

9) The bethylid subfamily Pristocerinae from Nepal,  
with descriptions of 9 new species

Subfamily Pristocerinae

Genus Pristocera

*Pristocera poirieri* sp. nov.

(Figs. 572-576)

Holotype. Male. HL 1.55 mm; HW 1.48 mm; WL 0.98 mm; 2.95 mm; LP 1.10 mm;  
WPD 1.05 mm; FWL 5.2 mm; TL 7.0 mm.

Head and alitrunk black; gaster castaneous; mandibles, antennae and legs  
dark brown.

Head slightly longer than wide, smooth and shining, with well convex sides  
and rounded posterolateral borders in frontal view; punctures on frons strong,  
separated by 0.5-1.0 x their own diameter; vertex on punctures almost the same  
diameter as on frons, but sparser than those on front.

Mandibles with 4 strong teeth. Anterior clypeal margin transverse. First 5  
segments of antennae in a ratio of about 16:5:8:7:7 in length; 2nd segment  
slightly longer than wide; 3rd 2.0 x as long as wide; 4th and 5th segments  
each 1.8 x as long as wide. Eyes 0.63 mm in length; FW 1.56 x EL.

Ocelli forming a compact triangle; DAO 0.11 mm; OOL 1.62 x WOT.

Pronotal disc smooth and shining, moderately punctate, without a distinct  
transverse carina anteriorly. Lateral areas of mesonotum moderately punctate;  
median area only sparsely punctate. Propodeum as long as wide; basal trian-  
gular area roughly reticulate and depressed as in Fig. 575; sublateral areas  
also reticulate.

Gaster petiolate.

Variation. Body size varies in head length from 1.70 mm to 2.10 mm, in  
head width from 1.65 mm to 2.20 mm, and in width of front from 1.00 mm to 1.35  
mm.

Holotype. Male. Pulchauki 6800 ft., Ktmd, Nepal, 21.VII.1967.

Paratypes. 8m, same data as holotype; 1m, same locality as holotype, 14-  
21.VII.1967; 2m, Godavari 6000 ft., Ktmd, Nepal, 1-3.VIII.1967; 1m, same  
locality, 7-13.VIII.1967; 1m, same locality, 14-21.VII.1967; 1m, same  
locality, 21-27.VII.1967; 2m, same locality, 21-30.VII.1967; 1m, same  
locality, 23-26.VII.1967; 1m, same locality, 30.VII.1967; 1m, same locality,  
20-23.VII.1967; 2m, same locality, 1-3.VII.1967; 1m, same locality,  
3.VIII.1967; 6m, Pulchauki 6600 ft., 1-14.VII.1967; 5m, same data, 14-  
21.VII.1967; 5m, 21-27.VII.1967; 2m, Pulchauki 7300 ft., Ktmd, Nepal, 1-  
4.VIII.1967; 2m, same data, 4-7.VIII.1967; 2mm, 7-14.VIII.1967; 1m, same  
locality, 13-17.VIII.1967; 1m, same locality, 21-27.VIII.1967; 2m, same  
locality, 27-31.VIII.1967; 1m, Pulchauki 8000 ft., Ktmd, Nepal, 21.VII.1967;  
1m, Gulubhanjyang 7500-8500 ft., nr. Ktmd, Nepal, 2.VII.1967.

*Pristocera huberi* sp. nov.

(Figs. 577-580)

Holotype. Male. HL 1.75 mm; HW 1.65 mm; FW 1.10 mm; LA 2.90 mm; LP 1.13 mm; WPD 1.15 mm; FWL 5.1 mm; TL ca. 8.0 mm.

Head and alitrunk black; gaster castaneous; mandibles and legs dark brown; antennae dark brown to medium brown.

Head longer than wide, with convex posterior border, smooth and shining; punctures of frons large but shallow, separated by less 0.5 x their own diameter; temple almost impunctate. Mandibles with 4 strong teeth. Anterior border of clypeus broadly convex. First 5 segments of antennae in a ratio of about 12:2:6:5:5 in length; 2nd segment wider than long; 3rd 2.3 x as long as wide; 4th and 5th segments each 1.9 x as long as wide. Eyes 0.75 mm in length; FW 1.47 x EL. Ocelli relatively small, DAO ca. 0.10 mm, forming a compact triangle; OOL 1.64 x WOT.

Pronotal disc with a strong transvers carina anteriorly, smooth with only a few shallow punctures. Lateral areas of mesoscutum and scutellar disc smooth, moderately punctate; median area of mesoscutum with only a few shallow punctures at near notauli. Propodeum as long as wide; basal triangular area mostly smooth, with a median carina and 3 pairs of longitudinal to oblique rugae; sublateral areas with oblique rugae; distinct sublateral carinae

present.

Gaster petiolate.

Variation. Paratypes vary in head length from 1.25 mm to 1.80 mm, in head width 1.25 mm to 1.80 mm, and in width of frons from 0.75 mm to 1.20 mm. The shape of posterior border also varies from moderately rounded in small individuals to weakly rounded in large individuals in frontal view.

Holotype. Male, Lothar 450 ft., nr. Birganj, Nepal, 30.VIII-5.IX.1967.

Paratypes. 2m, same data as holotype; 2m, same locality as holotype, 5-12.IX.1967; 1m, same locality, 16.IX.1967; 5m, Adhabhar 600 ft., 23-26.VIII.1967; 3m, same locality, 25-28.VIII.1967; 2m, same locality, 5-12.IX.1967.

Genus *Apenesia*

*Apenesia ktmdana* sp. nov.

(Figs. 586-588)

Holotype. Male. HL 0.80 mm; HW 0.78 mm; FW 0.50 mm; LA 1.55 mm; LP 0.68 mm; WPD 0.48 mm; FWL 3.2 mm; TL 4.0 mm.

Head black; alitrunk and gaster blackish brown, alitrunk darker than gaster; mandibles, antennae and legs yellowish brown.

Head as long as wide, with convex posterior border in frontal view, smooth with scattered shallow punctures. Mandibles with 4 acute teeth. Anterior border of clypeus broadly rounded. First 5 segments of antennae in a ratio of 10:3:10:9:9 in length; 3rd segment 3.3 x as long as wide. Eyes 0.33 mm in length, with very short erect hairs; FW 1.51 x EL. Ocelli forming a regular triangle; OOL 1.2 x WOT.

Pro- and mesonotum smooth with shallow punctures. Propodeum 1.42 x as long as wide; median carina present on basal 3/5 of propodeum; transverse carina absent; basal triangular area reticulate; sublateral areas smooth and shining.

Discoidal vein of forewings arising slightly down on transverse median vein.

Variation. Available materials vary in head length from 0.75 mm to 0.95 mm, in head width 0.70 mm to 0.90 mm, and in width of frons from 0.40 mm to 0.55 mm.

Holotype. Male, Ktmd, Godavari, 6000 ft., Nepal, 15.VII.1967.

Paratypes. 2m, same locality as holotype, 14.VIII.1967; 1m, same locality, 17.VII.1967; 1m, same locality, 20-22.VII.1967; 1m, same locality, 27-30.VII.1967; 3m, same locality, 1-3.VIII.1967; 1m, same locality, 3.VIII.1967; 1m, same locality, 7-13.VIII.1967, 1m, same locality, 7-14.VIII.1967.

*Apenesia carinicollis* sp. nov.

(Figs. 589-591)

Holotype. Male. HL 0.98 mm; HW 0.88 mm; FW 0.48 mm; LA 1.68 mm; DPL 0.43 mm; WPD 0.63 mm; FWL 2.7 mm; TL 4.0 mm.

Body black; gaster blackish brown with reddish tinge; mandibles, antennae and legs yellowish brown.

Head slightly longer than wide, with weakly convex posterior border and dully angulate posterolateral borders in frontal view; surface smooth with punctures moderately. Mandibles with 2 teeth; apical tooth acute and developed and subapical blunt and small. Anterior border of clypeus well produced, forming a triangle. First 5 segments of antennae in a ratio of 9:2:5:4.5:4.5 in length; 3rd segment 1.7 x as long as wide. Eyes 0.43 mm in length, with very short erect hairs; FW 1.12 x EL. POL:AOL = 4:3; OOL 1.38 x WOT.

Pronotal disc 0.46 x as long as wide, anterior border carinate as in Fig. 591; surface smooth with shallow punctures sparsely. Mesonotum smooth with

scattered shallow punctures. Propodeal disc 0.68 x as long as wide; transverse carina present; basal triangular area depressed and striate; sublateral areas reticulate.

Discoidal vein arising well down on transverse median vein.

Variation. Specimens examined vary in head length from 0.98 mm to 0.65 mm, and in head width from 0.88 mm to 0.63 mm. Surface of head varies from smooth in a large individual to moderately microreticulate in a small individual.

Holotype. Male, Nr. Birganj, Lothar 450 ft., Nepal, 30.VIII-5.IX.1967.

Paratypes. 2m, same data as holotype; 1m, Ktmd, Godavari 5000 ft., Nepal, 20.VII.1967; 1m, same locality, 23.VII.1967.

*Apenesia nepalensis* sp. nov.

(Fig. 592)

Holotype. Male. HL 0.95 mm; HW 0.88 mm; FW 0.55 mm; LA 1.9 mm; LP 0.80 mm; WPD 0.55 mm; FWL 3.8 mm; TL 5.3 mm.

Head black; alitrunk blackish brown; gaster brown; posterior border of each tergite with yellowish brown band; mandibles and antennae brown; legs yellow.

Head longer than wide, smooth with small punctures rather sparsely, with strongly convex posterior border in frontal view. Mandibles with 5 teeth. Anterior border of clypeus broadly rounded. Eyes with short erect hairs and

0.39 mm long; FW 1.41 x EL. POL:AOL = 4:3; OOL 1.33 x WOT.

Pro- and mesonotum mostly smooth, with punctures moderately. Propodeum longer than wide, with 3 discal carinae; basal triangular area reticulate; posterior portion of disc and declivity with strong transverse rugae.

Discoidal vein almost interstitial with median vein.

Holotype. Male, Ktmd, Godavari 6000 ft., Nepal, 7-13.VIII.1967.

*Apenesia pulchella* sp. nov.

(Figs. 583-585)

Holotype. Male. HL 0.98 mm; HW 0.93 mm; FW 0.58 mm; LA 1.70 mm; DPL 0.43 mm; WPD 0.58 mm; FWL 3.5 mm; TL 4.8 mm.

Body black; gaster reddish brown; mandibles, antennae and legs brown.

Head slightly longer than wide with convex posterior border in frontal view, and smooth and subopaque with punctures rather sparsely. Mandibles with 2 teeth, acute and developed apical tooth and small blunt subapical tooth. Anterior border of clypeus triangular, with dull median angle. First 5 segments of antennae in a ratio of 12:3:8:7:7 in length; 3rd segment 3.2 x as long as wide. Eyes 0.43 mm in length, hairless; FW 1.34 x EL. POL:AOL = 1:1; OOL 1.55 x WOT.

Pronotal disc 0.40 x as long as wide, smooth and subopaque with shallow punctures sparsely. Mesonotum smooth, impunctate in most part. Propodeal disc

0.74 x as long as wide; transverse carina present; basal triangular area depressed and striate; sublateral areas microreticulate.

Discoidal vein arising well down on transverse median vein.

Variation. Available specimens vary in head length from 1.20 mm to 0.70 mm, and in head width from 1.05 mm to 0.70 mm. Small specimens have more shining and less punctate head than that of large ones.

Holotype. Male, Ktmd, Pulchauki 6000 ft., Nepal, 1-14.VIII.1967.

Paratypes. 32m, same data as holotype; 2m, Ktmd, Pulchauki, 7300 ft., Nepal, 4-7.VIII.1967; 6m, Ktmd, Pulchauki, 6600 ft., 4-7.VIII.1967; mm, Ktmd, Pulchauki, 7300 ft., 13-17.VIII.1967; 3m, Ktmd, Pulchauki, 6600 ft., 13-17.VIII.1967; 2m, Ktmd, Pulchauki, 6000 ft., 13-17.VIII.1967; 4m, Ktmd, Pulchauki, 6800 ft., 21.VII.1967; 2m, Ktmd, Pulchauki, 6600 ft., 21.VIII.1967; 2m, Ktmd, Godavari 6000 ft., Nepal, 3.VIII.1967; 1m, same locality, 14.VII.1967; 2m, same locality, 13-17.VII.1967; 1m, same locality, 20-22.VII.1967; 4m, same locality, 23-26.VII.1967; 1m, 27-30.VII.1967; 1m, Ktmd, Godavari, 5000 ft., 26.V.1967; 1m, same locality, 16.VIII.1967; 1m, same locality, 12.VIII.1967.

*Apenesia alleni* sp. nov.

Holotype. Male. HL 0.85 mm; HW 0.75 mm; WL 0.45 mm; LA 1.55 mm; PL 0.73 mm; WPD 0.45 mm; FWL 2.9 mm; TL 4.3 mm.

Head black; pronotum and mesonotum castaneous; propodeum black; gaster castaneous; mandibles and antennae brown; legs brown to brownish yellow.

Head longer than wide, with weakly convex posterior border. Mandibles with 4 strong teeth. Clypeus weakly rounded apically, with a minute and blunt median tooth. First 5 segments of antennae in a ratio of about 12:3:6:6:6 in length. Eyes 0.38 mm in length, with short erect hairs. Ocelli forming a right triangle; OOL 1.5 x WOT.

Pro- and mesonotum smooth and shining, with scattered punctures. Propodeum 1.62 x as long as wide; median carina present on basal 7/10 of propodeum; disc reticulate.

Discoidal vein arising slightly down on transverse median vein.

Holotype. Male, Kakani forest, 2070 m, Nepal, 1-15.IX.1984, M.G.Allen leg.

Paratypes. 2m, same data as holotype.

Remarks. All the types are deposited in the collection of the Provincial Museum of Alberta, Canada.

Genus *Dissomphalus*

*Dissomphalus nepalensis* sp. nov.

(Figs. 549-551)

Holotype. Male. HL 0.70 mm; HW 0.78 mm; FW 0.43 mm; LA 1.08 mm; LPD 0.33 mm; WPD 0.51 mm; TL 2.8 mm.

Head and alitrunk blackish brown, head darker than alitrunk and almost black; gaster castaneous; mandibles yellowish brown; antennae and legs medium yellow to pale yellow.

Head wider than long, surface densely microreticulate with shallow punctures. Mandibles with 5 teeth; apical tooth acute, the rest 4 small and blunt. Anterior clypeal margin broadly rounded, with a median small tooth. First 5 segments of antennae in a ratio of about 9:3:3:3:3 in length; 2nd segment longer than wide; 3rd segment slightly longer than wide; 4th and 5th each as long as wide. Eyes 0.35 mm in length; FW 1.23 x EL. Ocelli forming a regular triangle; OOL 1.25 x WOT.

Pronotal disc 0.18 x as long as wide, densely microreticulate with shallow punctures. Mesonotum densely microreticulate, punctures less density than those of head and pronotum. Propodeal disc 0.65 x as long as wide; median carina present on basal 4/5 of disc; basal triangular area mostly shining, but weakly reticulate; sublateral areas smooth and shining.

Gaster smooth and shining; the constriction of 2nd tergite as in Figs. 550

and 551.

Variations. Available materials vary in head length 0.70 mm to 0.95 mm, head width 0.70 mm to 0.98 mm, and width of front 0.40 mm to 0.55 mm.

Holotype. Male, Lothar 450 ft., nr. Birganj, Nepal, 6-12. IX. 1967.

Paratypes. 2m, the same locality as holotype, 30. VIII-5. IX. 1967; 1m, same locality, 1. IX. 1967; 1m, same locality, 12-19. IX. 1967; 3m, Kakani forest 2070 m, Nepal, 1-15. IX. 1984, H. G. Allen leg. [deposited in PMA].

Genus *Pseudisobrachium*

*Pseudisobrachium nepalensis* sp. nov.

(Figs. 581-582)

Holotype. Male. HL 0.70 mm; HW 0.65 mm; FW 0.40 mm; LA 1.30 mm; LP 0.53 mm; WPD 0.40 mm; FWL 2.3 mm; TL 3.0 mm.

Head black; pro- and mesonota castaneous, propodeum blackish brown; gaster castaneous but lighter than pro- and mesonota; mandibles, antennae and legs yellow.

Head 1.08 x as long as wide, with weakly convex occipital border and dully angulate posterolateral borders in frontal view; surface microreticulate with shallow punctures moderately. Mandibles with 5 teeth; apical tooth acute and longest, basal 2 smallest and obscure. Anterior border of clypeus trapezoidal.

First 5 segments of antennae in a ratio of about 12:3:5:4.5:4.5 in length; scape 3.4 x as long as wide; 2nd segment slightly longer than wide; 3rd segment 1.7 x as long as wide; 4th and 5th segments each 1.5 x as long as wide. Eyes 0.38 mm in length; the longest hairs on eyes ca. 0.04 mm; FW 1.05 x EL. Ocelli large, DAO ca. 0.09 mm; OOL 0.94 x WOT.

Pro- and mesonota microreticulate, punctures weaker than those of head. Propodeum 1.33 x as long as wide; median areas microreticulate with transverse rugular; sublateral areas rather smooth, with few oblique rugulae.

Gaster smooth and shining.

Variation. Paratypes vary in head length from 0.65 mm to 1.00 mm; head width from 0.60 mm to 1.00 mm, and width of front from 0.35 mm to 0.65 mm.

Holotype. Male, Lothar 450 ft., nr. Birganj, Nepal, 5-12. IX. 1967.

Paratype. 2mm, the same locality as holotype, 30. VIII. -5. IX. 1967; 1m, Godavari 5000 ft., Ktmd, Nepal, 1-14. VIII. 1967; 1m, Godavari 6000 ft., Ktmd, Nepal, 13-17. VIII. 1967; 1m, Pulchauki 6600 ft., Ktmd, Nepal, 14-21. VII. 1967.

Remarks. All the types are deposited in the Canadian National Collection, Ottawa, Canada.

10) A description of a new species of the genus *Protisobrachium* from Asia

*Protisobrachium asianum* sp. nov.

(Figs. 593-596)

Holotype. Male. HL 0.55 mm; HW 0.44 mm; WF 0.29 mm; LA 1.00 mm; LP 0.43 mm; WPD 0.30 mm; FWL 1.9 mm; TL 2.6 mm.

Head black; alitrunk castaneous; gaster brown; mandibles, antennae and legs yellow.

Head rectangular, 1.25 x as long as wide, moderately microreticulate. Mandibles with an apical tooth only. Clypeus broadly produced anteriorly as in Fig. 593. Antennae slender; first 5 segments in a ratio of 7:2:6:6:5.8 in length; 2nd segment as long as wide; 3rd to 5th segments each about 3.0 x as long as wide. Eyes 0.24 mm in length, with erect hairs; WF 1.2 x EL. Ocelli large, forming an acute triangle; OOL 1.33 x WOT.

Pro- and mesonotal dorsa microreticulate; notauli obscure, and unrecognizable at the middle of mesonotum; parapsidal furrows present. Propodeum 1.43 x as long as wide; median carina present on basal 3/5 of disc; basal trian-

gular area microreticulate; sublateral areas including posterior half of disc smooth and shining.

Gaster sessile. Forewing venation as in Fig. 595.

Holotype. Male, Nakhon Ratchasima, Khao Yai National Park, 700-800 m alt., Thailand, 18-24. IV. 1990, E. Fulle leg. [PMA].

Paratypes. 2m, same data as holotype [PMA]; 1m, Khao Yai N. P., 800 m alt., Thailand, 10-16. IV. 1990, B. V. Brown leg. [PMA]; 1m, Khao Yai Nat. Park., Thailand, 10-17. II. 1989, T. W. Thormin leg. [PMA].

Remarks. This is the first record of the genus from Asia, and 2nd species of the genus.

11) Taxonomic revision of the genus *Calyozina*

Genus *Calyozina* Enderlein, 1912

*Calyozina* Enderlein, 1912.

Diagnosis. Small wasps belonging to the tribe Epyrini in subfamily Epyrinae with the following combination of characteristics.

1. Antennae with 13 segments; 3rd to 12th segments each pectinated or broadest at posteriormost.
2. Eyes with hairs.
3. A circular carina present around eyes.
4. PF = 6,3.
5. Pronotal disc wider than long, flat and rectangular; anterior border emarginate; anterolateral corners forming an acute angle.
6. Pronotal disc with large punctures coarsely.
7. Notauli large.
8. Scutellar pits large and circular, slightly to well separated.
9. Propodeum with several discal carinae.
10. Parameres of genitalia forming a broad lobe.
11. Cuspides of genitalia forming a lobe.

Remarks. Female not known.



The characters 3, 5, and 6 are autoapomorphic in this genus. The calyozina species from the Nearctic region by Evans (1964, 1965, 1978) should not belong to this genus, although Krombein (1992) also placed in this genus. Morphological examinations suggested that these Nearctic species should be included in the genus *Epyris* (See Figs. 597-611). The following species are transferred from *Calyozina* to *Epyris* here:

*Epyris amazonicus* (Evans, 1964) comb. nov.

*Epyris neotropicus* (Evans, 1964) comb. nov.

*Epyris mexicanus* (Evans, 1965) comb. nov.

*Epyris azureus* (Evans, 1978) comb. nov.

*Epyris caperatus* (Krombein, 1990) comb. nov..

Key to the species of *Calyozina*

1. Antennal 3-9 segments not ramose, only broadest at posteriormost in each segment (Fig. 624)..... *C. nepalensis* sp. nov.
- Antennae 3-9 segments each ramose (Figs. 613 & 630)..... 2
2. Notauli straight; each groove is tapering to the anteriormost ..... *C. thaiana* sp. nov.
- Notauli diverging toward the anterior front each groove has almost the same width from posterior to anteriormost ..... *C. ramicornis* Enderlein

*Calyozina ramicornis* Enderlein, 1912

(Figs. 612-622)

*Calyozina ramicornis* Enderlein, 1912.

*Calyozina ramicornis*: Krombein, 1992.

Redescription of type. Female. HL 1.10 mm; HW 1.10 mm; WF 0.70 mm; LPD 0.38 mm; WPD 0.43 mm; FWL 3.4 mm; TL 5.0 mm.

Body black; mandibles blackish brown except tip reddish brown; antennae brown; legs dark brown; wings hyaline; veins yellowish brown.

Head as long as wide, with convex posterior border and dully angulate posterolateral borders in frontal view; occipital collar well developed; frons, temples and vertex densely punctate which are ca. 0.05-0.06 mm in diameter. Mandibles slender with an apical tooth only. Median lobe of clypeus triangular, with rounded tip. First 5 segments of antennae in a ratio of 12:5:5:6:8 in length; scape relatively short, 1.7 x as long as wide; pedicel short and moniform, with a cornicle at the center; flagellar segments pectinate; length of blade of 3rd segment 2.4 x length of shaft; 6th segment 1.7 x length of its shaft. Eyes 0.53 mm in length, with short hairs; WF 1.54 x EL.

Ocelli forming an obtuse triangle; OOL 1.2 x WOT.

Pronotal disc 0.44 x as long as wide, with concave anterior border and

lateral borders; anterolateral borders prominently angulate; surface strongly punctate as in Fig. 612; diameter of punctures vary from 0.03 to 0.13 mm; in lateral view, anterodorsal corner forming a right angle. Mesoscutum microreticulate with shallow punctures. Notauli strong and large, diverging toward the front; each groove with almost the same width from posterior to anteriormost. Scutellum microreticulate; scutellar pits large and circular which are 0.13 mm in diameter. Propodeal disc slightly wider than long, with a median carina; basal triangular area reticulate; sublateral carinae present, but weak.

Gaster smooth and shining; 0.90 mm in maximum dorsal width. Anterior half of middle tibiae with several spines.

Specimen examined. Male, Taihorin, Formosa, H. Sauter [holotype, ZMB].

Remarks. Nine to 13 segments of both antennae were lost in holotype.

*Calyozina nepalensis* sp. nov.

(Figs. 623-628)

Holotype. Male, HL 0.90 mm; HW 0.88 mm; FW 0.60 mm; LA 1.60 mm; LPD 0.53 mm; WPD 0.60 mm; FWL 1.53 mm; TL 3.5 mm.

Body black; mandibles and legs blackish brown; antennae blackish brown except 2nd segment and anterior portion of 3rd segment brown; wings hyaline; veins brown.

Head almost as long as wide, with convex posterior border in frontal view, microreticulate with shallow punctures; punctures separated by about 0.5-1.0 x their own diameter. Mandibles with 4 teeth; apical tooth large; basal 3 small and blunt. Median lobe of clypeus triangular, with rounded tip. Antennae not pectinated, but 4th to 12th segments each broadest at posteriormost and weakly produced posteriorly; first 5 segments in a ratio of about 12:7:7:7:8 in length; scape short, 2.0 x as long as wide; 2nd and 3rd segments each 1.75 x as long as wide. Eyes 0.38 mm in length, with short erect hairs; WF 1.58 x EL. Ocelli forming an obtuse triangle; OOL 0.9 x WOT.

Pronotal disc 0.48 x as long as wide, with concave anterior border and lateral borders in dorsal view, and deeply punctate as in text-figure. Mesonotum microreticulate; notauli large and linear, and each groove tapering to the anteriormost; scutellar pits oblique and elliptical, separated by 0.5 x their own maximum diameter. Propodeum 0.88 x as long as wide; median carina reaching the transverse carina; basal triangle reticulate; sublateral areas with transverse rugae, somewhat reticulate.

Gaster smooth and shining; 0.68 mm in maximum dorsal width. Genitalia as in Figs. 627 and 628.

Middle legs without distinct spine.

Holotype. Male, Ktm, Pulchauki, 6600 ft., 2.VII.1967, Can. Exp. [CNC].

*Calyozina thaiana* sp. nov.

(Figs. 629-630)

Holotype. Male. HL 1.25 mm; HW 1.3 mm; WF 0.80 mm; LA 2.50 mm; LPD 0.80 mm; WPD 1.01 mm; FWL 3.7 mm; TL 5.8 mm.

Body black; mandibles blackish brown; antennae brown with reddish tinge; coxae, trochanters and femora blackish brown; fore and middle tibiae brown somewhat reddish; hind tibiae blackish brown to brown; tarsi yellowish brown; wings hyaline; veins yellow and pterostigma brown.

Head slightly wider than long, with convex posterior border in frontal view, microreticulate and densely punctate; punctures ca. 0.04-0.05 mm in diameter. Mandibles with 4 teeth; apical tooth large and acute; basal 3 teeth small and blunt. Median lobe of clypeus triangular. Antennae pectinate; first 5 segments in a ratio of 13:7:6:9:9 in length; scape short and broad, 1.86 x as long as wide; 2nd segment 1.4 x as long as wide, with a cornicle at benter; blade of 3rd segment 2.5 x length of shaft; 5th segment 2.6 x of shaft, and 9th segment 2.1 x of shaft. Eyes 0.60 mm in length, with scattered short erect hairs; FW 1.33 x EL. Front angle of ocellar triangle more than a right angle; OOL 0.86 x WOT. Maxillary palpi with 6 segments, labial with 3 segments.

Propodeal disc 0.44 x as long as wide, strongly punctate as in Fig. 629. Mesonotum strongly microreticulate with scattered small shallow punctures.

Notauli large and linear, and each groove tapering to the anteriormost; scutellar pits elliptical, separated by 1.0 x their own maximum diameter. Propodeal disc

0.79 x as long as wide, with 3 discal carinae which are reaching the transverse carina; sublateral carinae present; median area reticulate; sublateral and lateral areas with rather strong transverse rugae.

Gaster smooth and shining, 1.03 mm in maximum dorsal width.

Middle tibiae without distinct spine.

Paratype. A single paratype male with the following measurements: HL 1.10 mm; HW 1.05 mm; FW 0.63 mm; LA 2.95 mm; LPD 0.55 mm; WPD 0.78 mm; FWL 3.1 mm; TL 5.0 mm. Middle and hind tibiae blackish brown, while fore tibiae brown somewhat reddish.

Holotype. Male, Nakhon Ratchasima, Khao Yai National Park, 700-800 m alt., 18-24. IV. 1990, E. Fuller leg. [PMA]

Paratype. 1 m, Bangkok 180 km N. E., Khao Yai, N. P. 780 m, 10-16. IV. 1990, B. V. Brown leg. [PMA].

12) The staphylinoides species-group of the genus *Epyris*

Genus *Epyrus* Westwood, 1832

*Epyris* Westwood in Hope, 1837.

*Paracalyzoa* Cameron, 1909. [Synonymized by Krombein, 1992]

*Pseudocalyzoa* Turner, 1915. [Synonymized by Krombein, 1992]

*Calyzella* Enderlein, 1920. [Synonymized by Krombein, 1992]

Diagnosis of *Staphylinoides* species-group

Male.

- 1) 2nd and 3rd antennal segments small, especially 3rd segment being reduced to a small ring-joint.
- 2) 4th to 12th antennal segments each pectinated; terminal segment flat and blade shaped.
- 3) Eyes without hairs.
- 4) Pronotum with smooth contours.
- 5) Scutellar pits large, more or less round, and well separated.
- 6) Propodeum with several discal carinae.
- 7) Parameres of genitalia very long and slender.
- 8) Cuspides of genitalia biromous, very large and slender.

Female

- 1) Antennae with 13 segments, each segment simple and cylindrical.
- 2) Lower margin of mandibles with a large and blunt subapical tooth.
- 3) Pronotum with smooth contours.
- 4) Scutellar pits well-separated, the pits connected anteriorly by a narrow impressed line.
- 5) Middle tibiae with 2-3 rows of short spines.

*Epyris staphylinoides* (Hope)

(Figs. 631-652)

*Calyzoa staphylinoides* Hope, 1837.

*Epyris staphylinoides*: Krombein, 1992.

*Calyzoa ashmeadi* Enderlein, 1901. [Synonymized by Krombein, 1992]

*Calyzoa ramosa* Meunier, 1906. [Synonymized by Krombein, 1992]

*Epyris puduma* Krombein, 1992

*Epyris puduma* Krombein, 1992.

*Epyris hirtipennis* (Cameron)

(Figs. 655-660)

*Paracalyzoa hirtipennis* Cameron, 1909. [Synonymized of *Calyzina flavipennis* by Turner, 1915]

*Epyris hirtipennis*: Krombein, 1992.

*Calyzina flavipennis* Turner, 1914. [Synonymized by Turner, 1915.]

*Calyzoa nigra* Kieffer, 1922. [Synonymized by Krombein, 1992.]

*Parepyris bryanti* Turner, 1928. [Synonymized by Krombein, 1992.]

*Epyris sumatranus* (Enderlein, 1917)

*Calyzoa sumatrana* Enderlein, 1917.

*Epyris sumatrana* [sic.] (Enderlein) [Combined by Krombein, 1992.]

*Epyris sumatrensis* Krombein, 1992

*Calyzella flavipennis* Enderlein, 1920. [Preoccupied in *Epyris flavipennis* (Turner, 1914).]

*Epyris sumatrensis* Krombein, 1992. [New name for *E. flavipennis*.]

*Epyris formosus* Terayama

*Epyris apicalis* Walker in Smith, 1876.

*Calyzella sauteri* Enderlein, 1920.

*Epyris sauteri*: Krombein, 1992.

*Epyris sauteri*: Terayama [Synonymized of *Epyris apicalis* Walker by Terayama; see the part II in this paper.]

*Epyris formosus* Terayama [Replace name for *E. apicalis* Walker; part II in this paper.]

*Epyris rufiventris* (Kieffer, 1907)

*Calyzoa rufiventris* Kieffer, 1907.

*Epyris rufiventris* (Kieffer). [Combined by Krombein, 1992.]

*Epyris budda* sp. nov.

(Figs. 661-665)

Holotype. Male. HL 1.13 mm; HW 1.05 mm; FW 0.70 mm; LA 2.10 mm; LPD 0.63 mm; WPD 0.88 mm; FWL 3.2 mm; TL 5.3 mm.

Body black; mandibles yellowish brown, masticatory border dark brown; 1st to 3rd antennal segments castaneous; 4th to terminal segments yellowish brown; fore coxae and femora castaneous; fore tibiae and tarsi yellow; middle legs

brown; hind coxae and femora castaneous; hind tibiae yellow to yellowish brown; hind tarsi yellow.

Head 1.08 x as long as wide, with rather strongly convex posterior border; frons subopaque with moderately punctate; vertex sparsely punctate. Mandibles with 3 teeth; apical tooth most developed. Median lobe of clypeus forming nearly a right angle at middle. Antennae pectinate as in Figs. 662 & 665; first 5 segments in a ratio of about 14:2:1:5:5 in length. Eyes 0.55 mm in length; FW 1.27 x EL. Front angle of ocellar triangle obtuse; OOL 1.27 x WOT.

Pronotal disc microreticulate with shallow but large punctures. Mesonotum microreticulate with scattered punctures; scutellar pits large, 0.10 mm in length. Propodeal disc 0.72 x as long as wide, with 5 discal carinae; basal triangular area with strong transverse rugae; sublateral areas with transverse rugae.

First and 2nd gastral tergites smooth and shining; 3rd to 7th tergites weakly microreticulate and subopaque.

Holotype. Male, 70 km S.W., Chiang Mai, Doi Inthanon, N. P., Vachiratharn Falls, 800 m, Thailand, 28. IV. 1990, B. V. Brown leg. [PMA].

Paratypes. 2m, same locality as holotype, 7-11. V. 1990, B. V. Brown leg. [PMA]; 1m, Khao Yai, N. P., 780 m, Thailand, 16-24. IV. 1990, B. V. Brown leg. [PMA].

*Epyris aequatorialis* sp. nov.

(Figs. 666-678)

Holotype. Male. HL 1.45 mm; HW 1.53 mm; FW 0.95 mm; LA 2.60 mm; LPD 0.75 mm; WPD 1.18 mm; FWL 4.7 mm; TL ca. 6.0 mm.

Body black; mandibles blackish brown; antennae blackish brown to brown; legs blackish brown.

Head wider than long, with gently convex posterior borders in frontal view. Frons microreticulate with shallow punctures; vertex sparsely punctate. Mandibles with 3 teeth; apical tooth acute and most developed. Median lobe of clypeus narrow, forming an acute angle. Antennae pectinate; first 5 segments in a ratio of about 16:2:2:7:7 in length. Eyes 0.80 mm in length; FW 1.19 x EL. Ocelli forming a compact triangle; OOL 1.31 x WOT.

Pronotal disc microreticulate with shallow punctures. Mesonotum microreticulate; scutellar pits round, 0.09 mm in diameter. Propodeum 0.64 x as long as wide, with 5 discal carinae; basal triangular area with strong transverse rugae; sublateral areas with transverse rugulae.

First and 2nd gastral tergites smooth and shining; 3rd to 7th weakly microreticulate and subopaque. Subgenital plate as shown in Fig. 678; genitalia as in Figs. 672 and 673.

Holotype. Male, Prazer's Hill, Pahang, Malaya, 27. X. -3. XI. 1977, B. Bendell leg. [PMA].

*Epyris indra* sp. nov.

(Fig. 679)

Holotype, female. HL 1.28 mm; HW 1.25 mm; FW 0.85 mm; LA 2.63 mm; LPD 0.84 mm; WPD 1.03 mm; FWL 3.9 mm; TL 6.8 mm.

Body black; mandibles castaneous; antennal scapes castaneous; funiculus brown; legs castaneous except fore tibiae and fore tarsi brown.

Head as long as wide, with weakly convex posterior border in frontal view, subopaque and weakly microreticulate with scattered small punctures. Mandibles 5 teeth; basal two small and rounded; subapical tooth of lower margin obtuse triangular. Median lobe of clypeus forming a compact obtuse triangle. First 5 segments of antennae in a ratio of 20:4:3:7:7 in length. Eyes 0.50 mm in length; FW 1.70 x EL. Ocelli forming an acute triangle; POL:AOL = 1:2; OOL 2.44 x WOT.

Pronotal disc microreticulate, with moderately punctate; mesonotum microreticulate, with scattered shallow punctures only. Propodeal disc 0.82 x as long as wide, with 5 straight discal carinae; median and submedian areas transversely rugulae; sublateral areas dully and rather weakly microreticulate.

Variation. Materials examined vary in head length 0.98 mm to 1.28 mm, and in head width from 0.95 mm to 1.25 mm.

Holotype, Female, Nakhon Ratchasima, Khao Yai National Park, 700-800 m, Thailand, 18-24. IV. 1990, E. Fuller leg. [PMA].

Paratypes. 2f. same data as holotype; 1f. Doi Inthanon Nat. Park, 70 km S.W., Chiang Mai, 1260 m, Thailand, 31. I-7. II. 1989, T. W. Thormin leg. [PMA]; 1f, 70 km S. W., Chiang Mai, Doi Inthanon N. P., 800 m, Thailand, 7-11. V. 1990, B. V. Brown leg. [PMA].

*Epyris shakha* sp. nov.

(Fig. 680)

Holotype. Female. HL 1.05 mm; HW 1.20 mm; WF 0.85 mm; LA 2.60 mm; LPD 0.68 mm; WPD 0.93 mm; FWL 3.4 mm; TL 6.6 mm.

Body black; posterior half of 5th gastral tergite and 6th gastral segment reddish brown; mandibles yellowish brown; antennae dark brown, underside light brown; legs dark brown except tarsi brown.

Head wider than long, with straight posterior border in frontal view, subopaque and weakly microreticulate with scattered shallow punctures. Mandibles with a strong apical tooth and 4 small and blunt basal teeth; outermargin with a broadly rounded subapical tooth. Median lobe of clypeus broadly rounded. First 5 segments of antennae with a ratio of 18:4:4:1.5:6 in length. Eyes 0.50 mm in length; WF 1.70 x EL. Ocelli forming an obtuse triangle; POL:AOL = 7:4; OOL 1.73 x WOT.

Pronotal disc weakly microreticulate, with scattered shallow punctures.

Mesonotal disc subopaque, weakly microreticulate, and impunctate. Propodeal disc 0.73 x as long as wide, with 5 discal carinae; median and submedian areas with transverse rugae; sublateral areas microreticulate with rugosity.

Holotype. Female, Doi Inthanon Nat. Park, 70 km S.W., Chiang Mai, 1260 m, Thailand, 31. I-7. II. 1989, T. W. Thormin leg. [PMA].

Paratype. 1f, same data as holotype [PMA].

*Epyris maya* sp. nov.

(Fig. 681)

Holotype. Female. HL 1.75 mm; HW 2.10 mm; WF 1.45 mm; LA 3.75 mm; LPD 1.10 mm; WPD 1.65 mm; FWL 5.8 mm; TL 10.0 mm.

Body black; posterior half of mandible black; anterior half reddish brown; antennal scapes black except anteriormost reddish; antennal funiculus blackish brown, undersides from 6th to terminal segments light brown; fore coxae and trochanters blackish brown; fore femora and tibiae black; fore tarsi medium brown; middle and hind legs blackish brown except tarsi brown; wings tinged with yellowish brown.

Head wider than long, with almost straight, but very weakly concave posterior border in frontal view, smooth and rather subopaque with large punctures. Mandibles not dissected; however, large apical and preapical teeth and 2 small blunt teeth are visible; outer margin with a broad subtriangular

subapical tooth. Median lobe of clypeus small, broadly rounded. First 5 segments of antennae in a ratio of 34:8:7:10:9 in length. Eyes 0.85 mm in length; WF 1.71 x EL. Ocelli forming a compact triangle; OOL 2.0 x WOT.

Pronotal disc weakly microreticulate with punctures. Mesonotal disc smooth and subopaque with scattered shallow punctures. Propodeal disc 0.67 x as long as wide, with 5 discal carinae, surface between the carinae weakly striate; median and submedian areas depressed; sublateral areas with transverse rugulae.

First and 2nd gastral tergites smooth and shining; 3rd to 6th tergites with many of small punctures.

Holotype. Female, Nakhon Ratchasima, Khao Yai National Park, 700-800 m, 11-18. IV. 1990, E. Fuller leg. [PMA].

Paratypes. 15f, same data as holotype [PMA]; 8f, 70 km S. W., Chiang Mai, Doi Inthanon, N. P., 800 m, 28. VI. 1990, B. V. Brown leg. [PMA]; 2f, 180 km N. E., Bangkok, Khao Yai N. P., 780 m, 11-18. IV. 1990, B. V. Brown leg. [PMA]; 3f, same locality, 18-24. IV. 1990, B. V. Brown leg. [PMA]; 1f, same locality, 10-16. IV. 1990, B. V. Brown leg. [PMA]; 1f, same locality, 16-20. IV. 1990, B. V. Brown leg. [PMA].



13) The dodecatomus species-group of the genus *Epyris* from Asia

Diagnosis of dodecatomus species-group.

Male.

1. Antennal funicular segments simple and cylindrical.
3. 2nd and 3rd antennal segments each short, especially 3rd segment reduced to a narrow ring-joint.
4. Eyes without hairs.
5. Scutellar pits more or less round, well separated.
6. Parameres of genitalia extremely long and slender.
7. Cuspides long and slender, biramose.

This species group resembles to the stapylinoides species-group, but it is separated latter by the character 1 in male, and the absence of subapical tooth on lower margin of mandibles and the absence of 2-3 rows of short spines on middle tibiae in female (Krombein, 1992).

*Epyris shiva* sp. nov.

(Figs. 682, 684)

Holotype. Male. HL 1.50 mm; HW 1.40 mm; FW 0.78 mm; LA 2.80 mm; LPD 0.90 mm; WPD 1.35 mm; FWL 4.1 mm; TL 6.8 mm.

Body black; mandibles and antennae reddish brown; legs reddish brown except fore tibiae brown.

Head round, slightly longer than wide, smooth and shining with small punctures moderately. Mandibles with an apical tooth only. Median lobe of clypeus relatively broad, forming an obtuse angle. First 5 segments of antennae in a ratio of about 13:3:1.5:11:10 in length; scape short, 1.8 x as long as wide; 2nd segment 0.6 x as long as wide; 3rd segment forming a ring-joint; 4th segment 1.8 x as long as wide. Eyes 0.70 mm in length; FW 1.1 x EL. Ocelli forming an obtuse triangle; POL:AOL = 7:3; OOL 1.43 x WOT.

Pronotal disc smooth and shining, with small punctures moderately. Punctuation of mesoscutum coarser than that on pronotum; scutellum mostly smooth and impunctate. Propodeal disc 0.67 x as long as wide, with straight posterior border; 5 discal carinae present; surface between the carinae striate.

2nd gastral tergite smooth and shining, with shallow small punctures sparsely; 3rd to 6th segments weakly microreticulate and moderately punctate.

Holotype. Male, Nakhon Ratchasima, Khao Yai National Park, 700-800 m, Thailand, 18-24. IV. 1990, E. Fuller leg. [PMA].

Paratypes. 11m, same data as holotype [PMA]; 2m, same locality, 11-

18. IV. 1990, E. Filler leg. [PMA]; 3m, same locality, 12-18. IV. 1990, E. Filler leg. [PMA]; 1m, Chiang Mai, Doi Inthanon National Park 1300 m, 7-12. V. 1990, E. Filler leg. [PMA]; 7m, 70 km S. W. Chiang Mai, Doi Inthanon N. P., Vachiratharn Falls, 800 m, Thailand, 28. IV.-7. V. 1990, B. V. Brown leg. [PMA]; 1m, same locality, 7-11. V. 1990, B. V. Brown leg. [PMA]; 2m, 180 km N. E. Bangkok, Khao Yai N. P., 780 m, Thailand, 11-16. IV. 1990, B. V. Brown leg. [PMA]; 1m, same locality, 10-16. IV. 1990, B. V. Brown leg. [PMA]; 1m, same locality, 16-20. IV. 1990, B. V. Brown leg. [PMA]; 2m, same locality, 16-24. IV. 1990, B. V. Brown leg. [PMA].

*Epyris leytenus* sp. nov.

(Figs. 683, 685-688)

Holotype. Male. HL 1.10 mm; HW 1.00 mm; FW 0.58 mm; LA 1.90 mm; LPD 0.73 mm; WPD 0.75 mm; FWL 3.3 mm; TL 5.4 mm.

Body black; mandibles dark brown; antennal scapes dark brown; funiculus brown; coxae and femora blackish brown; trochanters and tibiae dark brown to brown; tarsi yellow.

Head round, slightly longer than wide, smooth and shining with scattered shallow punctures sparsely. Mandibles with an apical tooth alone. Median lobe of clypeus forming a right angle. Antennae as in Fig. 685; first 5 segments in a ratio of 10:3:1:13:10 in length. Eyes 0.53 mm in length; FW 1.09 x EL. Front

angle of ocellar triangle obtuse; POL:AOL = 3:2; OOL 1.45 x WOT.

Dorsa of pronotum and mesonotum weakly microreticulate; scutellar pits circular which are ca. 0.08 mm in diameter, separated by 1.0 x their own diameter.

Propodeal disc almost as long as wide, with 3 discal carinae; surface between carinae striate; sublateral areas with transverse rugae; posterolateral corners with blunt short teeth.

First and 2nd gastral tergites smooth and shining; 3rd to 6th segments very weakly microreticulate.

Holotype. Male, Leyte, Baybay, Philippines, 6. II. 1983, C. K. Starr & M. Tumilap. [PMA].

Paratype. 1m, same data as holotype [PMA].

*Epyris karnatakensis* sp. nov.

Holotype. Female. HL 1.10 mm; HW 1.04 mm; FW 0.58 mm; LP 2.00 mm; LPD 0.60 mm; WPD 0.80 mm; FWL 3.6 mm; TL 5.5 mm.

Body black; mandibles, antennae, and fore and middle legs yellowish brown; hind coxae, femure, trochanters medium to dark brown; hind tibiae and tarsi yellowish brown.

Head as long as wide, with weakly convex posterior border; anterior 1/4 weakly microreticulate; posterior 3/4 of head smooth with scattered shallow

small punctures. Mandibles slender, with an acute apical tooth only. Median lobe of clypeus rather broad, forming an obtuse angle. First 5 segments of antennae in a ratio of about 10:3:1:10:10 in length; scape short, as long as 4th segment; 2nd segment 0.6 x as long as wide; 3rd segment forming a ring-joint. Eyes 0.50 mm in length; FW 1.16 x EL. Front angle of ocellar triangle about a right angle; OOL 1.6 x WOT.

Pronotal disc flat, 0.66 x as long as wide, smooth and subopaque. Mesonotum smooth with shallow small punctures sparsely; scutellar pits round, separated by 2.0 x their own diameters. Propodeal disc wider than long, 0.75 x as long as wide, with 5 discal carinae; surface between carinae weakly striate; sublateral areas with weak transverse rugulae.

First and 2nd gastral tergites smooth and shining; 3rd to 5th microreticulate with shallow punctures moderately.

Holotype. Female, Karnataka, 12 km sw. Yellapur, India, 7.VII-14.VIII.1984, B. Gill leg. [PMA].

14) Two new species of the genus *Epyris* from the Southeast Asia

These two new species are distinguished from the other congeners by the following combinations of characters: 1) antennae with 13 segments, each flagellum segment cylindrical; 2) antennal 2nd segment short, forming a ring-joint; 3) parameres divided into two lobes, one is large and the other is small and thin; 4) cuspides very long and slender.

*Epyris sarawakensis* sp. nov.

Holotype. Male. HL 0.88 mm; HW 0.90 mm; WF 0.50 mm; LA 1.75 mm; LPD 0.40 mm; WPD 0.68 mm; LFW 1.40 mm; TL 4.3 mm.

Color black; antennae blackish brown, underside somewhat reddish; legs testaceous except tarsi yellow; forewings weakly clouded except apical and marginal portions hyaline.

Head as long as wide, surface smooth and shining with small shallow punctures sparsely. Mandibles with 5 blunt teeth, apical tooth most developed. Median lobe of clypeus forming an obtuse angle. First 5 segments of antennae in a ratio of 8:2.5:7:9:9 in length; scape 2.0 x as long as wide; 2nd segment 0.71 x as long as wide; 3rd segment 1.75 x as long as wide. Eyes 0.43 mm in length, without hairs; WF 1.16 x EL. Front angle of ocellar triangle obtuse;

OOL 1.30 x WOT.

Pronotal disc broad, 0.69 x as long as wide; surface smooth and shining with small shallow punctures spately. Mesonotum smooth and shining, impunctate; scutellar pits round, separated by 3.2 x their own diameters. Propodeal disc wider than long, with 5 discal carinae, surface between the carinae strongly striate; sublateral areas with oblique rugulae.

Holotype. Male, Sarawak, Sematin, Malaysia, 23. II. 1987, Finnamore & Baxfield leg., [PMA].

Paratypes. 15m, the same data as holotype; 4m, same locality, 21-23. II. 1987, Finnamore & Baxfield leg., [PMA].

*Epyris luzonensis* sp. nov.

(Figs. 689-694)

Holotype. Male. HL 1.03 mm; HW 1.08 mm; FW 0.63 mm; LA 2.15 mm; LPD 0.55 mm; WPD 0.65 mm; FWL 3.15 mm; TL 4.9 mm.

Color black; antennae black weakly brownish; legs castaneous except tarsi yellowish brown; wings subhyaline, slightly brownish except apically.

Head slightly wider than long, with almost straight occipital border in frontal view; surface smooth and shining with punctures rather spately. Mandibles with 5 teeth; apical tooth acute and longest, others small and blunt. Median carina of clypeus forming a obtuse angle. First 5 segments of mandibles

in a ratio of 10:2:10:12.5:12:5 in length; scape short, 1.25 x as long as wide; 2nd segment 0.36 x as long as wide; 3rd segment 1.54 x as long as wide. Eyes without hairs, 0.50 mm in length; FW 1.26 x EL. Front angle of ocellar triangle obtuse; DAO 0.08 mm; OOL 1.17 x WOT.

Pronotal disc wide, 0.66 x as long as wide; surface smooth and shining with punctures moderately. Mesonotum smooth and shining, impunctate; notauli short and wide; scutellar pits circular, separated by 5.0 x their own diameters. Propodeal disc 0.85 x as long as wide, with 5 discal carinae, surface between the carinae strongly striate; sublateral areas with transverse rugulae.

Paratype genitalia. Shown as in Figs. 693-694.

Holotype. Male, Luzon, San Gabriel, Philippine, 20. V. 1974, S. Ueda leg., [NIAES].

Paratypes 6m, the same data as holotype, [NIAES, NASM]; 2m, Liukuei, Taiwan, 29. IV. 1971, N. Fukuhara leg., [NIAES].

15) The longicephalus species-group of the genus *Epyris* from Asia

This species group may be separatable from the others by the following combination of characteristics.

Female

- 1) Head oval, occipit elongate; posterolateral corners not forming an angle in frontal view.
- 2) Mandibles relatively long, with 4-5 teeth.
- 3) Eyes with relatively long erect hairs.
- 4) Antennae with 13 segments; scape long, at least the same length of eye; funiculus widest at 5 or 6th segments.
- 5) Notauli relatively broad.
- 6) Scutellar pits rectangular, wider than long, separated by a thin lamellar wall.
- 7) Propodeum wider than long with several discal carinae.
- 8) Head and pronotum strongly microreticulate, with small punctures coarsely.

Male.

The shape of head, alitrunk and propodeum as in female, except antennae of

which scapes short and 4th segment broadest. Subgenital plate very small, with a basal stalk. Genitalia also very small; parameres lobe-shaped; cuspides biramose.

*Epyris longicephalus* sp. nov.

(Figs. 693-695)

Holotype. Female. HL 1.35 mm; HW 1.05 mm; FW 0.65 mm; LA 2.25 mm; LPD 0.55 mm; WPD 0.95 mm; FWL 3.6 mm; TL 5.7 mm.

Body black; antennae, legs, and tip of gaster reddish brown; forewings subhyaline, tinged with yellowish brown; subcosta and pterostigma brown, and other veins yellowish brown.

Head 1.42 x as long as wide; general shape as in Fig. 694. Anterior border of clypeus forming an acute triangle. First 5 segments of antennae in a ratio of 21:7:7:7:5 in length; scape 3.0 x as long as wide; 2nd segment 1.4 x as long as wide, 3rd 1.2 x as long as wide; 4th and 5th segments each slightly wider than long. Eyes 0.48 mm in length; the longest hair on eyes 0.07 mm. Ocelli relatively large, forming a compact triangle; DAO 0.06 mm.

Mesoscutum strongly microreticulate, but impunctate; notauli slightly diverging toward the front. Scutellar pits rectangular, 2.0 x as long as wide. Propodeal disc 0.58 x as long as wide, with 7 discal carinae; sublateral carina present; surface between the carinae strongly striate.

Holotype. Female, Peitoh, Taiwan, 20.V.1929, K. Sato leg. [NASM].

Paratype. 1f, Suigen, Keikido, Korea, VI. 1930, K. Sato leg. [NASM].

Distribution. Taiwan, Korea.

*Epyris thaianus* sp. nov.

Holotype. Female. HL 1.25 mm; HW 1.05 mm; FW 0.75 mm; LA 2.40 mm; LPD 0.75 mm; WPD 1.00 mm; FWL 3.5 mm; TL 6.0 mm.

Body black; mandibles reddish brown; antennal scapes blackish brown; over-side of funicles dark brown, underside reddish brown; legs dark brown; tip of gaster reddish brown; forewings subhyaline; veins yellowish brown.

Head 1.19 x as long as wide. Anterior border of clypeus forming an acute triangle. Mandibles with 5 tooth. First 5 segments of antennae in a ratio of 21:7:7:6:5 in length; scape 3.0 x as long as wide; 2nd segment 1.4 x as long as wide; 3rd as long as wide; 4th to 11th segments each distinctly wider than long. Eyes 0.53 mm in length; the longest hair on eyes 0.08 mm in length. Ocelli forming an acute triangle.

Mesoscutum microreticulate, impunctate; notauli linear, diverging toward the front. Scutellar pits transversely long, ca. 2.4 x as long as wide. Propodeal disc 0.75 x as long as wide, with 5 discal carinae; 2 pairs of sub-lateral carinae present; surface between the carinae strongly striate.

Variation. The smallest individual has following measurements: HL 0.85 mm;

HW 0.70 mm; TL 3.8 mm.

Holotype. Female, Nakhon Ratchasima, Khao Yai National Park, 700-800 m, Thailand, 12-18. IV. 1990, E. Fuller leg. [PMA]

Paratypes. 8f, same data as holotype [PMA]; 1f, Bangkok 180 km N. E., Khao Yai N. P., 780 m, Thailand, 10-16. IV. 1990, B. V. Brown leg. [PMA]; 1f, Bangkok 180 km N. E., Khao Yai N. P., 800 m, Thailand, 10-16. IV. 1990, B. V. Brown leg. [PMA]; 1f, Khao Yai N. P., 780 m, Thailand, 16-24. IV. 1990, B. V. Brown leg. [PMA]; 1f, Chiang Mai, Thailand, 20-23. IV. 1989, G. T. Baker leg. [PMA].

*Epyris nepalensis* sp. nov.

Holotype. Female. HL 0.78 mm; HW 0.72 mm; FW 0.44 mm; LP 1.49 mm; LPD 0.51 mm; WPD 0.61 mm; FWL 2.3 mm; TL 3.9 mm.

Head and alitrunk black; gaster blackish brown; mandibles reddish brown; antennae reddish brown to dark brown; legs yellowish brown with reddish tinge; wings hyaline; subcosta, pterostigma, and radial veins brown; others yellowish brown.

Head 1.08 x as long as wide. Mandibles with 5 tooth. Anterior border of clypeus broadly rounded. First 5 segments of antennae in a ratio of 14:5:4:4:4 in length; scape 2.8 x as long as wide; 2nd segment slightly longer than wide; 3rd to 5th segments each almost as long as wide. Eyes 0.35 mm in length; the longest hair on eyes ca. 0.04 mm. Front angle of ocellar triangle almost a

right angle.

Mesoscutum strongly microreticulate, with shallow punctures; notauli linear, diverging toward the front.

Propodeal disc 0.84 x as long as wide, with 5 discal carina; sublateral carinae absent; sublateral and lateral areas with strong transverse rugae.

Holotype. Female, Kakani forest, 2070 m, Nepal, 1-15.IX.1984, M. G. Ailen leg. [CAS].

*Epyris malayanus* sp. nov.

Holotype. Male. HL 1.40 mm; HW 1.25 mm; FW 0.70 mm; LA 2.60 mm; LPD 0.65 mm; WPD 1.20 mm; FWL 3.8 mm; TL 5.9 mm.

Body black; mandibles reddish brown; antennal scapes reddish brown, funicles dark brown; legs dark brown except tarsi brown; forewings subhyaline, tinged with yellowish brown; costa, subcost, pterostigma, and radial veins dark brown; others yellowish brown.

Head 1.13 x as long as wide. Anterior border of clypeus broadly rounded. First 5 segments of antennae in a ratio of 10:4.5:7:7.5:7 in length; scape 2.2 x as long as wide; 2nd segment 1.2 x as long as wide; 3rd 1.8 x as long as wide; 4th broadest, 1.8 x as long as wide; and 5th 1.8 x as long as wide. Eyes 0.40 mm in length; the longest hair on eyes ca. 0.04 mm. Front angle of ocellar triangle obtuse.

Anterolateral corners of pronotum forming an angle. Mesonotum weakly microreticulate, with shallow punctures sparsely; notauli large, diverging toward the front; parapsidal furrows strong. Propodeal disc 0.54 x as long as wide, with 5 discal carinae; sublateral areas strongly reticulate.

Gaster smooth and shining; subgenital plate 0.48 mm in length including median basal stalk.

Holotype. Female, Long Lama, Sarawak, Malaysia, 12-13.II.1987, A. T. Finnamore & C. Baxfield leg. [PMA].

16) Description of a new species of the genus *Epyris* from Taiwan

*Epyris nantohensis* sp. nov.

(Figs. 696-700)

Holotype. Female. HL 1.10 mm; HW 0.88 mm; WF 0.63 mm; LA 2.40 mm; LPD 0.73 mm; WPD 0.78 mm; FWL 3.8 mm; TL 7.5 mm.

Body black; mandibles reddish brown; anterior 2/3 of antennal scapes dark brown, and the last reddish brown; funicular segments yellowish brown, somewhat reddish; coxae, trochanters dark brown; fore and middle femora dark brown except posterior portion reddish brown; hind femora reddish to yellowish brown except middle portion dark brown; tibiae reddish brown; tarsi yellow.

Head rectangular, with straight posterior border and subparallel sides in frontal view; anterior 1/3 of surface microreticulate and posterior 2/3 smooth; front, vertex, and occiput with coarse longitudinal punctures densely. Mandibles with an acute apical tooth only (Fig. 699). Median lobe of clypeus narrowly rounded. Antennae short, not reaching the posteriormost of pronotum; scape 2.4 x as long as wide; 2nd segment slightly longer than wide; 3rd 0.75 x longer than wide; 4th as long as wide; first 5 segments in a ratio of 7:4.5:3:5:5 in length. Eyes flat, 0.38 mm in length, and scattered long

erect hairs which are ca. 0.06-0.08 mm in length; WF 1.66 x EL. Ocelli small, forming an acute triangle; OOL 2.11 x WOT.

Pronotal disc 0.90 x as long as wide, microreticulate with longitudinal punctures densely. Mesonotum microreticulate and impunctate; notauli thin, but complete; scutellar pits oblique, connected anteriorly by a narrow impressed line. Propodeal disc slightly longer than wide, with straight posterior border; lateral bords almost parallel, but broadest at posteriormost; median carina straight, reaching the transverse carina; median areas reticulate; lateral areas microreticulate, with transverse rugulae.

Legs short and stout. First tarsal segment of fore legs with 3 stout spines at anterior to mid portion of outside, and 4 spines at apices (Fig. 700); 2nd and 3rd segments with 3 and 2 apical spines, respectively. Middle tibiae spinose (Fig. 701).

Gaster smooth; posterior 2/3 of 2nd gastral tergite and 1/3 of 3rd tergite scattered shallow small punctures; 4th to 6th tergites with small shallow punctures moderately; in dorsal view, 2nd gastral tergite 1.4 x as wide as long; 3rd 1.5 x as wide as long; maximum width of 3rd tergite 1.14 x maximum width of 2nd tergite; sternites as in Fig. 702.

Holotype, Female, Shanlinshi, Nantou Hsien, Taiwan, 16.V.1990, L. LeSage leg.

Type depository. Province Museum of Alberta, Canada.

Remarks. The specimen is collected by sweeping at primary forest.



17) Three new species of the genus *Glenosema* from Asia

This genus is easily distinguished the others by elongate mandibles with a row of denticles of inner margin. This is recorded from the Oriental region for the first time.

*Glenosema* *khaoyaiensis* sp. nov.

(Figs. 701-705)

Holotype. Female. HL 0.45 mm; HW 0.44 mm; FW 0.28 mm; LA 0.75 mm; LPD 0.25 mm; WPD 0.29 mm; FWL 1.2 mm; TL 4.1 mm.

Head and alitrunk black; gaster castaneous; mandibles; antennae and legs yellow.

Head almost as long as wide, with convex posterior border, smooth and shining with scattered small punctures. Mandibles elongate, masticately margin with 7 teeth. Anterior border of clypeus truncate. First 5 segments of antennae in a ratio of about 7:4.5:1.2:2:2; scape strongly curved; 2nd segment 3.0 x as long as wide; 3rd segment wider than long; 4th segment slightly longer than wide. Eyes 0.20 mm in length; FW 1.4 x EL. Front angle of ocellar triangle less than a right angle; WOT 2.4 x OOL.

Pro- and mesonota microreticulate. Propodeal disc 0.86 x as long as wide, with parallel sides and straight posterior border; median carina reaching the

transverse carina; sublateral carinae present, reaching the transverse carina; disc microreticulate in most part.

Gaster almost smooth and shining, and very faintly microreticulate.

Holotype. Female. Khao Yai Nat. Park, 40 km S of Pak Chong, Thailand, 10-17. II. 1989, T.W. Thormin leg.

Paratypes. 7f, same data as holotype.

Type depository. All the types are preserved in the collection of the Provincial Museum of Alberta, Canada.

*Glenosema* *chiangmaiensis* sp. nov.

(Figs. 708-709)

Holotype. Female. HL 0.68 mm; HW 0.73 mm; FW 0.48 mm; LA 1.28 mm; LPD 0.38 mm; WPD 0.53 mm; FWL 1.9 mm; TL ca. 4.5 mm.

Head and alitrunk black; gaster black except posterior half of 1st and 2nd gastral tergites, and terminal segment reddish brown; mandibles blackish brown; antennae brown; coxae, trochanters and femora dark brown; tibiae and tarsi brown to yellowish brown.

Head wider than long, with convex posterior border, microreticulate with small but distinct punctures. Mandibles with 7 teeth. Anterior border of clypeus transverse. First 5 segments of antennae in a ratio of 14:5:3.5:3:3 in length; scape strongly curved; 2nd segment 2.5 x as long as wide; 3rd 1.8 x as

long as wide; 4th and 5th segments each slightly longer than wide. Eyes 0.25 mm in length, with relatively long erect hairs; FW 1.92 x EL. Ocelli forming a compact triangle; DAO 0.07 mm; OOL 2.3 x WOT.

Pronotum coarsely microreticulate with scattered shallow punctures. Mesonotum coarsely microreticulate. Propodeal disc 0.72 x as long as wide, with parallel sides and straight posterior border in dorsal view; 5 straight discal carinae present; surface with transverse rugae and weakly reticulate.

Gaster microreticulate and subopaque.

Holotype. Female. Doi Inthanon nat. Park, 1260m, 70 km SW Chang Mai, Thailand, 31. I-7. II. 1989, T. W. Thormin leg.

Type depository. The holotype deposited in the Provincial Museum of Alberta, Canada.

*Glenesoma doiensis* sp. nov.

(Figs. 710-711)

Holotype. Female. HL 0.58 mm; HW 0.60 mm; FW 0.40 mm; LA 0.93 mm; LPD 0.30 mm; WPD 0.40 mm; FWL 1.7 mm; TL ca. 3.0 mm.

Head and alitrunk black; gaster castaneous; mandibles blackish brown; antennae brown; coxae dark brown, trochanters yellowish brown; femora dark brown except yellowish apical portion; tibiae and tarsi yellowish brown.

Head almost as long as wide, with concave posterior border in frontal

view, microreticulate and impunctate. Mandibles with 7 teeth. Anterior border of clypeus transverse, with a small median tooth. Eyes 0.23 mm in length, with small erect hairs; FW 1.74 x EL. Ocelli small, forming a regular triangle; OOL 2.0 x WOT.

Pro- and mesonotum microreticulate. Propodeal disc 0.75 x as long as wide, with weakly convex seides and straight posterior border, and with 5 straight discal carinae which are reaching the transverse carina; anterior half of median and submedian areas strongly reticulate; posterior half with oblique rugae.

Gaster very weakly microreticulate, rather smooth and shining.

Holotype. Female, Doi Inthanon Nat. Park., 1260 m, 70 km SW Chiang Mai, Thailand, 31. I-7. II. 1989, T. W. Thormin leg.

Type depository. The holotype is preserved in the Provincial Museum Alberta, Canada.

18) The genus *Islareius* from Thailand

*Islareius thailandus* sp. nov.

(Figs. 712-715)

Holotype. Female. HL 0.55 mm; HW 0.48 mm; WF 0.29 mm; LA 0.93 mm; LPD 0.30 mm; WPD 0.38 mm; FWL 1.8 mm; TL 2.5 mm.

Head and gaster blackish brown; alitrunk black; coxae and femora brown; tibiae and tarsi yellowish brown.

Head 1.15 x as long as wide, with convex posterior border in frontal view, rather weakly microreticulate. Mandibles with 3 teeth; apical tooth longest and basal one shortest. Clypeus truncated anteriorly. Antennae with 12 segments; scape 3.2 x as long as wide; 2nd segment longer than wide; 3rd wider than long. Eyes 0.25 mm in length, with short erect hairs; WF 1.17 x EL. Ocelli relatively large, forming a compact triangle; OOL 1.85 x WOT.

Pro- and mesonotum relatively strongly microreticulate. Propodeum with parallel sides and strongly concave posterior border in dorsal view; median carina delicate but reaching near the transverse carina; basal triangular area strongly reticulate.

First and 2nd gastral tergites smooth and shining; 3rd to 6th very weakly microreticulate. Forewings as in Fig. 714; pterostigma small; radial vein long, almost the same length as subcosta; basal vein characteristically broad.

Holotype. Female. Nakhon Ratchasima, Khao Yai National Park, 700-800 m. 12-18. IV. 1990. E. Fuller leg.

Paratypes. 1f, same data as holotype; 1f, Bangkok 180 km N. E., Khao Yai N. P., 780 m, 10-16. IV. 1990. B. V. Brown leg.

19) A new species of the genus *Trachepyris* from Indonesia

*Trachepyris sumatrensis* sp. nov.

(Figs. 716-722)

Holotype. Female. HL 0.37 mm; HW 0.47 mm; WF 0.36 mm; LA 2.10 mm; LPD 0.58 mm; WPD 0.83 mm; FWL 3.3 mm; TL 5.5 mm.

Body black; mandibles, antennae, tibiae and tarsi reddish brown; wings slightly infruenced; pterostigma dark brown and veins much lighter.

Head rectangular, 0.79 x as long as wide; posterolateral corners with short scalloped carina. Mandibles elongate as in Figs. 716 and 717; apical half of inner margin without any tooth; basal 1/3 of shaft dully angulate. Median lobe of clypeus small and trapezoidal. First 4 segments of antennae as in Fig. 719; scape subrectangular and flat, 2.8 x as long as wide; 3rd segment slightly wider than long; 4th and 5th segments each as long as wide; terminal segment 1.7 x as long as wide. Eyes large and weakly convex, 0.50 mm long. Ocelli small, forming an obtuse triangle; OOL 1.7 x WOT; POL 0.9 x AOL.

Pronotal disc 0.86 x as long as wide, scattered shallow punctures, with scalloped carina anteriorly, extending half distance to upex laterally. Propodeal disc with parallel sides and almost straight posterior border, with 3 strong discal carinae; surface between discal carinae striate and with a longitudinal carina.

Fore tibiae as shown in Fig. 720; fore tarsi as in Fig. 721.

Holotype. Female, Sialang-Buah Beach, near Medon, North Sumatra, 25. VII. 1990. A. Shimizu leg [NIAES].

Paratype. 1 female, Sialang-Buah Beach, North Sumatra, Indonesia, 25. VII. 1990. T. Nambu leg [NIAES].

20) A new species of the genus *Bethylus* from Nepal

*Bethylus himarayanus* sp. nov.

Holotype. Female. HL 1.03 mm; HW 0.95 mm; FW 0.63 mm; LA 1.30 mm; LP 0.63 mm; DPW 0.60 mm; 2.8 mm; TL 4.3 mm.

Head and alitrunk black; gaster dark reddish brown; mandibles black; antennae brown except posterior 2/3 of scapes and underside of funicular segments reddish; coxae, femora and most part of tibiae dark brown; trochanters, both of anterior and posterior portions of tibiae and tarsi yellow; wings hyaline; pterostigma blackish brown.

Head rectangular, slightly longer than wide, with weakly convex posterior border in frontal view, densely microreticulate. Mandibles microreticulate, with 4 teeth. Anterior border of clypeus weakly convex. Antennae with 12 segments; first 5 segments in a ratio of about 9:4:3.5:3.5:3.5 in length; 2nd segment 3.0 x as long as wide; 3rd 2.8 x as long as wide. Eyes flat, 0.35 mm in length; WF 1.8 x EL. Ocelli small, front angle of ocellar triangle less than a right angle; OOL 2.5 x WOT.

Pro- and mesonotum densely microreticulate. Propodeum 1.05 x as long as wide in dorsal view; disc densely microreticulate; declivity only weakly microreticulate and rather smooth.

Gaster subopaque; 0.98 mm in maximum width as seen from above.

Paratype. A single paratype female with the following measurements:

HL 1.20 mm; HW 1.11 mm; FW 0.76 mm; AL 1.55 mm; LP 0.70 mm; WPD 0.70 mm; FWL 3.2 mm; TL 5.3 mm.

Holotype. Female, Pasture, 10,000 ft. (27° 56' N, 85° 00' E), V. 1967, Can. Nepal Exped. [CNC].

Paratype. 1f, Ktmd, Godavari, 15,000 ft., 25.V.1967, Can. Nepal Exped. [CNC].

Remarks. A paratype specimen was captured at a Mallesse trap.

21) The genus *Goniozus* from Taiwan

*Goniozus hoorai* Terayama

*Goniozus hoorai* Terayama, [See the part II in this paper.]

Diagnosis. Female. HL 0.60 mm; HW 0.55 mm; FW 0.35 mm; LA 0.93 mm; LPD 0.30 mm; WPD 0.43 mm; FWL 1.7 mm; TL 2.7 mm.

Body black; mandibles dark brown; antennae and legs yellow.

This species is distinguished from the other species in Taiwan by the following combination of characteristics: 1) head slightly longer than wide, 2) eyes with short erect hairs sparsely, 3) occipital borders each with a pair of distinctly long hairs, 4) forewings with a closed areolet.

Specimen examined. 1f, Meifeng, 2140 m, Nantou Hsien, 3-15.X.1990, C. R. Starr leg. [holotype: CNC].

Distribution. Taiwan, Japan (Ryukyus).

*Goniozus alishanus* sp. nov.

(Figs. 723-724)

Holotype. Female, HL 0.70 mm; HW 0.43 mm; FW 0.25 mm; LA 1.05 mm; LP 0.43 mm; WPD 0.33 mm; FWL 1.9 mm; TL 5.5 mm.

Body black; mandibles black; antennal scapes and 6th to terminal segments dark brown; 2nd to 5th segments brown; coxae, trochanters and femora blackish brown; anterior half of tibiae dark brown; posterior half of tibiae and tarsi yellow.

Head distinctly elongate, 1.63 x as long as wide, microreticulate. Mandibles not dissected, but at least 3 teeth are recognizable. Anterior margin of clypeus broadly rounded, with a median angulation; median carina developed, strongly arched in profile. First 5 segments of antennae in a ratio of about 5:2.5:2:2:2 in length; scape 1.67 x as long as wide; 2nd segment 1.7 x as long as wide; 3rd slightly longer than wide; 4th and 5th segments each as long as wide. Eyes 0.28 mm in length, with erect hairs; FW 0.89 x EL. Ocelli forming a regular triangle; OOL 2.0 x WOT.

Pronotal disc 2.6 x wider than long, microreticulate. Mesonotum elongate, and microreticulate. Propodeum 1.3 x as long as wide as seen from above; transverse carina absent; disc microreticulate with rugosity except median area smooth and shining; declivity weakly microreticulate.

Gaster elongate; smooth and shining.

Forewings as in Fig. 724; with closed areola.

Holotype. female, Alishan, 2400 m, Taiwan, VI.1977, J. & S. Klapperich leg. [CNC].

Remarks. This species is easily distinguished from the congeners of Asia by the extremely elongate head and alitrunk.

*Goniozus japonicus* Ashmead

*Goniozus japonicus* Ashmead, 1904. Jour. New York Ent. Soc., 12: 67.

Diagnosis. Female. HL 0.65 mm; HW 0.63 mm; FW 0.38 mm; LA 1.05 mm; LPD 0.30 mm; WPD 0.48 mm; FWL 2.1 mm; TL ca. 2.5 mm.

Body black; mandibles and antennae yellow; coxae and femora blackish brown; trochanters and tibiae medium brown; tarsi yellow.

This species is distinguished from the other species in Taiwan by the following combination of characteristics: 1) head almost as long as wide, with broadly rounded posterolateral borders and straight posterior border in frontal view; 2) posterolateral borders of head without distinctly long hairs; 3) Eyes without hair, and ca. 0.33 mm long; 4) pronotal disc 2.1 x wider than long; 5) propodeal disc 0.63 x as long as wide; 7) forewings without closed areola.

Material examined. 1f, Antung spa, Hualien, 1.V.1985, A. Saito leg.; 1f, Yuchih, Central Taiwan, 7.V.1971, N. Fukuhara leg.

Distribution. Taiwan, Korea, Japan, China(?).

22) *Goniozus marianensis* from the Mariana Islands, Micronesia

The genus *Goniozus* comprises 113 known species throughout the world, including 33 species from the Oriental region and 9 species from the Australian region. However, this has no information on the distribution record of this genus from Micronesia.

Recently, I had an opportunity to examine a specimen of this genus collected from the Northern Mariana Islands. After the examination, it was concluded that this is a new species, and description is made in this paper.

Measurements and their abbreviations used in this paper follow those of Evans (1964, 1978).

*Goniozus marianensis* Terayama, 1994

Holotype. Female. Head length 0.50 mm; head width 0.41 mm; width of front 0.28 mm; length of alitrunk 0.73 mm; length of propodeal disc 0.23 mm; width of propodeal disc 0.31 mm; forewing length 1.4 mm; total length ca. 1.9 mm.

Body testaceous; antennae yellow; fore coxae and femora castaneous, trochanters and tibiae yellow; middle and hind femora castaneous, and middle and hind coxae, trochanters and tibiae yellow.

Head 1.2 x as long as wide, with weakly convex posterior border in frontal view, microreticulate. Anterior margin of clypeus narrowly rounded. First 5 segments of antennae in a ratio of 6:3:2.5:3:3 in length. Eyes 0.25 mm in length; WF 1.12 x EL. Ocellar triangle flat, POL:AOL = 5:2; OOL 1.8 x WOT.

Pronotal disc trapezoidal, 0.54 x as long as maximum width, maximum width 1.44 x minimum width; surface moderately microreticulate. Microreticulatum of mesonotum weaker than that on pronotum. Propodeal disc 0.74 x as long as wide; transverse carina complete; median area smooth and shining; elsewhere microreticulate.

Forewings without closed areola; pterostigma 2.0 x as long as wide.

Holotype. Female, Guguan Is., Northern Mariana Isls., Micronesia, 17.V.1992, S. Miyano leg. [Type No. CBM-21-33300]

Type depository, National History Museum and Institute, Chiba, Japan.

Note. This part was published in the Nat. Hist. Res. Special Issue, No. 1: 229-230, (1990).

23) Four new species of the genus *Odontepyris* from Taiwan and Korea

*Odontepyris taiwanus* sp. nov.

(Figs. 725, 730, 731)

Holotype. Female. HL 1.38 mm; HW 1.55 mm; FW 0.95 mm; LA 2.40 mm; LPD 0.58 mm; WPD 1.05 mm; FWL 3.2 mm; TL 5.8 mm.

Body black; mandibles and antennal scapes black; funicles blackish brown; coxae and femora black; tibiae and tarsi castaneous; wings subhyaline, tinged with brown.

Head wider than long, 0.89 x as long as wide, with convex posterior border in frontal view, microreticulate and densely punctate. Mandibles with 4 teeth. Anterior clypeal margin narrowly rounded. First 5 segments of antennae in a ratio of 16:6:8:6:6; 2nd segment 1.4 x as long as wide; 3rd long, 2.0 x as long as wide; 4th and 5th segments each slightly longer than wide. Eyes 0.68 mm in length; FW 1.40 x EL. Front angle of ocellar triangle acute; OOL 2.0 x WOT.

Pronotal disc 0.59 x as long as wide with convex anterior border; anterolateral borders rounded, not forming an angle; lateral borders carinate; surface microreticulate and moderately punctate. Propodeal disc 0.55 x as long as wide, with concave posterior border and subparallel sides in dorsal view; 3

discal carinae present; median area reticulate; sublateral areas transversely striate.

Forewing with a small and oval areolet as in Fig. 731.

Holotype. Female. Chipon-Wenquan, Taitong Hsien, Taiwan, 8.VIII.1980, M. Terayama leg. [NIAES]

Paratype. 1f, Baibara, Taiwan, 25. IV.1929, K. Sato leg. [NASM].

*Odontepyris formosicola* sp. nov.

(Figs. 726, 728, 732)

HL 1.03 mm; HW 1.00 mm; FW 0.60 mm; LA 1.40 mm; LPD 0.48 mm; WPD 0.70 mm; 2.9 mm; TL 4.2 mm.

Body black; mandibles and antennae yellowish brown; coxae and femora dark brown; tibiae and tarsi yellowish brown; wings subhyaline, tinged with brown.

Head as long as wide, with straight posterior border in frontal view, microreticulate with shallow weak punctures moderately; punctures separated by ca. 1.0 x their own diameter. Median lobe of clypeus narrow, forming an acute angle. First 5 segments of antennae in a ratio of 18:10:9:9:9 in length; 2nd segments 2.5 x as long as wide; 3rd 1.5 x as long as wide; 4th and 5th segments each longer than wide. Eyes 0.45 mm in length; FW 1.33 x EL. Ocelli forming an acute triangle; OOL 1.89 x WOT.

Pronotal disc 0.44 x as long as wide, microreticulate, with shallow weak

punctures moderately; lateral borders not carinate. Propodeal disc 0.69 x as long as wide, with subparallel sides; posterior border notched at the middle; median area weakly depressed and with oblique rugae; a pair of parallel submedian carinae present; sublateral areas with transverse rugulae.

Forewing with a triangular areolet as in Fig. 732.

Holotype. Female. Motobu-kei, Nantou Hsien, Taiwan, 18.VIII.1980, T. Nambu leg. [NIAES].

Paratypes. 1f, Wushe 1200 m, Nantou Hsien, Taiwan, 16.III.1983, H. & M. Townes leg. [PMA].

*Odontepyris liukueiensis* sp. nov.

(Figs. 727, 729, 733)

Holotype. Female. HL 0.81 mm; HW 0.93 mm; FW 0.60 mm; LA 1.23 mm; LPD 0.38 mm; WPD 0.58 mm; FWL 2.2 mm; TL 3.1 mm.

Body black; mandibles blackish brown; antennal scapes blackish brown; funicles brown; legs dark brown; forewings subhyaline, tinged with brown.

Head 1.15 x as long as wide, with straight posterior border, microreticulate with shallow punctures moderately; punctures separated by 1-1.5 x their own diameter. Mandibles with 4 teeth. Anterior border of clypeus narrow, with dully angulate tip. First 5 segments of antennae in a ratio of 5:2:2:2:2 in length; 2nd to 5th segments each almost 1.3 x as long as wide. Eyes 0.38 mm in



length; FW 1.58 x EL. Front angle of ocellar triangle acute; OOL 1.54 x WOT.

Pronotal disc 0.44 x as long as wide; microreticulatum weaker than that on head and scattered very weak punctures; lateral borders carinate. Propodeal disc 0.66 x as long as wide, with parallel sides and straight posterior border; submedian carinae converging toward the back; median and sublateral areas with oblique rugae.

Forewing without areolet; median vein with a short branch vein as in Fig. 733.

Holotype. Female, Liukuei, S-W Taiwan, Taiwan, 29. IV. 1971, N. Fukuhara leg. [NIAES].

*Odontepyris koreanus* sp. nov.

(Figs. 734-736)

Holotype. Male. HL 0.83 mm; HW 0.90 mm; FW 0.55 mm; LA 1.38 mm; LPD 0.38 mm; WPD 0.63 mm; FWL 2.6 mm; TL 4.4 mm.

Body black; mandibles yellowish brown; upperside of antennae dark brown, and underside yellowish brown; coxae and femora blackish brown to almost black; trochanters, tibiae and tarsi yellowish brown.

Head slightly wider than long, with straight posterior border in frontal view, strongly microreticulate with very weak punctures sparsely. Median lobe of clypeus narrow, forming an acute angle. First 5 segments of antennae in a

ratio of 9:3.5:5:4.5:5 in length; 2nd segment slightly longer than wide; 3rd 1.5 x as long as wide; 4th 1.7 x as long as wide. Eyes 0.40 mm in length; FW 1.38 x EL. Ocelli relatively large, forming a right triangle; OOL 1.43 x WOT.

Pro- and mesonotal dorsum microreticulate. Propodeal disc 0.60 x as long as wide, with straight posterior border; a pair of submedian carinae present; median area reticulate; sublateral areas with transversely rugae.

Forewing with a subrectangular areolet.

Holotype. Male, Mt. Sudo-san, Kyongsang Puk-do, 400m alt., Korea, 23. VIII. 1990, K. Yamagishi leg. [PMA].

Paratype. 1m, same locality as holotype, 17-18. VII. 1971, K. Yamagishi leg. [TE].

24) Descriptions of three new species of the genus *Eupsenella* from Australia, with a redescription of *E. diemenensis*

*Eupsenella diemenensis* Dodd

(Figs. 743-745, 749, 756-758)

Redescription. Female. HL 0.70-0.88 mm; HW 0.73-0.88 mm; WF 0.43-0.55 mm; LA 1.40-1.55 mm; LPD 0.43-0.45 mm; WPD 0.60-0.70 mm; FWL 2.5-2.7 mm; TL 3.5-3.9 mm.

Body black; mandibles black; antennae with upperside dark brown, underside light brown; coxae and femora blackish brown; tibiae and tarsi light brown.

Head (Fig. 756) almost as long as wide, with almost straight posterior border in frontal view, microreticulate. Median lobe of clypeus roundly produced. First 4 segments of antennae in a ratio of 2:1:1:1 in length; scape 1.33 x as long as wide. Eyes 0.35-0.40 mm in length, with erect hairs sparsely; WF 1.24-1.38 x EL. Ocellar triangle flat. POL:AOL = 7:4; OOL 1.0 x WOT.

Pro- and mesonotal dorsum microreticulate with scattered shallow small punctures. Propodeal disc as in Figs. 743-745; a pair of submedian carinae present which are not reaching the transverse carina; surface coarsely microreticulate; declivity moderately microreticulate.

Forewing venation shown as in Fig. 757.

Variation. The relative length of the submedian carinae vary in from 0.2 to 0.7 x the propodeal length (Figs. 743-745).

Material examined. Mt. Wellington, Tas (Tasmania), Lea leg. (holotype, female, head and forewings mounted on a slide; SAM); 1f, Upper stocol, S. A., 19.11.1953, G. F. Gross leg.; 2f, Adelaide, N. B. Tindale leg.; 1f, Hobart, 25.VI.16/17. C. Cole leg.; 2f, Ardrossan, S.A., J.G.O. Tep leg.; 1f, Morgan, S. Australia, A.M. Lea leg.

*Eupsenella ceciliae* sp. nov.

(Figs. 737, 740, 746, 750, 753)

Holotype. Female. HL 0.95 mm; HW 1.15 mm; FW 0.65 mm; LA 1.55 mm; LP 0.55 mm; WPD 1.00 mm; FWL 3.0 mm; TL 4.5 mm.

Body blackish brown; mandibles blackish brown; antennal scapes blackish brown except posterior 1/4 yellowish brown; funicles with dark brown upperside and yellowish brown to brown underside; femora blackish brown; tibiae and tarsi brown somewhat yellowish.

Head (Fig. 737) wider than long, with convex posterior border, relatively weakly microreticulate with punctures moderately. Clypeus smooth and shining; median carina lacking; anterior border roundly produced. First 4 segment of antennae in a ratio of 3:1:1:1 in length. Eyes 0.45 mm in length, with erect hairs; FW 1.44 x EL. POL:WOT = 7:5; OOL 1.2 x WOT.

Pronotum (Fig. 740) relatively weakly microreticulate with shallow punctures sparsely; anterior border weakly convex; anterodorsal border round, not forming an angle in lateral view. Propodeal disc as in Fig. 746; median area smooth and shining; lateral areas moderately microreticulate.

Forewing venation as in Fig. 753.

Paratype. One paratype specimen with the following measurements: HL 1.00 mm; HW 1.13 mm; FW 0.65 mm; LA 1.86 mm; LP 0.45 mm; WPD 0.75 mm; FWL 2.4 mm; TL 4.3 mm.

Holotype. Female, Adelaide, J.G.O. Tepper leg.

Paratype. 1f, Ridgeway, 3.9.16/28, C. Cole leg.

*Eupsenella flavifemorata* sp. nov.

(Figs. 738, 741, 747, 751, 752, 754)

Holotype. Female. HL 1.00 mm; HW 1.00 mm; FW 0.61 mm; AL 1.70 mm; LP 62 mm; WPD 0.80 mm; FWL 2.9 mm; TL 3.9 mm.

Body blackish brown; 1st and 2nd gastral segments much lighter; legs yellowish brown.

Head (Fig. 738) as long as wide, with gently convex posterior border, microreticulate with shallow punctures sparsely. Clypeus broadly projecting with a median carina. First 4 segments of antennae in a ratio of 3:1:1:1 in length. Eyes 0.45 mm in length, with erect hairs; FW 1.35 x EL. Ocellar tri-

angle flat. POL:AOL = 3:2; OOL 0.75 x WOT.

Pronotal disc flat and trapezoidal; anterior border straight in dorsal view; anterodorsal border forming a dull angle in lateral view (Fig. 751); surface moderately microreticulate with shallow punctures sparsely.

Mesonotal dorsum flat; notauli parallel. Propodeal disc (Fig. 747) microreticulate; median carina almost reaching the posterior corner; submedian carinae short, ca. 1/5 of the length of propodeum.

Forewing venation as in Fig. 754.

Paratype. The paratype specimen with the following measurements: HL 1.00 mm; HW 0.95 mm; FW 0.58 mm; LA 1.75 mm; LP 60 mm; WPD 0.58 mm; FWL 2.9 mm; TL 4.5 mm.

Holotype. Female, NW Wood, Well. Coorong Nat. Pk. S.A., 11.1.1971, J.A. Hwrridge, G.F. & M. Gross leg.

Paratype. 1f, same data as holotype.

*Eupsenella reticulata* sp. nov.

(Figs. 739, 742, 748, 755)

Holotype. Female. HL 0.75 mm; HW 0.85 mm; FW 0.50 mm; LA 1.30 mm; LP 0.50 mm; WPD 0.68 mm; FWL 2.5 mm.

Body black; mandible yellow; upperside of antennae brownish yellow, under side yellow; coxae and femora dark brown; tarsi and tibiae yellow.

Head (Fig. 739) wider than long, with moderately convex posterior border, coarsely microreticulate and scattered with small punctures sparsely. Median lobe of clypeus rather broad, forming an obtuse angle. First 4 segment of antennae in a ratio of 2:1:1:1 in length; scape 1.43 x as long as wide. Eyes 0.38 mm in length, with erect hairs; FW 1.30 x EL. Ocelli relatively large, forming a compact triangle; POL:AOL = 5:3; OOL 0.75 x WOT.

Pronotum narrow and trapezoidal as in Fig. 742; anterodorsal border not forming an angle in lateral view; surface coarsely microreticulate. Mesonotum microreticulate; notauli diverging toward the front. Propodeal disc as in Fig. 748; sublateral carinae long, almost reaching the posterior border of disc; median area reticulate; sublateral areas with oblique rugulae.

Forewing venation as in Fig. 755.

Holotype. Female, Eully, S. A., 16.XI.1958, R.V. Southcott leg.

Remarks. All the types are deposited in the collection of the South Australian Museum, Australia.

25) Two new species of the genus *Parapenesia* from S. E. Africa

*Parapenesia seriemensis* sp. nov.

(Figs. 759-766)

Holotype. Male. HL 1.10 mm; HW 1.15 mm; WF 0.63 mm; LA 2.40 mm; LP 0.80 mm; WPD 0.80 mm; FWL 4.0 mm; TL 5.8 mm.

Head and alitrunk blackish brown; gaster reddish brown; mandibles and legs reddish brown; antennae dark brown; wings hyaline; pterostigma brown somewhat darker.

Head slightly wider than long, smooth to very weakly microreticulate with shallow punctures sparsely; posterior border moderately convex with a very shallow median notch in frontal view. Mandibles broad and triangular, with an acute apical tooth and 3 very broad and blunt teeth. Anterior border of clypeus concave. Antennae short, not reaching the anterior border of propodeum; first 5 segments in a ratio of 11:4:6:5.5:5 in length; 2nd segment slightly longer than wide; 3rd 2.0 x as long as wide. Eyes 0.50 x as long as wide; WF 1.26 x EL. Ocelli large, forming a regular triangle; DAO 0.13 mm; OOL 0.67 x WOT.

Pronotum weakly microreticulate, with convex anterior border in dorsal view. Mesonotum weakly microreticulate; notauli shallow. Propodeum as long as wide, with a strong median carina; disc with numerous transverse rugulae in

most part; basal triangular area absent; lateral and transverse carinae absent; declivity with transverse rugulae.

Gaster very weakly microreticulate and subopaque.

Pterostigma large, 2.1 x as long as wide; radial vein thin, basal 1/4 obscure.

Variation. The paratypes vary in head length from 0.98 to 0.83 mm, and in head width from 1.01 to 0.88 mm. A median notch of posterior border varies from very weakly recognizable to almost absent.

Genitalia. Subgenital plate and genitalia of a paratype are shown in Figs. 765 and 766, respectively.

Holotype. Male, S.W. Africa, Sesriem Canyon, 3 mls W. Sesriem, 21-22. I. 1972 [BMNH].

Paratypes. 2m, same data as holotype [BMNH]; 2m, S.W. Africa, Sesriem Farm, Maltahoe Dist., 19-20. I. 1972 [BMNH].

*Parapenesia longimandibulata* sp. nov.

(Figs. 767-769)

Holotype. Male. HL 1.09 mm; HW 1.20 mm; WF 0.65; LA 2.40 mm; LP 0.78 mm; WPD 0.80 mm; FWL 2.2 mm; TL 5.9 mm.

Head and alitrunk blackish brown; gaster redish brown; mandibles, antennae and legs reddish brown.

Head almost as long as wide, with moderately convex posterior border in frontal view; surface smooth with shallow but relatively large punctures which are separated by 1-2 x their own diameter. Mandibles narrow, with 3 teeth apically; inner margin with a minute, and blunt tooth at midlength. Clypeus slightly produced at midlength as in Fig. 767. Antennae short, not reaching the anterior border of propodeum; first 5 segments in a ratio of 16:4:7:6:6 in length; 2nd segment slightly longer than wide; 3rd 2.3 x as long as wide. Eyes 0.53 mm in length; WF 1.23 x EL. Ocelli large; POL:AOL = 8:5; DAO 0.18 mm; OOL 0.56 x WOT.

Pronotum with rounded anterior border in dorsal view, smooth with scattered large punctures moderately. Mesonotum smooth with large punctures rather sparsely; scutellar disc impunctate medially. Propodeum as long as wide; median carina present at basal 3/5; transverse carina absent; lateral carinae present but weak; anterior half of basal triangular area with 5 pairs of longitudinal rugae, and posterior half reticulate; sublateral areas microreticulate with rugae.

Gaster smooth and rather subopaque.

Holotype. Male, S. W. Africa, Sesriem Canyon, 3 mls. W. Sesriem, 21-22. I. 1972 [BMNH].

26) *Pseudisobrachium colombiensis*, a new species from Colombia,

South America

*Pseudisobrachium colombiensis* sp. nov.

(Figs. 770-771)

Holotype. Male, HL 1.80 mm; HW 1.70 mm; WF 1.13 mm; LA 3.40 mm; LPD 1.08 mm; WPD 1.13 mm; FWL 5.5 mm; TL 7.9 mm.

Head and alitrunk black; gaster reddish brown except 1st, anterior 2/3 of 2nd and anterior half of 3rd sternites blackish brown; antennae yellowish brown; mandibles reddish brown, with dark tip; coxae blackish brown; trochanters yellow; femora blackish brown except the base and tip yellow; tibiae and tarsi yellow; wings subhyaline, tinged with light brown.

Head almost as long as wide, with weakly convex posterior border and dully angulate posterolateral corners in frontal view, smooth and moderately punctate; punctures on anterior half of frons most dense and gradually sparse to vertex. Mandibles with 5 teeth; basal 2nd and 3rd minute; basalmost broad and round. Clypeus well produced, deeply concave anteriorly, with 2 strong apical teeth. First 5 antennal segments in a ratio of 21:3:14:10:10 in length; scape 2.6 x as long as wide; 2nd segment wider than long; 3rd 1.75 x as long as wide; 4th and 5th segments each 1.25 x as long as wide; flagellar pubescence short and subappressed. Eyes 0.80 mm in length, with erect hairs; WF 1.4

x EL. Ocelli forming a compact triangle; DAO 1.47 x WOT.

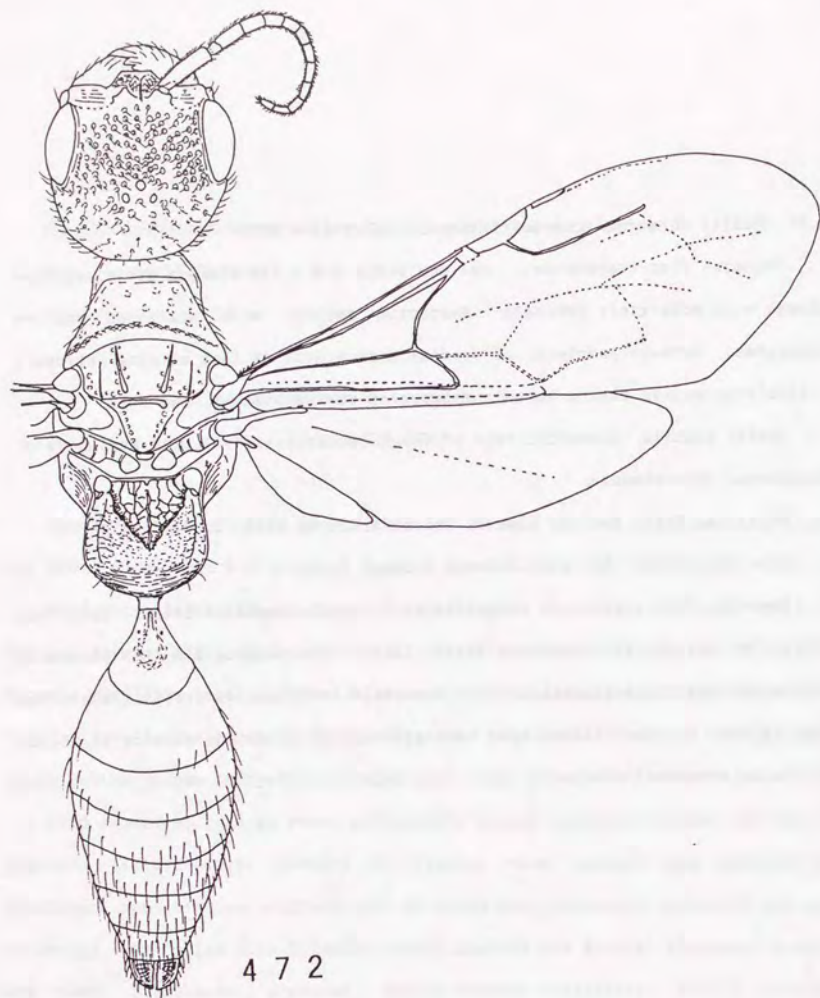
Pronotal disc trapezoidal, maximum width 1.4 x its minimum width; surface smooth with moderately punctate. Mesonotum smooth, with scattered shallow punctures; notauli complete. Propodeal disk almost as long as wide, strongly reticulate; median carina absent; transverse carina present, but weak.

Gaster sessile. Discoidal vein of forewings interstitial with median vein; metacarpus vein obscure.

Holotype. Male, Narino, Tumaco, Colombia, 26.VI.1962, Y. Doi leg.

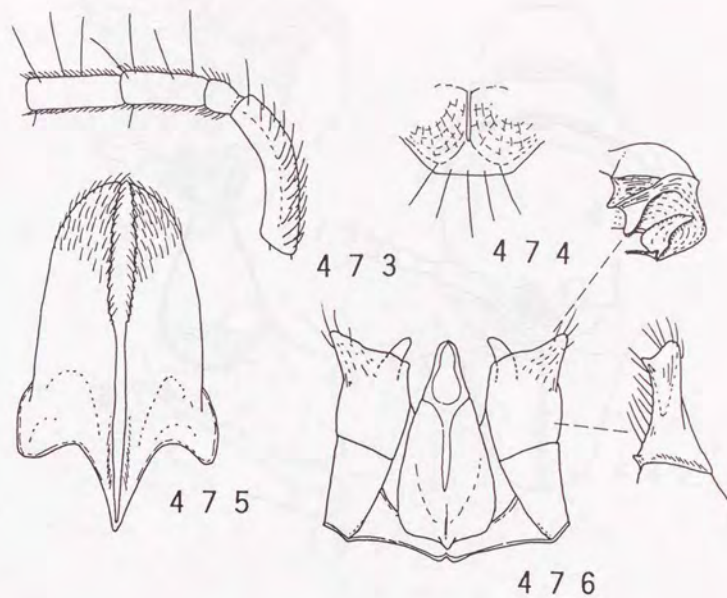
Type deposition. National Science Museum, Tokyo.

Remarks. This species resembles to *P. erythrocephalum* Evans, 1973 from Chile in having the characteristic form of the clypeus and the transverse carina marging the propodeal disk. However, it is easily distinguished from the latter by the black head and alitrunk in color and absence of median carina on propodeal disc.



472

Fig. 472. *Pristocera formosana* Miwa & Sonan, 1935, male.



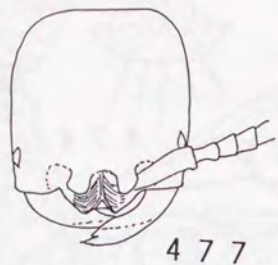
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Figs. 473-476. *Pristocera formosana* Miwa & Sonan, 1935, male. 473, first 4 segments of antenna; 474, anterior border of clypeus; 475, subgenital plate; 476, genitalia.



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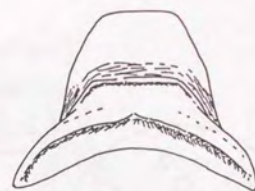


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Figs. 477-478. *Pristocera formosana* Niwa & Sonan, female. 477, head, full face view; 478, propodeum, dorsal view.



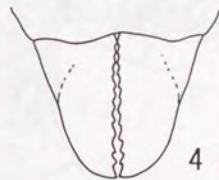
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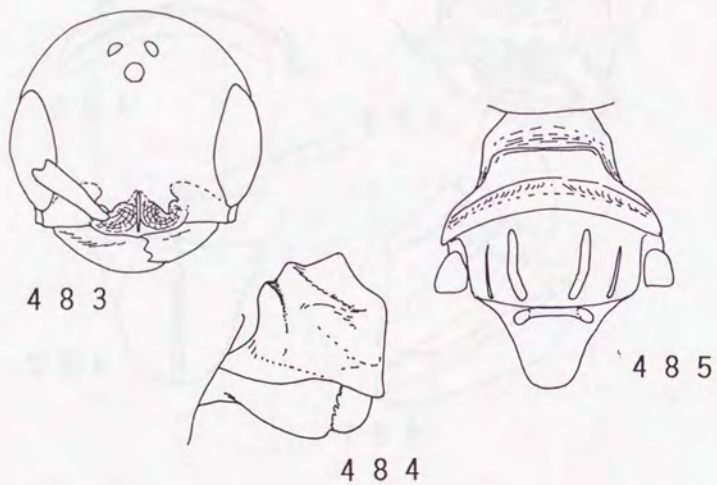
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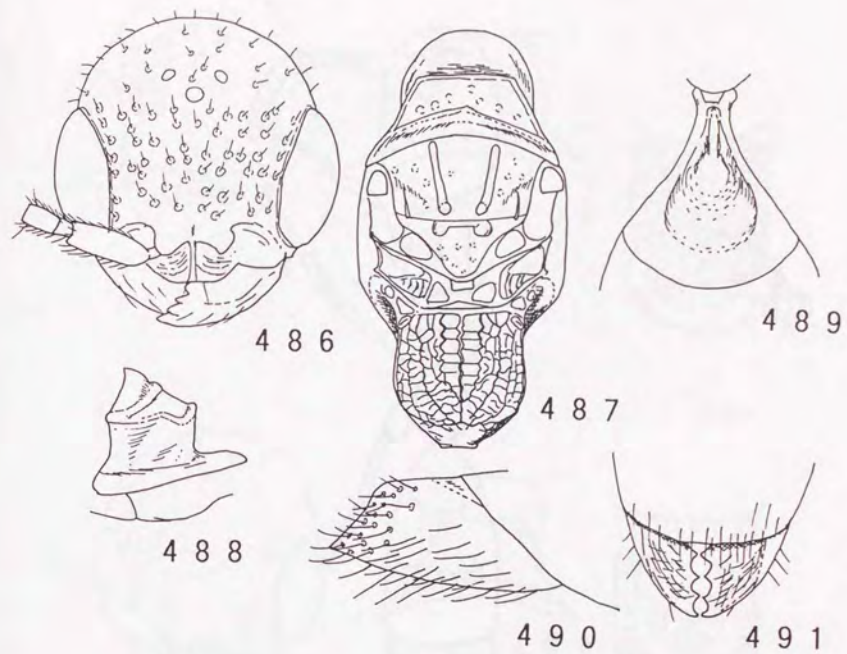
482

Figs. 479-482. *Pristocera kinabarensis* sp. nov., male. 479, head, frontal view; 480, pronotum, dorsal view; 481, pronotum, lateral view; 482, subgenital plate, ventral view.

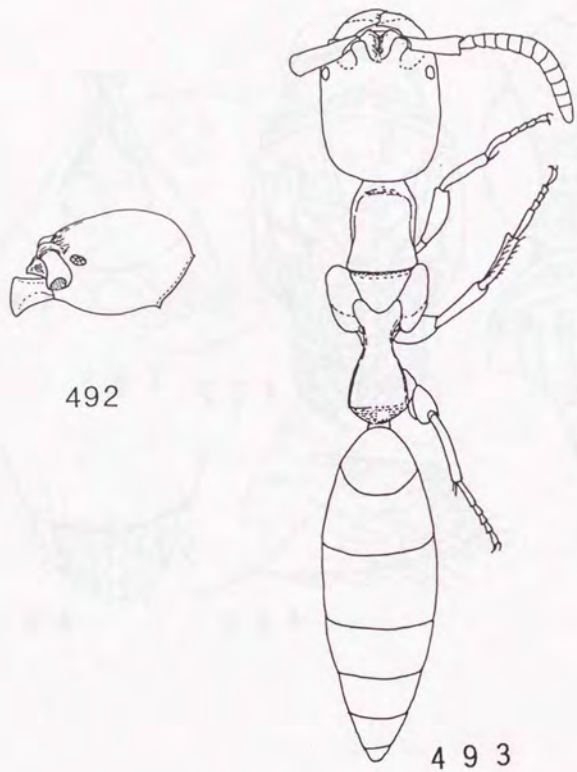




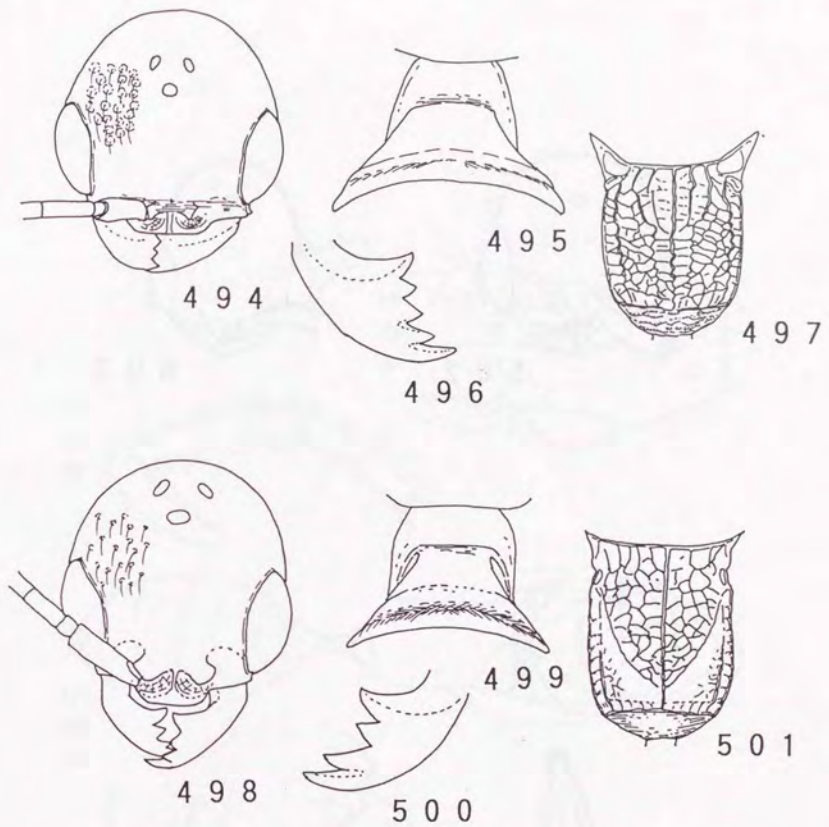
Figs. 483-485. *Pristocera changmaianus* sp. nov., male. 483, head, frontal view; 484, pronotum, lateral view; 485, pro- and mesonota, dorsal view.



Figs. 486-491. *Pristocera carinata* Magretti, male (drawn from the type). 486, head, frontal view; 487, alitrunk, dorsal view; 488, pronotum, lateral view; 489, 1st gastral tergite; 490, subgenital plate, lateral view; 491, subgenital plate, dorsal view.



Figs. 492-493. *Acrepyris mieae* sp. nov., male.  
492. head, lateral view; 493. profile.



Figs. 494-501. *Acrepyris* spp., male.

494-497. *A. taiwanensis* sp. nov.; 498-501. *A. takasago* sp. nov.  
494, 498, head, frontal view; 496, 500, mandible; 495, 499, pronotum,  
dorsal view; 497, 501, propodeum, dorsal view.



502



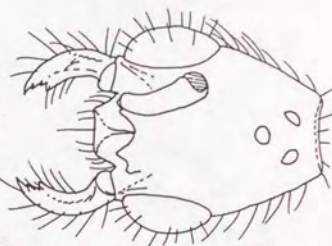
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Figs. 502, 503. *Pseudisobrachium fulleri* sp. nov. and *P. silvicolum* sp. nov., male, head, frontal view. 502, *P. fulleri* sp. nov.; 503, *P. silvicolum* sp. nov.

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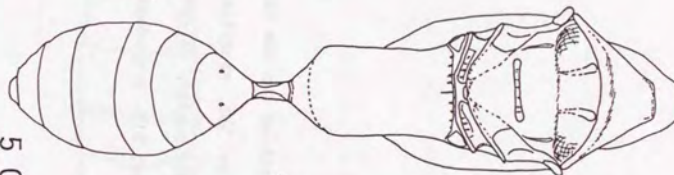
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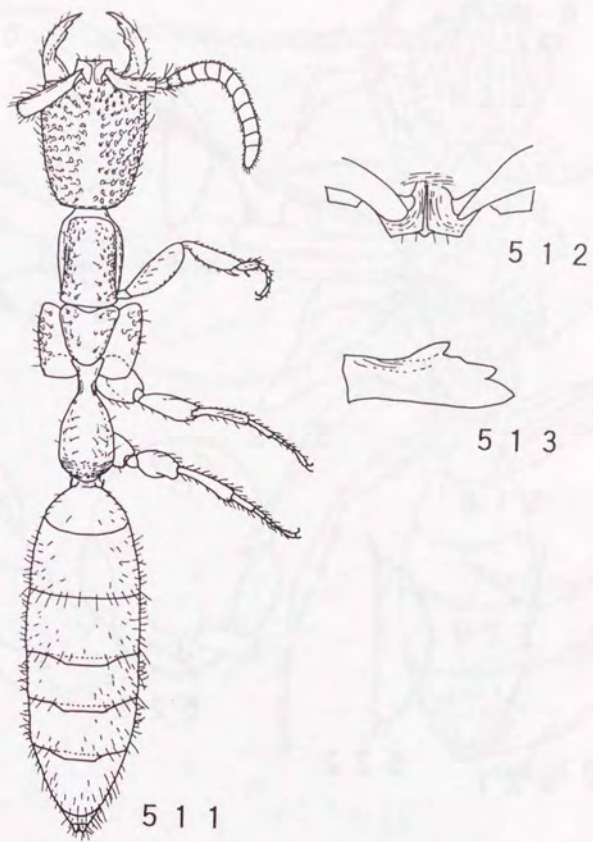
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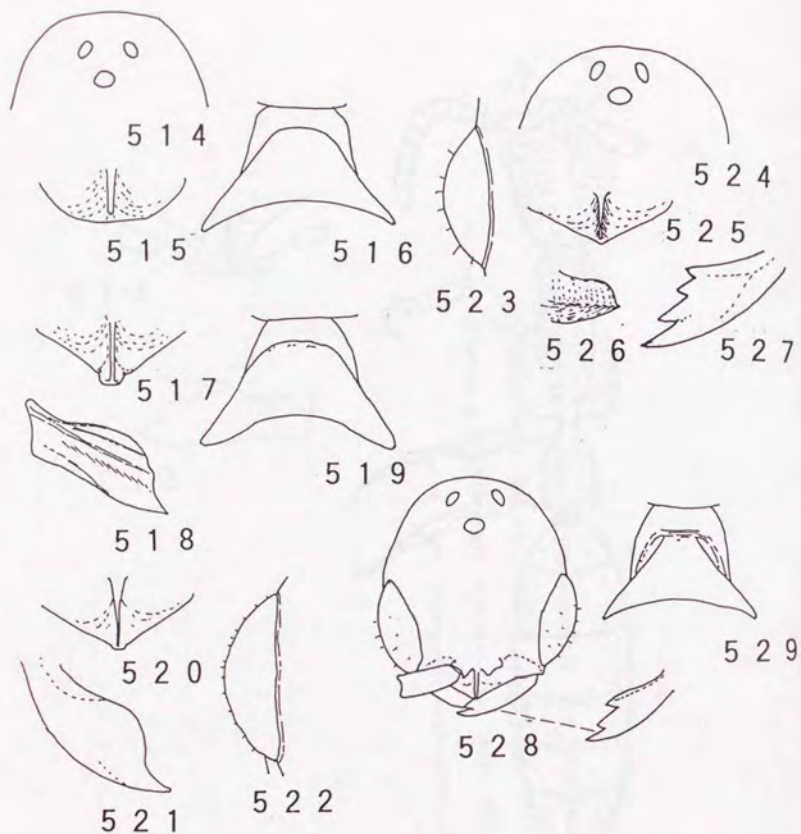


Figs. 504-510. *Pseudisobrachium lepidum* sp. nov., male.  
 504, head, frontal view; 505, mandible; 506, antennal 6 segments from the  
 base; 507, alitrunk and gaster, dorsal view; 508, fore wing; 509,  
 pronotum, lateral view; 510, propodeum and 1st gastral segment, lateral  
 view.



Figs. 511-513. *Pseudisobrachium hongkongensis* sp. nov., female.

511, profile; 512, clypeus; 513, mandible.



Figs. 514-529. *Apenesia* spp.

514-516, *A. chitouensis* sp. nov.; 517-519, *A. pingtongensis* sp. nov.;

520-522, *A. formosimonticola* sp. nov.; 523-527, *A. meifuiiae* sp. nov.;

528-529, *A. liukueiensis* sp. nov.

514, 524, posterior portion of head, frontal view; 528, head, frontal view; 515, 517, 520, 525, clypeus; 516, 519, 529, pronotum, dorsal view; 518, 521, 527, mandible; 522, 523, eye; 526, clypeus, lateral view.

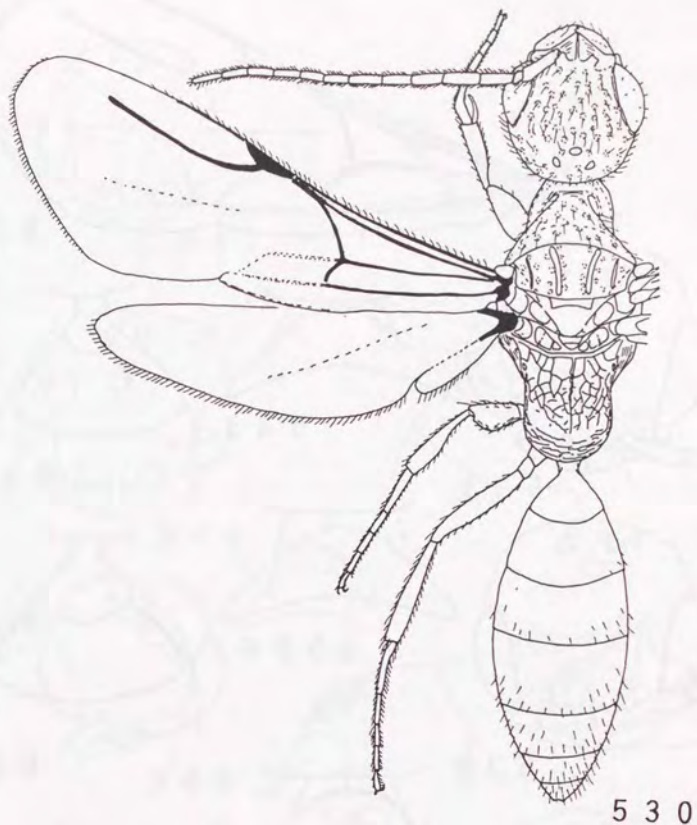
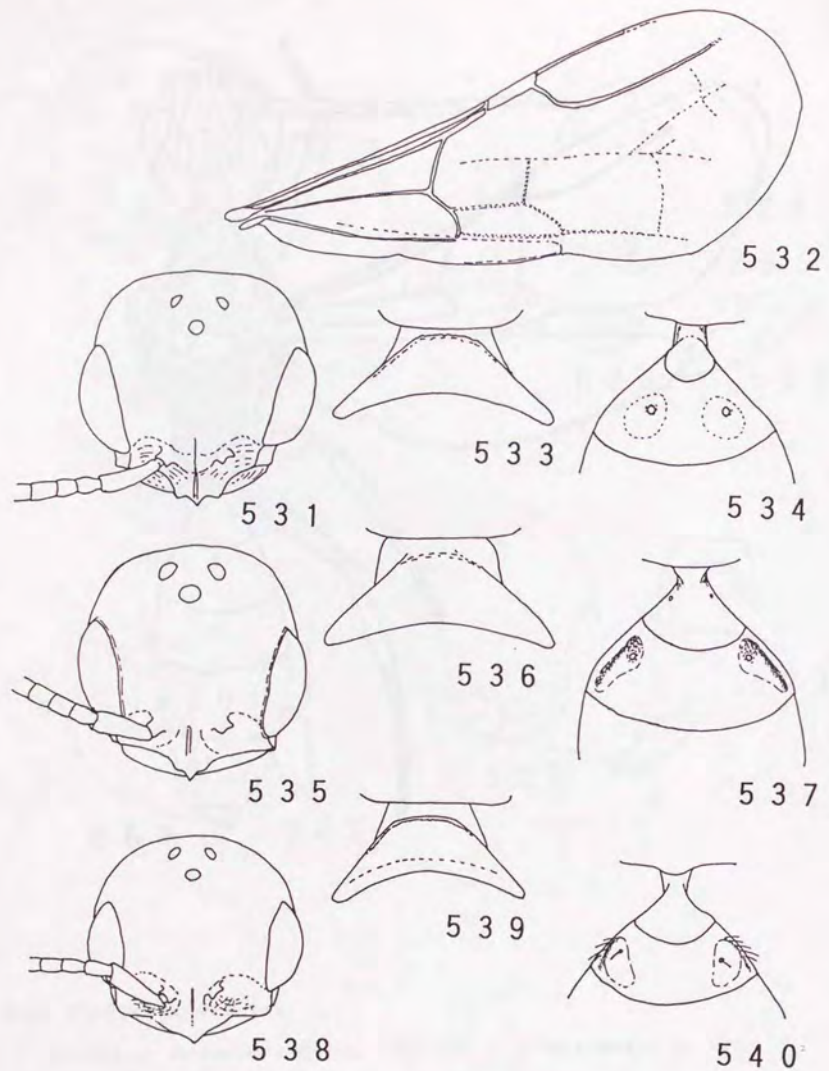


Fig. 530. *Apenesia meifulae* sp. nov., male, profile.



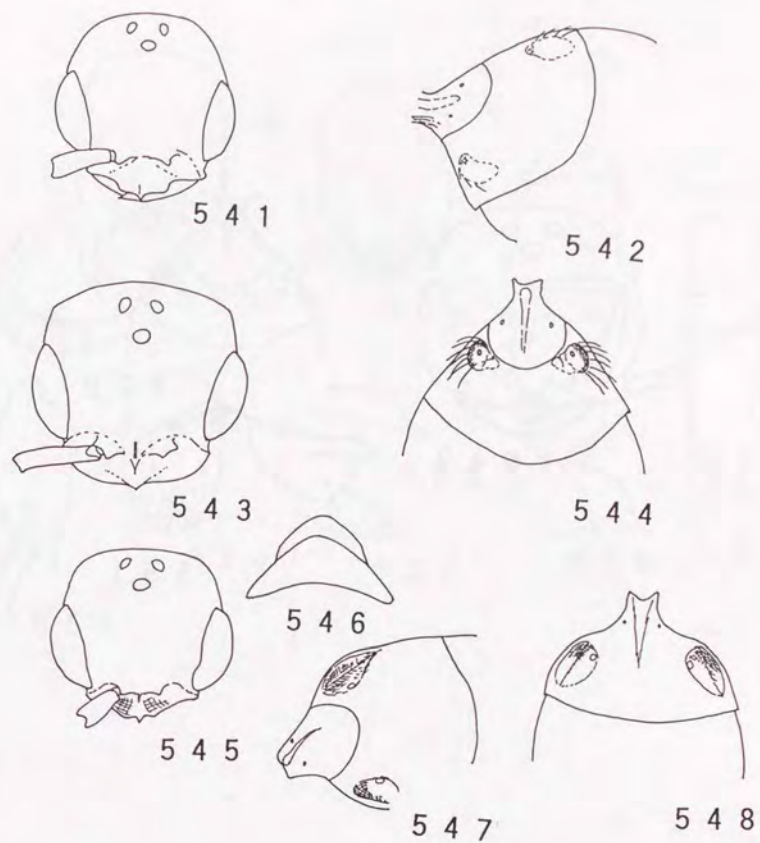
Figs. 531-540. *Dissomphalus* spp., male.

531-534. *D. thianus* sp. nov.; 535-537. *D. changmaiensis* sp. nov.;

538-540. *D. browni* sp. nov.

531, 535, 538, head, frontal view; 532, forewing; 533, 536, 539,

pronotum, dorsal view; 534, 537, 540, 1st and 2nd gastral tergites.



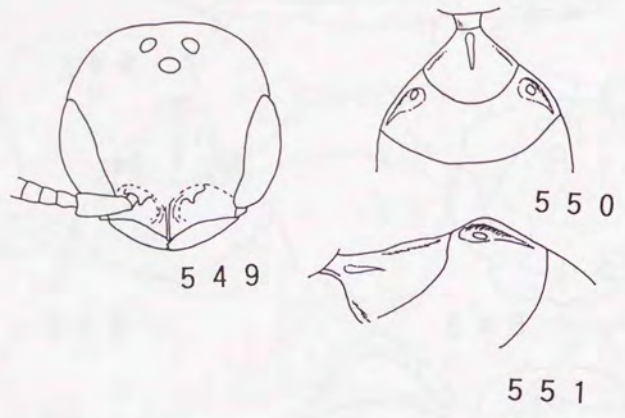
Figs. 541-548. *Dissomphalus* spp., male.

541-542. *D. wushenus* sp. nov.; 543-544. *D. kinabalensis* sp. nov.; 545-548,

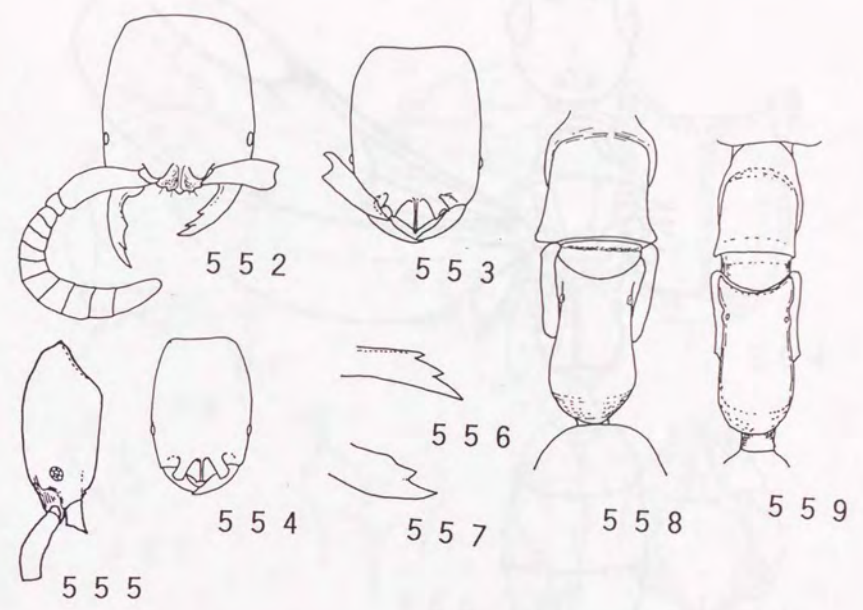
*D. philippinensis* sp. nov.

541, 543, 545, head frontal view; 542, 544, 547, 548, 1st and 2nd gastral

tergite; 546, pronotum, dorsal view.



Figs. 549-551. *Dissomphalus nepalensis* sp. nov., male.  
 549, head, frontal view; 550, 1st and 2nd gastral tergite, dorsal view; 551, ditto, dorsolateral view.



552-559. *Dissomphalus* spp., female.  
 552, 556, 558, *D. chiponensis* sp. nov.; 553, 555, 559, *D. khaoyaiensis* sp. nov.; 554, 557, *D. borneoensis* sp. nov.  
 552, 553, 554, head, frontal view; 555, head, lateral view; 556, 557, mandible; 558, 559, alitrunk, dorsal view.

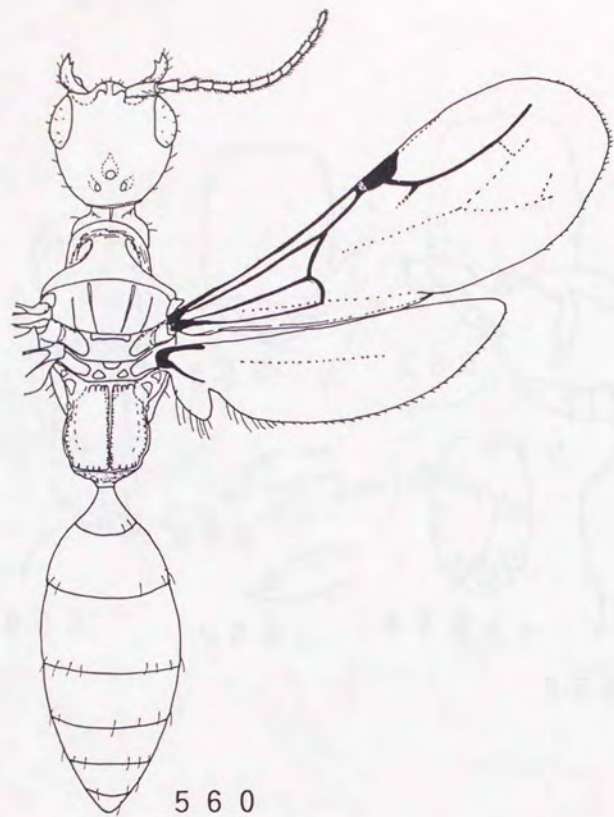
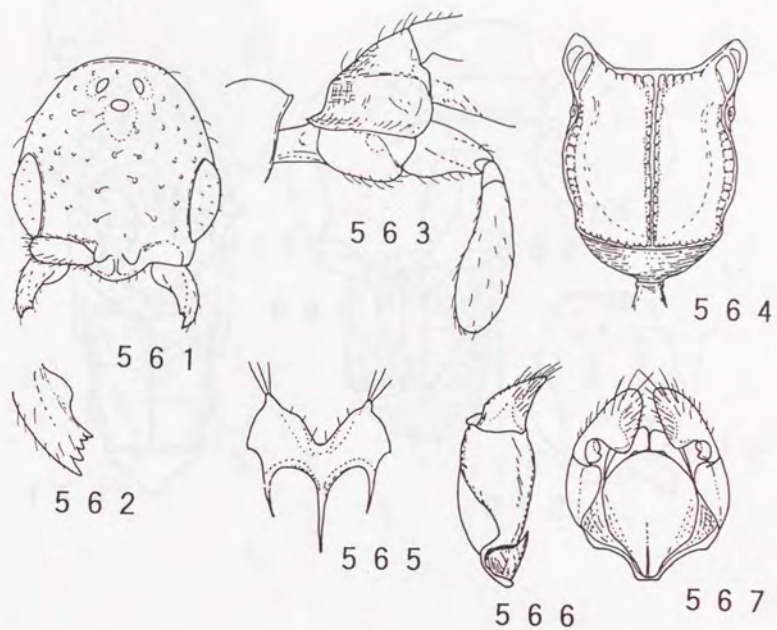


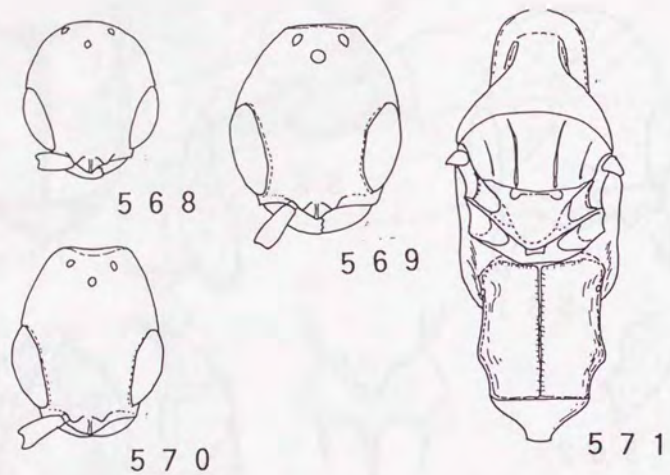
Fig. 560. *Parascleroderma atayal* sp. nov., male, profile.



Figs. 561-567. *Parascleroderma atayal* sp. nov., male.

561, head, frontal view; 562, mandible; 563, pronotum, lateral view;  
564, propodeum, dorsal view; 565, subgenital plate; 566, genitalia,  
lateral view; 567, genitalia, dorsal view.



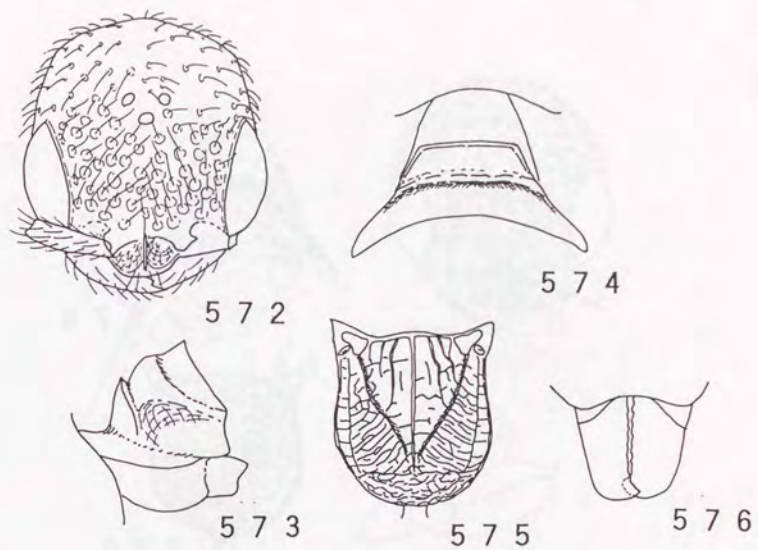


Figs. 568-571. *Parascleroderma* spp. and *Apenesia sarawakensis*, male.

568, *A. sarawakensis* sp. nov.; 569, 570, *P. bangkokensis* sp. nov.;

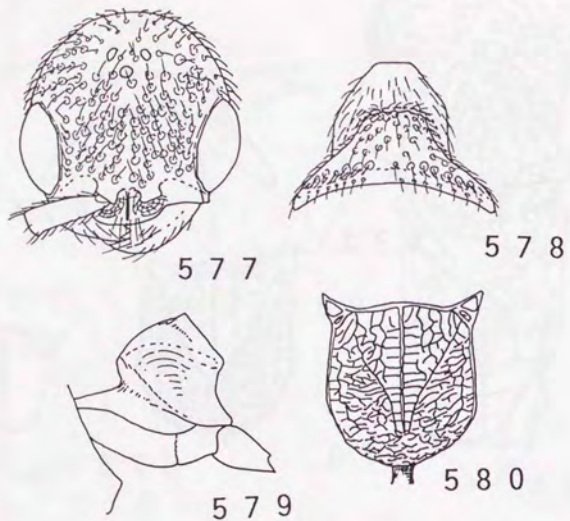
570, *P. longicephala* sp. nov.

568-570, head, frontal view; 571, alitrunk, dorsal view.

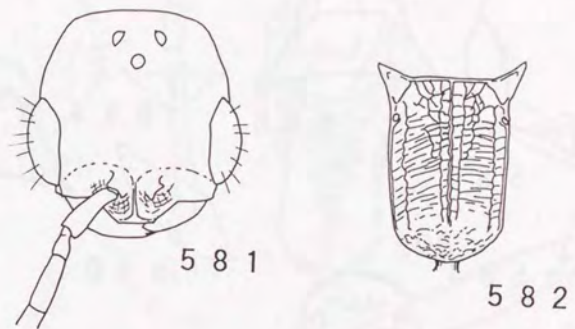


Figs. 572-576. *Pristocera poirieri* sp. nov., male.

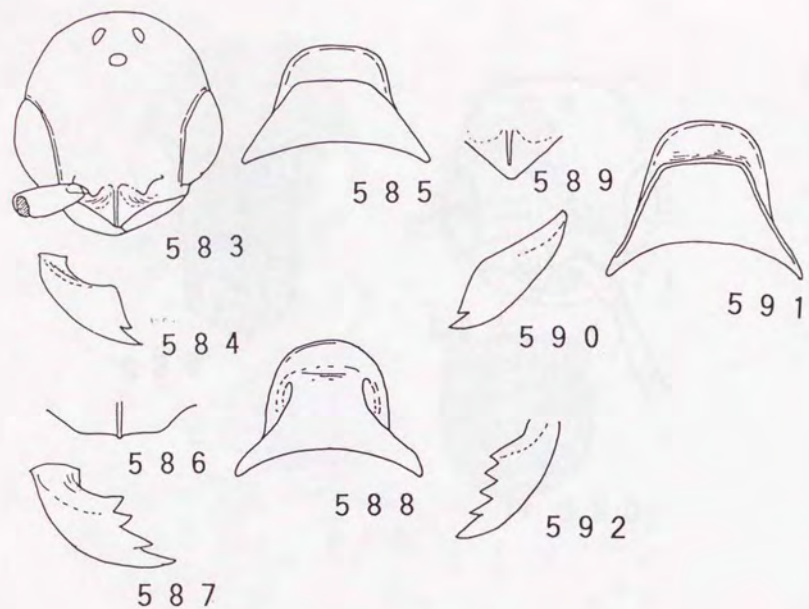
572, head, frontal view; 573, pronotum, lateral view; 574, pronotum, dorsal view; 575, propodeum, dorsal view; 576, subgenital plate, dorsal view.



Figs. 577-580. *Pristocera huberi* sp. nov., male.  
 577, head, frontal view; 578, pronotum, dorsal view; 579, pronotum,  
 lateral view; 580, propodeum, dorsal view.

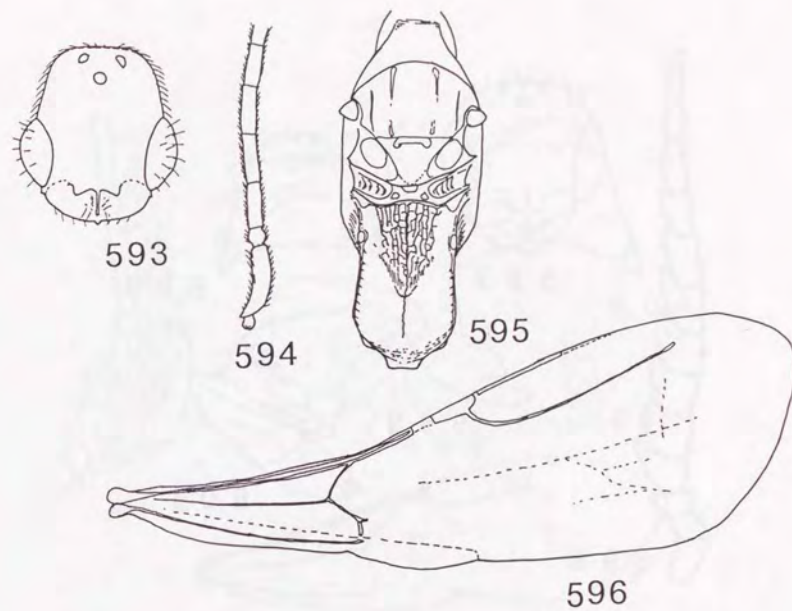


Figs. 581-582. *Pseudisobrachium nepalensis* sp. nov., male.  
 581, head, frontal view; 582, propodeum, dorsal view.



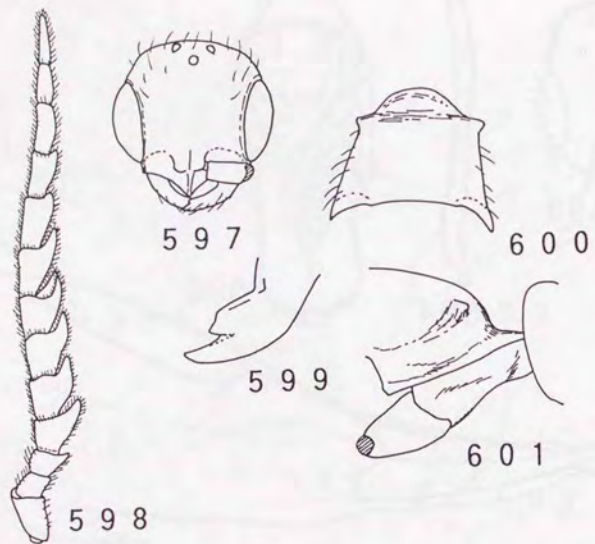
Figs. 583-592. *Apenesia* spp.

583-585; *A. pulchella* sp. nov.; 586-588, *A. ktmdana* sp. nov.; 589-591, *A. carnicollis* sp. nov.; 592, *A. nepalensis* sp. nov.  
 583, head frontal view; 584, 587, 590, 592, mandibles; 585, 588, 591, pronotum, frontal view; 586, 589, clypeus.



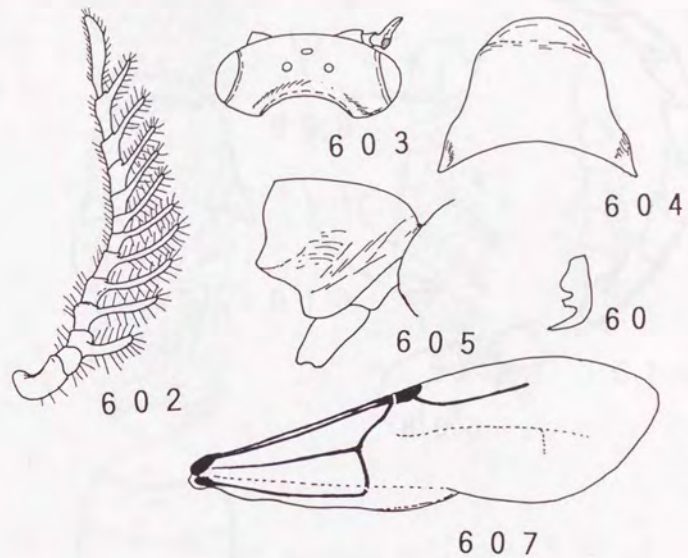
Figs. 593-596. *Protisobrachium asianum* sp. nov.

593, head, frontal view; 594, antennal 1-6 segments; 595, alitrunk, dorsal view; 596, forewing.



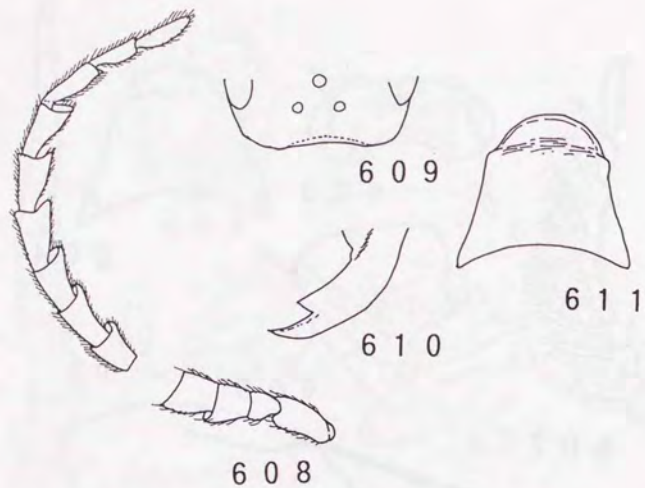
Figs. 597-601. *Epyris neotropica* (Evans) (drawn from holotype).

597, head, frontal view; 598, antenna; 599, mandible; 600, pronotum, dorsal view; 601, pronotum, lateral view.

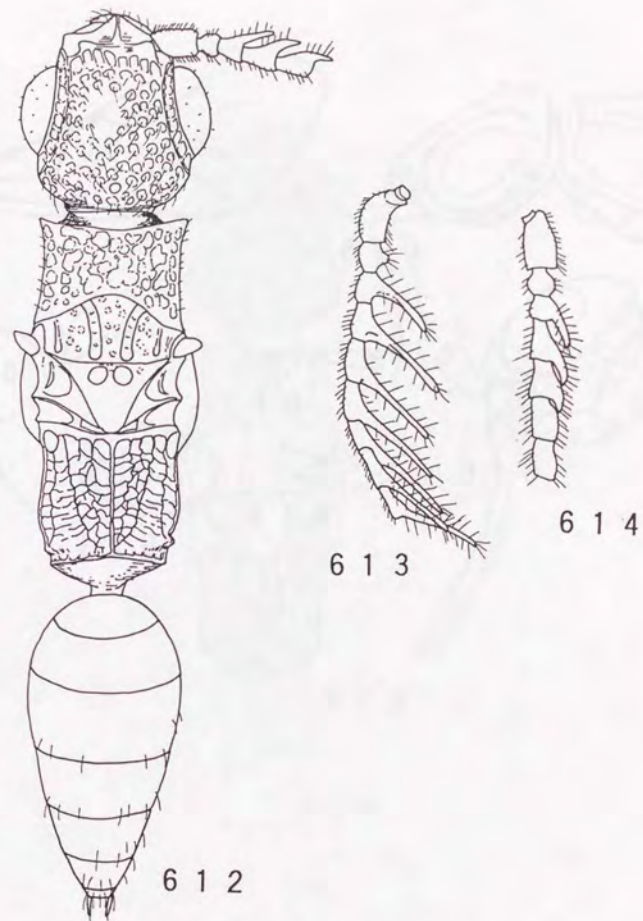


Figs. 602-607. *Epyris azurea* (Evans) (drawn from holotype).

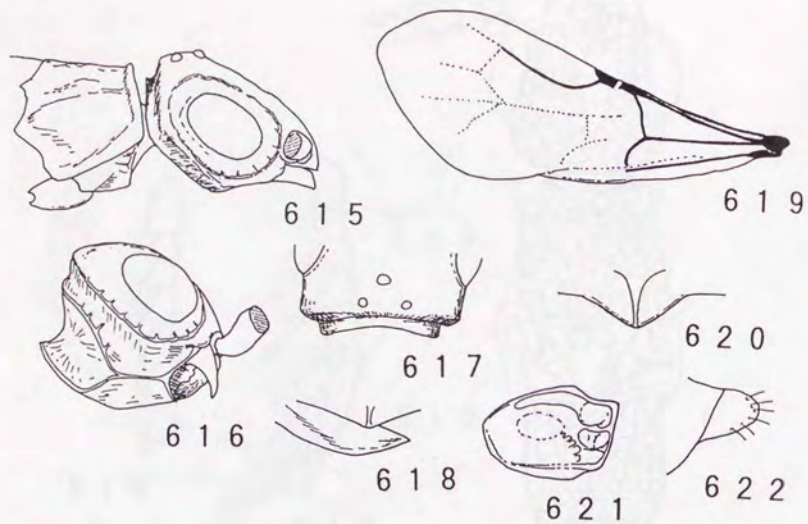
602, antenna; 603, head, dorsal view; 604, pronotum, dorsal view; 605, pronotum, lateral view; 606, middle claw; 607, forewing.



Figs. 608-611. *Epyris amazonica* (Evans) (drawn from holotype).  
 608, antenna; 609, posterior 1/3 of head, frontal view; 610, mandible;  
 611, pronotum, dorsal view.



Figs. 612-614. *Calyozina ramicornis* Enderlein, male (drawn from the type).  
 612, profile; 613, first 9 segments of antenna, lateral view; 614, first  
 7 segment of antenna, nearly dorsal view.



Figs. 615-622. *Calyozina ramicornis* Enderlein, male (drawn from the type).  
 615, head and pronotum, lateral view; 616, head, dorsolateral view; 617,  
 occipital carina; 618, mandible; 619, forewing; 620, clypeus; 621,  
 mesopleurum; 622, tip of paramere, lateral view.

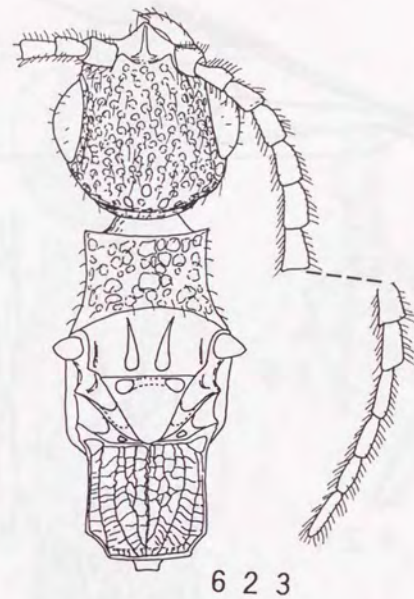
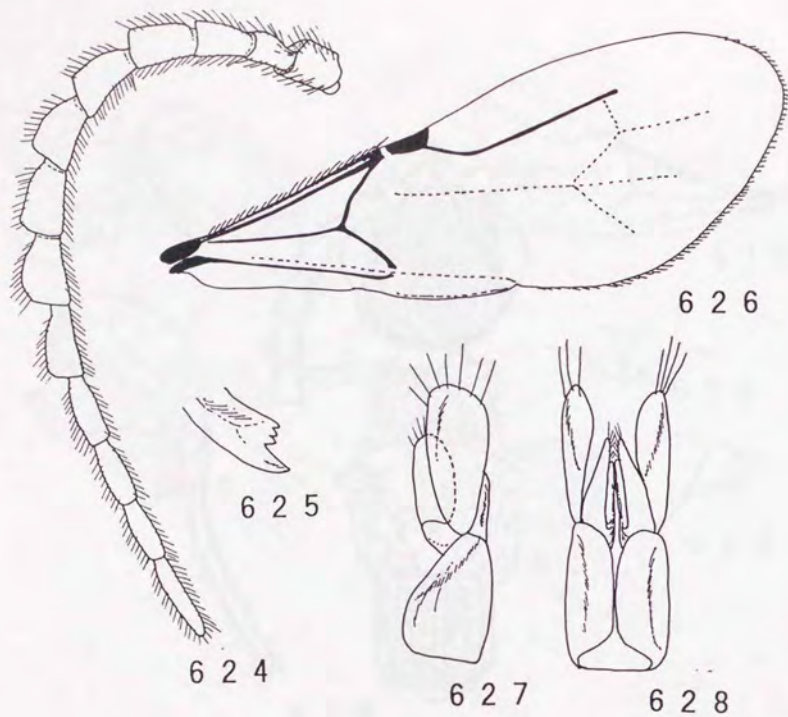
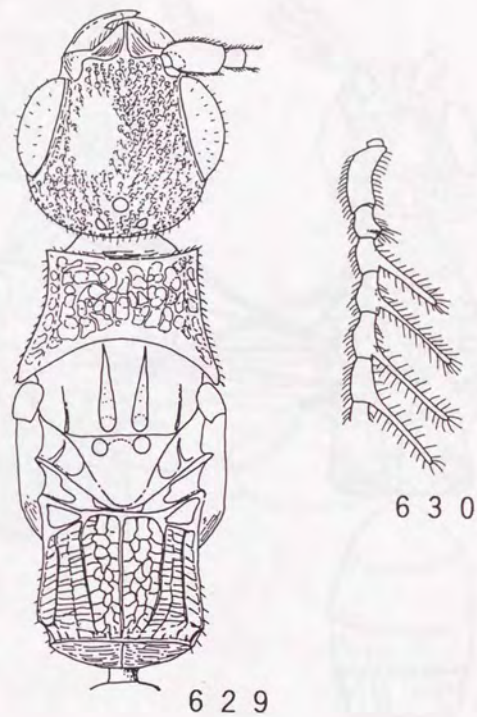


Fig. 623. *Calyozina nepalensis* sp. nov., male, head and alitrunk.



Figs. 624-628. *Calyozina nepalensis* sp. nov.

624, antenna; 625, mandible; 626, forewing; 627, genitala, lateral view; 628, genitala, dorsal view.



Figs. 629-630. *Calyozina thaiana* sp. nov., male.

629, head and alitrunk, profile; 630, first 6 segments of antenna.

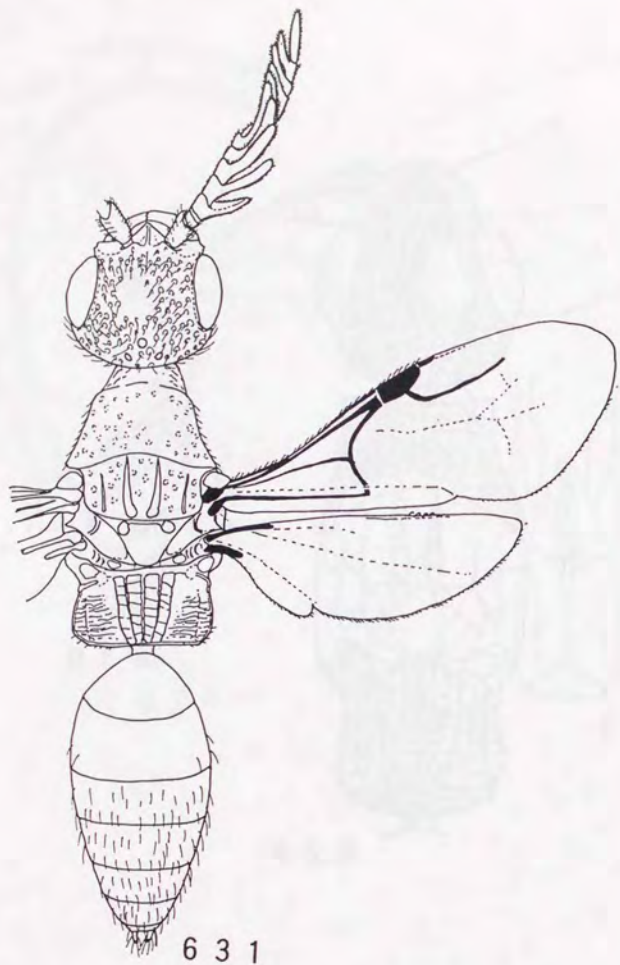


Fig. 631. *Epyris staphylinoides* (Hope), male (drawn from the holotype of *Calyzoa ashmeadi*).

634

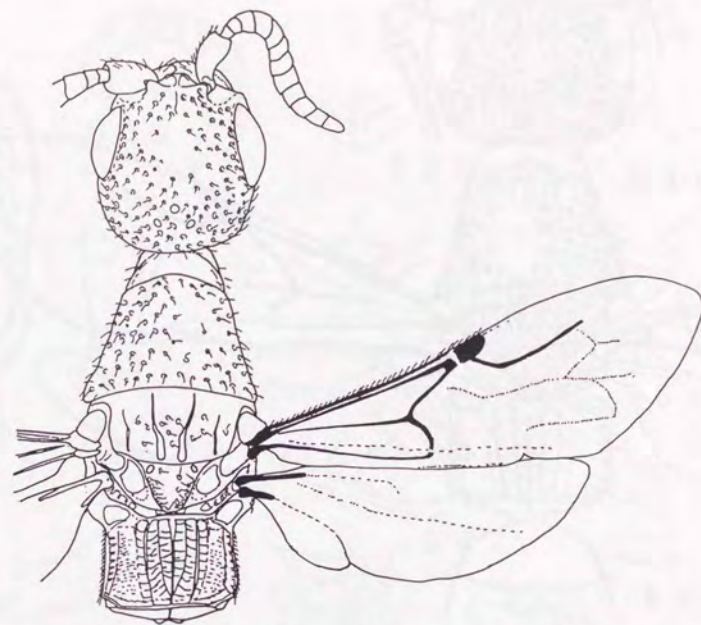


Fig. 632. *Epyris staphylinoides* (Hope), female.

635



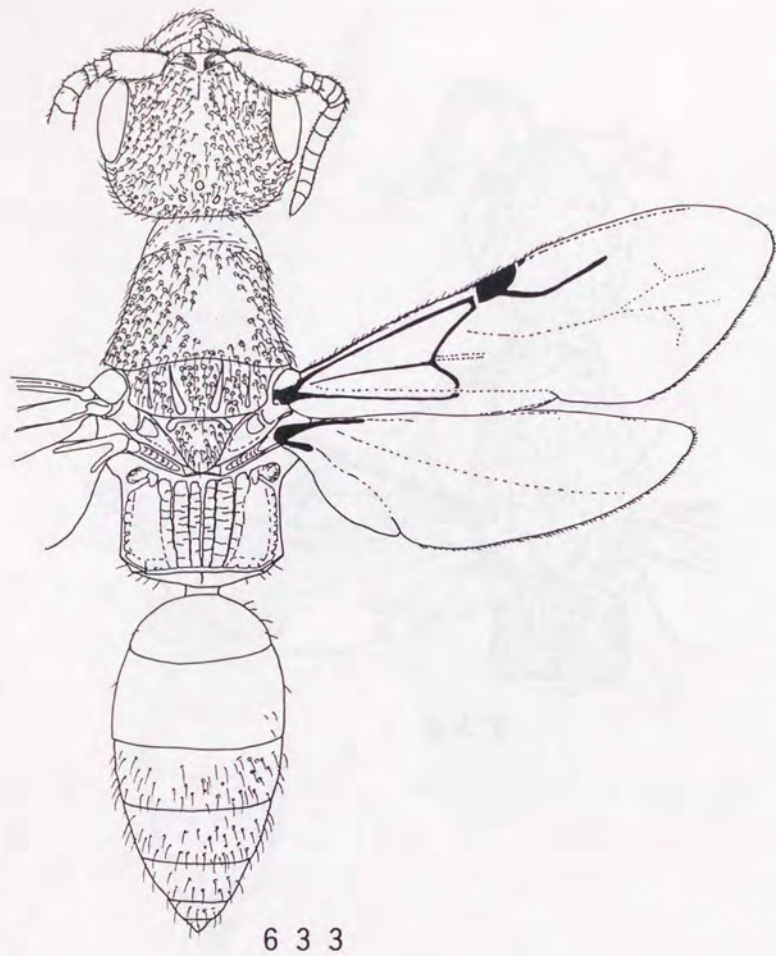
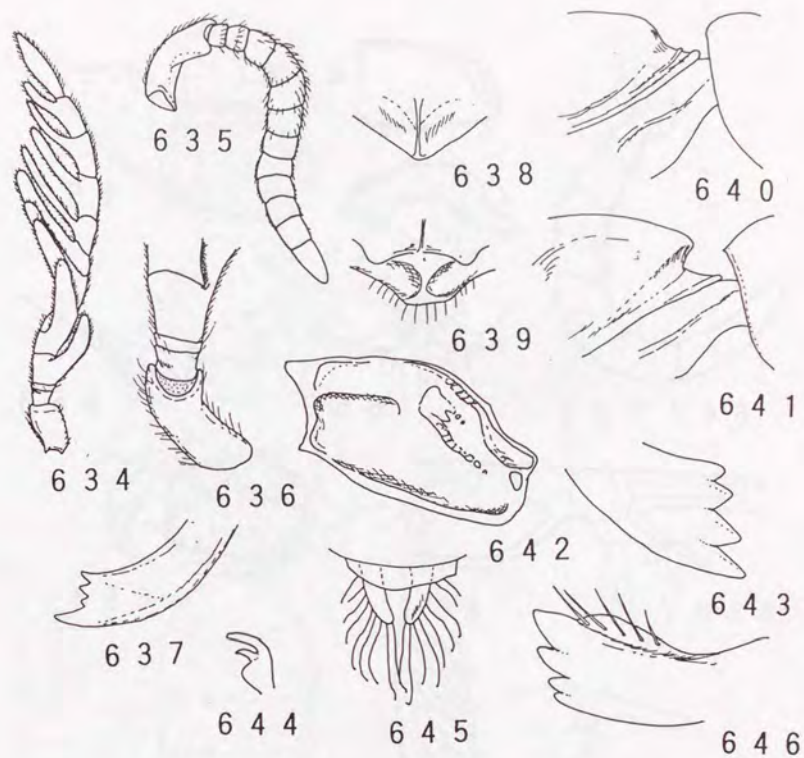
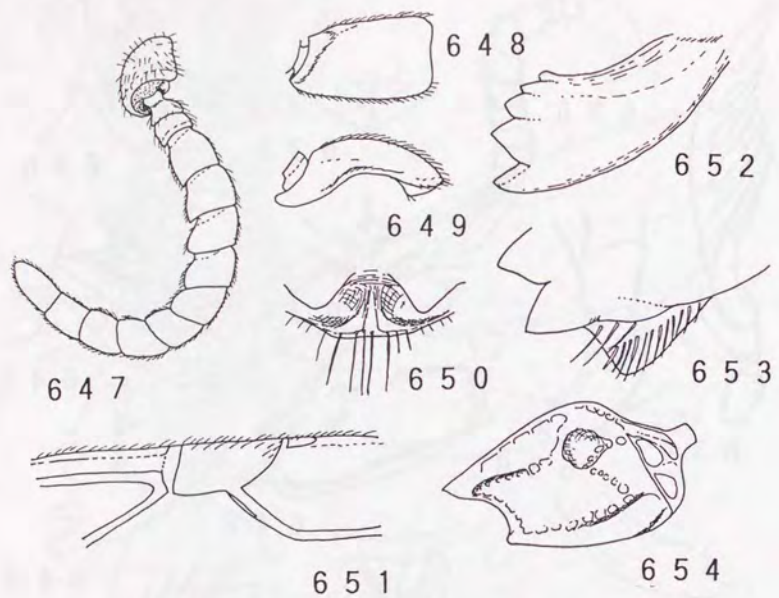


Fig. 633. *Epyris staphylinoides* (Hope), female.

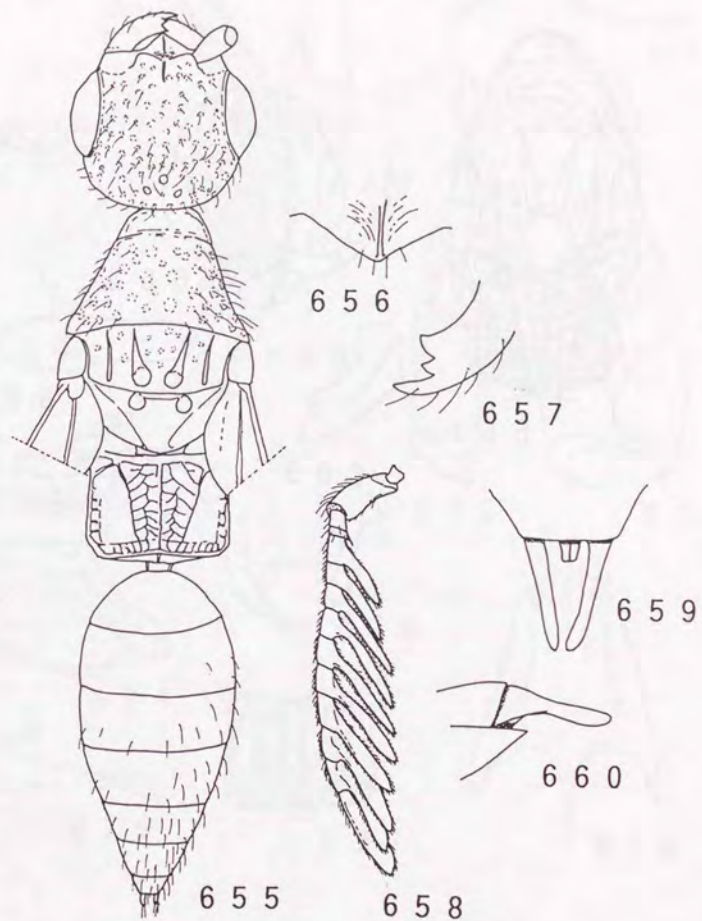


Figs. 634-646. *Epyris staphylinoides* (Hope).

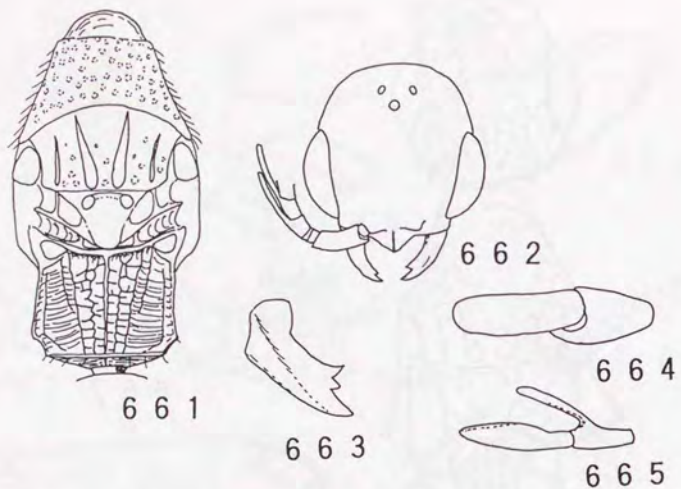
634, antenna, male; 635, ditto, female; 636, antennal 1-4 segments, male;  
 637, mandible, male; 638, 639, clypeus, female; 640, 641, pronotum,  
 lateral view, female; 642, mesopleurum, female; 643, 646, mandible,  
 female; 644, middle claw, male; 645, tip of gaster, dorsal view, male.



Figs. 647-654. *Epyris staphylinoides* (Hope), female.  
 647, antenna; 648, 649, antennal scape; 650, mandible; 651, pterostigma;  
 and postmarginal vein; 652, 653, mandible; 654, mesopleurum.

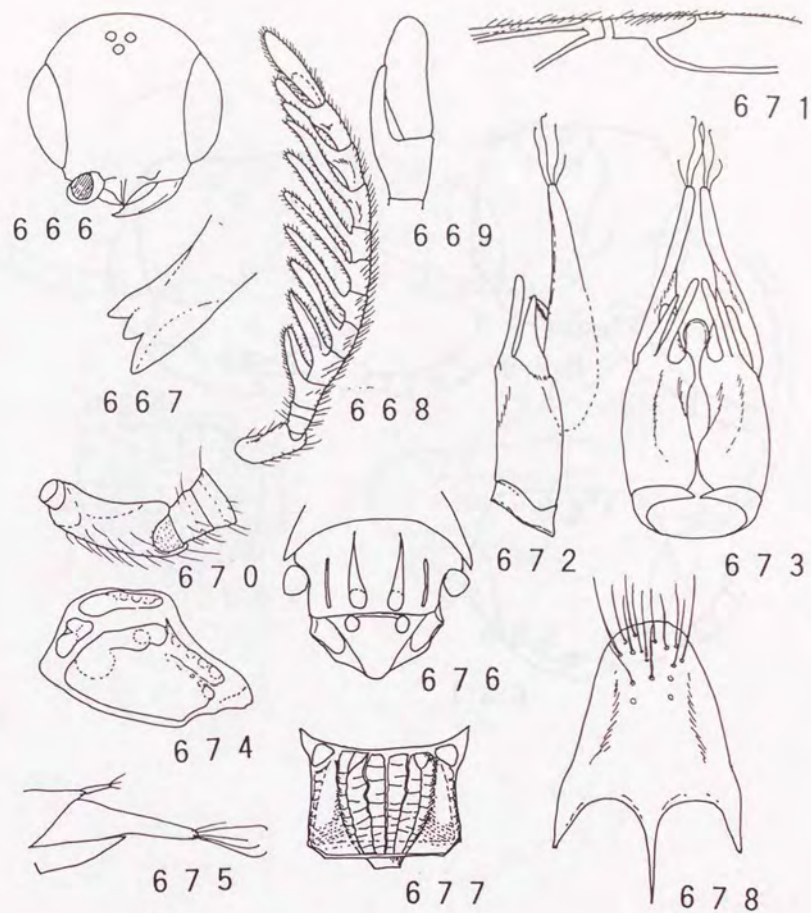


Figs. 655-660. *Epyris hirtipennis* (Cameron), male (type of *Calyozina*  
*flavipennis*).  
 655, profile; 656, clypeus; 657, mandible; 658, antennae; 659, paramere,  
 dorsal view; 660, ditto, lateral view.



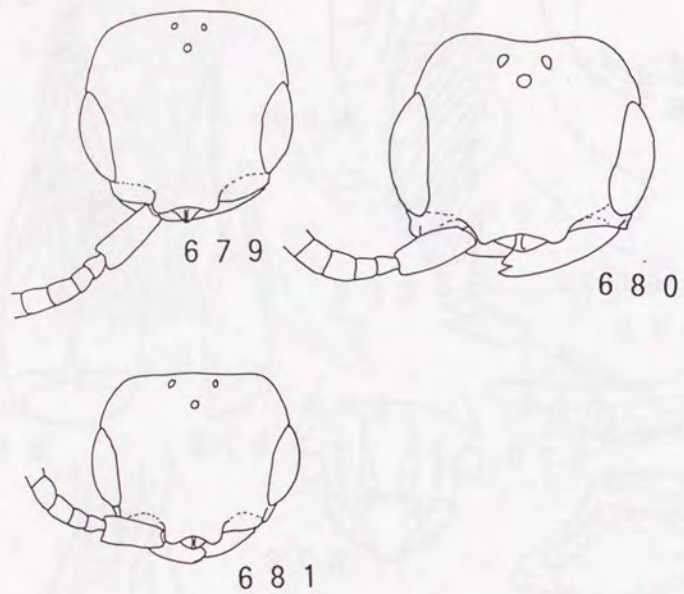
Figs. 661-665. *Epyris budda* sp. nov., male.

661, alitrunk; 662, head, frontal view; 663, mandible; 664, 665, antennal 12 and 13 segments.



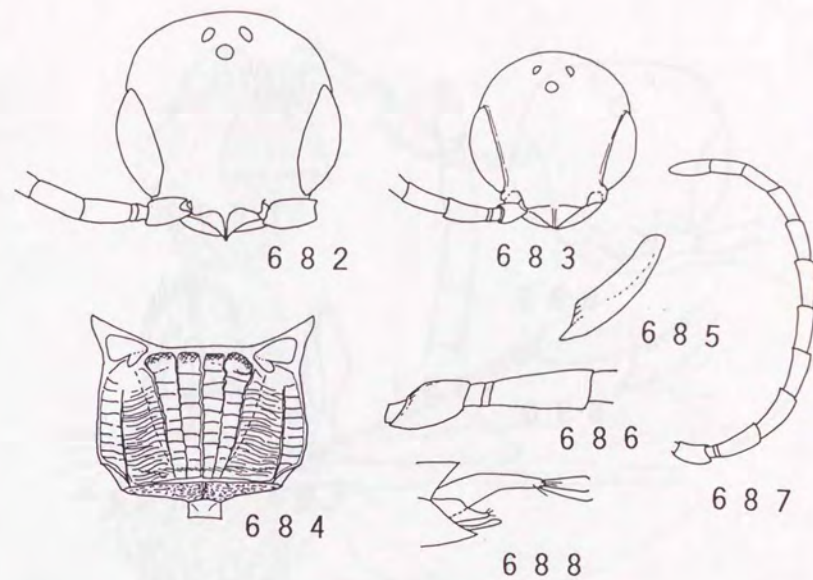
Figs. 666-678. *Epyris aequatorialis* sp. nov., male.

666, head, frontal view; 667, mandible; 668, antenna; 669, antennal 12 and 13 segments; 670, antennal 1-3 segments; 671, pterostigma; 672, genitalia, lateral view; 673, ditto, ventral view; 674, mesopleurum; 675, paramere, lateral view; 676, mesonotum; 677, propodeum; 678, subgenital plate.



Figs. 679-681. *Epyris* spp., head, frontal view.

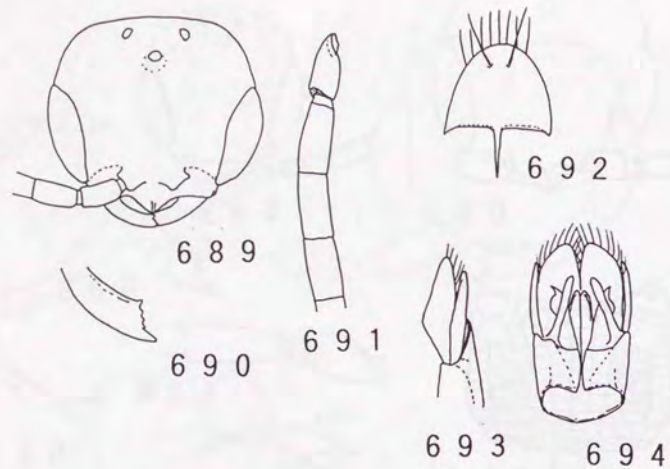
679. *E. indra* sp. nov.; 680. *E. shakha* sp. nov.; 681. *E. maya* sp. nov.



Figs. 682-688. *Epyris shiva* sp. nov. and *E. leytenus* sp. nov.

682, 684. *E. shiva* sp. nov.; 683, 685-688. *E. leytenus* sp. nov.

682, 683, head, frontal view; 684, propodeum, dorsal view; 685, mandible  
; 686, antennal 1-4 segments; 687, antenna; 688, paramere, lateral view.



Figs. 689-694. *Epyris luzonensis* sp. nov.  
 689, head, frontal view; 690, mandible; 691, antennal 1-5 segments;  
 692, subgenital plate; 693, genitalia, lateral view; 694, ditto, ventral  
 view.

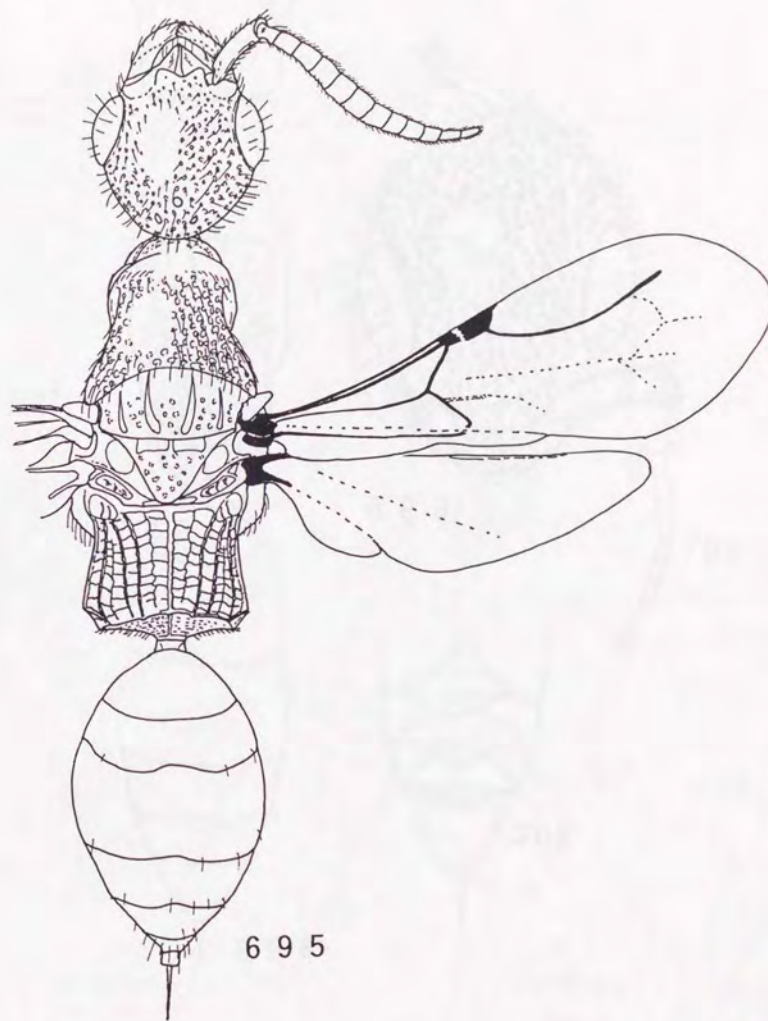
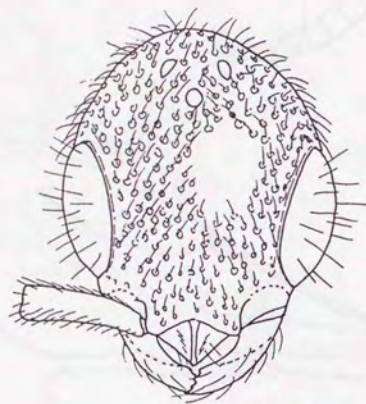


Fig. 695. *Epyris longicephalus* sp. nov., female, profile.



696

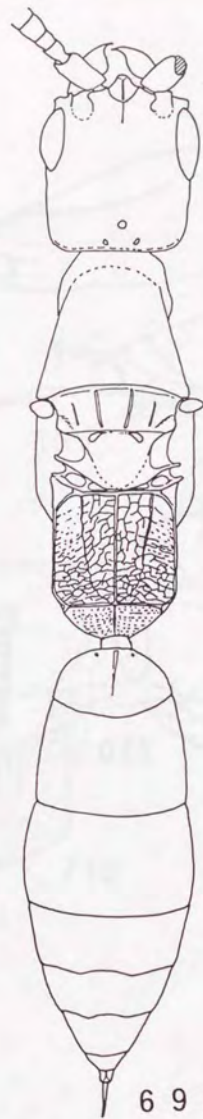


697

Figs. 696, 697. *Epyris longicephalus* sp. nov., female.

696, head, frontal view; 697, mandible.

646



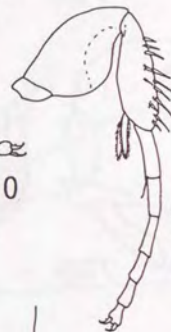
698



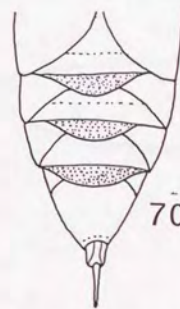
699



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701

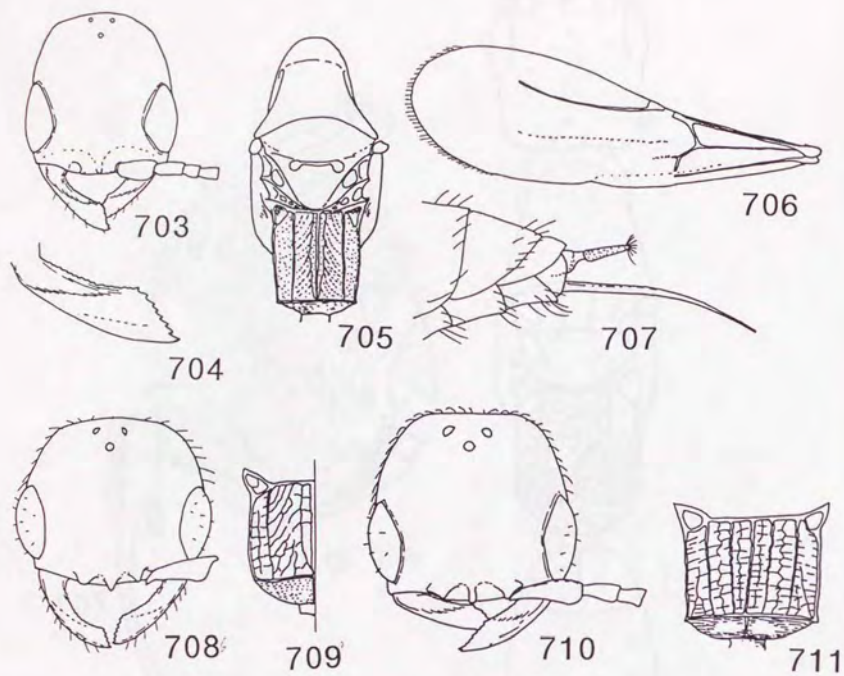


702

Figs. 698-702. *Epyris nantohensis* sp. nov.

698, profile; 699, mandible; 700, fore leg; 701, middle leg; 702, gastral sternites, ventral view.

647

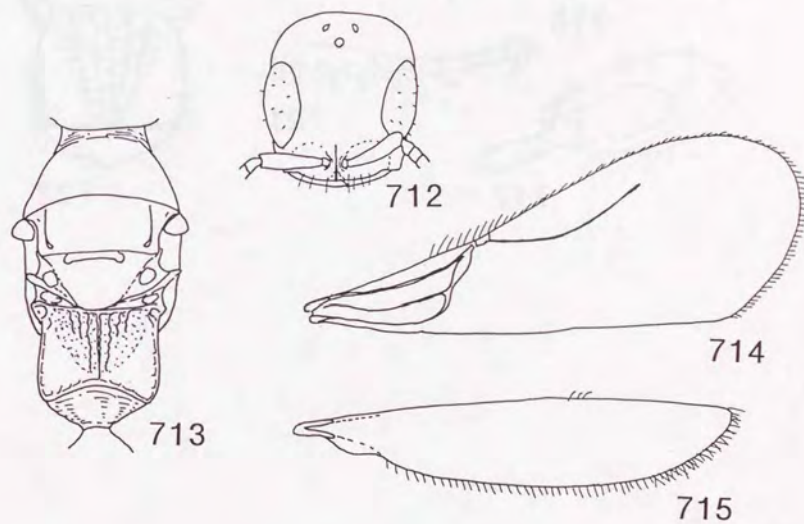


Figs. 703-711. *Glenosema* spp.

703-707, *G. khaoyaiensis* sp. nov.; 708, 709, *G. chiangmaiensis* sp. nov.;

710, 711, *G. doiensis* sp. nov.

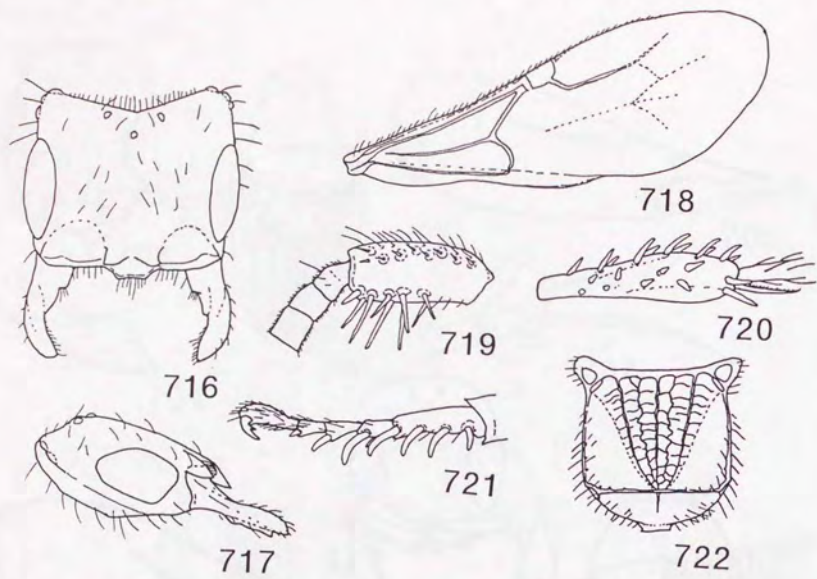
703, 709, 710, head, frontal view; 704, mandible; 705, alitrunk, dorsal view; 706, forewing; 707, tip of gaster, lateral view; 709, 711, propodeum, dorsal view.



Figs. 712-715. *Islaerius thailandus* sp. nov., male.

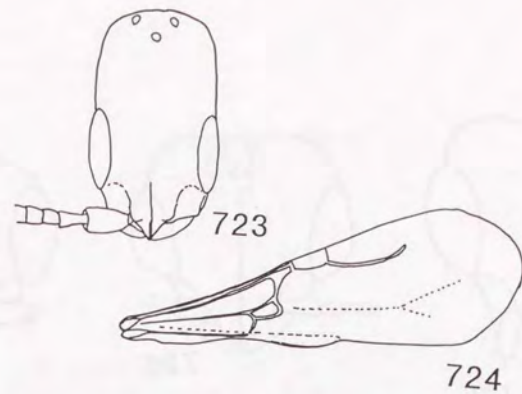
712, head, frontal view; 713, alitrunk, dorsal view; 714, forewing;

715, hindwing.



Figs. 716-722. *Trachypyrus smatrensis* sp. nov.

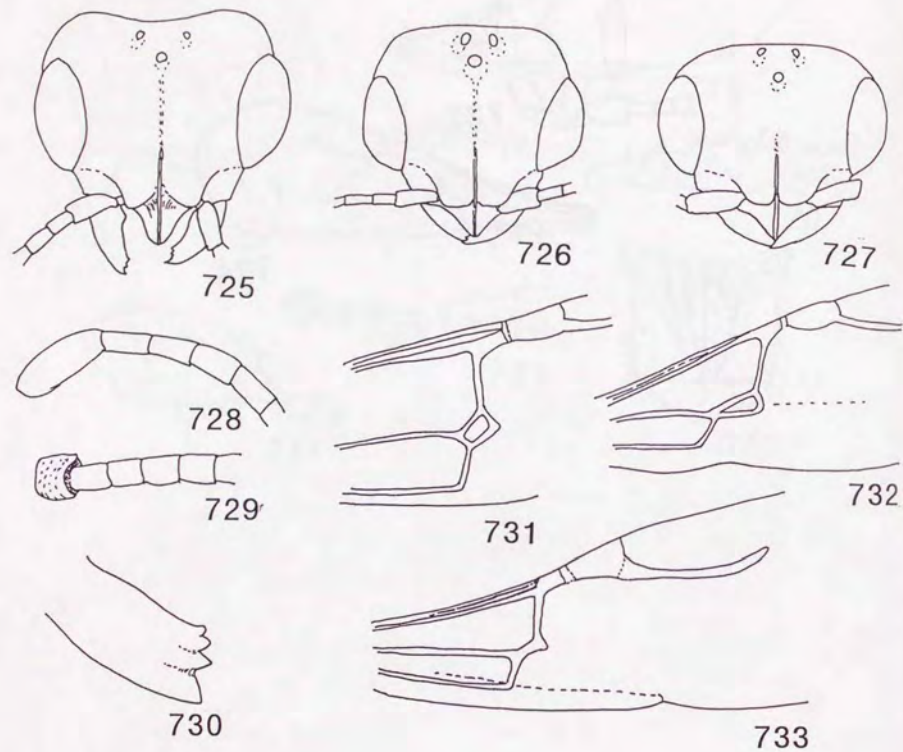
716, head, frontal view; 717, ditto, lateral view; 718, forewing; 719, antennal scape; 720, fore tibia; 721, fore tarsus; 722, propodeum, dorsal view.



Figs. 723, 724. *Goniozus alisanus* sp. nov., female.

723, head, frontal view; 724, forewing.

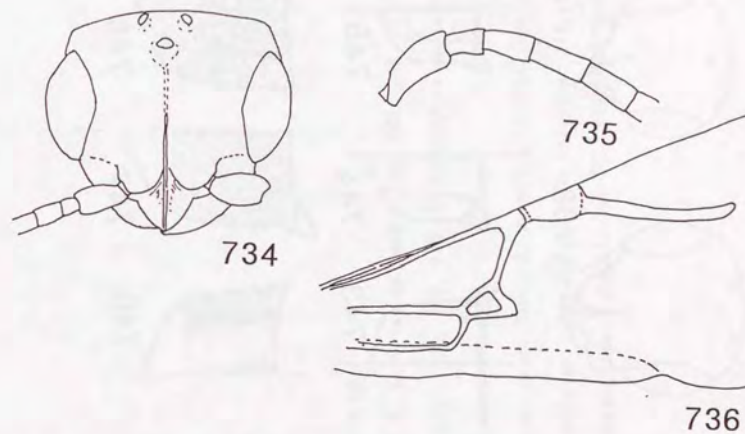




Figs. 725-733. *Odontepyris* spp., female.

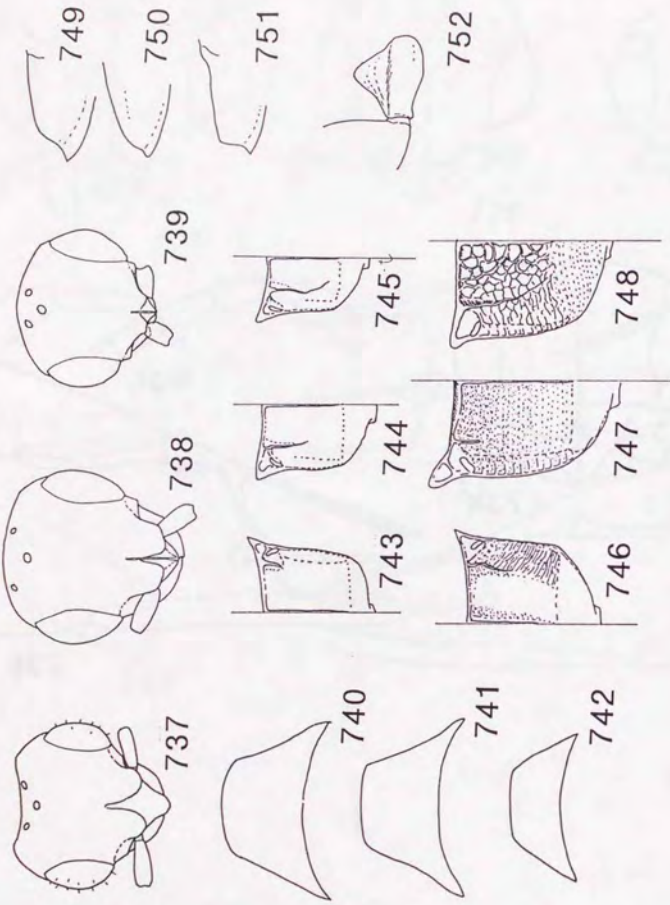
725, 730, 731, *O. chiponensis* sp. nov.; 726, 728, 732, *O. formosicola* sp. nov.; 727, 729, 733, *O. liukueiensis* sp. nov.

725-727, head, frontal view; 728, 729, antennal 1-5 segments (scape of Fig. 729 not parallel); 730, mandible; 731-733, forewing venation.



Figs. 734-736. *Odontepyris koreanus* sp. nov., male.

734, head, frontal view; 735, antennal 1-5 segments; 736, forewing venation.



Figs. 737-752. *Eupsenella* spp.

737, 740, 746, 750, *E. cecilliae* sp. nov.; 738, 741, 747, 751, 752, *E.*

*flavifemorata* sp. nov.; 739, 742, 748, *E. reticulata* sp. nov.;

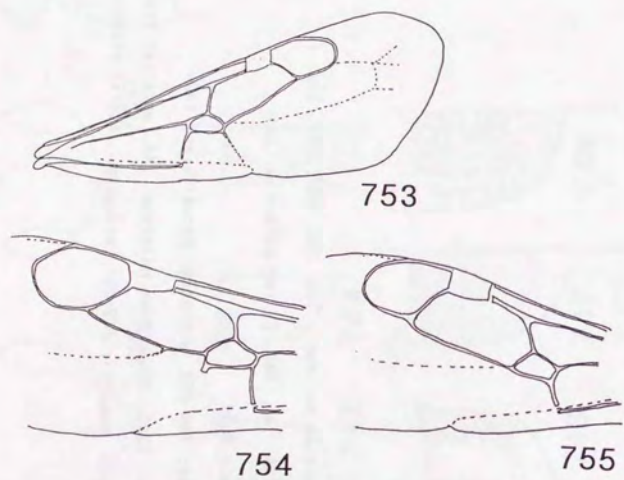
743-745, 749, *E. diemenensis* Dodd.

737-739, head, frontal view; 740-742, pronotum, dorsal view; 743-

748, pronotum, dorsal view, (743, drawn from holotype; 744, material from

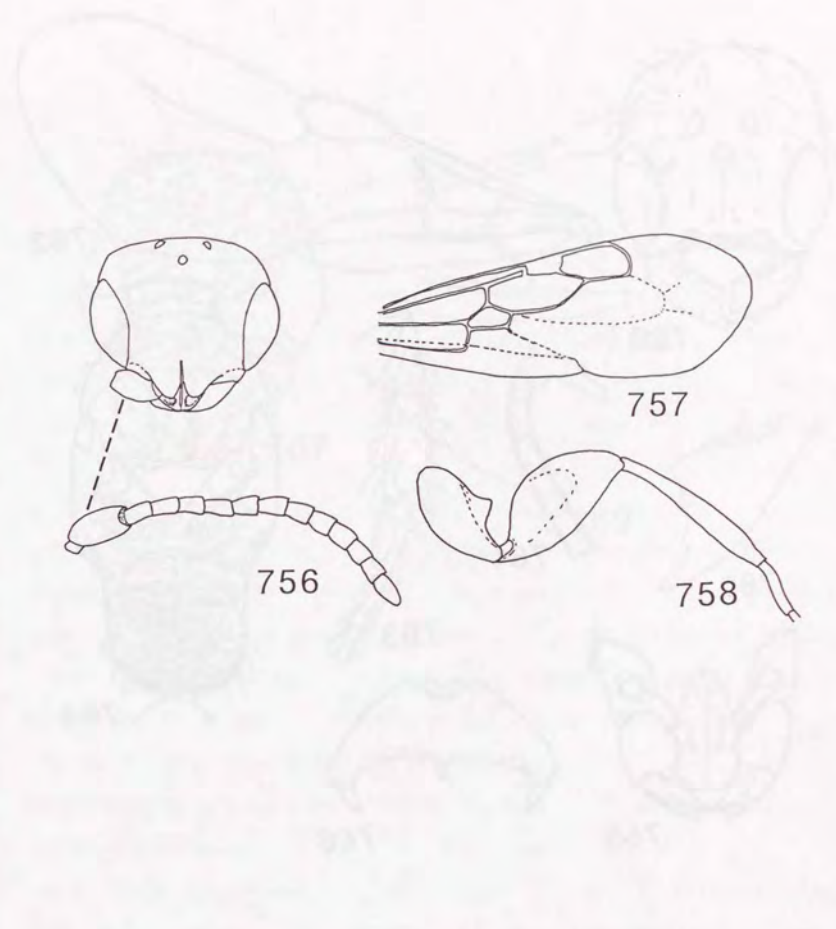
Aderside; 745, material from Hobart); 749-751, pronotum, lateral view;

752, hind coxa.



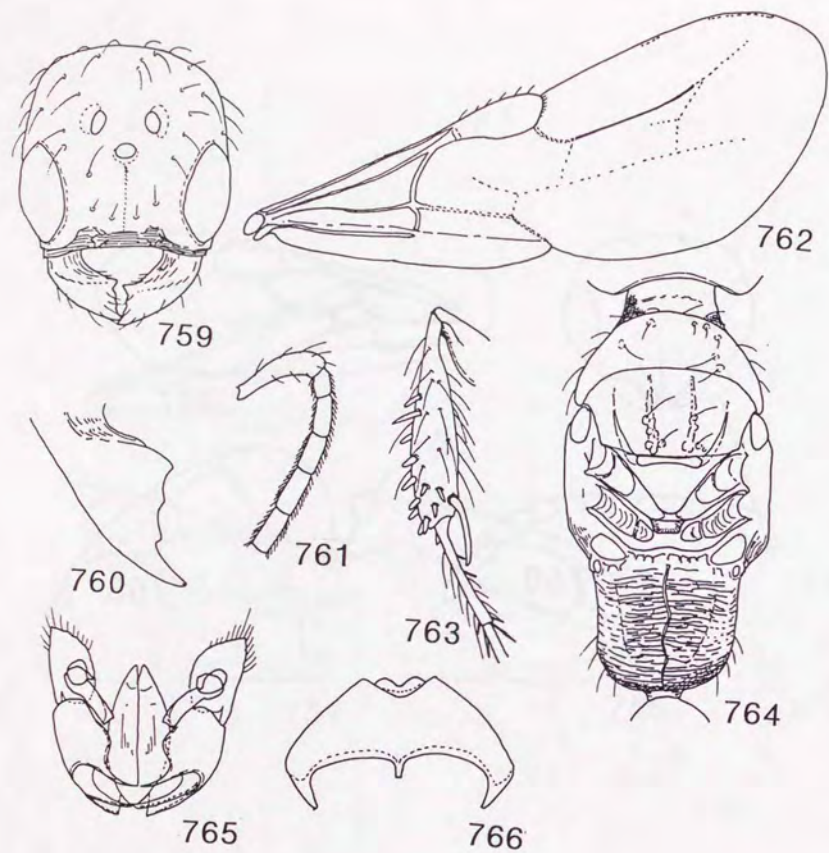
Figs. 753-755, *Eupsenella* spp. forewings.

753, *E. ceciliae* sp. nov.; 754, *E. flavifemorata* sp. nov.; 755, *E. reticulata* sp. nov.



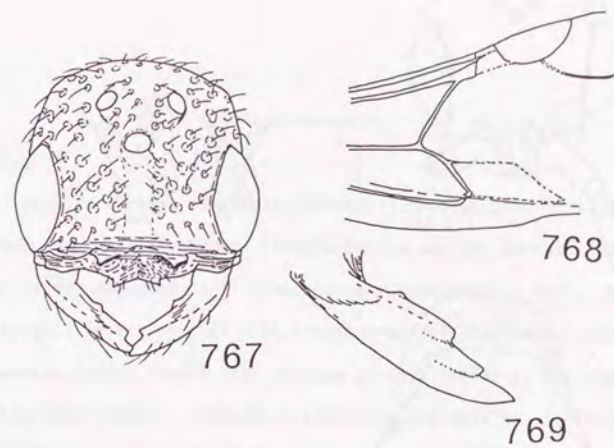
Figs. 756-758. *Eupsenella diemenensis* Dadd, female.

756, head and antenna; 757, forewing (drawn from holotype); 758, hind leg.



Figs. 759-766. *Prosapenesia seriemensis* sp. nov., male.

759, head, frontal view; 760, mandible; 761, antennal 1-6 segments; 762, forewing; 763, middle tibia; 764, alitrunk; 765, genitalia, ventral view; 766, subgenital plate.



Figs. 767-769. *Prosapenesia longimandibulata* sp. nov., male.

767, head, frontal view; 768, forewing venation; 769, mandible.

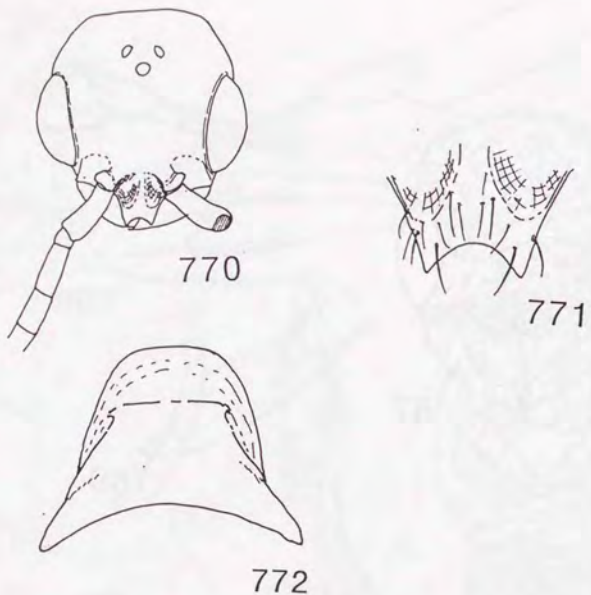


Fig. 770-772. *Pseudisobrachium colombiensis* sp. nov.

770, head, frontal view; 771, clypeus; 772, pronotum, dorsal view.

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## Summary

This thesis aims to clarify the internal relationships of Bethyridae at subfamily, tribe and genus level in the part I, and to contribute to the taxonomy of this family in the poorly studied countries in the part II (Japan) and part III (the other countries).

### Part I.

(1) The higher phylogeny of the Bethyridae was cladistically analyzed using all the possible subfamilies, tribes and 74 genera.

(2) The subfamily analysis at the subfamily level results in a single most parsimonious tree. The following conclusion has been reached: 1) 6 subfamilies are recognized; 2) Afoioginae is included in the Pristocerinae; 3) a new subfamily, Parapenesiinae, is proposed; 4) Epyrinae, Mesitiinae, and Galodoxinae are marked as sister-group each other, and Galodoxinae should be raised to subfamily rank; 5) 3 tribes, Epyrini, Sclerodermini, and Cephalonomiini, are considered to hold within the current position.

(3) Subfamily Pristocerinae comprises 20 genera, but is not established any tribe within it. The analysis indicated that the clade (*Dicrogenium* + *Neodicrogenium*) + *Kathepyris*) is positioned basally, and *Pristocera* and *Acrepyris* constitute the earlier branched of the cladogram. After that there is a division into two groups: (((*Afoiogfa* + *Parascleroderma*) + *Prosapenesia*) + *Diepyris*) and the rest.

(4) In the subfamily Epyrinae, which is most diverse group in external morphology, 3 tribes are recognized. The tribal phylogeny indicated Epyrini as the sister-group of (Sclerodermini + Cephalonimiini).

(5) The following groups of genera of tribe Epyrini are consistently supported as monophyletic: 1) Holepyris + Laelius; 2) ((Aspidepyris + Bakeriella + Calyozina).

(6) The following conclusions are consistent in the phylogenetic system of the relationships among genera in the tribe Sclerodermini: 1) The Nothepyrus, Chilepyris, and (Thlastepyrus + Alongatepyris) are positioned basally; 2) Bethylopsis may be the sister-group of (Glenosema + (Lepidosternopsis + Sclerodermus)); 3) Thlastepyrus and Alongatepyris constitute a monophyletic assemblage.

(7) The phylogeny of the genera of the tribe Cephalonimiini here proposed is (Islaelius + (Plastanoxus + Prolops + (Cephalonomia + Acephalonomia))).

(8) The cladogram of Mesitiinae has a polytomy involving (Anaylax + Pseudomesitius), Bradepyrus, and the remaining 9 genera. The distribution pattern of this subfamily is unique in Bethyridae: 1) It has not been found in the New World and the Australian region; 2) the largest generic diversity is seen in the Palaearctic region.

(9) Subfamily Bethylinae comprises 6 genera and is not recognized any tribe within it. The phylogeny indicated that the Eupsenella is placed basally, and after that there is a basal polytomy involving the rest of 5 genera.

(10) In the cladistic analysis with the external morphologies, there have

been found many homoplasious character states. The following evolutionary trends associated with the reduction in body size are observed among different phylogenetic lines: 1) Wing reduction; 2) simplification of the body surface sculpture; and 3) transformation to ant-like body forms in the female.

(11) Three new genera, Calopenesia, Neopenesia, and Orientepyrus, are established. Subgenus Acrepyrus of the genus Pristocera is raised to the generic status.

(12) New generic synonyms are proposed as follows:

*Psilobethylus* Kieffer is synonymized with *Dissomphals* Ashmead; *Neusakosia*

*Benoit* with *Prosapenesia* Kieffer; *Allepyrus* Kieffer with *Laelius* Ashmead;

*Homoglenus* Kieffer with *Epyrus* Westwood; *Procalyzoa* Kieffer provisionally with *Anisepyrus* Kieffer; *Lytepyrus* Kieffer with *Disepyrus* Kieffer;

*Nesepyrus* Bridwell with *Allobethylus* Kieffer; *Anoxus* Thomson with

*Bethylus* Latreille; and *Lytopsenella* Kieffer with *Eupsenella* Westwood.

(13) Genus *Bethylopsis*, which has long been unknown of its precise taxonomic position, is found to be a member of the tribe Sclerodermini of Epyrinae. Genus *Odontepyrus*, which is sometimes included in the subfamily Epyrinae, is placed in the subfamily Bethylinae. Genus *Bradepyrus* of the subfamily Epyrinae is transferred to the subfamily Mesitiinae.

(14) New format keys to the subfamilies and genera of the world are also presented.

Part II.

(1) The Japanese species of Bethylidae are revised, and 70 species of 16 genera are treated.

(2) The Japanese genera here recognized are *Acrepyris*, *Apenesia*, *Pseudisobrachium* and *Dissomphalus* belonging to the subfamily *Pristocerinae*, *Epyris*, *Holopyris*, *Laelius*, *Allobethylus*, *Sclerodermus*, *Cephalonomia* and *Plastanoxus* belonging to the subfamily *Epyrinae*, *Heterocoelia* belonging to the subfamily *Mesitiinae*, and *Bethylus*, *Odontepyris*, *Goniozus* and *Sierola* belonging to the subfamily *Bethylinae*.

(3) The following 61 species are described as new to science:

Subfamily *Pristocerinae*

*Acrepyris ryukyuensis* sp. nov.

*Apenesia bishamon* sp. nov., *A. daikoku* sp. nov., *A. elegans* sp. nov., *A.*

*kusigematii* sp. nov., *A. okinawensis* sp. nov., *A. tengu* sp. nov., *A.*

*kaguyahime* sp. nov., *A. otohime* sp. nov.

*Dissomphalus kyushuensis* sp. nov., *D. minutulus* sp. nov.

*Pseudisobrachium ryukyunum* sp. nov., *P. nambui* sp. nov., *P. onoyamai* sp. nov.

Subfamily *Epyrinae*

*Epyris asura* sp. nov., *E. emiae* sp. nov., *E. hagoromonis* sp. nov., *E. hiten*

sp. nov., *E. surusumi* sp. nov., *E. otome* sp. nov., *E. tennyō* sp. nov.,

*E. blandus* sp. nov., *E. hachijoanus* sp. nov., *E. idaten* sp. nov., *E.*

*minoensi* sp. nov., *E. niwoh* sp. nov., *E. nubatama* sp. nov., *E. pectinatus*

sp. nov., *E. shohki* sp. nov., *E. yakushimanus* sp. nov., *E. yamatonis* sp.

nov.

*Holepyris amamiinsulanus* sp. nov., *H. benten* sp. nov., *H. tsugarensis* sp.

nov., *H. yebisu* sp. nov., *H. yambaru* sp. nov.

*Laelius nigrofemoratus* sp. nov., *L. yamatonis* sp. nov., *L. yokohamanus* sp.

nov.

*Allobethylus tomoae* sp. nov.

*Sclerodermus yakushimensis* sp. nov.

*Plastanoxus fukuokensis* sp. nov.

*Cephalonomia shirahamana* sp. nov.

Subfamily *Mesitiinae*

*Heterocoelia inagiensis* sp. nov., *H. kamakurensis* sp. nov.

Subfamily *Bethylinae*

*Bethylus pirika* sp. nov., *B. sarobetsuensis* sp. nov., *B. shigaensis* sp. nov.

*Odontepyris japonicus* sp. nov.

*Goniozus akitsushmanus* sp. nov., *G. eriae* sp. nov., *G. hoorai* sp. nov., *G.*

*iyonus* sp. nov., *G. kaiensis* sp. nov., *G. kusigematii* sp. nov., *G.*

*tosaensis* sp. nov., *G. yezo* sp. nov., *G. yoshikawai* sp. nov.

*Sierola echigoana* sp. nov., *S. shimotsukeana* sp. nov.

(3) *Sclerodermus nipponicus* Yuasa, 1930, is synonymized with *S. harmandi* (Buysson, 1902) which is transferred from genus *Dissomphalus* to *Sclerodermus*. *Epyris sauteri* (Enderlein, 1912), originally described from Taiwan from the male, is synonymized with *Epyris apicalis* Walker, 1874. However, the name, *apicalis*, is preoccupied with *Epyris apicalis* (Motschulsky, 1863), then a re-

place new name, *E. formosus* is proposed. *Laelius microneurus* (Kieffer, 1906) and *Goniozus floridanus* (Ashmead, 1887) (= *G. platynotae* Ashmead, 1893) are excluded from the Japanese fauna.

Part III.

(1) The following 72 species of 16 genera are described as new to science:

Subfamily Pristocerinae

*Pristocera kinabarensis* sp. nov., *P. changmaianus* sp. nov., *P. poirieri* sp. nov., *P. huberi* sp. nov.

*Acrepyris tainanensis* sp. nov., *A. takasago* sp. nov., *A. mieae* sp. nov.

*Parapenesia seriemensis* sp. nov., *P. longimandibulata* sp. nov.

*Dessomphalus thaianus* sp. nov., *D. chiangmaiensis* sp. nov., *D. browni* sp.

nov., *D. philippinensis* sp. nov., *D. wushenus* sp. nov., *D. kinabalensis* sp. nov., *D. nepalensis* sp. nov., *D. borneoensis* sp. nov., *D.*

*khaoyaiensis* sp. nov., *D. chiponensis* sp. nov.

*Pseudisobrachium colombiensis* sp. nov., *P. hongkongensis* sp. nov., *P.*

*nepalensis* sp. nov., *P. fulleri* sp. nov., *P. silvicolum* sp. nov.

*Apenesia ktmdana* sp. nov., *A. carnicollis* sp. nov., *A. nepalensis* sp. nov.,

*A. pulchella* sp. nov., *A. alleni* sp. nov., *A. takasago* sp. nov., *A.*

*sarawakensis* sp. nov., *A. formosimonticola* sp. nov., *A. chitouensis* sp.

nov., *A. liukueiensis* sp. nov., *A. meifuiae* sp. nov., *A. pingtungensis*

sp. nov.

*Parascleroderma atayal* sp. nov., *P. bangkokensis* sp. nov., *P. longicephala*

sp. nov.

*Protisobrachium asianum* sp. nov.

Subfamily Epyrinae

*Calyozina nepalensis* sp. nov., *C. thaiana* sp. nov.

*Epyris sarawakensis* sp. nov., *E. luzonensis* sp. nov., *E. longicephalus* sp.

nov., *E. thaianus* sp. nov., *E. nepalensis* sp. nov., *E. malayanus* sp. nov.,

*E. budda* sp. nov., *E. aequatorialis* sp. nov., *E. indra* sp. nov., *E. shakka*

sp. nov., *E. maya* sp. nov., *E. shiva* sp. nov., *E. leytenus* sp. nov., *E.*

*karnatakensis* sp. nov., *E. nantohensis* sp. nov.

*Glensema khaoyaiensis* sp. nov., *g. chiangmaiensis* sp. nov., *G. doiensis* sp. nov.

*Islaerius thailandus* sp. nov.

*Trachepyrus sumatrensis* sp. nov.

Subfamily Bethylinae

*Odontepyrus taiwanus* sp. nov., *O. formosicola* sp. nov., *O. liukueiensis* sp.

nov., *O. koreanus* sp. nov.

*Eupsenella cesiliae* sp. nov., *E. flavifemorata* sp. nov., *E. reticulata* sp. nov.

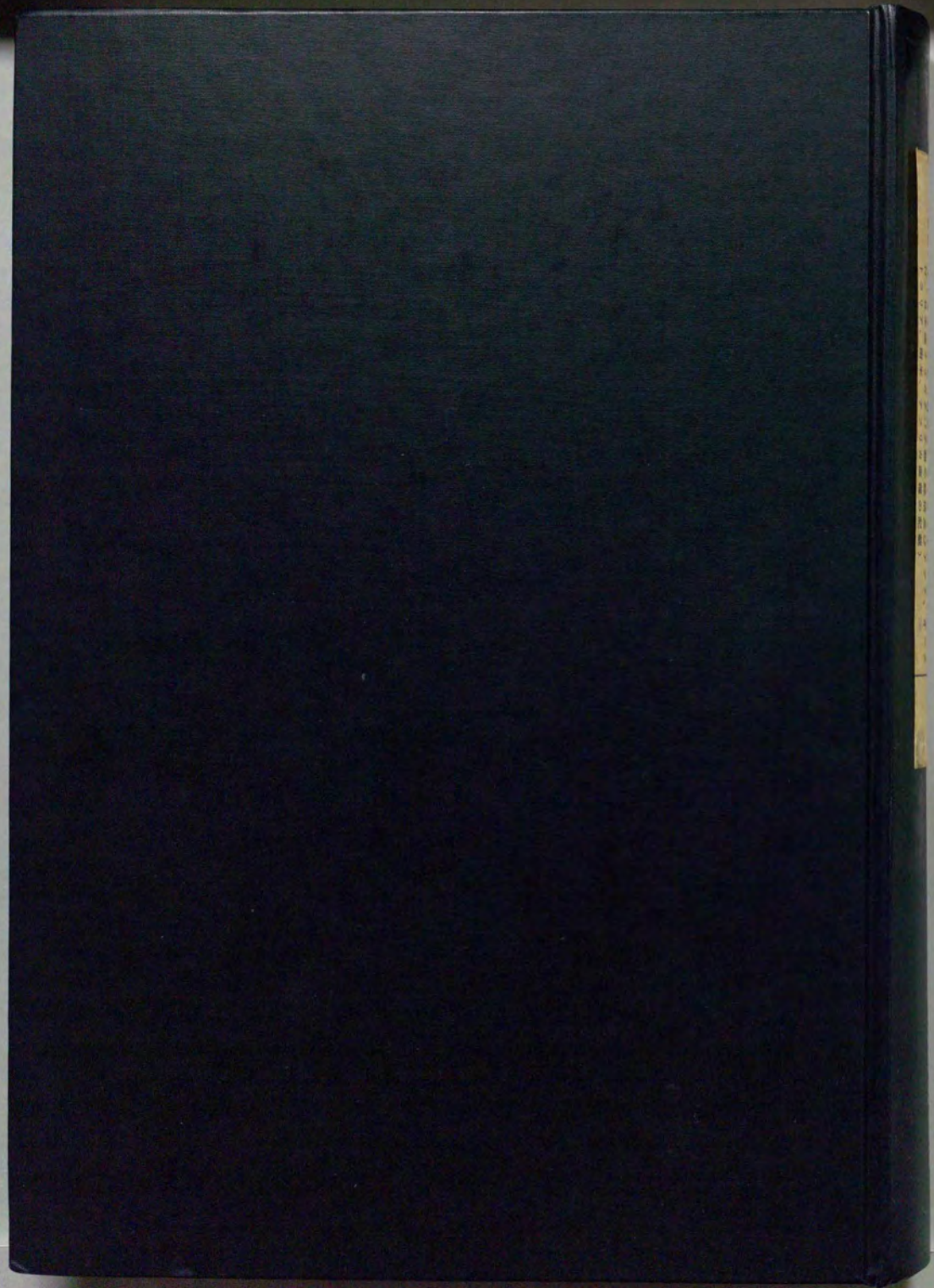
*Bethylus himarayanus* sp. nov.

*Goniozus alishanus* sp. nov.

(2) The following species are transferred from the genus *Calyozina* to *Epyris*:

*Epyris amazonicus* comb. nov., *E. neotropicus* comb. nov., *E. mexicanus* comb.

nov., *E. azureus* comb. nov., *E. caperatus* comb. nov.



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