

STUDIES ON THE TIPULIDAE OF CHINA (DIPTERA)
V. NEW CRANE-FLIES FROM YUNNAN AND KWANGTUNG

By CHARLES P. ALEXANDER

Massachusetts State College, Amherst, Massachusetts.

The preceding part under this general title was published in the Lingnan Science Journal, 19: 121-132, April 1940. In the present instalment I wish to discuss a few new species that were taken in Yunnan by Mr. Ernest R. Tinkham and in Kwangtung by Mr. F. K. To. The types of these novelties will be returned to the Lingnan Natural History Survey and Museum. I am greatly indebted to the collectors, and to Professor William E. Hoffman and Mr. J. Linsley Gressitt, for the opportunity of studying this interesting series of Tipulidae.

Tipulinae

1. **Dolichopeza (Nesopeza) tinkhamiana** n. sp. (Fig. 1, 6)

General coloration almost uniform reddish brown; halteres with stem yellow, knob dark brown; femora and tibiae brown, the tips of the latter, with the tarsi, snowy white; wings subhyaline, stigma oval, dark brown; *m-cu* more than one-third its length before fork of *M*; abdominal tergites yellow, their apices broadly brownish black; subterminal segments more uniformly blackened; male hypopygium with the outer dististyle flattened, dusky, at apex with three or four long fasciculate setae; inner dististyle large and complex, its beak very slender.

Male.—Length, about 9.5 mm; wing, 10 mm; antenna, about 4.5 mm.

Female.—Length, about 10 mm; wing, 9.5 mm.

Frontal prolongation of head light brown; palpi darker brown. Antennae of male relatively long, as shown by the measurements; scape, pedicel and extreme base of first flagellar segment yellow, the remainder of organ brown; flagellar segments long-cylindrical, with a short dense pubescence and scattered verticils of moderate length, somewhat longer on the outer segments. Head light reddish brown; anterior vertex wide.

Pronotum and mesonotum almost uniform reddish brown, the scutellum, but not the parascutella, slightly more buffy; praescutum with a very narrow and ill-defined median brown stripe. Pleura yellow, the mesepisternum more darkened. Halteres elongate, stem yellow, knob dark brown. Legs with the coxae and trochanters yellow; femora and tibiae brown, the tips of the latter broadly whitened; tarsi snowy white; legs detached and association difficult but one pair shows the proximal portions of tarsi a trifle more infuscated than are the outer segments. Wings (Fig. 1) subhyaline or with the cells beyond cord a trifle darkened; stigma oval, dark brown; veins brownish black. Venation: *Rs* longer than R_{2+3} ;

m-cu more than one-half its length before fork of *M*; medial forks of moderate depth; cell *2nd A* relatively narrow.

Abdominal tergites brownish yellow to pale brown, the apices of the segments broadly brownish black; subterminal segments forming a blackened ring, most evident in male; sternites somewhat more uniformly pale; hypopygium yellow, the tergite and dististyles darkened. Male hypo-

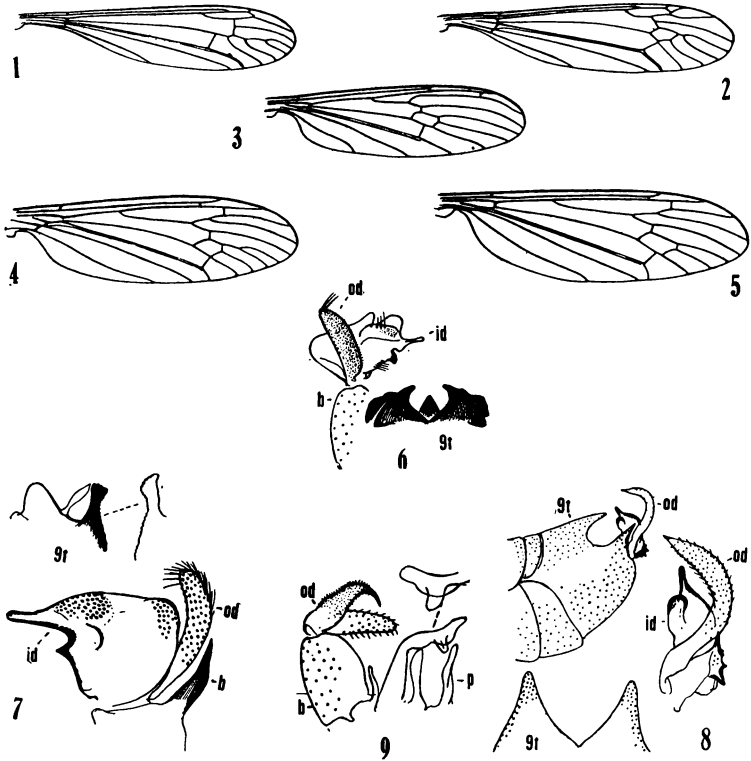


Fig. 1. *Dolichopeza (Nesopeza) tinkhamiana* n. sp., venation; Fig. 2, *Tipula palesoides* n. sp., venation; Fig. 3, *Dicranoptycha kwangtungensis* n. sp., venation; Fig. 4, *Hexatoma (Eriocera) sincera* n. sp., venation; Fig. 5, *Hexatoma (Eriocera) licens* n. sp., venation; Fig. 6, *Dolichopeza (Nesopeza) tinkhamiana* n. sp., male hypopygium; Fig. 7, *Tipula (Vestiplex) yunnanensis* n. sp., male hypopygium; Fig. 8, *Tipula palesoides* n. sp., male hypopygium; Fig. 9, *Dicranoptycha kwangtungensis* n. sp., male hypopygium.

(Symbols: *b*, basistyle; *id*, inner dististyle; *od*, outer dististyle; *p*, phallosome; *s*, sternite; *t*, tergite.)

pygium (Fig. 6) with the tergite, *9t*, heavily blackened, the lateral lobes narrow, incurved; median lobe narrowed distally. Region of sternite and

basistyle with long conspicuous yellow setae (not shown in figure). Outer dististyle, *od*, a flattened dusky lobe set with dense short curved setae; at apex with three or four elongate subfasciculate bristles. Inner dististyle, *id*, large and complex in structure, as illustrated; beak very slender.

Hab.—China (Yunnan).

Holotype, ♀, Yunnan-fu, Temple of the 500 Genii, September 3, 1934 (E. R. Tinkham). *Allotopotype*, ♂, in poor condition.

Dolichozepeza (Nesopeza) tinkhamiana is named in honor of the collector, Mr. Ernest R. Tinkham. The species is very distinct from generally similar regional forms, especially in the structure of the male hypopygium. Among these regional species it is most similar to *D. (N.) francki* Alexander, yet entirely distinct.

2. *Tipula (Vestiplex) yunnanensis* n. sp. (Fig. 7)

Allied to *divisotergata*; general coloration of mesonotum yellowish brown to yellow, the praescutum with four conspicuous brown stripes that are narrowly bordered by darker brown; antennae 12-segmented, flagellum brown; femora brown, the tips blackened; wings medium brown, restrictedly variegated with whitish subhyaline and darker brown; *Rs* nearly twice the length of *m-cu*; basal abdominal tergites yellow, heavily striped with dark brown; male hypopygium with the tergite divided by pale membrane, each half of the saucer produced into a slender black lobe or rod that is microscopically roughened; basistyle produced into an apical spine; inner dististyle a compressed blade, the apical beak slender.

Male.—Length, about 15 mm; wing, 21 mm; antenna, about 2.8 mm.

Frontal prolongation of head brownish yellow, darker beneath; nasus distinct, dark brown; palpi dark brown. Antennae short; scape yellow, pedicel very pale yellow, flagellum brown; antennae with 12 segments, the terminal one reduced; longest verticils exceeding the segments in length. Head yellowish brown, the vertical tubercle low, light yellow; vertex with three extensive brown areas, two lateral and one median.

Mesonotal praescutum with the ground color obscure brown or yellowish brown, with four conspicuous brown stripes that are narrowly bordered by darker brown; lateral borders of praescutum broadly yellow pollinose; scutum brownish yellow, each lobe with two separated brown areas; scutellum and mediotergite yellow pollinose, with a capillary brown median vitta. Pleura chiefly yellow pollinose, with extensive more grayish areas on the ventral sternopleurite and ventral anepisternum. Halteres with stem brown, the extreme base narrowly yellow, the knob dark brown, a trifle paler at apex. Legs with the coxae yellow to grayish yellow; trochanters yellow; femora brown, the tips blackened; tibiae and tarsi brown; claws (male) with a small erect tooth near base. Wings with the ground color medium brown, only restrictedly variegated with whitish subhyaline and darker brown; prearcular region and cell *Sc* more yellowish; stigma darker brown; the paler areas occur before and beyond the stigma, across

the base of cell *1st M*₂ and at near two-thirds the length of cell *M*; more yellowish areas across cells *R* and *M* at the basal fourth and at bases of anal cells; veins brown. Venation: *Rs* nearly twice as long as *m-cu*; outer end of cell *1st M*₂ pointed.

Abdominal tergites with the ground color yellow, becoming more obscure on the third and outer segments, with three conspicuous dark brown stripes that become wider on the outer segments and finally include all outer segments and hypopygium; basal sternites more brownish yellow to yellow, the outer segments darkened. Male hypopygium (Fig. 7) with the tergite, *gt*, divided medially by pale membrane, on either side of the midline produced into a slender black lobe that is weakly capitate or dilated at apex, the margin serrulate or roughened (only one-half of tergal saucer shown in figure). Basistyle, *b*, produced apically into a strong black spine. Outer dististyle, *od*, a dusky clavate lobe. Inner dististyle, *id*, compressed; apical beak long and slender, blackened; inner edge of style below the beak with a triangular blackened lobe or flange.

Hab.—China (Yunnan).

Holotype, ♂, Yunnan-fu, West Hills, altitude 7,000–8,000 feet, August 22, 1934 (E. R. Tinkham).

Tipula (Vestiplex) yunnanensis is allied to *T. (V.) divisotergata* Alexander, differing in the structure of the antennae and male hypopygium, and in the pattern of the wings.

3. *Tipula palesoides* n. sp. (Fig. 2, 8)

General coloration orange, the praescutum with three dark gray stripes that are conspicuously bordered by velvety black; head orange, the anterior vertex with a nearly complete velvety black crossband, interrupted at median line; halteres and legs darkened, the tips of femora black; wings with a weak brown tinge, the stigma dark brown, conspicuous; cell *M*₁ short-petiolate; cell *2nd A* long and narrow; basal abdominal segments yellow, those beyond fourth with caudal borders conspicuously blackened; male hypopygium with the tergite produced into slender lateral lobes; basistyle produced at apex into a spine; outer dististyle very conspicuous, appearing as a sickle-shaped cylindrical rod, the tip an acute spine.

Male.—Length, about 10 mm; wing, 12.5 mm; antenna, about 4.8 mm.

Frontal prolongation of head short, obscure yellow; nasus conspicuous; palpi pale brown throughout. Antennae with scape and pedicel yellow; flagellum black, the first segment slightly brightened at base; flagellar segments with weak basal enlargements; terminal segment reduced to a short thimble. Head orange, with a very conspicuous velvety black spot on either side of anterior vertex, not quite crossing the midline, leaving the summit of vertical tubercle orange.

Pronotum orange. Mesonotal praescutum yellow, with three conspicuous dark gray stripes that are bordered by velvety black; median stripe with the borders very broad, in front subequal to the diameter of

the stripe itself, behind more narrowed but still wide and conspicuous; lateral stripes more narrowly bordered by brownish black; extreme lateral humeral border darkened; scutum yellow, each lobe with two confluent gray areas that are encircled by brown borders; posterior sclerites of notum orange. Pleura orange, clear yellow on pteropleurite and dorsal pleurotergite. Halteres dark brown, the extreme base of stem pale. Legs with coxae orange; trochanters brownish orange; femora brown, the tips passing into black; tibiae brown, the tips more narrowly brownish black; tarsi passing through dark brown to black. Wings (Fig. 2) with a weak brownish tinge, cell *Sc* a trifle darker; stigma conspicuous, oval, dark brown; cord and the longitudinal veins beyond it narrowly seamed with brown; veins dark brown. Venation: *Sc*₂ ending opposite three-fourths the length of the moderately long, feebly angulated *Rs*; cell *M*₁ very short-petiolate, the petiole less than one-half *m*; *m-cu* at near midlength of cell 1st *M*₂; cell 2nd *A* long and narrow.

Basal abdominal segments yellow, the outer ones from the caudal border of the fifth tergite and the fourth sternite blackened. Male hypopygium (Fig. 8) with the tergite, *9t*, closely fused with the sternite. Ninth tergite, *9t*, dark basally, the distal half pale, produced into slender lateral lobes that are separated by a broad U-shaped emargination. Basistyle produced apically into a slender, spinous lobe, the tip subacute, the surface with numerous setae. Outer dististyle, *od*, a very conspicuous, sickle-shaped, yellow rod, the tip suddenly narrowed to an acute chitinized point, the surface of style with numerous setae. Inner dististyle, *id*, small and compact; apical beak slender, blackened; base of style on outer face with a spinous blackened plate. Eighth sternite, *8s*, short, simple.

Hab.—China (Yunnan).

Holotype, ♂, Yunnan-fu, Temple of the 500 Genii, September 3, 1934 (E. R. Tinkham).

Tipula palesoides is different from all known species of the genus. Superficially it much resembles species of the genus *Nephrotoma* Meigen, but is a true *Tipula*.

Limoniinae

4. *Dicranoptycha kwangtungensis* n. sp. (Fig. 3, 9)

General coloration of mesonotum brownish black, sparsely pruinose; pleura obscure brownish yellow, with a conspicuous black longitudinal stripe; legs yellow, the outer tarsal segments blackened; wings with a strong brownish yellow tinge; costal fringe of male short; *m-cu* lying far distad, beyond midlength of the small cell 1st *M*₂; abdomen brownish yellow, in male with a blackened subterminal ring; male hypopygium with the apical spine of the outer dististyle long and blackened, the lower margin of style with microscopic spines; phallosome complex.

Male.—Length, about 9 mm; wing, 9.5 mm.

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

Rostrum and palpi black. Antennae with scape pale brown, pedicel yellow; basal flagellar segments weakly bicolored, yellow basally, the

apices more infuscated, the intermediate and outer segments uniformly darkened; flagellar segments long-oval to elongate. Head clear light gray; anterior vertex of male relatively wide, a little less than twice the diameter of scape.

Pronotum and mesonotum almost uniformly brownish black, the sides of the pronotum and the lateral pretergites more reddish; praescutal stripes not differentiated from the ground; mediotergite more pruinose. Pleura obscure brownish yellow, with a conspicuous black longitudinal stripe extending from the cervical region and propleura across the ventral anepisternum, including almost all of the pteropleurite and pleurotergite; ventral pleurites obscure brownish yellow, the ventral sternopleurite a little darker. Halteres obscure yellow. Legs with the coxae pale brown; trochanters brownish yellow; femora yellow, the extreme tips very narrowly and insensibly darkened; tibiae and basitarsi yellow; remainder of tarsi brownish black. Wings (Fig. 3) with a strong brownish yellow tinge, cells *C* and *Sc* clearer yellow; a linear darkening in the stigmal area; veins dark yellow. Costal fringe (male) short and dense. Venation: Anterior branch of *Rs* arcuated at origin, running close to *R*₁ so cell *R*₁ is very narrow; cell *1st M*₂ small, its inner end arcuated to weakly angulated and spurred; *m-cu* unusually far distad, at or beyond midlength of cell *1st M*₂; all veins issuing from cell *1st M*₂ elongate.

Abdomen brownish yellow, the sternites a little clearer yellow; a subterminal dark ring in male, lacking in female; male hypopygium yellow. Male hypopygium (Fig. 9) with the apical spine of outer dististyle, *od*, long and blackened, the lower or concave face of style with microscopic spines, the outer surface with abundant dense erect setulae. Phallosome, *p*, complex, as shown; longest element a powerful sinuous arm, before apex on lower face with a flattened flange.

Hab.—China (Kwangtung).

Holotype, ♀, Lung Ping Hui, Lin District, May 16–17, 1934 (F. K. To). *Allotopotype*, ♂, in poor condition.

Dicranoptycha kwangtungensis is entirely different from allied regional species. It is allied to *D. phallosomica* Alexander, yet differs conspicuously in coloration, venation, and in the structure of the male hypopygium.

5. *Hexatoma (Eriocera) sincera* n. sp. (Fig. 4)

Belongs to the *plumbeicincta* group; general coloration opaque black, including the entire head and thorax; legs dark brown; wings dark brown, the prearcular field, costal border and discal area light yellow; wing-tip in cells *R*₃ and *R*₄ very restrictedly whitened; vein *R*₁₊₂ slightly exceeding twice the length of *R*₂₊₃₊₄; cell *M*₁ present, exceeding its petiole in length; *m-cu* at outer end of cell *1st M*₂; abdomen opaque black, the basal rings glabrous, on tergites two to five heavily light gray pruinose; hypopygium orange.

Male.—Length, about 14 mm; wing, 12.5 mm; antenna, about 3.5 mm.

Rostrum and palpi black. Antennae (male) 7-segmented; scape and pedicel black, flagellum brownish black; flagellar segments gradually decreasing in length outwardly. Head velvety black; vertical tubercle low, bilobed.

Thorax uniformly opaque velvet-black; vestiture of praescutal interspaces short and sparse. Halteres with stem dark brown, knob black. Legs with coxae and trochanters black; remainder of legs dark brown. Wings (Fig. 4) with the ground color dark brown; prearcular field broadly yellow, connected in cells *C* and *Sc* with a similarly colored discal area before cord, this latter area extending from vein R_1 to Cu_1 ; extreme wing-tip in cells R_3 and R_4 restrictedly more whitish; extreme wing-base darkened; veins brown, yellow in the flavous areas. Costal fringe dense but short; sparse macrotrichia on longitudinal veins beyond cord. Venation: R_{2+3+4} a little longer than R_{2+3} ; R_{1+2} slightly exceeding twice the length of R_{2+3+4} ; cell M_1 present, longer than its petiole; *m-cu* opposite fork of M_{3+4} , at outer end of cell *1st* M_2 .

Abdomen opaque black; segments two to five, inclusive, with basal rings heavily light gray pruinose, especially heavy on distal portion, the pruinose area including not more than one-half the total length of the segment; sternites with basal rings more plumbeous and glabrous rather than pruinose; hypopygium and preceding segment orange.

Hab.—China (Yunnan).

Holotype, ♂, Yunnan-fu, Shin Tang, altitude 7,000–8,000 feet, in pine-clad mountains, August 28, 1934 (E. R. Tinkham).

Allied to *Hexatoma (Eriocera) chrysomela* (Edwards), likewise from southeastern China (Fukien-Kwangtung), differing conspicuously in the pattern of the wings.

6. *Hexatoma (Eriocera) licens* n. sp. (Fig. 5)

General coloration opaque black; antennae black throughout; halteres and legs black throughout; claws of male toothed; wings with a strong blackish suffusion; radial veins beyond cord with numerous macrotrichia; R_{2+3+4} a trifle longer than the basal section of R_5 ; cell M_1 lacking; *m-cu* at near two-thirds the length of lower face of cell *1st* M_2 ; abdomen black, the basal rings of tergites two to four more nacreous.

Male.—Length, about 13 mm; wing, 12.5 mm; antenna, about 4 mm.

Rostrum and palpi black. Antennae (male) 8-segmented, black throughout; flagellar segments cylindrical, gradually decreasing in length outwardly, the third and fourth subequal in length. Head dull black.

Thorax opaque black, without evident pattern. Halteres and legs black throughout; claws (male) with a conspicuous tooth. Wings (Fig. 5) strongly and uniformly suffused with blackish; veins black. Radial veins beyond cord with abundant macrotrichia; outer medial veins with trichia sparse or lacking. Venation: Sc_1 ending shortly before fork of R_{2+3+4} , Sc_1 alone shorter than R_2 ; R_s approximately one-half longer than R ; R_{2+3+4} a trifle longer than the basal section of R_5 ; R_{2+3} about one-third longer than R_2 ; cell M_1 lacking; cell *1st* M_2 long, exceeding vein

M_4 beyond it; $m-cu$ at near two-thirds the length of lower face of cell 1st M_2 and a little exceeding the distal section of Cu_1 .

Abdomen, including hypopygium, black, the basal rings of tergites two to four more glabrous and nacreous.

Hab.—China (Yunnan).

Holotype, ♂, Yunnan-fu, Temple of the 500 Genii, September 3, 1934 (E. R. Tinkham).

By Edward's key to the Old World species of *Eriocera* (Ann. Mag. Nat. Hist., (9) 8: 70-78; 1921), the present fly runs to couplet 37, where it disagrees with all species beyond this point by the combination of uniformly black abdomen and loss of cell M_1 of the wings. There is no species since described with which it can be confused.