

Undescribed Species of Crane Flies from the Himalaya Mountains (Diptera: Tipulidae), XVI¹

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Abstract: Six new species of Eriopterine crane flies are described, all from Assam, these being *Gonomyia* (*Protogonomyia*) **acucurvata** n.sp., *Erioptera* (*Teleneura*) **laetipes** n.sp.; *Ormosia* (*Ormosia*) **furcivena** n.sp.; *O. (O.) idioneurodes* n.sp.; *O. (O.) idiostyla* n.sp., and *O. (O.) neopulchra* n.sp.

Part XV of this series of papers was published in the Journal of the New York Entomological Society, **75**: 183–187, 1967. As in earlier papers the materials were collected by Dr. Fernand Schmid in Assam, representing the eastern Himalayas and their southern extensions. I again express my deepest thanks to Dr. Schmid for the privilege of retaining the types in my personal collection of these flies.

Gonomyia (*Protogonomyia*) **acucurvata** n.sp.

Generally similar to *megalomata*; size large (wing of male to 7.5 mm); body blackened, heavily pruinose; male hypopygium with the flange of outer lobe of basistyle very large, semicircular in outline; outer dististyle a slender rod with a conspicuous knob near base, apex of inner style an acute spine.

MALE: Length about 6–6.5 mm; wing 7–7.5 mm; antenna about 1.7–1.8 mm.

Rostrum, palpi and antennae black. Head brownish black, sparsely pruinose to appear opaque, more conspicuous on anterior vertex.

Thorax black, heavily pruinose to appear gray, the central praescutal stripe darkened anteriorly; dorsopleural membrane brown. Halteres blackened. Legs black. Wings weakly darkened, stigma very long and narrow, brown; veins darker brown. Venation: Sc_1 ending nearly opposite fork of R_s , Sc_2 removed from tip, Sc_1 alone longer than $m-cu$; R_{2+3+4} variable in length from about one-third to nearly one-half R_s ; cell R_3 very extensive at margin; $m-cu$ at or close to fork of M .

Abdomen, including hypopygium, black. Male hypopygium with the glabrous flange of outer lobe of basistyle very large, semicircular in outline, terminating the lobe. Outer dististyle a slender rod, near its base with a conspicuous knob; intermediate style longest, stem narrow, setiferous, at apex with two blackened blades, the more slender one lying transversely across the face of the second triangular point; inner style narrowed outwardly, its apex bent laterad into an acute spine, the latter with small weak setae near its base. Aedeagus with terminal hook strongly curved.

HOLOTYPE: ♂, Kelang, Kameng, North East Frontier Agency, Assam, 6,000 feet, July 2, 1961 (Schmid). Paratopotypes, 3 ♂♂, with the type.

The most similar regional species are *Gonomyia* (*Protogonomyia*) *acustylata* Alexander and *G. (P.) megalomata* Alexander, which similarly have the outer

¹ Contribution from the Entomological Laboratory, University of Massachusetts.

flange of the lobe of basistyle large and flattened, all three species differing among themselves in details of hypopygial structure.

Erioptera (Teleneura) laetipes n.sp.

General coloration of mesonotum medium brown, lateral praescutal borders and posterior sclerites more yellowed; pleura chiefly dark brown, meron yellowed; legs with femora and tibiae yellowed, appearing more darkened by vestiture, tarsi and tips of tibiae clear light yellow; modified scales of legs elongate, subequal in size to the setae; wings tinged with brown, prearcular and costal fields slightly darker.

FEMALE: Length about 5–5.5 mm; wing 5–6 mm.

Rostrum and palpi black. Antennae black throughout, verticils elongate. Head clear light yellow.

Pronotum obscure yellow. Mesonotum chiefly medium brown, lateral praescutal borders and area surrounding the wing root broadly yellow, mediotergite paler brownish yellow. Pleura chiefly dark brown, meral and dorsopleural regions extensively more yellowed. Halteres brownish black, base of stem yellow. Legs with coxae and trochanters brownish yellow; femora and tibiae yellowed but appearing darker from the abundant vestiture that includes elongate scales that are subequal in size to the normal setae, tarsi and tips of tibiae light yellow. Wings tinged with brown, prearcular and costal fields slightly darker; veins pale brown, trichia darker. Venation: Cord at near two-fifths the wing length; R_{2+3+4} from two-fifths to one-half R_s ; R_{2+3} and R_2 subequal; veins beyond cord long and generally parallel to one another, as in the subgenus; vein *2nd A* gently sinuous.

Abdomen brownish black; valves of ovipositor horn-yellow.

HOLOTYPE: ♀, Talung Dzong, Kameng, North East Frontier Agency, Assam, 7,800 feet, June 6, 1961 (Schmid). Paratopotypes, 2♀♀, pinned with the type.

Erioptera (Teleneura) laetipes is distinguished most readily from other generally similar species with unpatterned wings by the light yellow tarsi, the most similar species being *E. (T.) ctenophora* Alexander and *E. (T.) parallela* Brunetti. A key to the species was provided by the writer at the time of defining the subgenus *Teleneura* (Philippine Jour. Sci. **46**: 286–287; 1931). Edwards (Jour. Fed. Malay States Mus. **17**: 277; 1933) indicates that *Erioptera nigribasis* Edwards, placed in *Teleneura* on venational characters, lacks the modified scales on the legs as possessed by other species and its position here may be in question.

Ormosia (Ormosia) fureivena n.sp.

Size large (wing of female 7 mm); mesonotal praescutum obscure yellow with three light brown stripes, posterior half of central one with a dark brown median line; femora yellow with basal and subterminal darkened bands; wings medium brown, conspicuously variegated by whitish yellow areas chiefly before the cord, outer radial field uniformly brown; small darkened spots along cord and elsewhere on disk; vein *2nd A* with a strong supernumerary vein to the wing margin bisecting the cell.

FEMALE: Length about 6.5 mm; wing 7 mm; antenna about 1.4 mm.

Rostrum brown; palpi black. Antennae with scape light brown; proximal six flagellar segments large, weakly bicolored, pale brown with yellowed apices, outer segments darker. Head dark brown, with abundant yellow setae.

Pronotum brown. Mesonotal praescutum obscure yellow with three light brown stripes, posterior half of the broad central one with a narrow dark brown median vitta; posterior sclerites of notum light brown. Pleura dark brownish gray. Halteres yellow. Legs with coxae brownish gray; trochanters obscure yellow; femora yellow with a nearly basal diffusely darkened ring and a narrower subterminal band, the extreme tip yellow; tibiae brownish yellow with darkened vestiture; tarsi dark brown. Wings medium brown, variegated by large whitish yellow spots before cord, beyond cord with cells R_3 to $2nd\ M_2$ uniformly of the ground; the major whitened areas include cell R_1 and adjacent cell Sc , and a small post-stigmal brightening; further pale marks in both ends of cells R and $1st\ A$, outer end of cell M , base of $2nd\ A$, and at base and near apex of $1st\ M_2$; vestiture of wings dark in the brown portions, yellow in the whitened areas; veins light brown, darker along cord, R_2 , m , and vein $2nd\ A$, including the fork; all longitudinal veins excepting R_5 and $1st\ A$ vaguely darkened at margins. Venation: R_2 close to radial fork; m transverse; $m-cu$ shortly before fork of M ; vein $2nd\ A$ at near midlength with a strong branch that attains the posterior margin.

Abdomen dark brown, provided with abundant yellow setae. Ovipositor horn-yellow, the acute tips of cerci narrowly blackened.

HOLOTYPE: ♀, Hkayam Boum, Manipur, Assam, 8,500 feet. June 22, 1960 (Schmid).

Ormosia (Ormosia) furcivena is most similar to species such as *O. (O.) idioneura* Alexander and *O. (O.) idioneurodes* n.sp., being told by the pattern of the legs and wings and by the venation, especially the supernumerary crossvein in cell $2nd\ A$. The uniformly darkened outer radial field of the wing is noteworthy.

Ormosia (Ormosia) idioneurodes n.sp.

Allied to *idioneura*; general coloration of body brownish yellow and dark brown; antennae of male relatively long; halteres pale yellow; legs brown, bases and tips of femora yellowed; wings with ground whitened, patterned with light brown; a supernumerary crossvein in cell R_3 ; male hypopygium with two very unequal dististyles, the larger one with tip acute, gonapophyses appearing as flattened dark-colored blades.

MALE: Length about 4.5 mm; wing 4.6 mm; antenna about 1.4 mm.

Rostrum and palpi black. Antennae relatively long, more than one-fourth the wing, brown; flagellar segments long-oval, the more proximal ones with very long verticils exceeding twice the segments, much shorter outwardly. Head dark brownish gray, with abundant porrect yellow setae.

Pronotal scutum dark brown, scutellum and pretergites pale yellow. Mesonotal praescutum brownish yellow with a darker central stripe that is margined narrowly with darker brown, sides of sclerites similarly darkened; pseudosutural foveae oval, blackened, conspicuous; scutum with the broad central area dark brown, lobes obscure brownish yellow, dark brown laterally; scutellum and postnotum dark brown, the former with very long yellow setae. Pleura dark brown, dorsopleural region slightly paler; propleura and dorsal pteropleurite with very long yellow setae. Halteres pale yellow. Legs with coxae and trochanters dark brown; femora with base and apex yellowed, with more than the central half darker, the color produced especially by dark setae; tibiae and tarsi light brown. Wings with ground whitened, base and costal region more yellowed, most veins seamed with light brown to produce a variegated appearance; veins brown, more yellowed in the costal interspaces. Venation: Sc_1 ending about opposite R_2 , Sc_2 far retracted; R_2 at radial fork; a supernumerary crossvein in cell R_3 at near two-thirds the length beyond which

vein R_1 is strongly upcurved; cell 2nd M_2 square at origin, m being transverse, with a short spur at the angulation; $m-cu$ nearly its own length before fork of M ; vein 2nd A strongly sinuous.

Abdomen, including hypopygium, dark brown. Male hypopygium with tergite conspicuous, subrectangular in outline, outwardly parallel-sided, posterior border gently emarginate. Basistyle short and stout, outer setae very long. Dististyles two, very unequal, one a small pale lobe that narrows to the obtuse tip; second style very large, a powerful blackened rod, its outer third curved to an acute point. Phallosome with each gonapophysis a flattened dark blade, nearly parallel-sided, apex turned laterad into an acute point, outer margin with a few microscopic denticles; aedeagus subequal in length, narrowed gradually outward, tip truncate.

HOLOTYPE: ♂, Sirhoi Kashong, Manipur, Assam, 7,500 feet, June 9, 1960 (Schmid).

The larger *Ormosia* (*Ormosia*) *idioneura* Alexander, of northeastern Burma, likewise has a supernumerary crossvein in cell R_3 of the wings, differing in the more heavily patterned wings, with $m-cu$ close to the fork of M . The male sex of *idioneura* is unknown.

Ormosia (*Ormosia*) **idiostyla** n.sp.

Allied to *geniculata*; mesonotal praescutum light brown with a narrow dark brown central stripe, posterior notum and pleura dark brown; knobs of halteres weakly darkened; femora black, tips very narrowly pale yellow, tibiae and tarsi black, posterior tarsi light brown; wings weakly darkened, variegated by whitened areas, arranged almost as in *geniculata*; male hypopygium with dististyles long and slender, outer style terminating in a long acute spine and bearing a small bispinous blade at near midlength, inner style extended into a long black spine; gonapophyses compact, each bispinous at apex.

MALE: Length about 4.5–4.8 mm; wing 4.8–5.3 mm; antenna about 1.5–1.6 mm.

FEMALE: Length about 4 mm; wing 4.5 mm.

Rostrum dark brown, palpi black. Antennae with scape brown, pedicel large, whitened; flagellum dark brown, the apices of the individual segments pale, outer six segments uniformly darkened; proximal flagellar segments with very long verticils, the longest about two and one-half times the segment, outer verticils shorter. Head dark brown.

Pronotum dark brown, sides of scutellum and anterior pretergites pale yellow. Mesonotum light brown, praescutum with a narrow dark brown central stripe that is slightly interrupted behind the tuberculate pits; scutum light brown, scutellum and postnotum dark brown. Pleura dark brownish gray, indistinctly lined with short black marks, dorsopleural membrane darkened. Halteres with stem yellow, knob weakly darkened. Legs with coxae dark brown, trochanters slightly paler; femora brownish black, tips very narrowly pale yellow, including the vestiture; tibiae and tarsi black, posterior tarsi light brown. Wings weakly darkened, variegated by whitened areas, these arranged almost exactly as in *geniculata*, before cord including major spots in cells R , M , Cu and anals, beyond cord with arcuate bands, the posterior one almost a circle, bisected by vein M_1 ; veins brown, paler in the prearcular and stigmal regions. Costal fringe variegated yellow and dark, those of the stigmal region unusually conspicuous. Venation: $m-cu$ shortly before fork of M .

Abdomen, including hypopygium, black. Male hypopygium with tergite transverse, the outer end more expanded, truncate, with microscopic pubescence, with larger setae from the base of the head caudad. Basistyle stout, with some of the outer apical setae very long, yellow, the more proximal ones smaller, those of mesal face of style very small

and delicate. Outer dististyle shorter and stouter than the inner, long and narrow, produced into a slender black spine, beneath which is a slightly broader blade that terminates in a narrowly blackened point, the lower margin membranous, with small setae; outer margin of style at near midlength with a small blade that forks into two unequal black spines, the outer one shorter and stouter; inner style long and slender, before midlength twisted, gradually narrowed into a long slender spine. Phallosome with gonapophyses short and compact, terminating in two divergent short black spines.

HOLOTYPE: ♂, Rumkhang, Khasi-Jaintia, Assam, 2,000 feet, March 20, 1960 (Schmid). Allotopotype, ♀, 5,500 feet, March 24, 1960. Paratopotype, ♂, with the allotype.

While similar in general appearance to *Ormosia* (*Ormosia*) *geniculata* (Brunetti), the present fly differs in the blackened tibiae and tarsi and especially in the very different hypopygium, including the tergite, both dististyles, and the gonapophyses.

Ormosia (*Ormosia*) **neopulchra** n.sp.

Generally similar to *pulchra*; general coloration of thorax gray, praescutum with a brown central stripe; antennae relatively long, flagellum brownish black; femora yellow, conspicuously patterned with black; wings light brown with conspicuous whitened spots that include a marginal series; male hypopygium without acutely pointed dististyles.

MALE: Length about 5-5.2 mm; wing 5.4-5.8 mm; antenna about 1.6-1.7 mm.

Rostrum dark brown, palpi black. Antennae relatively long, as shown by the measurements; scape and pedicel testaceous yellow, flagellum brownish black, the incisures of the more proximal segments restrictedly yellowed; flagellar segments subcylindrical, the longest verticils of the intermediate segments about two and one-half times the segments, the erect whitish pubescence conspicuous. Head gray.

Pronotum brownish gray, paler laterally; pretergites light yellow. Mesonotum gray, praescutum with a brown central stripe, the lateral pair scarcely differentiated from the ground; vestiture of praescutum and scutum long and conspicuous. Pleura gray, ventral sternopleurite paler. Halteres yellow. Legs with coxae brown; trochanters yellowed, tips narrowly darkened; femora yellow, conspicuously banded with dark brown, on middle femora bases broadly yellow, central darkened ring narrow, fore and hind femora more uniformly dark brown, bases not or scarcely brightened, yellow subterminal ring much narrower than the restricted yellow apex; tibiae and tarsi light brown, outer segments darker. Wings light brown with conspicuous whitened spots, the most evident being marginal in cells R_2 through $2nd\ M_2$ and in cell $1st\ A$ at the bend of vein $2nd\ A$; remaining whitened areas more extensive but less distinct, in bases of cells R and M and most of R_1 and M_2 ; stigma darker than the ground; veins brown. Venation: R_2 near fork of R_{2+3+4} ; tips of veins R_3 and R_4 strongly upcurved; vein $2nd\ A$ sinuous, with a strong loop at and beyond midlength that narrows the cell.

Abdomen brownish black. Male hypopygium with median tergal lobe broad, apex shallowly emarginate. Longest dististyle a narrow gently curved rod, apex subobtusely, blackened, with an oval pale lobe on outer margin at base; inner style slightly broader, tip very obtuse to subtruncate. Each gonapophysis a broad subtriangular blackened plate, with two slender acute points additional to the stouter apex.

HOLOTYPE: ♂, Rahung, Kameng, North East Frontier Agency, Assam, 7,000 feet, April 25, 1961 (Schmid). Paratypes, 2 ♂, Chug, Kameng, 7,300 feet, April 17, 1961.

The most similar regional species are *Ormosia* (*Ormosia*) *kashmiri* Alexander, *O. (O.) pulchra* (Brunetti), and *O. (O.) subpulchra* Alexander, differing among themselves chiefly in hypopygial structures. All of the above species have the dististyles terminating in spinous points, not obtuse as in the present fly.