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SOME NEW NORTH AMERICAN SPECIES OF DELTOCEPHALOID
LEAFHOPPERS

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***Polyamia brevipennis* n. sp.**

Resembling *caperatus* in size and general appearance but without color markings, apparently more closely related to *apicatus* and *alboneura* but with short wings. Length 2-2.5 mm.

Vertex bluntly angled, a little longer on middle than basal width between eyes. Elytra short covering only first four or five basal segments of abdomen, apical cells very small.

Color straw yellow, frequently unmarked. Ocelli black. In dark specimens with faint markings on vertex. Four large brown spots on anterior margin of pronotum and veins of elytra heavily infuscated.

Genitalia: Female last ventral segment very short on lateral margins, then convexly rounded with a slight notch either side. Lateral portions of preceding segment conspicuously produced at either side. Male valve roundedly produced, twice as broad as long. Plates triangularly elongate, longer than combined basal width.

Described from a series of twenty specimens collected in Birmingham, Alabama, by the senior author June 16 and 17, 1928. Male holotype, female allotype and male and female paratypes in collection of the senior author.

These were collected in a very interesting habitat of short grasses along with *alboneura* and specimens of *Lonatura bicolor* and *L. notata*.

***Polyamia similaris* n. sp.**

Resembling *obtectus* in form and appearance but smaller with distinct male genitalia. Length 3 mm.

Vertex as in *obtectus*, bluntly angled, slightly wider between eyes than length at middle, equaling pronotum in length.

Color: The color pattern is almost like *obtectus*. Vertex with recurved arcs either side of apex. A pair of proximal spots at apex and one next each ocellus, a broken band between anterior margins of eyes and oblique markings either side on basal portion brown to black. Mottling on anterior margin of pronotum, brown. Wing veins rather heavily infuscated.

Genitalia: Last ventral segment arising from posterior margin of previous segment, produced rather abruptly to posterior margin which is trilobate. The central lobe is slightly broader and not quite as long as the lateral lobes. Lateral processes of preceding segment conspicuous at sides of last ventral segment. Male plates broad at base, short, triangular. One-third wider at base than long. Male oedagus frequently pulled out of genital chamber and lying dorsally. In this position with anterior end curving downwardly and with a basal spur on anterior ventral portion. Connectives very long.

Described from a large series of specimens from Clarksville, Tennessee. Collected by the senior author during June, July and August, 1915 and 1917. Also a series of specimens collected at Vienna, Illinois, during June, 1934, by Dr. H. H. Ross and the senior author. Male holotype, female allotype and paratypes in author's collection. Paratypes in Illinois Natural History Survey Collection.

This species has been confused with *obtectus* and *compactus*.

***Polyamia algosus*, n. sp.**

Resembling *fumidus* in size and appearance but paler in color and with distinct genitalia. Length 4.5 mm.

Vertex bluntly angled, one-fourth wider between eyes than length at middle.

Color: Vertex pronotum and scutellum pale yellow tinged with gray. Eyes dark. Elytra whitish subhyaline, slightly smoky, abdomen showing conspicuously through elytra.

Genitalia: Female last ventral segment sloping from lateral angles to posterior margin which is roundly notched either side of a broad median tooth which is slightly indented at middle so as to form a pair of pointed teeth. Side portions of preceding segment conspicuous at lateral margins. Male valve very short and narrow, lying entirely within the concavity of the last ventral segment. Plates elongate, triangular, almost as long as combined basal width. Pygofers rather short and broad at tips.

Described from one male and three female specimens collected at Wisconsin Rapids, Wis., July 20-26, 1930. Male holotype, female allotype, and female paratypes in author's collection.

It differs from *fumidus* in having a definite tooth on the female segment and by the shorter male plates and the shorter, broader pygofers.

***Hebecephalus obliqua* n. sp.**

Size and general appearance of *cruciatus* but with distinct coloration and genitalia. Length 2.5-2.7 mm.

Vertex bluntly angled almost as long as basal width between eyes.

Color: Vertex with a pair of black triangular spots at apex. A broad

oblique band extending from ocellus to center of vertex either side of middle, a pair of pale oblique markings either side on posterior half. Pronotum dark with five pale longitudinal lines. Elytra milky white with veins heavily infuscated.

Genitalia: Female last ventral segment truncated, with central third produced to form a triangular tooth which is slightly bifid at apex. Lateral angles of last ventral segment rounded off. Male plates resembling *cruciatus*, as long as combined width at base. Apices broad, obliquely truncate, a black spot at center of each plate. Tips of pygofers with heavy spines bent inwardly. Male valve with apex broad, truncated.

Described from a series of seven specimens collected at Redfish Lake and Stanley Basin, Idaho, August 3, 1930, by the senior author. Holotype female, allotype male, and male and female paratypes in author's collection.

***Hebecephalus algidus* n. sp.**

Resembling *vinculatus* in size and coloration but with vertex a little more sharply angled and with distinct genitalia. Length 3.5 mm.

Vertex bluntly angled but appearing pointed, a little wider between eyes than median length.

Color: Vertex white with a pair of spots near apex and a spot next either eye, brown. Two pairs of faint transverse bars on posterior half. Pronotum pale. Elytra milky white marked by two rather distinct brown transverse bands. The anterior extends obliquely forward from the costa and crosses the middle of the clavus. The posterior one crosses the anterior portion of the apical cells. The veins are not infuscated and are scarcely visible except where they are crossed by these bands.

Genitalia: Female last ventral segment deeply narrowly notched either side of a pair of central proximal teeth which are straight and closely appressed on inner margins, broad at base and with outer margins convexly rounded to form rather sharp apices. Side portions of underlying segment conspicuously produced beyond last ventral segment.

Described from a single female specimen collected in Alaska in 1921. Holotype female in collection of senior author.

***Hebecephalus borealis* n. sp.**

Resembling *vinculatus* in form, coloration and general appearance but much larger and with distinct genitalia. Length 4 mm.

Vertex bluntly angled, one-fourth wider between eyes than length at middle.

Color very similar to *vinculatus*. A row of triangular spots above margin sometimes merged with first transverse bar. Pronotum rather heavily marked with dark brown. Veins of elytra, rather uniformly and heavily infuscated, appearing slightly banded.

Genitalia: Female last ventral segment with prominent lateral angles, posterior margin rather deeply roundedly excavated either side of a pair of proximal median black teeth which are broad and with broadly rounded apices. Male valve broadly triangular. Plates short and broad, shorter than combined basal width, scarcely narrowed at apex which is obliquely cut off so that the outer margins are longer than the inner margins.

Described from one male and two female specimens collected at Nordegg,

Alberta, August 31, 1921. Male holotype, female allotype, and female paratype in collection of the senior author.

***Laevicephalus orientalis* n. sp.**

Resembling *uhleri* in form and appearance but with more sharply pointed vertex and distinct genitalia. Length 3.5-4 mm.

Vertex rather sharply angled as long or slightly longer on middle than basal width between eyes.

Color: Vertex creamy to bright yellow pronotum and scutellum greenish washed with yellow. Elytra varying in color, sometimes dark green with white or yellowish veins often with apices smoky. In case of the eastern Canadian or mountainous form, often with black elytra.

Genitalia: Female last ventral segment without lateral angles, sloping to middle of segment which is distinctly incised at middle leaving a pair of inconspicuous teeth at middle. The median two-thirds of posterior margin heavily black bordered. Male plates broad at base strongly convexly curved to rather blunt and broad apices. Pygofers greatly exceeding plates. Oedagus in lateral view appearing broad with a curved portion extending ventrally and posteriorly and produced by curving upwardly. This structure is open in the middle and appears as two parallel structures. In *uhleri* the terminal portion of the oedagus is pointed ventrally, widened dorsally and produced into two divergent pieces.

The male oedagus is quite different from *uhleri*. Whereas *uhleri* is a high altitude, western species, *orientalis* is an eastern form and may occur far north in Canada or in Southern Illinois, Tennessee, Pennsylvania, Virginia, D. C., and it apparently has a rather wide distribution. Described from a large series of specimens from Conewago, W. Chester, Kane and Greensburg, Pa., Fabyans N. H., Cranberry Lake, N. Y., Somerville, N. J., Ch. Bridge, Va., Saddleback Lake, Me., Sault Ste. Marie, Michigan, Lauzon, Que., and Eichorn, Shawneetown, Hardin, Elizabethtown, Hanging Rock and Cave In Rock, Illinois.

Holotype male and allotype female from Pennsylvania in author's collection. Paratypes in Herbert Osborn collection and the Illinois Natural History Survey collection.

***Laevicephalus rotundens* n. sp.**

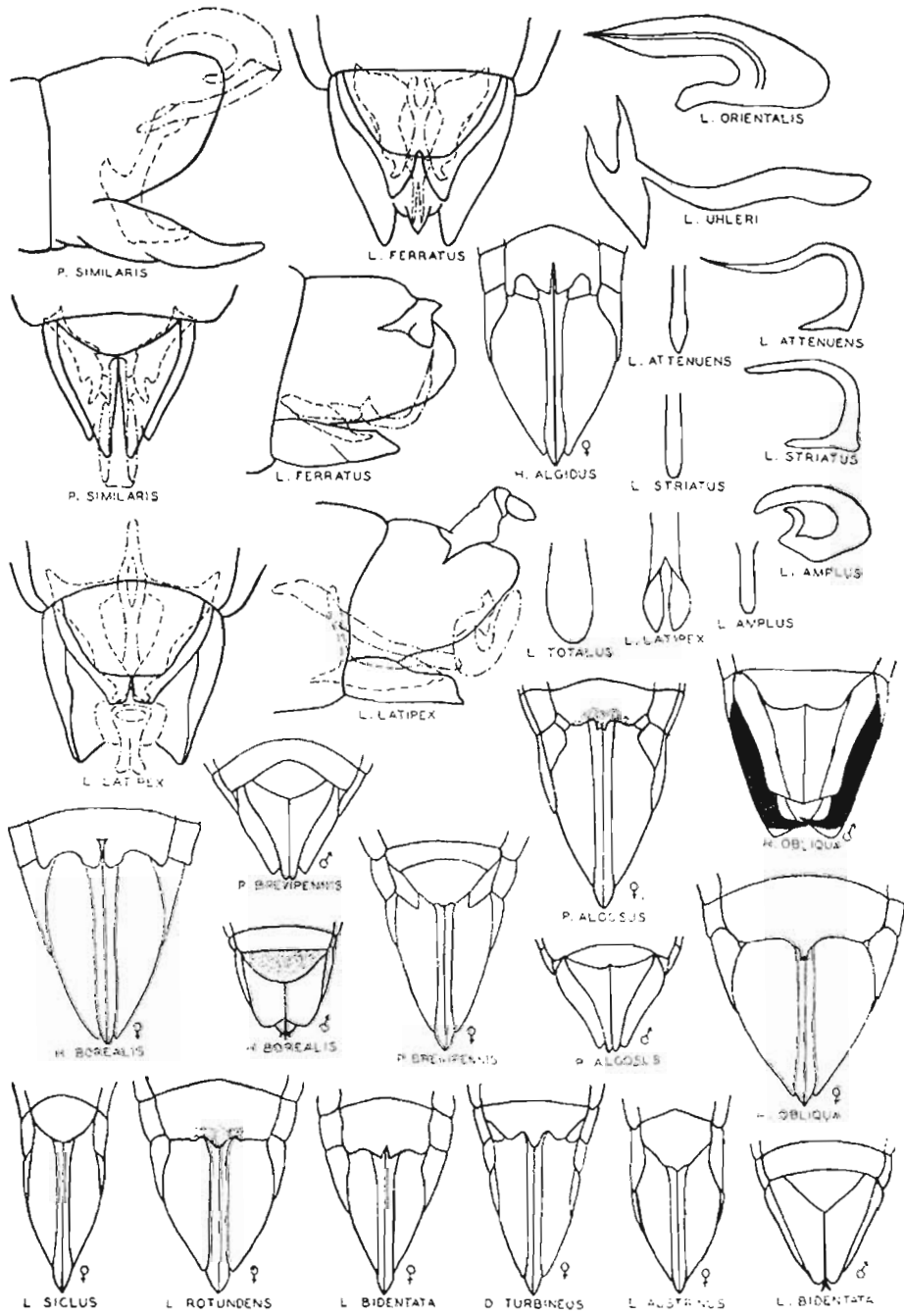
Resembling *acus* and *sylvestris* in size and general appearance but with different female genitalia. Length 3.5 mm.

Vertex strongly produced but bluntly pointed at apex, about one-fifth longer on middle than basal width between eyes.

Color yellow to pale green, ocelli black. Vertex with two faint diverging lines at apex brownish. Elytra subhyaline with conspicuous venation.

Genitalia: Female last ventral segment truncate with a definite notch either side of a rounded produced median tooth. Central third of segment embrowned.

Described from two female specimens collected at Orono, Maine, June 18, 1913, and August 1, 1913, and one female from Ft. Kent, August 28, 1913, by Professor Herbert Osborn. Female holotype and female paratype in Osborn Collection.



AMERICAN DELTOCEPHALOID LEAFHOPPERS

***Laevicephalus siclus* n. sp.**

Resembling *convergens* in general form and coloration but with different female genitalia. Length 3.5 mm.

Vertex pointed but with blunt tip, a little wider between eyes than length at middle.

Color: Vertex yellowish marked by a pair of rather broad brownish lines which arise at the apex extending along margin of vertex almost to ocellus then extending across either side of vertex almost to anterior margin of pronotum. Pronotum pale washed with yellow, disc darker. Elytra whitish subhyaline veins yellowish green.

Genitalia: Female last ventral segment broadly convexly rounded, without prominent lateral angles.

Described from two female specimens collected at Murtaugh, Idaho, June 21, 1930, by the senior author, a female specimen from Ft. Pierre, S. D., Sept. 21, 1920, by H. C. Severin and one female from Richfield, Utah, collected Sept. 20, 1927.

Female holotype and female paratypes in collection of senior author.

***Laevicephalus austrinus* n. sp.**

Resembling *siclus* but larger, more robust and without color markings. Length 4 mm.

Vertex bluntly angled, length at middle equalling basal width between eyes.

Color: Vertex yellowish, a faint brownish line extending from apex either side to ocellus. Pronotum and scutellum yellowish. Elytra greenish subhyaline, veins yellow.

Genitalia: Female last ventral segment with lateral angles rounded, median two-thirds rather abruptly and strongly produced more than one-third its length and convexly rounded. The margin slightly indented so as to appear trilobate.

Described from a single female specimen from Texas without specific locality. Female holotype in collection of senior author.

***Laevicephalus bidentata* n. sp.**

Resembling *collinus* in general appearance but with distinct genitalia. Length 4 mm.

Vertex bluntly angled, one-fourth wider between eyes than length at middle. Elytra shorter than abdomen, exposing its apical portion.

Color: Yellow unmarked, ocelli black. Teeth of last ventral segment usually brown.

Genitalia: Female last ventral segment with produced lateral angles, posterior margin shallowly concavely excavated either side of a broad median produced portion which is incised at center forming two distinct brown teeth which are produced beyond the lateral angles. Male plates as long as combined width at base. Broad at base gradually sloping to blunt rounded apices. Pygofers exceeding plates.

Described from two female and two male specimens collected at Pingree Park, Colorado, August 20, 1929, by Prof. J. G. Sanders. Female holotype, male allotype and male and female paratypes in collection of senior author.

***Laevicephalus ferratus* n. sp.**

Resembling *striatus* in form and appearance, distinguished only by the unique character of the genitalia. Length 3.5 mm.

Vertex bluntly angled, one-fourth wider between eyes than length at middle.

Color yellow washed with green, veins of elytra yellow.

Genitalia: Female segment shallowly concavely rounded as in *striatus*. Male plates scarcely exceeding valve, very similar to *striatus*. Connective very short, in ventral view with a rounded horseshoe shaped base. Oedagus short, angularly bent and directed upward. Apex sharply pointed appearing bifurcate in dorsal view.

The oedagus and connective are remarkably different from *striatus*.

Described from one male and two female specimens collected at Presque Isle, Penna., by the senior author, July 21, 1920. Holotype male, allotype female and female paratype in author's collection.

***Laevicephalus attenuens* n. sp.**

In form and appearance resembling *striatus* but with distinct male genitalia. Length 3.5 mm.

Vertex bluntly angled, apex almost rounded, one-fourth wider between eyes than length at middle.

Color yellowish to green. Vertex with a pair of triangular spots just back of apex, a broken band between anterior margins of eyes and another one on posterior portion. Pronotum usually dark in color. Elytra with pale veins heavily infuscated.

Genitalia: Female last ventral segment truncate, slightly broadly produced either side of a broad shallow v-shaped notch at centre. Male valve and plates not different from *striatus*. Male oedagus longer than *striatus* tapering to fine attenuated apex. Normally extending dorsally then curved downward and forward forming an arched portion and with apex very delicate and curved dorsally so as to form a slight hook at apex.

Described from a series of male and female specimens collected at Yellowstone Park, Wyoming, July 4, 1930, by the senior author. Male holotype, female allotype, and male and female paratypes in author's collection.

***Laevicephalus latipex* n. sp.**

Resembling *striatus* in form and appearance, but with different color markings and distinct male genitalia. Length 3.7-4 mm.

Vertex bluntly angled, a little more than one-fourth wider between eyes than length at middle.

Color pale brown or green. Vertex with a pair of oblique dashes at apex extending along margin and another pair along margin just before ocelli. A pale interrupted band across vertex just back of these and oblique dashes of brown on posterior half. Elytra usually heavily infuscated.

Genitalia: Female last ventral segment shallowly concavely rounded. Male external genitalia not different from *striatus*. Male oedagus thick in lateral view and rather sharply curved back upon itself. In dorsal view with apex rather abruptly broadened to twice its width on apical third, formed by the dorsal portion of the oedagus tube curving outward as the oedagus is directed forward.

Described from a series of specimens collected at Pike's Peak, Colorado, June 23, 1919, by J. H. Pollock, specimens from Pingree Park, Colo., August 20, 1929, by J. G. Sanders, Estes Park, Colo., August 29, 1920, by H. C. Severin and at Lincoln and Omaha, Nebraska, June and July, 1932, by Dr. Dorothy M. Johnson. Male holotype, female allotype and male and female paratypes in author's collection, paratypes in collection of Dr. Johnson.

***Laevicephalus totalus* n. sp.**

Resembling *striatus* in form and appearance but with distinct male genitalia and usually distinctly marked. Length 3.7-4 mm.

Vertex bluntly angled more pointed than in *latipex*, almost as long on middle as basal width between eyes.

Color yellowish with variable markings. Vertex usually marked with brown so as to form a somewhat definite broad longitudinal stripe extending from apex to anterior margin of pronotum on either side. Pronotum with longitudinal stripes brownish. Elytra partially infuscated.

Genitalia: Female last ventral segment roundedly notched either side near lateral angles and broadly roundedly notched at center giving the margin a four-lobed appearance. Male valve and plates not different from *striatus*. Male oedagus shorter than in *striatus* in dorsal view appearing greatly flattened and several times as broad as *striatus* throughout its entire length.

Described from a large series of specimens from Murtaugh, Idaho, collected by the senior author, June 21, 1930, and a series of specimens in the Osborn collection from Cane Tree and Cattail Spring, Wyoming, collected in August and September 1909 and 1906. Holotype male, allotype female, and male and female paratypes in collection of senior author. Male and female paratypes in Osborn collection.

***Laevicephalus amplus* n. sp.**

Resembling *striatus* in form and general appearance but larger and with different coloration and distinct male genitalia. Length 3.7-4 mm.

Vertex bluntly angled, almost one-fourth wider between eyes than length at middle.

Color: Vertex yellowish, a pair of long heavy oblique dashes extending from apex along margin and a pair of linear spots just above ocelli, brown. Posterior portion of vertex with faint markings. Scutellum washed with yellow. Elytra with veins pale, heavily infuscated.

Genitalia: Female last ventral segment broadly concavely rounded. Male valve and plates not differing from *striatus*. Male oedagus short and broad, tubular in form with circular opening on dorsal surface but not broadened or enlarged at apex. The oedagus is much shorter and broader than *striatus*.

Described from a pair of specimens collected at Bakersfield, California, by Professor Herbert Osborn. Male holotype and female allotype in Osborn collection.

***Deltocephalus turbineus* n. sp.**

Resembling *fuscinevus* in general form but with different coloration and distinct genitalia. Length 4 mm.

Vertex not strongly produced, bluntly angled, about one-third wider between eyes than median length.

Color: Pale brownish marked with dark brown. Vertex with a pair of faint spots just above apex, a darker pair next each ocellus, a narrow interrupted transverse band between ocelli and two oblique dashes either side on posterior portion brown. Pronotum dark brown marked with five pale longitudinal vittae. Elytra brownish, rather opaque, veins rather obscure. Second sector divided by two cross veins on anterior half.

Genitalia: Female last ventral segment with narrow lateral margins then sloping to posterior margin which is deeply notched so as to form three rather definite lobes which are angularly produced: the central one is longer and more narrow and appears as a broad tooth. Lateral portions of preceding segment conspicuous at lateral margins of last ventral segment.

Described from a single female specimen collected at Fowler, Colorado, June 9, 1904, by E. S. G. Titus. Holotype female in author's collection.