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OF TYPHLOCYBINE LEAFHOPPERS CLOSELY
ALLIED TO DIKRANEURA
(Cicadellidae: Homoptera)

BY

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A NEW GENUS—FORCIPATA—AND NINE NEW SPECIES
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For several years certain *Dikraneura* leafhoppers have been commonly collected from grass habitats. These leafhoppers are characterized by having the male plates contiguous at the base and the inner margins convexly rounded outwardly so that the middle portion of the plates are widely separated but they curve together at the apex and are differently shaped from the triangular plates of *Dikraneura*. This character has been considered as a specific one and all specimens of this type have been placed under the name *Dikraneura fieberi* Loew. Recent study of this material has revealed the fact that this character is generic and several species are undescribed in the material collected in the United States. Furthermore, examination of materials forwarded for study by W. E. China from the British Museum demonstrates that neither *similis* nor *fieberi*, the latter of which Dr. Eger has considered as synonymous with *similis*, occur in North America, if we may judge from material examined in many collections from all parts of the United States and Canada.

The proportional size, shape and apices of the male plates and the appearance of the oedagus in lateral view give excellent characters for diagnosis and have been used to illustrate these species and distinguish them.

Forcipata new genus

The members of this genus differ from the two most closely related genera *Dikraneura* Hardy and *Nolus* Fieber by having the male plates more cylindrical and more uniform in width than flat and triangular, and by the plates curving outwardly so as to be widely separated at the middle, but with base and apex contiguous or proximal. Venation more similar to *Dikraneura* but differing by having the first cross vein wanting and the second more distad than the third and the third more distad than the fourth.

The species of the genus usually have a rather bluntly angled head and are yellow in color.¹

¹Although submitted for publication in 1934, data concerning material collected in 1935 have been added in all possible cases.

Forcipata loca n. sp.

Resembling *fieberi* in form and appearance but with distinct genitalia. Length, 4 mm.

Vertex rather strongly produced and bluntly angled, more than one third wider between eyes than length at middle, produced half its length before anterior margins of the eyes.

Color: Vertex orange yellow, pronotum and scutellum yellow. Elytra, subhyaline with veins yellow.

Genitalia: Female last ventral segment with central produced lobe rather narrow, notches between this and lateral lobes at base broad and U-shaped. Male plates bearing a sharply pointed spine on inner margins near apex, tips pointed and curving slightly inwardly. Male oedagus in lateral view about the same width throughout except for the pointed apices which are directed dorsally both at the anterior and posterior ends. Between these the central portion is broadly curved dorsally about as far as the apices.

This is the most common North American species of the genus and has previously been designated as *fieberi*. It has been taken as far west as Kansas and South Dakota. The male oedagus was figured by Hartzell as *Empoasca flavescens* in his monograph of that group. (Proc. Dav. Acad. Sci. 30: 1923; Pl. IV, Fig. 23 e.)

Described from a large series of specimens from Ohio, Pennsylvania, New York, Connecticut, Maine, Massachusetts, Vermont, New Hampshire, Virginia, Delaware, Illinois, South Dakota, Kansas and Ontario, Canada. Holotype male from Ohio Pyle, Penna. Allotype female from Kane, Penna., and male and female paratypes in the senior author's collection. Paratype males and females in the Illinois Natural History Survey collection; Snow collection, University of Kansas; the U. S. National Museum collection and the Herbert Osborn collection.

Forcipata magna n. sp.

Resembling *D. fieberi* in general appearance but larger and with distinct genitalia. Length, 3.5 mm.

Vertex of male produced and rounded, twice as wide between eyes as length at middle, produced almost one half its length before anterior margins of eyes. Pronotum more than one half longer than vertex. Female vertex appearing more produced and bluntly angled.

Color: Vertex yellow, tinted on margin with ochraceous. Pronotum and scutellum yellow. Elytra yellowish subhyaline, slightly tinged with green.

Genitalia: Female last ventral segment with median lobe with side margins appearing concavely rounded or angularly indented, apex very narrow, notches between this and lateral lobes, broad. Male plates broad on basal half, narrowed on apical half, a bluntly angled

lobe on inner margin near apex, tip blunt, rounded. Male oedagus in lateral view with a broad basal portion which extends obliquely, apical portion narrow, extending caudally and with pointed apex extending dorsally.

Described from a series of thirty-five specimens collected at Yellowstone Park, Wyoming, July 4, 1930. Male holotype, female allotype and male and female paratypes in collection of senior author.

***Forcipata sicula* n. sp.**

Size and form of *magna* but with distinct genitalia. Length, 3.5 mm.

Vertex blunt, rounded, more than one-third wider between the eyes than length at middle, produced one-half its length before the anterior margins of the eyes.

Color: Vertex pronotum and scutellum dull yellow. Elytra dull greenish subhyaline, veins yellow.

Genitalia: Female last ventral segment with median lobe rather broad at base tapered to almost truncate apex, lateral lobes narrow, about half the length of median lobe, separated from median lobe by rather broad notches. Male plates constricted before apex which is slightly enlarged with a blunt protruding tooth on inner angle and a sharp pointed median tooth on inner margin of apex. Male oedagus curved upward at middle, rather abruptly constricted just before apex which is narrowed and bent sharply so as to extend dorsally.

Described from a series of 37 specimens from Stanley Basin, Idaho; Everett and Copalis, Washington; Eugene and Chehalis, Oregon. Male holotype and male and female paratypes in collection of senior author. Female allotype and male and female paratypes in the collection of Prof. Herbert Osborn. Female paratype in the Snow collection, University of Kansas.

***Forcipata triquetra* n. sp.**

Resembling *ficberi* but with vertex less produced and more blunt and with distinct genitalia. Length, 3 mm.

Vertex not strongly produced, rounded, more than twice as wide between eyes as length at middle, produced one-half its length before anterior margins of the eyes.

Color: Vertex pronotum and scutellum yellowish. Elytra subhyaline with veins yellow.

Genitalia: Female last ventral segment broad, sides of median lobe almost straight, apex broadly rounded, lateral lobes very narrow produced about half the length of median lobe. Male plates slightly constricted just before apices which are slightly enlarged and rounded on apex, their inner margins each bearing a short sharp-pointed tooth at about the middle of the inner face and a shorter one also sharp-pointed at the base of inner face. Male oedagus in lateral view elongate, triangular. Base rather broad, gradually tapering to acutely pointed apex which is curved and directed a little dorsally.

Described from a series of 20 male and female specimens from Dickinson Co., Kansas; Brookings, South Dakota; Conifer, New York; Delphos, Kansas; Volo, Dolson and Vienna, Illinois; Lincoln, Nebraska; West Point, Nebraska; Douglas Co., Kansas, and Missouri Valley, Iowa. Holotype male, allotype female and male and female paratypes in collection of senior author. Male and female paratypes in collection of Prof. Herbert Osborn and the Snow collection, University of Kansas, and three female paratypes in the Illinois Natural History Survey collection, Urbana, Illinois. Female paratype in U. S. National Museum Collection.

***Forcipata ohioensis* n. sp.**

A narrow species resembling *feberi* but with distinct genitalia. Length, 3 mm.

Vertex of male bluntly angled twice as wide between eyes as length at middle, two-thirds of its length produced before anterior margins of the eyes. Anterior margin of pronotum strongly convexly produced.

Color: Vertex, pronotum and scutellum yellowish. Elytra dull greenish subhyaline, veins yellow, conspicuous.

Genitalia: Female last ventral segment with central produced lobe narrow, rounded at apex, side lobes produced two-thirds the length of central lobe. Male plates broader at base, rather strongly curved inwardly at apices which are blunt and rounded without an enlargement or protruding spine on inner margin. Male oedagus in lateral view triangular, broad at base, rapidly tapering to slender apical portion which is strongly curved and produced dorsally.

Described from a series of 29 male and female specimens collected at Circleville, Ohio, June 3, 1934, by the junior author; one male specimen collected at Loda, Illinois, November 3, 1931, by Dr. H. H. Ross, and 15 male and female specimens collected at Shawneetown, Albion, Vienna and Putnum, Illinois, in 1935, by Dr. H. H. Ross and the senior author. Male holotype, female allotype and male and female paratypes in the collection of the senior author. Male and female paratypes in the Illinois Natural History Survey collection.

***Forcipata ancantha* n. sp.**

A minute species with strongly produced vertex, resembling *ohioensis* but with distinct genitalia. Length, 3 mm.

Vertex strongly produced and rather sharply angled, one-third wider between eyes than length at middle, produced two-thirds its length before anterior margins of the eyes.

Color: Yellow tinged with orange. Basal half of elytra yellow, apical half subhyaline with veins yellow.

Genitalia: Female last ventral segment with median lobe narrowed to rather narrow, rounded apex. Male plates only slightly enlarged on inner margin before apex, apices narrowed and directed inwardly. Male oedagus in lateral view appearing broad on basal half, apical half narrowed, directed ventrally and caudally, tip curved and produced dorsally.

Described from a series of fifty male and female specimens collected from small grasses at Castle Rock, Oregon, Illinois, by Dr. H. H. Ross and the senior author June 30, 1935. These occurred in a heath habitat. Holotype male, allotype female and male, and female paratypes in Illinois Natural History Survey collection. Male and female paratypes in the collection of the senior author.

***Forcipata acclina* n. sp.**

Form and appearance of *ohioensis* but with distinct genitalia. Length, 3.2 mm.

Vertex strongly produced and bluntly angled, almost two-thirds as long at middle as width between eyes, produced almost two-thirds its length before anterior margins of the eyes.

Color: Yellowish, apex of vertex tinged with orange, pronotum and scutellum yellowish. Elytra subhyaline, veins yellow.

Genitalia: Female last ventral segment short and broad, broadly rounded, lateral lobes scarcely produced beyond notched base of central lobe. Male plates rather abruptly bent and curved inwardly at about half their length, broadened at apex and curved so as to form a concave face between a pointed tooth at anterior and posterior extremities. Male oedagus long, bluntly pointed at base, curved upward at middle, constricted near apex then bent upwardly at right angles and produced dorsally forming a rather long spine-like apex.

Described from a series of 15 specimens from Taylor's Falls, Minn.; Kane, Pa.; Enterline, Pa., and Kreamer, Pa., collected by J. G. Sanders and the senior author; Conifer, N. Y.; Cranberry Lake, N. Y.; Brookings, S. D. and Fargo, N. D., collected by Prof. Herbert Osborn; Windsor, Vt., and Glen, N. Y., collected by Dr. R. H. Beamer. Male holotype and male and female paratypes in the collection of the senior author. Female allotype and male and female paratype in the Osborn collection and female paratypes in the Snow collection, University of Kansas.

***Forcipata calipera* n. sp.**

A small species resembling *ohioensis* in general appearance but with distinct genitalia. Length, 3.2 mm.

Vertex strongly produced and rounded, one-third wider between eyes than length at middle, produced one-half its length before anterior margins of the eyes.

Color: Vertex, pronotum and scutellum orange yellow. Elytra with basal half rather opaque and orange yellow in color, apical half hyaline, only the veins yellowish.

Genitalia: Female last ventral segment with median lobe narrow, apex rounded, lateral lobes about two-thirds as long as median lobe. Male plates with a rounded enlargement on inner margins about middle, apical third strongly curved inwardly and extending at almost right angles to basal portion and almost touching at median line. Male oedagus in lateral view a little wider at middle, apices tapered and sharp pointed, curved twice so that apical and basal portions and central curved lobe extend dorsally.

This species can easily be distinguished by the strongly curved male plates.

Described from a large series of specimens from Kane, Penna., 8-22-19; Enterline, Penna., 7-4-20; Kreamer, Penna., 7-26-18; North Bloomfield, Penna., 7-16-20; Pt. Trevoiton, Penna., 7-26-18; Richfield, Penna., 7-26-18, and Taylor Falls, Minn., 8-16-18, all collected by J. G. Sanders and the senior author. Also one specimen from Salem, N. Y., August 15, 1904, collected by Prof. Herbert Osborn, and one from Cranberry Lake, N. Y., August 5, 1917, by Dr. C. J. Drake. Male holotype, female allotype and male and female paratypes in senior author's collection; female paratypes in collection of Prof. Herbert Osborn.

Forcipata ortha n. sp.

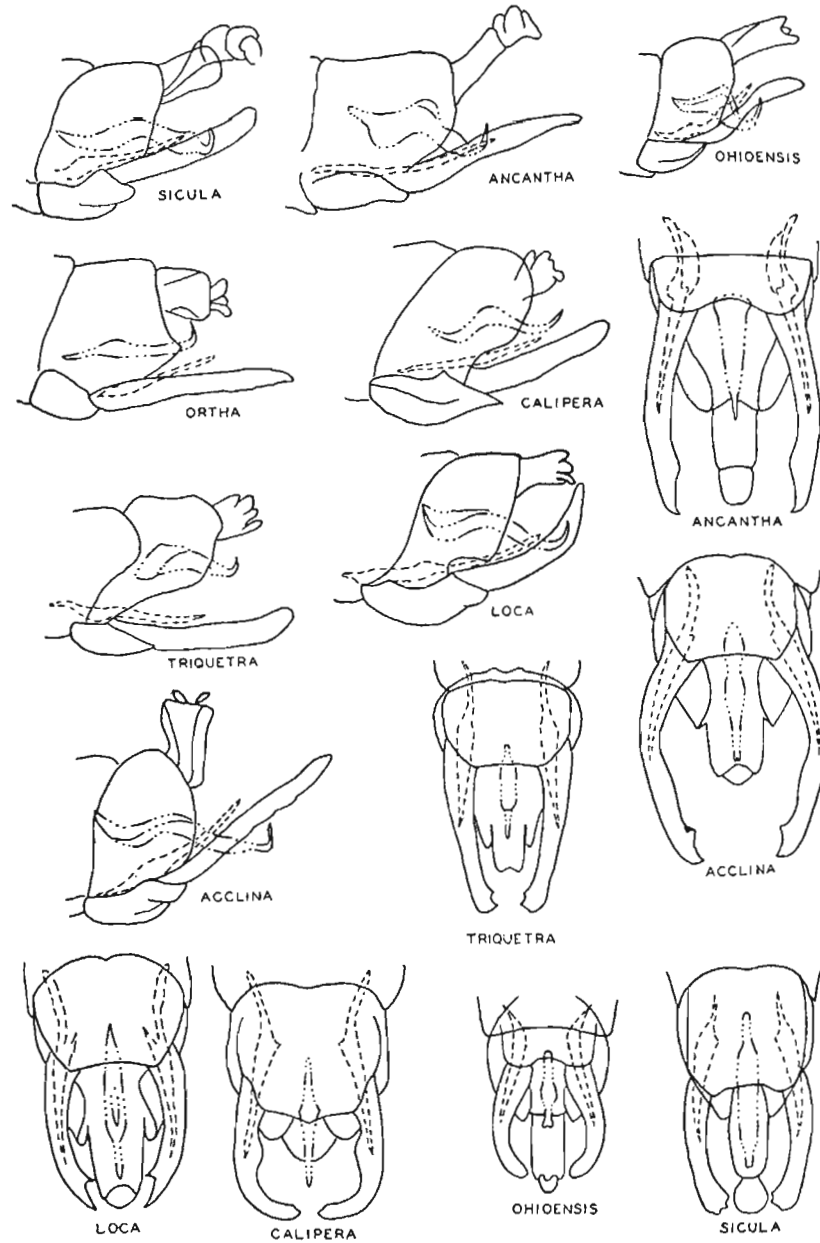
Resembling *calipera* but with vertex more produced and sharply angled and with distinct genitalia. Length, 3.5 mm.

Vertex bluntly angularly produced, more than one-third wider between eyes than length at middle, produced about two-thirds its length before anterior margins of the eyes.

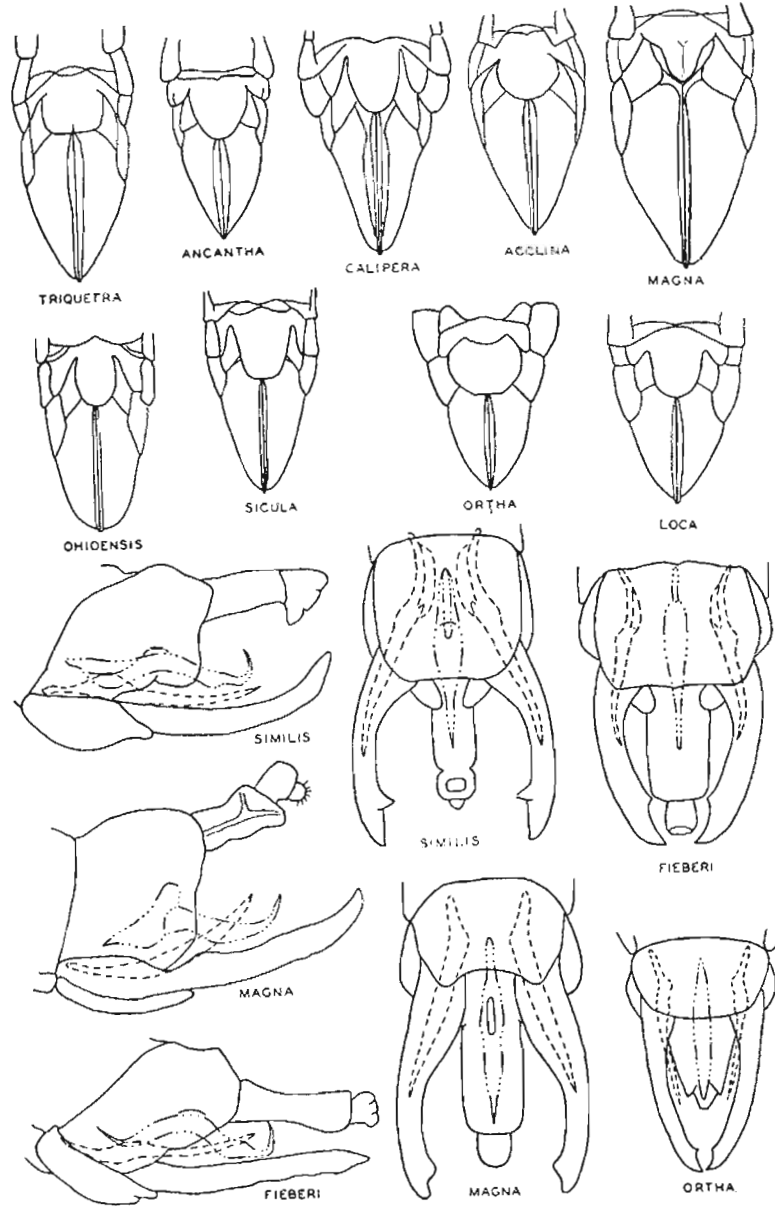
Color: Vertex pronotum and scutellum dirty yellowish. Elytra dull green tinged with yellow on claval area, remainder hyaline with yellow veins. Apical portion smoky.

Genitalia: Female last ventral segment with median lobe broad, rounded to blunt apex. Side lobes very small, almost wanting. Male plates almost uniform in width with a sharp pointed spur just before apex on inner margin. Apex sharp pointed. Male oedagus in lateral view almost straight to apex which is sharply upturned and tapered to pointed tip. Basal end narrower, tapered, caudal to which the oedagus is slightly enlarged dorsally.

Described from a series of 14 specimens from Kane, Richfield, Harrisburg and Pt. Trevoiton, Penna., collected by J. G. Sanders and the senior author, and specimens from Maine, collected by Prof. Herbert Osborn. Holotype male (Kane, Penna.) allotype female (Kane, Penna.) and male and female paratypes in the collection of the senior author. Female paratypes (Maine) in the Osborn collection.



Forcipata new genus. Lateral and ventral views of male genitalia.



Forcipata new genus. Ventral view of female genitalia (top); ventral and lateral views of male genitalia (bottom).