

UNDESCRIBED SPECIES OF DICRANOPTYCHA FROM
EASTERN NORTH AMERICA (TIPULIDÆ, DIPTERA).¹BY CHARLES P. ALEXANDER,
Amherst, Mass.

While revising the species of the crane-fly genus *Dicranoptycha* in my collection, a few species that had not been described were noted and their diagnoses are given in this paper. The material upon which the descriptions are based was largely included in the writer's collection and in a very extensive series of these flies collected in Indiana, Tennessee, North Carolina, Georgia and Florida by Prof. J. Speed Rogers of the University of Florida. Specimens of *Dicranoptycha septemtrionis* were taken by Dr. Crampton and by Mr. M. C. Van Duzee. I express my sincere thanks to all of the above named gentlemen for their co-operation in this matter.

The crane-flies of the genus *Dicranoptycha* are eminently characteristic of open Austral woodlands, often occurring far from running water. The immature stages of certain species, at least, are spent in dry soil in habitats such as the above. Recent papers by the writer on the Eastern species are included in the following references: Entomological News, 30: 19-22; 1919. Pomona Journal of Entomology and Zoology, 11: 67-74; 1919. Cornell University Agr. Expt. Sta., Memoir 38: 829-830; 1920.

The structure of the male hypopygium offers the best characters for the differentiation of some of the otherwise very similar species. In general, the basistyles are unarmed and do not offer good specific characters. The two dististyles are broadly joined at base, the outer more or less heavily chitinized and armed in various ways with teeth and erect setulæ. The shape of this style and its armature is of prime importance in defining the various species. In *D. tigrina* Alex., *D. minima* Alex. and *D. pallida*, sp. n., there are no denticles on the outer margin of the style. The inner dististyle is more fleshy and differs in shape in

¹Contribution from the Department of Entomology, Massachusetts Agricultural College.

the various forms. At the base of the mesal face of the basistyle but not connected with it, nor, apparently, connected with the tergite, lies a pale flattened rod that is termed herein the *lateral process*. From its position it appears to be an *interbasal process* but from its location in membrane rather removed from the basistyles, I hesitate to call the structure an interbase. The shape of these lateral processes differs much in the various species. The aedeagus and surrounding apophyses vary greatly and offer remarkable characters. The largest aedeagi are found in *D. sobrina* O. S. and *D. megaphallus*, sp. n. In most of the other species, the organ is relatively small and insignificant. The gonapophyses are greatly produced and bifid at their tips in *D. tigrina* Alex.

Dicranoptycha australis sp. n.

Male.—Length 9-9.5 mm.; wing 8.5 mm.

Female.—Length about 8-8.5 mm.; wing 8-8.3 mm.

Generally similar to *D. sobrina* O. S., differing especially in the hypopygial characters.

Basal two segments of antennæ obscure yellow, the flagellum abruptly dark brown. Head and thorax light gray, the præscutum with a very ill-defined grayish brown median stripe. Pleura light gray. Legs with the coxæ sparsely pruinose; trochanters obscure yellow; femora and tibiæ obscure yellow, with darker setæ; terminal tarsal segments passing into dark brown. Wings with the costal fringe (σ^7) relatively short and inconspicuous; membrane strongly suffused with brownish yellow, the costal region clearer yellow; veins brown. Venation: *Rs* shorter than the elongate cell 1st *M*₂, sometimes angulated and spurred at origin.

Abdominal tergites pale to medium brown; segment seven blackened; eight dark brown; hypopygium and sternites pale. Male hypopygium with the outer dististyle relatively small, gradually narrowed and gently curved to the long acute apical spine; outer surface with short, dense, erect setæ; distal half with microscopic appressed serrulations. Inner dististyle stout, the apex suddenly enlarged, provided with coarse setæ. Aedeagus

relatively small and inconspicuous, the apex rounded. Lateral processes with the apex of each not evenly rounded but directed slightly lateral, the mesal edge rounded, the lateral edge nearly straight to appear like a pruning-knife.

Habitat.—South-eastern United States.

Holotype, ♂, Gainesville, Florida, April 15, 1922 (J. S. Rogers); No. 43.

Allotype, ♀, Ocmulgee Valley, Bibb Co., Georgia, June 3, 1923 (J. S. Rogers); No. 4.

Paratopotypes, 6 ♂ ♀; paratype, 1 ♂, with the allotype. Type returned to Professor Rogers.

Dicranoptycha septemtrionis sp. n.

Generally similar to *D. sobrina* O. S.; mesonotum dark brown, sparsely dusted with gray; pleura pruinose; femora and tibiae yellow, the terminal tarsal segments dark brown; wings tinged with yellow, with a faint brown tinge; abdominal tergites brown, segments seven and eight dark brown; male hypopygium with the outer dististyle rather strongly curved, the blackened apex microscopically serrulate on all surfaces; ædeagus small and inconspicuous, about equal in size to the lateral process.

Male.—Length 7-7.5 mm.; wing 8.5-9 mm.

Rostrum brownish gray, the palpi dark brown. Antennæ with the basal segments light yellow, the flagellar segments gradually passing into brown. Head yellowish gray.

Pronotum dark, dusted with gray. Mesonotal præscutum dark brown, sparsely dusted with gray, especially on the humeri; scutellum and postnotum gray dusted. Pleura pale, the dorsal pleurites darker, the entire surface sparsely pruinose. Halteres pale, the knobs weakly infuscated. Legs with the coxæ and trochanters yellow; femora and tibiae yellow; basitarsi yellow, the tips and remainder of the tarsi dark brown. Wings with a yellowish tinge, weakly suffused with brown, the costal region clearer yellow; veins pale brown, those of the costal region more yellowish. Costal fringe (♂) relatively short. Venation: *R*₅ longer than cell 1st *M*₂, the latter rectangular; *m-cu* shortly beyond the fork of *M*.

Abdominal tergites brown, segments seven and eight dark brown, segment nine slightly paler; remainder of hypopygium yellow; sternites brownish yellow. Male hypopygium with the outer dististyle relatively short, rather strongly curved to the acute tip, with about the distal half to third of the style blackened; base of style with microscopic setulæ that become longer, more conspicuous and suberect outwardly, the surface of the style in the blackened portion microscopically serrulate on all surfaces. Inner dististyle longer, fleshy, with conspicuous setæ, the style gradually narrowed to the blunt apex. Aedeagus small and inconspicuous, subequal in size to one of the lateral processes, the latter broad at base, thence gradually decreasing to the narrowly obtuse apex.

Habitat.—North-eastern United States.

Holotype, ♂, Greenfield Mt., Franklin Co., Massachusetts, September 6, 1925 (G. C. Crampton).

Paratopotypes, ♂ ♀, August 23-September 6, 1925 (C. P. Alexander); paratype, ♂, Niagara Falls, New York, September 6, 1911 (M. C. Duzee).

Type in the writer's collection.

All of the records for *D. sobrina* O. S. in my "Crane-flies of New York," Part I, Cornell University Agr. Expt. Sta. Mem. 25: 797; 1919, pertain to this new species. Material was sent to various collections in 1925 with the determination of *D. sobrina*. The species flies late in the season and all of those seen alive by the writer occurred near sluggish streams of water, usually at the foot of wooded hillsides.

Dicranoptycha megaphallus sp. n.

Male.—Length about 8 mm.; wing 9.2 mm.

Generally similar to *D. sobrina* O. S., differing conspicuously in several features, notably the short costal fringe of the male and the spinulose outer dististyle of the male hypopygium.

The head and thorax of the type are greasy and the coloration is discussed in general terms only. Antennæ with the scapal segments light yellow, the flagellum darker. Head dark, any normal pruinosity destroyed. Thorax dark colored, un-

doubtedly pruinose in fresh specimens; sternopleurite paler than the remainder of the pleura. Halteres pale, the knobs slightly darkened. Legs with the coxæ and trochanters obscure yellow; femora yellow, including the fore femora; tibiæ and tarsi yellow, the terminal tarsal segments passing into dark brown. Wings with a grayish yellow tinge, the base and costal region clearer yellow; veins brown, more yellowish in the costal region. Venation: *Rs* shorter than cell 1st *M*₂, the proximal end of the latter more arcuated; *m-cu* a little less than its own length beyond the fork of *M*.

Abdominal tergites brown, the lateral margins narrowly paler; segments six and seven dark brown, eight and nine, with the hypopygium, yellow; sternites yellowish brown. Male hypopygium with the outer dististyle relatively long and slender, the distal half or less blackened and armed with small but conspicuous spinules, those on the outer face more nearly erect; basal half of style on outer face with short, dense, erect setulæ. Inner dististyle broad basally, narrowed apically, the tip a little expanded. Aedeagus very large, on slide appearing rectangular, the tip subtruncate, pale. Lateral processes evenly rounded at tips.

Habitat.—Tennessee.

Holotype, ♂, Allardt, Fentress Co., at light, altitude 1650 feet, June 10, 1924 (J. S. Rogers); No. 11.

Type returned to Professor Rogers.

Dicranoptycha pallida sp. n.

Generally similar to *D. winnemana* Alex., in the pale coloration; legs yellow, the tips of the tibiæ and the basal segments of tarsi narrowly darkened; wings with a strong yellow tinge; costal fringe (♂) short; abdomen (♂) with only the eighth segment darkened; male hypopygium with the outer dististyle smooth on the outer convex face; ædeagus small; a single small, median gonapophysis.

Male.—Length about 7-7.2 mm.; wing 7.2-7.8 mm.

Female.—Length 9-9.5 mm.; wing 8-8.5 mm.

Rostrum and palpi dark brown. Antennæ with the basal segments obscure yellow, only the outer flagellar segments more infuscated. Head brownish yellow.

Mesonotum shiny brownish yellow, the pleura light gray pruinose. Halteres pale, the knobs slightly infuscated. Legs with the coxæ slightly pruinose; trochanters obscure yellow; femora yellow, with conspicuous erect setæ; tibiæ and tarsi light yellow, the tips of the individual segments weakly infuscated; terminal tarsal segments uniformly infuscated. Wings with a strong brownish yellow suffusion, the costal region clearer yellow; veins dark yellow. A few trichiaë at ends of both anal veins. Costal fringe (σ^7) relatively short. Venation: *Rs* considerably longer than cell 1st *M*₂.

Abdominal tergites brownish yellow, segment eight conspicuously dark brown; ninth tergite and the hypopygium light yellow; sternites paler yellow. Male hypopygium with the outer dististyle of moderate length, gently curved to the acute tip, the outer margin entirely smooth, the inner margin with only a few weak denticles on the distal quarter before the spinous apex; vestiture of style barely visible, under high magnification appearing as microscopic setulæ. Inner dististyle stout, gradually decreasing in diameter outwardly, clothed with conspicuous slender setæ, those at the apex only a little stouter. Aedeagus small, relatively slender. A single gonapophysis, the tip of which is bent ventrad toward the ædeagus. Lateral process with the apex evenly rounded.

Habitat.—Kansas.

Holotype, σ^7 , Lawrence, Douglas Co., altitude 900 feet, August 1, 1918 (C. P. Alexander).

Allotopotype, ♀ , July 16, 1918.

Paratopotypes, 10 σ^7 ♀ , July 16-August 1, 1918.

Type in the writer's collection.

This is the species (Kansas material only) discussed in earlier papers by the writer as being *D. winnemana* Alex. (Ent. News, 30: 19-21; 1919—Pomona Journ. Ent. and Zool., 11: 67-74; 1919—Cornell Univ. Agr. Expt. Sta., Mem. 38: 829-830; 1920).