

A NEW GENUS OF BLACINAE (HYMENOPTERA: BRACONIDAE)¹By Lester P. Gibson²

Abstract: A new genus, *Canalicephalus*, of the subfamily Blacinae is described along with 4 new species, *C. orientalis* from Borneo, *C. novus* from New Guinea, and *C. bakeri* and *C. mindanao*, both from the Philippines. Keys are included to separate these 2 genera and the 4 species.

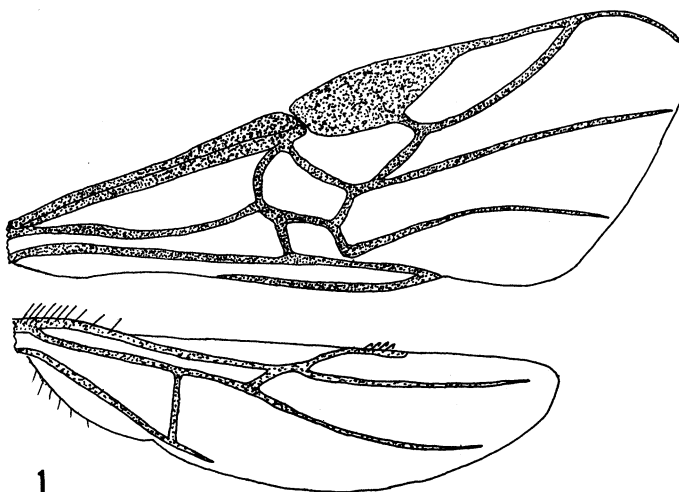
During recent studies of the genus *Urosigalphus* Ashmead (Gibson 1972a, b, 1974) reports of the presence of *Urosigalphus* in the Philippines were investigated. *Urosigalphus* was not found among the specimens of Blacinae known from there, but several species of *Triaspis*, *Aliolus*, and *Schizoprymnus* were found, some of which resembled *Urosigalphus*. Several specimens were included that comprise a new genus. Efforts to date have produced only 6 specimens representing 4 new species.

Genus CANALICEPHALUS, n. genus

Size: Length of known species 3.5–4.4 mm. **Color:** Body maroon to black, palpi yellow, tan, or tan with basal area maroon, mandibles orange to red with darker tips. Antennal scape and pedicel lighter in color than flagellar segments; flagellar segments 1 and 2 usually lighter than more apical segments. Legs yellow tan to orange with hind tibia and tarsi brown to red. Front wings hyaline or tinted brownish with strong, dark-colored veins which extend to wing tips. Tegula yellow tan to dark brown. **Head:** Front view subtriangular. Vertex deeply notched with widely spaced ocelli. Compound eyes strongly convex. Face with distinct anterior tentorial pit near each end of frontoclypeal groove. Face punctate. Clypeus semicircular and moderately small. Labrum finely punctate; labial palpi 3-segmented. Maxillary palpi 5-segmented and elongate. Mandible broad basally, narrowing to bidentate tip apically. Occipital carina usually complete; well developed laterally, less so dorsally. Antennal scapes well separated at base but arched inward and upward along well-defined antennal sulci. Antennae 17-segmented and nearly as long as entire body; scape and pedicel shiny and nearly smooth but punctate, pedicel short, less than 1/2 as long as scape; flagellar segments longer than broad, closely reticulate with a moderately dense short pile, segments progressively slightly shorter distally, but apical segment slightly longer than penultimate segment. **Thorax:** Slightly shorter than carapace. Mesonotum slightly broader than long, notaulices present, foveolate; area of notaulices' convergence U-shaped and foveolate or rugoso-punctate. Scutellar groove with 5 dissecting carinae. Metanotum narrow. Propodeum with confused transverse carina, dorsal area narrow, posterior surface usually punctate. Propodeal spiracles small and circular. Mesopleural groove absent. Pronotum densely punctate. Tegula pear-shaped. Front wings (FIG. 1) with relatively strong veins; stigma somewhat lanceolate; costa-subcosta and radius closely appressed along anterior margin, mediocubital vein sinuate; submedian cell as long as median cell; all veins beyond stigma well formed. Hind wing with submediellian cell approximately 3/5 as long as mediellian cell. Legs with coxa, femora and hind tibia and tarsi enlarged; hind coxa 1/2 as long as femur; hind femur 3 times longer than broad; hind tibia clavate; hind tarsal claws similar in size. **Abdomen:** Shorter than thorax and head combined, basally broad and sessile. First 3 abdominal tergites fused into a rigid unsegmented and unsutured carapace which normally conceals rest of the abdomen except for ovipositor. Carapace usually longitudinally punctate and carinate to near apex which is rugoso-punctate, sides rounded onto venter, with a reflexed bordering margin completely surrounding the ventral opening; apex of carapace with apical ornaments. Ventral opening of carapace narrow and slightly longer than 1/2 carapace length.

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FIG. 1. Wings of *Canalicephalus* sp.

Biology: Not known.

Type-species: *Canalicephalus orientalis* Gibson, n. sp.

Distribution: Species collected in New Guinea, Borneo, and Mindanao.

Remarks: *Canalicephalus* can be separated from *Urosigalphus* Ashmead, which it closely resembles, by the head shape, the carapace shape, the wing venation, and the hind tarsal claws.

The name *Canalicephalus* is proposed for this new genus since the top of the head is distinctly notched (FIG. 2). This genus keys to *Urosigalphus* in the key to genera of Blacinae (Gibson 1972a). It can be readily separated by the following change of couplet 4 and the addition of couplet 6.

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|--|------------------------------|
| 4(3). Carapace without sutures, ventral edge reflexed completely around apex | 6 |
| 6(4). Head with notch (FIG. 2); outer claw of hind tarsi similar in size to inner claw | |
| | <i>Canalicephalus</i> Gibson |
| Head without notch; outer claw of hind tarsi larger than inner claw | <i>Urosigalphus</i> Ashmead |

KEY TO *Canalicephalus* SPECIES

1. Carina around compound eye; palpi and tegula yellow; mandible evenly bidentate; *orientalis*, n. sp.
No distinct carina around compound eye; palpi tan; tegula orange or brown; mandible with anterior tooth larger than posterior 2
2. Wings tinted brown; tegula dark brown; antennal scape brown; carapace apex with upturned peg *novus*, n. sp.
Wings hyaline; tegula orange; antennal scape yellow; carapace apex parallel 3
3. Carapace apex with 3 apical spines; occipital carina complete; scutellum rugoso-punctate laterally *bakeri*, n. sp.
Carapace apex with central point only; occipital carina incomplete; scutellum finely punctate laterally *mindanao*, n. sp.

Canalicephalus orientalis Gibson, n. sp.

FIG. 3-5

Size: Length 3.8-3.9 mm. Carapace 1.73 mm, ovipositor 2.25 mm. *Color:* Body maroon, ventral abdomen tan; palpi straw yellow, mandibles light red with darker bases and tips. Antennal scape and pedicel yellow; flagellar segments 1 and 2 light brown, rest medium brown. Legs yellow tan with hind

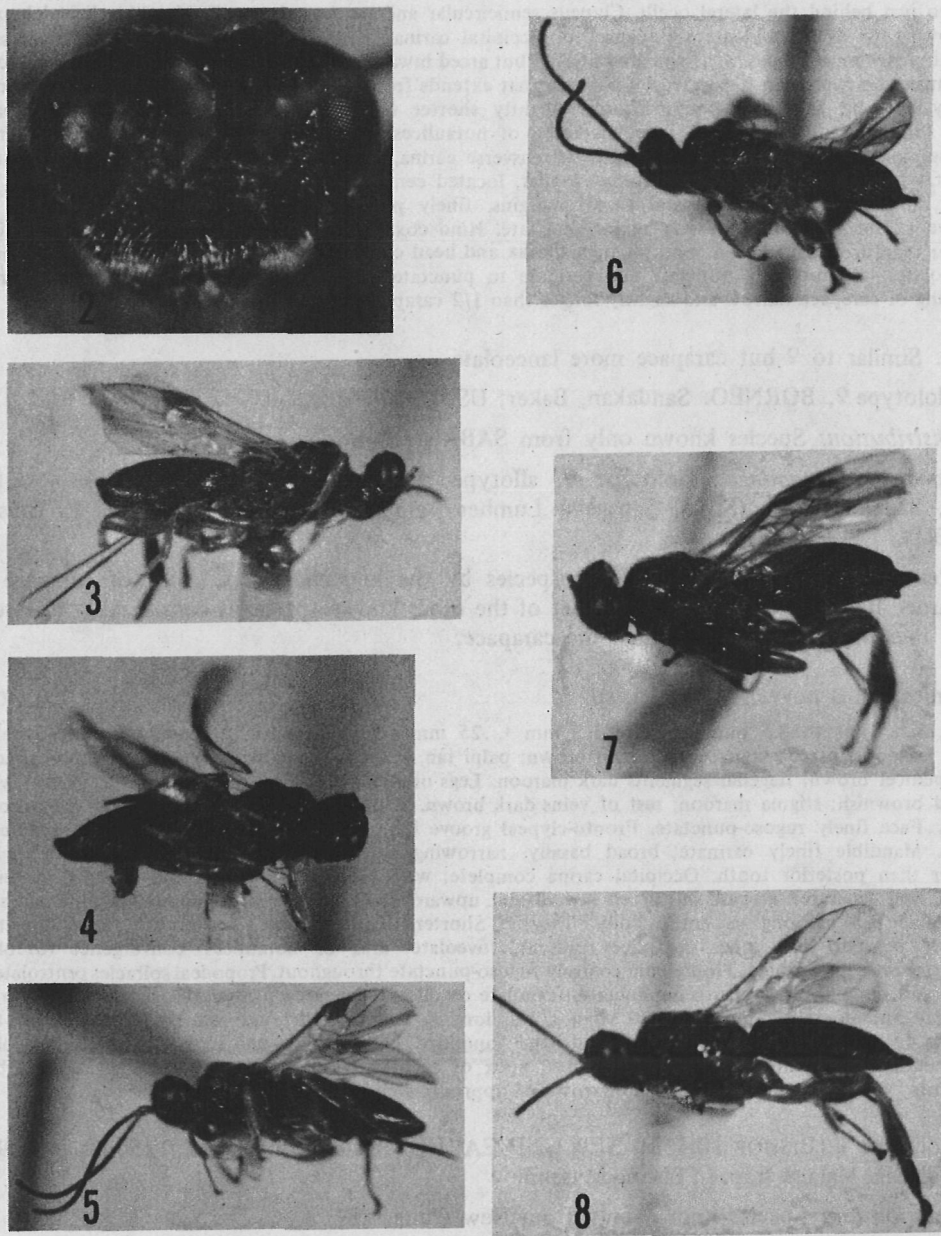


FIG. 2-8 (2) Head of *Canalicephalus* sp. (front view showing notched vertex and strongly convex eyes). Lateral views of *C. orientalis*, n. genus, n. sp.: (3) type ♀, (4) allotype ♂, (5) paratype ♀. Lateral views of holotype ♀♀: (6) *C. novus*, n. genus, n. sp.; (7) *C. bakeri*, n. genus, n. sp.; (8) *C. mindanao*, n. genus, n. sp.

tibia and tarsi brown. Stigma brown. Front wings hyaline with veins light brown basally and darker apically. Veins extend to wing tip. Tegula yellow tan. *Head*: Face evenly punctate. A carina runs from antennal base ventrally around eye slightly above the center of the gena; then dorsally around rear of eye to just behind the lateral ocelli. Clypeus semicircular and moderately small. Mandible broad basally, narrowing to evenly bidentate tip apically. Occipital carina complete; well developed laterally, less so dorsally. Antennal scapes well separated at base but arced inward and upward along well-defined impunctate antennal sulci which are separated by a carina that extends from antennal base to median ocelli. Antennae nearly as long as entire body. *Thorax*: Slightly shorter than carapace. Mesonotum slightly broader than long, notaulices present, foveolate; area of notaulices' convergence foveolate. Scutellum coarsely rugoso-punctate. Propodeum with confused transverse carina, dorsal area narrow, posterior surface usually punctate. Propodeal spiracles small and circular, located centro-laterally. Mesopleura mostly smooth and shiny, foveolate along lateral and dorsal margins, finely punctate and densely hairy on ventral 1/3, groove absent. Pronotum densely rugoso-punctate. Hind coxa 1/2 as long as femur; hind femur 3 times longer than broad. *Abdomen*: Shorter than thorax and head combined, basally broad and sessile. Carapace lanceolate, longitudinally punctate and carinate to punctate apex; apex of carapace upturned. Ventral opening of carapace narrow and slightly longer than 1/2 carapace length.

♂: Similar to ♀ but carapace more lanceolate.

Holotype ♀, BORNEO: Sandakan, Baker; USNM 72776.

Distribution: Species known only from SABAH (N. Borneo).

Specimens examined: Holotype ♀, allotype ♂ (USNM), BORNEO: Sandakan, Baker; 1 ♀, Sandakan Bay (S.W.), Sapagaya Lumber Camp, 2-20 m, 4.XI.1957, J. L. Gressitt (BPBM).

Remarks: Differs from the other species by the key characters. Apex of carapace is upturned like a pixie shoe, whereas that of the other known species is considerably different. Also the ovipositor is longer than the carapace.

Canalicephalus novus, Gibson, n. sp.

FIG. 6

♀. *Size*: Length 3.5 mm; carapace 1.5 mm + .25 mm peg.; ovipositor 1.0 mm. *Color*: Body black with maroon tint to carapace; abdomen brown; palpi tan, mandibles red with dark tips. Antennal scape and pedicel brown; flagellar segments dark maroon. Legs orange with hind tibia and tarsi red. Front wings tinted brownish; stigma maroon; rest of veins dark brown. Veins extend to wing tips. Tegula dark brown. *Head*: Face finely rugoso-punctate. Fronto-clypeal groove indistinct. Clypeus semicircular and moderately small. Mandible finely carinate; broad basally, narrowing to bidentate tip, the anterior tooth slightly longer than posterior tooth. Occipital carina complete; well developed laterally, and dorsally. Antennal scape well separated at base but arced inward and upward along well-defined impunctate antennal sulci. Antennae 3/5 as long as entire body. *Thorax*: Shorter than carapace. Mesonotum finely punctate; slightly broader than long, notaulices present, foveolate; area of notaulices' convergence foveolate. Scutellum rugoso-carinate. Propodeum coarsely rugoso-punctate throughout. Propodeal spiracles centrolateral, small and circular. Mesopleura impunctate, foveolate on all margins. Mesopleural groove absent. Pronotum coarsely and densely punctate. Hind coxa 1/2 as long as femur; hind femur nearly 3 times longer than broad. *Abdomen*: Shorter than thorax and head combined, basally broad and sessile. Carapace lanceolate, longitudinally punctate and carinate to apex, apex of carapace with apical cylindrical peg slightly bent upwards. Ventral opening of carapace narrow and approximately 1/2 carapace length.

Holotype ♀ (BISHOP 10,488), NEW GUINEA (NE): Wau, Morobe Dist., 1250 m, 21.I.1963, J. Sedlacek, Malaise trap. In Bishop Museum.

Distribution: Species known only from New Guinea.

Remarks: Differs from the other species by the key characters. The scutellum is rugoso-punctate but not as coarse as in *C. orientalis*.

Canalicephalus bakeri, Gibson, n. sp.

FIG. 7

♀. *Size*: Length 4.4 mm; carapace 2.2 mm, ovipositor 1.2 mm. *Color*: Head and thorax black, carapace deep maroon, abdomen maroon, palpi tan with basal area maroon, mandibles light red with red tips. Antennal scape and pedicel yellow (flagellar segments broken off). Legs orange with hind tibia and tarsi red. Front wings hyaline with strong brown to maroon colored veins which extend to wing tips. Stigma

and costa maroon. Tegula orange. *Head*: Face densely, finely punctate and quite hairy. Clypeus semicircular and moderately small. Mandible slightly rugose, broad basally, narrowing to bidentate tip; anterior tooth being much longer than posterior tooth. Occipital carina complete; well developed laterally and dorsally. Antennal scapes well separated at base but arced inward and upward along well-defined, sparsely punctate antennal sulci, separated by a carina from below antennal base to median ocelli. *Thorax*: $2/3$ as long as carapace. Mesonotum slightly broader than long, finely punctate, notaulices present, foveolate; area of notaulices' convergence finely punctate. Scutellum punctate dorsally, rugoso-punctate laterally. Propodeum coarsely rugoso-punctate, dorsal area and posterior surface coarsely rugoso-punctate. Propodeal spiracles centrolateral, small and circular. Mesopleura impunctate, foveolate on dorsal and lateral margins, posterior margin with postero-ventral corner finely punctate and densely hairy. Mesopleural groove absent. Pronotum densely punctate. Hind coxa $1/2$ as long as femur; hind femur over 2 times longer than broad.

Abdomen: Slightly longer than thorax and head combined, basally broad and sessile. Carapace lanceolate but somewhat truncate apically on dorsal $1/2$ in lateral view, longitudinally punctate and carinate to near rugoso-punctate apex. Apex of carapace with a parallel central spine and 2 short ventral spines at tip. Ventral opening of carapace narrow, approximately $2/3$ carapace length.

Holotype ♀ (USNM 72774), PHILIPPINE IS: Dapitan, Mindanao, Baker.

Distribution: Species known only from Mindanao, Philippine Islands.

Remarks: Similar to *C. mindanao* in mandibular teeth, body size, and ovipositor length. Differs by key characters and darker wing veins.

Canalicephalus mindanao, Gibson, n. sp.

FIG. 8

♀. *Size*: Length 4.3 mm, carapace 2.2 mm, ovipositor 1.1 mm. *Color*: Body dark maroon, abdomen brown ventrally, palpi tan, mandibles orange with red tips. Antennal scape and pedicel yellow; flagellar segments 1 and 2 brown, rest maroon. Legs pale orange with hind tarsi red-brown. Front wings hyaline; stigma and costa light red-brown, rest of veins pale; veins extend to wing tips. Tegula light orange. *Head*: Face finely punctate. Clypeus semicircular and small. Mandible rugose; broad basally, narrowing to bidentate tip; the anterior tooth being much larger than posterior tooth. Occipital carina incomplete; well developed laterally, absent dorsally. Antennal scapes well separated at base but arced inward and upward along well defined antennal sulci, separated by carinae from anterior base to median ocelli. (Antennae with 2 apical segments missing). *Thorax*: $3/4$ as long as carapace. Mesonotum slightly broader than long, notaulices present, foveolate; area of notaulices' convergence foveolate. Scutellum centrally and laterally carinate; sparsely, finely punctate. Propodeum coarsely rugoso-punctate, dorsal area narrow. Propodeal spiracles centro-lateral, small and circular. Mesopleura impunctate and shiny but foveolate along ventro-anterior and dorsal margins, posterior margin with large foveae in dorsal $1/2$ and finely punctate and hairy in posterior-ventral corner. Mesopleural groove absent. Pronotum densely coarsely rugoso-punctate. Hind coxa $1/2$ as long as femur; hind femur approximately 3 times longer than broad. *Abdomen*: As long as thorax and head combined, basally broad and sessile. Carapace lanceolate, longitudinally punctate and carinate to near rugoso-punctate apex, apex of carapace pointed, parallel with body. Ventral opening of carapace narrow and slightly shorter than $1/2$ carapace length.

Holotype ♀ (USNM 72775), PHILIPPINE IS: Davao, Mindanao, Baker.

Distribution: Known only from the type.

Remarks: Somewhat similar to *C. bakeri* but differs by key characters and paler wing veins.

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LITERATURE CITED

- Gibson, Lester P. 1972a. Revision of the genus *Urosigalphus* of the United States and Canada (Hymenoptera: Braconidae). *Misc. Publ. Ent. Soc. Amer.* 8: 83-134.
 1972b. *Urosigalphus* of Mexico and Central America (Hymenoptera: Braconidae). *Misc. Publ. Ent. Soc. Amer.* 8: 135-57.
 1974. South American *Urosigalphus* (Hymenoptera: Braconidae). *Misc. Publ. Ent. Soc. Amer.* 9: 201-26.