

## UNDESCRIBED SPECIES OF CRANE-FLIES FROM THE HIMALAYA MOUNTAINS (TIPULIDAE, DIPTERA), IV\*

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The preceding part under this general title was published in the JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY, 66: 161-170. As was the case with the preceding three instalments, materials discussed at this time are from Nepal where they were taken in 1957 by Dr. Edward I. Coher and assistants. A single species from the Darjeeling District, north India, taken by Father Aloysius Camilleri, is included. All types are included in the author's collection of crane-flies.

### **Tipula (Vestiplex) bhutia** new species

Belongs to the *himalayensis* group; mesonotum gray, the praescutum with four brownish gray stripes that are narrowly bordered by blackish, the interspaces narrow; antennae relatively long, basal three segments yellow, the remainder black, first flagellar segment short; legs black, only the femoral bases yellow, claws of male toothed; wings conspicuously marbled brown and creamy yellow; abdomen yellow basally, the outer five segments black; male hypopygium with the tergal lobes broadly rounded; apex of basistyle terminating in two short black teeth or spines; outer dististyle darkened; appendage of ninth sternite simple, relatively short, from an enlarged base; aedeagus stout, narrowed to an acute point.

MALE. Length about 13 mm.; wing 15 mm.; antenna about 5 mm.

Frontal prolongation of head gray, nasus elongate, yellowed at tip; palpi black. Antennae of male relatively long; scape and pedicel brownish yellow, first flagellar segment a little darker, remainder of organ black; first flagellar segment short, only slightly more than one-half the second; outer segments somewhat incised, longer than the verticils. Head gray on the anterior vertex, with a capillary brown central vitta extending from the small vertical tubercle backward; posterior half of head, including the genae, more fulvous.

Pronotum dark gray, vaguely patterned with darker. Mesonotal praescutum with the very restricted ground gray, with four dark brownish gray stripes that are narrowly bordered by blackish, the interspaces narrowly obscured; scutal lobes each with two dark gray areas that are narrowly bordered by darker, central area brownish yellow; scutellum gray, with a

\* Contribution from the Entomological Laboratory, University of Massachusetts.



brown central line; mediotergite yellow pollinose, darker on sides and behind, with indications of a capillary darkened vitta, pleurotergite yellow. Pleura chiefly gray, more or less variegated with darker; dorsopleural region brown, metapleura yellow. Halteres with stem yellow, knob dark brown. Legs with fore coxae gray, remaining coxae somewhat more buffy; trochanters yellow; femora black, the bases yellow, narrowly so on the posterior legs; no yellow subterminal ring as is common in the group; tibiae and tarsi black; claws of male with a small basal tooth. Wings brown, conspicuously marbled with cream yellow areas, the ground more extensive than the pale areas, the latter in all cells before cord, including two or more areas each in cells *R*, *M*, *Cu* and the Anals; beyond the cord the yellow is chiefly restricted to a short poststigmal band extending from costa into cell *R*<sub>5</sub>; a small slightly more whitened area across base of cell 1st *M*<sub>2</sub>, including also small parts of cells *R* and *M*<sub>3</sub>; prearcular field conspicuously yellowed, costal region more obscurely so; veins brown, yellow in the brightened fields, including the outer radial cells. Venation: *R*<sub>1+2</sub> strongly upcurved; petiole of cell *M*<sub>1</sub> subequal to or shorter than the oblique *m*; *m-cu* at fork of *M*<sub>3+4</sub> or beyond this on vein *M*<sub>4</sub>.

Abdomen with the basal sternites yellow, the tergites with three narrow stripes, the median one paler; fifth and succeeding segments, including the hypopygium, brownish black. Male hypopygium with the tergite transverse, narrowed outwardly, the posterior border with a narrow V-shaped median notch forming broad rounded lobes that are provided with abundant relatively short setae except on the lateral parts; tergite apparently without further ventral armature, as in several allied species. Outer margin of basistyle at apex produced into a short stout black spine, in cases with a second similar spine or point. Appendage of ninth sternite a short relatively stout rod from an enlarged darkened base, the latter with strong setae from conspicuous pale punctures; outer rod very gently curved, narrowed to an acute spine, surface with strong setae. Outer dististyle an elongated darkened club with strong retrorse setae at outer end; inner style with beak relatively stout, slightly upcurved, apex obtuse; lower beak and other lobes blackened. Aedeagus stout, narrowed to an acute point, with distinct lateral shoulders.

Holotype, ♂, Simbhanjang Pass, Nepal, 8650 feet, April 16, 1957 (Coher). Paratopotypes, 2 ♂♂, with the type.

While generally similar to various other Himalayan members of the group in its conspicuously marbled wings and appearance, the present fly differs from all in the coloration, structure of the antennae and particularly in features of the male hypopygium, including the tergite, basistyle, dististyles and appendage of the ninth sternite. The lack of a yellow subterminal ring on the femora is noteworthy.

***Tipula (Vestiplex) malla* new species**

Belongs to the *himalayensis* group; size relatively large (wing of male



16 mm.); mesonotal praescutum with four brownish gray stripes; scutellum and mediotergite with a central brown vitta; antennae relatively long, basal flagellar segments bicolored; legs black, femoral bases and a narrow subterminal ring yellowed; wings marbled light brown and creamy yellow;  $R_{1+2}$  preserved; basal abdominal segments yellow, the lateral tergal borders narrowly gray, outer segments more uniformly blackened; male hypopygium with the posterior border of tergite produced into two broad blackened lobes, their margins obliquely truncated and microscopically roughened; inner dististyle with the beak long and slender; appendage of ninth sternite a gently curved simple rod from an expanded base, its tip acute.

MALE. Length about 16 mm.; wing 16 mm.; antenna about 5 mm.

Frontal prolongation of head brownish yellow; nasus distinct, relatively stout; palpi black. Antennae of male relatively long; scape and pedicel yellow, first flagellar segment obscure yellow, the central half swollen and slightly darker; succeeding two or three segments bicolored, the small basal enlargements black, the remainder brownish yellow, passing through brown to black, the segments beyond midlength of the organ almost uniformly darkened; segments feebly incised, much longer than the verticils. Head brownish yellow, the orbits more pruinose; a narrow darkened central stripe on vertex, beginning on the entire vertical tubercle.

Pronotum brownish gray, the scutum with three blackened areas, scutellum more yellowed. Mesonotal praescutum with the restricted ground brownish yellow, with four brownish gray stripes, the lateral pair slightly darker, especially on their inner border; median interspace very narrow and more obscured than the lateral ones; intermediate stripes confluent on extreme anterior ends and here with very restricted darkened borders; scutum grayish yellow; stigma small, pale brown; yellow areas before cord subequal in mediotergite grayish yellow with a clearly defined brown central vitta; pleurotergite more yellowed. Pleura gray, slightly patterned with darker; dorsopleural membrane dusky. Halteres with stem yellow, knob brownish black. Legs with fore coxae gray, remaining coxae more yellowed; trochanters yellow; femora black, bases restrictedly yellowed, with a narrow obscure brownish yellow subterminal ring, the blackened tips more extensive; tibiae and tarsi black; claws small, simple. Wings light brown, conspicuously marbled with pale creamy yellow areas; prearcular field and cell *Sc* deeper yellow; stigma small, pale brown; yellow areas before cord subequal in extent to the dark pattern, most extensive in cells *R* and *M* where they form a major V-shaped mark; cell *Cu*, base and angles of 1st *A*, and much of cell 2nd *A* yellowed; beyond the cord the yellow color appears chiefly as an incomplete poststigmal band extending from costa into the base of cell  $R_5$ ; a single isolated whitish yellow area in cell 1st  $M_2$  and bases of cells  $M_3$  and  $M_4$ ; veins of anterior half of wing yellowed, of posterior half, from *M* backward, darker. Venation:  $R_{1+2}$  preserved, upcurved at tip, widening the cell; *Rs* moderately long, about one-half longer than *m-cu*; cell  $M_1$  about three times its petiole; cell 1st  $M_2$  pointed at its inner end; *m-cu* shortly before the fork of  $M_{3+4}$ .

Basal abdominal segments yellow, the lateral tergal borders narrowly



gray, margined internally by a vague darker line, more evident on cephalic part of the individual segments; outer end of abdomen more uniformly blackened; styli yellowed. Male hypopygium with the tergite small, transverse, its posterior border produced into two broad blackened lobes that are separated by a very narrow notch; lobes blackened, their margins obliquely truncated and microscopically serrulated or roughened, the inner angle produced into a more definite tooth; immediately beneath the dorsal lobes is a second one, its surface with numerous microscopic spicules. Basistyle without blackened armature, the outer apical part produced into a weak pale triangular blade. Appendage of ninth sternite a gently curved rod from an expanded base, relatively short, its tip acute; surface with long pale setae that are more abundant at base. Two dististyles, the outer elongate, narrow, entirely pale, its inner face provided with abundant very long erect to slightly retrorse setae; inner style with the beak long and slender, its lower margin heavily blackened, provided with short setae; outer basal lobe relatively large. Phallosome broad at base, the outer third more narrowed but without a distinct shoulder. Eighth sternite relatively large, posterior border convexly rounded, with relatively few setae.

Holotype, ♂, Simbhanjang Pass, Nepal, 8197 feet, June 24, 1957 (Coher).

Allied and generally similar to other species of the *himalayensis* group, such as *Tipula* (*Vestiplex*) *distifurca* Alexander, *T.* (*V.*) *subtineta* Brunetti, and others, differing especially in the structure of the male hypopygium, particularly the tergite, appendage of the ninth sternite, and the dististyles.

***Tipula* (*Vestiplex*) *rana* new species**

Belongs to the *himalayensis* group; size relatively large (wing of male 16 mm.); general coloration of praescutum yellow with four entire brown stripes; antennae relatively long, scape and pedicel yellow, flagellum brown; femora black with a broad brownish yellow subterminal ring; claws of male toothed; wings variegated yellow and pale brown;  $R_{1+2}$  entire; basal abdominal segments yellow, tergites with three black stripes, outer four segments brownish black; male hypopygium with the posterior border of tergite four-lobed; inner dististyle broad; appendage of ninth sternite broad at base, narrowed into a slender spine, surface with unusually long pale setae.

MALE. Length about 15 mm.; wing 16 mm.; antenna about 4.3 mm.

Frontal prolongation of head about equal in length to the remainder, light brown, restrictedly gray pruinose at base above; nasus slender; basal segment of palpi brownish yellow, remainder black. Antennae of male relatively long; scape and pedicel yellow, first flagellar segment light brown, the remainder dark brown; segments feebly incised, longer than the verticils. Head above yellow medially, brightest in front, chestnut brown on orbits and genae; vertex with a more darkened central stripe that deepens to dark brown on the entire vertical tubercle.



Pronotum variegated brown and yellow. Mesonotal praescutum with the restricted ground yellow, with four entire brown stripes, the intermediate pair narrowly separated by a ground vitta, posterior interspaces narrow and obscured; humeral region impressed, dark brown; a vague sublateral brown spot before suture, visible only in certain lights; scutum yellow, each lobe with two brown areas, the anterior one oval, about one-third the size of the posterior mark; scutellum and mediotergite yellow pollinose, with a narrow central brown stripe; pleurotergite yellow. Pleura olive yellow, patterned with brown, including areas on the anepisternum and a longitudinal line near the dorsal margin of the sternopleurite; dorsopleural membrane brown. Halteres with stem yellow, knob infuscated. Legs with the coxae olive yellow; trochanters yellow; femora black, with a broad brownish yellow ring before the narrower intensely black apex; tibiae and tarsi brownish black; claws with basal tooth. Wings with the prearcular and costal regions saturated yellow; disk variegated with pale brown and light yellow, the former more extensive; beyond the cord the yellow pattern appears as a short poststigmal band extending from costa into cell  $R_5$ ; before cord the yellow pattern more extensive, subequal in amount to the brown, with two areas in cells  $R$  and  $M$  and others in the Anal cells, most restricted in cell  $Cu$ ; veins brown, more yellowed in the brightened basal and costal parts. Venation:  $R_{1+2}$  entire; petiole of cell  $M_1$  longer than  $m$ ;  $M_{3+4}$  shorter than basal section of  $M_{1+2}$ .

Basal abdominal segments yellow, the tergites trivittate with dark brown, the stripes narrow; sixth and succeeding segments brownish black, hypopygium black. Male hypopygium distinctive; ninth tergite fused basally with the sternite, transverse, posterior border with a very broad U-shaped emargination, the lateral lobes relatively small, obtuse at tips; immediately beneath these a large flattened oval lobe or blade, its mesal edge blackened. Outer dististyle relatively long; inner style large, broad, beak small. Appendage of ninth sternite distinctive, broad at base, at near midlength narrowed into a long acute spine, surface of lobe with relatively few but very long and conspicuous pale setae. Aedeagus triangular in outline, without lateral shoulders.

Holotype, ♂, Simbhanjang Pass, Nepal, 8197 feet, June 24, 1957 (Coher).

Other somewhat similar regional species include, besides *Tipula* (*Vestiplex*) *himalayensis* Brunetti, *T. (V.) distifurca* Alexander, *T. (V.) inaequidentata* Alexander, *T. (V.) nigroapicalis* Brunetti, *T. (V.) styligera* Alexander, *T. (V.) subtinctoria* Brunetti, and others more recently described by the writer. The present fly is quite distinct from all in the structure of the male hypopygium, particularly the tergite, inner dististyle and appendage of the ninth sternite. In its general appearance it most resembles *inaequidentata*.



***Tipula (Oreomyza) camillerii* new species**

Size small (wing of male 10 mm.); general coloration brownish gray, praescutum with three slightly darker brown stripes; antennae with scape and pedicel yellow, first flagellar segment yellow, its tip blackened, remaining segments black; first flagellar segment elongate; legs black, femoral bases narrowly obscure yellow, claws of male simple; wings brown, variegated by yellow areas that form vague crossbands;  $R_{1+2}$  atrophied, cell 1st  $M_2$  small, pentagonal; abdomen yellow basally, outer segments black; male hypopygium with the ventral part of the basistyle produced into a strong lobe that is tipped with spines; gonapophysis bearing a strong tooth on mesal edge; aedeagus trifid at apex.

MALE. Length about 8.5 mm.; wing 10 mm.; antenna about 3 mm.

Frontal prolongation of head yellowed above, darkened beneath; nasus short; palpi black throughout, terminal segment more than twice the length of the penultimate. Antennae of male of moderate length; scape and pedicel yellow, first flagellar segment yellow, the outer fourth blackened, remainder of organ black; first flagellar segment long-cylindrical, about equal to the succeeding two combined; flagellar segments beyond the first with the basal enlargement scarcely indicated, segments longer than their verticils, terminal segment very small. Head gray, more buffy in front; a capillary impressed darkened line extending from the low vertical tubercle backward; setigerous punctures of vertex conspicuous.

Pronotum brownish gray. Mesonotal praescutum brownish gray, with three slightly darker brown stripes, the median one more or less bordered and divided by dusky, the anterior end vaguely brightened; posterior sclerites of notum brownish gray, scutal lobes more or less darkened; scutellum and mediotergite with a central darker vitta; scutellum and postnotum with long pale setae, katapleurotergite vaguely more brightened. Pleura dark brownish gray; dorsopleural membrane yellow. Halteres with stem light yellow, knob infuscated. Legs with coxae and trochanters brownish yellow; remainder of legs black, femoral bases restrictedly obscure yellow; claws simple. Wings brown, variegated by yellow areas, as follows: At arculus, before and beyond origin of  $R_s$  in cell  $R$ , near outer end of cell  $M$  and as a crossband beyond the cord, extending from costa into cell  $M_3$ ; a further brightening before midlength of cell 1st  $A$ ; cell  $C$  brown.  $Sc$  more yellowed; stigma small, brown, scarcely differentiated from the ground; veins brown, more yellowed in the subcostal field. Macrotrichia on veins beyond cord and on outer ends of  $M$ ,  $Cu$  and most of 2nd  $A$ , lacking on  $R_s$  and 1st  $A$ . Venation:  $R_s$  long, nearly twice  $R_{2+3}$ , the latter forming an angle at the end of  $R_s$ ;  $R_{1+2}$  atrophied, vaguely persistent as a pale line; cell  $M_1$  about twice its petiole; cell 1st  $M_2$  small, pentagonal,  $m$  being the shortest element;  $m-cu$  near outer end of  $M_{3+4}$ ; cell  $M_4$  deep, distal section of  $Cu_1$  about twice  $m-cu$ .

Abdomen with basal five segments obscure yellow, the tergites narrowly darkened medially, the extreme posterior borders of the sternites narrowly suffused; outer segments, including hypopygium, black, the sixth sternite yellowed on basal part. Male hypopygium with the tergite narrowed



outwardly, posterior border with a broad U-shaped emargination, with a further tiny notch at the base, lobes broadly rounded. Region of ninth sternite produced mesad and caudad into a strong lobe that is tipped with six or seven strong spines arranged in a compact group. Outer dististyle broadest across outer end, apex obliquely truncated; inner style unusually broad, beak obtuse, lower beak still more obtuse, its margin corrugated, outer basal lobe obtuse, unmodified. Aedeagus relatively short and stout, terminating in three stout pale filaments; gonapophyses appearing as yellow blades, the tips acute, on mesal edge beyond midlength with a strong spine. Eight sternite with posterior border convexly rounded, without lobes or modified setae.

Holotype, alcoholic ♂, Kurseong, Darjeeling District, India, August 1957 (Aloysius Camilleri).

This interesting species is named in honor of the collector, Father Aloysius Camilleri, S.J., who has collected numerous interesting Diptera in the vicinity of Kurseong. The most similar regional ally is *Tipula* (*Oreomyza*) *gnoma* Alexander, of northeastern Burma, which differs especially in the structure of the antennae and male hypopygium. *T. (O.) striatipennis* Brunetti is more distantly related. All three species agree in the atrophy of vein  $R_{1+2}$ , thereby differing from the numerous other species of *Tipula* in the eastern Himalayan fauna.

***Dolichopeza* (*Nesopeza*) *longisetosa* new species**

General coloration of head and thorax yellow; legs with tarsi and tips of tibiae white; wings weakly tinged with brown, stigma dark brown; male hypopygium with the posterior border of tergite conspicuously trilobed; ninth sternite with two pencils of very long setae; inner dististyle complex.

MALE. Length about 9 mm.; wing 9mm.; antenna about 3.5 mm.

Frontal prolongation of head obscure yellow; palpi dark brown. Antennae of male relatively long, as shown by the measurements, exceeding one-third the length of wing; scape and pedicel pale yellow, flagellum brownish black; verticils much shorter than the segments; in addition to the sparse verticils, segments with a dense very short pubescence. Head obscure yellow; vertical tubercle lacking.

Pronotum testaceous yellow. Mesonotal praescutum chiefly covered by three yellow stripes, the interspaces vaguely more obscured; scutal lobes yellow, the median region more obscured; scutellum and mediotergite brownish yellow, the latter clearer yellow behind. Pleura light yellow throughout. Halteres elongate, stem dusky, knob infuscated. Legs with the coxae and trochanters testaceous; femora obscure yellow basally, passing into brown outwardly; tibiae brown, the tips whitened; involving about the outer sixth to eighth; tarsi white. Wings weakly tinged with brown; stigma oval, dark brown; a vague paler brown seam at anterior cord; veins brown. Venation:  $Rs$  arcuated, longer than  $R_{2+3}$ ;  $R_{1+2}$  at-



rophied;  $R_3$  long and straight, about one-half longer than  $R_{2+3}$ ; medial forks relatively shallow, cell  $M_1$  about one-half longer than its petiole;  $m-cu$  about three-fourths to four-fifths its length before the fork of  $M$ ; cell 2nd  $A$  narrow.

Basal abdominal segments light brown, the tergites more darkened outwardly, outer three or four segments dark brown. Male hypopygium with the posterior border of tergite conspicuously trilobed, including large lateral flattened scoops, their outer surface with blackened spicules, the most cephalic one a powerful spine; central tergal lobe blackened, base broad, apex gently convex, on either side with a shorter and paler obtuse hairy lobe. Ninth sternite on either side with a slender pencil of very long setae. Outer dististyle a long flattened blade, the outer setae longest; inner style with outer part of beak heavily blackened, connected with the pale lower or inner section by pale membrane, the latter, together with the extensive outer basal lobe, with abundant microscopic setulae.

Holotype, ♂, Simbhanjang Pass, Nepal, 8197 feet, June 24, 1957 (Coher).

The most similar described regional species include *Dolichopeza* (*Nesopeza*) *lacteipes* Alexander and *D. (N.) orientalis* Brunetti, both differing evidently in the coloration of the body and appendages and in the structure of the male hypopygium. Attention is called to the exceedingly long hair pencils on the ninth sternite of the present fly.

#### ***Limonia* (*Limonia*) *cnephosa* new species**

Allied to *globithorax*; general coloration of body dark brown to brownish black; antennae with basal flagellar segments subglobular, outer ones with short glabrous necks; halteres and legs dark brown; wings relatively broad, very strongly blackened; cell 1st  $M_2$ , nearly square, shorter than vein  $M_4$ ;  $m-cu$  at or beyond the fork of  $M$ .

FEMALE. Length about 5 mm.; wing 5 mm.

Rostrum and palpi black. Antennae black throughout; flagellar segments subglobular, the outer ones more oval; segments with short glabrous necks; terminal segment subequal in length to the penultimate, its outer end pointed; verticils longer than the segments. Head dull brownish black.

Pronotal scutum brownish black, scutellum restrictedly obscure yellow. Mesonotum large, moderately gibbous, dark brown, posterior sclerites more yellowed, especially the scutellum. Pleura brown, sternopleurite paler. Halteres brownish black, base of stem restrictedly yellowed. Legs with coxae and trochanters brownish yellow; remainder of legs dark brown; claws long and slender, with spines at extreme base only. Wings relatively broad, very strongly blackened; veins brown. Venation:  $Sc_1$  ending opposite midlength of  $Rs$ ,  $Sc_2$  at its tip; free tip of  $Sc_2$  lying some distance before level of  $R_2$ ; cell 1st  $M_2$  nearly square, slightly widened outwardly, shorter than vein  $M_4$ ;  $m-cu$  subequal in length to distal section of  $Cu_1$ , placed at or shortly beyond the fork of  $M$ .



Abdomen dark brown; both the cerci and hypovalvae blackened at bases, outer ends more horn colored.

Holotype, ♀, Kathmandu Road, Mile 65.5, Nepal, June 24, 1957 (Coher).

Although it is quite distinct from all other regional members of the genus, the present fly is closely related to the Japanese *Limonia* (*Limonia*) *globulithorax* (Alexander), differing especially in slight details of the antennae and in the broader wings, with the venational details distinct. There seems to be no question of the validity of the present fly despite the present lack of the more distinctive male sex.

***Limonia* (*Limonia*) *decurvans* new species**

Size small (wing of male about 6 mm.); general coloration of thorax obscure yellow; mouthparts very reduced to virtually lacking; basal flagellar segments subglobular, the outer ones elongate; wings strongly tinged with brown, virtually unpatterned; *Sc* and cell 1st  $M_2$  long; male hypopygium with two dististyles, rostral prolongation of ventral style with two spines on lower margin near base.

MALE. Length about 4.5–5 mm.; wing 5.5–6 mm.; antenna about 1 mm.

Rostrum and palpi very reduced to virtually lacking. Antennae with scape brown, the remainder black; basal flagellar segments subglobular, with short abrupt apical pedicels, beyond midlength of the organ the segments becoming progressively much longer; terminal segment nearly equal to the preceding two taken together; verticils shorter than the segments. Head blackened, paler on occipital region; eyes small; anterior vertex very broad, exceeding four times the diameter of scape.

Pronotum obscure yellow. Mesonotum obscure yellow, the central region of praescutum and the scutal lobes vaguely darker. Pleura obscure yellow. Halteres with stem dusky, knob infuscated. Legs with coxae and trochanters yellow; remainder of legs yellowish brown to brown, tarsi scarcely darker; claws long, with a strong basal spine and a capillary subappressed spine at near midlength. Wings strongly tinged with brown, virtually unpatterned, even the stigma scarcely apparent; veins light brown. Veins of outer half of wing with relatively short and inconspicuous macrotrichia. Venation: *Sc* long,  $Sc_1$  ending about opposite or beyond three-fifths the length of *Rs*, in cases  $Sc_2$  longer than  $Sc_1$ ; free tip of  $Sc_2$  and  $R_2$  in transverse alignment; cell 1st  $M_2$  large, subequal to or longer than distal section of vein  $M_{1+2}$ ; *m-cu* at or before fork of *M*, in cases to one-fourth its own length.

Abdominal tergites brown, sternites a trifle paler; hypopygium brownish yellow. Male hypopygium with the tergite transverse, the posterior border subtruncate to very feebly emarginate, cephalic margin more strongly convex; setae sparse, about eight or nine on either lobe, removed from the thickened margin; surface of tergal plate with abundant microscopic setulae. Basistyle with the ventromesal lobe stout, setae numerous, grouped



on apical half. Two dististyles, the outer one a pale straight rod, its outer half strongly narrowed; inner style small, its area about two-thirds that of the basistyle; rostral prolongation a compressed blade, its tip decurved; two rostral spines, large and pale, closely approximated on lower margin of prolongation near base, curved to the acute tips. Gonapophysis appearing as a pale blade, the apical lobe a direct posterior extension of the base of the style. Aedeagus broad, pale, tip bifid, slightly decurved; genital tubes approximated at midline.

Holotype ♂, Simbhanjang Pass, Nepal, 8197 feet, June 24, 1957 (Coher). Paratopotypes, 3 ♂♂.

*Limonia* (*Limonia*) *decurvans* is readily told from all other regional members of the subgenus having unpatterned wings by the extremely reduced mouthparts and the structure of the male hypopygium, especially the presence of two dististyles and the decurved rostral spines of the ventral style.

***Limonia* (*Metalimnobia*) *hedone* new species**

Size relatively large (wing of female 10 mm.); mesonotal praescutum brownish yellow with three brownish black stripes, the median one narrow, laterals broad, reaching the margin; posterior sclerites of notum black, mediotergite yellowed on posterior half; pleura black; knobs of halteres black; femora yellow, with two black rings, the more basal one broader, especially on middle and posterior legs, femoral tips broadly yellow; wings light yellow, heavily patterned with pale and darker brown, cell *M* along vein *Cu* with a series of about six dark brown spots; *m-cu* before fork of *M*; abdomen obscure yellow, lateral borders broadly blackened.

FEMALE. Length about 8.5 mm.; wing 10 mm.

Rostrum and palpi black, the former relatively long. Antennae with the scape brownish yellow, pedicel light yellow, flagellum dark brown to brownish black; basal flagellar segments short-oval, outer ones elongate, terminal segment longest, about one-half longer than the penultimate; outer verticils very long. Head dull black, sparsely pruinose; anterior vertex narrow, about equal in width to two rows of ommatidia.

Pronotum brown. Mesonotal praescutum brownish yellow, with three brownish black stripes, the median one narrow, slightly widened behind, lateral stripes broad, reaching the outer border, the interspaces thus very wide; scutum narrowly silvery medially, the lobes extensively polished black; scutellum brownish black, parascutella obscure yellow; mediotergite brownish black on anterior half, sending a median point backward, the remainder obscure yellow or testaceous yellow. Pleura and pleurotergite brownish black, only the ventral sternopleurite paler. Halteres with stem yellow, knob black. Legs with the coxae brown; trochanters obscure yellow; femora yellow, each with two brownish black rings, the outer one narrow, subequal on all legs, less than the yellow apex, basal dark ring narrowest on fore legs, very broad on middle and hind pairs, including about one-third the length of the segment; tibiae yellow, tips very narrowly blackened;



tarsi black; claws of female with about five teeth, the outermost largest. Wings light yellow, heavily patterned with brown, costal border more saturated yellow; heaviest darkened areas include four in cell *R*, the third at origin of *Rs*, fourth at fork, confluent with the stigma; narrower dark brown areas at fork of *Sc*, cord and outer end of cell 1st *M*<sub>2</sub>; paler brown washes in outer radial field, at ends of longitudinal veins and as conspicuous washes in cells *Cu* and 1st *A* and 2nd *A*; cell *M* with more than the anterior half washed with pale brown, the clear posterior border adjoining vein *Cu* with about six small dark brown spots; veins brown, yellowed in the costal and areolar regions. Venation: *Sc*<sub>1</sub> ending beyond midlength of the sinuous *Rs*, *Sc*<sub>2</sub> near its tip; *Sc*<sub>2</sub> and *R*<sub>2</sub> subequal and in virtual transverse alignment; *r-m* lying just before the level of *R*<sub>2</sub>; inner end of cell 1st *M*<sub>2</sub> arcuated; *m-cu* about one-third to nearly one-half its length before the fork of *M*.

Abdomen obscure brownish yellow, darker laterally, sternites clearer yellow with broader lateral margins; outer segments with posterior borders more narrowly darkened. Ovipositor with cerci slender, gently upcurved to the acute tips; hypovalvae deep, blackened basally.

Holotype, ♀, Simbhanjang Pass, Nepal, 8197 feet, June 24, 1957 (Coher).

The most similar regional species include *Limonia* (*Metalmimnobia*) *biannulata* (Brunetti), *L. (M.) vajra* Alexander and *L. (M.) jactator* new species, all of which have patterned wings, differing among themselves chiefly in the coloration of the body and especially of the legs.

***Limonia* (*Metalmimnobia*) *jactator* new species**

Size medium (wing of female 8.5 mm.); mesonotal praescutum with the brownish yellow ground very restricted, heavily patterned with black; mediotergite chiefly obscure yellow; legs black, femora with base and subterminal ring yellow; wings pale yellow, patterned with brown, including three major areas in cell *R*; cell 1st *M*<sub>2</sub> small, about one-half the distal section of vein *M*<sub>1+2</sub>; *m-cu* more than three-fourths its length before the fork of *M*.

FEMALE. Length about 8 mm; wing 8.5 mm.

Rostrum and palpi black, the former relatively long, about one-third the remainder of head. Antennae with scape light brown, pedicel yellow, flagellum brownish black; flagellar segments short-oval, passing into more elongate-oval; verticils considerably longer than the segments. Head dull black, more pruinose on the anterior vertex, less so on the genae; anterior vertex narrow, about one-third the diameter of scape.

Pronotum brownish black, pretergites paler brown. Mesonotal praescutum with the restricted ground brownish yellow, the extensive pattern black, including a relatively narrow median stripe, slightly wider sublateral stripes and broad lateral margins, all these areas confluent at the suture; median region of scutum silvery, lobes brownish black; scutellum brownish black,



parascutella light yellow; mediotergite chiefly obscure yellow, weakly darkened on anterior half of central part; pleurotergite obscure yellow dorsally, the ventral part infuscated. Pleura chiefly brownish black, the ventral sclerites yellowed, including the ventral sternopleurite and meron; dorso-pleural membrane dusky. Halteres with stem yellow, knob brown. Legs with coxae and trochanters yellow, fore coxae weakly darkened; remainder of legs black, femora with the basal fourth and a conspicuous subterminal ring light yellow, the latter narrower than the black tip; claws with three or four teeth, the outermost larger. Wings pale yellow, the costal and prearcular fields more saturated yellow; a heavy brown pattern, arranged as follows: Three major areas in cell *R*, including the origin and fork of *Rs*, the latter confluent with the stigma; cord and outer end of cell 1st *M*<sub>2</sub> narrowly seamed; paler washes in base of cell *C* and at ends of longitudinal veins, very extensive in the Anal field; all marginal darkenings enclosing yellow submarginal spots; still paler brown washes in outer radial cells; veins brown. Venation: *Sc*<sub>1</sub> ending about opposite midlength of *Rs*, *Sc*<sub>2</sub> near its tip; cell 1st *M*<sub>2</sub> unusually small, about one-half the distal section of vein *M*<sub>1+2</sub>; *m-cu* more than three-fourths its length before the fork of *M*.

Abdomen obscure brownish yellow, sternites clearer yellow, pleural membrane dusky; genital segment and valves of ovipositor horn-yellow; cerci relatively small, gently upcurved.

Holotype, ♀, Simbhanjang Pass, Nepal, 8197 feet, June 24, 1957 (Coher).

As indicated under the account of *Limonia* (*Metalimnobia*) *hedone* new species, this latter fly and the present species are generally similar to one another and apparently closely allied, differing evidently in the pattern of the body and wings but especially of the legs.

#### ***Limonia* (*Rhipidia*) *coheriana* new species**

Belongs to the *morionella* group; general coloration polished black; size small (wing of male under 4 mm.); antennae of male bipectinate, the pedicels of the segments elongate; legs brownish black, outer tarsal segments paling to creamy white; wings pale grayish subhyaline, unpatterned; male hypopygium with the tergite narrowly transverse; rostral spines two, long, from a common elongate basal tubercle.

MALE. Length about 3.5 mm.; wing 3.8 mm.; antenna about 1.9 mm.

Rostrum and palpi black, the former of moderate length. Antennae of male black throughout, bipectinate, elongate, especially the pedicels of the flagellar segments which are approximately three-fourths as long as the longest branches; segments with the pedicels progressively shorter outwardly; apparently two simple terminal segments. Head black.

Thorax uniformly polished brownish black to black. Halteres with stem dirty white, knob infuscated. Legs with the coxae dark brown to brownish black; trochanters brown; remainder of legs brownish black, the outer tarsal segments paling to creamy white. Wings pale grayish subhyaline, without pattern, even the stigma lacking; veins pale brown. Venation: *Sc*<sub>1</sub> ending



opposite origin of  $R_s$ ,  $Sc_2$  far retracted;  $R_s$  only a little longer than the basal section of  $R_{4+5}$ ; cell  $M_2$  open by atrophy of  $m$ ;  $m-cu$  about one-fifth its length beyond the fork of  $M$ ; cell 2nd  $A$  broad.

Abdomen brownish black. Male hypopygium with the tergite narrowly transverse, posterior border shallowly emarginate. Basistyle with the ventromesal lobe relatively small. Dorsal dististyle stout, gently curved, tip abruptly acute; ventral style subequal in area to the basistyle; rostral prolongation small, spines two, from a common tubercle. Gonapophysis with mesal-apical lobe relatively slender, the acute tip narrowly blackened.

Holotype, ♂, Jhawani, Nepal, March 19, 1957 (Coher).

I take unusual pleasure in naming this interesting fly for the collector, my long-time friend Dr. Edward I. Coher. The most similar regional species is *Limonia (Rhipidia) morionella* (Edwards), which is well-distinguished by the darkened stigma and structure of the antennae of the male. There are relatively numerous species of the group in the Oriental and Ethiopian regions, including Mauritius and Madagascar.

(continued from page 222)

Dr. Ramsey presented a series of kodachromes showing the vast numbers of pests intercepted at our ports-of-entry, and the methods of detection used.

The meeting adjourned at 10:00 P.M.

PETER FARB, *Secretary*

#### MEETING OF DECEMBER 3, 1957

President Treat called to order a regular meeting of the Society in Room 419 of the American Museum of Natural History at 8:00 P.M. Twenty-five members and ten guests were present.

Dr. Treat greeted the visitors. Mr. Bernard Heineman introduced his guest, Mr. Raymond Brush, an amateur lepidopterist, and Dr. James Mullen introduced Mr. Daniel J. Sullivan, S.J., a graduate student at the Fordham University Biological Laboratory. A belated announcement was made that Edwin Way Teale had been honored last June by Earlham College, his alma mater, with an honorary degree of Doctor of Letters.

Dr. Treat reported that the Executive Committee heard the report of Miss Alice Gray and Mr. Tony Roberts on the proposed Junior Entomological Society; concrete proposals on membership will be submitted at the next meeting.

The President asked Dr. Creighton, Chairman of the Nominating Committee which also consisted of Dr. Klots and Dr. Schneirla, to read the tentative slate of officers to be voted on at the Annual Meeting. Dr. Creighton stated that the Committee felt that the present officers have done an admirable job of conducting Society affairs, and they wished to return them to office. A few changes were suggested for the Publications Committee, however. Candidates nominated were: Dr. Treat, President; Dr. Mullen, Vice-President; Mr. Farb, Secretary; Mr. Bloch, Assist. Secy.; Mr. Huberman, Treasurer; Mrs. Vaurie, Asst. Treasurer.





Alexander, Charles P. 1959. "Undescribed Species of Crane-Flies from the Himalaya Mountains (Tipulidae, Diptera), IV." *Journal of the New York Entomological Society* 67, 223–235.

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