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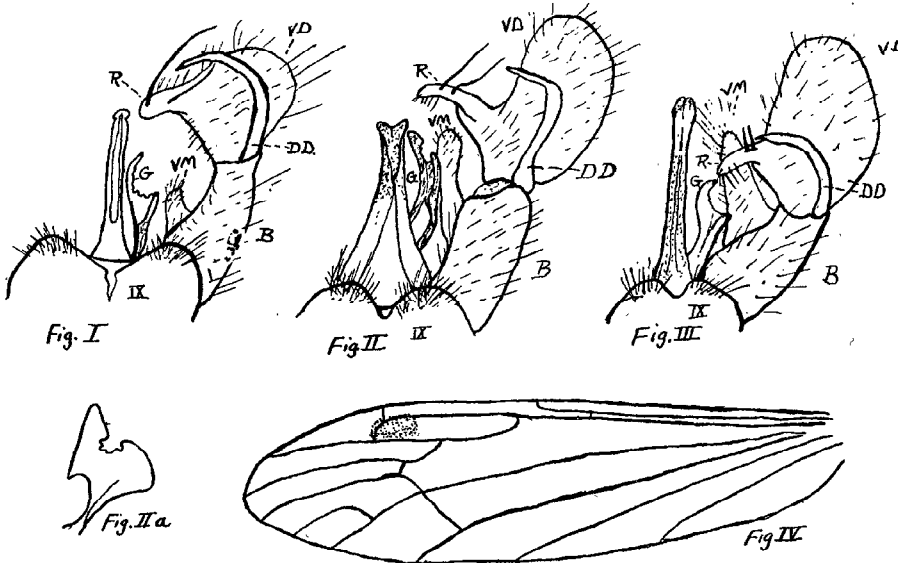
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**A NEW DICRANOMYIA ALLIED TO DICRANOMYIA IM-  
 MODESTA OSTEN SACKEN—TIPULIDAE, DIPTERA**

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During the past few years of ecological and distributional studies on the crane-flies, I have had considerable difficulty in



**EXPLANATION OF FIGURES**

- Figure I. Male genitalia of *D. gladiator* O. S., dorsal view.
- Figure II. Male genitalia of *D. immodesta* O. S., dorsal view.
- Figure IIa. Gonopophysis of *D. immodesta* O. S., side view.
- Figure III. Male genitalia of *D. iowensis* sp. nov., dorsal view.
- Figure IV. Wing of *D. iowensis* sp. nov.

- |                       |  |
|-----------------------|--|
| B—Basistyle           | IX—Ninth Tergite                       |
| DD—Dorsal dististyle  | VM—Ventro-mesal lobe of basi-<br>style |
| VD—Ventral dististyle | G—Gonopophysis.                        |
| R—Rostrum             |  |

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distinguishing Osten Sacken's species, *Dicranomyia immodesta* and *gladiator*. Part of the difficulty has been due to the existence of a third species, heretofore undescribed, whose geographic range and habitat distribution overlaps that of the above species.

***Dicranomyia iowensis* sp. nov.**

Resembles in venation, size, and general body appearance *Dicranomyia immodesta* and *gladiator*. Differs from both of these species in that the thoracic notum and pleura are opaque, the antennae wholly dark brown, and the male genitalia distinctly different.

Rostrum straw yellow, tinged with brown at the apex and along the sides. Basal half of the first segment of the palpus yellow, the distal half and the remaining joints a dull dark brown. The antennae are dark brown thruout; the first basal joint long cylindrical, the second hardly half as long, the joints of the flagellum elliptical, with a few short setae and a thin pubescence. The vertex bright chestnut brown with a silvery reflection; occiput dark brown with a narrow silvery line along the margin of each eye.

The thoracic notum is a dull yellowish brown except that the lateral margins of the prescutum are a light opaque yellow. A single central dull brown stripe is well marked on the pronotum and anterior half of the prescutum but fades into the ground color on the posterior part of the prescutum. The usual position of the lateral stripes is frequently indicated by faint darker areas on the posterior half of the prescutum. The lobes of the scutum are faintly darkened; the scutellum and postnotum are slightly duller and darker than the rest of the thoracic notum. The pleura are a dull grayish yellow, somewhat lighter dorsally. The coxae and proximal halves of the femora are dull yellow, the distal halves of the femora and the tibia somewhat darker and the tarsi brown. The base and stem of the halteres are yellow, the knobs dull, dark brown. The wings are entirely clear, save for a very faint, small, ovoid brown stigma. The veins are brown, the venation (figure IV) quite like that of *D. immodesta*.

The tergites of the abdomen are dull brown, the sternites yellow, more or less suffused with brown. The margins of the sternites are slightly shining. The genitalia of both male and female are yellow; altho dull, this yellow is conspicuous in contrast to the brown abdominal tergites. The ninth tergite of the

male genitalia is broad and short with a deep, rounded, caudal notch. The rounded lateral lobes produced by the notch are chitinized on their caudal margins which bear about fifteen long, yellow setae. The basistyles are a little longer than broad, thinly covered with long, yellow setae. From their ventro-mesal margins large fleshy lobes, about as long as the basistyle itself, project caudo-ventrad, almost parallel from the base to apex. These lobes are covered with a moderate pubescence and bear numerous setae, particularly at their apices. The dorsal dististyle is an arcuated, cylindrical, chitinized rod, slightly dilated at the base and just before the apex. Beyond the second slight dilation it tapers abruptly to a short, stout, straight, apical spine. A chord drawn from apex to base of the dorsal dististyle is very nearly equal to the length of the basistyle. The ventral dististyle is a large, inflated, ovoid lobe covered with a short pubescence and bearing rather scattered setae of moderate length. At midlength it is a little less in diameter than the chord of the dorsal dististyle and is a little less than twice as long. On the mesal margin, about one fourth of its length from the proximal end, the ventral dististyle bears a prominent, fleshy rostrum, curved dorsocephalad. Near the base of the rostrum, on its caudo-dorsal face are two short, stout, chitinized spines set close together in a common groove. These spines are almost exactly equal in length. The cephalic face of the rostrum, near its tip bears five or six stout setae. The penis guard is long and subcylindrical. It narrows from a dilated base to a slender rod but becomes slightly dilated just before the faintly bilobed apex. The gonopophyses are prominent flat hooks, whose bases form vertical plates on either side of the penis guard and whose apices are directed dorsad. Between the base and apex each has a semicircular depression like the blade of a sickle, whose dorsal and concave edge is gently and slightly serrate.

The ovipositor is but slightly different from that of *immodesta* or *gladiator*, slightly shorter and more slender than in *gladiator*, the tergal valves more arcuated than in *immodesta*.

Holotype, male, Poweshiek Co., Iowa, Sept. 18, 1920 (Field Cat. No. 52).

Allotype, female, topotypic.

Paratopotypes, 4 males; paratypes: Poweshiek Co., Iowa, 3 males, 2 females, Oct. 10, 1920; 1 female, June 2, 1920; 1 female, Sept. 5, 1920. Hardin Co., Iowa, 2 females, May 20, 1920; 4 males, 2 females, May 21, 1920; 3 males, 4 females,

May 22, 1920. Harrison Co., Ind., 5 males, June 18, 1921; Jefferson Co., Ind., 1 male, June 11, 1921; Washtenaw Co., Mich., 1 male, Aug. 6, 1921; 1 male, Aug. 24, 1921; 2 males, July 12, 1922; 1 male, June 6, 1922 (T. H. Hubbell); 1 male, Aug. 17, 1922 (F. M. Gaige).

Part of the paratypes from Indiana and Iowa are placed in the collection of Dr. C. P. Alexander; the holotype, allotype and other paratypes are in the collection of the Museum of Zoology of the University of Michigan.

Figured with present species are the genitalia of the males of *D. immodesta* O.S. and *D. gladiator* O.S. as I have identified these species from Osten Sacken's descriptions and his figure of the male genitalia of *D. gladiator*. The characters shown in these figures are constant in the series of each of these species that I have before me and the differences in body markings: three stripes on the prescutum of *gladiator*, one stripe on the prescutum of *immodesta*; the mesosternum of *gladiator* with rounded brown spots between the fore and middle coxae, the mesosternum of *immodesta* unmarked, fits in each series with the genitalia figured. There is a slight discrepancy between the male genitalia figured by Osten Sacken for *gladiator* and that figured for the species I am identifying as *gladiator*. I believe that this discrepancy is not greater than is to be expected when it is remembered that Osten Sacken drew his figure from observations on the living insect, while the present figure is made from a mount cleared in KOH and drawn as seen with a compound microscope.

*Dicranomyia iowensis* would seem, from the slight data now available, to be somewhat more western than *immodesta* or *gladiator*. Altho taken with these two species in Washtenaw Co., Michigan it was far less common than either. In southern Indiana, *iowensis* is far less common than *gladiator* but not so rare as *immodesta*. However, southern Indiana has other supposedly western crane-flies, *Gonomyia kansensis* Al, *Tipula flavibasis* Al. and is close to the southern limits of *D. immodesta*. In Iowa neither *gladiator* or *immodesta* were taken in the two localities where *iowensis* was common.

The immature stages of *iowensis* are unknown, the adults have been taken in situations much like those from which *gladiator* and *immodesta* have been commonly found, moist flood plains of small streams, wet grassy areas near springs, and from grassy, slightly shaded ravines.