

New Species and Range Extensions of the Genus *Molophilus* from the South Pacific and Southeast Asia (Diptera: Tipulidae)

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ABSTRACT

Six new species of *Molophilus* (*Molophilus*) are described, 5 from New Guinea and 1 from Nepal. Range extensions for *Molophilus laevistylus* and *M. nilgiricus* are reported.

INTRODUCTION

This paper describes 5 new species of the tipulid genus *Molophilus* from Papua New Guinea and 1 from Nepal, and adds distribution records from New Caledonia and Nepal. All specimens are deposited in Bishop Museum, Honolulu (BPBM).

SYSTEMATICS

Molophilus (*Molophilus*) *alatostylus* Hynes, new species

Fig. 1

MALE. Length ca. 3.5 mm; wing 4.7 mm. Palpi dark brown. Scape, pedicel, and basal flagellomeres light brown, becoming dark brown at distal end. Rostrum and vertex yellow brown. Thorax and abdomen brown with a yellow triangular area from paratergites to pseudosutural foveae. Halteres yellow brown at base, darker at apex. Coxae and trochanters yellow brown; femora, tibiae, and tarsi brown, with last 2 tarsal segments dark brown. Wings light brown, veins only slightly darker. Venation with R_2 at same level as r-m; cell M_3 about $5\frac{1}{2} \times$ length of m-cu; 2A ending beyond m-cu. Hypopygium yellow brown. Lobe of basistyle with apical recurved beak dark brown, short, and blunt. Outer dististyle a parallel-sided, slightly sinuate blade terminating in 2 arms; outer arm with small spinulae and setae along outer and distal edges, inner arm glabrous. Inner dististyle a black, wing-shaped blade, terminating in an acute point, inner edge with 2-4 rows of thick, pointed spines; branching off base of main stem of dististyle, a wide plate with several longer spines on posterior edge, and 2-3 small spines on anterior edge. Aedeagus elongate, simple.

Type data. Holotype ♂ (BPBM 13748), PAPUA NEW GUINEA: [Western Highlands], Kubor Range, 2,950 m, 28.V.1966 (J.L. Gressitt). Paratype, 1♂, same data as holotype, genitalia on BPBM slide 2145.

Molophilus (*Molophilus*) *kuborensis* Hynes, new species

Fig. 2

MALE. Length ca. 3.1 mm; wing 4.5 mm. General coloration yellowish brown, thoracic nota slightly darker. Palpi, vertex, rostrum, scape, pedicel, and first 2 flagellomeres brownish yellow, remaining flagellomeres brown. Pronotum light brown medially, yellow laterally. Mesonotum with prescutum yellow at edges, yellow also reaching pseudosutural foveae.

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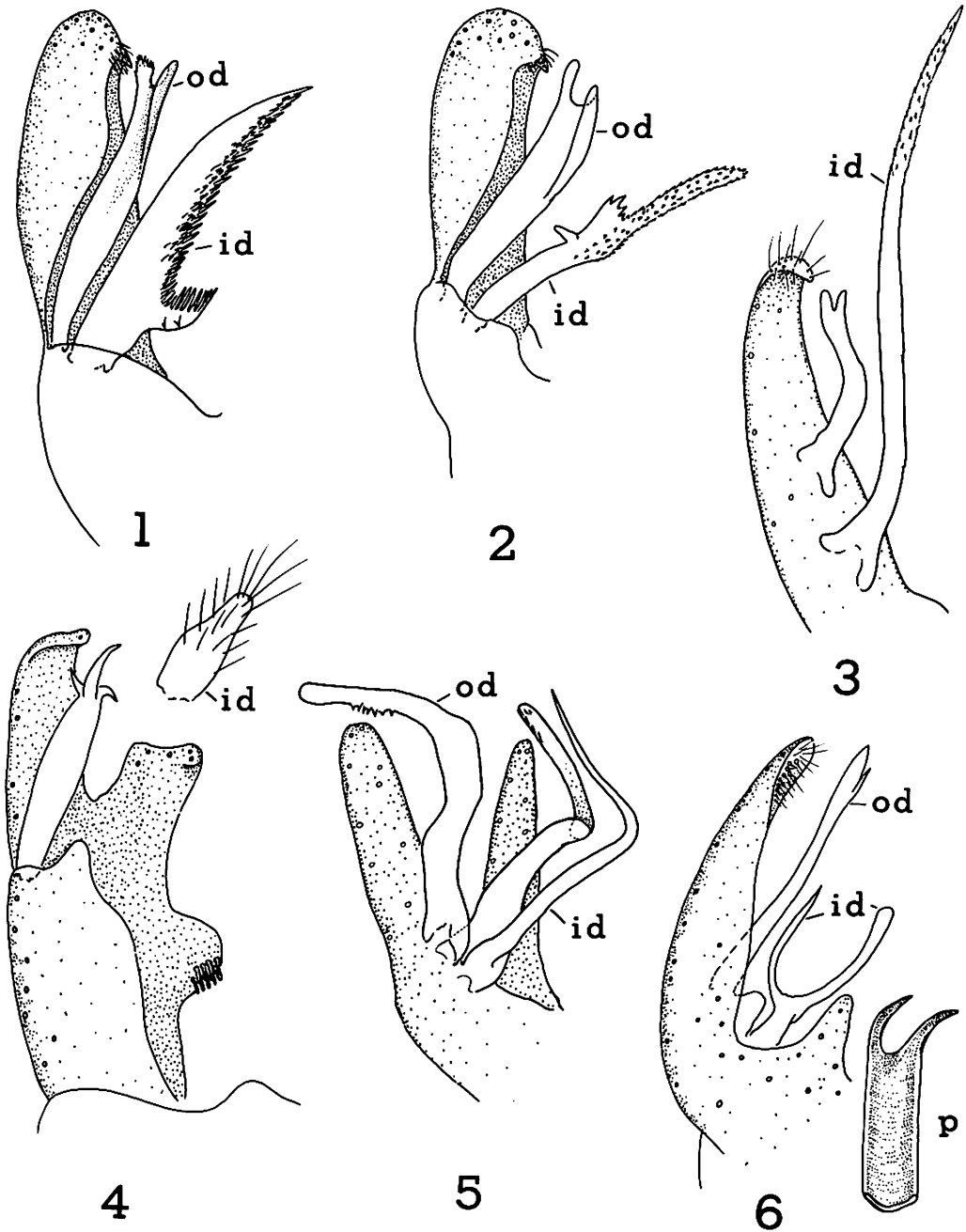


Fig. 1-6. Hypopygia: 1, *Molophilus (M.) alatostylus*; 2, *M. (M.) kuborensis*; 3, *M. (M.) subbelone*; 4, *M. (M.) umboiensis*; 5, *M. (M.) flexostylus*; 6, *M. (M.) furcophallus*. (b = basistyle, id = inner dististyle, od = outer dististyle, p = phallosome.)

Halteres yellow, remainder of thorax and legs yellowish brown. Wings with yellowish tinge, veins light brown. Venation with R_2 at level of r-m; cell M_3 ca. $5 \times$ length of m-cu; 2A ending slightly beyond m-cu. Hypopygium with beak of basistylar lobe short, blunt. Outer dististyle a flat plate that rolls upward on either edge, terminating in 2 short, equal

arms; entire structure tightly lodged in groove on outer lobe of basistyle. Inner dististyle an elongate, flattened blade narrowing to obtuse tip; distal $\frac{1}{2}$ with small teeth on upper and lower surfaces; 2 lateral extensions at midlength, on outer edge, basal extension thick and toothlike, upper extension ending in a group of 4 unequal spines. Phallosome rectangular; aedeagus simple, short.

Type data. Holotype δ (BPBM 13749), PAPUA NEW GUINEA: Western Highlands, Kubor Range, 2,950 m, 23.V.1966 (J.L. Gressitt) genitalia on BPBM slide 2139. Paratype δ , same data as holotype.

***Molophilus (Molophilus) umboiensis* Hynes, new species**

Fig. 4

MALE. Length ca. 2.2 mm; wing 3.0 mm. Palpi dark brown. Rostrum yellow, vertex yellow at edges of eyes, remainder brown. Antennae dark brown, elongate, if stretched would reach base of wing. Thorax dark brown, paratergites yellow. Halteres brown, darker at tips. Legs dark brown. Abdomen dark brown. Wings with brownish tinge, veins slightly darker. Venation with R_2 its own length before level of r-m; R_{4+5} $2 \times$ r-m; 2A ends at level of m-cu. Hypopygium with basistyle developed into at least 3 lobes. Outer lobe flat, fleshy at apex; mesal lobe with 9 peglike teeth at inner edge of basal margin. Outer dististyle terminates into 3 unequal points; outer edge bordered with short setae. What appears to be the inner dististyle a simple, fleshy lobe with numerous setae on surface, attached adjacent to outer dististyle. Aedeagus thick at base, narrowing to an acute point.

Type data. Holotype δ (BPBM 13750), PAPUA NEW GUINEA: Umboi I, WNW of Lab Lab, 300 m, 8-9.II.1967 (S.L. & G.A. Samuelson) genitalia on BPBM slide 2150.

***Molophilus (Molophilus) flexostylus* Hynes, new species**

Fig. 5

MALE. Length 2.3 mm; wing 3.3 mm. Palpi and rostrum brown, remainder of head darker. Antennal scape brown, pedicel yellow, remainder of antennae broken. Pronotum and prescutum yellow, the latter with 2 slightly lighter stripes on either side of midline; posterior edge of scutum yellow. Pleura brown, coxae yellow, legs missing. Halteres with stem light yellow, knobs slightly darker. Abdomen brown. Wings light brown, veins scarcely darker. Venation of R_2 at or slightly before level of r-m; 2A ends just before level of m-cu. Hypopygium with basistyle elongate and no beak. Outer dististyle bent laterad at midlength, with 6-7 denticles on outer edge of mid distance between angle and distal tip. Inner dististyle bilobed, both arms bent and slightly twisted at midlength, outer arm with spinulae at obtuse tip. Phallosome short, truncate; aedeagus slender, ending in acute tip.

Type data. Holotype δ (BPBM 13751). NEPAL: Syabrubens, 35 km W of Trisuli (Nawakot), 1,450 m, 30.X-5.XI.1965 (L.W. Quate) genitalia on BPBM slide 2163.

***Molophilus (Molophilus) furcophallus* Hynes, new species**

Fig. 6

MALE. Length 2.8 mm; wing 4.8 mm; antennae 0.9 mm. Head with palpi, rostrum, and vertex dark brown. Pronotum dark brown. Prescutum nearly black, with large yellow spot in front of pseudosutural foveae; paratergites light yellow anteriorly. Halteres light yellow. Remainder of thorax and abdomen dark brown. All coxae brown; fore and middle trochanters brown, the hind trochanters yellow. Femur of front leg light brown, becoming darker at tip. Femur and tibia of middle leg dark brown, remainder of legs broken. Wings light brown, trichia dark brown. A noticeable patch of trichia at fork of M. Venation with R_2 in transverse alignment with r-m; 2A ends at level of m-cu. Hypopygium yellowish brown. Apical lobe of basistyle extended, inner surface covered with fine, yellow setae.

Outer dististyle elongate, slender, slightly curved, a closely appressed spine on distal inner edge. Inner dististyle deeply U-shaped; inner arm longer obtuse at tip, outer arm acute at tip. Phallosomic plate large, very long, heavily sclerotized blade, edges curling dorsad and mesad at distal $\frac{1}{3}$; tip deeply forked, the 2 tines strongly curved ventrad.

Type data. Holotype ♂ (BPBM 13752), PAPUA NEW GUINEA: Western Highlands, Kubor Range, 2,950 m, 23.V.1966 (J.L. Gressitt) (BPBM 13752). Paratypes, 3♂, same data as holotype, genitalia on BPBM slides 2147, 2151.

***Molophilus (Molophilus) subbelone* Hynes, new species**

Fig. 3

MALE. Length ca. 3.7 mm; wing 4.3 mm. Vertex dark brown, remainder of head and palpi more yellowed. Antennal scape dark brown, remainder of antennae broken. Pronotum and paratergites yellow brown. Prescutum reddish brown, 3 darker stripes vaguely evident on disk. Scutum yellowed centrally, lobes dark brown. Scutellum reddish brown. Halteres yellow on stem, darker at knobs. Pleura reddish brown. Coxae, trochanters, and basal portion of femora yellowish brown, remainder of legs reddish brown. Wings pale brown, veins darker. Venation with R_2 at same level as r-m; petiole of M_3 about $2 \times$ m-cu; 2A short, straight, ending before m-cu. Abdomen, including hypopygium, brown. Outer lobe of basistyle elongate, fleshy, recurved and setiferous at apex. Outer dististyle a black, curved, slender rod, apex deeply cut forming 2 unequal teeth. Inner dististyle elongate, sinuous, microscopic setae on distal $\frac{1}{4}$. Aedeagus $\frac{1}{2}$ length of inner dististyle.

Type data. Holotype ♂ (BPBM 13753), PAPUA NEW GUINEA: Morobe Prov, Wau, 1,200 m, 5.XII.1961 (J. Sedlacek) genitalia on BPBM slide 2171.

Remarks. *Molophilus subbelone* is very closely related to *M. belone* Alexander, 1961, and *M. perhirtipes* Alexander, 1961, from the same region. *Molophilus subbelone* differs from the holotypes of *belone* and *perhirtipes* by its deeply toothed outer dististyle.

***Molophilus (Molophilus) laevistylus* Alexander, 1944**

Specimens examined. NEW CALEDONIA: 1♂, Cole de Mouiranee, 2.II.1963 (C. Yoshimoto & N. Krauss) genitalia on BPBM slide 2161. 1♂, Cole des Roussettes, 450–550 m, 4–6.II.1963 (C. Yoshimoto, J.L. Gressitt & N. Krauss), genitalia on BPBM slide 2153.

Remarks. This species was originally described from northern New South Wales, Australia. The 2 records given above indicate a greater distribution for the species.

***Molophilus (Molophilus) nilgircus* Edwards, 1927**

Specimens examined. NEPAL: 2♂, Syabrubens, 35 km N of Trisuli (Nawakot), 1,450 m, 30.X–5.XI.1965 (L.W. Quate) genitalia on BPBM slides 2153, 2164.

Remarks. This species was originally described from the Nilgiri Hills (Madras), India. The specimens examined vary only slightly from specimens in the Alexander Collection at the U.S. National Museum. Alexander's specimens have the tip of the dististyle acute, whereas the specimens reported here have the tips rounded.

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