

NEW AND LITTLE KNOWN TIPULIDAE FROM THE MARQUESAS *

By

CHARLES P. ALEXANDER

DEPARTMENT OF ENTOMOLOGY, ZOOLOGY, AND GEOLOGY, MASSACHUSETTS STATE COLLEGE.

INTRODUCTION

The species discussed in this paper were submitted to me for determination by the collectors of most of the specimens, E. P. Mumford and A. M. Adamson, of the Pacific Entomological Survey.

TRIBE ERIOPTERINI

The vast majority of the Eriopterine Tipulidae in the more remote Pacific islands pertain to the subgenus *Lipophleps* of the genus *Gonomyia* Meigen. In this series from the Marquesas are included no fewer than four species of this subgenus, all, as known, being restricted to the Marquesas.

Key to Marquesan Species of *Lipophleps*

1. General coloration metallic blue-black; wings yellowish, conspicuously patterned with brown; size large (wing, male, more than 6 mm.).....**metallescens** Edwards
 General coloration reddish brown to brown, variegated with yellow; wings unmarked, except for the stigmal area when present; size small (wing, male, not exceeding 5 mm.)2
2. Tips of all femora broadly and conspicuously blackened.....**adamsoni** new species
 Femora uniformly blackened, or pale with a brown subterminal ring3
3. Antennae, legs, and knobs of halteres brown; wings strongly suffused with blackish.....**mumfordi** new species
 Antennae with the scapal segments conspicuously light-yellow; knobs of halteres yellow, femora brownish-yellow, with a slightly darker subterminal brown ring; wings brownish gray**marquesana** new species

* Pacific Entomological Survey Publication I, article 7.

Edwards²⁴ has recorded still another species of *Lipophleps* from Hivaoa. His specimen was in too fragmentary a condition to determine, but is certainly different from the other species known from the Marquesas.

Gonomyia (Lipophleps) metallescens Edwards (fig. 26, a, e).

Gonomyia (Lipophleps) metallescens Edwards: Ann. Mag. Nat. Hist. (9), 20, p. 240, 1927.

Male

Length about 5.5-6 mm.; wing, 6.5-7.5 mm. Palpi dark-brown. Dorsal sternopleurite shimmering blue-gray, its ventral portion polished black. All legs with femora chiefly blackened, with a paler annulus beyond midlength; tibiae and tarsi chiefly blackened. Wings (fig. 26, a) with the prearcular region broadly and abruptly light yellow; cubital and anal cells beyond base almost uniformly infuscated; remainder of wing-pattern about as in the type. Venation: Sc_1 ending opposite or slightly beyond the origin of R_s . Abdomen black, the hypopygium a trifle paler. Male hypopygium (fig. 26, e) with the lateral arms of the tergal plate produced, each bearing two branches, one being a flattened black paddle, the other, an acute spine; on one side the spine exceeds the obtuse arm, and on the opposite side the obtuse arm exceeds the spine. Two dististyles, the outer heavily sclerotized; inner dististyle much expanded at base.

The ochreous abdominal rings described for the type female are little apparent in the material at hand, being most evident on the subterminal tergites.

Marquesas: Eiao, uplands toward north end, east side, elevation 1900 feet, September 29, 1929, on *Hibiscus tiliaceus*, 2 males (1 allotype), 1 female; Vaituha, near sea level, September 29, 1929, at light, 1 female, and October 2, 1929, 1 male; Adamson.

The male sex has never been described, and one of the present specimens is defined as allotype. This striking crane-fly was described from two females taken on Nukuhiva, Marquesas.

The hypopygium is very different in structure from that of the two other species of the *flavidapex* group whose males are known (*dicranura* Edwards and *labidura* Edwards). In these latter species, the basistyles are strongly produced at apices, the lobes thus formed heavily blackened and terminating in a small terminal spine; a single dististyle. In the present species the basistyle is unmodified and there are two dististyles, as described.

Gonomyia (Lipophleps) adamsoni new species (fig. 26, b, f).

General coloration of mesonotum light reddish-brown, without distinct markings; pleura pale, blackened dorsally, the ventral portion with a silvery longitudinal stripe; femora with tips broadly and conspicuously blackened; wings pale brownish-yellow, the stigma and axillary region faintly darkened; a small brown cloud on anterior cord; Sc short, Sc_1 ending just before origin of R_s ; male hypopygium with the phallosome symmetrical, each arm bearing a lateral branch beyond midlength, the branches and arms clothed with an abundant delicate pubescence.

²⁴ Edwards, F. W., Diptera Nematocera from the South Pacific: Ann. Mag. Nat. Hist., (9), 20, p. 240, 1927.

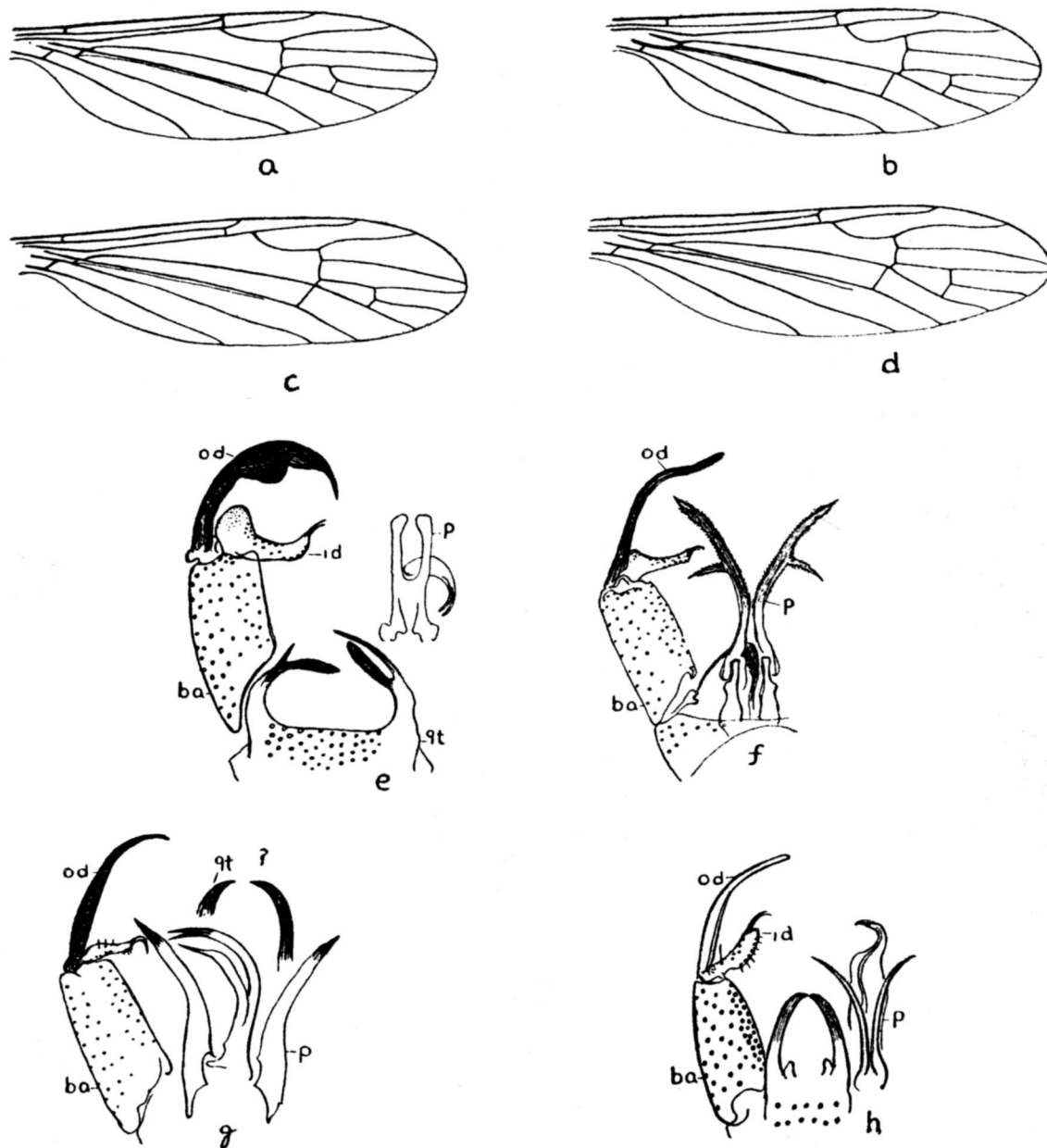


FIGURE 26. Marquesan species of *Lipophleps*: a, *Gonomyia* (*Lipophleps*) *metallescens* Edwards, wing; b, *Gonomyia* (*L.*) *adamsoni* new species, wing; c, *Gonomyia* (*L.*) *mumfordi* new species, wing; d, *Gonomyia* (*L.*) *marquesana* new species, wing; e, *Gonomyia* (*L.*) *metallescens* Edwards, male hypopygium; f, *Gonomyia* (*L.*) *adamsoni* new species, male hypopygium; g, *Gonomyia* (*L.*) *mumfordi* new species, male hypopygium; h, *Gonomyia* (*L.*) *marquesana* new species, male hypopygium. ba = basistyle; id = inner dististyle; od = outer dististyle; p = phallosome; qt = 9th tergite.

Male: length about 4.3-4.4 mm.; wing, 4-4.2 mm. Female: length about 5 mm.; wing, 4.2 mm.

Rostrum and palpi brownish-black. Antennae with the scapal segments light-yellow, the flagellar segments a little more testaceous, in the male with elongate verticils. Head light yellow, the center of the vertex restrictedly darkened.

Pronotum yellow. Mesonotal praescutum and scutum reddish brown, without distinct markings, the lateral margin of the praescutum paler, centers of scutal lobes slightly darkened; scutellum testaceous; postnotal mediotergite pale testaceous, the cephalic portion a little darker. Pleura blackened dorsally, the ventral portion with a conspicuous silvery longitudinal stripe extending from behind the fore coxae to the base of the abdomen, passing beneath the root of the halteres; ventral sternopleurite reddish-brown; the dorsal darkening includes the dorso-pleural membrane, propleura, anepisternum and pteropleurite, the pleurotergite pale. Halteres light sulphur-yellow. Legs with the fore and middle coxae yellowish testaceous, the posterior coxae slightly more darkened; trochanters yellow; femora yellow, the tips broadly blackened, the amount subequal on all legs; tibiae and tarsi yellow, the outer tarsal segments slightly infuscated. Wings (fig. 26, *b*) pale brownish-yellow; stigma and axillary region faintly darkened; a more conspicuous darker broken cloud on anterior cord; veins pale-brown, the anterior cord dark-brown. Venation: Sc_1 ending just before the strongly arcuated Rs , Sc_2 close to its tip; anterior branch of Rs nearly straight; cell $1st M_2$ closed; $m-cu$ close to the fork of M .

Abdominal tergites and sternites obscure yellow, narrowly blackened laterally. Male hypopygium (fig. 26, *f*) with two dististyles, the outer a curved, simple, glabrous, blackened rod; inner style much smaller, fleshy, with abundant erect setae, including two stouter, more fasciculate setae at apex. Phallosome symmetrical, each arm slender, densely clothed with a delicate pale pubescence, the tips acute; on outer margin beyond midlength with an acute lateral spine arising from membrane, the basal half of the spine with numerous setulae. Aedeagus terminating in an acute recurved spine.

Marquesas: Eiao, Vaituha, near sea level, October 2, 1929, at light, holotype male, allotopotype female; September 29, 1929, paratopotype male, Adamson.

This very distinct species of *Gonomyia* is named in honor of the collector of the material, A. M. Adamson.

***Gonomyia* (*Lipophleps*) *mumfordi* new species (fig. 26, *c*, *g*).**

General coloration dark-brown, the thoracic pleura with a more or less distinct ventral yellow stripe; rostrum and antennae black; legs blackened; knobs of halteres darkened; wings with a uniform strong blackish tinge; vein $1st A$ with macrotrichia distributed throughout the entire length.

Male: length about 3.2 mm.; wing, 4 mm.

Rostrum, palpi, and antennae black, the outer segments of the antennae slender, with long conspicuous verticils. Head dark-brown, restrictedly variegated with yellow.

Mesonotum chiefly dark-brown, the median region of the scutum, together with the adjoining portions of the praescutum, obscure yellow; scutellum dark brown; postnotal mediotergite dark-brown. Pleura dark-brown, especially the dorsal half, the ventral half traversed by a more or less distinct yellow longitudinal stripe; ventral sternopleurite paler brown than the dorsal region. Halteres brown. Legs with the coxae and trochanters pale-brown; remainder of legs dark brown to black. Wings (fig. 26, *c*) with a uniform blackish tinge, the oval stigma very slightly darker; veins brown. Costal fringe relatively long and conspicuous; macrotrichia on vein $1st A$ for the entire length. Venation: Sc_1 ending just before the origin of Rs , Sc_2 a short distance from

its tip; R_s very strongly arcuated; basal deflection of R_s long; $m-cu$ close to the fork of M .

Abdomen, including the hypopygium, dark-brown. Male hypopygium (fig. 26, *g*) with the outer dististyle simple, glabrous. Inner dististyle very small, terminating in two fasciculate setae, with additional normal setae scattered over surface. Phallosome consisting of two divergent apophyses, pale, with the acute tips narrowly blackened, before the tips on mesal face with an extensive pale membrane. Aedeagus elongate, curved, at apex split into two acute, slightly divergent spines; immediately beneath the aedeagus and closely connected with it for about one-half of its length is a second rod that is drawn out into a long pale point.

Marquesas: Hivaoa, Matauuna, elevation 3700 feet, March 4, 1930, miscellaneous beating, holotype male; March 3, 1930, paratopotype male, Mumford and Adamson.

I take great pleasure in naming this interesting *Gonomyia* in honor of the Director of the Pacific Entomological Survey, Mr. Edward P. Mumford. The species is readily distinguished from all other small regional species of *Lipophleps* by the almost uniform dark color of the body, legs, halteres, and wings. The paratype is more extensively darkened than the type, the yellow pleural stripe being obliterated or nearly so.

***Gonomyia (Lipophleps) marquesana* new species (fig. 26, *d, h*).**

Rostrum black; antennal scape light-yellow, flagellum black; scutellum dark-brown basally, the apex broadly yellow; thoracic pleura yellow, conspicuously striped longitudinally with dark-brown; knobs of halteres light-yellow; femora brownish-yellow, with a subterminal pale brown ring; wings brownish-gray, the prearcular and costal regions pale yellow; stigma pale-brown, oval; macrotrichia on vein *1st A* for entire length.

Male: length about 3.5-3.7 mm.; wing, 4.2-4.5 mm. Female: length about 4.5 mm.; wing, 5 mm.

Rostrum and palpi black. Antennae with the scapal segments clear light-yellow, the flagellum black; flagellar segments of male with elongate verticils, as in the subgenus. Head light-yellow.

Pronotum yellow dorsally, darker laterally. Mesonotal praescutum brown medially, paling to yellowish brown on sides, the humeral region and lateral pretergites clear light yellow; pseudosutural foveae reddish-brown, but little conspicuous against this ground-color; scutal lobes dark-brown, obscure yellow on median portion; scutellum dark brown medially at base, the apex broadly yellow; postnotal mediotergite yellow, the cephalic margin darkened, the caudal margin with two paler brown spots. Pleura pale whitish-yellow, conspicuously variegated with darker, including a dorsal longitudinal stripe extending from the cervical sclerites to the abdomen, passing beneath the halteres; a much paler brown area on the ventral sternopleurite. Halteres with the stem testaceous, the knobs clear light yellow. Legs with the coxae pale yellow, the basal portions of the mid-coxae a trifle darkened; trochanters yellow, femora brownish yellow, with a slightly darker subterminal brown ring; tibiae brownish black; tarsi black. Wings (fig. 26, *d*) with a brownish-gray tinge, the prearcular and costal regions pale-yellow; stigma pale-brown, oval, very faintly indicated and ill-defined; veins brown. Macrotrichia on vein *1st A* for the entire length; costal fringe and macrotrichia of veins long and conspicuous. Venation: Sc short, Sc_1 ending opposite origin of R_s .

Abdominal tergites obscure yellowish-brown, the sternites a little paler; hypopygium yellow. Male hypopygium (fig. 26, *h*) with two dististyles, the outer one a simple

gently curved rod, the inner small and fleshy, terminating in two fasciculate setae, with other smaller setae, chiefly marginal in distribution. Elements of phallosome symmetrical, consisting of two flattened sword-shaped dusky blades, with two more slender divergent rods. Apex of aedeagus a short curved hook.

Marquesas: Hivaoa, Mount Temetiu, elevation 3,900 feet, December 30, 1930, at light, holotype male and numerous paratopotypes, males and females; December 29, 1930, at light, numerous paratopotypes, males and females, H. Tauraa; Matauuna, elevation 3,700 feet, March 4, 1930, by miscellaneous beating, allotype female, Mumford and Adamson.

One paratype male has one wing with cell *1st M*₂ open by the atrophy of *m*.