# Descriptions of New Taxa and Distribution Records of the Family Bethylidae (Insecta, Hymenoptera) II. Subfamily Bethylinae and Fossil Taxa

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Abstract Seven living bethylid wasps belonging to the subfamily Bethylinae are described as new to science from Asia and Australia: Eupsenella ceciliae sp. nov., E. flavifemorata sp. nov., E. reticulata sp. nov., Goniozus hualienensis sp. nov., Bethylus himalayanus sp. nov., Sierola mawarajo sp nov. and S. indra sp. nov. Eupsenella diemenensis Dodd, 1916, is redescribed. A new fossil genus Archaeopristocera is described from the Dominican amber based on Archaeopristocera miki sp. nov. A fossil genus Uromesitius Brues, 1933, is removed from the Family Bethylidae to the subfamily Cleptiinae of Family Chrysididae. World distribution of 6 genera of Bethylinae is also shown and commented.

#### Introduction

In the present part, I describe 7 species belonging to the subfamily Bethylinae, and a new fossil genus and species from the Dominican amber.

Special terms used in this paper follow those in Terayama (1999). The following abbreviations are used in the descriptions: HL-head length; HW-head width; WF-width of frons; LM-length of mesosoma; PW-pronotal width in dorsal view; LP-length of propodeum in dorsal view; LPD-length of propodeal disc in dorsal view; WPD-width of propodeal disc in dorsal view; FWL-forewing length; TL-total body length; EL-eye length; POL-distance between posterior ocelli; AOL-distance between posterior ocellus and anterior ocellus; OOL-distance from a posterior ocellus to nearest eye margin; WOT-distance across and including posterior ocelli; DAO-daiameter of anterior ocellus. The abbreviations of institutions are as follows: CNC- Bio-systematics Research Centre, Ottawa, Canada; SAM-South Australian Museum, Adelaide, Australia; NSMT- National Science Museum, Tokyo, Japan.

## Taxonomic accounts and distribution

## 1. Subfamily Bethylinae

# 1-1. Genus Eupsenella Westwood

The genus *Eupsenella* is very small genus and a single species, *E. diemenensis*, has been known in Australia and New Zealand only (Fig. 34-C). For the kindness of the South Australian Museum, Australia, I examined 13 specimens of the genus *Eupsenella*. After careful examination, I recognized 4 species of which 3 are new to science describe herein.

# Eupsenella diemenensis Dodd (Figs. 1-4, 14-16, 20)

Eupsenella diemenensis Dodd, 1916.

**Redescription.** Female. HL 0.70-0.88 mm; HW 0.73-0.88 mm; WF 0.43-0.55 mm; LM 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; mandible black; antenna with upperside dark brown, underside light brown; coxae and

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femora blackish brown; tibiae and tarsi light brown.

Head almost as long as wide, with almost straight posterior margin in full face view; frons and vertex microreticulate. Median lobe of clypeus roundly produced. First 4 segments of antenna in a ratio of 2:1:1:1 in length; scape 1.3 times as long as wide. Eye 0.35-0.40 mm in length, with erect hairs sparsely; WF 1.24-1.38 times EL. Ocellar triangle flat, POL: AOL = 7:4; OOL 1.0 times WOT.

Pro- and mesonotal dorsa microreticulate with scattered shallow small punctures. Propodeal disc as in Figs. 14-16; a pair of submedian carinae present which are not reaching the transverse carina; relative length of the submedian carina varies in from 0.2 to 0.7 times the propodeal length; discal surface microreticulate; decrivity moderately microreticulate.

Forewing as shown in Fig. 3.

**Specimens examined.** Mt. Wellington, Tas (Tasmania), Lea leg. (holotype, female, head and forewings mounted on a slide; SAM); 1 female, Upper stocol, S. A., 19.II.1953, G. F. Gross leg.; 2 females, Adelaide, N. B. Tindale leg.; 1 female, Hobart, 25.VI.16/17, C. Cole leg.; 2 females, Ardrossan, S. A., J. G. O. Tep leg.; 1 female, S. Australia, A. M. Lea leg.

Remarks. The holotype specimen from Tasmania is showen in the Figs. 1-4 and 14.

### Eupsenella ceciliae sp. nov. (Figs. 5, 8, 11, 17, 21)

Female (holotype). HL 0.95 mm; HW 1.15 mm; WF 0.65 mm; LM 1.55 mm; LPD 0.55 mm; WPD 1.00 mm; FWL 3.0 mm; TL 4.5 mm.

Body blackish brown; mandible blackish brown; antennal scape blackish brown excepting yellowish brown apical 1/4; funiculus with dark brown upperside and brown to yellowish brown underside; femora blackish brown; tibiae and tarsi brown, somewhat yellowish.

Head wider than long, with convex posterior margin in full face view; frons and vertex punctate; interspaces relatively weakly microreticulate. Clypeus smooth and shining; median carina lacking; anterior margin roundly produced. First 4 segment of antenna in a ratio of 3:1:1:1 in length. Eye 0.45 mm in length, with erect hairs; WF 1.44 times EL. POL: WOT = 7:5; OOL 1.2 times WOT.

Pronotum relatively weakly microreticulate with shallow punctures sparsely; anterior margin weakly convex in dorsal view; anterodorsal margin rounded, not forming an angle in lateral view. Propodeal disc as in Fig. 17; median area smooth and shining; lateral area moderately microreticulate.

Forewing as in Fig. 5.

Variation. One paratype specimen with the following measurements: HL 1.00 mm; HW 1.13 mm; WF 0.65 mm; LM 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. 1 female, Ridgeway, 3.9.16/28, C. Cole leg.

Type depository. SAM.

**Remarks.** This is a peculiar species in lacking median clypeal carina in Bethylidae. The loss of the carina is considerd as a secondary fusion.

#### Eupsenella flavifemorata sp. nov. (Figs. 6, 9, 12, 18, 22, 23)

Female (holotype). HL 1.00 mm; HW 1.00 mm; WF 0.61 mm; LM 1.70 mm; LPD 62 mm; WPD 0.80 mm; FWL 2.9 mm; TL 3.9 mm.

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

Head as long as wide, with gently convex posterior margin in full face view; frons and vertex

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microreticulate with shallow sparse punctures. Clypeus broadly producing, with a median carina. First 4 segments of antenna in a ratio of 3:1:1:1 in length. Eye 0.45 mm in length, with erect hairs; WF 1.35 times EL. Ocellar triangle flat, POL: AOL = 3:2; OOL 0.75 times WOT.

Pronotal disc flat and trapezoidal; anterior margin straight in dorsal view; anterodorsal margin forming a dull angle in lateral view; discal surface moderately microreticulate with shallow punctures sparsely. Mesonotal dorsum flat; notauli parallel. Propodeal disc microreticulate; median carina almost reaching posterior margin; submedian carina short, ca. 1/5 of the length of propodeum.

Forewing as in Fig. 6.

Variation. The paratype specimen with the following measurements: HL 1.00 mm; HW 0.95 mm; WF 0.58 mm; LM 1.75 mm; LPD 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.I.1971, J.A. Hwrridge, G. F. & M. Gross leg.

**Paratype.** 1 female, same data as holotype.

Type depository. SAM.

## Eupsenella reticulata sp. nov. (Figs. 7, 10, 13, 19)

Female (holotype). HL 0.75 mm; HW 0.85 mm; WF 0.50 mm; LM 1.30 mm; LPD 0.50 mm; WPD 0.68 mm; FWL 2.5 mm.

Body black; mandible yellow; antenna with brownish yellow upperside and yellow underside; coxae and femora dark brown; tarsi and tibiae vellow.

Head wider than long, with moderately convex posterior margin in full face view; frons and vertex strongly microreticulate and with small punctures sparsely. Median lobe of clypeus rather broad, forming an obtuse angle. First 4 segment of antenna in a ratio of 2:1:1:1 in length; scape 1.4 times as long as wide. Eye 0.38 mm in length, with erect hairs; WF 1.30 times EL. Ocelli relatively large, forming a compact triangle; POL: AOL = 5:3; OOL 0.75 times WOT.

Pronotal disc strongly microreticulate, narrow and trapezoidal in dorsal view; anterodorsal margin not forming an angle in lateral view. Mesonotum microreticulate; notauli diverging toward the front. Propodeal disc as in Fig. 19; sublateral carina long, almost reaching the posterior margin of disc; median area reticlate; sublateral area with oblique rugulae.

Forewing as in Fig. 7

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

Type depository. SAM.

## 1-2. Genus Goniozus Foerster

### Goniozus hualienensis sp. nov. (Figs. 24, 25)

Female (holotype). HL 0.65 mm; HW 0.65 mm; WF 0.48 mm; LM 1.13 mm; LPD 0.30 mm; WPD 0.50 mm; FWL 2.1 mm; TL 2.4 mm.

Body black; mandible and antenna yellowish brown; legs brown excepting yellowish brown tarsi; wings hyaline; wing veins pale yellowish brown; pterostigma and prostigma dark brown.

Head as long as wide, with weakly convex posterior margin in full face view; frons and vertex shagreened, and scattered with shallow weak punctures. Median lobe of clypeus triangular. First 5 segments of antenna in a ratio of 5:3.8:2.9:2 in length. Eye 0.35 mm in length, hairless; WF 0.86 times EL. Ocelli forming an obtuse triangle; POL: AOL = 9:5; OOL 0.8 times WOT.

Pronotal disc short, 0.58 times as long as wide, 0.60 mm in maximum width in dorsal view; surface shagreened. Mesonotum shagreened. Propodeal disc short, 0.60 times as long as wide; basal triangular area smooth, lateral and posterior areas shagreened; transverse carina distinct.

Forewing without closed areolet.

Metasoma smooth and shining,

Holotype. Female, Antung spa Hualien, Taiwan, 1. V. 1985, A. Sato leg.

Type depository. NSMT.

**Remarks.** This species resembles *G. japonicus* Ashmead from Japan, Korea, China, and Taiwan, but is separated from this by the short pronotum and propodeum, and the wide head.

### 1-3. Genus Bethylus Latreille

### Bethylus himalayanus sp. nov.

Female (Holotype). HL 1.03 mm; HW 0.95 mm; WF 0.63 mm; LM 1.30 mm; LP 0.63 mm; DPW 0.60 mm; FWL 2.8 mm; TL 4.3 mm.

Head and mesosoma black; metasoma dark reddish brown; mandible black; antenna brown except for posterior 2/3 of scape and underside of funicular segments reddish; coxae, femora and most part of tibiae dark brown; trochanters, tip and base of tibiae and tarsi yellow; wings hyaline; pterostigma blackish brown.

Head rectangular, slightly longer than wide, with very weakly convex posterior margin in full face view; frons and vertex strongly microreticulate. Mandible microreticulate, with 4 teeth. Anterior margin of clypeus weakly convex. Antenna 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 times as long as wide; 3rd 2.8 times as long as wide. Eye flat, 0.35 mm in length; WF 1.8 times EL. Ocelli small, front angle of ocellar triangle less than a right angle; OOL 2.5 times WOT.

Pro- and mesonota strongly microreticulate. Propodeum 1.05 times as long as wide in dorsal view; disc strongly microreticulate; declivity only weakly microreticulate and partly smooth.

Metasoma 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; WF 0.76 mm; LM 1.55 mm; LP 0.70 mm; WPD 0.70 mm; FWL 3.2 mm; TL 5.3mm.

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

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

Type depository. CNC.

**Remarks.** A paratype specimen was captured at a Mallese trap. This is the first record of this genus from Nepal and the latitudinally most southern distributional record (Fig. 34-A).

#### 1-4. Genus Sierola Cameron

The genus *Sierola* containes about 100 species, and is mostly distributed in the Hawaii, the Marqesus and Australia, and a few from North America (1 species), Japan (2 species), Far East Russia (1 species), and southern China (1 species). I have examined the specimens of this genus from Chiang Mai, Thailand, and Bangalore, India, which represent 2nd and 3rd records of this genus from the Oriental region (Fig. 34-C), and the Indian record is the most eastern distribution in the genus.

Sierola mawarajo sp. nov. (Figs. 26-29)

Female (Holotype). HL 0.50 mm; HW 0.43 mm; WF 0.24 mm; LM 0.73 mm; LPD 0.21 mm; DPW

0.32 mm; FWL 1.2 mm; TL 1.9 mm.

Head and mesosoma black; metasoma dark brown; mandible black; antenna yellow; coxae and femora brown; trochanters, tibiae and tarsi yellow.

Head 1.18 times as long as wide, with weakly convex posterior margin in full face view; frons and vertex microreticulate. First 5 segments of antenna in a ratio of about 4.5 : 2 : 1 : 1: 1.5 in length; 2nd segment 1.4 times as long as wide, 3rd to 5th segments each as long as wide. Eye 0.24 mm in length; WF 1.0 times EL. Ocelli forming an obtuse triangle; POL : AOL = 5 : 4; OOL 1.2 times WOT.

Mesosoma microreticulate; pronotal disc trapezoidal in dorsal view. Propodeal disc microreticulate, 0.68 times as long as wide, with subparallel sides and straight posterior margin in dorsal view; lateral and transverse carinae present.

Metasoma smooth and shining.

Forewing as in Fig. 28; basal vein thick; areolet thin and long.

Holotype. Female, Khao Yai, Thailand, 10-17. II. 1989, T. W. Thormin leg.

Paratypes. 2 females, same data as holotype.

Type depository. All the types are deposited in CNC.

#### Sierola indra sp. nov. (Figs. 30-33)

**Female(Holotype).** HL 0.55 mm; HW 0.45 mm; WF 0.25 mm; LM 0.88 mm; LP 0.28 mm; DPW 0.33 mm; FWL 1.4 mm; TL 1.9 mm.

Head and mesosoma black; metasoma dark brown; mandible black; antenna yellow; coxae and femora brown; trochanters, tibiae and tasrsi yellow.

Head 1.22 times as long as wide, with almost straight posterior margin in full face view; frons and vertex microreticulate. First 5 segments of antenna in a ration of about 5:2.5:1:1:1.2 in length; 2nd segment 1.6 times as long as wide; 3rd to 5th segments each as long as wide. Eye 0.28 mm in length; WF 0.9 times EL. Ocelli forming an obtuse triangle; POL: AOL = 6:4.5; OOL 1.2 times WOT.

Pronotum microreticulate; disc trapezoidal in dorsal view. Mesonotum microreticulate excepting smooth posterior 1/3. Propodeal disc 0.85 times as long as wide, with parallel sides and weakly concave posterior margin in dorsal view; lateral carinae present; transverse carina present, but even weak; disc microreticulate, with a smooth median longitudinal band medially.

Metasoma smooth and shining.

Forewing as in Fig. 32; areolet 0.3 times as long as wide.

Holotype. Female, Bangalore, 916 m, Karnataka, India, 1-31. VIII. 1987, K. Ghorpade leg.

Type depository, CNC.

Remarks. Known from the type only.

### 2. Fossil genus and species

#### 2-1. Description of a new genus and species

The age of the Dominican amber is suggested that it is either late Oligocene or early Miocene. I have a chance to examine a bethylid wasp of the Dominican amber. The wasp is female and is a member of the subfamily Pristocerinae. After careful examinaton, I concluded that it is a new genus and species described herein.

Archaeopristocera gen. nov.

Type species: Archaeopristocera miki gen. et sp. nov. Gender. Feminine. Etymology: Archaeo, Gr. + Pristocera.

**Diagnosis.** Moderate-sized bethylid wasp in the following convinations of characteristics in female: 1) Head elongate, with strongly concave posterior margin in full face view; 2) mandible long, with strongly angulate shaft; 3) anterior margin of clypeus concave, with a pair of teeth laterally; 4) frontal lobe produced to the level of clypeus; 5) antenna short, not reaching posterior margin of head; 6) eye small, consist of several facets; 7) ocelli lacking; 8) wings and tegra absent; 9) mesopreuron produced laterally; 10) propodeal disc narrowest at anterior 1/3; 11) metasoma sessile; 12) middle tibia setose; 13) tarsus longer than tibia.

**Remarks.** This genus is included in the subfamily Pristocerinae by the characters 6), 7), and 8). Characters 2), 3) and 13) are autoapomorphies of the genus in this subfamily.

## Archaeopristocera miki gen. et sp. nov. (Figs. 35-38)

Female (Holotype). HL 1.35 mm; HW 0.99 bmm; LM 1.80 mm; PW 1.43 mm; LPD 0.80 mm; WPD 0.46 mm; TL 6.0 mm.

Head long, 1.37 times as long as wide, with parallel sides and deeply concave posterior margin in full face view; posterolateral corner acutely angulate; frons and vertex impunctate. Mandible long and strong; shaft strongly curved, with 4 acute apical teeth. Anterior margin of clypeus convex, with a pair of lateral teeth. Antennal lobe produced, and forming an acute angle anteriorly. First 5 segments of antenna in a ratio of 17: 2.5: 2: 2: 2 in length; scape clavate, 2.14 times as long as wide; 2nd segment as long as wide; 3rd to 12th segments each wider than long; terminal segment 2.7 times as long as wide. Eye 0.08 mm in diameter.

Pronotal disc 1.41 times as long as wide; mesonotum 0.62 times as long as wide; propodeum 1.74 times as long as wide, narrowest at anterior 1/3 and broadest at posterior end; maximum width of disc 1.84 times its minimum width.

Metasoma sessile, 2.35 mm in maxumum dorsal width, and 2.78 mm in length. Femora and tibiae wide and flat; middle tibia 0.64 mm in length, with ca. 7 pairs of erect setae at outer margin, and 4 paits of setae and a spinose spure at distal margin; middle and hind tarsus long, ca. 0.73 and 0.75 mm in length, respectively.

Holotype. Female, from Dominican amber with no further locality.

Type depository. NSMT.

#### 2-2. Species transferred to the Chrysididae

The fossile genus *Uromesitius* established by Brues in 1933 is contained a single species *U. caudatus* from Lower Oligocene. This species has chrysidid like characteristics, rather those of Bethylidae. It is strongly suggested that this species is a member of the subfamily Cleptinae in the family Chrysididae by the 4-segmented metasoma and the robust ovipositor tube. Thus, this genus is transferred from the Bethylidae to the Chrysididae.

#### Acknowledgments

I wish to express my cordial thanks to J. Forrest (South Australian Museum, Adelaide), A. T. Finnamore (Provincial Museum of Alberta), J. Huber and J. Poirier (Bio-systematics Research Centre, Ottawa), and A. Shinohara (National Science Museum, Tokyo), for lending the types and/or valuable specimens.

#### References

- Brues, C. T., 1923. Some new fossil parasitic Hymenoptera from Baltic Amber. Prof. Amer. Acad. Arts & Sci., 58(8): 327-346.
- Brues, C. T., 1933. The parasitic Hymenoptera of the Baltic Amber. Bernstein-Forschunger, 3(1932): 4-178.
- Cockerell, T. D. A., 1917. Arthropods in Burmese Amber. Amer. Jour. Sci., Ser. 4, 44: 360-368.
- Cockerell, T. D. A., 1917. Arthropods in Burmese Amber. Psyche, 24(2): 40-45.
- Dodd, A. P., 1916. Australian Hymenoptera: Proctotrypoidea. No. 4. Trans. & Proc. Royal Soc. South Australia, 40: 9-32.
- Evans, H. E., 1973. Cretaceous aculeate wasps from Taimyr, Siberia (Hymenoptera). Psyche, 80(3): 166-178.
- Spahr, U., 1987. Ergänzungen und Berchtigungen zu R. Keilbachs Bibliographie und Liste der Bernsteinfossilien -Ordnung Hymenoptera. Stuttgarter Beitr. Naturk., Ser. B, Nr. 127: 1-121.
- Terayama, M., 1995. Phylogeny and distribution of the subfamily Bethylinae (Hymenoptera: Chrysidoidea: Bethylidae). Bull. Biogeogr. Soc. Japan, 50: 1-9.
- Terayama, M., 1999. Family Bethylidae. In Yamane, Sk., S. Ikudome & M. Terayama (eds.), Identification guide to the Aculeate of the Nansei Islands, Japan. Hokkaido University Press, pp. 91-131.

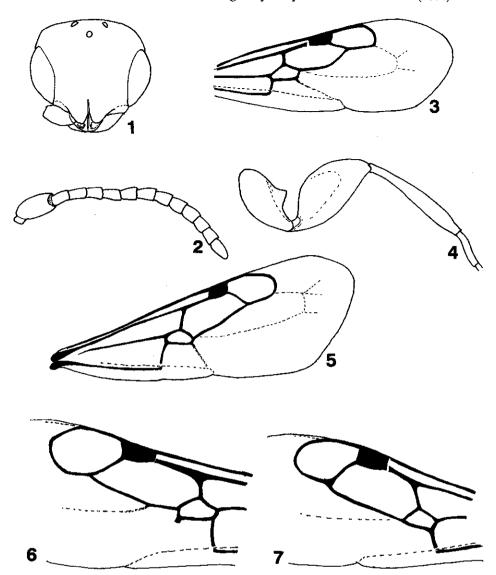


Plate I. Figs. 1-4, Eupsenella diemensis Dodd, 1916 (drawn from holotype); 5, E. cecilliae sp. nov.; 6, E. flavifemorata sp. nov.; 7, E. rticulata sp. nov. 1, Head, full face view; 2, antenna; 3, 5-7, forewing; 4, hind leg.

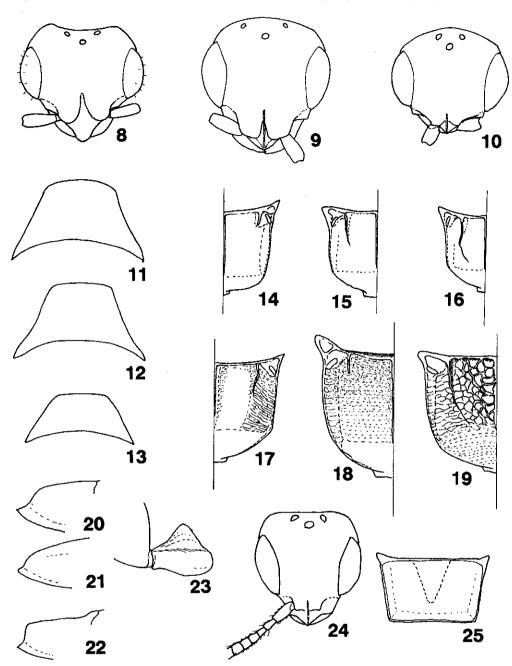


Plate II. Figs. 8, 11, 17, 21, Eupsenella cecilliae sp. nov.; 9, 12, 18, 22, 23, E. flavifemorata sp. nov.; 10, 13, 19, E. reticulata sp. nov.; 14-16, 20, Eupsenella diemensis Dodd, 1916; 24, 25, Goniozus hualienensis sp. nov. 8-10, 24, Head, full face view; 11-13, pronotum, dorsal view; 20-22, ditto, lateral view; 14-19, 25, propodeum, dorsal view; 23, hind trochanter.

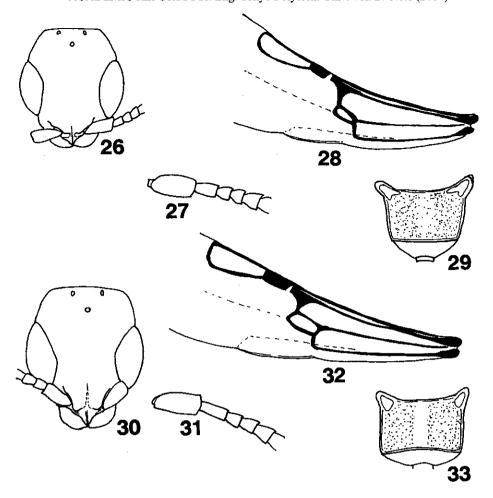


Plate III. Figs. 26-29, Sierola mawarajo sp. nov.; 30-33, Sierola indra sp. nov. 26, 30, Head, full face view; 27, 31, first 5 segments of antenna; 28, 32, forewing; 29, 33, propodeum, dorsal view.

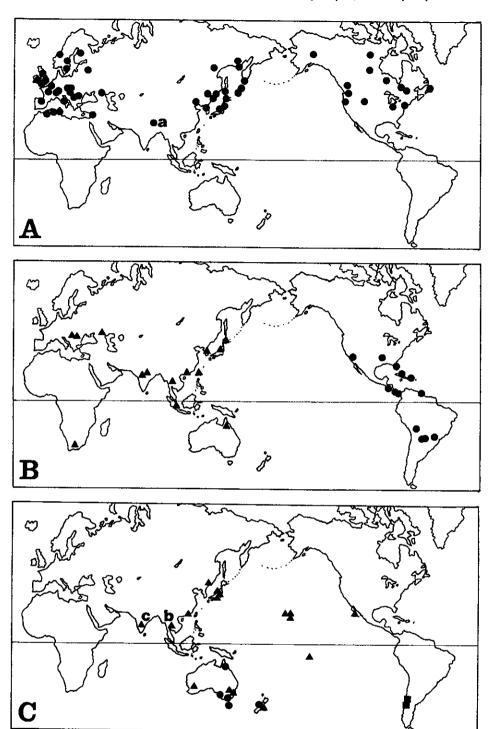


Plate IV. Fig. 34, World distribution of 6 genera of the subfamily Bethylinae. A, Genus Bethylus (a; Bethylus nepalensis sp. nov.); B, genera Odontepyris (▲) and Prosierola (●); C, genera Sierola (▲; b, Sierola mawarajo sp. nov.; c, S. indra sp. nov.), Eupsenella (●) and Lytopsenella (■).

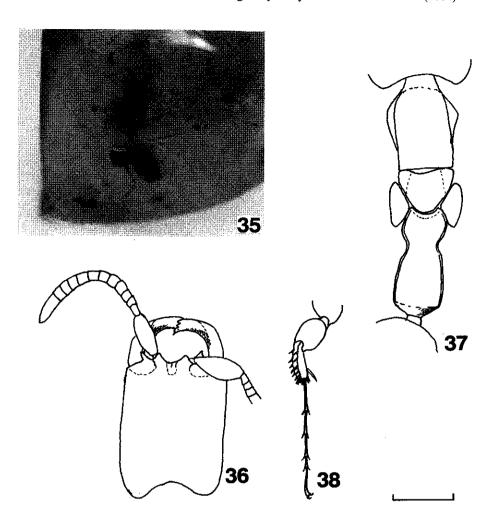


Plate V. Figs. 35-38. Archaeopristocera miki gen. et sp. nov., female. 35, Specimen in amber; 36, head, dorsal view; 37, mesosoma, dorsal view; 38, middle leg, Bar: 0.5 mm for Figs. 36-38.

Taxa	Geological age
Subfamily Protopristocerinae*)	
#Archaepyris minutus Evans 1973	Upper Cretaceous
#Bethylitella cylidrella Brues 1933	Miocene
#Bethylopteron ambignum Brues 1933	Lower Oligocene
#Palaeobethyloides longiceps Breus 1933	Lower Oligocene
#Protopristocera sucini Breuse 1923	Lower Oligocene
Subfamily Pristocerinae	J
Apenesia electriphila Cockerell 1917	Miocene
#Parapristocera skwarrae Breus 1933	Lower Oligocene
#Pristapenesia primaeva Breus 1933	Lower Oligocene
Pseudisobrachium oligocenicum Theobald 1937	Oligocene
Subfamily Epyrinae	V
#Celonophamia taimyria Evans 1973	Upper Cretaceous
#Ctenobethylus succinalis Breus 1939	Oligocene
Epyris kiefferi (Brues 1933)	Oligocene
E. atavellus Cockerell 1920	Miocene
E. deletus Breus 1910	Miocene
E. inhabilis (Breus 1923)	Oligocene
E. longipes (Breus 1923)	Oligocene
E. bifossatus (Breus 1939)	Lower Oligocene
E. rectinervis (Cockerell 1921)	Oligocene
E. tenellus Stotz 1938	Oligocene
Holepyris dubius (Breus 1933)	Lower Oligocene
H. minor (Breus 1933)	Lower Oligocene
H. planiceps Breus 1933	Lower Oligocene
H. precursor Breus 1933	Lower Oligocene
H. robustus (Breus 1933)	Lower Oligocene
Isobrachium concaptum Breus 1933	Lower Oligocene
I. invelatum Breus 1933	Lower Oligocene
Laelius nudipennis Brues 1933	Lower Oligocene
L. pallidus Breus 1933	Lower Oligocene
#Messoria copalina Menuier 1916	Uncertain
Rhabdepyris elatus Breus 1933	Lower Oligocene
R. setosus Breus 1933	Lower Oligocene
Sclerodermus quadridentatus Cockerell 1917	Miocene
Subfamily Bethylinae	
Goniozus contracta Breus 1933	Lower Oligocene
Prosierola submersa Breus 1933	Lower Oligocene
Eupsenella crastina (Breus 1923)	Oligocene
E. setigera (Breus 1923)	Oligocene

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E. simplex (Breus 1923)

Oligocene

## Genera of uncertain placement

 $\#Palaeobethylus\ brevicollis\ Breus\ 1933$ 

#P. politus Breus 1923

Lower Oligocene Lower Oligocene

#P. longicollis Breus 1923

Lower Oligocene

<sup>#:</sup> Genera known from fossil only. \*): Judging from the comparison with the external morphology among the genera, I presume that this fossil subfamily is not monophyly.