterally, not emarginate in front; among 3 rows of setae the proximal row is very long, but other two are very short; secondary setae are absent. *a*-, *b*-, *c*-sensillae of labral margin (Fig. C) strongly reduced to subequally short setulae; other discoidal sensillae are absent in the type specimen before me. Left mandible (Fig. D) has a large, triangularly pointed tooth; right mandible (Fig. E) is abruptly bent to form an elongate distal hook and at the base of the distal hook there is a minute toothlet. Maxillary palpus (Fig. F) 4-segmented; segment III fusiform in outline, dilated in the middle; IV (Fig. G) is short, with long filamentous sensillae. Lacinia (Fig. F) gradually dilated, finely ciliate behind. Galea with an obtuse distal lobe bearing minute cilia all over. Labial palpus (Fig. I) distinctly 3-segmented; *a* is normal; *γ*, *c* are absent; *β** is a long seta; *δ* long like *β*; *a* is lateral to *tp*; *b* well inside the lateral margin, placed on same level with *a*; *e* on level of *f*; segment I much broader than II; III long, feebly narrowed distally. Glossa (Fig. H) not diverged, but shortly produced and, with a pair of short setula bilaterally; basal pores far remote from one another; On prementum (Fig. H) the median area fairly broad, devoid of any trace of pseudopores, and lateral area has up to 10 pseudopores together with 1 setal and 2 real pores, the latter are close together in position. Paraglossa quite effaced. Mentum (Fig. J) broadly emarginate in front; setae *v*, *u* are absent; *w* standing close to the antero-lateral corner; peculiarly the suture delimiting mentum from gular plate is completely confluent. Pronotum is as broad as the head, narrowed behind; the sides nearly straight with broadly rounded posterior corner; lateral erect setae are black and short; surface is subglabrous as the head. Prosternum simple, while mesosternum so broadly truncate that the mesocoxae are widely separating from one another. Elytron apparently broader than long, too short for pronotum; sides nearly parallel, not emarginate behind. On the disk there are some 13 long macrosetae. Macrosetae on the tibiae are long, mingled with similarly long secondary setae. Tarsal formula as 4, 5, 5; the basal segments of meso- and metatarsi short; V is not surpassing the 4 preceding together. Macrochaetotaxy as 01-02-02-02-01-00. Abdomen fairly physogastric with unusually broad paratergites and very thin parasternites (Fig. K); tergite II mostly retarded; VIII (Fig. L) not modified, but entirely rounded behind where peculiarly 1+1 major setae are occurred. All secondary setae are reduced to minute setulae; stigma is small; numerous fine punctures are restricted to the basal part of the tergite. In aedeagus the median lobe (Fig. M) is elongate, shortly acuminate in apex in ventral view; in lateral view the apical lobe is broadly concave in the middle. Costa *ar. c.* clearly recurved distally; *m. c.* entire; *v. ap.*

* As erroneously designated *c* in Fig. 6 I must be read as *β*.

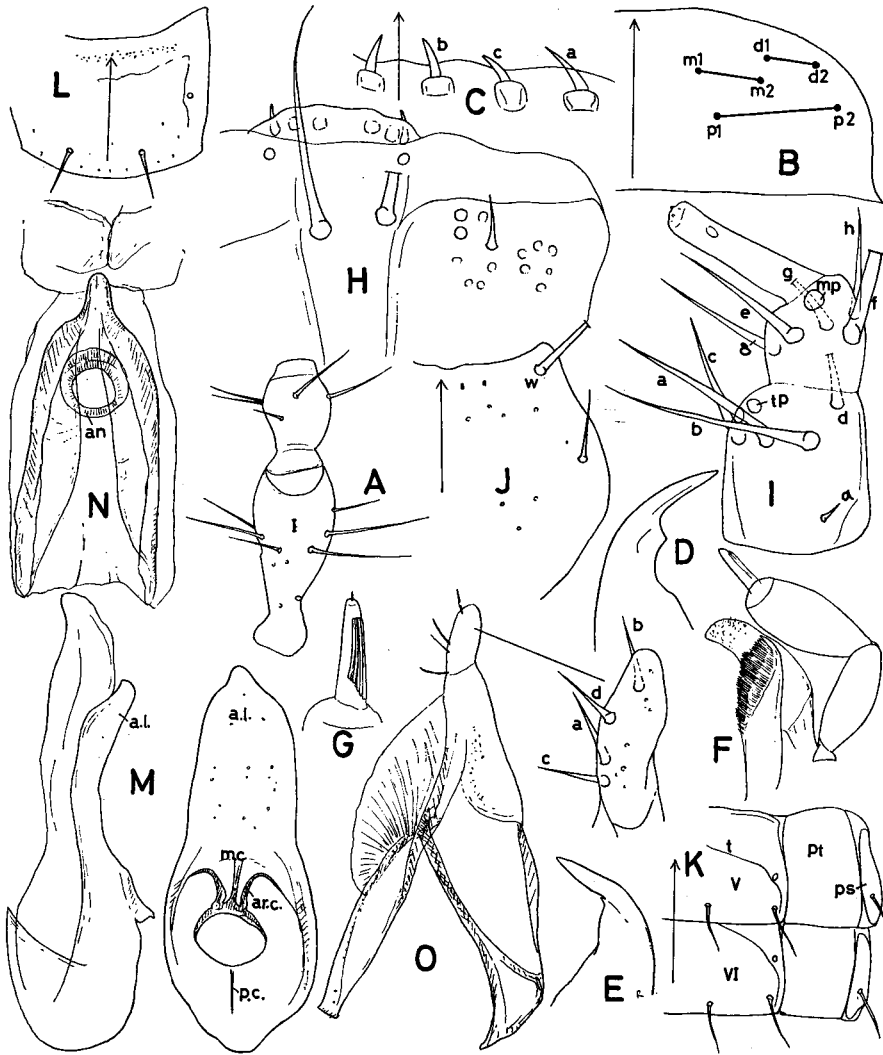


Fig. 6. *Termitobaena bryanti*. holotype ♂: A, antennal segments II-III; B, labrum; C, labral margin; D, E, left & right mandibles; F, maxilla I; G, segment IV of maxillary palpus; H, glossa & prementum; I, labial palpus; J, mentum; K, tergites V, VI; L, tergite VIII; M, median lobe; N, copulatory piece; O, lateral lobe.

is reduced. From the inner armature (Fig. N) the copulatory piece is broad, dilated behind, ending in a short, obtuse apical process; annellus is large, situated anterior to the middle of the corpus. The distal apodemes are membranous largely and ill-defined.

Length. ca 1.90 mm (head 0.30 mm long $\times$ 0.40 mm wide; pronotum 0.32 mm $\times$ 0.45 mm; elytra 0.28 mm $\times$ 0.54 mm).

♀. Unknown.

Material examined. BORNEO: Holotype ♂, Matang, Sarawak (1 II, 1914, Moulton) (FMNH)

In the presence of the semicircular glossa, broad prementum, incrassate labial palpus, and in the modified macrochaetal arrangement of abdomen this species is nearly related to *Amischa* spp., but the lateral area of prementum is provided with numerous pseudopores in *Termitobaena* Bh. The physogastric abdomen, strongly reduced labral margin, reduced major setae of tergite VIII and confluent suture of the mentum are characteristic.

Distribution. North Borneo.

***Tachyusa opaca* Bernhauer, 1915**

Fig. 7

Tachyusa opaca Bernhauer, 1915: 149

♀. Ground colour is brown, subopaque; head, pronotum more intensively pigmented; elytra paler than pronotum, with a broad, bright zone along the posterior margin; abdomen uniformly brown; antennae slightly darker toward extremity; legs paler, with a little infusate femora. Body rather depressed above, nearly parallel. Head suborbicular in outline, with a faint depression above and covered with extremely dense granules throughout. Eyes moderate in size. Post-gena is long. Cervical carina is diverged. Antenna is long for corpus; segment III clearly longer than II; IV–VII longer than wide; VIII–X are decreasing distally in length; XI fairly long. From labrum (Fig. A) *d-1* close to level of *d-2*; *m-2* is separated from the distal row of setae; proximal row is subequal to the distal row; 3+3 secondary setae are present. *a*-sensilla of labral margin (Fig. B) is spiniform and converging; *b* is briefly pointed; *c* is conical. Mandibles stout, shortly hooked at apex. right mandible has a distinct molar tooth. Maxillary palpus 4-segmented; segment III much longer than II, gradually dilated distally; IV long and with short basal sensillae. Distal lobe of galea is normal and with long cilia. Lacinia (Fig. C) dilated basally; distal comb is composed of 6 loosely arranged spines; 2 isolated teeth (*a*) are short. Labial palpus (Fig. E) is 3-segmented; segment III much longer than II; β reduced to a discoidal sensilla and near *tp* in position; γ long, close to *f*; δ is reduced like β and on same level with *g*; *a* is nearly *tp*; *e* is advanced, on level of *mp*. Glossa (Fig. D) bifurcate into 2 narrowly elongate, diverging arms; median area of prementum is narrow, converging, with some 9 pseudopores; on lateral area 1 setal, 2 real and up to 19 small pseudopores are present, Paraglossa is with long cilia. The antero-lateral corner of mentum (Fig. F) gently produced; *v* setula long; *u* on the corner. Pronotum is distinctly narrowed posteriorly, with well-defined posterior corner and with an obsolete depression along the middle; lateral erect setae are entirely reduced; surface furnished with similar granules to the head; secondary setae along the middle are orientated mostly in anterior direction. Elytron is broad compared to the pronotum, slightly arcuate in the lateral margin; surface is provided with conspicuous secondary setae, and the granules are much finer than on the pronotum. Flabellum of hind wing is with 5 long setae. Femora and tibiae fairly slender; macrosetae on each tibia apparently reduced. Tarsal formula as

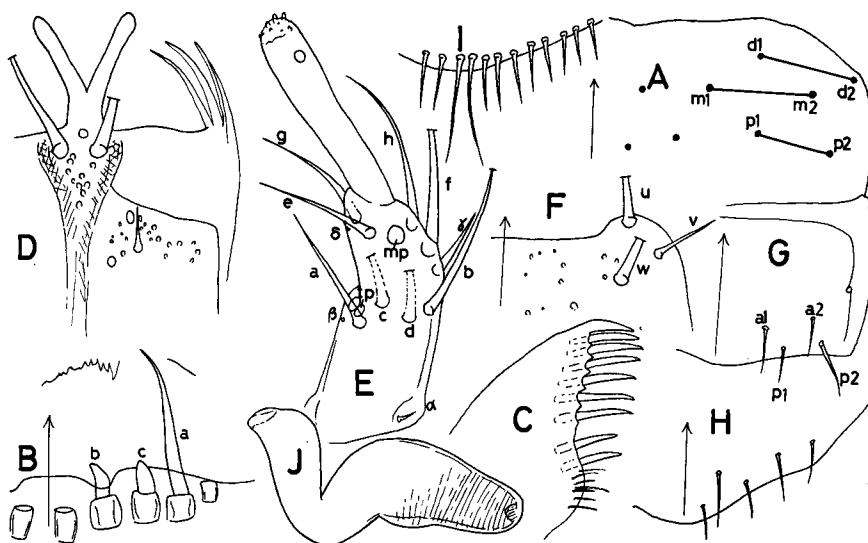


Fig. 7. *Tachyusa opaca*. holotype ♀: A, labrum; B, labral margin; C, distal comb of lacinia; D, glossa & prementum; E, labial palpus; F, mentum; G, tergite VIII; H, I, sternite VIII & its posterior margin; J, spermatheca.

4, 5, 5, and metatarsus has segment I similarly elongate to V. Macrochaetotaxy as 01-02-02-02-03-24. Abdomen is nearly parallel, weakly dilated towards tergite V. Tergite VIII (Fig. G) short, not modified and only gently produced in the middle of the hind margin; among 4+4 major setae *a*-2 clearly separate from the stigma; microsculpture is transverse pattern. Sternite VIII (Fig. H) produced behind, with a row of long and short marginal setae (Fig. I). Spermatheca (Fig. J) is stout, short, and twisted; bursa fairly large, elongate, bearing a small umbilicus within; duct short more or less dilated towards end.

Length. 2.60 mm (head 0.37 mm long × 0.44 mm wide; pronotum 0.44 mm × 0.48 mm; elytra 0.41 mm × 0.66 mm).

♂. Unknown.

Specimen examined. BORNEO: Holotype ♀, Matang, Sarawak (7 XII. 1913, Moulton) (FMNH)

The glossa with prolonged arms, the median area of prementum provided with numerous pseudopores, and long *v* setula of mentum are the features peculiar to the present species.

Distribution. North Borneo.

Following species was written as *Atheta*, but not belonging to Athetae.

***Placusa mjobergi* (Cameron, 1928), new combination**

Fig. 8

Atheta (*Acrotona*) *mjöbergi* Cameron, 1928: 418

♀. Ground colour uniformly borwnish, with long, delicate body setae on the fore-

parts; head much more infusate than pronotum; elytra bright yellow except for narrowly infusate basal portion; abdomen evenly pigmented; antennae have bright basal segments; legs paler. Body narrowly elongate and fragile. Head small, broadly inserted into the pronotum at basis, with fine, dense granules throughout. Eyes large. post-gena is short. Antenna is not dilated distally; segment III a little shorter than II; IV the smallest; V–X similar to each other and longer than wide. Cervical carina (Fig. A) not diverged. Labrum (Fig. B) not emarginate in front; *d-1* is on the same vertical line as *m-2*; distal row of setae short compared to others; proximal row nearly horizontal, parallel to the medial row; 1+1 secondary setae are present. Labral margin (Fig. C) fairly modified; *a*-sensilla is completely reduced, while *b* is peculiarly long and setaceous; *c* is not differentiated like *a*. Mandibles robust, only briefly pointed at apex and edentate. Maxillary palpus (Fig. D) is 5-segmented, each segment narrowly elongate except for extremely short V. Lacinia (Fig. E) broad at base, abruptly narrowed distally; distal comb consists of 6 similar teeth, with sharp serrulation which may correspond to the teeth. Labial palpus (Fig. G) short, stout and bent inwards; segment I, II completely fused together; *a* marginal in position; β setaceous, just behind *tp*; γ long, just anterior to *f* and standing on the produced distal corner of segment II; δ alike to β , on level of *mp*; *a* cose to *tp*, while *b* is fairly surpassing

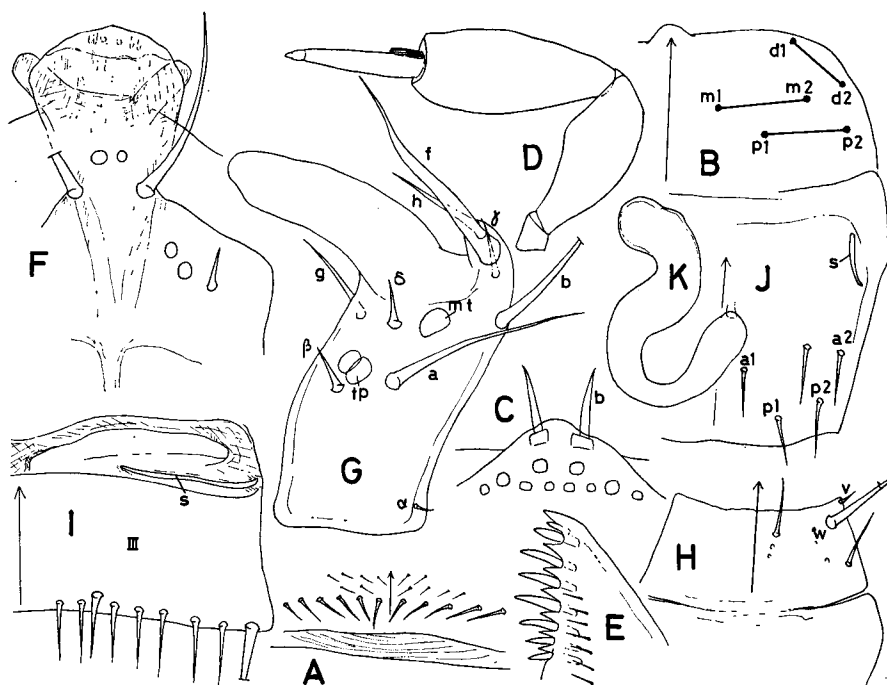


Fig. 8. *Placusia mjoebergi*. holotype ♀: A, cervical carina; B, labrum; C, labral margin; D, maxillary palpus; E, distal comb of lacinia; F, glossa & prementum; G, labial palpus; H, mentum; I, J, tergites III & VIII; K, spermatheca.

the level of *a*; *c*, *d* widely separating and short; *e*, *g*, *h* absent. Glossa (Fig. F) broadly semicircular in outline, without setae; there is a paired projections under the glossa; paired distal setae separating, while the basal pores are standing side by side. Prementum (Fig. F) has no pseudopores; median area broad, narrowed behind; lateral area has 1 setal, 2 real pores. Mentum (Fig. H) shallowly emarginate in front; *v* minute and on the corner; *u* widely separating from *v*, well inside the margin; *w* close to *v*. Pronotum fairly narrowed anteriorly; sides evenly rounded in their full lengths; surface covered with extremely dense, very short secondary setae, those on the middle line are directed posteriorly. There is a row of long marginal setae on the basis. Elytron not emarginate behind. Macrochaetotaxy as 01-02-02-02-12-32, Abdomen has no conspicuous lateral erect setae, but the hind margin has some long setae. Tergites are highly specified: Tergite II is with the rudimentary stigma; III (Fig. I)–VIII are with the stigmata (*s*) not rounded, but strikingly narrowed forming a transverse slit-like, and dislocated to the base of the tergites. Fore- and middle legs are lost. Tergite VIII (Fig. J) is not modified, with slit-like stigma; 5+5 major setae are present. Metatibia with a long macroseta; metatarsus with segment I elongate compared to others. Spermatheca (Fig. K) is contorted; bursa is gradually continuous to the duct and without umbilicus.

Length. 2.10 mm (head 0.20 mm long $\times$ 0.31 mm wide; pronotum 0.39 mm $\times$ 0.83 mm; elytra 0.39 mm $\times$ 0.82 mm).

♂. Unknown.

Material examined. BORNEO: Holotype ♀, Sang Serambo, (BMNH).

With the reduced *a*-sensilla of labral margin, rounded glossa of labium and incurved labial palpus, slit-like stigmata of the abdominal tergites and by long segment I of the metatarsus the present species must be included in *Placusa* Erichson, 1873. From the European *P. complanata* Erichson, 1839 the species is separated by elongate segments of the antennae, flat glossa, longer slit-like stigmata and by different shape of the spermatheca.

Genus *Pelioptera* Kraatz, 1857

Type species: *Pelioptera micans* Kraatz, 1857

The taxonomic status of the genus *Pelioptera* is rather dubious. In the reduced *a*-sensilla of labrum and in the chaetotaxy of labial palpus as well as in the gross feature of prementum *Pelioptera* is closely allied to *Geostiba* Thomson, 1858, from which it is sharply separated by the form of the mesosternal process as it is fairly truncate apically in *Pelioptera* and acutely ending in *Geostiba*. The macrochaetotaxy of abdominal tergites is either 01(12)-12-12-12- or 01-21-21-21 in *Pelioptera*, while it is 01-22 (12)-23(22)-23(22) in *Geostiba*. The median area of prementum is fairly broad and with or without pseudopores in *Pelioptera*, while there are some pseudopores in *Geostiba*. The lateral area of prementum has 2 or 3 real pores in *Pelioptera*, while *Geostiba* has constantly 3 real pores at the place. The genus *Pelioptera* may be split into some groups in future.

Thus, the following species all reviewed in my previous paper (1977: 206–214)

must be included in it, they are: *Aloconota unica* (Bh.), *Geostiba exasperata* (Kr.), *G. ocyamensis* (Bh.), *G. flavonitescens* (Bh.), *G. luchuensis* (Cam.) and *G. vacillator* (Cam.).

Eight species of *Pelioptera* from the tropical Asia are reviewed in the present article together with those 5 species reported in my previous paper. They may be keyed out as follows:

1. Macrochaetotaxy of abdomen as 01-12-12-12 in principle.....2
Macrochaetotaxy of abdomen as 01-21-21-21.....10
 2. Copulatory piece is fuliform.....*micans* Kr.
Copulatory piece is not as above.....3
 3. In prementum 3 real pores are present4
In prementum 2 real pores are present7
 4. *v*-setula of mentum very short5
v-setula of mentum distinctly long in relation with *u*.....*flavonitescens* (Bh.)
 5. γ -setula on labial palpus separate from *b*6
 γ -setula on labial palpus close to *b**ocyamensis* (Bh.)*
 6. *a*-seta on labial palpus close to *b* in position.....*testaceipennis* (Motsch.)
a-seta on labial palpus clearly posterior to level of *b*.....*vacillator* (Bh.)
 7. γ -setula on labial palpus close to *b*.....*opaca* Kr.
 γ -setula on labial palpus separated from *b*.....8
 8. Labial palpus strongly constricted in front of *tp*.....*xylophila* (Cam.)
Labial palpus not as above.....9
 9. *v*-setula on mentum distinctly long and apart from *u*.....*nilgiriensis* (Fv.)
v-setula on mentum minute and close to *u*.....*exasperata* (Kr.)
 10. *a*-seta on labial palpus is present.....*unica* (Bh.)
a-seta on labial palpus is absent.....11
 11. *a*-sensilla of labral margin elongate and conical.....*peguana* (Bh.)
a-sensilla of labral margin not as above.....12
 12. 3 real pores on prementum nearly equidistant from each other.....*luzonica* (Bh.)
3 real pores on prementum not equidistant.....*monticola* Cam.
- * *a* in Fig. 17C (K. Sawada, 1977: 209) must be read as *b*.

***Pelioptera micans* Kraatz, 1857**

Fig. 9

Pelioptera micans Kraatz, 1857: 56

Pelioptera micans: Cameron, 1939: 415

♂. Ground colour is brownish, shining, with inconspicuous body setae; head similarly coloured with the pronotum; elytra tinged with yellow; abdomen uniformly brown, obscurely bright on basis; antennae brown with a little paler basal segments; legs evenly paler. Body narrowly elongate and subparallel. Head thick dorsoventrally, without any trace of median depression; surface nearly glabrous. Eyes large, and the post-gena is much shorter than the diameter of the eye. Cervical carina is diverged. Antenna is slightly dilated distally; segment I clearly longer than II; III a little shorter than II; IV is the smallest, fairly broader than long; V similar, but clearly large compared to IV; X strongly transverse; XI acuminate and fully as long as 2 preceding

together. Labrum (Fig. A) nearly truncate in front; *m*-2 is on level of *d*-2; *p*-1 is anterior to *p*-2; distal row of setae fairly shorter than the medial row; 2+2 secondary setae are present. *a*-sensilla of labral margin (Fig. B) is ovate; *b* narrowly elongate, obtuse at apex. Right mandible (Fig. C) is not toothed, but obsoletely crenulate in its inner margin. Masillary palpus is 4-segmented; segment IV relatively long. Lacinia is gradually dilated basally; distal comb consists of some 6 compactly arranged teeth and without isolated teeth behind the distal comb. Galea with the distal lobe bearing dense, long and short cilia. In labial palpus (Fig. E) *a*-setula normal in position; *β* is close to *tp*; *γ* is situated midway between *a* and *b* as a common character among the species of *Pelioptera*; *δ* is close to *e*; *a* is lateral to *b*; *f* is anterior to level of *mp*; segment I is normally long; III long, parallel. Glossa (Fig. D) deeply forked to 2

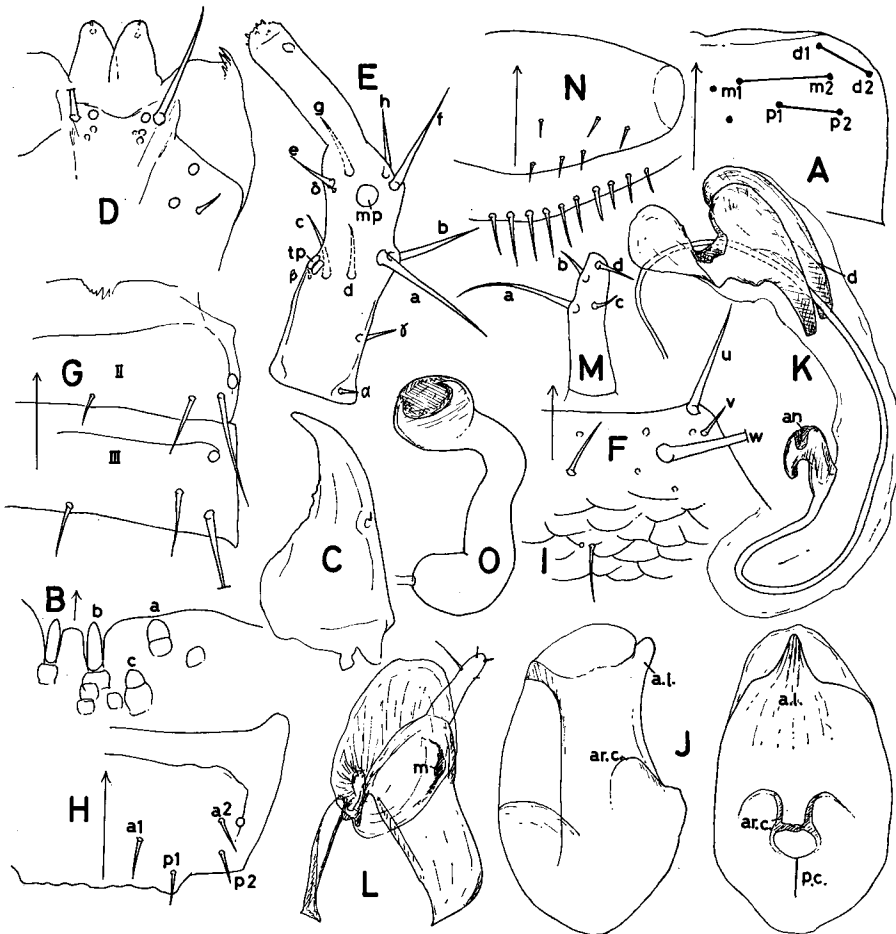


Fig. 9. *Pelioptera micans*. syntype ♂, ♀: A, labrum; B, labral margin; C, right mandible; D, glossa & prementum; E, labial palpus; F, mentum; G, tergites II, III; H, I, tergite VIII & its microsculpture; J, median lobe; K, inner armature of aedeagus; L, M, lateral lobe & its distal segment; N, ♀ sternite VIII; O, spermatheca.

lobate arms, each of which is a little dilated basally. Median area of prementum fairly broad, with a few pseudopores confined to the lateral corner; lateral area has 2 real and 1 setal pores, the former is distant from the border of the median area. Mentum (Fig. F) nearly truncate in front; *u*-seta is short and placed just on the lateral corner; *v* is posterior to *u*; *w* well inside the lateral margin. Pronotum fairly broad, evenly convex above, without median depression; sides nearly straight, with broadly rounded anterior corner; lateral erect setae long; secondary setae along the middle are directed anteriorly in basal half, and in distal half posteriorly. Mesosternum broadly truncate behind and separated in some extent from the rounded metasternal process. Accordingly the mesocoxae are widely separated to each other. A marginal row of some 13 similar spinules in the mesotibia. The intermediate macroseta of mesotibia is fairly long. Elytron not emarginate postero-externally. Flabellum with up to 9 long setae. Macrochaetotaxy of abdomen as 12-12-12-12-13-35. In tergites the posterior row of macrosetae is composed of 2 unequal setae which are standing far remote from each other. The posterior margin of tergite VIII (Fig. H) is broadly truncate, obsoletely crenulate in its full length; among 4+4 major setae *a*-2 placed close to the stigma, while *a*-1 widely separated from *a*-2; microsculpture in the middle (Fig. I) is imbricate pattern. In aedeagus the median lobe (Fig. J) is 0.28 mm long, ovate; distal process is short and carinate, and uniformly arcuate in lateral view. Costa *ar. c.* is separated from one another, recurved distally; *m. c.* and *v. ap.* nearly completely reduced. Copulatory piece (Fig. K) is modified; The distal process converted to a remarkably long, filiform duct, which is distally coiled for many times and proximally ending in a narrow corpus in which the annellus is present. Distal apodeme (*d*) is a pair of large, broad sclerites standing side by side, whose posterior ends are protruded; anterior to the distal apodeme there is a rounded thin lobe. Lateral lobe (Fig. L) is rather short; the medial segment is obsoletely protruded postero-internally; middle apodeme (*m*) is long, with an additional apodeme; the distal segment (Fig. M) fairly elongate; among 4 major setae *a* much longer than others, placed on level of *c*.

Length. ca 1.90 mm (head 0.25 mm long $\times$ 0.36 mm wide; pronotum 0.29 mm $\times$ 0.40 mm; elytra 0.25 mm $\times$ 0.30 mm).

♀. Tergite VIII not modified. Sternite VIII (Fig. N) has 6+6 strongly reduced macrosetae, and a row of some 8 marginal setulae. Spermatheca (Fig. O) contorted more or less dilated in posterior half; bursa is bulbous, with a robust, very flat umbilicus.

Material examined. Sri Lanka: Syntype ♂ & ♀, J. Nietner Coll., Kraatz (IPAL). Borneo: 2 ♂, 3 ♀, Karamauk, Sabah, North Borneo, (2 XII, 1977, R. Yoshii leg.)

Nearly edentate right mandible, elongate *b*-sensilla of the labral margin, and filiform copulatory piece are characteristic. Besides, the macrochaetotaxy of the species is different from other congeners. In a Bornean specimen the spermatheca is more abruptly curved.

Distribution. Sri Lanka, and Borneo (nov.).

Pelioptera opaca Kraatz, 1857: 56

Homalota dilutipennis Motschulsky, 1858: 252 new synonym.

♂. Brown in ground colour, subopaque; head, pronotum dark brown, while the elytra are yellowish leaving the scutellar region as far as the lateral corner dark brown; abdomen nearly brown, brighter toward basis; antennae brown, with slightly paler basal segments; legs uniformly paler. Body delicate, subparallel. Head moderate in size, without depression in the middle; surface is densely, finely punctured all over. Eyes small. Post-gena is long. Antenna is stout; segment III much shorter than II; IV–X fairly transverse, the former is the smallest, and V is suddenly large; XI is long. Labrum (Fig. A) narrowly emarginate in front; *d*-2 is placed anterior to level of *m*-2;

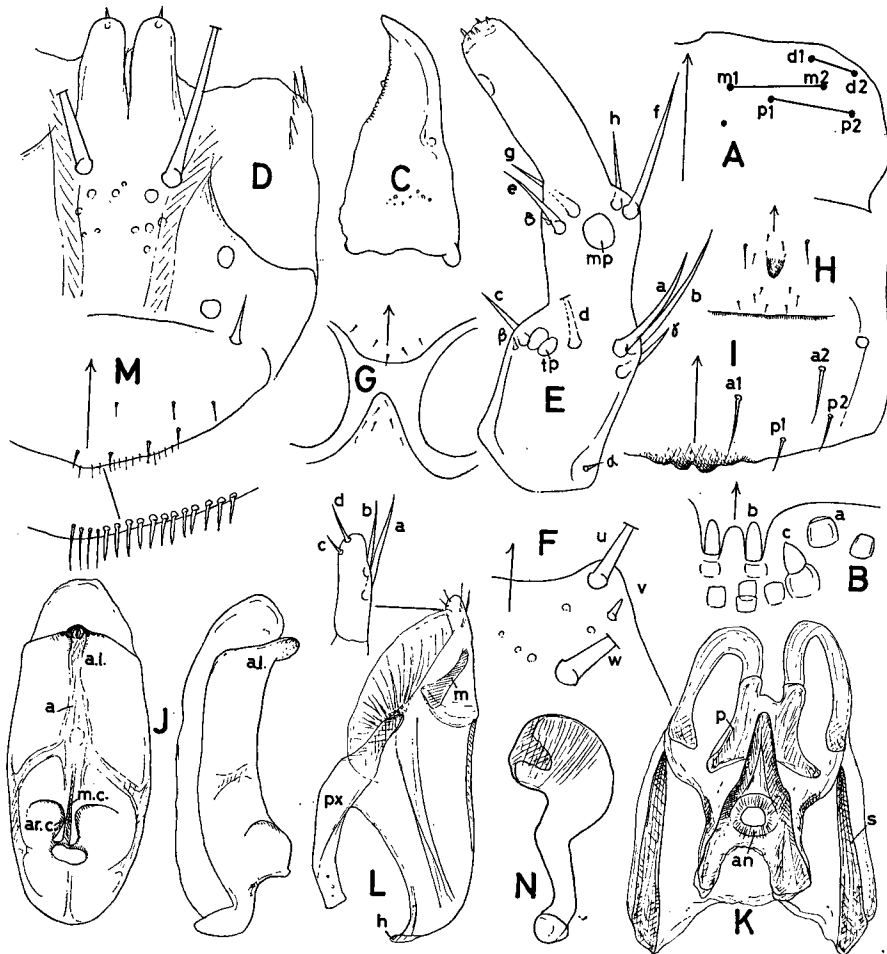


Fig. 10. *Pelioptera opaca*. syntype ♂, ♀: H, tergite VII; M, ♀ sternite VIII; N, spermatheca. *Plioptera dilutipennis*. type ♂: A, labrum; B, labral margin; C, right mandible; D, glossa & prementum; E, labial palpus; F, mentum; G, meso- & metasternums; I, tergite VIII; J, median lobe; K, inner armature of aedeagus; L, lateral lobe.

$p-2$ at the same vertical level with $d-2$; distal row of setae is very short; only $1+1$ secondary setae are present. a -sensilla of labral margin (Fig. B) is nearly completely reduced, while b is fairly elongate as in *P. micans* Kraatz; c is conical, large. Mandibles are very shortly protruded on apices; right mandible (Fig. C) has very fine toothlet in the middle of the inner margin. Glossa (Fig. D) is narrowly elongate, feebly dilated proximally and bears a pair of apical setulae. Prementum (Fig. D) has a broad median area, where there are some 10 small to minute pseudopores; lateral area is with 1 setal, 2 real pores on the middle. β -setula of labial palpus (Fig. E) placed close to tp ; γ just behind b ; δ on level of g ; a is close to b , whereas f is anterior to mp ; segment I fairly broad, shorter than II. Mentum (Fig. F) lightly protruded in the anterior corner; v is strongly reduced; w remote from u . In lacinia 2 apical teeth of the distal comb are fairly larger than others, Cervical carina diverged. Pronotum is broad, with a broad, obsolete median depression; sides are gently arcuate in their full lengths and slightly narrowed behind; lateral erect setae are mostly reduced or very short; surface more coarsely sculptured than on the head; secondary setae along the middle are long, directed posteriorly. Elytron is broad, not emarginate postero-externally. Flabellum is composed of 5 long setae. Mesosternal process (Fig. G) short, quite obtuse at apex. Abdomen is parallel, slightly dilated distally; lateral erect setae are strongly reduced. Macrochaetotaxy of abdomen as 01-02-12-12-12-33. Tergite VII (Fig. H) has a short median carina near the base. Hind margin of VIII (Fig. J) is finely emarginate in the middle, where it is more heavily sclerotized and pigmented than elsewhere; among $4+4$ major setae the posterior ones are fairly reduced; microsculpture is not discernible. In aedeagus the median lobe (Fig. J) is 0.32 mm long and is broadly subtruncate at apex in ventral view, where there is a very short apical process which is raised to form an apical carina or hook in lateral view. Costae are developed; $ar. c.$ approximate distally; $m. c.$ is present; $v. ap.$ fused with the median longitudinal apodeme (a). Inner armature of aedeagus (Fig. K) is modified; copulatory piece is triangularly protruded; annellus (an) is situated in the middle of corpus. There is a pair of long conspicuous sclerites (s) of the suspensoria. Distal apodemes are composed of a middle plate (p) and a pair of recurved arms attached to it. Lateral lobe (Fig. L) is elongate; middle apodeme (m) is dilated behind; proximal segment (px) is a long incurved sclerite, whose apex is directed to the basal hook (h) of the medial segment; vellum is narrow; distal segment is small for corpus; among 4 major setae b is close to a ; c , d are apical in position.

Length. ca 1.60 mm (head 0.25 mm long $\times$ 0.29 mm wide; pronotum 0.26 mm $\times$ 0.35 mm; elytra 0.21 mm $\times$ 0.45 mm).

♀. Tergite VIII is not modified. Sternite VIII (Fig. M) with $6+6$ strongly reduced macrosetae; a row of subequally short marginal setae is present. Spermatheca (Fig. N) is short, not recurved, and has a large bursa and a produced umbilicus.

Material examined. SRI LANKA: Syntype ♂, ♀, Ceylon, J. Nietner, Coll. Kraatz (IPAL). Type ♂, *Homalota dilutipennis* Motsch., Ind. or Ceyl. Cloomb. (ZMUM).

In the gross features of aedeagus *P. opaca* Kr. is allied to *P. exasperata* Kraatz, 1859,

but the inner armature of aedeagus is different, i.e. spiniform sclerites of suspensoria are much more developed in *P. opaca* Kr. In all these respects the syntype of *P. dilutipennis* (Motschulsky, 1858) preserved in the Zoological Museum of Moscow University coincides well with *P. opaca* Kr.

Distribution. Sri Lanka.

***Pelioptera nilgiriensis* (Fauvel, 1904), new combination**

Fig. 11

Atheta nilgiriensis Fauvel, 1904: 62

Atheta (*Dimetrota*) *nilgiriensis*; Cameron, 1939: 375

♂. Dark brown in ground colour and shining; head more infusate than in the pronotum; elytra more yellowish than pronotum; abdomen nearly black throughout; antennae evenly brown; legs paler. Body robust. Head moderate in size, slightly depressed on vertex, finely, densely punctured all over. Eyes large. Post-gena is short. Antenna is dilated distally, with distinct macrosetae; segment I apparently larger than II; III subequal to II in length; IV the smallest, fairly transverse; V is suddenly large compared to IV; V-X are subequally transverse; XI is short. *m-2* of labrum (Fig. A) is located on level of *d-2*; *p-2* is posterior to level of *p-1*; proximal row of setae is subequal to medial row in length; 2+2 secondary setae are present, and their places are more posterior than usual. *b*-sensilla of labral margin (Fig. B) is elongate, obtuse apically; *c* oblong. Mandibles very short at apices; right mandible is quite edentate on its inner margin. Glossa (Fig. C) broad, short, fairly dilated basally. In prementum the median area is very broad, lightly narrowed behind and with some 10 scattered pseudopores; the lateral area has 1 setal and 2 real pores. Galea with long dense cilia distally. Lacinia is densely ciliate on its inner margin, without 2 isolated teeth behind the distal comb. *β*-setula of labial palpus (Fig. D) is separated from *tp*; *γ* is midway between *a* and *b*; *δ* is placed on level of *h*; *a* is on the same level with *b*; *c*, *d* are remote from one another; *f* on same level with *mp*; segment III fully longer than I. Mentum (Fig. E) is truncate in front; *v* well developed, long, while *u* is short, placed lateral to *v*. Cervial carina incompletely diverged. Pronotum evenly convex above, faintly, very narrowly sulcate along middle; sides are weakly narrowed behind, with nearly straight lateral margin; lateral erect setae fairly long; surface is covered with very fine secondary setae, with coriaceous microsculpture alike to that of the head. Elytron is broad, not emarginate posteriorly, with fairly short macrosetae. Flabellum is with up to 11 long setae. Mesosternal process short, entirely truncate at apex. Abdomen is nearly parallel, subglabrous leaving long, fine erect setae toward the extremity. Macrochaetotaxy of abdominal segments as 01-12-12-12-13-35. Tergite VIII (Fig. E) broadly truncate behind; the truncate margin is faintly crenulate and with a small, obtuse lateral process; microsculpture (Fig. G) is imbricate; among 4+4 major setae *a-2* is posterior to level of stigma, while *a-1* on the same level with *p-2*. Mesotibia is with a long macroseta near the middle; mesotarsus has segment I much shorter than II, while that of metatarsus is subequally elongate to II. In aedeagus (Fig. H) the median lobe is 0.42 mm long; in ventral view the apical process is suddenly acuminate to form a long acute

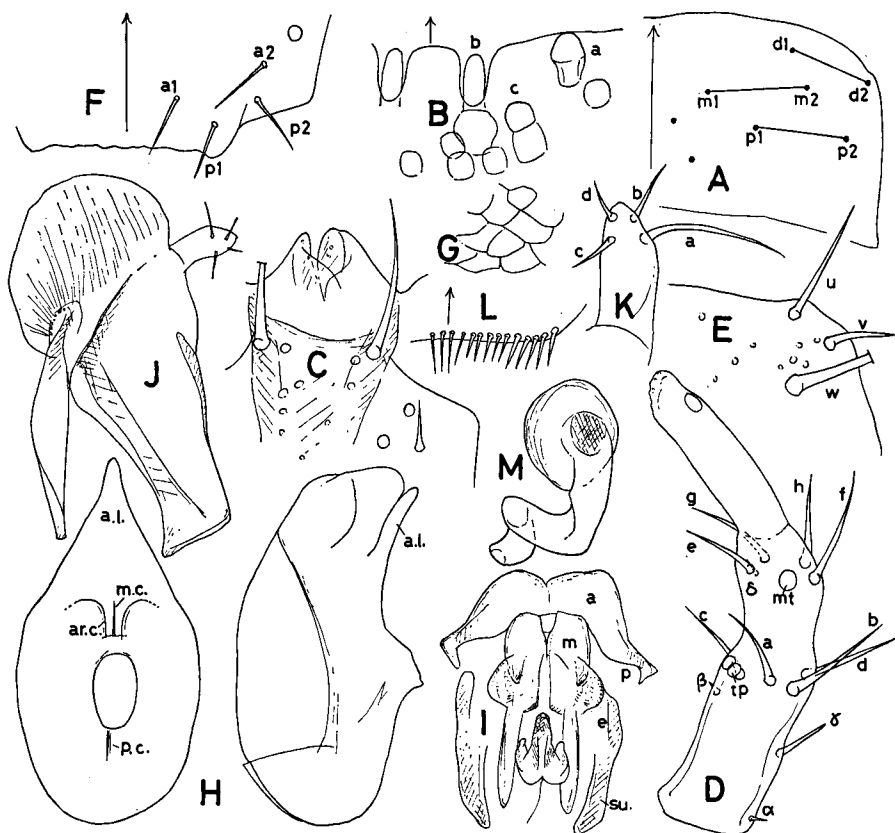


Fig. 11. *Pelioptera nilgiriensis*. type ♂: A, labrum; B, labral margin; C, glossa & prementum; D, labial palpus; E, mentum; F, G, tergite VIII & its microsculpture; H, median lobe; I, inner armature; J, K, lateral lobe & its distal segment; L, sternite VIII; M, spermatheca.

apex; in lateral view the apical process is evenly arcuate in its full length. Costae are incomplete; *ar. c.* recurvate shortly; *m. c.* is present; *v. ap.* quite absent. Inner armature (Fig. I) is modified: Copulatory piece is transformed to a small triangular sclerite, and annellus is invisible; suspensorium (*su*) is long, with an elevation (*e*) near apex; distal apodemes are composed of a large medial apodeme (*m*) and membranous apical apodeme (*a*), the latter has laterally hooked apophysis (*p*). Lateral lobe (Fig. J) has the fusiform proximal segment, while the medial segment is markedly dilated and constricted posteriorly. Vellum is well developed; distal segment (Fig. K) is nearly oblong; *a*-seta very long compared to others and placed on the same level with *c*.

Length. 2.10 mm (head 0.31 mm long × 0.42 mm wide; pronotum 0.38 mm × 0.48 mm; clytra 0.32 mm × 0.66 mm).

♀. Tergite VIII is not modified. Sternite VIII is broadly rounded behind; its posterior margin (Fig. L) is faintly emarginate in the middle. There is a row of up to 12+12 long and short marginal setae. Spermatheca (Fig. M) is contorted; bursa is large, bulbous in outline, and with a rounded umbilicus.

Specimen examined. INDIA: Type ♂, Nilgiri Hills, India, Coll. et Det. A. Fauvel (INSB). 1 ♂, ♂ ♀, Keramauk, Sabah, North Borneo, (2 XII. 1977, Dr. R. Yoshii leg.).

The retarded glossa, prolonged *v*-setula of mentum, and the specifically modified aedeagus are the features peculiar to the present species. By the gross feature of the median lobe and by the form of tergite VIII in male this species is closely allied to *P. micans* Kr., but the inner armature of aedeagus is quite different.

Distribution. India, Borneo (nov.).

***Pelioptera xylophila* (Cameron, 1920), new combination**

Fig. 12

Atheta (*Dimetrota*) *xylophila* Cameron, 1920: 261

♂. Ground colour is dark brown, weakly shining in the fore-parts; head more intensely pigmented; abdomen lightly paler. subglabrous and well shining; antennae uniformly infusate leaving paler basal segments; legs pale. Body narrowly elongate, subparallel, with conspicuous body setae. Head moderate in size, evenly convex above, devoid of depression in the middle. Eyes fairly large for the post-genae, which are fluently arcuate in their full lengths. Antenna is gradually dilated toward extremity; segment II shorter than III; IV fairly small compared to V; VI-X increasing in width; XI is long. Among 6+6 major setae *m*-2 of labrum (Fig. A) is on same level with *d*-2; *p*-2 is situated on vertical line of *m*-2; medial row of setae much longer than the proximal row; 2+2 secondary setae are occurred. *a*-sensilla of labral margin (Fig. B) conically pointed, while *b* is oblong; *c* quite obtuse at apex. Right mandible (Fig. C) very shortly hooked apically, neither dentate nor crenulate on its inner margin. Labial palpus (Fig. E) is clearly 3-segmented by the presence of a deep constriction with which segment I is delimited from II; *β* is placed at apex of segment I, and *tp* is anterior to it; *γ* in front of the middle between *a* and *b*; *δ* on same level with *f*; *mp* much larger than *tp*; *d* on same level with *γ*. Glossa (Fig. D) is short, converging distally, with a pair of accessory setulae. Median area of prementum is fairly broad, narrowed behind, with some 10 small pseudopores; in lateral area 1 setal and 2 real pores are present. Mentum (Fig. F) truncate in front; *v* is posterior to *u* and on same level with *w*. Maxillary palpus 4-segmented, narrowly elongate; segment III fairly dilated compared to II, IV rather long. Galea is narrow, with a densely ciliate apical lobe. Lacinia gradually dilated basally, bears a row of fine marginal spinules on its inner margin. Pronotum well convex above, devoid of median depression; sides are uniformly arcuate in their full lengths, with conspicuous black erect setae; surface is covered densely with minute granules, which are apparently rougher than on the head; secondary setae along middle are directed posteriorly. Elytron short, not emarginate postero-externally; there is a black erect seta on humeral corner. Flabellum has up to 12 long setae. Mesosternum is entirely truncate posteriorly, while metasternum has fairly protruded anteriorly forming a subtruncate process. All the tibiae have black, conspicuous macrosetae, those on mesotibia are fairly long. Tarsal formula as 4, 5, 5 in which mesotarsus is with segments I-IV increasing distally in length, while metatarsus has seg-

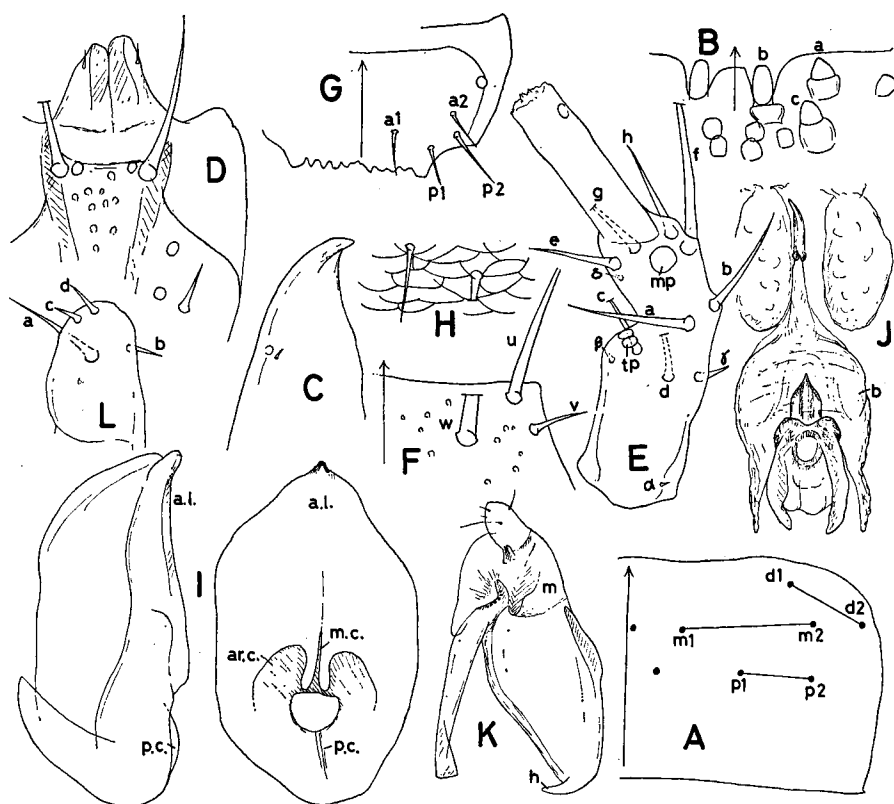


Fig. 12. *Pelioptera xylophila*. syntype ♂: A, labrum; B, labral margin; C, right mandible; D, glossa & prementum; E, labial palpus; F, mentum; G, H, tergite VIII & its microsculpture; I, median lobe; J, inner armature; K, L, lateral lobe & its distal segment.

ments I–IV fairly elongate. Macrochaetotaxy of abdomen as 02-12-12-12-13-134. Abdomen is nearly parallel, subglabrous, with numerous conspicuous black, erect setae laterally; tergites III–IV are fairly sulcate basally; tergite VIII (Fig. G) short, broadly truncate in the posterior margin where it is finely crenulate in its entire width; among 4+4 similarly short major setae *a*-2 is clearly remote from the stigma and close to *p*-2 in position; *a*-1 is on same level with *p*-2; microsculpture in the middle (Fig. H) appears as a transversely imbricate pattern. The median lobe of aedeagus (Fig. I) is 0.40 mm long; in ventral view it is nearly ovate, with a very short apical process, which is feebly sinuate-arcuate in lateral view. *ar. c.* is broadly recurved distally; *m. c.* long; *p. c.* is present. From the inner armature (Fig. J) copulatory piece is small for corpus, with a short, acute apical process and medially placed annellus. Suspensoria are fused to form a broad, membranous lobe (*b*) whose projecting apex bears a sclerotized hook. Laterally there is a pair of ovate lobes. Lateral lobe (Fig. K) is normally broad and medial segment is with a sharp basal hook (*h*); middle apodeme (*m*) is broad, with an accessory apodeme; distal segment (Fig. L) is short, nearly ovate, among 4 major setae *a* is normally long, while others are similarly short; *a* is close to level of *b*.

Length. 2.25 mm (head 0.38 mm long $\times$ 0.44 mm wide; pronotum 0.38 mm $\times$ 0.55 mm; elytra 0.38 mm $\times$ 0.69 mm).

♀. Unknown.

Specimen examined. SINGAPORE: Syntype ♂, Woodland, (BMNH).

In this species the feature of the labial palpus is peculiar. In the form of the median lobe and the prementum as well as in the short glossa the species is close to *P. nilgiriensis* (Fv.), but different in the inner armature of the male genitalia.

Distribution. Singapore.

***Pelioptera testaceipennis* (Motschulsky, 1858), new combination** Fig. 13

Homalota testaceipennis Motschulsky, 1858: 251

Atheta (*Dimetrota*) *testaceipennis*; Cameron, 1939: 377

Homalota pelioptera Kraatz, 1859: 30 new synonym

Homalota dubia Kraatz, 1859: 37 new synonym

Atheta luchuensis Cameron, 1933: 213 new synonym

Geostiba luchuensis (Cam.); Sawada, 1977: 211

♂. Dark brown in ground colour and shining; head is nearly black; pronotum is infusate leaving pale basal area; elytra are mostly yellowish brown; abdomen is dark brown; antennae and legs are uniformly brownish. Body is robust and convex above. Head is small for corpus and without depression in the middle. Eyes are moderate in size. Post-genae is short compared to the eyes; antenna is dilated distally; segment I is narrowly elongate; II is a little longer than III; IV and X are about as long as wide; XI is long. Cervical carina is diverged. Labrum (Fig. A) is nearly truncate in front; *m*-2 is on the level of *d*-2; *p*-2 is close to the level of *m*-2; all three rows are subequally short. 2 secondary setae are present. *a*-sensilla of the labral margin (Fig. B) is nearly completely reduced; *b* is oblong and with truncate apex; *c* is obtuse. Right mandible (Fig. C) is blunt, shortly hooked at apex; its inner margin is finely crenulate and with a flat projection at the place of the molar tooth. Maxillary palpus is narrowly elongate. Galea has a small distal lobe bearing long cilia. Lacinia is subparallel and without 2 isolated teeth behind the distal comb. Labial palpus (Fig. D) consists of 3 long segments; β is minute and close to *tp*; γ is long and placed at anterior one-third of the segment; δ is minute and placed at the level of *h*; *a* is long and close to *b*; *e* is much shorter than *f* and on the level of *mp*, while *f* is posterior to *mp*; *tp* is similarly large as *mp*. Glossa (Fig. E) is elongate and lightly dilated basally. Paraglossa is protruded. Median area of prementum is very broad compared to the lateral area and with up to 5+5 small pseudopores confined to the lateral corner and some additional ones placed at the middle, which are apart from the border of the median area. Mentum (Fig. F) is nearly truncate in front; *u* is on the corner; *v* is posterior to *u*; *w* is long and close to the level of *v*. Pronotum is evenly convex above and with an obsolete median depression before base; sides are nearly straight and feebly narrowed behind; lateral erect setae are lost in the type specimen; secondary setae along the middle are directed posteriorly, and with minute microsculpture. Mesosternal process is entirely truncate, and metasternal process is pointed apically. Mesotibia has a black conspicuous

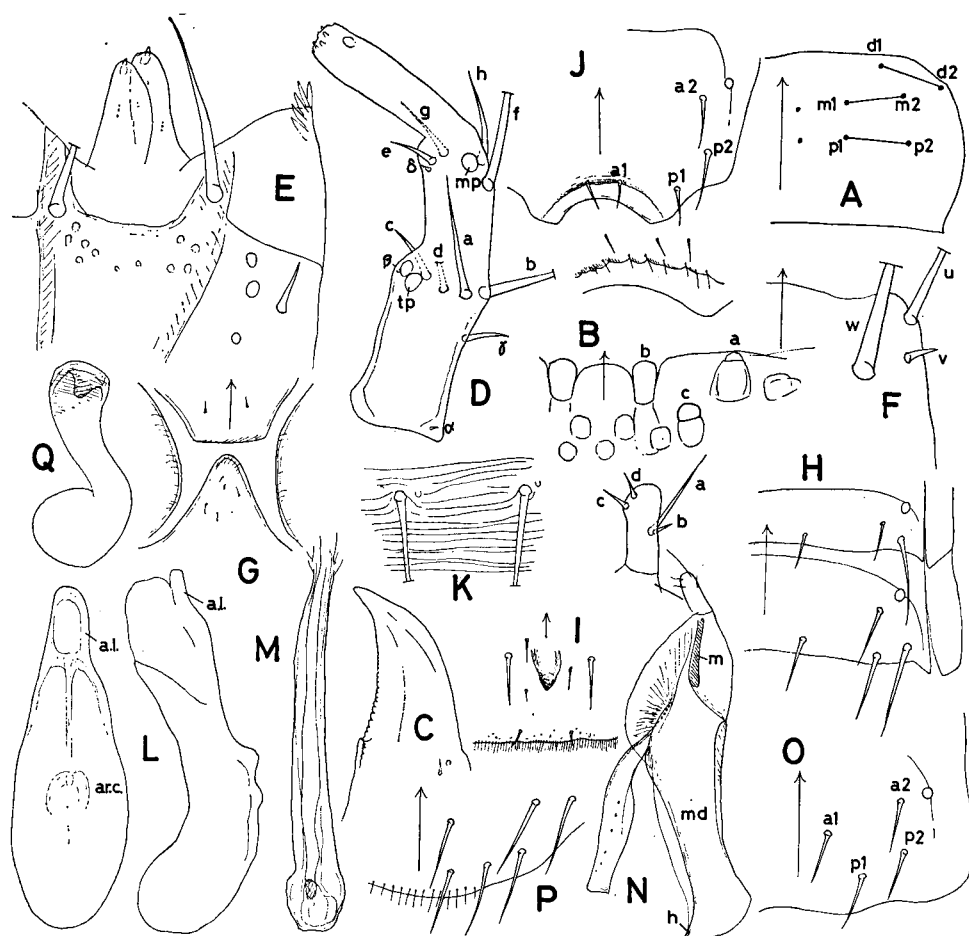


Fig. 13. *Pelioptera testaceipennis*. syntype ♂: A, labrum; B, labral margin; C, right mandible; D, labial palpus; E, glossa & prementum; F, mentum; G, meso- & metasternum; I, tergite VII; J, K, tergite VIII & its microsculpture; L, median lobe; M, copulatory piece; N, lateral lobe. *Pelioptera dubia*. holotype ♀: H, tergites III-IV; Q, spermatheca. *Pelioptera pelioptera*. holotype ♀: O, tergite VIII; P, sternite VIII.

macroseta. Tarsal formula as 4, 5, 5; segment I of metatarsus is much longer than II and subequal to V. Elytron is lightly dilated distally and not emarginate postero-externally; lateral erect setae are minute. Flabellum composed of up to 13 long setae. Macrochaetotaxy of the abdominal tergites as 01-11-11-12-12-33. Tergite VII (Fig. I) has a pointed median protuberance before base. Tergite VIII (Fig. J) is deeply emarginate in the hind margin, whose bottom is sclerotized having a row of finely crenulate marginal ridge; *a-2* is close to stigma, while *a-1* is distally dislocated and on the marginal ridge of the hind margin; *p-1* is on the level of *a-1*; microsculpture on the middle (Fig. K) is transverse. Median lobe (Fig. L) is 0.62 mm long, narrowly elongate to form an oblong apical lobe in ventral view; in lateral view it is bent upwards and

with low dilations in the middle; costation is reduced for the most parts. Inner armature of aedeagus (Fig. M) is cylindrical and mostly membranous. Lateral lobe (Fig. N) is elongate; medial segment (*md*) is narrow and with a reduced basal hook (*h*); middle apodeme (*m*) is long, and vellum is narrow; distal segment is short; *b*-seta is converted to a setula and is placed at the level of *a*.

♀. Tergite VIII (Fig. N) is not modified, but gently emarginate in the middle of the posterior margin; among 4+4 similar major setae *a-1* is anterior to the level of *p-2*. Sternite VIII (Fig. O) is broadly rounded behind and with a row of short marginal setae. Spermatheca (Fig. P) is short; duct is bulbiform distally; bursa is small and with a short umbilicus.

Specimen examined. INDIA: Syntype ♂ of *H. testaceipennis* Motsch., Ind. or., Coll. Motschulsky (ZMUM). Syntype ♀ of *H. pelioptera* Kr., Ind. post., Heeler, Coll. Kraatz; Sri Lanka: Holotype ♀ of *H. dubia* Kr., Ceylon, J. Nietner, Coll. Kraatz (IPAL).

Close inspection of the type series of various species have revealed that *H. testaceipennis* Motsch., *P. pelioptera* Kr., *P. dubia* Kr. and *G. luchuensis* (Cam.) are belonging to one and the same species. Laterally confined pseudopores in the prementum, posteriorly removed *f*-seta of labial palpus and cylindrically prolonged copulatory piece of the aedeagus are the features peculiar to this species. The macrochaetal arrangement may vary according to the specimens i.e. 01-11-11-12- in the type of *testaceipennis*, 01-12-13-13- in (Fig. H) *dubia* and *pelioptera* and 01-12-12-12-12 in *luchuensis*, but they are concordant in other crucial characters. In the type (male) of *luchuensis* the distal segment of lateral lobe has *b*-seta distally situated. But since they are concordant in other features, it is regarded as conspecific for the time being.

Distribution. Sri Lanka, India, and Japan (Okinawa).

***Pelioptera peguana* (Bernhauer, 1915), new combination**

Fig. 14

Atheta (*Aloconota*) *peguana* Bernhauer, 1915: 30

Atheta (*Aloconota*) *peguana*; Cameron, 1933: 292

♂. Brown in ground colour, shining, with minute body setae on the fore-parts; head more intensively pigmented than pronotum; elytra similarly infusate to the head. Body robust, parallel. Head is coriaceous, without depression in the middle. Eyes are large, but not protruded beyond the contour. Cervical carina diverged. Antenna gradually dilated towards the extremity; segment III longer than II; IV as long as wide; V-X are moderately transverse; XI long. Labrum (Fig. A) slightly emarginate in the middle of the anterior margin; *m-2* is close to the vertical line of *d-1*; *p-2* is nearer to the lateral margin than to *m-2*; median row of setae is subequal to the proximal row in length; 2+2 secondary setae are present. *a*-sensilla of labral margin (Fig. B) fusiform; *b* normally developed and with obtuse apex; *c* is short. Maxillary palpus 4-segmented and long; segment II narrowly elongate, incurved; III gradually dilated distally; IV short in relation with III. The distal comb of lacinia (Fig. C) consists of 6 spines and without isolated teeth. From labial palpus (Fig. D) *γ* is just behind *b*; *δ* is on level of *mp*; *a* is missing; *c*, *d* are similarly short. Constriction between I and II is distinctive.

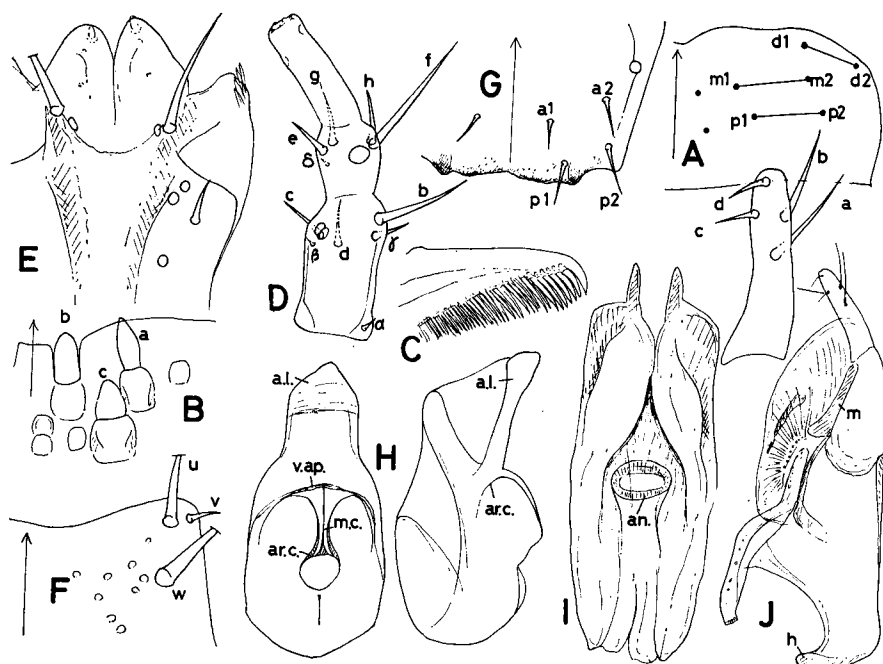


Fig. 14. *Pelioptera peguana*. holotype ♂: A, labrum; B, labral margin; C, lacinia; D, labial palpus; E, glossa & prementum; F, mentum; G, tergite VIII; H, median lobe; I, inner armature of aedeagus; J, lateral lobe.

Glossa (Fig. E) broad basally and more or less acuminate distally; accessory setulae are absent. Median area of prementum is broader than the lateral area, converging behind, without pseudopores; the lateral area has 1 setal, 3 real pores; 2 anterior pores are more close together. Mentum (Fig. F) is emarginate in front; *v*-setula is lateral to *u*; *w* remote from *u*. Pronotum nearly in square, feebly narrowed behind; sides are almost straight, whose lateral erect setae are mostly lost in the type specimen; surface with numerous, coarse and flat punctures. Mesosternal process is short, obtuse at apex. All tibiae possess strongly reduced macrosetae; mesotibia is fairly spinulose towards apex. Tarsal formula as 4, 5, 5 in which the metatarsus is with segments I–IV similarly elongate. Elytron similar to pronotum in length and not emarginate behind. Macrochaetotaxy of abdomen as 01–21–21–22–22–33. Abdomen subparallel and nearly glabrous; the posterior margin of tergite VIII (Fig. G) is shallowly emarginate, slightly protruded to form a fine carinule on each side; among 4+4 major setae *a*–2 is posterior to the level of stigma; microsculpture is imbricate. All tibiae have similarly short macrosetae. The median lobe of aedeagus (Fig. H) is 0.58 mm long, ovate and protruded distally to form a subparallel apical process which is nearly straight in lateral view. Costa *ar. c.* are approximate in the middle and broadly recurved distally; *m. c.* is entire, while *v. ap.* is inconspicuous. Copulatory piece (Fig. I) acutely pointed apically, with a large annellus in the middle; suspensorium is narrowly extending anteriorly ending in a well sclerotized short process (*p*). Lateral lobe (Fig. J) is fairly narrow,

dilated basally; the medial segment has a strong basal hook (*h*); middle apodeme (*m*) is narrowly elongate; distal segment is long in relation with corpus, *a* is situated in the middle; *b* anterior to *a*; *c*, *d* are subequally short.

Length. ca 3.30 mm (head 0.42 mm long $\times$ 0.43 mm wide; pronotum 0.58 mm $\times$ 0.58 mm; elytra 0.51 mm $\times$ 0.80 mm).

♀. Unknown.

Specimen examined. BURMA: Holotype ♂, Ost Indien, Pegu, Coll. Waagen (FMNH).

In the gross feature of the median lobe of aedeagus and in the labral margin the species is allied to the Japanese *P. unica* (Bernhauer, 1907), but can be divided it by broader glossa, narrower lateral lobe of aedeagus, absence of *a*-seta on labial palpus (always?) and by different copulatory piece.

Distribution. Burma.

***Pelioptera monticola* Cameron, 1933**

Fig. 15

Pelioptera monticola Cameron, 1933: 359

♀. Ground colour is dark reddish brown, strongly shining; head intensively pigmented, but pronotum is paler; elytra uniformly reddish brown; abdomen is dark reddish brown; antennae are brown, with brighter basal segments; legs are entirely reddish brown. Body is nearly parallel, with obsolete body setae. Head weakly convex above, with a small median fovea between eyes; surface is nearly glabrous and with numerous coarse punctures. Eyes large compared to the post-genae, which are nearly straight, with a few short setae. Antenna is short, not dilated distally; segment I-III subequal in length and form; IV the smallest; V abruptly enlarged and as long as wide; VI-X similar; XI long. Labrum (Fig. A) emarginate in the middle of the anterior margin; *m*-2 clearly anterior to level of *d*-2; *d*-1 on the line of *m*-2; all rows of setae are subequally long, with 2+2 secondary setae. In labral margin (Fig. B) *a*-sensilla is reduced to a minute process; *b* oblong, truncate at apex; *c* short and conical. Right mandible (Fig. C) narrow, with a short, but distinct apical hook and fine well-defined molar tooth. Maxillary palpus (Fig. D) is 4-segmented; segment III gently dilated, IV is long. Labial palpus (Fig. E) indistinctly 3-segmented; segment I is much shorter than III; *a* well inside the lateral margin, while *β* is close to *tp*; *γ* is near by *b*; *δ* is on level of *h*; *a* absent (always?); *e* on the level of *f*; *mp* larger than *tp*. Glossa (Fig. F) fairly broad, dilated to form 2 lobate arms. Median area of prementum much broader than the lateral area, without pseudopores leaving basal paired pores; the lateral area bears 1 setal and 3 real pores, anterior two of the latter are close together; paraglossa is well developed attaining the apex of glossa. The anterior margin of mentum (Fig. G) is not emarginate, but entirely truncate; *u*, *v* are close to each other, whereas *w* is remote from *u*. Cervical carina is diverged. Pronotum is nearly square, with an obsolete median depression before scutellum; sides are straight, so that the hind corner is well-marked; lateral erect setae are lost in the type specimen. surface has coarse punctures. Mesosternum (Fig. H) is gently produced behind forming an obtuse process. Mesotibia

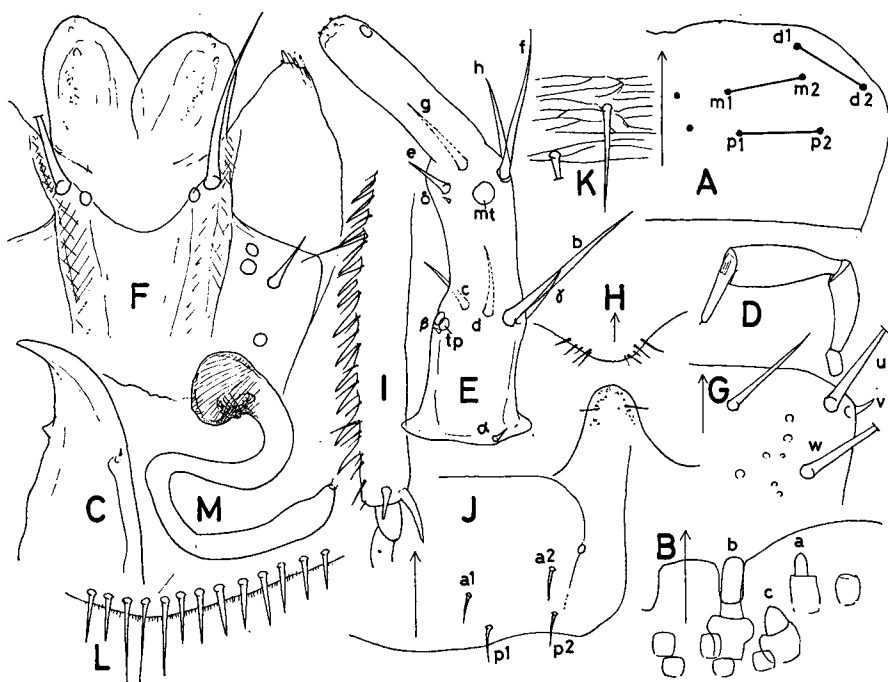


Fig. 15. *Pelioptera monticola*. holotype ♀: A, labrum; B, labral margin; C, right mandible; D, maxillary palpus; E, labial palpus; F, glossa & prementum; G, mentum; H, meso- & metasternums; I, tergite VIII; J, sternite VIII.

(Fig. I) has a row of more than 10 similar spinules lying along its outer margin. Tarsal formula as 4, 5, 5. Elytron is short compared to pronotum, not emarginate behind, without distinct macrosetae. Flabellum is with some 10 setae. Macrochaetotaxy as 01-21-21-21-21-34. Abdomen is gradually dilated towards tergite VI and with inconspicuous lateral erect setae. Tergite VIII (Fig. J) gently rounded behind; among 4+4 similarly short major setae *a*-2 is placed posterior to the level of stigma; microsculpture in the middle (Fig. K) transversely imbricate. Sternite VIII (Fig. L) is rounded behind and with a row of up to 10+10 short and long marginal setae. Spermatheca (Fig. M) is elongate to form a sigmoid duct; bursa is short and with a small umbilicus.

Length. 4.20 mm (head 0.47 mm long $\times$ 0.53 mm wide; pronotum 0.57 mm $\times$ 0.66 mm; elytra 0.53 mm $\times$ 0.96 mm).

♂. Unknown.

Material examined. BORNEO: Holotype ♀, Mt, Kinabalu, Kamborangah, 2,100 m alt., (28 III. 1929) (BMNH).

In labrum, maxillary palpus and by chaetotaxy of labial palpus the present species is close to *P. peguana* (Bh.), but differs by the converging glossa, shorter paraglossa and by narrower median area of prementum. In addition, the body is large, and with broader pronotum.

Distribution. Borneo.

***Pelioptera luzonica* (Bernhauer, 1916), new combination**

Fig. 16

Atheta (*Philhygra*) *luzonica* Bernhauer, 1916: 431

♀. Reddish brown in ground colour, well shining; head nearly black; pronotum is reddish brown; elytra are similar to the pronotum in colour; antennae brown, with 4 infusate basal segments; abdomen is darker towards extremity; leg paler throughout. Body narrowly elongate, with few number of body setae. Head nearly flat above, with a shallow median fovea near base; surface is glabrous. Eyes large, but not much protruded from the contour. Post-gena is short, abruptly converging. Cervical carina diverged. Antenna not dilated distally and with some short macrosetae; segment I fairly robust; II, III similar to one another; IV is the smallest and as long as wide; V-X are subequal; X a little longer than wide; XI short. Labrum (Fig. A) broadly emarginate in front; *d*-2 is posterior to the level of *m*-2; *p*-2 more lateral than *m*-2; all rows of setae are similarly long; 2+2 secondary setae are present. *a*-, *c*-sensillae of labral margin (Fig. B) subequally conical in form, while *b* is oblong. Mandibles are gradually narrowed distally and indistinctly hooked at apex; right mandible (Fig. C) has a well-defined toothlet and an obsolete marginal crenulation. Maxillary palpus (Fig. D) is 4-segmented, narrowly elongate; segment III uniformly dilated distally and with nearly straight inner margin; IV long compared to III. Labial palpus (Fig. F) is 3-segmented, with a constriction between I and II; *γ*-setula is hidden by *b*; *δ* is on the level of distal margin of *mp*; segment III is fairly long in relation to I; *tp* much smaller than *mp*. Glossa (Fig. E) is lobate; apparently narrowed in distal half; paraglossa is short. Median area of prementum is normally broad, constricted and with widely separated distal pores; the anterior margin is deeply emarginate. Lateral area has 3 real pores, which are similarly separated to each other. Setal pore is near the anterior real pores. Mentum (Fig. G) emarginate in front, with nearly rectangular anterior corner; *v*-setula is on the corner, but *u* is posterior to *v*; there are numerous minute pseudopores in the middle. Lacinia is densely ciliate before the distal comb, which is composed of 6 compact teeth. Galea has long dense cilia at apex. Pronotum is gently convex above, narrowed behind, without depression in the middle; surface has extremely dense, distinct microsculpture; sides are nearly straight, the posterior corner is well-defined, with moderately long erect setae. Elytron is nearly as long as wide, with short secondary setae. Flabellum bears some 6 long setae. Mesosternal process (Fig. H) shortly protruded, subtruncate in apex, while the metasternal process is terminating in a narrowly rounded apex. Macrosetae of tibiae are rather short; metatarsus is with long segment I, as long as V. Macrochaetotaxy of abdomen as 01-21-21-21-22-23. Abdomen is subparallel, without large punctures and with short and inconspicuous lateral setae. Tergite VIII (Fig. I) is not modified; 4+4 major setae are similarly short; *a*-2 the longest, and placed posterior to the stigma; microsculpture in the middle is transversely imbricate. Sternite VIII (Fig. J) bears 6+6 short macrosetae and a row of short and long marginal setae. Spermatheca (Fig. K) modified; the duct not dilated distally, turned abruptly; bursa large, bulbous and without umbilicus.

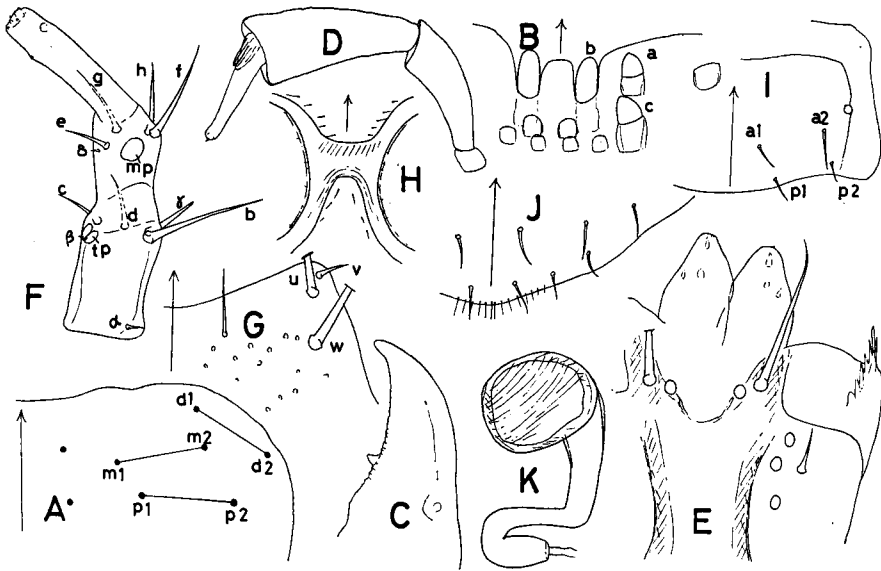


Fig. 16. *Pelioptera luzonica*. holotype ♀: A, labrum; B, labral margin; C, right mandible; D, maxillary palpus; E, glossa & prementum; F, labial palpus; G, mentum; H, meso- & metasternums; I, tergite VIII; J, sternite VIII.

Length. up to 2.40 mm (head 0.38 mm long $\times$ 0.45 mm wide; pronotum 0.42 mm $\times$ 0.51 mm; elytra 0.38 mm $\times$ 0.78 mm).

♂. Unknown.

Specimen examined. PHILIPPINES: Holotype ♀, Mt. Makiling, Luzon, Coll. Baker (FMNH).

The species is allied to *P. peguana* (Bernahuer, 1915) from Burma, but differs by shorter *a*-sensilla of the labral margin, narrower glossa and shorter tergite VIII. Besides, the body is much smaller and with apparently broader pronotum. In the gross feature of the prementum and in the similar chaetotaxy of the labial palpus the species is near to *P. monticola* Cameron, 1933 from Mt. Kinabalu, but the glossa is narrower, the spermatheca is different and the body is much smaller.

Distribution. Philippines (Luzon).

Following Bornean species have no concern with *Athetae* and these results of re-examination are only to enrich our knowledge to the systematic position of *Athetae* in general.

Genus *Paroxyppodinus* Cameron, 1933

Type species: *Paroxyppodinus pendleburyi* Cameron, 1933: 351

In this genus both the maxillary palpus and labial palpus are 5-segmented. The right mandible has 2 teeth on the inner margin and the left mandible bear 1 tooth.

Abdominal sternite VIII has a row of bifurcate marginal setulae in both sexes. Tarsal formula is 4, 4, 5.

The shape of labium and maxilla is similar to those of *Tinotus* Sharp, 1883. But in the latter genus the tarsal number is 4, 5, 5.

***Paroxypodinus pendleburyi* Cameron, 1933**

Fig. 17

Paroxypodinus pendleburyi Cameron, 1933: 351

♂. Reddish brown in ground colour, with minute body setae; head and pronotum are somewhat brighter than elytra; abdomen is darker towards the extremity; antennae brown, with paler basal segments; legs uniformly pale. Body is narrow, fusiform. Head rounded in outline, too small for corpus and without depression on the middle; surface bears dense, fine punctures all over. Eyes normal in size. Post-gena a little shorter.

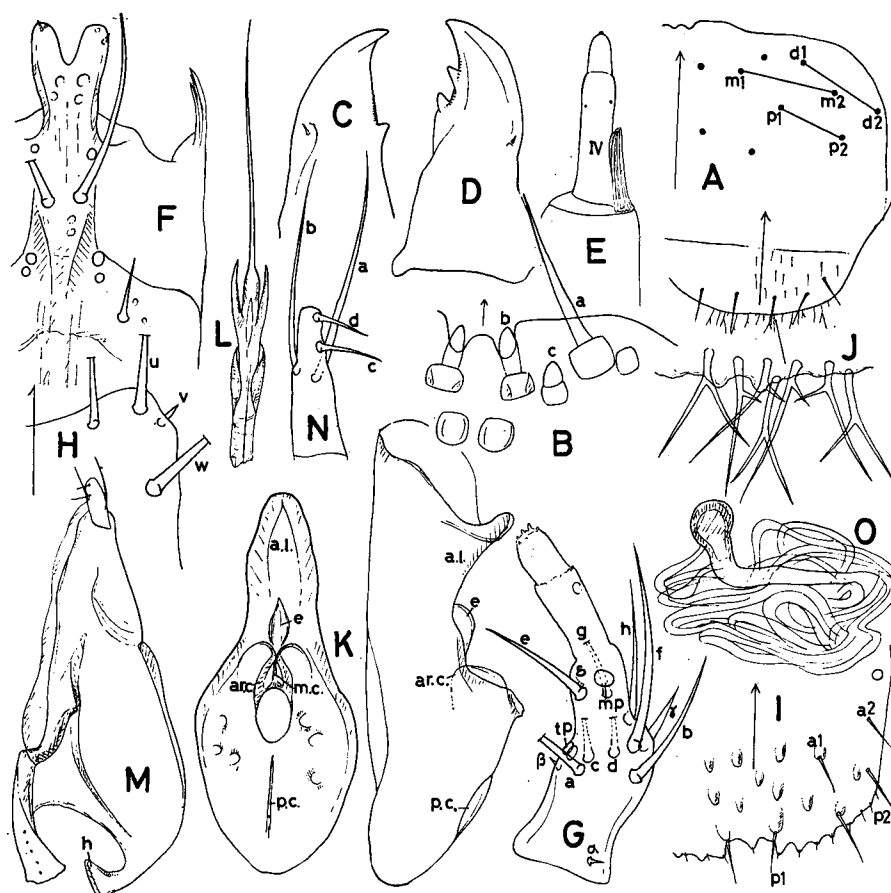


Fig. 17. *Paroxypodinus pendleburyi*. syntype ♂, ♀: A, labrum; B, labral margin; C, D, left & right mandibles; E, maxillary palpus; F, glossa & prementum; G, labial palpus; H, mentum; I, tergite VIII; J, sternite VIII; K, median lobe; L, inner armature; M, N, lateral lobe & its distal segment; O, spermatheca.

Cervical carina not diverged. Antenna normally dilated distally; segment I, II are relatively narrow; III shorter than II, constricted basally; IV as long as wide; X broader than long; XI short, obtuse at apex. Labrum (Fig. A) transverse; $d-2$ much posterior to level of $m-2$; $p-1$ anterior to level of $p-2$; $4+4$ secondary setae are occurred. a -sensilla of labral margin (Fig. B) is setaceous, converging; b conical; c broad at base. Left mandible (Fig. C) with a sharp molar tooth in the middle; right mandible (Fig. D) is narrowed distally ending in a brief apex, with 2 similar teeth on its inner margin. Maxillary palpus 5-segmented; segment IV (Fig. E) short compared to III, with a bundle of long basal sensillae; V very short and obtuse. Galea with a well ciliated distal lobe. Lacinia is gradually dilated basally. Labial palpus (Fig. G) 4-segmented, with segment I dilated; γ long, placed on level of f ; e normal in position; h is proximally dislocated as in f . Golssa (Fig. F) short, forked to 2 stout arms. Prementum with 2 distal setae; and the basal pores anterior to the setae are separating one another; median area is broad, with a few, obsolete pseudopores; lateral area has 2 real, 1 setal pores, the former is close to the median area. Mentum (Fig. H) broadly emarginate; v minute, and at the anterior corner; w is separating widely from u . Pronotum transverse, evenly convex above, with the lateral margin uniformly arcuate in its full length; lateral erect setae are reduced. Mesosternum narrowly pointed behind, neither carinate nor raised in the middle. Metasternum with a short process, whose apex is apart from the mesosternum. Elytron longer than pronotum, lightly emarginate behind; no long macroseta is present on the humeral corner. Macrochaetal arrangement as 01-01-02-02-02-33. Abdomen with tergite III bearing a short median carina; VII with a small median protuberance; VIII (Fig. I) has several coarse elevation on the disc, a row of marginal crenulation, which consists of fine, coarse teeth; among $5+5$ short major setae all of the posterior setae arranged along the margin; $a-1$ on level of $p-3$. Sternite VIII (Fig. J) broadly produced behind, with similarly short macrosetae; the posterior margin is finely crenulated in its full length, peculiarly with a row of clearly bifurcate marginal setulae. All the macrosetae on tibiae are inconspicuous, mingled with the secondary setae around them. Tarsal formula as 4, 4, 5 in which the pro- and mesotarsi have segment IV fairly long; metatarsus with subequally elongate basal segments. Median lobe of aedeagus (Fig. K) broad and abruptly narrowed to the apical lobe in ventral view; in lateral view the apical lobe is strongly bent down, bears a basal elevation (e in Fig. K) in front of $ar. c.$ Costa $ar. c.$ are fused apically, diverged behind; $m. c.$ is present; $p. c.$ raised. Copulatory piece (Fig. L) narrowly elongate, with a very long, filiform apical process; annellus not differentiated. Lateral lobe (Fig. M) acuminate; middle apodeme inconspicuous; vellum reduced to a narrow extension along the margin of the medial segment; a strong basal hook (h in Fig. M) is present; distal segment (Fig. N) narrowly elongate; among 4 major setae a , b subequally very long, whereas c , d very short compared to others.

Length. ca 2.50 mm (head 0.28 mm long $\times$ 0.40 mm wide; pronotum 0.41 mm $\times$ 0.63 mm; elytra 0.51 mm $\times$ 0.82 mm).

♀. Tergite VIII not modified and with $5+5$ major setae. Sternite VIII short, with a row of up to 4 marginal setae, all of which are fairly bifurcate as in male. Sper-

matheca (Fig. O) complicated; duct is folded many times; bursa rounded, without umbilicus.

Material examined. BORNEO: Syntype ♂ and ♀, Mt. Kinabalu, Kamborangah, 7200 ft. (4 IV, 1929) (FMNH).

The complicated spermatheca, medially carinate abdominal tergites in male and bifurcate marginal setae of sternite VIII in both sexes are features peculiar to the present species.

Distribution. Borneo.

***Strabocephalum mirabile* Bernhaeuer, 1911**

Fig. 18

Strabocephalum mirabile Bernhaeuer, 1911: 92

♂. Reddish brown in ground colour, strongly shining; head and pronotum similarly pigmented; elytra reddish yellow, with the infusate lateral area, and the posterior margin narrowly infusate; abdomen uniformly reddish brown, while the antennae have paler basal segments; legs bear dark femora and tibiae. Body is robust and reminds us of a pheidolen ant (Fig. A). Head nearly orbicular with sinuately emarginate basal margin, rather large for corpus and almost glabrous; antennae are inserted between the eyes and remote to each other. Eyes are anterior in position, so that the post-genae are very long, fluently rounded in full length. Cervical carina transformed to a stout collar of neck (Fig. A). Gular plate (Fig. B) acutely converging behind. Antenna (Fig. A) short and with conspicuous macrosetae; segment I lightly geniculate; II shorter than III; IV–X broader than long; XI elongate. *m*–2 of labrum (Fig. C) is posterior to level of *m*–1, separated from the distal row of setae; *p*–1 is on the level of *p*–2; all three rows of setae are subequal in length; more than 12 short secondary setae are present. *a*-sensilla of labral margin (Fig. D) is setaceous and *c* is a broad spine. Mandibles (Fig. E, F) are short, triangular; right mandible is without dentition on its inner margin. Maxillary palpus is 4-segmented, narrowly elongate; segment II is long, faintly dilated distally; IV (Fig. G) with well-developed filamentous sensillae. Galea ciliate apically. Lacinia densely spinulate along the inner margin and gradually dilated basally. On labial palpus (Fig. H) *α* is at the corner; *β* is not setaceous, but reduced to a discoidal sensilla; *γ* is short and close to *b*; *δ* is like *β*, and close to *e*; *a* inside the margin, while *e* far remote from *a*; *f* at the middle between *b* and *h*; *g* marginal in position; segment II, III are remarkably long in relation to I; *mp* is small for corpus. Glossa (Fig. I) broad, forked to 2 arms, which are standing side by side, each with two paired setulae; paraglossa well produced. Prementum peculiar: Median area is broad, with many minute pores all over; lateral area has no pseudopores, but with 1 setal, 2 real pores. Mentum (Fig. J) is modified; anterior margin is deeply emarginate and its lateral corner is produced to a narrow process; *v* is almost reduced; *w* is longer than other. Pronotum (Fig. O) is small, hexagonal and strongly convex above and glabrous as the head; lateral erect setae are inconspicuous; both lateral and posterior margins are finely raised. Mesosternal process (Fig. K) is truncate, touching to the apex of metasternal process. Tibial macrosetae are short, mingled with the secondary setae.

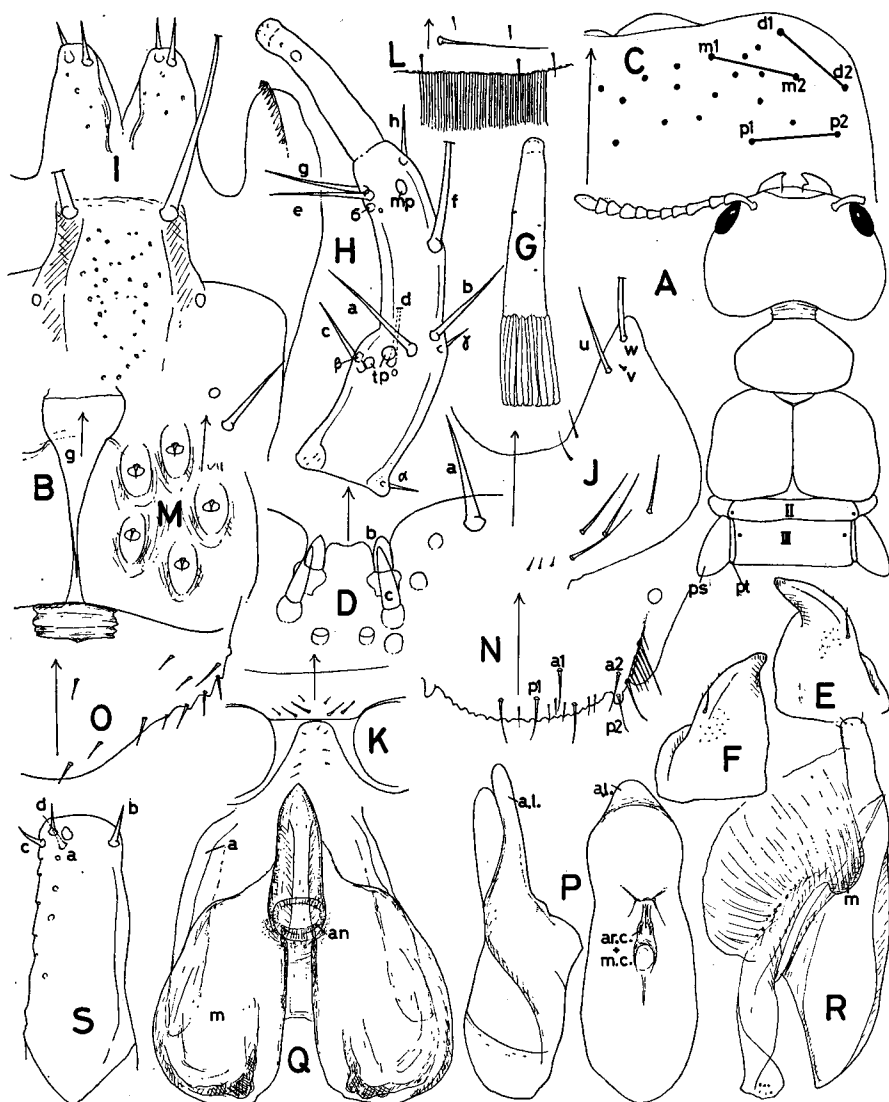


Fig. 18. *Strabocephalum mirabile*. holotype ♂: A, habitus; B, gular plate & neck; C, D, labrum & its margin; E, F, right & left mandibles; G, segment IV of maxillary palpus; H, labial palpus; I, glossa & prementum; J, mentum; K, meso- & metasternums; L, M, tergite VII & its placoid punctures; N, tergite VIII; O, sternite VIII; P, median lobe; Q, inner armature of aedeagus; R, S, lateral lobe & its distal segment.

Tarsal formula as 4, 5, 5 in which the mesotarsus has 4 short basal segments; metatarsus with 4 elongate basal segments. Elytron not emarginate behind; lateral margin sinuate in the middle; surface is with fine scattered setigerous granules, with a conspicuous microsculpture throughout. Flabellum has up to 12 long setae. Macrochaetotaxy as 01-22-22-12-12-14. Abdomen is dilated, thick, with broad lateral margin, i.e. the paratergites (*pt* in Fig. A) are reduced to a thin plate, while, the parasternites (*ps*)

are unusually broad and flat above. Tergite VII (Fig. M) is with more or less elongate, umbilicate punctures, each bearing a minute setula and with unusually long, fringed cilia along the posterior margin (Fig. L). Tergite VIII (Fig. N) is peculiar; the posterior margin is rounded, finely crenulated in its full length, with a short process on each side. Major setae are reduced; they are 7+7 in number which are restricted to the narrow area before the posterior margin; several long setae are arranged in a line bilaterally. Sternite VIII (Fig. O) has the round posterior margin, whose basal part is finely dentate, with fine setae corresponding to the dentition. In aedeagus the median lobe (Fig. P) is 0.80 mm long; apical lobe is slender in lateral view, lightly bent upwards to the apex; in ventral view it is narrowly oblong; apical lobe is broad, bilaterally dilated in the middle and obtuse at apex. Costa is reduced; *ar*, *c*. is absent; *v. ap.* is reduced to a narrow line. Copulatory piece (Fig. Q) is, when lightly pressed by the cover glass, composed of a pair of broad, membranous lobes (*m*) and a large annellus (*an*). Anterior to it the apical process is sclerotized and elongate to an obtuse apex. Suspendorium (*s*) is narrow and retarded. Lateral lobe (Fig. R) is normal; vellum is well developed; middle apodeme (*m*) is broad; proximal segment is broad; medial segment is not hooked, but angulate at the base. Distal segment (Fig. S) is long and truncate apically and weakly serrulated on its inner margin; all of 4 major setae are reduced to setulae situated at the distal end.

Length. ca 5.00 mm (head 1.10 mm long $\times$ 1.65 mm wide; pronotum 0.74 mm $\times$ 1.13 mm; elytra 0.84 mm $\times$ 1.65 mm).

♀. Unknown.

Material examined. BORNEO: Holotype ♂, Sarawak, Quop Oct. (FMNH).

Strabocephalum mirabile Bh. is peculiar in many respects: Labrum is with numerous secondary setae and its margin is with produced *c*-sensilla. Deeply emarginate mentum possesses minute *v*-setula and segments of labial palpus are elongated.

That the glossa has more than 1 paired setae and the prementum is with broad median area is the characteristics common with *Santhota sparsa* Shp., and *Zyras irrides-cens* K. Saw. (cf. Sawada 1970: 49, 1971: 84).

Distribution. Borneo.

***Coenonica vulnerata* Bernhauer, 1915**

Fig. 19

Coenonica vulnerata Bernhauer, 1915: 148

♂. Ground colour is reddish brown and weakly shining; head reddish brown; pronotum lighter than the head; elytra are darker than the pronotum; abdomen and antennae are uniformly pigmented; legs are paler. Body small and broad, coarsely pubescent in the fore-parts. Head is roughly punctured throughout. Eyes are convex, large. Short post-gena has many setae. Cervical carina is diverged to form the raised margin. Antenna is dilated distally; segment I is short for II; III is subequal to II; IV is as broad as wide; VII-X are transverse; XI is large, fully as long as 3 precedings together. Labrum (Fig. B) is nearly truncate; *d*-2 is posterior to level of *p*-2; *p*-1 is anterior to the level of *p*-2; distal row of setae is long and almost longitudinal; 2+2 secondary

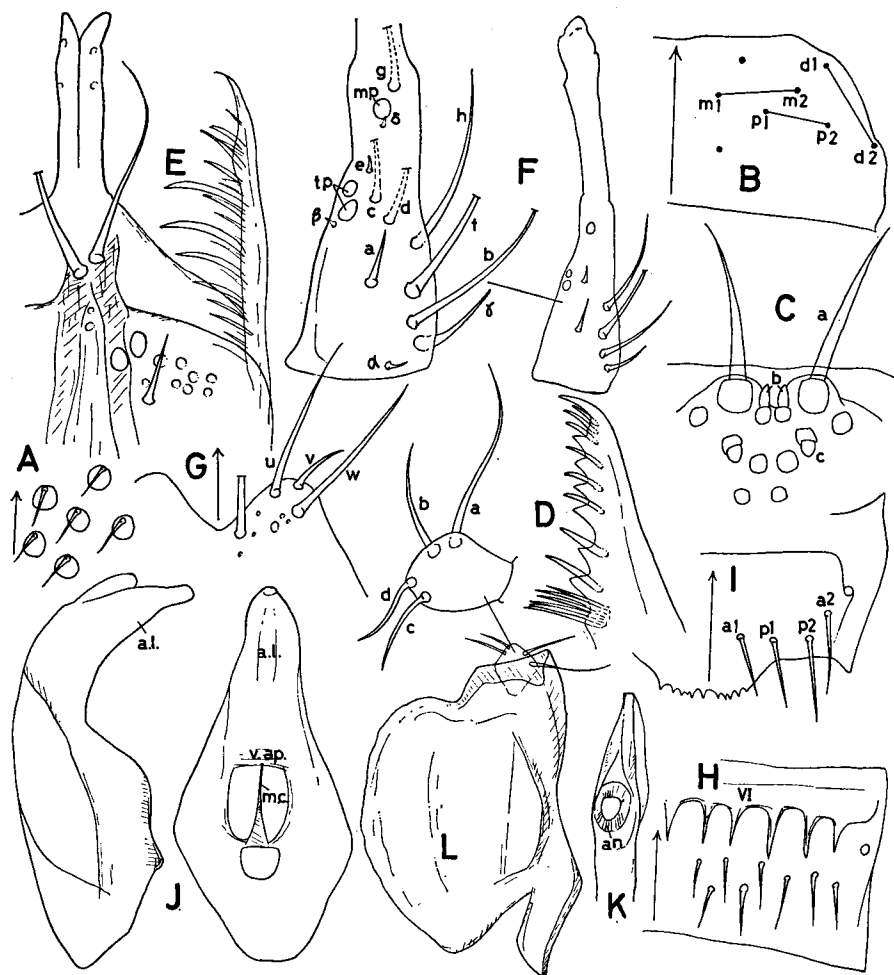


Fig. 19. *Coenonica vulnerata*, holotype ♂: A, placoid punctures on head; B, labrum; C, labral margin; D, distal comb of lacinia; E, glossa & prementum; F, labial palpus; G, mentum; H, I, tergites VI, VIII; J, median lobe; K, copulatory piece; L, lateral lobe.

setae are present. On labral margin (Fig. C) *a*-sensilla is long setaceous and diverging distally; *b* is conical and close together; *c* is obtuse. Mandibles are apically hooked and the right one has a small molar tooth. Maxillary palpus is 4-segmented; segment II is dilated; III is larger than II; IV is long for III. Lacinia (Fig. D) is corneus all over and with 7 teeth of the inner margin and long pointed spines alternating with the teeth. Glaea has a large distal lobe bearing long cilia. Labial palpus (Fig. F) is narrowly elongate and its last segment is long for others; γ is long, close to the basis; β and δ are also small; *tp* and *mp* are normally located but other setae are proximally dislocated; *a* is shorter than *b* and on the level of *f*; *tp* are longitudinally arranged and large. Glossa (Fig. E) is simple, narrowly elongate and forked apically. Paraglossa is well developed,

surpassing the glossa and with many long and short teeth. On prementum (Fig. E) the distal setae are close together and longitudinally arranged; median area is moderately broad and with 2 small pseudopores; lateral area has 1 setal, 2 large real, and up to 7 pseudopores. Mentum (Fig. G) is emarginate in front; setae *u*, *v* and *w* are on the anterior corner. Pronotum is transverse and with a broad median depression which bears 2 obsolete, longitudinally arranged carinulae and numerous coarse punctures; the punctures on the basal margin are large. Lateral erect setae are dense and fine. Prosternum has a sharp median carina. Mesosternum is shortly produced and nearly truncate at apex. Metasternum is gently produced in front. Elytron is strongly punctured throughout and fairly emarginate behind. Macrochaetotaxy as 01-12-12-12-13-22. Abdomen is broad; tergite VI has a row of sharp basal crenulation (Fig. H). Legs are normally long; tarsal formula as 4, 4, 5; basal segments of meso- and metatarsi are subequally short; all tibiae have short macrosetae and similar secondary setae. Median lobe of aedeagus (Fig. J) is 0.36 mm long; broad at base and gradually narrowed distally ending in an obtuse apex; in lateral view the corpus is bent down on distal half. Costa *m. c.* is entire; *ar. c.* are widely apart from one another; *v. ap.* is inconspicuous. Copulatory piece (Fig. K) is small for the corpus; narrowly elongate and with pointed apex and with a small annellus (*an*). In lateral lobe (Fig. L) medial segment is sclerotized along the outer margin; middle apodeme (*m*) is broad; vellum is wide and extended; distal segment is suborbicular; *a* is longer than *b*; *c*, *d* are long.

Length. ca 1.80 mm (head 0.28 mm long $\times$ 0.43 mm wide; pronotum 0.31 mm $\times$ 0.54 mm; elytra 0.38 mm $\times$ 0.70 mm).

♀. Unknown.

Material examined. BORNEO: Holotype ♂, Matang, 1000 ft., Sarawak, (3 XII, 1913, Moulton) (FMNH).

In the gross feature of labrum and in the labium including the chaetotaxy of the labial palpus the species is closely allied to *Diestota luzonica* Bernhauer, 1928 (sensu K. Sawada, 1971: 63) of Philippines.

Distribution. Borneo.

Acknowledgements

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Abbreviations used: *a. l.*, apical lobe; *an.*, annellus; *ar. c.*, arcuate costae; *m. c.*, median costa; *md.*, medial segment; *mp*, median pore; *p. c.*, proximal costa; *tp*, twin pores; *v, ap.*, ventral apodeme. (see also K. Sawada, 1972: 34, 44).

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