Reprinted from the JOURNAL OF THE ELISHA MITCHELL SCIENTIFIC SOCIETY
Vol. 65, No. 1, June, 1949

THE REDESCRIPTION OF TWENTY-ONE SPECIES OF AREOPIDAE DESCRIBED IN 1923

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PLATES 1–4 AND ONE TEXT FIGURE

In 1923 the author published a "Key to the Fulgoridae of Eastern North America" (Jour. Elisha Mitchell Sci. Soc. **38:** 139–230, pls. 38–70) in which he described twenty-one new species of the Family Areopidae. At that time not so much attention was being paid to the details of the male genitalia as is now required for the specific determination of species of this family, hence it has been deemed best to redescribe these species from the types.

In order to understand clearly the terminology used in describing the male genitalia of this family, a generalized drawing of the male genitalia of the group is attached. (Text fig. 1). The male genitalia of the Areopidae consists of the modified ninth, tenth, and eleventh abdominal segments. The ninth abdominal segment usually consists of a greatly swollen, somewhat spherical element called the pygofer. The ninth segment is open caudad. This opening is known as the genital opening. The genital opening is usually divided into two areas: the more dorsal, anal region, surrounding the anal segment (tenth segment) and the anal spine (eleventh segment); and the ventral area or genital region. The genital region is divided into an inner compartment and outer compartment by the diaphragm. The anal angle which is usually more or less prominent separates the anal region from the genital region. The aedeagus and its connectives are in the inner compartment and the genital styles are in the outer compartment. The connectives between the aedeagus and genital styles are composed of a basal connective and a pair of aedeagal struts which have a characteristic shape that is of importance in identifying the species. The ventral area of the genital opening is sometimes distinctly separated from the lateral margins by the ventral angles, and in some genera a pair of distinct plates are formed on the ventral border. These may be known as genital plates. In other genera the ventral area may be distinctly separated from the lateral margins of the pygofer which are usually distinctly swollen. This structure may be known as the ventral plate. The genital styles are sometimes simple, flattened, plate-like structures. They may, however, be very elaborate structures with a basal angle strongly developed or with the apical angles developed into elaborate and sometimes branched structures. The aedeagus is usually simple and tubular, sometimes with rows of spines in various areas, sometimes with distinct dorsal processes usually on basal half or with lateral processes usually on basal area. The dorsal margin of the diaphragm which bounds the inner chamber of

the ninth segment is sometimes modified with distinct plates or spines known as the plates of the genital armature. The tenth segment is usually provided with one, sometimes two, pair of anal spines. These spines are sometimes short, produced as anal lobes, sometimes very long, reaching in certain genera to the lower margin of the genital opening. The eleventh segment, known as the anal style, is usually simple, more or less conical and attenuate toward the apex.

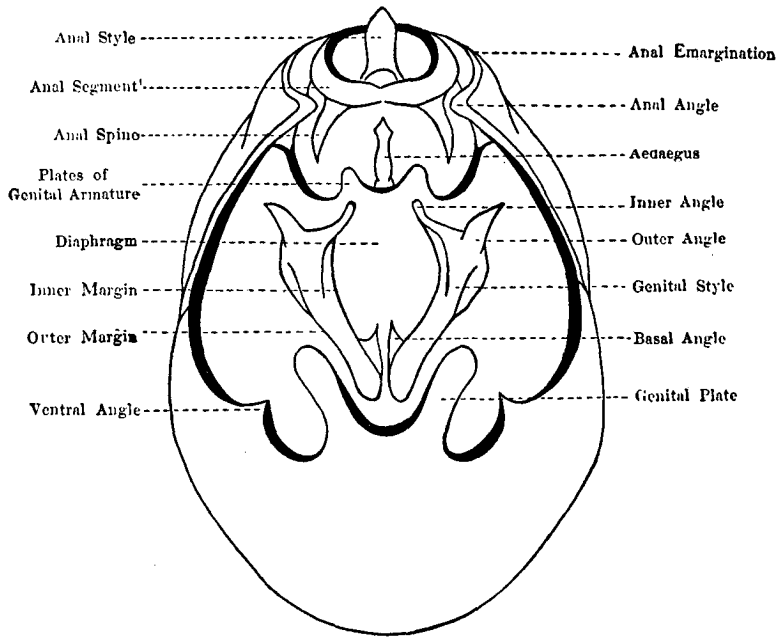

FIG. 1. Generalized view of the caudal aspect of the male genitalia of Areopidae.

Stenocranus arundineus Metc.

(Metcalf 1923a: 197)

(Pl. 1, fig. 5; Pl. 4, fig. 1)

This species may be recognized by its general light orange yellow color without conspicuous black markings except the black eyes and broad short vertex.

Pygofer elongate, narrow. Genital opening elongate, narrow, the outer compartment shallow. Anal angles not produced; ventral angles obtusely produced. Genital styles curving laterad and then gradually attenuate to acute apices which overlap at the tips, exceeding the dorsal margin of the diaphragm. Diaphragm narrow; dorsal margin broadly incised. Anal segment elongate, narrow, somewhat spatulate when viewed dorsad with two pairs of anal spines; the inner pair narrow, gradually acuminate to sharp apices which do not reach the dorsal margin of the diaphragm; outer pair flat, broadened somewhat to the apical third, then suddenly constricted, narrowing to acute apices which are overlapped by the dorsal margin of the diaphragm. Anal style narrow and elongate. Ae-

deagus slender with three apical processes; the dorsal process elongate, recurved at the apex. Aedeagal strut slender, elongate, expanded apically.

Holotype: ♂, Swannanoa, N. C., August 9, 1918. Herbert Osborn and Z. P. Metcalf.

Allotype: ♀, Swannanoa, N. C., August 9, 1918. Herbert Osborn and Z. P. Metcalf.

Paratypes: 10 ♂♂ and 10 ♀♀, collected at Swannanoa, North Carolina, August 1918, from *Arundinaria* sp.

Megamelanus terminalis Metc.

(Metcalf 1923a: 198)

(Pl. 1, fig. 4; Pl. 4, fig. 14)

This species may be recognized by the bicolored wings of the brachypterous male, the strongly spatulate vertex, and the straight lateral carinae of the pronotum.

Pygofer elongate when viewed caudad, longer than wide. Genital opening nearly twice as long as broad. Anal angles obtusely rounded. Diaphragm rather broad; median area distinctly produced, lobe-like. Genital armature with a pair of spine-like processes. Genital styles elongate; outer margin nearly straight; inner margin broadly incised; outer angle broadly rounded; inner angle strongly, acutely produced; genital styles meeting at their apices on the median line. Aedeagus tubular, broadly obtuse at the apex. Anal segment very short; two pairs of anal spines; dorsal pair very short, little more than the produced ventral angles; ventral pair elongate, slender, extending well below the dorsal margin of the diaphragm. Anal style relatively large. Aedeagal strut rather broad, broadly curved.

Holotype: ♂, Carolina Beach, Wilmington, N. C., June 4, 1920.

Allotype: ♀, Carolina Beach, Wilmington, N. C., June 4, 1920.

Paratypes: 5♂♂, Carolina Beach, Wilmington, N. C., June 4, 1920; 4♂♂, Cape Charles, Virginia, July 31, 1920, D. M. DeLong; 10♀♀, Carolina Beach, North Carolina, June 1920; 2♀♀, Cape Charles, Virginia, August 1, 1920, D. M. DeLong.

Megamelanus dorsalis Metc.

(Metcalf 1923a: 199)

(Pl. 2, fig. 7; Pl. 4, fig. 8)

This species may be recognized by its yellowish testaceous head and thorax, and blackish wings, and distinct genitalia.

Pygofer when viewed ventrad elongate, narrow; when viewed laterad elongate, nearly oval. Genital opening when viewed caudad broader than long. Genital chamber deep and the anal sinus deep. Anal angles not much produced. Genital styles elongate, club-shaped; outer margin sinuate; inner margin broadly incised toward the apex; inner and outer angles produced. Diaphragm broad, produced into a pair of curved hook-like processes on the median line, broadly

carinate ventrad of these processes. Anal segment short, rather broad, almost concealed by the pygofer with a pair of short, hook-like anal spines. Anal style short and broad, nearly triangular in outline. Aedeagus elongate, obtuse at the apex. Aedeagal strut rather broad and nearly straight.

Holotype: ♂, Atlantic City, New Jersey, August 25. W. J. Gerhardt.

Allotype: ♀, Atlantic City, New Jersey, August 25. W. J. Gerhardt.

Paratype: ♂, Pascagoula, Miss., August 6, 1921. H. L. Dozier.

Megamelanus lautus Metc.

(Metcalf 1923a: 200)

(Pl. 1, fig. 1; Pl. 4, fig. 6)

This species bears a superficial resemblance to *Megamelanus dorsalis* but the vertex is longer, narrower, the wings are more elongate, brownish fuscous, spotted with white, and the genitalia are distinct.

In this species the pygofer is short and broad; when viewed laterad nearly one and one-half times as long as broad; the dorso-lateral angle broadly rounded, not conspicuous; when viewed caudad the length about the same as the width. Outer chamber shallow. Genital styles nearly rectangular, thick, about five times as long as broad. Bases closely approximate, diverging from each other at about 35 degrees; outer apical angle broadly rounded; inner apical angle acutely produced, reaching beyond the dorsal margin of the diaphragm. Diaphragm large; dorsal margin broadly U-shaped; median line slightly elevated; genital armature with a pair of short, plate-like processes slightly deflexed on the ventral apical angle. Anal segment large; caudal angle produced into a narrow lobe-like process. Anal spines elongate, very slender, gently curved; apex rather acute. Anal style short, broad, ovate. Aedeagus short, obtuse at the apex, complex at the base. Aedeagal strut elongate, narrow at base, widened at apex.

Holotype: ♂, Loma, Texas, December 11, 1910. In the collection of the Illinois State Laboratory of Natural History.

Allotype: ♀, Loma, Texas, December 11, 1910.

Paratypes: ♂, Sarita, Texas, December 5, 1911; ♂, Ocean Springs, Miss., August 15, 1921. H. L. Dozier.

Megamelus distinctus Metc.

(Metcalf 1923a: 201)

(Pl. 2, fig. 10; Pl. 3, fig. 6)

This species may be recognized by its pale frons with the black clypeus and distinct genitalia.

Pygofer elongate. Genital plates distinct, consisting of a pair of lateral lobes which are strongly inflated, broadly rounded at the apex and a median pair of flattened plate-like structures which are triangular at the base; apex produced into a tongue-like process. Outer chamber shallow. Genital styles small, almost concealed by the genital plates, somewhat enlarged basad, gradually

narrowed toward the apex with the inner angle produced triangular. Aedeagus very long, reaching almost to the anterior margin of the pygofer when viewed caudad, broadly curved when viewed laterad with a distinct dorsal process which is obtuse apically, arising from the apex of the basal third. Aedeagal strut short, flat, slightly undulate on both margins. Anal segment short. Anal style elongate.

Holotype: ♂, Portland, Conn., July 25, 1920. B. H. Walden.

Megamelus aestus Metc.

(Metcalf 1923a: 202)

(Pl. 2, fig. 5; Pl. 4, fig. 2)

This species may be recognized by its general blackish color with a median pale vitta evident dorsad and distinct genitalia. Face, antennae, legs, and venter except the abdomen, pale yellow.

Pygofer divided into two areas. A broad ventral plate evident with the lateral areas strongly inflated with a pair of median genital plates elongate, nearly parallel-sided to the apex which is somewhat obtuse. Dorsal area not so strongly inflated. Genital styles small, enlarged at the base, constricted at the middle with the apex expanded; inner angle elongate, rather acute; outer angle broadly rounded. Diaphragm projecting dorsad with an elongate U-shaped incision on the median line and bearing two pairs of acute, spine-like processes; the dorsal pair short; ventral pair elongate, apex curved outward. Outer chamber deep. Aedeagus elongate, slender with an elongate lateral process originating near the base and more than half as long as the aedeagus; with numerous spines on the middle third, apical third smooth and spineless. Aedeagal strut nearly straight, parallel-sided. Anal segment greatly flattened, lateral lobes broadly rounded; in dorsal aspect somewhat spatulate, lateral margins expanding somewhat from the base to the broad apical lobes. Anal style elongate, sagittate with a distinct dorsal lobe at the base.

Holotype: ♂, Carolina Beach, N. C., June 7, 1920. Z. P. Metcalf.

Megamelus inflatus Metc.

(Metcalf 1923a: 203)

(Pl. 2, fig. 3; Pl. 4, fig. 13)

This species may be recognized by its almost uniform pale yellow color with the pygofer of the male strongly inflated, ventral plate complex.

Pygofer rather large, broadly inflated. Ventral plate very distinct; quadrate basal area distinctly set off from the pygofer; dorsal margin with a distinct V-shaped median notch and a small but distinct median spine; genital plates strongly produced with a V-shaped median notch at the apex. Genital styles approximate to apical third, then strongly divergent to rounded apical lobes with the inner angle somewhat produced. Diaphragm long with a V-shaped notch on dorsal margin; dorsal margin produced on the median line. Aedeagus long and slender, nearly straight with a distinct tooth on the dorsal margin about

the middle. Aedeagal strut long and slender, distinctly elbowed at the apex. Anal segment elongate without anal spines. Anal angle inconspicuous. Ventral angle concealed by the genital plates.

Holotype: ♂, Mill Neck, New York, June 19. N. Banks. In the collection of the Museum of Comparative Zoology.

Paratype: ♂, Mill Neck, New York, June 19. N. Banks.

This distinct little species has evidently been confused in the past with *Megamelus notulus* but the male genitalia are entirely distinct.

Megamelus uncus Metc.

(Metcalf 1923a: 204)

(Pl. 2, fig. 11; Pl. 3, fig. 2)

This species may be recognized by its general pale yellow color with the lateral borders of the abdomen broadly black and distinct male genitalia.

In this species the pygofer is broad, strongly inflated. Genital plates arising from a somewhat quadrate ventral plate at the base, narrow, elongate, and incurved. Outer genital chamber large with the diaphragm high, distinctly produced on median area with an apical V-shaped notch, thus producing a pair of plates which are distinctly curved caudad. Genital styles broad, flat, with the outer angle strongly produced. Aedeagus elongate, slender, decurved at the apex with slender recurved spine near apex of basal half. Aedeagal strut, elongate, narrow, somewhat undulate. Anal segment long with a distinct pair of anal spines which are long and acute. Anal style short, rather broad.

The holotype and allotype of this species were labeled simply Anticosti. The only Anticosti listed in Lippincott's Gazetteer is Anticosti Island in the St. Lawrence Bay. I have since learned, however, that these specimens were collected along Anticosti Creek in the District of Columbia.

Holotype: ♂, Anticosti, D.C., August 29. In the collection of the Museum of Comparative Zoology.

Allotype: ♀, Anticosti, D. C., August 29. In the collection of the Museum of Comparative Zoology.

Megamelus anticostus Metc.

(Metcalf 1923a: 204)

(Pl. 2, fig. 13; Pl. 3, fig. 4)

This species may be recognized by the evident pale dorsal vitta, and it is very close to *Megamelus uncus*, but differs in the details of the genitalia.

Pygofer short and very broad. Ventral area strongly inflated and deeply incised on either side of the genital plates. Genital plates elongate; inner margin incised just before the apex with the inner angle obtusely produced; outer margin nearly straight. Genital chamber deep. Diaphragm high, produced into a broad, nearly quadrate plate on the median line with the plate deeply triangularly incised mediad. Genital styles nearly horizontal, enlarged at the base, reduced to acute points at the apex. Aedeagus long and slender, needle-like,

somewhat curved at the base with an elongate recurved process at the apex of the basal third. Aedeagal strut long and narrow, distinctly sinuate. Anal segment elongate with a pair of distinct anal spines which are curved outward. Anal style short and broad.

The holotype and allotype of this species were labeled simply Anticosti. The only Anticosti listed in Lippincott's Gazetteer is Anticosti Island in the St. Lawrence Bay. I have since learned, however, that these specimens were collected along Anticosti Creek in the District of Columbia.

Holotype: ♂, Anticosti, D. C., August 29.

Allotype: ♀, Anticosti, D. C., August 29.

Pissonotus speciosus Metc.

(Metcalf 1923a: 205)

(Pl. 1, fig. 6; Pl. 3, fig. 3)

This species may be recognized by its small size, bright colors, and distinct genitalia.

Pygofer short, narrow and high. Ventral angles slightly produced. Genital opening large; anal angles inconspicuous. Outer chamber rather deep. Genital styles flat, plate-like, approximate on their bases, diverging at an angle of about 90 degrees, then twisting with the inner apical angle produced, the outer apical angle broadly rounded. Diaphragm fairly high, distinctly produced in an acute triangular plate; anal segment rather large with two broadly flattened anal spines which are broad at the base, suddenly constricted at about the middle and then slightly expanded to the obtuse apex. Anal style short, terete at the base, somewhat flattened and rather acute at the apex. Aedeagus tubular, not very long. Aedeagal strut elongate, slightly obtusely expanded on the dorsal margin near the base.

Holotype: ♂, Wrentham, Mass., June 27, 1920. G. W. Barber.

Paratypes: 2♂♂, Wrentham, Mass., June 27, 1920. G. W. Barber.

Pissonotus fulvus Metc.

(Metcalf 1923a: 206)

(Pl. 2, fig. 1; Pl. 4, fig. 12)

This species may be recognized by its almost uniform ochraceous orange color with only the eyes and tips of the tarsi black.

Pygofer large. Genital region of the genital aperture small, almost completely covered by the median genital plate; anal portion very large; anal emargination broadly carinate. Genital plate very large, consisting of two obtuse lateral lobes and a single median lobe which is broadly oval in outline with the dorsal margin with a broad V-shaped notch. Diaphragm large, broadly curved on the dorsal margin. Anal segment large; anal spines broad and flat, broadly oval at the base, suddenly constricted at the middle and narrowed to the acute apex. Genital styles small. Anal style short and broad, almost circular in outline. Aede-

agus elongate, tubular with two pairs of processes at the apex. Aedeagal strut nearly straight, slender, somewhat enlarged at the base and slightly curved.

Holotype: ♂, Paxton, Illinois, July 30, 1916.

Allotype: ♀, Paxton, Illinois, July 30, 1916.

Paratype: ♂, Metropolis, Illinois, August 19, 1916.

Pissonotus nigridorsum Metc.

(Metcalf 1923a: 206)

(Pl. 1, fig. 7; Pl. 4, fig. 4)

This species may be recognized by its general shining black color with the clypeus and legs bright yellow.

Pygofer elongate, narrow. Genital opening narrow, elongate; anal emargination deep. Outer genital chamber deep. Genital plates slender, blade-like, acute at the edge. Genital styles broad, thin, approximate at the base, divergent at an angle of about 90 degrees; the apices strongly reflexed, cup-like. Diaphragm simple with a deep V-shaped notch on the dorsal margin. Aedeagus when viewed caudad, elongate, slender, decurved, sagittate at the apex; when viewed laterad, rather broad and flat. Anal segment rather short, almost included in the anal emargination, with a pair of horn-like anal spines, which are somewhat bulbous at the base, then terete and acuminate, recurved. Anal style elongate, slender.

Holotype: ♂, Greenburg, Pa., September 18, 1904. M. Wirtner.

Delphacodes shermani Metc.

(*Liburnia shermani* Metcalf 1923a: 207)

(Pl. 1, fig. 8; Pl. 3, fig. 1)

This species is close to *L. campestris* Van Duzee but may be recognized by the entirely distinct genitalia.

Pygofer when viewed ventrad slightly broader than long, nearly quadrate, with a distinct median impression caudad; when viewed caudad almost as broad as high, the genital opening very large; anal angles scarcely produced; ventral angles inconspicuous; anal emargination not very deep. Diaphragm very high with the dorsal margin incised, V-shaped, with the lateral margins slightly sinuate; median area somewhat produced. Outer chamber not very deep. Genital styles broad and somewhat bulbous at the base, stem narrow, apex broad and capitate with both the inner and outer angles strongly produced; outer angle obtuse, inner angle acute. Aedeagus broad and short, obtuse at the apex. Aedeagal strut slender, not very long. Anal segment when viewed dorsad nearly quadrate in outline; when viewed caudad short, terete with the median area somewhat produced and a pair of short triangular anal spines. Anal style short and broad.

Holotype: ♂, Raleigh, N. C., late July. F. Sherman.

Allotype: ♀, Raleigh, N. C., late July. F. Sherman.

Paratypes: 5 ♀♀, Raleigh, N. C., late July. F. Sherman.

Delphacodes campestris Van D.

(Muir and Giffard 1924a: 25)

(*Liburnia unda* Metcalf 1923a: 207)

(Pl. 2, fig. 6; Pl. 4, fig. 7)

This is a pale species quite similar to *Liburnia detecta* Van Duzee but may be recognized by its distinct genitalia.

Pygofer short. Genital opening slightly longer than broad; ventral angle slightly produced; anal angles strongly produced; the lateral margin of the genital opening curving outward between the two angles. Outer chamber shallow. Diaphragm rather broad. Genital armature consisting of two reflexed processes which are lined with minute spines on the outer margin; the two are closely appressed on the median line and give the impression, at low power, of consisting of a single tongue-like process. Genital styles elongate, reaching the dorsal margin of the diaphragm, closely approximate on the inner margin; basal angles slightly but not conspicuously produced; outer margin broadly curved; outer angle obtuse; inner margin curved outward at the base and then curved inward toward the apex; the apical angle rather conspicuous. Ventral sinus shallow. Aedeagus compressed, broad at the base, narrow at the apex and produced into a conspicuous dorsal process, usually with a row of minute spines along the dorsal margin at the base. Aedeagal strut compressed, nearly linear in outline with the dorsal apical margin somewhat produced. Anal segment short, nearly concealed by the strongly produced margins of the anal emargination. Anal style elongate, narrow, slightly sagittate.

When I described *Liburnia unda* originally, I had an entirely different species in mind as the *Liburnia campestris* Van D. Muir and Giffard's re-examinations, descriptions, and drawings of the type of *campestris* enable me to make this correction in the synonomy.

Holotype: ♂, Carolina Beach, near Wilmington, N. C., June 6, 1920. Z. P. Metcalf.

Allotype: ♀, Carolina Beach, near Wilmington, N. C., June 6, 1920. Z. P. Metcalf.

Paratype: ♂, Carolina Beach, near Wilmington, N. C., June 6, 1920. Z. P. Metcalf.

Euidella triloba Metc.

(*Liburnia triloba* Metcalf 1923a: 208)

(Pl. 2, fig. 2; Pl. 3, fig. 5)

This species may be recognized by its dull ochraceous brown color, large size, and distinct genitalia.

Pygofer small. Genital region of the genital opening very large; anal region broad and short; anal angle conspicuously produced, elongate, triangular, obtuse at the apex; outer chamber deep. Genital styles complex; bases approximate, shaft curved caudad, then dorsad and terminating in a tri-lobed apical

region with the inner angles overlapping at the apex. Diaphragm not very broad with a broad U-shaped dorsal margin; genital armature complex, consisting of two pairs of spines; a large median pair which curve dorsad, caudad and then ventrad; and a slender lateral pair which curve toward the median line and dorsad to reach the lower margin of the anal segment. Anal segment small without anal spines. Anal style elongate, ovoid. Aedeagus curved, rather broad at the base, narrowed apically and suddenly expanded into two obtuse lobes. Aedeagal strut elongate with a distinct finger-like process at the apex.

Holotype: ♂, New Orleans, La.

Paratypes: 2 ♂♂, Titusville, Fla., November 8, 1911. Cornell University collection.

Delphacodes alexanderi Metc.

(*Liburnia alexanderi* Metcalf 1923a: 209)

(Pl. 2, fig. 4; Pl. 4, fig. 5)

This species may be recognized by the pale yellow color of the head, thorax and legs; the frons, wings and abdomen largely black.

Pygofer rather long. Genital opening large; anal and ventral angles barely indicated. Diaphragm not very high. Outer chamber rather deep. Genital styles conspicuous, approximate on the basal third, then diverging at an angle of about 70 degrees; together somewhat lyre-shaped; outer margin strongly sinuate; outer apical angle acute; inner margin incised on the basal half, the apical half broadly curved to the acute apex. Aedeagus short and blunt, apical area with two rows of small spines, the apical third with a row of stout dorsal spines. Aedeagal strut rather stout, T-shaped. Anal segment small; anal spines close together, somewhat horn-like and rather acute at the incurved apex. Anal style sagittate.

Holotype: ♂, Swannanoa, N. C., August 25, 1919. H. Osborn and Z. P. Metcalf.

Paratypes: ♂, Urbana, Illinois; ♂, Dongola, Illinois, August 21, 1916; ♂, Tupelo, Miss., March 22, 1921, H. L. Dozier; ♂, Falls Church, Va., August 24, N. Banks.

Delphacodes fulvidorsum Metc.

(*Liburnia fulvidorsum* Metcalf 1923a: 210)

(Pl. 2, fig. 9; Pl. 3, fig. 7)

This species may be recognized by the pale yellow color of the frons, vertex, thorax and legs; wings and the abdomen largely black.

Pygofer short and broad. Anal angle produced. Outer chamber shallow. Genital styles rather broad, short; outer margin nearly straight; inner margin broadly incised; apical margin nearly truncate; inner angle slightly produced; outer angle broadly produced, when viewed laterad distinctly sock-shaped. Diaphragm short, incised on the dorsal margin with an obtuse median carina below the incision; genital armature consisting of a pair of closely approximate

short spine-like processes. Aedeagus elongate, tubular with a distinct spine-like process at the base. Aedeagal strut short, L-shaped, basal portion slipper-shaped with an elongate heel. Anal segment short, broad, with a pair of slender anal spines which are curved outward. Anal style elongate, slender.

Holotype: ♂, Brownsville, Texas, December 10, 1910.

Paratypes: 2 ♂♂, Brownsville, Texas, December 10, 1910.

Euidella gerhardi Metc.

(*Liburnia gerhardi* Metcalf 1923a: 210)

(Pl. 1, fig. 2; Pl. 4, fig. 11)

This species may be recognized by its general bright ochraceous yellow color, with the frons narrow, and distinct genitalia.

Pygofer very short and broad. When viewed caudad about as broad as high. Genital opening large; anal angles strongly produced. Outer chamber rather deep; ventral angles not much produced, very obtuse. Genital styles biramose; bases bulbous; inner angle strongly produced, broadly obtuse; outer angle elongate, acute; a distinct, somewhat horn-like process arising from the inner surface just beneath the inner angle. Diaphragm large, broadly V-shaped. Aedeagus short, obtuse at the apex. Anal segment short. Anal spines elongate, reaching the dorsal border of the diaphragm, horn-shaped, curving toward the median line and rather obtuse at the apex. Anal styles short, almost as broad as long, somewhat tongue-like.

Holotype: ♂, Beverly Hills, Ill., August 31, 1907. W. J. Gerhard.

Allotype: ♀, Beverly Hills, Ill., August 31, 1907. W. J. Gerhard.

Paratype: ♀, Chicago, Ill., July 5, 1907.

Delphacodes staminata Metc.

(*Liburnia staminata* Metcalf 1923a: 211)

(Pl. 1, fig. 3; Pl. 4, fig. 10)

This species may be recognized by its pale color, with the frons strongly constricted between eyes, the genital styles slender, the apices suddenly expanded.

Pygofer elongate; when viewed laterad, broadly triangular in outline; when viewed caudad, longer than broad. Genital opening large; anal region especially large; anal angles not produced; ventral angles broadly obtuse, not conspicuous. Diaphragm not very high, produced into a broad median lobe; median line strongly carinate. Genital styles slender, elongate, produced beyond the dorsal margin of the diaphragm; bases approximate; outer margin broadly sinuate; inner margin nearly straight; outer apical angle produced; inner apical angle produced; apical margin broadly produced. Anal segment short; anal spines broad, flat, reaching ventrad beyond the dorsal margin of the diaphragm. Anal style short. Aedeagus simple.

Holotype: ♂, Chicago, Ill., July 25. W. J. Gerhard.

Delphacodes waldeni Metc.

(*Liburnia waldeni* Metcalf 1923a: 212)

(Pl. 2, fig. 12; Pl. 4, fig. 3)

This species may be recognized by its uniform dull brown color and short male pygofer.

Pygofer short and very broad. Genital opening narrow, distinctly widened dorsad; anal angles somewhat produced. Genital styles elongate, rather narrow; bases approximate; basal angle obtusely produced; outer margin broadly incised; inner margin also incised; inner and outer apical angles short, triangular; apical margins produced into an elongate triangular process reaching the anal segment. Outer genital chamber rather deep. Diaphragm not very broad, deeply incised on the thick, dorsal margin. Anal segment broad; anal spines short; anal style short, broad, somewhat sagittate. Aedeagal strut somewhat T-shaped. Aedeagus short, broad, tongue-shaped, obtuse at the apex.

Holotype: ♂, New Haven, Conn., August 8, 1920. B. H. Walden.

Criomorphus conspicuus Metc.

(Metcalf 1923a: 212)

(Pl. 2, fig. 8; Pl. 4, fig. 9)

This species has a general resemblance to *Phyllodinus flabellatus* Ball but the tibiae are terete, not expanded and the median frontal carina is forked on the clypeal margin.

Pygofer short and broad. Genital opening broader than long, almost triangular in outline with a shallow ventral sinus. Outer chamber shallow. Genital styles elongate, nearly horizontal at the base; bases approximate; apex acute, elongate, curved dorsad; outer and inner margins distinctly sinuate. Diaphragm long; dorsal margin produced on median line into a short triangular tube which projects caudad in a triangular process, distinctly carinate on the median line. Anal segment short; anal spines elongate, rather broad at the base, overlapping the dorsal margin of the diaphragm. Anal style short, triangular. Aedeagus short, somewhat expanded at the base and slightly bulbous at the apex which is set with numerous short triangular spines. Aedeagal strut short, somewhat T-shaped, distinctly projecting on the caudal border.

Holotype: ♀, New Haven, Conn., June 1920. B. H. Walden.

Paratypes: ♀, Urbana, Ill., June 1913; ♀, Forest Hills, Mass., August 1919.

DESCRIPTIONS OF PLATES

PLATE 1

Fig. 1. Megamelanus lautus
Fig. 2. Euidella gerhardi
Fig. 3. Delphacodes staminata
Fig. 4. Megamelanus terminalis
Fig. 5. Stenocranus arundineus

Fig. 6. Pissonotus speciosus
Fig. 7. Pissonotus nigridorsum
Fig. 8. Delphacodes shermani

PLATE 2

Fig. 1. Pissonotus fulvus
Fig. 2. Euidella triloba
Fig. 3. Megamelus inflatus
Fig. 4. Delphacodes alexanderi
Fig. 5. Megamelus aestus
Fig. 6. Delphacodes campestris
Fig. 7. Megamelanus dorsalis
Fig. 8. Criomorphus conspicuus
Fig. 9. Delphacodes fulvidorsum
Fig. 10. Megamelus distinctus
Fig. 11. Megamelus uncus
Fig. 12. Delphacodes waldeni
Fig. 13. Megamelus anticostus

PLATE 3

Fig. 1. Delphacodes shermani
Fig. 2. Megamelus uncus
Fig. 3. Pissonotus speciosus
Fig. 4. Megamelus anticostus
Fig. 5. Euidella triloba
Fig. 6. Megamelus distinctus
Fig. 7. Delphacodes fulvidorsum

PLATE 4

Fig. 1. Stenocranus arundineus
Fig. 2. Megamelus aestus
Fig. 3. Delphacodes waldeni
Fig. 4. Pissonotus nigridorsum
Fig. 5. Delphacodes alexanderi
Fig. 6. Megamelanus lautus
Fig. 7. Delphacodes campestris
Fig. 8. Megamelanus dorsalis
Fig. 9. Criomorphus conspicuus
Fig. 10. Delphacodes staminata
Fig. 11. Euidella gerhardi
Fig. 12. Pissonotus fulvus
Fig. 13. Megamelus inflatus
Fig. 14. Megamelanus terminalis

PLATE 1

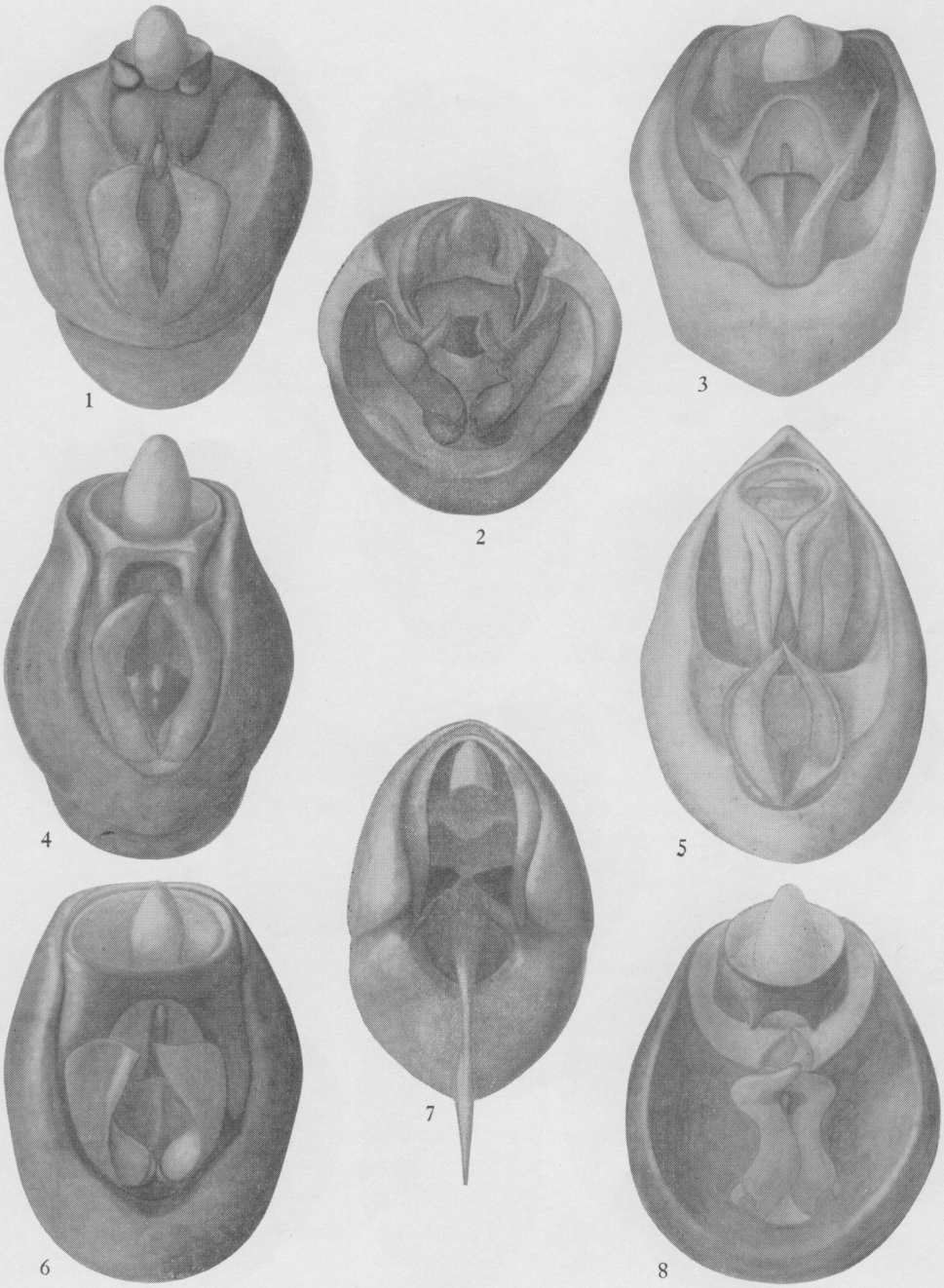

PLATE 2

PLATE 3

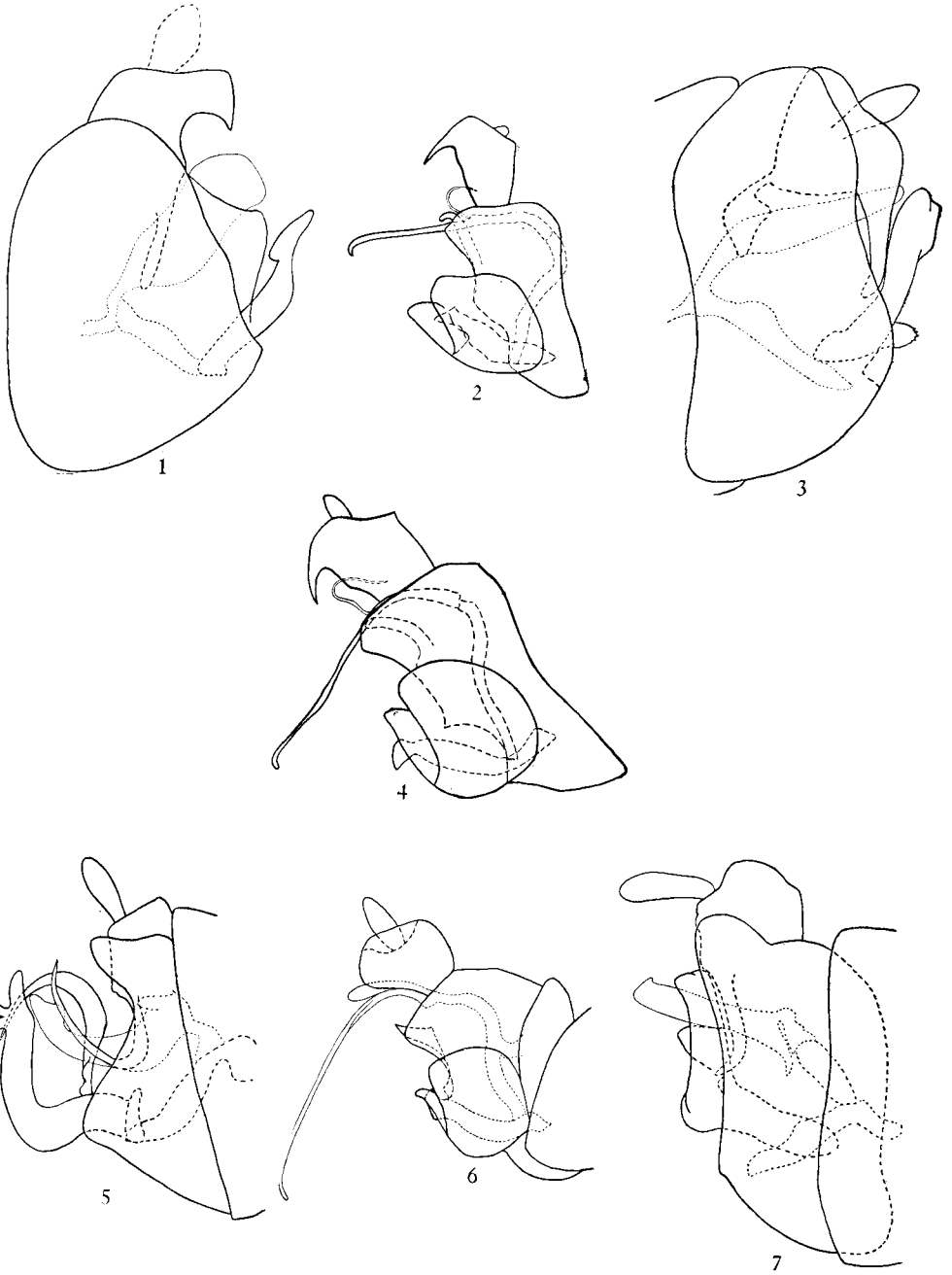

PLATE 4