

UNDESCRIBED SPECIES OF NEMATOCEROUS DIPTERA. PART III.

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The preceding part under this general title was published in 1953 (Bull. Brooklyn Ent. Soc., 48: 41-49). At this time I am characterizing some species of unusual interest in the families Tanyderidae, Ptychopteridae, and Blepharoceridae, the types being preserved in my personal collection except where indicated to the contrary.

TANYDERIDAE

Radinoderus supernumerarius n. sp.

Size relatively small (wing, male, under 10 mm.); general coloration dark brown and gray, the disk of the praescutum virtually covered by three brown stripes; legs brown; wings whitish subhyaline, with an extensive banded brown pattern, including oblique bands at cord and over outer end of cell *1st M*₂, the bands much broken by pale spots and frecklings; a supernumerary crossvein in cell *R*₃.

Male: Length about 8 mm.; wing 9.5 mm.

Rostrum moderately produced, nearly as long as the remainder of head, brownish black; palpi black. Antennae broken beyond the second flagellar segment; black, the apex of the pedicel more reddened; basal flagellar segments cylindrical, with abundant coarse scattered verticils. Head light gray; anterior vertex at narrowest point very reduced, only a little more than the width of a single row of ommatidia.

Cervical region stout, dark brown. Pronotum short, dark brown, the sides narrowly gray. Mesonotal praescutum with sides and humeral region restrictedly light gray, the disk chiefly covered by three dark brown stripes; posterior sclerites of notum chiefly brown, variegated with gray, the latter including the scutellum. Pleura variegated with brown and light gray. Halteres with stem pale yellow, knob dark brown. Legs with all coxae and trochanters brownish gray; remainder of legs brown, the femoral bases narrowly yellowed, least so on the posterior legs. Wings with the restricted ground whitish subhyaline, with an extensive banded brown pattern, the areas much broken by pale dots and specks; there are two major bands, both oblique, one at cord, the second over the outer end of cell *1st M*₂, interconnected in costal field and again along vein *Cu*; basal band more or less connected with an

irregular pattern at and near the arcular region; outer band sending seams to the border at ends of all the veins; both bands with a very narrow but continuous brown outer margin that is bordered internally by a row of whitish spots; veins yellow, darker in the patterned areas. Wing tip slightly falcate. Venation: R_s strongly sinuous at midlength, the outer end of cell R not strikingly modified, as in certain other species of the genus; R_{2+3+4} longer than the basal section of R_5 ; a supernumerary crossvein in cell R_3 , connecting with vein R_3 near its base, the two elements subequal; $m-cu$ at near midlength on vein M_{3+4} .

Abdomen, including hypopygium, chiefly dark brown, the more basal tergites variegated with paler, including a more distal area on either side of tergite two.

Habitat: Dutch New Guinea.

Holotype: ♂, Iffar, Lake Sentani, near Hollandia, swept from foliage over stream, August 1936 (L. E. Cheesman); British Museum (Natural History).

Radinoderus supernumerarius is quite distinct from other described members of the genus, differing most evidently in the wing pattern and venation, as the presence of a supernumerary crossvein in cell R_3 . The most similar regional species appears to be *R. oculatus* (Riedel), of extreme eastern Papua, which differs in the size, pattern of the legs and wings, and in the venation.

PTYCHOPTERIDAE

Bittacomorphella thaiensis n. sp.

General coloration of thorax polished black, the postnotum and pleura silvery pruinose; legs black, tarsal segments two and three pure white, including the vestiture; wings subhyaline, the outer three-fourths of cell R blackened to form an elongate stigmal area; vein Cu strongly sinuous to angularly bent at near midlength.

Female: Length about 9 mm.; wing 7 mm.; antenna about 4 mm.

Front brilliantly silvery; palpi light brown. Antennae black throughout, slightly more than one-half the length of the wing in the female; flagellar segments elongate-cylindrical. Head blackened above, the anterior vertex silvery.

Thoracic dorsum polished black, mediotergite more pruinose, microscopically punctured. Pleura and pleurotergite silvery pruinose, the ventral pleurites blackened. Halteres black. Legs with the fore coxae blackened except at tips, the remaining coxae and trochanters whitened; femora dark brown, restrictedly brightened at base, the tip passing into black; tibiae and basitarsi black; tarsal

segments two and three pure white, the much smaller fourth and fifth segments black. Wings subhyaline or weakly suffused, with iridescent reflections, the costal border more hyaline; outer three-fourths of cell R_1 blackened to form an elongate stigmal area in that cell; veins brownish black. Venation: $r-m$ at or before fork of R_s , R_{2+3} lying close to vein R_1 ; vein Cu strongly sinuous to angularly bent at near midlength, the point of angulation almost coinciding with the fold in cell 1st A , which here simulates a longitudinal vein.

Abdomen black, the posterior borders of the intermediate segments narrowly pale. Ovipositor with weak fleshy valves.

Habitat: Thailand.

Holotype: ♀, Doi Chom Cheng, at Miss Lemmon's Cabin, Chiangmai, altitude 3000 feet, January 1, 1953 (Prayoon C). *Paratopotype*: ♀. *Paratype*: ♀, Near Wat at Doi Sutep, Chiangmai, February 1953 (Deed C. Thurman).

The discovery of a species of phantom crane-fly in the Oriental Region came as a great surprise. To this date only five species of *Bittacomorphella* Alexander had been discovered, one in the eastern Nearctic, two western Nearctic, and two eastern Palaearctic (Honshu, Japan). The present fly is most similar to *Bittacomorphella nipponensis* Alexander, differing most evidently in the pattern of the legs and wings. In the latter species, the tips of all basitarsi are whitened.

BLEPHAROCERIDAE

Edwardsina luteipleura n. sp.

Male: Length about 5 mm.; wing 8.5×2.8 mm.; antenna about 3.7 mm.

Characters mostly as in *Edwardsina dispar* Edwards, with which it agrees in the unusually long antennae, differing in coloration and in all details of structure of the mouthparts and male hypopygium. The chief points of difference from *dispar* are:

Maxillary palpi much longer, especially the elongate first segment which is about one-third longer than the second and about six times as long as broad, the blade of the maxilla not attaining its outer end; sensory structure of second segment very conspicuous, appearing as an oval knob. Antennae with the intermediate flagellar segments fully four times as long as broad, cylindrical. Head and pronotum dark brown to brownish black.

Mesonotum light brown, paling to gray laterally; median prae-

scutal stripe very broad in front, distinctly divided by a ground line; scutellum, postnotum and pleura uniformly yellowish, sparsely pruinose, with no darkening of the ventral pleurites; sides of scutellum beneath with an area of short black setae. Halteres blackened, only the base of stem yellowed. Legs uniformly dark brown, the outer tarsal segments passing into black; fifth tarsal segment much shorter than the third; claws with two major very long outer teeth and a smaller more basal one. Wings nearly hyaline, the darkened stigmal region very reduced, more yellowed; veins black very distinct against the ground. Venation: R_s oblique; cell R_3 almost sessile.

Abdomen with tergites chiefly dark brown, gray pruinose; basal sternites yellowed; hypopygium brownish black. Male hypopygium with the outer third of the dististyle strongly narrowed to the obtuse tip. Penis filaments not flanged on basal half, the extreme base merely slightly dilated.

Habitat: Chile.

Holotype: ♂, Curacautin, Malleco, December 6-24, 1950 (L. E. Peña).

***Blepharocera yankovskyi* n. sp.**

Size medium (wing, male, 5.8 mm.); mesonotum brown, the surface subnitidous; scutellum brownish yellow; eyes (male) very large unequally bisected, the upper reduced section of moderate size; wings crystal clear, the costal cell more yellowed; R_s less than twice $r-m$; male hypopygium with the setae of the tergal lobes long and conspicuous, relatively sparse; outer dististyle very large, bilobed.

Male: Length about 5 mm.; wing 5.8 mm.

Eyes of male very large, especially the anterior or lower part, the upper section small but not greatly reduced as in *yamasakii* or *japonica*. Ocelli large and conspicuous, the posterior pair separated by a distance less than one-half their own diameter.

Mesonotum brown, the surface subnitidous; scutellum brownish yellow. Pronotum and pleura gray pruinose, the metapleura yellowed. Halteres yellow, knobs dark brown. Wings crystal clear, the costal cell more yellowed. Venation: R_s less than twice $r-m$.

Male hypopygium with the tergal lobes relatively narrow, the setae long and conspicuous, relatively sparse. Outer dististyle very large, bilobed, each lobule of approximately the same size and shape; inner dististyle small, parallel-sided, the tip obtuse.

Habitat: North Korea.

Holotype: ♂, Ompo, altitude 600 feet, November 8, 1937 (Yan-

kovsky).

I take great pleasure in dedicating this species to the collector, Mr. Alexander Yankovsky. The most similar species appears to be *Blepharocera japonica* Kitakami, which is much smaller, being one of the smallest known members of the genus (Male, length 2.6–3.5 mm.; wing 3.2–4.2 mm.). As indicated above, both *B. japonica* and *B. yamasakii* Kitakami have the upper division of the eye of the male very reduced. The general localities where Yankovsky collected in Northern Korea have been discussed in another paper by the writer (Trans. Roy. Ent. Soc. London 95: 227–228; 1945).

Blepharocera dimorphops n. sp.

General coloration of thorax shiny black; eyes of the two sexes very dissimilar, in the male large and apparently undivided, in the female profoundly divided, the two divisions separated by a broad band of the head, the flattened upper eyes with large ommatidia, the convex lower pair with small ommatidia and very short setae; posterior femora yellow with a broad blackish band at near midlength; wings subhyaline; *Rs* about twice *r-m*; veins *R*₄ and *R*₅ divergent, cell *R*₄ at margin about one-half more extensive than cell *R*₂; abdomen conspicuously bicolored, velvety black, the basal rings of the tergites gray pruinose, of the sternites narrowly yellowed.

Male: Length about 5 mm.; wing 4.8 mm.

Female: Length about 6 mm.; wing 6.2 mm.

Male. Terminal segment of palpus very long, subequal to segments two and three taken together. Antennae with the terminal segment approximately twice the penultimate. Eyes large, apparently not bisected to any degree, the ommatidia of the outer convex face larger but merging gradually with the small ommatidia nearest the vertex; setae short. Head dark.

Thorax shiny black, the region surrounding the wing bases paler; pleura weakly pruinose. Halteres with stem brown, the basal third yellow, knob brownish black. Legs with the fore coxae blackened, the others and all trochanters yellow; remainder of legs brownish black, the femoral bases yellowed; posterior femora much larger, chiefly yellow, with a broad blackish band at near midlength; claws relatively short, weakly protuberant at near midlength. Wings subhyaline, the prearcular and costal fields narrowly darkened; veins brownish black. Venation: *Rs* about twice *r-m*; veins *R*₄ and *R*₅ diverging strongly on their outer halves, cell *R*₄ at margin about one-half more extensive than cell *R*₂.

Abdomen conspicuously bicolored, the first tergite and basal rings of the succeeding ones gray pruinose, the much broader posterior portions deep velvety black; sternites brownish black, the bases narrowly but conspicuously yellow. Male hypopygium with the tergal notch relatively wide. Dististyle with the outer lobe more extensive, expanded outwardly, the tip broadly obtuse; inner lobe smaller, the setae more approximated; inner dististyle a tiny glabrous rod.

Female. Much as in the male, differing notably in the structure of the eyes. Antennae strongly narrowed outwardly, the terminal segment very long, nearly as long as the preceding two combined. Head tetrophthalmous, the upper and lower eyes bisected and separated by a broad band of the head; upper eyes flattened, the ommatidia large, the setae relatively long and conspicuous; lower pair of eyes with small ommatidia and very short setae. Facial patches oval in outline, the setae black.

Habitat: China (Fukien).

Holotype: ♂, Ta-chu-lan, altitude 1500 meters, June 25, 1948 (Joseph Fu). *Allotopotype:* ♀, June 22, 1948.

The difference in structure of the compound eyes in the two sexes is very striking, from simple or virtually so in the male to broadly tetrophthalmous in the female. The eye in this latter sex is generally similar to the condition found in the Bornean *Blepharocera tetrophthalma* Edwards, which seems to be the nearest relative. No members of the family *Blepharoceridae* had been recorded from China except from the Tianshan Mountains, far to the west on the border between Mongolia and the Soviet Union.

Blepharocera thurmanæ n. sp.

Size small, especially the male (wing, 4 mm. or less); general coloration of thorax dark brown, the pleurotergite and posterior pleurites paler; eyes of male with upper faceted area contiguous with the lower one or separated by a capillary sclerotized strip, in the female the band broader; male hypopygium with the outer dististyle widened outwardly, emarginate at apex.

Male: Length about 3.5–4 mm.; wing 3.5–4 mm.

Female: Length about 5.5 mm.; wing 5.5 mm.

Described from alcoholic material.

Male. Antennae short, the basal flagellar segments shorter than broad, the outer ones more elongate, approximately one-half longer than broad; terminal segment nearly one-half longer than the

penultimate. Eyes very large; dorsal area of larger ommatidia greatly restricted when compared with the major ventral portion comprised of small ommatidia, without a sclerotized separating band as in female, or this reduced to a capillary line. Head dark.

Thorax dark brown, the pleurotergite and posterior pleurites paler. Halteres with the large knobs dark brown, the base of stem yellow. Legs with the coxae and trochanters pale, the fore coxae darker; legs brown to dark brown, the femora narrowly yellowed basally. Wings hyaline, the costal cell infuscated, especially outwardly; veins brown. Venation: *Rs* ranging from subequal to about one-half longer than *r-m*; branches of *Rs* sinuous, *R*₅ ending immediately above the wing tip.

Abdomen vaguely bicolored, dark brown to brownish black, the bases of segments two to four, inclusive, obscure yellow to produce a banded appearance; hypopygium black. Male hypopygium with the outer dististyle relatively large, widened outwardly, emarginate at apex to produce two lobes, the upper one with coarse setae.

Female. As in the male, differing in the sexual characters, especially of the eyes. Dorsal ommatidia larger and more numerous than in the male, separated from the large ventral section by a sclerotized strip, producing a four-eyed appearance; ventral ommatidia small, their area scarcely one-eighth to one-tenth that of the large dorsal ones. Mid-coxal lobe much larger, with abundant black setae.

Habitat: Thailand (Chiengmai).

Holotype: Alcoholic ♂, Chom Tong, altitude 1000 feet, February 9, 1952 (Deed and Ernestine Thurman). *Allotopotype:* ♀. *Paratopotypes:* 4 ♂♂.

I take great pleasure in dedicating this species to Mrs. Deed C. (Ernestine) Thurman, to whom and to her husband, I am greatly indebted for some unusually interesting Nematocerous Diptera from Thailand. The nearest relative seems to be *Blepharocera indica* Brunetti, of the western Himalayas, which is still known to me only from Brunetti's brief original description and figure. This is a larger fly with the colorational and venational details distinct. The structure of the eyes and male hypopygium in *indica* has not been described. This is the first record of a species of the family Blepharoceridae from Thailand.