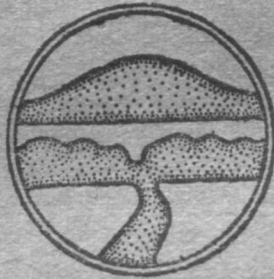


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STUDIES ON THE TIPULIDAE OF CHINA (DIPTERA)
IV. New or little-known Crane-flies from Tien-mu-shan, Chekiang
(continued)

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STUDIES ON THE TIPULIDAE OF CHINA (DIPTERA)

**IV. New or little-known Crane-flies from Tien-mu-shan, Chekiang
(continued)**

By CHARLES P. ALEXANDER

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In the preceding part under this title I recorded sixteen species of Tipulidae from Tien-mu-shan, an isolated mountain in northern Chekiang. The conclusion of the study, recording seventeen further species, is presented in this paper and a brief account of the species is given.

So many of the species in Mr. Suenson's 1937 collection from Tien-mu-shan proved to be undescribed that the data upon which the following summary is based are scarcely sufficient to generalize upon the distribution of hitherto described forms. It is evident that some of the species are endemic or have a very restricted range in eastern China. Still others have a vast range, being found not only in eastern China but ranging at least as far to the west as Szechwan. A few additional forms are at present known only from eastern China and Formosa. It seems evident that the Himalayan—Chinese fauna includes many species of Tipulidae that have reached the island of Formosa and will be detected in the various mountains of eastern China when more collecting is done. The following summary is self explanatory.

1. Species occurring in Chekiang and in the main islands of Japan but not in Formosa or in western China.

Nephrotoma flavonota (Alexander).

Limonia (Dicranomyia) pammelas (Alexander).

2. Species known from Formosa and from eastern China but not from western China or the main Japanese islands.

Ctenacroscelis clavipes Edwards.

Longurio (Longurio) fulvus Edwards.

Dicranota (Amalopina) fumicostata Alexander.

3. Species occurring in eastern and in western China.

Tanyptera antica Alexander.

Tipula (Yamatotipula) subyamata Alexander.

Nephrotoma nigrostylata Alexander.

Limonia (Metalimnobia) xanthopteroides (Riedel).

Limonia (Euglochina) dignitosa Alexander.

Elliptera jacoti Alexander.

4. Species at the present time known only from eastern China.

Pselliophora xanthopimplina Enderlein.

Tipula (Acutipula) luteinotalis Alexander.

Tipula (Oreomyza) savionis Alexander.

Hexatoma (Hexatoma) kiangsiana Alexander.

5. Very wide-spread species, ranging from the Himalayan region to eastern China or beyond.

Tipula (Yamatotipula) nova Walker.

Antocha (Antocha) indica Brunetti.

Fifteen species in the present series of thirty-three proved to be undescribed and are still known only from various altitudes on Tien-mu-shan. It seems certain that these species will be found on certain mountains in Chekiang, Anhwei, Fukien and Kiangsi.

Record of Species

17. *Tanyptera antica* Alexander

1938. *Tanyptera antica* Alexander, Phil. Jour. Sci. 66 : 310-311.

One male, Tien-mu-shan, May 29, 1937 (*Suenson*). Agrees closely with the type male from western China except that *Rs* is considerably longer, approaching the condition found in the subspecies *anticoides* Alexander, of the highest mountains of western Fukien. In the present specimen, the distal half of the posterior tibiae is yellowish white, conspicuously paler than the basal half. In a second specimen from the same locality, taken by the Reverend Mr. Octave Piel, this condition is not shown and is evidently inconstant.

18. *Pselliophora xanthopimplina* Enderlein

1921. *Pselliophora xanthopimplina* Enderlein, Zool. Anzeig. 52:224 (April 8, 1921).

1921. *Pselliophora quadrivittata* Edwards, Ann. Mag. Nat. Hist. (9)7 :377 (April 1921).

One male, two females, Tien-mu-shan, June 3-11, 1937 (*Suenson*).

Enderlein's unique female type was from Tsha-jiu-san, China, collected by Rudolf Emil Mell; I am not able to state the more exact locality of this specimen but other material taken by Mell was chiefly taken in Kwangtung (1908-1920). Edwards' species was similarly based on a unique female, found in the old Stevens collection, and indicated as being from north China. It seems probable that this was actually from eastern China rather than what is now generally held to be northeastern China. Which of the two names will be found to have priority cannot be stated at this time. There is no essential difference in coloration between the sexes.

19. *Ctenacroscelis clavipes* Edwards

1921. *Ctenacroscelis clavipes* Edwards, Ann. Mag. Nat. Hist. (9)8 :111.

Tien-mu-shan, June 7, 1937 (*Suenson*); 1 male.

The black femoral tips and enlarged tibial apices are more extensive than in material from Formosa but there is no doubt as to the identity.

20. *Tipula* (*Schummelia*) *quiris* n.sp. (fig. 1, 10).

Belongs to the *variicornis* group; general coloration yellow, the praescutum with four poorly indicated brown stripes, the intermediate pair separated by a capillary black vitta; antennae bicolored; wings with a brownish yellow tinge, restrictedly patterned with darker, more heavily so in the female; male hypopygium with the caudal margin of tergite produced into a conspicuous, compressed-flattened, median blade; outer dististyle short and broad; inner dististyle with the beak slender; eighth sternite unarmed.

Male.—Length, about 10 mm.; wing, 12 mm.

Female.—Length, about 12-13 mm.; wing, 11-12 mm.

Frontal prolongation of head obscure yellow to yellowish brown; nasus stout; palpi obscure yellowish brown to dark brown. Antennae relatively long in male, short in female, bicolored; basal three segments yellow, succeeding segments with blackened bases, the apical portions yellow; outer segments more uniformly darkened. Head brownish gray, in the male with a brownish black capillary median vitta extending from the summit of the low vertical tubercle to the occiput; in female, the occiput immaculate or virtually so.

Pronotum brown medially, the sides paler. Mesonotal praescutum yellow with four poorly indicated brown stripes, the intermediate pair separated by a capillary black vitta on cephalic third; scutal lobes weakly darkened, the median region restrictedly pale; scutellum and mediotergite testaceous yellow. Pleura and pleurotergite uniformly yellow. Halteres dark brown. Legs with the coxae and trochanters yellow; femora obscure yellow to brownish yellow; tibiae somewhat darker brown; tarsi dark brown. Wings (fig. 1) with a

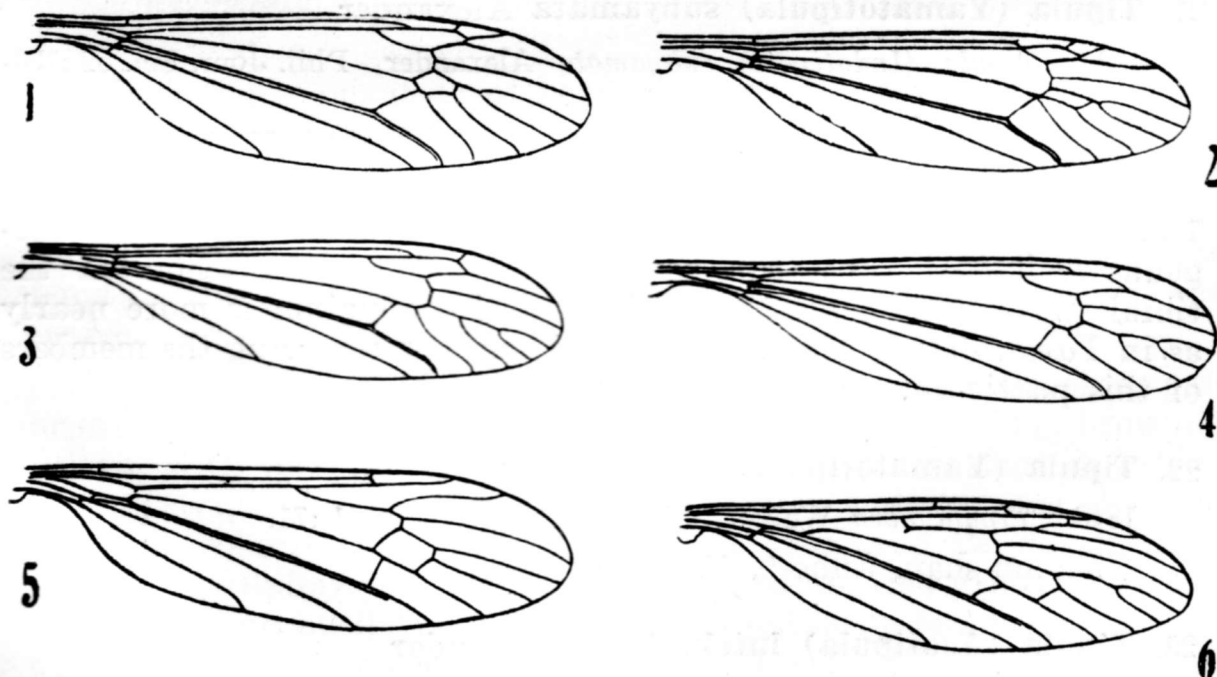


Fig. 1, *Tipula* (*Schummelia*) *quiris* n. sp., venation; fig. 2, *Nephrotoma medioproducta* n.sp., venation; fig. 3, *Dolichozepe* (*Nesopeza*) *leucocnemis* n.sp., venation; fig. 4, *Dolichozepe* (*Nesopeza*) *incisuralis* n.sp., venation; fig. 5, *Helius* (*Helius*) *tienmuanus* n.sp., venation; fig. 6, *Epiphragma* (*Epiphragma*) *evanescens* n.sp., venation.

brownish yellow tinge, clearer yellow in the costal region; stigma conspicuous, brown; in male, remainder of wing surface scarcely patterned or with barely evident dark seams along veins *Cu* and *m-cu*; in female, this latter dark pattern broad and conspicuous, with further diffuse but extensive brown washes on either side of the cord; obliterative areas across cell 1st M_2 relatively conspicuous; veins brown, more yellowish in the prearcular and costal fields. Venation: Sc_2 entering R_{1+2} at near two-thirds the length of R_s , the latter subequal to or shorter than *m-cu*; cell 1st M_2 of moderate length; *m-cu* some distance before fork of M_{3+4} .

Abdominal tergites obscure brownish yellow, the caudal and lateral borders of the segments broadly brown, more diffuse in the male; sternites more uniformly yellow; hypopygium yellow. Ovipositor with cerci very slender and straight. Male hypopygium (fig. 10) with the caudal margin of tergite, *9t*, produced into a conspicuous compressed-flattened median blade; viewed from above, this blade widest before midlength, thence gradually narrowed to an acute point, the surface with microscopic setulae. Outer dististyle, *od*, relatively short and broad, pale throughout. Inner dististyle, *id*, with the beak slender, blackened, the blade high. Eighth sternite, *8s*, unarmed. Aedeagus with the tip decurved.

Holotype, ♂, Tien-mu-shan, altitude 1050 meters, June 25, 1937 (*Suenson*). *Allotopotype*, ♀. *Paratopotypes*, 2 ♀♀.

The nearest ally of the present fly is the Japanese *Tipula* (*Schummelia*) *insulicola* Alexander. It differs markedly in coloration and, especially, in the structure of the male hypopygium.

21. *Tipula* (*Yamatotipula*) *subyamata* Alexander

1936. *Tipula* (*Indotipula*) *subyamata* Alexander, Phil. Jour. Sci. 52:136-137.

Tien-mu-shan, May 29-June 10, 1937 (*Suenson*). Hitherto known from Szechwan, western China. I had earlier (Phil. Jour. Sci. 57:113, 1935) referred those species allied to *Tipula yamata* to the subgenus *Indotipula* Edwards, based chiefly on the reduction in the tibial spurs. The structure of the male hypopygium is more nearly as in *Yamatotipula* Matsumura and I am now referring the members of this particular subgroup to this latter subgenus.

22. *Tipula* (*Yamatotipula*) *nova* Walker

1848. *Tipula nova* Walker, List Dipt. Brit. Mus. 1:71.

Tien-mu-shan, June 9, 1937 (*Suenson*).

23. *Tipula* (*Acutipula*) *luteinotalis* Alexander

1940. *Tipula* (*Acutipula*) *luteinotalis* Alexander, Phil. Jour. Sci. (*in press*).

Tien-mu-shan, May 21, 1937 (*Suenson*). Elsewhere from the highest mountains of western Fukien.

24. **Tipula (Oreomyza) savionis** Alexander

1937. *Tipula (Oreomyza) savionis* Alexander, Notes d'Ent. Chinoise, Mus. Heude, 4(1):13-15.

Tien-mu-shan, May 19, 1937 (*Suenson*), 1 male; altitude 1050 meters, June 25, 1937 (*Suenson*), 2 females.

In this species, the anterior femora are intense black, excepting at their extreme bases, the color contrasting conspicuously with the yellow tibiae; middle and hind femora yellow, with broadly blackened tips. In the female, the antennae are shorter than in the male and are pale yellow throughout.

25. **Nephrotoma flavonota** (Alexander)

1914. *Pachyrhina flavonota* Alexander, Can. Ent. 46:158-159.

Tien-mu-shan, May 24-June 11, 1937 (*Suenson*); 4 males and females.

26. **Nephrotoma medioproducta** n.sp. (fig. 2, 7)

Belongs to the *palloris* group; general coloration sulphur-yellow, variegated with darker; antennae (male) relatively long, flagellar segments beyond the first black; head orange, occipital brand virtually lacking; praescutum with three liver-brown stripes, mediotergite pale in central portion; wings yellow, patterned with brown, including the wing tip; abdominal tergites yellow, heavily trivittate with black; male hypopygium with the tergite conspicuously produced medially; outer dististyle long-attenuate; inner dististyle with a high dorsal crest; gonapophyses with apices pale, densely setulose; eighth sternite uniformly black, unarmed.

Male.—Length, about 10 mm.; wing, 11.5 mm.; antenna, about 5 mm.

Frontal prolongation of head dull yellow, with a more polished area on dorsum; nasus conspicuous; palpi dark brown, the terminal segment broadly paler on central portion. Antennae relatively long; basal three segments yellow, remainder of flagellum black; scape short; flagellar segment moderately incised, exceeding the verticils in length. Head orange; occipital brand very much reduced in size and scarcely evident against the ground; vertical tubercle entire.

Pronotum sulphur yellow, a trifle darker medially, the sides pale brown. Mesonotal praescutum with the ground color brownish yellow, with three more liver brown stripes, the surface polished; lateral stripes a trifle outcurved at anterior ends but not differentiated in color; lateral margins of praescutum and the dorsopleural membrane sulphur yellow; scutum with median area yellow, each lobe chiefly covered by liver brown areas; scutellum testaceous yellow, the extreme base brighter yellow; mediotergite yellow in central portion, the posterior and lateral margins more reddish brown. Pleura and pleurotergite light sulphur yellow, variegated with reddish brown areas, involving the anepisternum, ventral sternopleurite, ventral

meron and ventral pleurotergite. Halteres brown. Legs with the coxae and trochanters reddish brown; femora brownish yellow, the tips narrowly and inconspicuously brownish black; tibiae medium brown, the tips not or scarcely darker; tarsi passing through brown to black. Wings (fig. 2) with the ground color strongly yellow, the prearcular field and cell *Sc* more saturated yellow; cell *C* more brownish yellow; stigma dark brown, with about 15 to 16 trichia; wing tip narrowly but conspicuously infuscated; a narrow brown seam along cord; veins beyond cord very insensibly seamed with brown; veins dark brown, yellow in the brightened areas. Venation: *Sc*₂ ending at origin of *Rs*, *Sc*₁ preserved as a spur; cell *M*₁ short-petiolate; *m-cu* at fork of *M*.

Abdominal tergites yellow, trivittate with black, the stripes interrupted on basal ring, widened behind; on outer segments the median areas form broad triangles; eighth sternite uniformly black; sternites yellow, the margins black, more extensive and conspicuous on outer segments. Male hypopygium with the tergite (fig. 7, 9t) conspicuously produced medially into a broadly triangular lobe; lateral spines lying more ventrad than remainder of tergal surface. Margin of basistyle ventrad of the dististyles with a heavily blackened lobe. Outer dististyle, *od*, long and narrow, the distal third attenuated. Inner dististyle, *id*, with a high dorsal sail-like crest, the posterior border of which is coarsely toothed; apical beak slender. Gonapophyses, *g*, subequal in length to the aedeagus, angularly bent beyond midlength, the apex pale, membranous, provided with abundant microscopic setulae. Apex of penis divided into three extremely long, setoid rods. Eighth sternite unarmed. Ninth sternite near base with a small finger-like median lobe, directed ventrad.

Holotype, ♂, Tien-mu-shan, June 11, 1937 (*Suenson*).

Nephrotoma medioproducta is very different from allied species that have been referred to the so-called *palloris* group, an evidently artificial aggregation of forms that agree chiefly in the pale central region of the mediotergite. The present fly is well distinguished from the most similar species, as *N. bifusca* Alexander, *N. sinensis* (Edwards) and *N. stylacantha* Alexander, by the very distinct male hypopygium.

27. *Nephrotoma nigrostylata* Alexander

1935. *Nephrotoma nigrostylata* Alexander, Phil. Jour. Sci. 57:204-206.

Tien-mu-shan, May 28, 1937 (*Suenson*); five specimens, both sexes.

Widely distributed in China, chiefly at low altitudes.

28. *Dolichopeza (Nesopeza) leucocnemis* n.sp. (fig. 3, 8)

Allied to *albitibia*; general coloration pale brown to testaceous brown; antennae (male) elongate, nearly one-half the length of body, flagellum yellow; knobs of halteres dark brown; femora yellowish

white, the tips narrowly but conspicuously brownish black; tibiae and tarsi uniformly snowy white; wings with a strong brown tinge, the prearcular field, costal margin and wing tip even darker brown; stigma dark brown, preceded and followed by conspicuous whitish areas; medial forks moderately deep; basal abdominal segments brown, ringed basally and medially with pale; outer segments more uniformly blackened; male hypopygium with the tergite saucer-shaped, deeply notched medially, the lateral lobes large and conspicuous.

Male.—Length, about 8-9 mm.; wing, 8-9 mm.; antenna, about 4 mm.

Female.—Length, about 10.5-11 mm.; wing, 9 mm.

Frontal prolongation of head testaceous yellow; basal segments of palpi pale, the outer segments passing to brownish black. Antennae (male) elongate, approximately one-half the entire body; scape brown, remainder of organ very pale yellow or yellowish white; flagellar segments long-cylindrical, greatly exceeding the verticils in length; pubescence of segments abundant but short, white. Head brown, the front and narrow anterior orbits more reddish brown.

Pronotum brown. Mesonotal praescutum testaceous, with three scarcely darker brownish stripes, in cases the praescutum uniformly pale brown; remainder of mesonotum testaceous brown. Propleura and mesepisternum darker brown than the mesepimeron and pleurotergite. Halteres with stem yellow, knob dark brown. Legs with coxae dark liver brown, contrasting with the pale yellow trochanters; all femora yellowish white, the tips narrowly but abruptly and conspicuously brownish black; remainder of legs uniformly snowy white. Wings (fig. 3) with a strong brown tinge, the prearcular field, costal margin and wing tip even darker brown; stigma dark brown, preceded and followed by conspicuous whitish areas, the former including cell R_1 and the adjoining cells cephalad of it; post-stigmal brightening smaller, appearing as a subbasal area in cell Sc ; veins brown. Venation: Sc_2 entering R_1 at near three-fourths the length of R_s , the latter from one and one-half to two times $m-cu$; medial forks of moderate depth; $m-cu$ about three-fifths to two-thirds its length before fork of M ; cell 2nd A relatively wide.

Abdomen brown, the more basal segments ringed with pale, including basal and medial rings on both the tergites and sternites; outer segments more uniformly blackened; hypopygium reddish brown, relatively large. Male hypopygium (fig. 8) with the tergite, $9t$, large and conspicuous, heavily blackened, with conspicuous, obliquely truncated, lateral lobes but with no median blade; a deep U-shaped median notch; lateral borders of tergite elevated into ridges that are produced cephalad and are provided with small blackened spines. Outer dististyle moderately flattened, pale throughout. Inner dististyle, id , with the beak long-produced, the apex narrow. Eighth sternite unarmed, the posterior border straight.

Holotype, ♂, Tien-mu-shan, June 3, 1937 (*Suenson*). *Allotopotype*, ♀, June 6, 1937. *Paratopotypes*, 7 ♂♂ ♀♀, May 24-June 7, 1937.

Dolichopeza (Nesopeza) leucocnemis is very distinct from *D. (N.) kulingensis* Alexander, its closest described ally. The structure of the male hypopygium, together with the pattern of the legs and wings, offer strong specific characters.

29. *Dolichopeza (Nesopeza) incisuralis* n.sp. (fig. 4, 9)

Allied to *albitibia*; general coloration brownish gray, the praescutum with four slightly darker brown stripes; antennae (male) relatively short, flagellum brown; femora dirty white, the tips narrowly darkened; remainder of legs snowy white, the tips of the tibiae narrowly but conspicuously brownish black; posterior tibiae with a vague subbasal dusky ring; wings strongly tinged with brown; stigma darker brown, preceded and followed by creamy-white spots; abdomen dark brown, the basal rings of segments two to five pale; male hypopygium relatively large, the eighth sternite produced ventrad, its caudal margin with a linear median incision; ninth tergite trilobed, the median blade projecting some distance beyond the level of caudal ends of the lateral lobes.

Male.—Length, about 8-8.5 mm.; wing, 9-9.5 mm.; antennae, about 3.1-3.2 mm.

Female.—Length, about 10-10.5 mm.; wing, 10 mm.

Frontal prolongation of head testaceous yellow; palpi brown. Antennae (male) relatively short; scape obscure yellow; pedicel yellow to brownish yellow; basal flagellar segments pale brown, the outer segments passing into dark brown; flagellar segments long-cylindrical, with short verticils. Head grayish brown, the front and anterior orbits obscure yellow.

Pronotum brownish gray. Mesonotal praescutum brownish gray, with four slightly darker brown stripes; posterior sclerites of notum dark brown. Pleura uniformly dark brown, including the dorsopleural membrane, the sternopleurite not brightened. Halteres dusky, the base of stem restrictedly yellow, the knob dark brown. Legs with the coxae brown; trochanters yellow; femora dirty white to brownish white, the tips narrowly and gradually darker brown, the amount subequal on all legs; tibiae snowy white, very narrowly but conspicuously tipped with brownish black; posterior tibiae with a very vague, scarcely evident, dusky ring just beyond base; tarsi snowy-white. Wings (fig. 4) with a strong brownish tinge, the costal and apical portions not darker; stigma darker brown, preceded and followed by creamy-white spots; veins brown. Venation: *Rs* about one-third to one-half longer than *m-cu*, the latter about one-third its length before fork of *M*; medial forks of moderate depth.

Abdomen dark brown, broadly ringed with obscure yellow, the latter color occupying the posterior portions of segments two to five,

inclusive; extreme caudal borders of these latter segments darkened; outer segments uniformly brownish black. One male paratype has the abdomen brown with additional pale areas on the basal rings. Male hypopygium relatively large. Male hypopygium with the ninth tergite (fig. 9) conspicuously trilobed, the median blade projecting some distance beyond the caudal ends of the lateral lobes; median lobe with a median ridge or line from which run numerous delicate striae obliquely basad; lateral lobes broad. Outer dististyle, *od*, somewhat dilated on basal half, the apex obtuse. Inner dististyle, *id*, compressed, the apical beak slender, the apex narrow. Eighth sternite, *8s*, strongly produced ventrad into a protuberance, the margin with a deep linear incision, forming two flattened lobes.

Holotype, ♂, Tien-mu-shan, May 21, 1937 (*Suenson*). *Allotopotype*, ♀, pinned with type. *Paratopotypes*, 6 ♂ ♀, May 20-21, 1937.

Most similar to *Dolichocheza* (*Nesopeza*) *kulingensis* Alexander, of northern Kiangsi, China. The latter differs in the coloration of the body and legs and in the details of structure of the male hypopygium.

30. *Limonia* (*Euglochina*) *dignitosa* Alexander

1931. *Limonia* (*Euglochina*) *dignitosa* Alexander, Phil. Jour. Sci. 44 :351.

Tien-mu-shan, June 4-11, 1937 (*Suenson*); 3 males and females.

31. *Helius* (*Helius*) *tienmuanus* n.sp. (fig. 5, 11)

General coloration dark brown; rostrum about equal in length to remainder of head; anterior vertex very narrow; halteres brownish black throughout; legs brown, the tarsi and tips of all tibiae whitened; wings with a weak brown tinge, the costal region and stigma a trifle darker; branches of *Rs* rather strongly divergent, cell *R*₂ at margin about one-third as extensive as cell *R*₃; *m-cu* about one-third to one-fourth its length beyond fork of *M*; abdominal tergites brownish black; male hypopygium with the outer dististyle short, very unequally bidentate at apex; gonapophyses appearing as flattened blades, at outer margin near base bearing a small pale lobule or flange; aedeagus coiled in a short spiral.

Male.—Length, about 6 mm.; wing, 6 mm.; rostrum alone, 0.5 mm.

Female.—Length, about 7 mm.; wing, 6 mm.; rostrum alone, 0.5 mm.

Rostrum of moderate length, about equal in length to remainder of head, black; palpi black. Antennae black throughout. Head dull black; anterior vertex very narrow.

Pronotum dark brown, the sides of scutellum yellow. Mesonotum dark liver brown, the praescutum without stripes; scutellum more pruinose. Pleura dark brown. Halteres brownish black through-

out. Legs with the coxae and trochanters brownish black; femora brown; tibiae pale brown, the tips paling to whitish; tarsi white or yellowish white. Wings (fig. 5) with a weak brown tinge, cells *C* and *Sc*, together with the stigma, a trifle darker brown; veins brown. Venation: *Sc*₁ ending a short distance before fork of *Rs*, *Sc*₂ at its tip; branches of *Rs* rather strongly divergent, cell *R*₂ at margin about one-third the extent of cell *R*₃; *r-m* shorter than *m*; veins issuing from cell 1st *M*₂ long; *m-cu* about one-third to one-fourth its length beyond the fork of *M*.

Abdominal tergites brownish black; sternites a little paler. Ovipositor with the valves, especially the cerci, very long and slender. Male hypopygium (fig. 11) with the outer dististyle, *od*, short, very unequally bidentate at apex, the more basal tooth very small. Inner dististyle, *id*, much longer, the apical third attenuated. Gonapophyses, *g*, appearing as flattened pale blades, their apices produced into a long slender point; outer margin near base bearing a small pale lobule or flange. Aedeagus, *a*, coiled in a short spiral.

Holotype, ♂, Tien-mu-shan, June 9, 1937 (*Suenson*). *Allotopotype*, ♀, with the type.

Helius (Helius) tienmuanus is quite distinct from the other regional species of the genus. It is generally similar to *H. (H.) chikurensis* Alexander, of Formosa, differing in the venation and in the structure of the male hypopygium.

32. *Epiphragma (Epiphragma) evanescens* n.sp. (fig. 6)

General coloration dark brown, variegated with yellow, the thoracic pleura heavily variegated with yellowish white and dark brown; fusion segment of flagellum orange, involving two segments; apex of knob of halteres yellow; legs yellow, the femora with a pale brown, subobsolete ring before tip; wings whitish subhyaline, with a heavy, chiefly ocelliform pattern; *R*₂₊₃₊₄ nearly straight, about in longitudinal alignment with *Rs*.

Female.—Length, about 11 mm.; wing, 9-10 mm.

Rostrum dark; palpi black. Antennae with the scape and pedicel dark brown; fusion-segment orange, succeeding flagellar segments brownish black; fusion-segment elongate, evidently formed of two segments that are indicated by a constriction but not by a suture; verticils longer than the segments. Head yellowish brown, more or less variegated with darker.

Pronotum yellow. Mesonotal praescutum chestnut brown on anterior half; posterior half yellowish pollinose, variegated with four brown lines before suture, evidently indicating the posterior ends of the usual stripes; lateral praescutal borders brownish black; scutum reddish brown, the margins of the lobes more yellowish; scutellum brownish yellow pollinose, parascutella dark brown;

mediotergite with the entire disk yellowish pollinose, the margins and a median dash on cephalic half brown. Pleura yellowish white pollinose, heavily patterned with brown, including the dorsopleural membrane and areas on anepisternum, pteropleurite and dorsal and ventral portions of pleurotergite; a more ventral darkening on lower sternopleurite and meron. Halteres with stem yellow, base of knob dark brown, apex yellow. Legs with the coxae brown, variegated at near midlength with yellow; trochanters reddish yellow; femora yellow with a narrow, pale brown, subobsolete ring before the broader yellow tip; remainder of legs uniformly yellow. Wings (fig. 6) whitish subhyaline, with a heavy, chiefly ocelliform brown pattern; ocelli with centers beyond arculus, at origin of R_s , along cord, at outer end of cell $1st M_2$ and fork of M_{1+2} ; basal rings entirely separate from the larger ones at cord by a complete pale crossband at midlength of R_s , thus including the supernumerary crossvein; brown areas solidly darkened; spots at ends of veins R_{1+2} , R_3 and R_4 small, the outer radial field thus chiefly pale; all longitudinal veins with dark marginal spots; stigma bicolored, dark brown adjoining vein R_1 , the cephalic portion yellow; a major dark area across cells Cu and $1st A$, ending at vein $2nd A$, in direct transverse alignment with the ocellus at origin of R_s ; two additional dark areas in cell $2nd A$, the more basal axillary; veins yellow, brown in the patterned areas. Venation: R_s angulated and spurred at origin; R_{2+3+4} nearly straight, in virtual longitudinal alignment with R_s ; $m-cu$ strongly sinuous, near basal portion of cell $1st M_2$.

Abdominal tergites brownish gray, variegated with darker brown; sternites obscure yellow; outer segments more uniformly darkened; cerci horn-color, slender, strongly upcurved to the acute tips.

Holotype, ♀, Tien-mu-shan, Chekiang, China, altitude 1050 meters, June 25, 1937 (*Suenson*). *Paratype*, ♀, Wakayama, Honshiu, Japan, 1928 (*Sakaguchi*).

Epiphragma (*Epiphragma*) *evanescens* is somewhat similar to *E. (E.) nymphica* Alexander (Formosa) in wing pattern but has the legs differently patterned. Conversely, the leg pattern is much as in *E. (E.) subobsoleta* Alexander (western China) but the antennae and wing pattern are quite distinct. I am referring the Japanese specimen to this species as a paratype since it agrees in all important features.

33. *Hexatoma* (*Hexatoma*) *kiangsiana* Alexander

1937. *Hexatoma* (*Hexatoma*) *kiangsiana* Alexander, Notes d'Ent. Chinoise, Mus. Heude, 4 (5) :77-78.

Tien-mu-shan, May 21-June 6, 1937 (*Suenson*); 12 males and females. Described from a single male taken at Kuling, northern Kiangsi, July 7, 1935, by the Reverend Mr. Octave Piel.

中國大蚊科之研究(雙翅目)

IV. 浙江天墓山新大蚊及其鮮經研究之品種

亞力山大著

(摘要)

所述天墓山之大蚊十七種，係由 Suenson 氏於一九三七年採得者。由此可見喜馬拉雅中華區之大蚊，遠佈及台灣，及見中國東部各山。計屬新種者有：*Tipula* (*Schummelia*) *quiris*, *Nephrotoma medioproducta*, *Dolichozeza* (*Nesopeza*) *leucocnemis*, *D. (N.) incisuralis*, *Helius* (*H.*) *tienmuanus*, 及 *Epiphragma* (*E.*) *evanescens*.

Explanation of Plate

- Fig. 7. *Nephrotoma medioproducta* n. sp., male hypopygium, details.
 8. *Dolichozeza* (*Nesopeza*) *leucocnemis* n. sp., male hypopygium, details.
 9. *Dolichozeza* (*Nesopeza*) *incisuralis* n. sp., male hypopygium, details.
 10. *Tipula* (*Schummelia*) *quiris* n. sp., male hypopygium, details.
 11. *Helius* (*Helius*) *tienmuanus* n. sp., male hypopygium.

(Explanation of symbols: *a*, aedeagus; *b*, basistyle; *g*, gonapophysis; *id*, inner dististyle; *od*, outer dististyle; *s*, sternite; *t*, tergite.)

