

**NEW OR LITTLE-KNOWN *TIPULIDAE* FROM NEW GUINEA**

**(*Tipulidae*, *Diptera*)**

Part I

by

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(University of Massachusetts, Amherst)

With 8 text-figures



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NEW OR LITTLE-KNOWN *TIPULIDAE* FROM NEW GUINEA  
(*Tipulidae, Diptera*)

Part I

by

CHARLES P. ALEXANDER

(University of Massachusetts, Amherst)

With 8 text-figures

At this time I am describing four new species belonging to the genus *Gynoplistia* WESTWOOD, all taken by Dr M. A. LIEFTINCK in the vicinity of the Klamono Oilfields, in northwestern New Guinea. The types of these species will be deposited in the author's collection. At the same time I am figuring the male hypopygium of five further members of the same genus that had been described earlier by myself but had never been illustrated. Such species were taken by Miss L. E. CHEESMAN in Waigeu, northern Dutch New Guinea and in Papua, the types being preserved in the British Museum of Natural History (London). I am very deeply indebted to Dr LIEFTINCK for the privilege of determining the above materials and other more extensive series from New Guinea that will be discussed in a later paper.

***Gynoplistia (Paralimnophila) euryphaea* ALEXANDER (fig. 1).**

1946. *Gynoplistia (Paralimnophila) euryphaea* ALEXANDER; Ann. Mag. Nat. Hist. (11) 13:751 - 753.

The type, a ♂, was from Mount Tafa, Papua, altitude 8500 feet, taken in February 1934, by CHEESMAN.

***Gynoplistia (Gynoplistia) dixantha* ALEXANDER (fig. 2).**

1947. *Gynoplistia (Gynoplistia) dixantha* ALEXANDER; Ann. Mag. Nat. Hist. (11) 14:266 - 268.

The type, a ♂, was from Mafulu, Papua, altitude 4000 feet, taken in January 1934, by CHEESMAN.

***Gynoplistia (Gynoplistia) flavizona* ALEXANDER (fig. 3).**

1947. *Gynoplistia (Gynoplistia) flavizona* ALEXANDER; Ann. Mag. Nat. Hist. (11) 14:264 - 266.

The type, a ♂, was from Kokoda, Papua, altitude 1200 feet, taken in September-October 1933, by CHEESMAN.

**Gynoplistia (Gynoplistia) klamonoensis** sp. n. (fig. 4).

General coloration black, the pleura pale on propleura and pteropleurite; legs entirely black; wings grayish subhyaline, heavily patterned with dark brown, including cells *C* and *Sc*, with posterior extensions to arculus, origin of *Rs*, along cord and over the wing tip; cell *M*<sub>1</sub> present; abdomen black, segments two to six with yellow bases; male hypopygium with a single apical lobe on basistyle; dististyle single, expanded at tip; aedeagus relatively slender, the apical third with several small darkened projections.

Male. — Length about 7 mm; wing 6.5 mm.

Rostrum very reduced, virtually flush with the front, testaceous brown; palpi pale brown. Antennae with scape and pedicel orange; flagellum broken. Head above dark brown; eyes relatively large, head transverse.

Pronotal scutum buffy, the scutellum polished brownish black. Mesonotum almost uniformly blackened, the surface subopaque by a sparse pruinosity. Pleura black, striped transversely with pale, this color involving the propleura and the pteropleurite. Halteres with stem pale, the outer end, with the knob, black. Legs black, the coxae sparsely pruinose. Wings grayish subhyaline, heavily patterned with dark brown, including the prearcular field and cells *C* and *Sc*, with posterior extensions therefrom, broadest at cord and wing tip, the former not involving the center of cell 1st *M*<sub>2</sub>; other darkenings include the arculus, origin of *Rs*, outer end of cell 1st *M*<sub>2</sub> and *m-cu*; an isolated dark spot in each anal cell; veins dark brown. Veins beyond cord with abundant macrotrichia. Venation: *Sc*<sub>1</sub> ending about opposite the fork of *R*<sub>2+3+4</sub>, *Sc*<sub>2</sub> at its tip; *Rs* long, strongly arcuated at origin; *R*<sub>2+3+4</sub> short; anterior branch of *Rs* lying close to *R*<sub>1+2</sub>, the outer end of the cell narrow; vein *R*<sub>2</sub> faint to subobsolete; cell *M*<sub>1</sub> present, subequal to its petiole; cell 1st *M*<sub>2</sub> rectangular, with *m-cu* at midlength; vein 2nd *A* strongly sinuous.

Abdomen conspicuously bicolored, the segments black, the second to sixth, inclusive, with conspicuous yellow basal rings, these broadest on the second segment where nearly one-half is included, becoming progressively narrower on the outer segments; seventh and succeeding segments, including the hypopygium, uniformly blackened. Male hypopygium (fig. 4) with the tergite, *9t*, large, transverse, the caudal margin truncate. Basistyle, *b*, at apex produced into a single lobe or blade, this broadest before midlength, thence narrowed to the tip, the outer margin with unusually long setae, the longest more than twice the diameter of the blade opposite

the point of insertion. Dististyle, *d*, single, elongate, nearly twice as long as the lobe of the basistyle, the stem straight, the outer fourth more expanded, near the tip suddenly narrowed into a more slender lobule, the apex of which is flattened or slightly expanded. Aedeagus, *a*, relatively slender, straight, on apical third with several small weak darkened projections that are scarcely spinous; tip obtuse, pale and membranous.

Holotype, ♂, Klamono Oilfields, Northwest New Guinea, August 18-24, 1948 (LIEFTINCK).

There are a few generally similar Papuan species, all differing in the structure of the male hypopygium. The dististyle and aedeagus of the present fly are distinctive among such species.

### ***Gynoplistia (Gynoplistia) latibasalis* sp. n.**

General coloration of mesonotal praescutum and scutum reddish brown, possibly pruinose in fresh specimens; mediotergite reddish brown, with a black central triangle; pleura brownish black, banded transversely with silvery on the propleura and pteropleurite; antennae (female) 16-segmented, with eight branched segments, the longest branches about three times the segments; femora yellow, the tips black; wings chiefly blackened, the prearcular field more yellowed; a broad more whitish band before cord, about half as wide as the basal black band; cells *C* and *Sc* uniformly dark brown; macrotrichia of veins beyond cord very sparse; abdomen black, segments two to four, with the extreme base of five, dull orange; genital shield orange.

Female. — Length about 11 mm; wing 9.5 mm.

Rostrum and palpi yellow. Antennae (female) 16-segmented, the formula being 2 + 2 + 6 + 6; scape and pedicel yellow, the remainder of organ chiefly dark brown, the incisures of the four or five proximal flagellar segments yellow, very broadly so on the first one, on the others with only the apical stem darkened; all outer segments and branches uniformly darkened; branch of first flagellar segment nearly twice the segment, of the second about two and one-half times; longest branch (about flagellar segment four or five) about three times the segment. Head chiefly yellow, the extreme central part of anterior vertex weakly darkened.

Pronotum brownish black. Mesonotal praescutum and scutum chiefly reddish brown, the surface discolored, probably pruinose in fresh material; scutellum dark brown; mediotergite obscure reddish brown, with a black central triangle, the point behind. Pleura brownish black, the propleura

and pteropleurite pale, heavily silvery white pruinose. Halteres infuscated, knob brownish black, base of stem narrowly yellow. Legs with coxae light gray pruinose; trochanters dark brown; femora yellow, the tips black, including about the outer sixth; extreme bases of femora narrowly and vaguely infuscated; tibiae dark brown, the tips narrowly darker; tarsi black; claws microscopically serrulate on lower face of about the proximal quarter. Wings chiefly blackened; prearcular field more yellowed; a broad more whitish band before the cord, extending from vein  $R$  virtually to the posterior border; centers of outer radial cells very narrowly whitened to form an outer incomplete crossband; cells  $C$  and  $Sc$  uniformly dark brown; the dark basal crossband is approximately twice as wide as the major pale area; veins brown, a trifle lighter in the pale band, prearcular field yellowed. Macrotrichia beyond cord very sparse, occurring only on distal section of  $R_5$ . Venation:  $R_{2+3+4}$  short, only about one-third the subobsolete basal section of  $R_5$ ; cell  $M_1$  present, subequal to its petiole;  $m-cu$  at near midlength of cell  $1st M_2$ .

Abdomen with the first segment black; segments two to four, with extreme base of five, orange yellow, the surface dull; succeeding segments black; genital shield orange, cerci orange-yellow.

Holotype, ♀, Klamono Oilfields, Northwest New Guinea, August 18-24, 1948 (LIEFTINCK).

In its unusually heavy wing pattern, the present fly suggests *Gynoplistia* (*Gynoplistia*) *melancholica* WALKER and *G. (G.) nigrithorax* ALEXANDER, especially the latter. This has the antennae 17-segmented, with ten branched segments, and with the entire thorax black. The blunt serrulations on the claws, as described, are found likewise in other species of the subgenus but usually to a greater degree than here.

#### ***Gynoplistia* (*Gynoplistia*) *lieftinckiana* sp. n. (fig. 5).**

General coloration of head and thorax orange yellow, virtually unpatterned; antennae (male) 16-segmented, with twelve branched segments; femora orange yellow; wings light yellow on basal half, including the veins, the veins of outer half darkened, the wing tip narrowly infuscated; cell  $M_1$  lacking; abdomen dull orange, the outer four segments black; male hypopygium with two spinous points at apex of basistyle; dististyle single; phallosome consisting of two sets of blackened rods.

Male. — Length about 11.5 mm; wing 8.5 mm.

Female. — Length about 14 mm; wing 10 mm.

Rostrum of male yellowed at base, darkened outwardly, in female, the dorsal surface uniformly darkened, provided with conspicuous yellow

setae; palpi light reddish brown. Antennae (male) 16-segmented, the formula being  $2 + 2 + 10 + 2$ ; scape and pedicel reddish yellow, the succeeding two or three segments with the stem yellow, the branches black; intermediate segments black, the extreme base of stem obscure yellow, outer branched segments uniformly black, the outer two simple ones medium brown; branches of flagellar segments one and two about four times the segment; longest branches (about flagellar segments six and seven) some six or seven times the segments; last branch subequal in length to the segment. In female, the terminal segments broken but there are at least seven branched segments, the longest some four times the segment; basal flagellar segments with the incisures broadly yellow, the intermediate part of stem and the branches black. Head reddish brown, the vertex in female more darkened, almost black.

Thorax polished orange yellow, in female darker but giving the appearance of being more or less discolored from within. Halteres orange yellow. Legs with the coxae, trochanters and femora orange yellow, the tips of the last not or scarcely darkened in male, more blackened in female; tibiae and basitarsi obscure yellow, the outer tarsal segments black. Wings with about the basal half light yellow, including the veins, the cord and the veins beyond brown, the wing tip narrowly pale brown; a vague darkening over cord in male, broader and more conspicuous in female. A complete series of trichia on distal section of vein  $R_5$ ; on outer medial veins, including a few scattered trichia on distal section of vein  $M_1 + 2$ , lacking on the branches behind this. Venation:  $R_2$  pale, about one-half as long as  $R_1 + 2$ ;  $R_2 + 3 + 4$  a little shorter than  $r-m$ ; cell  $M_1$  lacking;  $m-cu$  at near one-third the length of cell  $1st M_2$ .

Abdomen of male dull orange, the sixth and all succeeding segments, including the hypopygium, black, the sixth and seventh segments with purplish reflexions. In the female, the basal five segments orange, the remainder of abdomen polished blue-black, the valves of the ovipositor orange. Male hypopygium (fig. 5) with the ninth tergite,  $9t$ , truncate across tip. Basistyle,  $b$ , at apex produced into two strong blackened rods or spines, the longest directed mesad, its tip acute or microscopically notched; shorter spine directed caudad. Dististyle,  $d$ , single, about twice as long as the shorter spine of the basistyle, narrowed to the tip, the lower margin microscopically tuberculate. Phallosome,  $p$ , consisting of various blackened rods and spines (of which one-half are shown in figure); lateral rods bearing a strong spur near base, with further smaller spines near its base; inner rods broad-based, bent at a right angle into a very strong straight black spine.

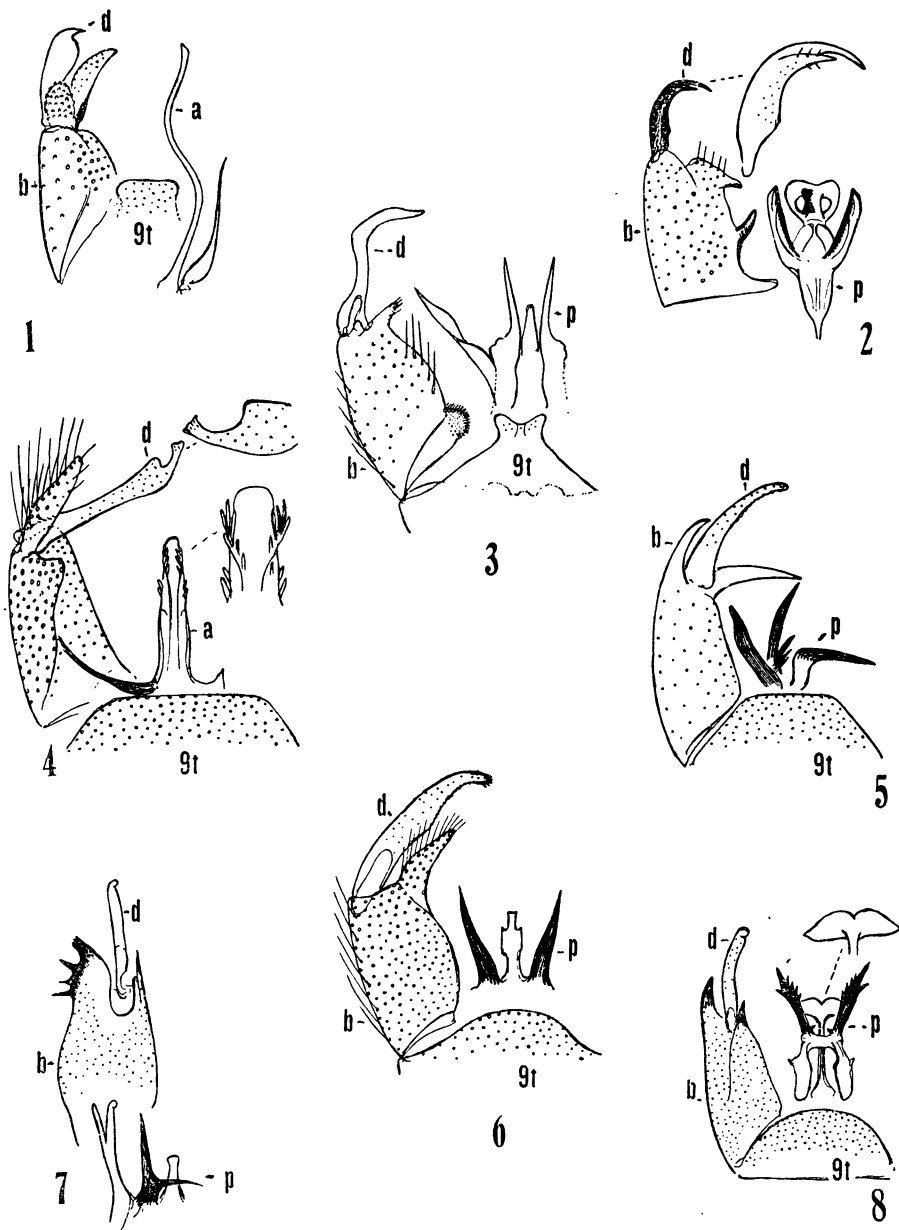


Fig. 1. *Gynoplistia (Paralimnophila) curyphaea* ALEXANDER; male hypopygium. — Fig. 2. *G. (Gynoplistia) dixantha* ALEXANDER; male hypopygium. — Fig. 3. *G. (Gynoplistia) flavizona* ALEXANDER; male hypopygium. — Fig. 4. *G. (Gynoplistia) klamonoensis*, sp. n.; male hypopygium. — Fig. 5. *G. (Gynoplistia) lieftinckiana*, sp. n.; male hypopygium. — Fig. 6. *G. (Gynoplistia) waigeuensis*, sp. n.; male hypopygium. — Fig. 7. *G. (Gynoplistia) waigeuensis* ALEXANDER; male hypopygium. — Fig. 8. *G. (Gynoplistia) xanthocera* ALEXANDER; male hypopygium. — (Symbols: *a*, aedeagus; *b*, basistyle; *d*, dististyle; *p*, phallosome; *t*, tergite).



Holotype, ♂, Klamono Oilfields, Northwest New Guinea, August 18-24, 1948 (LIEFTINCK).

I am most pleased to name this very interesting species for the collector, Dr M. A. LIEFTINCK, to whom I am greatly indebted for cooperation in the study of the New Guinea Tipulidae. The fly bears a marked superficial resemblance to *Gynoplistia (Gynoplistia) evelynae* ALEXANDER, which has cell  $M_1$  of the wings present and differs conspicuously in the structure of the male hypopygium. The female here associated with the type male as allotype differs in slight regards but is believed to be conspecific.

***Gynoplistia (Gynoplistia) vigilans* sp. n. (fig. 6).**

Mesonotum brownish black, the pleura concolorous, striped transversely with pale; antennae (male) 16-segmented, with eleven long-branched segments; femora yellow, the tips conspicuously blackened; wings whitish subhyaline, with a somewhat restricted brown banded pattern; cell  $M_1$  present; first abdominal segment black, segments two and three chiefly orange, the lateral borders more blackened; outer abdominal segments blackened; male hypopygium with the basistyle produced at apex into a single setiferous lobe; phallosome consisting of a pair of blackened spines that subtend the central aedeagus.

Male. — Length about 13 mm; wing 10 mm.

Rostrum obscure orange yellow; first two segments of palpus yellow, the outer two whitened. Antennae (male) 16-segmented, the formula being  $2 + 2 + 9 + 3$ ; scape and pedicel orange yellow; succeeding segments with the incisures yellow, the intermediate part of stem and the branches dark brown; outer four or five segments uniformly dark brown; branch of first flagellar segment nearly three times the segment; longest branch (about flagellar segment five or six) some five or six times the segment; branch of the eleventh flagellar segment short, less than the segment. Head above orange on front and surrounding the bases of the antennae and again on the occiput, the posterior vertex and the orbits broadly infuscated.

Pronotum dull brownish black, the posterior angles of the scutellum and the pretergites obscure yellow. Mesonotum brownish black, the surface sparsely pruinose, the praescutum without distinct pattern. Pleura dull black, transversely striped with pale, the latter including a narrow yellow band on the pleura extending to the base of the fore coxa and a broad silvery white band extending from the wing root to above the mid coxa. Halteres brownish black, the base of stem yellow. Legs with the coxae

brown or reddish brown; trochanters piceous brown; femora yellow, the tips conspicuously blackened, with about the outer fifth or sixth included; femoral bases less evidently darkened, most extensive on the posterior legs; tibiae brown or brownish yellow, the tips darker; tarsi black. Wings whitish subhyaline, the prearcular field yellowed; cells *C* and *Sc* darkened; a somewhat restricted brown banded pattern, the most conspicuous area over the cord, extended narrowly to the wing margin over *m-cu* and distal section of vein *Cu*, virtually covering cell *1st M*<sub>2</sub>; wing tip narrowly darkened, the inner edge extending back almost to the fork of *M*<sub>2</sub>; basad of cord with relatively small isolated spots at arculus, origin of *Rs*, and in cell *1st A* at near two-thirds the length of the vein; veins light brown, darker brown in the patterned areas. Macrotrichia of outer veins unusually sparse, even on the distal section of *R*<sub>5</sub> being relatively few and scattered, lacking on the basal portions of the veins. Venation: *Sc*<sub>1</sub> ending just beyond the fork of *Rs*, *Sc*<sub>2</sub> near its tip; basal section of *R*<sub>5</sub> oblique, unusually long, about three times *R*<sub>2+3+4</sub>; inner end of cell *1st M*<sub>2</sub> arcuated, lying almost as far basad as cell *R*<sub>4</sub>; cell *M*<sub>1</sub> subequal in length to its petiole; *m-cu* at near one-third the length of cell *1st M*<sub>2</sub>; vein *2nd A* more gently sinuous than is common in the genus.

First abdominal segment black; segments two and three chiefly orange, the lateral borders more blackened; fourth segment orange on about the proximal third; remainder of abdomen, including hypopygium, black. Male hypopygium (fig. 6) with the caudal margin of the ninth tergite, *9t*, convexly rounded. Apex of basistyle, *b*, produced into a single lobe, this only moderately sclerotized and provided with unusually long setae. Dististyle, *d*, single, relatively broad, especially at near midlength, thence narrowed to the obtuse tip, which bears four or five blackened teeth; inner margin of outer half with microscopic tubercles; surface with scattered microscopic pale punctures. Phallosome, *p*, consisting of a pair of blackened spines and the central aedeagus, the latter with a quadrate dilation at near midlength.

Holotype, ♂, Klamono Oilfields, Northwest New Guinea, August 18 - 24, 1948 (LIEFTINCK).

Quite distinct from other regional species, including *Gynoplistia* (*Gynoplistia*) *klamonoensis* sp. n., in the coloration and, especially, the structure of the male hypopygium, particularly the phallosome.

***Gynoplistia* (*Gynoplistia*) *waigeuensis* ALEXANDER (fig. 7).**

1946. *Gynoplistia* (*Gynoplistia*) *waigeuensis* ALEXANDER; Ann. Mag. Nat. Hist. (11) 13: 759 - 760.

The type, a ♂, was from Camp Nok, Waigeu, altitude 2500 feet, taken in April 1938, by CHEESMAN. The detailed account of the collector's expedition to Waigeu and Japen in 1938 - 1939 has been most entertainingly described in her recent book, "Six-legged snakes in New Guinea," 281 pp., plates, text-figures; 1949; GEORGE G. HARRAP and Company, Ltd.

**Gynoplistia (Gynoplistia) xanthocera** ALEXANDER (fig. 8).

1946. *Gynoplistia (Gynoplistia) xanthocera* ALEXANDER; Ann. Mag. Nat. Hist. (11) 13: 154 - 156.

The type, a ♂, was from Sabron, Cycloop (Cyclops) Mountains, Northern Dutch New Guinea, altitude 900 feet, taken in May 1936, by CHEESMAN.

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