

## SOME MALAYAN DELPHACIDÆ (HOMOPTERA)

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### ONE PLATE

This paper deals with a few of the specimens of Delphacidæ recently collected by Prof. C. F. Baker. I hope in the near future to be able to report on the remainder of the collection.

The more I study this family the more I am convinced that the tibial spur must form the chief characteristic for the primary division, although it may appear to be, at times, more artificial than natural. Any other one character is still more unsatisfactory.

The types of the new species described in this paper are deposited in the collection of the Hawaiian Sugar Planters' Experiment Station, Honolulu, H. T., and the paratypes, when present, in the Baker collection.

### Genus PUROHITA Distant

*Purohita nigripes* sp. nov.

*Male*.—Macropterous; width of vertex at base slightly more than length, base slightly behind middle of eyes, twice width of apex; basal joint of antennæ 1.5 times the length of second.

Very light brown; apical half of face, genæ, and lateral margins of pronotum whitish, a dark brown line dividing the white lateral portion of pronotum from the rest, darker brown over abdominal tergites, a dark longitudinal mark on first and second femora, tarsi of those legs black or dark brown. Tegmina hyaline, slightly opaque, veins white with irregular black spots, a dark brown mark over cross veins, not quite reaching to inner margin and fading out toward apex; wings hyaline, slightly opaque, veins light brown.

Lateroventral edge of pygophor produced into a small, obtuse angular process; genital styles straight on inner margin and on outer margin for basal two-thirds, then tapering to the acute apex, which is curved outward.

Length, 3.5 millimeters; tegmen, 4.0.

*Female*.—Basal joint of antennæ slightly longer in proportion to the second (1 to 1.8); whitish mark over apical half of face and lateral margin of pronotum slightly greenish.

Length, 5.3 millimeters; tegmen, 5.7.

PENANG (*C. F. Baker, 9874*), 1 male and 1 female.

Genus **BAMBUSIBATUS** Muir

*Bambusibatus albolineata* Muir.

BORNEO, Sandakan (*Baker, 9889*), 2 females.

Genus **TROPIDOCEPHALA** Stål

*Tropidocephala* STÅL, Ofv. Vet. Ak. Forh. (1853) 266.

*Tropidocephala malayana* Matsumura.

*Tropidocephala malayana* MATSUMURA, Ann. Mus. Nat. Hung. 5 (1907), 64, pl. 2, figs. 5, 11.

PENANG, 1 male and 1 female. SINGAPORE, 1 male. (*Baker, 9851, 9852*).

The males are darker in color than the females, the apical veins and across the apical cells being fuscous. The male genitalia are very close to those of *T. dryas* (Kirk.).

Genus **BRACHYCRERA** Muir

*Brachycraera albolineata* Muir.

BORNEO, Sandakan (*Baker*), 2 specimens.

Genus **UPACHARA** Distant

*Upachara straminea* sp. nov. Plate I, fig. 1.

*Female*.—Macropterous; head broader than thorax, width of vertex double the length, apex not or but very slightly produced in front of eyes and together with outer edges of eyes forming nearly a semicircle, base of vertex in front of middle of eyes, curved parallel to apex; carinæ faint, diamond cell obscure, basal cells 5-sided with a small depression in middle of each; face very little longer than broad (1 to 0.9), sides arcuate, median carina simple; antennæ small, not reaching base of clypeus, first joint about as long as wide, second joint twice the length of first. Pronotum as long as or slightly longer than vertex, faintly tricarinate, lateral carinæ strongly divergingly curved, not reaching hind margin, mesonotum faintly tricarinate. Hind tibiæ longer than tarsi, first tarsus subequal to other two together; spur not as long as first tarsus, small, cultrate, thick, a small tooth at apex but none on hind margin.

Stramineous; spines on hind legs black; tegmina hyaline, light stramineous, veins little darker; granules minute, sparse, with fine, black hairs.

Length, 2.7 millimeters; tegmen, 2.8.

PENANG (*Baker, 9862*), 1 female.

Genus **SOGATOPSIS** Muir

*Sogatopsis pratti* Muir.

BORNEO, Sandakan (*Baker*), 1 female.

Genus **MALAXA** Melichar

*Malaxa obtusipennis* sp. nov.

*Female*.—Macropterous; vertex longer than wide (1 to 0.8), base slightly wider than apex, diamond cell slightly before apex, apex very slightly curved, base slightly behind middle of eyes; length of face 2.7 times the width, slightly narrowed between eyes, sides straight, subparallel; antennæ reaching well beyond middle of clypeus, second joint twice the length of first. Tegmina with apex more obtuse than in the type species, but apical cells forming about one-half of tegmina.

Black, or deep, shiny, liver brown; antennæ, apex of clypeus, rostrum, legs, carinæ of vertex and pronotum, base of mesonotum and abdominal sternites light brown or yellow; ovipositor dark. Tegmina dark brown, clear hyaline at apex of clavus extending into corium, and at apex of costal cell and first two apical cells and apex of third apical cell, veins between them dark; veins dark brown; wings hyaline.

Length, 2.2 millimeters; tegmen, 2.8.

BORNEO, Sandakan (*Baker, 9894*), 3 females.

*Malaxa bakeri* sp. nov. Plate I, fig. 3.

*Male*.—Macropterous; length of vertex nearly equal to width at base (1 to 0.9), base situated considerably before middle of eyes, wider than apex, which is very slightly rounded; length of face 2.4 times width, slightly widened from base to apex, sides straight, median carina simple; antennæ reaching a little beyond base of clypeus, second joint 2.5 times the length of first; hind tibia slightly longer than tarsi, first tarsus subequal to the other two together. Tegmina long, apex subacute, apical cells forming half of tegmen (cross veins in middle of tegmen). Stramineous; slightly fuscous on pronotum between carinæ and on abdominal tergites. Tegmina hyaline, clear; longitudinal veins white; granules very minute with white hairs; cross veins

dark brown, forming a line from apex of clavus to middle of costa, broadening slightly toward costa; wings hyaline, veins white.

Pygophor very shallow, the diaphragm being nearly on a level with the rim, medioventral edge with a small spine curved to the left, anal segment with a single, large spine from the left side; genital styles narrow, long, with the apex produced into a curved, flat spine turned outward; ædeagus complex with a long curved spine on right side (not dissected out).

Length, 1.9 millimeters; tegmen, 2.6.

*Female*.—Macropterous; similar in coloration to the male.

Length, 2.5 millimeters; tegmen, 3.4.

LUZON, Bataan Province, Limay (*Baker*, 10079), 1 female; Laguna Province, Mount Maquiling (*Baker*), 1 female. SINGAPORE (*Baker*), 1 male. PENANG (*Baker*), 1 female.

The vertex is longer, the antennæ are shorter, and the tegmina are less acute than in the type species.

*Malaxa javanensis* sp. nov. Plate I, fig. 2.

*Male*.—Macropterous; base of vertex slightly wider than the length, considerably behind the middle of eye; length of face 2.2 times width, slightly widening toward apex, sides straight; antennæ reaching only to base of clypeus, second joint 2.4 times length of first; cross veins of tegmina at middle.

Yellow; lateral portions of pronotum, tegulæ, coxæ, and abdominal tergites dark brown. Basal half of tegmina brown, apical half hyaline, veins same color as membrane, granules very minute; wings hyaline with light brown veins.

Pygophor a little longer than broad, no spines on medioventral edge, anal segment with a large, curved spine on left side; genital styles asymmetrical at base.

Length, 1.5 millimeters; tegmen, 2.1.

JAVA, Pekalongan (*F. Muir*), 1 male.

*Malaxa nigra* sp. nov.

*Male*.—Macropterous; length of vertex slightly longer than width of base, base about middle of eyes, slightly broader than apex, which is slightly rounded; length of face 3.2 times width, slightly widened to apex, sides straight; antennæ reaching beyond middle of clypeus, second joint 2.8 times length of first; cross veins about middle of tegmina.

Head, thorax, coxæ, and abdomen very dark shiny brown or black, antennæ, legs, lower portion of genæ, carinæ of vertex, anal segment, and ventral aspect of pygofer yellowish. Teg-

mina black or very dark brown over basal half, hyaline over apical half, veins the same color as membrane, granules very small.

Pygophor slightly compressed laterally, medioventral edge with a single small spine; anal segment with a large spine from the left side; genital styles small, slightly curved, broadest at base, apex acute; ædeagus not visible externally and not dissected out.

Length, 1.5 millimeters; tegmen, 2.3.

*Female*.—Similar to the male.

Length, 1.7 millimeters; tegmen, 2.3.

LUZON, Bataan Province, Mount Limay (*Baker*), 1 male: Laguna Province, Mount Maquiling (*Baker*), 1 female.

#### Genus *ARCOFACIES* Muir

*Arcofacies* MUIR, *Canad. Ent.* (1915) 261, 270, 320.

*Arcofacies penangensis* sp. nov.

*Male*.—Width of vertex at base double the length, base nearly double the width, of apex; length of face 1.5 times the width, sides slightly arcuate; antennæ not reaching base of clypeus, second joint 1.5 times length of first. In lateral view the clypeus at right angle to face, apex of face projecting slightly beyond clypeus; mesonotum considerably arched. Hind femora short, not reaching beyond apex of abdomen; tibiæ longer than femora, tarsi much shorter than tibiæ, first tarsus subequal in length to other two together, spur small, about as long as first tarsus, fairly broad, thick, a tooth at apex but none on hind margin. Tegmina acutely tectiform, compressed beyond apex of abdomen, costal margin shallowly emarginate beyond apex of abdomen, apex acute.

Ochraceous buff; hind legs slightly fuscous, abdomen bright yellow with a few, small, black spots on sternites, chestnut brown over pygophor and genital styles; tegmina chestnut brown, darkest over basal third, a clearer space along middle of costa at the emargination, a dark mark at apex of each apical vein, a small one at apex of claval vein, at fork of cubitus and fork of subcosta and radius, veins the same color as membrane, with numerous small, light granules.

Pygophor round with a small opening, no distinct dorsal margination, anal segment short, exposed, without spines, anal style large, lanceolate; genital styles slightly curved, flattened, margins subparallel, apex truncate and produced into a quadrate recess on inner margin.

Length, 2.1 millimeters; tegmen, 3.6.

*Female*.—Tegmina lighter than in male, abdomen ochraceous with a small black spot on each sternite, ovipositor same color as pygofer.

Length, 2.8 millimeters; tegmen, 4.4.

PENANG (*Baker, 9880*), 1 male and 1 female.

*Arcofacies fullawayi* Muir.

SINGAPORE and PENANG (*Baker, 9863*); previously known from the Philippines and Formosa.

*Arcofacies insignis* sp. nov.

*Female*.—Macropterous; width of base of vertex about double the length, base 1.7 times width of apex, diamond-shaped cell small but distinct; length of face 2.8 times width, sides straight, parallel, carinae of head fairly prominent; antennae reaching well beyond middle of clypeus, second joint very little longer than first; in lateral view clypeus strongly curved, apical portion at right angle to basal portion; hind femora short, not reaching to apex of abdomen; tibiae longer than femora and much longer than tarsi, first tarsus subequal in length to the other two together. Tegmen similar in outline to that of type species.

Orange buff; slightly fuscous between carinae of face and genae, first antennal joint with two black, longitudinal marks, second joint mostly fuscous, lighter over carinae of thorax; tibiae with a black longitudinal line, ovipositor the same color as pygofer. Tegmina conspicuously marked with white and buff turning to light brown, some of the markings bordered with dark brown, the darker marking being over the basal two-thirds of costal cell, over basal portion of cubitus and media, marginal portion of clavus, over cross veins and spreading basad along cubitus and over apical portion of apical veins; veins light with light granules, most numerous on apical veins where they are irregular; wings hyaline with light veins.

Length, 3.3 millimeters; tegmen, 5.1.

LUZON, Mountain Province, Baguio (*Baker*), 1 female. This species is so distinct that I feel no confusion can arise by describing it from a female.

#### Genus SOGATA Distant

*Sogata* DISTANT, Faun. Brit. Ind. Rhyn. 3 (1906) 471, fig. 258; MUIR, Can. Ent. 5 (1919) 8.

*Sogata 4-spinosa* sp. nov. Plate I, fig. 6.

*Male*.—Macropterous; head considerably narrower than pronotum; length of pronotum and mesonotum 1.5 times length of

head including eyes; length of vertex 1.7 times the width, carination as in *Delphacodes* Fieb., the Y carina obscure, base considerably behind middle of eyes; length of face 2.6 times the width, sides straight, slightly widened to apex; antennæ reaching slightly beyond base of clypeus, second joint 2.2 times length of first; first hind tarsus slightly longer than the other two together, tibial spur laminate with many small teeth on hind margin; lateral carinæ of pronotum straight, diverging posteriorly, reaching hind margin.

Light ochraceous, face between carinæ fuscous, nota laterad of outer carinæ darker; pleura, coxæ, and abdomen dark. Tegmina hyaline, inner half from base of clavus to apex of tegmen light brown, darker over area apical of cross veins; veins ochraceous with many fine granules bearing black hairs; wings hyaline, veins brown.

Opening of pygophor about as long as broad, dorsal emargination large, anal angles not produced; anal segment with two pairs of spines; outer pair short, broad, and slightly curved and wide apart at base; inner pair touching at base, long, narrow, and more basad than the outer pair; genital styles short, inner edge slightly concave, apex truncate with each angle slightly produced; ædeagus figured from left side with anal segment and pygofer.

Length, 1.7 millimeters; tegmen, 2.

SINGAPORE (*Baker*), 1 male. Described from one male. It is possible that this is the male of *S. dohertyi* Dist., but it differs enough to separate it. It is interesting in possessing two pairs of spines on the anal segment.

#### Genus EUMETOPINA Breddin

*Eumetopina* BREDDIN, Deut. Ent. Zeit. (1896) 109.

*Eumetopina maculata* sp. nov. Plate I, fig. 7.

*Male*.—Macropterous; vertex slightly wider than long, base slightly wider than apex and situated slightly in front of middle of eye, apex rounded; length of face 1.3 times the width, slightly narrowed between eyes; antennæ reaching to near middle of clypeus, second joint three times length of first.

Ochraceous yellow, a fuscous mark on each side of median carina of pronotum, slightly fuscous over median portion of mesonotum, and a dark mark on each side just laterad of lateral carinæ; abdomen fuscous over tergites. Tegmina hyaline, very slightly ochraceous, veins darker, granules near together, minute, bearing light hairs; wings slightly ochraceous.

Pygophor with two minute spines close together on medioventral edge; anal segment with a single, median spine; genital styles small, narrow, slightly curved at apex; ædeagus with two spines on left side, the apical one larger and flat, the other furcate at apex, a large spine on right side at apex.

Length, 2.8 millimeters; tegmen, 3.

MINDANAO, Davao (*Baker, 10060*).

*Female*.—There are two specimens which I associate with the above male; namely, one from Imugan, Nueva Vizcaya, Luzon (the allotype), and one from Mount Limay, Luzon (*Baker, 9848*). They both have the pair of black marks on the mesonotum; otherwise they are ochraceous yellow.

This species is similar to *E. bakeri*, but the ædeagus is quite distinct.

*Eumetopina flava* sp. nov. Plate I, figs. 5a, b.

*Male*.—Macropterous; vertex about as long as broad at base, slightly narrowed to apex, which is slightly rounded; first joint of antennæ about half length of second; hind tarsi equal in length to hind tibiæ, first tarsus considerably longer than the other two together.

Light yellow; tegmina hyaline, very pale yellow, veins slightly darker, granules very minute, bearing light hairs.

Pygophor opening about as long as broad, a minute process on medioventral edge; anal segment with a single, median, curved spine on ventral edge; genital styles small, narrow, curved slightly at apex, which is pointed.

Length, 2.4 millimeters; tegmen, 3.

LUZON, Laguna Province, Mount Maquiling (*Baker, 9858*), 1 male.

*Eumetopina bakeri* sp. nov. Plate I, figs. 4a, b.

*Male*.—In build similar to *E. flava*. Light yellow, black over the middle portion of pronotum, mesonotum, and on metanotum and abdominal tergites.

Opening of pygophor about as deep as wide, two small processes on the medioventral edge; genital styles small, narrow, slightly curved at tip; ædeagus figured.

Length, 2.7 millimeters; tegmen, 3.

*Female*.—The female that I associate with this is all yellow like *E. flava*.

Length, 3.4 millimeters; tegmen, 3.6.

BORNEO, Sandakan (*Baker, 9892*).



## Genus PEREGRINUS Kirkaldy

*Peregrinus maidis* (Ashmead).

BORNEO, Sandakan (*Baker*), 1 specimen.

## Genus DICRANOTROPIS Fieber

*Dicranotropis pseudomaidis* (Kirkaldy).

PENANG (*Baker*), 1 specimen. Previously known from Queensland.

## Genus STENOCRANUS Fieber

*Stenocranus* (?) *singaporensis* sp. nov. Plate I, fig. 8.

This species is congeneric with, and closely allied to, *S.* (?) *taiwanensis*.<sup>1</sup> For the present I place these two species in *Stenocranus* while recognizing that they will eventually have to be moved.

*Male*.—Macropterous; Mikado orange; tegulæ, middle of dorsum of abdomen and genital styles black.

Anal segment large, projecting considerably beyond pygofer, apex broadly rounded, pygofer very shallow, styles standing well out, a small spine on medioventral line. The apex of the genital styles differs considerably from *S. taiwanensis*. In the figure the right is shown more foreshortened than the left.

Length, 1.8 millimeters; tegmen, 2.3.

*Female*.—Macropterous. Similar to male in coloration.

Length, 2.3 millimeters; tegmen, 2.8.

SINGAPORE (*Baker*), 1 male and 1 female (type). PENANG (*Baker*, 9865, 9867, 9868), 1 male and 4 females. Some of the females do not have the tegulæ black.

<sup>1</sup> Proc. Hawaiian Ent. Soc. III 4: 323, pl. 6, fig. 44.

## ILLUSTRATIONS

### PLATE I

- FIG. 1. *Upachara straminea* sp. nov., head, pronotum, and mesonotum, dorsal view.
2. *Malaxa javanensis* sp. nov., pygophor, full view.
3. *Malaxa bakeri* sp. nov., pygophor, full view.
4. *Eumetopina bakeri* sp. nov., ædeagus, *a*, lateral view; *b*, dorsal view.
5. *Eumetopina flava* sp. nov., ædeagus, *a*, lateral view; *b*, dorsal view.
6. *Sogata 4-spinosa* sp. nov., pygophor, lateral view.
7. *Eumetopina maculata* sp. nov., ædeagus, dorsal view.
8. *Stenocranus* (?) *singaporensis* sp. nov., pygofer, full view.