

UNDESCRIBED SPECIES OF NEMATOCEROUS DIPTERA. PART VII.¹

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The preceding part under this general title appeared in 1959 (Bul. Brooklyn Ent. Soc. 54: 37-43). In the present report I am considering new species in the Nematoceros families Tanyderidae, Ptychopteridae, Trichoceridae and Dixidae, the types of the novelties being preserved in my collection except where indicated to the contrary.

TANYDERIDAE

Protanyderus schmidi, n. sp.

Size medium (wing of female 8.5 mm.); general coloration of mesonotum and abdomen brown, the praescutal interspaces and abdomen with small darker brown spots; legs yellow, femora slightly darkened outwardly, outer tarsal segments black; wings whitish subhyaline, conspicuously crossbanded with dark brown, the areas oblique; cells *1st M*₂ expanded outwardly, with vein *M*₂ deflected caudad narrowing cell *M*₃ at margin, cell *M*₄ being correspondingly extensive.

Female: Length about 7.5 mm.; wing 8.5 mm.

Rostrum brownish yellow pollinose, black at apex; palpi black; remaining mouthparts brownish black. Antennae black throughout, unusually small; flagellar segments subcylindrical, about one-half as long as the largest verticils. Head brownish gray, variegated by darker brown areas, especially on anterior part where the surface at midline is slightly depressed; posterior vertex chiefly dark brown, paler on orbits; anterior vertex relatively broad, nearly three times the diameter of scape.

¹ Contribution from the Entomological Laboratory, University of Massachusetts.

Cervical region medium brown, only moderately elongated; pronotum grayish brown. Mesonotal praescutum chiefly covered by four brown stripes that are separated from the nearly concolorous ground by longitudinal rows of black setigerous punctures on the interspaces; scutal lobes brownish gray, slightly more brightened behind the suture, each lobe with a curved row of setigerous punctures; scutellum brown, large and swollen, with long yellow setae; postnotum reduced, light brown. Pleura brown, very sparsely pruinose, especially on the sternopleurite. Halteres with stem obscure yellow, knob brownish black. Legs with coxae brown; trochanters yellowish brown; remainder of legs chiefly clear yellow, the outer ends of the femora slightly infuscated; outer tarsal segments black. Wings whitish subhyaline, conspicuously banded with dark brown, the light and dark color subequal in amount; cells *C* and *Sc* chiefly darkened, variegated by small ground spots, the largest at end of vein *Sc*; three major oblique dark bands, the first from the origin of *Rs* to the axillary region, second over the cord, entirely crossing the wing, third band from end of vein *R*₁ across the outer end of cell 1st *M*₂; last band continued to the wing tip in cells *R*₃ and *R*₄, with slight invasions of cells *R*₂ and *R*₅; small dark marginal spots at ends of veins *M*₁ and *M*₂; darkened bands on posterior half of wing variegated by grayish spots; the major ground areas include a circular spot across *Rs*, separated from a larger mark in the anal cells by a dark seam over vein *Cu*; largest ground band extends unbroken from *R*₁ to the posterior margin, nearly parallel sided; pale areas in outer radial cells small, those in medial field larger; veins yellow, slightly darker in the patterned areas. Venation: As in other Asiatic species of the genus but differing conspicuously in the medial field, cell 1st *M*₂ being strongly expanded at outer end, with vein *M*₂ deflected caudad so cell 2nd *M*₂ at margin is very extensive, approximately four times cell *M*₃; in other regional species the two cells are more nearly equal in extent, least so in *yankovskyi* where cell *M*₂ is about twice cell *M*₃; cell *M*₄ similarly very extensive at margin, cell *Cu* very narrow.

Abdomen brownish gray, densely freckled with small brownish black spots, the setae yellow. Ovipositor small.

Habitat: North India (Uttar Pradesh).

Holotype: ♀, Loharket, Almora, 5770 feet, September 19, 1958 (Fernand Schmid).

This striking fly is named for the collector, Dr. Fernand Schmid, who has added vastly to our knowledge of the crane-flies of Almora and Garhwal. It is quite distinct from the four species of the genus hitherto made known from Asia, *Protanyderus alexanderi* Kariya, *P. esakii* Alexander, *P. beckeri* (Riedel) and *P. yankovskyi* Alex-

ander, all from the Palaearctic region. The present is the first record of the family from India or from the entire Oriental region. The most recent key to the Asiatic species of the Tanyderidae is by Peus.²

Araucoderus gloriosus (Alexander)

Tanyderus gloriosus Alexander; Arkiv för Zoologi, 13, no. 7: 5-7, fig. (wing); 1920.

The type was from the Rio Aysén, South Chile, collected by Per Dusén. The fly is herewith recorded from Argentina: Cerro Chapelco, Territory of Neuquen, altitude 1700 meters, December 28, 1951 (S. Schachovskoy); metatype ♀.

PTYCHOPTERIDAE

Ptychoptera osceola, n. sp.

Size small (wing 6 to 8 mm.); mesonotal praescutum and scutum black, the former reddened anteriorly; scutellum, postnotum and pleura uniformly orange to yellow; antennae of male long, exceeding the wing; femora and tibiae yellow, tips not darkened; abdomen chiefly yellow, the posterior border of third tergite broadly blackened, the outer segments more or less darkened; male hypopygium with the seminal vesicle relatively small, median sternal appendage large and membranous.

Male: Length about 6.5-8 mm.; wing 6-8 mm.; antenna about 4.5-5 mm.

Female: Length about 8 mm.; wing 7 mm.; antenna about 2 mm.

Rostrum light yellow; palpi testaceous yellow. Antennae of male elongate, as shown by the measurements, about two-thirds the wing; basal three segments light brown, the remainder of flagellum black, flagellar segments elongate-cylindrical, verticils short and inconspicuous; antennae of female much shorter, scape brownish yellow, pedicel clear yellow, flagellum black. Head polished black.

Pronotum yellow. Mesonotal praescutum and scutum black, the anterior central third of the former reddened, in cases the color even more extensive; scutellum and postnotum reddish orange. Pleura uniformly yellow. Halteres infuscated. Legs with coxae and trochanters yellow; femora, tibiae and basitarsi obscure yellow, the tips not darkened; outer tarsal segments black. Wings with the discal interspaces whitened, the apex and anal cells

² Peus, Fritz. Tanyderidae and Liriopidae, in Lindner's Die Fliegen der Palaearktischen Region, Lieferung 200: 1-44, 67 figs.; 1958.

slightly more darkened; three incomplete brown bands, the largest and outermost at cord, narrowed behind, extending about to the basal third of the last section of vein Cu_1 ; second band in cells R and M ; basal area very short, at arculus; isolated brown spots over each of the outer forks, the posterior one smaller; costal border more uniformly pale brown; wing tip appearing weakly darkened because of the abundant macrotrichia; veins brown. Macrotrichia of outer cells involving about the outer half of the area beyond the cord. Venation: $r-m$ before the fork of Rs , its position slightly variable.

Abdomen of male chiefly yellow, the third tergite with posterior border broadly blackened; outer segments more orange yellow, the fifth and sixth in cases more darkened; in the female the intermediate tergites with narrow blackened borders. Male hypopygium with the posterior border of the ninth tergite broadly emarginate, the lateral lobes relatively slender, tips narrowly obtuse. Dististyle with the inner apical lobe produced into a more or less distinct blackened point. Seminal vesicle relatively small, as compared with *rufocincta*. Median sternal appendage large and membranous, especially on the dorsal part.

Habitat: Florida.

Holotype: ♂, Gainesville, Alachua County, May 2, 1930 (J. Speed Rogers); Rogers No. 273. *Allotopotype*: ♀, July 4, 1929 (Rogers); Rogers No. 268. *Paratopotypes*: Numerous males and some females, all collected by Rogers on the following dates and bearing his collection numbers—No. 26, March 12, 1922; No. 58, February 11, 1923; No. 206, July 25, 1926; No. 207, July 26, 1926; No. 209, November 7, 1926; No. 211, November 25, 1926; No. 255, March 7, 1929; No. 259, April 20, 1929; No. 263, May 4, 1929; No. 635, May 1929, in sphagnum bog, reared; No. 651, March 10, 1930. *Paratypes*: 2 ♂♂ (one mounted on slide), Welaka, Putnam County, April 11, 1947 (R. E. Bellamy); No. 2566. Full data covering the various numbers are in the Rogers Collection, University of Michigan, where the types and majority of the paratypes are placed.

The present fly has been confused with the more northern *Ptychoptera rufocincta* Osten Sacken but appears certainly to be distinct in the diagnostic characters listed above. As has been indicated in other papers, it is virtually certain that the earlier described *P. quadrifasciata* Say is the same as *rufocincta* but in the absence of the type of the former it seems advisable to retain the name *rufocincta*, which has been in constant use since its original description.

***Ptychoptera garhwalensis*, n. sp.**

Entire body black, the surface chiefly nitidous; legs brown, tarsi black; wings tinged with brownish yellow, unpatterned; *Rs* relatively short, arcuated, longer than *r-m*; male hypopygium with the lateral tergal lobes large, decurved; dististyle with a strong tooth on mesal face at near midlength.

Male: Length about 9 mm.; wing 9 mm.; antenna about 5.1 mm.

Rostrum reddish brown, slightly darkened at tip; mouthparts obscure orange; palpi with basal segment reddish brown, remainder brownish black. Antennae black, apex of pedicel light brown; relatively long, exceeding one-half the wing; flagellar segments cylindrical, exceeding in length the short verticils and short dense white pubescence. Head black, surface subopaque by a vague bloom.

Pronotum black. Mesonotum black, surface nitidous or virtually so, variegated by restricted reddish areas on the pretergite opposite the humeri, in region of the wing insertion, the parascutella and along the postnotal suture. Pleura black, in places more pruinose, especially on the mesepimeron. Halteres obscure yellow, clearer at base. Legs with fore and middle coxae reddish brown, vaguely pruinose behind, posterior coxae black, heavily pruinose; trochanters obscure yellow; femora light brown basally, passing into dark brown; tibiae light brown, tips darker; tarsi black. Wings tinged with brownish yellow, the prearcular and costal regions and the narrow space between the cubital branches more saturated yellow; veins dark brown, paler in the brightened areas, especially *Sc*. Macrotrichia in all cells beyond cord except cell *R*₁ and bases of the remaining cells; basad of cord with macrotrichia in centers of cells *R* and *Cu*. Venation: *Rs* relatively short, arcuated, longer than *r-m* which lies at its fork; cell *M*₁ small.

Abdomen black throughout, surface subnitidous. Male hypopygium large, the ninth tergite viewed from above with broad lateral lobes, their tips obliquely truncated, separated by a U-shaped notch, on sides of which is a pair of small forked lobules; median tergal lobe slender, with abundant setae; viewed from the side the lateral lobes appear further notched, the large ventral part dilated outwardly. Dististyle an elongate obscure yellow rod, its mesal face with a rounded basal lobe near base and a triangular darkened tooth at near midlength. Lobes of ninth sternite appearing as paired flattened dusky spatulate blades, clothed with long pale setae. Posterior border of eighth sternite produced caudad into a broad depressed lobe.

Habitat: North India (Uttar Pradesh).

Holotype: ♂, Manghu Chatti, Pauri Garhwal, 9000–9270 feet, May 20, 1958 (Fernand Schmid).

The present fly is readily told from all other regional members of the genus by the almost uniformly black color of the body, the venation of the radial field, and by the structure of the male hypopygium. By my key to the Himalayan species of the genus,³ the fly disagrees with all known species in the venation, being somewhat closer to *Ptychoptera ichneumonoidea* Alexander, of northeastern Burma.

TRICHOCERIDAE

Trichocera ursa-major, n. sp.

Readily told from all previously described species by the unusual structure of the male hypopygium, particularly the dististyle.

Male: Wing about 7 mm.

Wings faintly tinged with brown, stigmal darkening not evident; veins light brown. Macrotrichia of veins relatively short, on all veins except near wing base. Venation: Petiole of cell M_1 about twice m ; $m-cu$ near outer end of cell 1st M_2 ; vein 2nd A curved gently into margin, the cell almost parallel-sided.

Male hypopygium large, including the tergite which is narrowed outwardly, the posterior border with a broad shallow emargination, the lateral angles slightly produced, each bearing a single fasciculate bristle. Basistyle short and stout. Dististyle unique in structure, very large, three-branched; longest branch gradually enlarged outwardly, irregularly trilobed at apex, the lateral lobe with a dense brush of long yellow setae, inner lobe small, with shorter setae, intermediate lobe pale, with stiff scattered setae; intermediate branch short and stout, extended into two lobules, one a flattened blade, the other shorter, more or less truncated at tip; inner branch short, obtuse and dilated at tip. Gonapophyses short and stout, divergent.

Habitat: Canadian Northwest Territories.

Holotype: ♂, wing and hypopygium on microscope slide, Great Bear Lake, July 9, 1948; Rogers Collection, University of Michigan, study specimen 4614. The remainder of the type was unavailable at time of description.

Compared with other species of the genus with unusually modified male hypopygia the present fly is quite distinct in the structure of the dististyle and ninth tergite. Such forms with large and complex genitalia include, among others, *Trichocera colei* Alexander, *T. forcipula* Nielsen, *T. lutea* Becher, *T. mirabilis* Alexander and *T. salmani* Alexander.

³ Alexander, Charles P. Arkiv för Zoologi, 38 A, no. 2: 1–3; 1946.

DIXIDAE

Dixa amabilis, n. sp.

General coloration of thorax brownish yellow, the anterior praescutal stripes almost concolorous with the ground; femora yellow, tips abruptly black, tibiae and tarsi black; wings whitish subhyaline, heavily patterned with light brown, more heavily so on anterior half of wing, the pale and brown areas subequal in extent.

Female: Length about 4.5 mm.; wing 3.8 mm.

Rostrum dark brown, relatively long, about three-fourths the remainder of head; palpi black. Antennae with scape and pedicel obscure brownish yellow, flagellum black, extreme bases of the proximal four segments whitened. Head above light brown, silvery pruinose.

Pronotum testaceous yellow. Mesonotal praescutum and scutum pale, with three brownish yellow stripes that are best delimited from the ground by narrow reddish brown margins, the interspaces more silvery pruinose; a reddish brown U-shaped area on side of praescutum; scutellum testaceous yellow, darker beneath; postnotum light brown. Pleura chestnut brown, propleura more yellowed. Halteres broken. Legs with coxae and trochanters yellow; femora yellow, the tips abruptly black, involving about the outer fifth of the segment; remainder of legs black; posterior tibiae slightly dilated on outer margin before apex. Wings whitish subhyaline, heavily patterned with light brown, the two colors subequal in extent; cells *C* and *Sc* yellowed; the major dark areas are on the anterior half of wing, including about six marks, the two in cell *R* extending from vein *R* backward, subequal to the interspaces; areas at cord and stigma confluent behind, forming a Y-shaped mark over the anterior cord; outer two costal darkenings in cell *R*₂, confluent behind in cells *R*₄ and *R*₅, the latter isolating an apical ground area in cells *R*₃ to *R*₅; on posterior half of wing the dark areas are smaller and paler, including large clouds in cells *Cu* and *A*; veins yellow, slightly darker in the patterned areas. Macrotrichia on outer veins, including almost the outer half of Anal vein. Venation: *Rs* straight, oblique, in virtual alignment with the basal section of *R*₅; cell *M*₁ relatively short.

Abdomen brownish yellow, vaguely more brightened on the more proximal segments. Ovipositor with cerci elongate, straight.

Habitat: North India (Uttar Pradesh).

Holotype: ♀, Teri, Teri Garhwal, 2500–5000 feet, April 19, 1958 (Fernand Schmid).

Dixa amabilis is most similar to *Dixa guttipennis* Thomson and *D. maculipennis* Brunetti, differing from both and from all other described regional species by the coloration of the legs and by the unusually heavy wing pattern.