

UNDESCRIBED SPECIES OF NEMATOCEROUS DIPTERA. PART XII.¹

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The preceding part under this general title appeared in April 1962 (Bul. Brooklyn Ent. Soc., 57: 33-39). In the present paper I am describing three new species of Tipulidae belonging to the genus *Ctenacroscelis* Enderlein from Assam, India, collected by Dr. Fernand Schmid, to whom my thanks are extended for invaluable help in making known the rich and varied crane-fly fauna of India. The genus *Ctenacroscelis* contains the World's largest known crane-flies, some with a wing expanse exceeding 100 millimeters. All known species are Old World, with a marked concentration of forms in southern Asia, including more than 30 now known from India.

TIPULIDAE

Ctenacroscelis hansonii, n. sp.

Belongs to the *brobdignagius* group; size very large (wing of male 39 mm.); antennae light brown, pedicel yellow, terminal segment black; head buffy with a conspicuous dark brown central stripe that is narrowed behind; dark pleural stripe narrow; femora brownish yellow, tips brownish black, last tarsal segment pale; wings relatively broad, almost uniformly rich brown; R_1 at fork of R_{2+3} ; abdominal tergites dark brown, lateral borders narrowly yellowish gray, sternites light yellow; male hypopygium with tergite shallowly emarginate, without lateral hair pencils; inner dististyle without a basal lobe; eighth sternite with posterior border very deeply emarginate, lobes unusually conspicuous, projecting, provided with abundant but relatively short yellow setae.

Male: Length about 33 mm.; wing 39 mm.; antenna about 5 mm.

Frontal prolongation of head cinnamon brown above, dark brown on sides; nasus elongate; palpi black. Antennae light brown, pedicel yellow, terminal segment black; flagellar segments nearly cylindrical, setae small and sparse. Head above buffy, more yellowed before eyes; a narrow but conspicuous dark brown central stripe on vertex, slightly widened and bifid on the low entire vertical tubercle, narrowed behind, attaining the occiput; genae less evidently darkened.

¹ Contribution from the Entomological Laboratory, University of Massachusetts.

Cervical sclerites darkened laterally. Pronotum broadly brown above, sides light yellow. Mesonotal praescutum with four dark gray stripes that are bordered by dark brown, including the interspaces, lateral margins light yellow; extreme posterior point of praescutum obscure orange, not conspicuous as in *majesticus*; scutum, scutellum and center of mediotergite dark gray, parascutella light brown; sides and posterior border of mediotergite and dorsal part of pleurotergite dark brown; notal vestiture very sparse on praescutum, longer and abundant on mediotergite, still longer on scutellum. Pleura light yellow on dorsopleural region and ventral pleurotergite, slightly more intense on anepisternum, dorsal pteropleurite and pleurotergite; a narrow but conspicuous dorsal brown stripe extending from cervical region to wing base. Halteres dark brown, base of stem narrowly yellowed. Legs with coxae light yellow, anterior face of fore pair weakly more darkened; trochanters deeper yellow; femora brownish yellow, tips brownish black, relatively extensive; tibiae and tarsi similarly brownish yellow, tips very narrowly infuscated; fourth tarsal segment uniformly darkened, terminal segment light brown; claws toothed, epicondyle large. Wings relatively broad, almost uniformly rich brown; prearcular field darkened, obliterative areas restricted but conspicuous, on both sides of anterior cord; narrow brown seams on *m-cu* and adjoining medial veins and along vein *2nd A* in cell *1st A*; outer medial veins with a delicate pale brown line on either side; veins fulvous brown. Venation: R_1 at fork of $R_2 + 3$, R_2 obliterated or barely preserved; petiole of cell M_1 a little shorter than m ; *m-cu* at near two-thirds M_{3+4} .

Abdominal tergites conspicuously dark brown, lateral borders narrowly yellowish gray; sternites light yellow, hypopygium darkened. Male hypopygium with notch of tergite relatively shallow, lobes narrowly obtuse at tips, the outer third with vestiture short, black, very abundant, margin broadly glabrous; no lateral hair pencils. Outer dististyle relatively broad at base, narrowed outwardly, apex obliquely truncate; vestiture yellow, sparse and very inconspicuous. Inner dististyle without basal lobe, before apex slightly dilated, tip narrowed, extended beneath into a small flattened blade, with a further small subterminal ventral tooth. Eighth sternite with posterior border very deeply emarginate, lobes unusually conspicuous, projecting, provided with abundant relatively short yellow setae, these narrowly lacking on midline.

Habitat: India (Assam).

Holotype: ♂, Chingsao, Manipur, 5,400 feet, 14 June 1960 (Fernand Schmid).

I take unusual pleasure in dedicating this noteworthy crane-fly to Dr. John Francis Hanson, former student and later a colleague at the University of Massachusetts. I, together with most other contributors to the *Bulletin*, gratefully acknowledge a debt of appreciation for conscientious help and advice from Dr. Hanson as Editor of the Brooklyn *Bulletin*.

The species is readily distinguished from all other regional members of the genus by the body and wing coloration and by the structure of the male hypopygium, particularly the inner dististyle and eighth sternite. Other Indian species of the *brobdignagius* group that have the eighth sternite of the male hypopygium emarginate include *Ctenacroscelis dorsopleuralis* Alexander, *C. elobatus* Alexander, *C. majesticus* (Brunetti), *C. makara* Alexander, *C. mara* Alexander, and *C. perobtus* Alexander.

***Ctenacroscelis leptostylus*, n. sp.**

Size large (wing of male 33 mm.); nasus short and stout; mesonotal praescutum brown with four dark gray stripes that are narrowly bordered by darker brown; pleura conspicuously striped with yellow and brown, the dorsal dark stripe narrow; femora light brown, tips narrowly and vaguely darkened; wings strongly light cinnamon brown, vaguely patterned; abdominal tergites dark brown, outer segments more cinnamon brown with a light yellow silken pubescence: male hypopygium with tergite narrow, posterior border deeply emarginate; outer dististyle narrowed outwardly, inner style very slender, gradually narrowed outwardly, at base with a small slender lobe; eighth sternite unmodified.

Male: Length about 31–32 mm.; wing 32–33 mm.; antenna about 4.4–4.5 mm.

Female: Length about 30 mm.; wing 31.5 mm.; antenna about 4.5 mm.

Frontal prolongation of head dark brown, restrictedly pruinose dorsally; nasus very short and stout, with long black setae; palpi black. Antennae with scape and pedicel buffy, the latter weakly infuscated at apex; flagellum dark brown, outer two segments darker; basal flagellar segments cylindrical, intermediate ones a trifle produced beneath, setae short and sparse. Head brown, orbits light gray, front more yellowed; vertical tubercle low, entire.

Pronotum narrowly dark brown medially, sides broadly light yellow. Mesonotal praescutum brown with four poorly defined darker gray stripes that are narrowly bordered by darker brown, the extreme lateral border yellowed; scutum brown, each lobe with

three dark gray areas that are narrowly separated by brown; scutellum brownish gray, parascutella yellowed; mediotergite above light gray, the precipitous posterior part and the sides yellowed, pleurotergite similarly yellowed; vestiture of notum erect, conspicuous, more numerous on scutellum and postnotum. Pleura handsomely patterned, including a broad yellow dorsopleural stripe, beneath this with a narrow but conspicuous dark brown stripe extending from cervical region to beneath the wing root; still more ventrally, including the anepisternum, more brownish yellow; sternopleurite and lower posterior pleurites very light cream yellow. Halteres dark brown, base of stem narrowly yellowed. Legs with coxae chiefly yellowed, the anterior faces very weakly darkened, less evident on the middle pair, all coxae with long erect pale setae; trochanters yellow, patterned with brown; femora light brown, tips narrowly and vaguely more darkened; tibiae light brown; tarsi with three proximal segments light brown with darkened tips, outer two segments uniformly black; claws long, bidentate; terminal segment with a strong epicondyle provided with long black setae. Wings strongly light cinnamon brown, stigma darker; very vague darker clouds over outer end of cell *1st M*₂, fork of *M*₁₊₂, *m-cu* and vein *2nd A* in cell *1st A*; veins brownish yellow, the prearcular veins conspicuously blackened. Veins very glabrous, *R*₄₊₅ with a few scattered punctures. Venation: Petiole of cell *M*₁ from about two-fifths to one-half *m*; *m-cu* at near four-fifths *M*₃₊₄.

Abdominal tergites chiefly dark brown, sides of basal segments more yellowed, outer tergites more cinnamon brown; basal three sternites yellowed, outer segments darkened; sixth and seventh tergites densely covered with a delicate light yellow pubescence, more apparent in certain lights. Male hypopygium with tergite very narrowly and deeply emarginate, the lobes narrowly obtuse at tips, with abundant yellow setae but without hair pencils. Basistyle scarcely produced at apex, internally with long yellow setae. Outer dististyle narrowed outwardly, apex obtuse, vestiture short and relatively sparse. Inner dististyle very slender, gradually narrowed outwardly, slightly bent beyond midlength, the apex a small flattened disk; inner face near base with a small slender lobe provided with a few black setae. Eighth sternite unmodified.

Habitat: India (Assam).

Holotype: ♂, Ukhrul, Manipur, 6,000 feet, July 15, 1960 (Fernand Schmid). *Allotype*: ♀, Langdang, Manipur, 5,300 feet, June 5, 1960 (Fernand Schmid). *Paratype*: ♂, with the allotype.

Despite its large size, the present fly seems better referred to the

albovittatus group of the genus rather than to the *brobdignagius* group as is suggested by the size. The very short nasus and scarcely margined praescutal stripes should be noted. The fly is readily told from all other known species by the structure of the inner dististyle of the male hypopygium which is more slender than in the other described forms.

***Ctenacroscelis simplicitarsis*, n. sp.**

Belongs to the *pallifrons* group; mesonotum virtually all orange, praescutum with three scarcely differentiated stripes; wings grayish, prearcular and costal fields a little darker but with no other pattern; male hypopygium with disk of eighth sternite bearing two large lobes, these, together with the central furrow, with abundant long yellow setae.

Male: Length about 25 mm.; wing 24 mm.; antenna about 4 mm.

Frontal prolongation of head relatively long, brownish yellow, clearer yellow on sides, ventral and outer dorsal surfaces weakly darkened; nasus elongate, tipped with short yellow setae. Antenna with scape and pedicel yellowed, proximal flagellar segments brownish yellow, slightly produced; dorsal surface with abundant short black setae, the produced lower face glabrous. Head yellow; vertical tubercle large, entire.

Pronotum yellow. Mesonotum appearing almost uniformly orange; praescutum with three scarcely differentiated stripes that are very narrowly and vaguely bordered by darker orange; sides of praescutum behind the humeri weakly infuscated; scutal lobes orange, each with two vaguely indicated areas, the larger posterior one slightly margined internally with darker, on sides beyond mid-length with a small pale brown spot; scutellum yellow, sides weakly more darkened, parascutella pearly yellow; postnotum orange, yellow pollinose; praescutum with sparse erect yellow setae, those of scutellum and mediotergite similar but longer. Pleura orange yellow, propleura and ventral sternopleurite vaguely more darkened. Halteres with stem pale basally, knob darkened. Legs with all coxae orange yellow, posterior pair with very long yellow setae; trochanters yellow; femora brownish yellow, slightly darkened above at tips; remainder of legs yellowish brown; claws of male small, simple; last tarsal segment elongate, more than four times the length of the claw, without an epicondyle. Wings grayish, prearcular and costal fields, with the stigma, slightly darker; veins pale brown. Veins with the exception of costa virtually glabrous, there being a few very tiny punctures on R_{4+5} and a single series of

scattered trichia on veins R , R_1 , and $Sc_2 + R_1$ as far as vein R_2 . Venation: R_2 obliterated, vein R_1 fusing with $R_2 + 3$ before fork leaving a short element $R_1 + 2 + 3$; petiole of cell M_1 about two-thirds m .

Abdomen with basal segments yellowed, the first tergite with a darkened brown spot on either side; beyond the second segment abdomen brown; hypopygium with tergite and styli more yellowed. Male hypopygium with the tergite small, yellow, posterior margin very gently emarginate, lateral angles subacute; vestiture including a marginal fringe of delicate setulae and abundant longer setae on posterior third of plate, all hairs yellow. Outer dististyle relatively long, basal half slightly broader, apex obtuse. Inner dististyle with basal half slightly dilated into a lobe, head moderately expanded, apex irregularly subtruncate; face of style before apex ridged, one of these extended to a slender free spine. Eighth sternite with posterior border convexly rounded, fringed with long yellow setae; disk back from margin with two large lobes, their obtuse tips darkened, inner margins and the broad midventral furrow with abundant long yellow setae.

Habitat: India (Assam).

Holotype: ♂, Phaileng, Mizo District, Lushai Hills, 3,500 feet, 14 Sept. 1960 (Fernand Schmid).

The only other described regional ally is *Ctenacroscelis pallifrons* Edwards, of the eastern Himalayas in North Bengal and Sikkim, which likewise has the claws of the male small and simple, with the elongate terminal tarsal segment lacking an epicondyle. All other Asiatic species known to me have the claws of male very long, bi-dentate, and with the last tarsal segment produced into a well-developed basal hairy enlargement, the epicondyle. The present fly is readily told by the unpatterned wings and by the hypopygial structure, especially the eighth sternite, where the discal lobes are very large when compared with *pallifrons*. It may be noted that in *pallifrons* there is no clearly defined ventral furrow, the central sternal vestiture consisting of long dark colored setae. The South African *Ctenacroscelis quathlambicus* Alexander likewise has simple male claws but apparently must be referred to a distinct group in the genus.