

NEW RECORDS AND SPECIES OF MEMBRACIDAE  
FROM INDIA.

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(Plate X.)

Through the courtesy of Professor C. F. Baker of Los Banos, P.I., I have had the privilege of examining a most interesting series of Membracidae belonging to the Zoological Survey of India.

This collection contains five new species and furnishes a number of very valuable records. The report on these insects follows:—

**Tricentrus pronus** Distant.

One female from Tura, Garo Hills, Assam, 1400 ft., October 1917 (*Mrs. Kemp*).

**Tricentrus projectus** Distant.

One female from Calcutta, Tollyganj, Nov. 11, 1916 (*F. H. Gravely*).

**Tricentrus resectus** Distant.

A pair, each specimen labelled "Hills near Taiping, Perak, Dec. 26-30, 1915." The male is very slightly smaller than the female.

**Tricentrus brevis** Funkhouser.

One male from Barkuda I., Chilka Lake, Ganjam Dist., Madras Pres., Aug. 3-19, 1919 (*F. H. Gravely*).

**Tricentrus albomaculatus** Distant.

One male from Tura, Garo Hills, Assam, 1200-1500 ft., July 1917 (*S. Kemp*).

**Tricentrus allabens** Distant.

Two specimens, both females, one from Darjiling, 7000 ft., E. Himalayas, June 4, 1917 (*E. Brunetti*); the other from hills near Taiping, Perak, Dec. 26-30, 1915 (*N. Annandale*).

**Acanthucus minutispinus**, sp. nov.

(Pl. X, fig. 1).

Black with golden pubescence; tegmina smoky; legs ferruginous; suprahumeral horns long, sharp, triquerate; median spine

very small, triangular, arising on dorsal line just back of suprahumeral, posterior process nearly straight, slightly upturned at tip, reaching just beyond internal angles of tegmina.

Technical description:—

Head about as long as wide, black, densely pubescent with long golden hairs, roughly sculptured; base arched and sinuate; eyes large, prominent, gray mottled with brown; ocelli small, amber-coloured, not conspicuous, about equidistant from each other and from the eyes and situated above an imaginary line drawn through centres of eyes, clypeus longer than broad, black, densely pilose, extending for about half its length below inferior margins of genae, margins of genae nearly straight, slightly turned outward at edges.

Pronotum black, finely punctate densely pubescent; metopidium vertical, as broad as high, humeral angles prominent, triangular, extending outward farther than the eyes, median carina strongly percurrent, suprahumeral horns as long as the distance between their bases, flattened dorso-ventrally, extending outward and upward and curving slightly backward, undersurface bearing central carina, tips sharp, central spine very small, triangular, entirely black, pubescent, situated on median dorsal line just behind bases of suprahumeral, scutellum only slightly exposed, posterior process slender, thicker through the middle than at the base, tricarinate, tip sharp and slightly upraised, extending just beyond internal angles of tegmina.

Tegmina long, narrow, smoky-hyaline, tinged with ferruginous; base narrowly opaque and punctate; veins prominent, marked with brown; basal costal margin pilose; five apical and two discoidal areas. Hind wings with four apical areas.

Undersurface of body black and strongly pubescent. Legs uniformly ferruginous.

Length from front of head to tips of tegmina 7.5 mm.; width between extremities of suprahumeral horns 3.5 mm.

*Type*.—Female. In collection of Zoological Survey of India.

*Locality*.—Sureil, Darjiling Dist., E. Himalayas, Oct. 11–31, 1917 (*N. Annandale* and *F. H. Gravely*).

### ***Gargara pulchripennis* Stal.**

One female from Mujang, Sarawak, July 12, 1910 (*C. Beebe*).

### ***Gargara nigrofasciata* Stal.**

One female from Talewadi, near Castle Rock, N. Kanara Dist., Bombay Pres., Oct. 3–10, 1916 (*S. Kemp*).

### ***Gargara nitidipennis* Funkhouser.**

One male from Mujang, Sarawak, July 12, 1910 (*C. Beebe*).

**Gargara majuscula** Distant.

One female from Pashok, alt. 3500 ft., Darjiling Dist., E. Himalayas, June, 1916 (*L. C. Hartless*).

**Gargara tumida** Melichar.

One female from Pashok, alt. 2500 ft., Darjiling Dist., E. Himalayas, May 26, 1914 (*F. H. Gravely*).

**Centrotypus asmodeus** Distant.

One female from Kapit, Sarawak, Aug. 9, 1910 (*C. Beebe*).

**Centrotypus parvus**, sp. nov.

(Pl. X, fig. 2).

Small, slender, black, pubescent; suprahumeral slender-sharp, projecting upward and outward, as long as the distance between their bases; scutellum entirely concealed; posterior process long, slender, decurved, extending beyond internal angles of tegmina and just about reaching end of abdomen; tegmina ferruginous-hyaline; undersurface of body black; legs uniformly ferruginous.

Technical description:—

Head subquadrate, wider than long, black, impunctate, finely pubescent with short silvery hairs; base arcuate and sinuate; eyes large, prominent, dark brown; ocelli small, conspicuous, white, shining, equidistant from each other and from the eyes and situated about on a line drawn through centres of eyes; inferior margins of genae feebly sinuate; clypeus longer than wide, black, pilose, projecting for more than half its length below margins of genae, tip pointed.

Pronotum black, finely punctate, closely pubescent with short silvery hairs; gibbous above head; median carina percurrent; dorsum nearly straight; humeral angles small, triangular, sharp, inconspicuous; suprahumeral horns slender, sharp, extending outward and upward with tips bent slightly backward, as long as the distance between their bases; metopidium convex, broader than high, nearly vertical above the head, a smooth semicircular depression over each eye; scutellum entirely concealed; posterior process long, slender, tricarinate, nearly straight, tip slightly depressed, extending beyond internal angles of tegmina and just about reaching tip of abdomen.

Tegmina long, narrow, smoky-hyaline, tinged with ferruginous; base black, punctate, coriaceous and opaque; veins prominent, costal veins black, others brown; five apical and two discoidal cells.

Undersurface of body black and densely pubescent. Legs entirely and uniformly ferruginous.

Length from front of head to tips of tegmina 5 mm.; width between tips of suprahumeral horns 2.3 mm.

*Type*.—Male. The type-specimen bears Professor Baker's duplicate number 16912.

*Locality*.—Hills near Taiping, Perak, Dec. 26–30, 1915 (*N Annandale*).

#### **Leptocentrus decipiens Kirby.**

One female from Calcutta, the label bearing the data "Tollyganj, April 9, 1917 (*F H. Gravely*)."

#### **Leptocentrus leucaspis Walker.**

One male from hills near Taiping, Perak, Dec. 26–30, 1915 (*N Annandale*), and one female from Rawalpindi, Punjab, June–July, 1917 (*R. Hodgart*).

#### **Leptocentrus mephistopheles Buckton.**

One female from Garo Hills above Tura, Assam, alt. 3500–3900 ft., Sept., 1917 (*Mrs. Kemp*).

I am very suspicious that Buckton's species is merely a colour variety of *L. leucaspis* Walker.

#### **Leptocentrus longispinus Distant.**

One female from Mormugao, Portuguese India, Sept., 1916 (*S. Kemp*).

#### **Leptocentrus obortus Distant.**

Four specimens, a male from Phagu, alt. 9000 ft., Simla Hills, May 18–21, 1916 (*N Annandale* and *S. Kemp*), two females from Tura, Garo Hills, Assam, Oct. 1917 (*Mrs. Kemp*), and a female from Barkuda I., Chilka Lake, Ganjam Dist., Madras Pres., Sept. 20, 1919 (*E Brunetti*).

#### **Ebhul maculipennis, sp. nov.**

(Pl. X, fig. 3).

Near *E. carinatus* Funkh., but larger, with differently shaped metopidium and differently marked tegmina.

Large, dark brown, not punctured, sparingly pubescent, base of metopidium flaring forwards over the head; pronotum high and subarcuate, posterior process long, sinuate, sharp, reaching just to internal angles of tegmina, tegmina opaque, richly marked with yellow and dark brown; trochanters, femora and bases of tibiae dark brown, rest of legs yellow. A beautiful, distinct and well-marked species.

Technical description:—

Head subtriangular, longer than wide, rough'y sculptured, dark brown, not punctate, densely pubescent with short silvery

hairs; base arcuate and nodose, partly hidden under overhanging margin of pronotum; eyes small, gray mottled with brown; ocelli very small, opalescent, inconspicuous, twice as far from each other as from the eyes and situated well above a line drawn through centres of eyes; inferior margins of genae sinuate, clypeus twice as long as wide, brown, densely pubescent, extending for two-thirds its length below margins of genae, tip broadly rounded.

Pronotum dark brown, roughly sculptured, not punctate, sparingly pubescent with short silvery hairs, elevated and gibbous over humeral angles, no indications of lateral carinae; metopidium wider than high, roughly sculptured, depressed at base, lower anterior margin projecting forward over the head, upper margin keel-shaped; median carina strongly percurrent; humeral angles large, triangular, blunt, projecting outward beyond the eyes as far as twice the width of the eyes; scutellum well exposed, longer than wide, apex bifurcate; posterior process long, slender, sinuate, dark brown at both ends and yellow in the middle, tip sharp and reaching just to internal angles of tegmina.

Tegmina short, broad, opaque, basal half bright yellow, apical half dark brown, the two colours meeting along an irregular diagonal line extending from the scutellum backwards and downwards; five apical and two discoidal cells; veins not prominent.

Undersurface of body dark brown, densely pubescent; trochanters, femora and bases of tibiae dark brown, apical two-thirds of tibiae and all of tarsi and claws bright yellow.

Length from front of head to tips of tegmina 6 mm.: width between extremities of humeral angles 2.7 mm.

*Type*.—Female. In collection of Zoological Survey of India.

*Locality*.—Pashok, alt. 2000 ft., Darjiling Dist., E. Himalayas, May 16–June 14, 1916 (*F. H. Gravely*).

#### *Otinotus oneratus* Walker.

One male from Coorg, S. India (*F. Hannyngham*).

#### *Antialcidas attenuatus*, sp. nov.

(Pl. X, fig. 4).

Small, slender, brown, shining, punctate, pubescent; supra-humerals large, triangular, sharp; posterior process extended upward in a plate before apex; tegmina shining smoky-hyaline marked with brown; undersurface of body dark brown; legs ferruginous.

Technical description:—

Head subquadrate, longer than wide, dark brown, densely pubescent with golden hairs, a white sericeous streak of longer white hairs down median line and another at right angles to it across genae; base arcuate and sinuate; eyes large, prominent, brown; ocelli large, prominent, glassy, elevated, twice as far from each other as from the eyes and situated well above an imaginary

line drawn through centres of eyes, inferior margins of genae rounded; clypeus longer than wide, extending for two-thirds its length below inferior margins of genae, a broad white sericeous streak down median line tip rounded and pilose.

Pronotum bright golden brown, finely punctate, densely pubescent with short golden hairs, a white sericeous streak extending upwards from the head on each side the median line between the horns as far as the posterior process, another fainter streak on each side passing under the horns, metopidium broader than high, almost vertical above the head, convex, a smooth depressed spot over each eye; median carina percurrent; humeral angles large, triangular, sharp, extending outward as far beyond the eyes as the width of the eye; suprahumeral horns large, heavy, triquerate, sharp, extending outward and upward, about as long as their width at base but not as long as the distance between their bases, upper surface flat and white sericeous; posterior process elevated at base in subtriangular crest extending upward about as high as suprahumeral horns, tip suddenly short, sharp, upturned, just reaching internal angles of tegmina.

Tegmina smoky-hyaline, shining, marked with brown at tips and just before internal angles, base broadly opaque, coriaceous, punctate and pubescent, five apical and two discoidal cells; interior apical veins strongly bent upwards.

Undersurface of body very dark brown, almost black, pubescent with silvery hairs, legs uniformly ferruginous.

Length from front of head to tips of tegmina 4.6 mm.; width between extremities of suprahumeral horns 2.2 mm.

*Type*.—Female. In collection of Zoological Survey of India.

*Locality*.—Sureil, 5000 ft., Darjiling Dist., E. Himalayas, Oct. 11-31, 1917 (*N. Annandale* and *F. H. Gravely*).

### *Dograna suffulta* Distant.

One female from Castle Rock, N. Kanara Dist., Bombay Pres., Oct. 11-26, 1916 (*S. Kemp*).

### *Emphusis malleus* Walker.

One male from Castle Rock, N. Kanara Dist., Bombay Pres., Oct. 11-26, 1916 (*S. Kemp*).

### *Machaerotypus brunneus*, sp. nov.

(Pl. X, fig. 5).

Large, entirely brown, coarsely punctate, densely pubescent, pronotum much swollen and elevated above the head, scutellum entirely exposed; humeral angles prominent; no suprahumeral horns; posterior process short, sinuate, sharp, arising high above the scutellum; tegmina smoky-hyaline, legs and undersurface of body brown.

## Technical description:—

Head twice as wide as high, reddish-brown, nearly flat, coarsely punctate with black punctures, sparingly pubescent with long silvery hairs; base gradually arcuate; eyes large, prominent, brown; ocelli large, conspicuous, opaque white, equidistant from each other and from the eyes and situated about on a line drawn through centres of eyes; inferior margins of genae rounded; clypeus longer than wide, depressed, projecting for more than half its length below inferior margins of genae, very densely pilose, tip rounded.

Pronotum brown, coarsely punctate, densely pubescent, highly elevated above head, swollen subglobose; median carina nearly obsolete; metopidium higher than wide, a smooth irregular depression above each eye, convex in front, tectiform above as seen from the front; humeral angles large, prominent triangular, extending outward farther than the eyes; no suprahumeral; scutellum entirely exposed, wider than long, coarsely punctate, densely pubescent, apical margin weakly notched, posterior process short, sinuate, sharp, arising from highest point of pronotum well above the scutellum, not reaching internal angles of tegmina.

Tegmina long, narrow, ferruginous-hyaline, sparingly pilose both on veins and between veins; apex clouded; base narrowly opaque, coriaceous, dark brown, punctate; veins heavy, prominent, brown; five apical and two discoidal cells.

Undersurface of body dark brown and pubescent; legs light brown, the trochanters and femora marked with dark brown and ferruginous, the tibiae lighter brown and the tarsi and claws darker.

Length from front of head to tips of tegmina 10 mm.; width between extremities of humeral angles 4 mm.; height of pronotum above head 4 mm.

*Type*.—Female. In collection of Zoological Survey of India.

*Locality*.—Mungpoo, alt. ca. 3000 ft., Darjiling Dist., E. Himalayas, Oct. 11–31, 1917 (*N. Annandale* and *F. H. Gravely*).

