

A REVISION OF THE GENUS *MEGAMELUS*
IN AMERICA NORTH OF MEXICO
(Homoptera, Fulgoridae, Delphacinae)^{1, 2}

R. H. BEAMER

Megamelus Fieber

Haplotype: *Delphax notula* Fieber, 1866, Verh. Zool. Bot. Ges. Wien 16:519.

This genus is characterized by a narrow head, a long, narrow crown extending in front of the eyes and especially by the lobed appearance of the ninth segment of the male abdomen. This later is diagnostic for this genus. The type is the European species, *Megamelus notulus* Fieber, and as such is considered in this paper.

Megamelus davis VanDuzee

Megamelus davis VanDuzee, 1897, Bull. Buffalo Soc. Nat. Sci. p. 235.

Megamelus angulatus Osborn, 1903, Ohio Naturalist 5:373.

BRACHYPTEROUS FORM: Resembles *Megamelus paleatus* (VanDuzee) but almost brown in color, anal segment with processes and aedeagus flat with narrow twisted apex. Length ♂ 3.2 mm., ♀ 3.8 mm. Clavus of elytra almost black.

Structure: Antennal segments about equal in length; crown more than twice as long as apical width, projecting in front of eyes more than one-third its length, carinae very pronounced; elytra longer than wide, apices broadly rounded; calcar about as long as first segment of tarsi, broad.

Color: General ground color dark brown, lobes of ninth segment of male black, apices of carinae, veins of elytra, pustules of abdomen usually lighter.

Genitalia: Genital capsule in ventro-caudal view with outer lobes of ninth segment kidney-shaped; median lobes widest at base, narrowed on caudal half to sharp apices; styles with outer margin narrowed and rounded at apices to recurved points on inner margin; aedeagal brace broadly rounded anal segment with two sinuate caudally projected processes, about as long as sides of segment.

Types: 6 ♂ and 1 ♀ Michigan, Davis, June. Lectotype ♂ designated by Oman, 1947, Iowa State Jour. of Sci. 21(2):215.

Material at hand from Tennessee, New Jersey, Missouri, Illinois, Kansas, Washington, D.C., and Florida.

The material from New Jersey was collected by F. M. Uhler, July 21, 1942, from the leaves of *Castalia odorata* with the following note, "They destroyed the leaves of this plant throughout the entire growing season."

The only cotype male of *angulatus* was dissected Jan. 29, 1952, and found to be identical with *M. davis*.

¹ Contribution No. 842 from the Department of Entomology, University of Kansas.

² The illustrations were prepared with the aid of a grant from the General Research Funds of the University of Kansas. I wish to acknowledge the aid of Mr. E. B. Wittlake in the preparation of these illustrations.

Megamelus lunatus n. sp.

BRACHYPTEROUS FORM. Resembling *Megamelus flavus* Crawford but aedeagal brace with excavation more nearly truncate, tips of arms of brace not nearly so sharply pointed and scarcely directed ventrally.

Structure: Basal antennal segment distinctly shorter than the second; crown about twice as long as apical width; carinae distinct but not too high and sharp; elytra reaching to second abdominal segment, apices truncate.

Color: General color quite dark brown with a median longitudinal light stripe.

Genitalia: Genital capsule in ventral view with outer lobes of ninth segment about half as long as capsule, inner lobes more than half as long as outer, widest at base, apical half more than half as wide as base, apices rounded with a rather heavy peg between their bases; styles widest on basal half, sharply narrowed on inner margin near middle to half basal width, enlarged again on apices; outer point angular, inner more or less rounded; aedeagus very long and curved both near base and apex, with numerous retrorse serrations near middle, aedeagal brace deeply excavated with almost flat bottom, apices slightly bent ventrally; anal segment with a large pair of curved processes extending anteriorly.

Types: Holotype male, allotype female and one female paratype: South Dayton, New York, July 23, 1946, L. D. Beamer; other paratypes: 4 ♀ same place and date, R. H. Beamer, 1 ♂ Ashford, New York, July 22, 1946, L. D. Beamer; 1 ♂ Lake Placid, New York, July 23, 1946, R. H. Beamer.

MACROPTEROUS FORM. Like the brachypterous form except with long flight wings.

Types: Holomorphotype ♂, allomorphotype ♀, and one ♂ paramorphotype Ashford, New York, July 22, 1946, R. H. Beamer; other paramorphotypes: 1 ♂ same place and time, L. D. Beamer, 2 ♂ Douglas Co., July, 1939, P. B. Lawson, 1 ♀ South Dayton, New York, July 23, 1946, L. D. Beamer.

Types in the Snow Entomological Museum.

Megamelus notulus (Germar)

Delphax notula Germar, 1830, Thon. Ent. Archiv. 2:57.

BRACHYPTEROUS FORM. This species is treated here because it is the type of this genus. The specimen used is from Sweden, collected and determined by Frej Ossiannilsson.

Structure: First segment of antennae almost as long as second; vertex slightly more than twice as long as apical width, projects in front of eyes not quite one-third its length; carinae strongly marked but not as high and sharp as some; elytra slightly longer than wide, apices nearly truncate with rounded corners; calcar almost as long as first tarsal segment, not much wider.

Color: General ground color light, lateral fovea of crown and broad stripe on each side of dorsum dark brown.

Genitalia: Genital capsule in caudo-ventral view with lateral lobes of ninth segment large, kidney-shaped, second pair of lobes about one-half as long as outer, narrow, about one eighth as wide, with a short sharp spine between their bases; styles widest on basal third, inner margin sharply excavated near middle, apices enlarged with a knob-shaped inner and angular outer corner;

aedeagal brace U-shaped with apices sharp and curved ventroanteriorly; anal segment with a pair of recurved sharp spines; aedeagus long, covered with many short, sharp, retrorse serrations in middle region and a sword-shaped process near base about one third as long as shaft.

Specimens at hand, 3 ♂ and 1 ♀ Bohemia, and 2 ♂ Sweden.

Megamelus flavus Crawford

Megamelus notulus flavus Crawford, 1914, Proc. U. S. Natl. Mus. 46:609.

Megamelus unicus Metcalf, 1923, Jour. Elisha Mitchell Sci. Soc. 38:204.

Megamelus anticostus Metcalf, 1923, Jour. Elisha Mitchell Sci. Soc. 38:204.

BRACHYPTEROUS FORM. Resembles *Megamelus notulus* (Germar) but may be separated from it by inner lobes of ninth segment of male having much sharper apical inner corners and by aedeagus without basal sword-shaped process. Length ♂ 3 mm.

Structure: First segment of antennae slightly shorter than second; crown about twice as long as apical width, projecting one-fourth its length in front of eyes, carinae distinct; elytra almost as broad as long, apices truncate.

Color: General color stramineous with a rather broad dorsal median white stripe over head and pronotum and a lateral brown vitta along outside of elytra and dorsum of abdomen; lobes of genitalia almost black.

Genitalia: Genital capsule in caudoventral view with outer lobes of ninth segment large, kidney-shaped, almost half as long as entire capsule; inner lobes narrow, about half as long as outer, inner corner of apices very sharp; a small peg-like projection midway between their bases; aedeagal brace deeply excavated, apices sharp, bent ventrally at points; aedeagus very long, covered with short, sharp, retrorse serrations, base without sword-shaped process; anal segment with a pair of very slender, sharp, retrorse curved processes.

Types: The type series in the United States National Museum was examined, one of the males cleared and studied. Other specimens from Grand Lake, Colorado and from Alaska were at hand.

The types of *M. unicus* Metcalf and *M. anticostus* Metcalf taken by the same man on the same day on Ellis Bay, Anticosti, Quebec, were examined August 29, 1952, and found to be identical and both the same as *Megamelus flavus* Crawford. The holotypes of these species are in the Museum of Comparative Zoology at Harvard.

Megamelus aestus Metcalf

Megamelus aestus Metcalf, 1923, Jour. Elisha Mitchell Sci. Soc. 38:202.

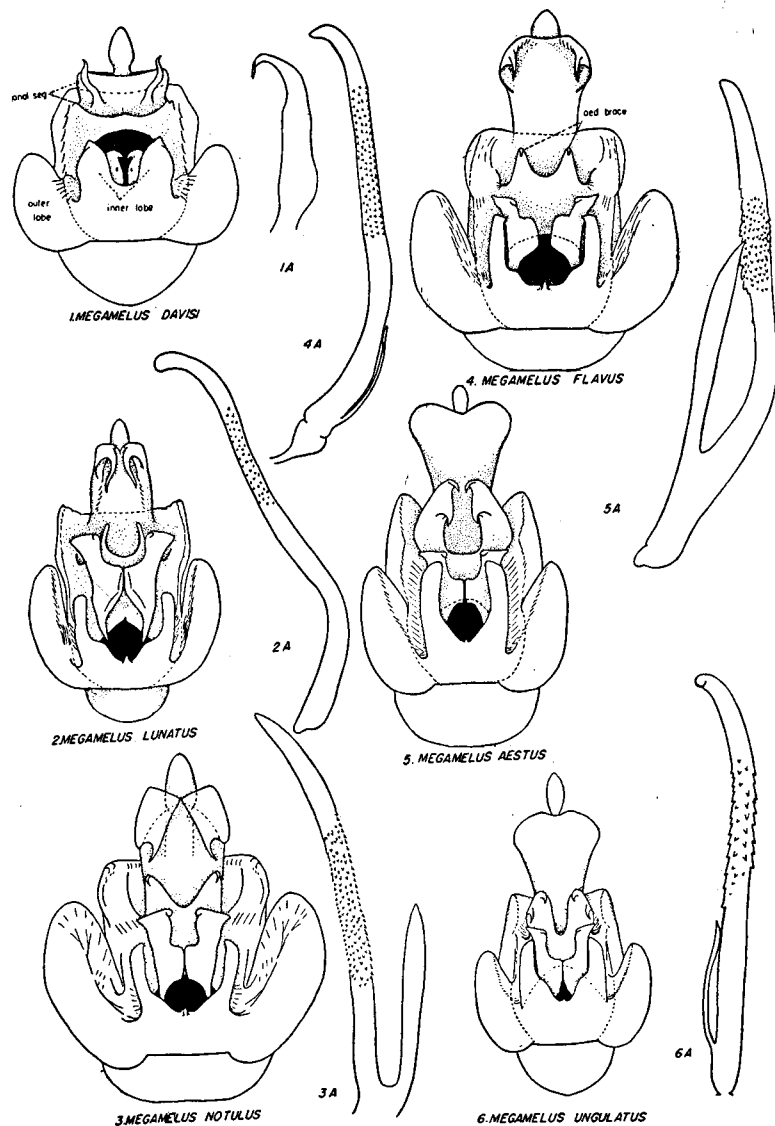
BRACHYPTEROUS FORM. Resembling *M. flavus* but without hooks on anal segment, with two recurved hooks on inside of each side of aedeagal brace and with a large sword-shaped process near base on ventral side of aedeagus. Length ♂ 3 mm., ♀ 4 mm.

Structure: Crown about twice as long as apical width, projecting in front of eyes about one-third length, carinae evident, not sharp; elytra slightly longer than wide, apices truncate, corners rounded; calcar shorter than first tarsal segment, fairly wide.

Color: General color flavous with a lighter median stripe; a broad lateral

stripe on each side of dorsum and two more or less longitudinal uneven stripes on elytra, dark brown, ventral lobes of ninth segment light brown.

Genitalia: Genital capsule in caudoventral view with outer lobes of ninth segment at least one-third as long as capsule, rather sharp at apices; inner pair of lobes almost as long as outer, widest at base, remainder about one-third as



wide as outer, inner margins slightly longer than outer, short sharp spine between bases; styles widest at base, sharply narrowed on inner margin near middle, apices enlarged with rounded knob on inner point and sharpened point on outer; aedeagal brace deeply excavated into about two equal parts with a pair of retrorse spines on inner margin of each portion; aedeagus long and slender with midportion covered with numerous short retrorse serrations and a sword-shaped process arising at base on ventral margin, a little more than half as long as shaft.

Holotype ♂, in collection of Z. P. Metcalf, examined. Other specimens examined: 3 ♂♂ and 1 ♀ from New Hampshire in the Snow Entomological Museum.

Megamelus unguatus n.sp.

BRACHYPTEROUS FORM. Resembling *M. bispinosus* except that retrorse spines of aedeagal brace are on the outer instead of inner margin. Length ♂ 3 mm., ♀ 3.5 mm.

Structure: Vertex a little more than twice as long as apical width, extending about one-third its length in front of eyes, carinae distinct and sharp; elytra nearly square, apices truncate, corners rounded.

Color: General ground color yellowish brown, broad median longitudinal stripe lighter, a broad lateral stripe on each side of dorsum including most of elytra quite dark; outer lobes of ninth segment golden yellow.

Genitalia: Genital capsule in caudoventral view with outer lobes of ninth segment about one-fourth length of capsule; inner lobes two-thirds as long as outer, widest at base, outer half narrowed to about one-third width of outer, with small sharp tooth between their bases; styles widest at base, narrowed sharply on inner margin near middle to half basal width, angularly extended on outer apical corner; aedeagal brace deeply excavated on middle third, each side with two recurved sharp spines on outer margin; aedeagus long and narrow, curved ventrally on outer half, middle portion covered with somewhat larger recurved serrations; a slender process on ventral margin near base about one-third as long as shaft.

Types: Holotype ♂, allotype ♀, 12 ♂♂ and 18 ♀♀ paratypes, Storrs, Connecticut, August, 1946, R. H. Beamer; other paratypes: 5 ♂♂ and 1 ♀ Storrs, Connecticut, August 29, 1946, R. H. Beamer; 1 ♂ Nelson, North Carolina, August 31, 1946, R. H. Beamer; 4 ♂♂ Chapel Hill, North Carolina, August 31, 1946, R. H. & L. D. Beamer.

PLATE I

1. *Megamelus davisi*, ventral view of genital capsule of male; anal. seg.—anal segment showing asymmetrical processes. s-styles, inner lobes and outer lobes; 1a, lateral view of aedeagus, enlarged.
2. *Megamelus lunatus*, ventral view of genital capsule of male; 2a, lateral view of aedeagus, enlarged.
3. *Megamelus notulus*, ventral view of genital capsule of male; 3a, lateral view of aedeagus, enlarged.
4. *Megamelus flavus*, ventral view of genital capsule of male; 4a, lateral view of aedeagus, enlarged.
5. *Megamelus aestus*, ventral view of genital capsule of male; 5a, lateral view of aedeagus, enlarged.
6. *Megamelus unguatus*; ventral view of genital capsule of male; 6a, lateral view of aedeagus, enlarged.

Types in the Snow Entomological Museum.

Megamelus bifidus n.sp.

BRACHYPTEROUS FORM. Resembling *Megamelus bispinosus* Beamer but sides of division in aedeagal brace almost contiguous and without processes. Length ♂ 3 mm., ♀ 4 mm.

Structure: Crown about two and one-half times as long as width at apex, projecting one-third its length in front of eyes, carinae distinct, fairly sharp; elytra about as wide as long with apices truncate; dorsum of abdomen with pustules more or less in five rows.

Color: Generally dark with broad median dorsal stripe light; basal third of elytra semihyaline, margin of posterior corners white; venter generally much lighter.

Genitalia: Genital capsule in caudoventral view with outer lobes of ninth segment almost one-fourth as long as capsule, inner pair about half as long as outer, separated at base by their own length, inner margin on basal third deeply incised, short heavy tooth between their bases; styles widest on basal third, inner margins gradually narrowed on apical two-thirds to truncate apices; aedeagal brace medianly split on apical half, two portions contiguous on basal two-thirds, caudal half very narrow; aedeagus very long and slender, apex slightly bent ventrally; anal segment without processes.

Types: Holotype ♂, allotype ♀, 4 ♂ and 12 ♀ paratypes: Douglas County, Kansas, October 26, 1944, R. H. Beamer; other paratypes: 1 ♂ Douglas County, Kansas, June 9, 1944; 4 ♂ and 5 ♀ Douglas County, Kansas, November 2, 1944, R. H. Beamer; 3 ♂ and 11 ♀ Douglas County, Kansas, September 26, 1944, R. H. Beamer; 3 ♂ and 4 ♀ Douglas County, Kansas, August 9, 1944, R. H. Beamer; 1 ♂ La Cygne, Kansas, October 28, 1945, R. H. Beamer; 2 ♂ and 7 ♀ Ithaca, New York, July 25, 1946, R. H. Beamer; 16 ♂ and 9 ♀ Ashford, New York, July 22, 1946, R. H. Beamer; 8 ♂ and 1 ♀ Ashford, New York, July 22, 1946, L. D. Beamer.

Types in the Snow Entomological Museum.

Megamelus recurvatus n.sp.

BRACHYPTEROUS FORM. Resembling *Megamelus gracilis* but sides of aedeagal brace retrorse on outer third and aedeagus with short stout process on basal half. Length ♂ 3 mm.

Structure: First segment of antennae slightly more than two-thirds as long as second; crown rather broad, extending in front of eyes about one-fourth its length, sharply carinate.

Color: General color dark amber with median longitudinal light stripe.

Genitalia: Genital capsule in ventral view without processes on anal segment; lateral lobes of ninth segment about one-half as long as capsule, inner lobes half as long as outer and about one-third as wide not counting their bases, with a short peg between their bases; aedeagal brace broadly excavated to base, sides of brace sharply narrowed on outer third, abruptly recurved. aedeagus long, slender, with a short, strong, ventral process near basal third.

about median fourth of shaft covered with small, sharp, retrorse serrations.

Holotype ♂, Swan River, Manitoba, Canada, August 2, 1937, R. H. Beamer. In the Snow Entomological Museum.

Megamelus gracilis n.sp.

MACROPTEROUS FORM. Resembling *M. paleatus* but definitely smaller, aedeagus a long slender curved shaft instead of a short tubular one, also aedeagal brace divided to base into sharp pointed incurving parts. Length ♂ 4 mm., ♀ 5 mm.

Structure: First segment of antennae slightly shorter than second, crown almost 4 times as long as apical width, projecting in front of eyes slightly more than one-third total length, carinae very high and sharp.

Color: General ground color straw-yellow with apices of carinae, antennae, and venter, except an arcuate mark across body in region of clypellus, lighter.

Genitalia: Genital capsule in ventrocaudal view with lateral lobes of ninth segment about one-third as long as capsule, kidney-shaped, narrowest at caudal end; inner lobes about one-third as long as outer, twice as wide at base as at apex, narrowed on inner margin; styles widest on basal half, narrowed on inner margin to truncate apices; aedeagal brace excavated on middle to base, arms narrowed and incurved to sharp almost touching apices; aedeagus long and slender, outer third gently curved ventrally, near middle with 25-30 retrorse medium sized serrations; anal segment without processes.

Types: Holotype ♂, allotype ♀, and 1 ♂ paratype: Old Town, Florida, July 11, 1939, R. H. Beamer; other paratypes: 14 ♂ and 1 ♀ Sebring, Florida, June 20, 1951, Price, Beamers and Wood; 3 ♂ and 1 ♀ Homestead, Florida, June 22, 1951, Price, Beamers and Wood; 2 ♂ Sanford, Florida, July 11, 1951, Price, Beamers, and Wood; 2 ♂ and 1 ♀ Sanford, Florida, June 12, 1923, C. O. Bare; 1 ♀ Sanford, Florida, August 4, 1930, Paul W. Oman; 2 ♂ Royal Palm Park, Florida, July 22, 1948, E. L. Todd; 3 ♂ Royal Palm Park, Florida, July 21, 1948, R. H. Beamer; 1 ♀ Lachoochee, Florida, July 7, 1948, R. H. Beamer; 1 ♀ Morrison Field, Florida, West Palm Beach, Florida, September 3, 1942, D. Elmo Hardy; 1 ♂ Jacksonville, Florida, November, 1932; 1 ♀ Paradise Key, Florida, February 21, 1919, Schwartz and Barber; 1 ♂ Oldtown, Florida, July 11, 1939, P. W. Oman; 1 ♂ LaBelle, Florida, July 16, 1939, P. B. Lawson; 1 ♂ Oleno State Park, Florida, June 16, 1951, Price, Beamers and Wood; 2 ♂ and 3 ♀ Otter Creek, Florida, March 9, 1947, R. H. Beamer.

Types and paratypes in the Snow Entomological Museum; paratypes in the United States National Museum.

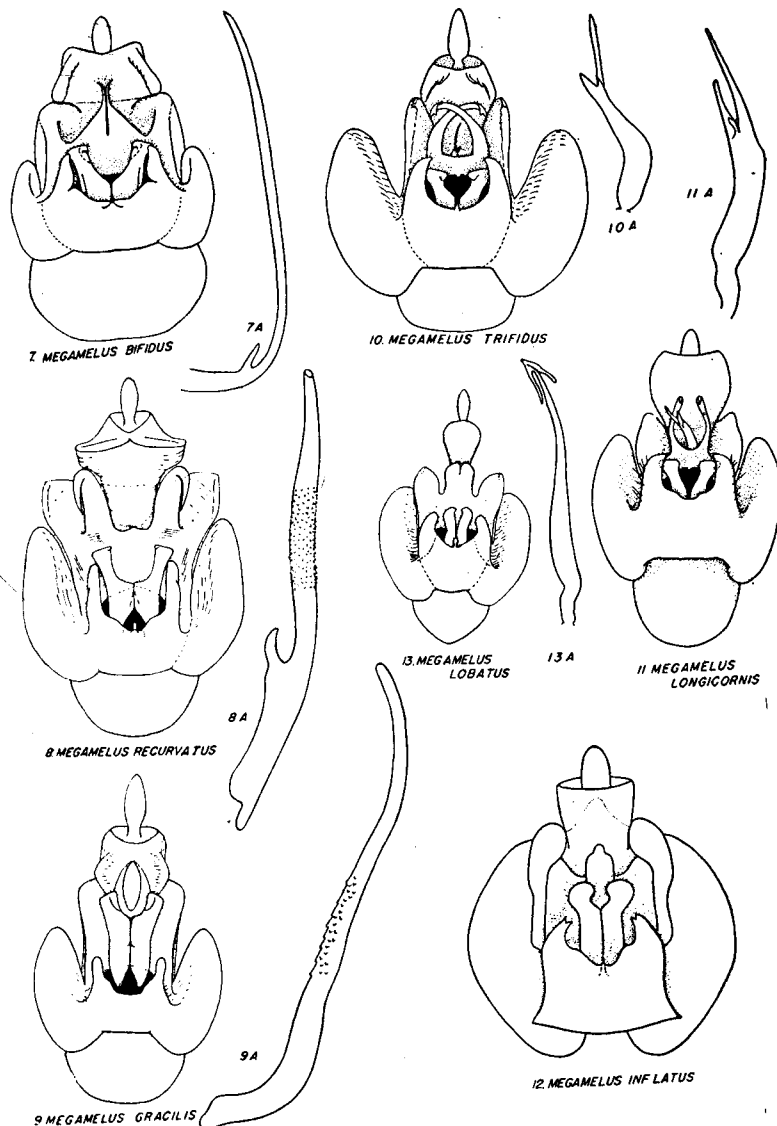
Megamelus trifidus n.sp.

BRACHYPTEROUS FORM. Resembling *Megamelus gracilis* Beamer but arms of aedeagal brace tapered very little and bifid at apices. Length ♂ 3.2 mm.

Structure: Basal segment of antenna slightly shorter than second; crown about three times as long as apical width, projecting a little more than one-third its length in front of eyes; carinae very high and sharp; elytra slightly longer than wide, apices truncate.

Color: General ground color mostly brownish, mottled with lighter especially on middorsal line.

Genitalia: Genital capsule in ventral view with outer lobes of ninth segment large, about half as long as capsule; inner lobes small, not half as long as outer, narrowed to fairly sharp apices on inner margin, basally separated



by about their own length with small sharp peg on margin of base; styles narrowed on inner margin of outer third, widened again on inner margin and more so on outer; aedeagal brace broadly excavated to truncate bottom, arms ribbon-like, slightly narrowed on basal third, curving in to cross, ending in bifid apices; aedeagus short and heavy, bent on basal third, ending in a trifid apex; anal segment without processes.

Types: Holotype ♂ and 1 ♂ paratype, Yankeetown, Florida, March 9, 1947, R. H. Beamer; other paratypes: 14 ♂ ♂ Cedar Keys, Florida, March 8, 1947, R. H. Beamer.

Types and paratypes in the Snow Entomological Museum.

Megamelus longicornis (Dozier)

Stenocranus longicornis Dozier, 1922, Ohio Jour. Sci., p. 76.

MACROPTEROUS FORM. Resembling *M. paleatus* VanDuzee in size but aedeagus flat with a trifid tip instead of short tubular with a sinuate process at apex.

Structure: First segment of antennae barely shorter than second; vertex narrow and long, projecting almost one-third its length in front of eyes, sharply carinate.

Color: General color dark brown, median dorsal line light on pronotum, veins of elytra quite dark, margined with fuscous.

Genitalia: Genital capsule in ventral view with outer lobes of ninth segment almost half as long as capsule; inner lobes narrow, about half as long as outer, apices pointed on inside, rounded on outside; aedeagal brace excavated almost to base, with margins widely separated, slightly narrowing on outer half with apices sharply pointed and extreme apex recurved; aedeagus of medium length, flat with apex trifid; anal segment without processes.

The holotype, according to word from Doctor Dozier's son, has been destroyed. Accordingly, the specimen described above is here designated neotype. It was collected at Covington, Louisiana, June 23, 1948, E. L. Todd. Other specimens, 5 ♂ ♂ and 3 ♀ ♀ (with the following data: Port Arthur, Texas, 10-20-V.E.D. Parmer) have been examined. Neotype in the Snow Entomological Museum.

PLATE II

7. *Megamelus bifidus*, ventral view of genital capsule of male; 7a, lateral view of aedeagus, enlarged.
8. *Megamelus recurvatus*, ventral view of genital capsule of male; 8a, lateral view of aedeagus, enlarged.
9. *Megamelus gracilis*, ventral view of genital capsule of male; 9a, lateral view of aedeagus, enlarged.
10. *Megamelus trifidus*, ventral view of genital capsule of male; 10a, lateral view of aedeagus, enlarged.
11. *Megamelus longicornis*, ventral view of genital capsule of male; 11a, lateral view of aedeagus, enlarged.
12. *Megamelus inflatus*, ventral view of genital capsule of male from illustration by Z. P. Metcalf, with his permission.
13. *Megamelus lobatus*, ventral view of genital capsule of male; 13a, lateral view of aedeagus enlarged.

A REVISION OF THE GENUS *MEGAMELUS* IN AMERICA NORTH OF MEXICO (Homoptera, Fulgoridae, Delphacinae)

R. H. BEAMER

(Concluded)

Megamelus metzaria Crawford

Megamelus metzaria Crawford, 1914, U.S. Natl. Mus. 46:611.

MACROPTEROUS FORM. Resembling *Megamelus lobatus* Beamer but processes at apex of aedeagus from the same base, aedeagal brace with apex more acute and processes between inner lobes of ninth segment distinctly enlarged at apex. Length ♂ 4.8 mm., ♀ 5 mm.

Structure: Basal segment of antennae distinctly shorter than second; crown distinctly less than twice as long as apical width, carinae distinct but not sharp; elytra much longer than body, semihyaline with a brown spot before apex of clavus.

Color: General color stramineous, scutellum and portions of abdominal segments much darker.

Genitalia: Genital capsule in ventral view with outer lobes of ninth segment large, almost half as long as capsule; inner lobes about one-third as long as outer, widest at base, apices rounded about half as wide, a large knob-shaped process at base between them; styles widest at base, slightly narrowed to truncate apices with outer and inner corners sharp; aedeagal brace spatulate, long, weakly colored on each side of apex, making structure appear quite narrow; aedeagus long and narrow, curved ventrally at apex which is divided into two slender processes; anal segment without processes.

Types: Holotype ♂, Banner, Wyoming, in collection of Pomona College. The type, not too well preserved, was studied and found to be identical with the specimen figured here except in the shape of the apex of the styles. The left style was absent entirely and the right was atypical for the whole genus in that the apex narrowed to a sharp point on the outer margin (fig. 16b). It is possible it was due to parasitism or some other cause. If at some future date specimens collected at Banner, Wyoming, should definitely prove *Megamelus metzaria* to be a different species, then the one figured here as *metzaria* can be given a new name. Many specimens studied, Douglas County, Kansas; 2 ♂ ♂ Cheboygan, Michigan.

BRACHYPTEROUS FORM. Like the macropterous form except with nonflight wings.

Types: Holomorphotype ♂, allomorphotype ♀, and 5 ♂ and 3 ♀ paramorphotypes: Meade County, Kansas, September 13, 1944, R. H. Beamer; other paramorphotypes: Lawrence, Kansas, August 23, 1944, R. H. Beamer; 2 ♂ ♂ Douglas County, Kansas, November 6, 1944, R. H. Beamer; 1 ♂ Douglas County, Kansas, October 2, 1945, R. H. Beamer; 1 ♂ Meade

CONTENTS OF THIS NUMBER

Notes on Distribution of the Western Corn Rootworm, <i>Diabrotica virgifera</i> Lec., in Kansas (Coleoptera: Chrysomelidae) C. C. BURKHARDT AND HARRY R. BRYSON	1
The <i>Dacus</i> (<i>Afrocadus</i>) <i>Bezzi</i> of the World (Tephritidae, Diptera) D. ELMO HARDY	3
An Annotated List of Pompilid Wasps Taken at Blackjack Creek, Pottawatomie County, Kansas (Hymenoptera) HOWARD E. EVANS AND CARL M. YOSHIMOTO	16
Biological Studies in the Genus <i>Periclista</i> ROBERT E. BEER	19
A New Species of <i>Merragata</i> (Hemiptera: Hebridae) from Mexico T. WAYNE PORTER	27
A Revision of the Genus <i>Megamelus</i> in America North of Mexico (Homoptera, Fulgoridae, Delphacinae) R. H. BEAMER	29

Megamelus inflatus Metcalf

Megamelus inflatus Metcalf, 1923, Jour. Elisha Mitchell Sci. Soc. 38:203.

No specimens of this species are at hand for study. The following is the original description. "This species may be recognized by its almost uniform pale yellow color with the pygofer of the male strongly inflated, genital hooks united into a single obtuse process.

"Vertex rather broad, strongly produced; frons narrowed between the eyes, broadened apically, the median frontal carinae forming a distinct callosity at the apex of the head; antennae long; first segment almost as long as the second, pronotum elongate, with a distinct impressed point either side of the median carina; intermediate carinae strongly divergent, reaching the posterior border; mesonotum about as long as the pronotum; calcar small; less than half as long as the basal segment of the tarsus; male pygofer strongly inflated; genital plates flat, incurved at the apex with a small median tooth between; genital styles short, about half as long as the genital plates, obtuse at the apex; genital hooks united on the median line then produced into an elongate obtuse process; anal segment short, anal processes not produced.

"Color: General color pale yellow, the frons, antennae and eyes and the lateral margins of the abdomen a little darker.

"Length, apex of head to apex of abdomen, 2.10 mm.

"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."

The accompanying drawing was made with the permission of Dr. Metcalf from an illustration in his paper "The Redescription of Twenty-One Species of Areopidae Described in 1923," Jour. of the Elisha Mitchell Sci. Soc., 65: 48-60, 1949.

From Doctor Metcalf's illustration the bifid apex of the inner lobes on the ninth segment is the outstanding difference separating this species from closely related ones.

Megamelus lobatus n.sp.

BRACHYPTEROUS FORM: Resembling *M. falcatus* but largest process on apex of aedeagus not several times larger than smaller process. Length ♂ 3mm. ♀ 3.5mm.

Structure: Second segment of antennae longer than basal; crown about twice as long as apical width, carinae distinct but not sharp; elytra about as wide as long, apices truncate.

Color: General color stramineous with longitudinal stripe either side of dorsum very dark brown, lobes of ninth segment yellow.

Genitalia: Genital capsule in ventral view with outer lobes of ninth segment almost half as long as capsule, inner pair scarcely half as long as outer, more than twice as wide at base as at rounded incurved apices, a third pair of lobes one either side of aedeagal brace and almost as large; styles almost parallel-sided, narrowed on outer margin to rounded outer corner with beak-shaped inner corner; aedeagal brace spatulate, barest indication of median

excavation, lateral margins more or less serrate; aedeagus long and slender, curved ventrally with a pair of processes at apex; anal segment without processes.

Types: Holotype ♂, allotype ♀, 12 ♂♂ and 8 ♀♀ paratypes, Cedar Keys, Florida, March 3, 1947, L. D. and R. H. Beamer; other paratypes: 3 ♂♂ and 2 ♀♀, Slidell, Louisiana, March 3, 1947, R. H. Beamer; 3 ♂♂ Slidell, Louisiana, June 23, 1948, R. H. Beamer; 4 ♂♂ and 9 ♀♀ Arkansas Pass, Texas, January 2, 1946, R. H. Beamer; 2 ♂♂ and 4 ♀♀ Durham, New Hampshire, August 12, 1946, R. H. Beamer; 5 ♂♂ and 7 ♀♀ Yankeetown, Florida, March 9, 1947, L. D. and R. H. Beamer; 3 ♂♂ and 4 ♀♀ Mystic, Connecticut, August 8, 1946, R. H. Beamer; 8 ♂♂ and 11 ♀♀ Norwich, Connecticut, August 6, 1946, R. H. Beamer; 19 ♂♂ and 10 ♀♀ Piny Point, Maryland, August 26, 1946, R. H. Beamer; 5 ♂♂ and 5 ♀♀ same place and date, R. I. Sailer; 4 ♂♂ and 2 ♀♀ 17 miles south of Homestead, Florida, March 14, 1947 R. H. Beamer; one pair, Sanford, Florida, March 11, 1947, R. H. Beamer.

Types and paratypes in Snow Entomological Museum. Paratypes in United States National Museum.

MACROPTEROUS FORM. Like the brachypterous form but with flight wings. Length ♂ 3.5 mm., ♀ 4 mm. Elytra milky colored except fuscous spot near apex of clavus.

Types: Holomorphotype ♂, allomorphotype ♀, 2 ♂♂ and 1 ♀ paramorphotypes, Cocanut Grove, Florida, August 9, 1930, J. O. Nottingham; other paramorphotypes: 4 ♀♀ same place and time as types, R. H. Beamer; 1 ♂ 17 miles south of Homestead, Florida, March 14, 1947, R. H. Beamer; 1 ♀ Yankeetown, Florida, July 31, 1930, Paul W. Oman; 1 ♀ Plant City, Florida, July 14, 1939, R. H. Beamer; 2 ♂♂ South Amboy, New Jersey, August 15; 1 ♂ Palatka, Florida, December 24, 1950, R. H. Beamer; 1 ♂ Fort Pierce, Florida, August 7, 1930, Paul W. Oman; 1 ♂ Kingsland, Georgia, July 12, 1951, Price, Beamers, Wood; 1 ♂ Snead, Florida, June 15, 1951, Price, Beamers, Wood; 3 ♂♂ Sebring, Florida, June 20, 1951, Price, 1951, Price, Beamers, Wood; 4 ♂♂ Ft. Myers, Florida, June 21, 1951, Price, Beamers, Wood; 1 ♂, Lake Placid, Florida, July 12, 1948, E. L. Todd; 1 ♂ Royal Palm Park, Florida, July 21, 1948, R. H. Beamer; 3 ♂♂ Sanford, Florida, C. O. Bare; 1 ♂ Suwanee Springs, Florida, August 2, 1939, D. E. Hardy; 2 ♂♂ Biloxi, Mississippi, June 25, 1948, R. H. Beamer; 1 ♂ Buras, Louisiana, June 21, 1948, R. H. Beamer.

Types and paramorphotypes in Snow Entomological Museum; paramorphotypes in the United States National Museum.

Megamelus falcatus n.sp.

BRACHYPTEROUS FORM. Resembling *Megamelus palaetus* (VanDuzee) but margins of elytra without white markings, crown much shorter and narrower and aedeagus with two apical processes, one of which is broad and sickle-shaped. Length ♂ 3 mm., ♀ 3.2 mm.

Structure: First segment of antennae about half as long as second. Crown not quite twice as long as apical width, carinae evident but not sharp. Elytra with apices truncate, corners rounded, slightly longer than greatest width.

Color: General color amber, darker spot near apex of clavus and about lateral half of dorsum of abdomen often darker.

Genitalia: Genital capsule in caudoventral view with outer lobes of ninth segment semicircular in outline, inner lobes about as wide as long, separated by their own width with a short broad tooth midway between their bases, caudal lateral lobes long and narrow; styles widest at base, sides parallel to outer third where they narrow on inner margin to about one sixth basal width, turned in at right angles; aedeagal brace more or less rectangular, apex slightly narrower than base, slightly concave; aedeagus long and narrow with two asymmetrical processes at apex, one short and narrow, the other broad at base and twice as long; anal segment with a pair of very short, sharp caudoventral processes.

Types: Holotype ♂, allotype ♀, 3 ♂ and 3 ♀ paratypes, Danbury, New Hampshire, August 12, 1946, R. H. Beamer; other paratypes: 2 ♂ ♂ and 3 ♀ ♀ Canaan, New Hampshire, August 11, 1946, R. H. Beamer; 2 ♂ ♂ Storrs, Connecticut, August 2, 1946, R. H. Beamer; 1 ♂ and 1 ♀ Lake Placid, New York, July 30, 1946, R. H. Beamer. Types in the Snow Entomological Museum.

Megamelus coronus n.sp.

MACROPTEROUS FORM. Resembles *Megamelus metzaria* Crawford but apex of aedeagal brace with three lobes, also peg between inner lobes on ninth segment, bifid and very large. Length ♂ 2.5 mm.

Structure: First antennal segment a little more than half as long as second; crown more than twice as long as apical width, projecting in front of eyes about one-fourth its length, carinate.

Color: General color amber, sides of pronotum and all of metanotum darker brown; elytra more or less milky with a fuscous spot on tip of clavus and veins darker.

Genitalia: Genital capsule with lobes of ninth segment about half as long as capsule; inner lobes about half as long as outer, apices sharp on inner corner, rounded on outer, with a large bilobed process between their bases; styles enlarged on outer fifth, outer corner longest, more than twice length of inner; aedeagal brace with three lobes about the same size on apex; aedeagus long and slender with a recurved apex containing two processes of about same size.

Holotype male, Harris Co., Texas, July 28, 1928, J. G. Shaw, in the Snow Entomological Museum.

(To be concluded)

NOTICE TO CONTRIBUTORS

For uniformity and for economy of space, authors are requested to give generic and specific descriptions in telegraphic style, *i.e.* with minimal use of articles and verbs. Synonymies, bibliographies, paragraphing and punctuation will be edited to conform with the style used generally in this issue unless the author, when submitting his manuscript, specifically asks that no such changes be made.

CHARGE TO AUTHORS FOR REPRINTS

Number of Reprints	Charge per page	Min'm. chg. 1-2 pages
100	1.35	3.75
150	1.68	4.50
200	2.01	5.25
250	2.34	6.00
300	2.67	6.75
350	3.00	7.50
400	3.33	8.25
450	3.66	9.00
500	3.99	9.75

PRICE OF BACK VOLUMES

Back Volumes \$2.50 per volume

Subscriptions for back volumes or numbers should be sent to Donald A. Wilbur, Department of Entomology, Kansas State College, Manhattan, Kansas.

County, Kansas, September 9, 1944, R. H. Beamer; 1 ♂ Sterling, Kansas, August 4, 1944, R. H. Beamer; 1 ♂ Montauk, Long Island, New York, August 17, 1946, L. D. Beamer; 2 ♂ ♂ Douglas County, Kansas, August 8, 1945, R. H. Beamer; 1 ♂ Wichita, Kansas, June 20, 1946, R. H. Beamer; 1 ♂ Hutchinson, Kansas, June 18, 1949, R. H. Beamer; 1 ♂ same place, July 28, 1950, L. D. Beamer; 1 ♂ Durham, New Hampshire, August 12, 1946, R. H. Beamer.

Types in the Snow Entomological Museum.

Megamelus paleatus (VanDuzee)

Stenocranus paleatus VanDuzee, 1897, Bull. Buffalo Soc. Nat. Sci., p. 232.

MACROPTEROUS FORM. This is the largest species in Florida and perhaps the most common. Length ♂ 5 mm., ♀ 5.5 mm.

Structure: Basal segment of antennae slightly shorter than second; crown almost three times as long as apical width, projecting almost one half its length in front of eyes, carinae sharp and high; elytra long, projecting almost one-third their length beyond abdomen.

Color: General color yellowish brown, mottled with darker, especially a spot before apex of clavus and veins of elytra much darker, also genital capsule, legs, and various ventral sclerites spotted with almost black.

Genitalia: Genital capsule in ventral view almost spherical; lateral lobes of the ninth segment large, half as long as entire capsule, widest on caudal end; inner lobes short and narrow, about one-fourth as long as outer, small raised tooth between them; styles with apices truncate enlarged on both outer and inner corners; aedeagal brace almost circular; aedeagus very short, tubular, scarcely more than half as long as genital capsule, with a short curved process arising on margin of apex; anal segment without processes.

Types: Holotype ♀ from Florida in collection at Iowa State College, Ames, Iowa.

Neallotype ♂ described here, Red Level, Florida, July 6, 1948, R. H. Beamer. In the Snow Entomological Museum.

Numerous specimens are at hand from many localities in Florida, Texas, and Louisiana. The Texas specimens were taken on *Pontederia cordata* in Bastrop State Park, in May, 1954.

BRACHYPTEROUS FORM. Resembling the macropterous form but lighter in color, elytra barely longer than wide, extending only to second abdominal segment.

Types: Holomorphotype ♂, allomorphotype ♀, 11 ♂ and 7 ♀ paromorphotypes: Palatka, Florida, March 10, 1947, R. H. Beamer. Types in the Snow Entomological Museum. Between 300 and 400 long-winged specimens examined, mostly from Florida. Specimens were compared with the type in Ames, Iowa, and declared identical by Jean Lafoon in 1952.

Megamelus hamatus n. sp.

BRACHYPTEROUS FORM. Resembles *Megamelus paleatus* (VanDuzee) but aedeagus flat instead of cylindrical with apex narrowed into a sword-shaped process that projects from tip of shaft almost at right angles. Length ♂ 3 mm., ♀ 3.5 mm.

Structure: Calcar about as long as first tarsal segment and twice as wide; first antennal segment definitely shorter than second; crown slightly more than twice as long as apical width, projecting in front of eye almost half its length; elytra reaching to second abdominal segment, apices broadly rounded.

Color: General color light brown, lateral fovea of crown dark, lateral angles of scutellum, two spots on apices of each elytra, pustules on dorsum of abdomen, spot beneath each eye and narrow crossband at apex of clypeus white.

Genitalia: Genital capsule in ventral view wider than long; outer lobes on ninth segment broad, more than half as long as capsule; inner lobes more than half as long and more than half as wide as outer; styles widest at base, narrowed to broadly rounded outer corner and a sharply curved inner corner; aedeagal brace broadly and shallowly excavated at apex; aedeagus short, flat, blade-like, apex narrowed to a sword-shaped, curved process projecting ventrally at right angles to shaft.

Types: Holotype ♂, allotype ♀, 2 ♂ and 11 ♀ paratypes, Woodbridge, Virginia, August 28, 1946, R. H. Beamer; other paratypes: 1 ♂ and 2 ♀, same place and time, L. D. Beamer; 5 ♂ ♂ and 17 ♀ ♀ Plummers Island, Maryland, August 3, 1913, W. L. McAtee; 1 ♀ August 15, 1 ♀ October 5, same year, place, and collector.

Types and paratypes in Snow Entomological Museum; paratypes in United States National Museum.

Megamelus distinctus Metcalf

Megamelus distinctus Metcalf, 1923, Jour. Elisha Mitchell Sci. Soc., 38:201.

BRACHYPTEROUS FORM. Resembling *M. lobatus* but aedeagus not bifid at apex. Length ♂ 3 mm., ♀ 3.12 mm.

Structure: Basal segment of antennae slightly shorter than second; crown more than twice as long as apical width, projecting about one-third its length in front of eyes; elytra about as wide as long, apices truncate.

Color: General ground color whitish to dark brown, quite variable; some specimens almost dark brown all over, others quite light throughout.

Genitalia: Genital capsule in ventrocaudal view with outer lobes of ninth segment about one-fourth as long as capsule, about half as wide as long, rather sharp on caudal end; inner pair not quite half as long as outer, about twice as wide at base as on outer two-thirds, apices rounded; styles with avicephaliform apices; aedeagal brace with apex truncate to somewhat bilobed; aedeagus long, curved ventrally at base and again on outer third with a short stout spur on right side of shaft near end of basal curve; anal segment without processes.

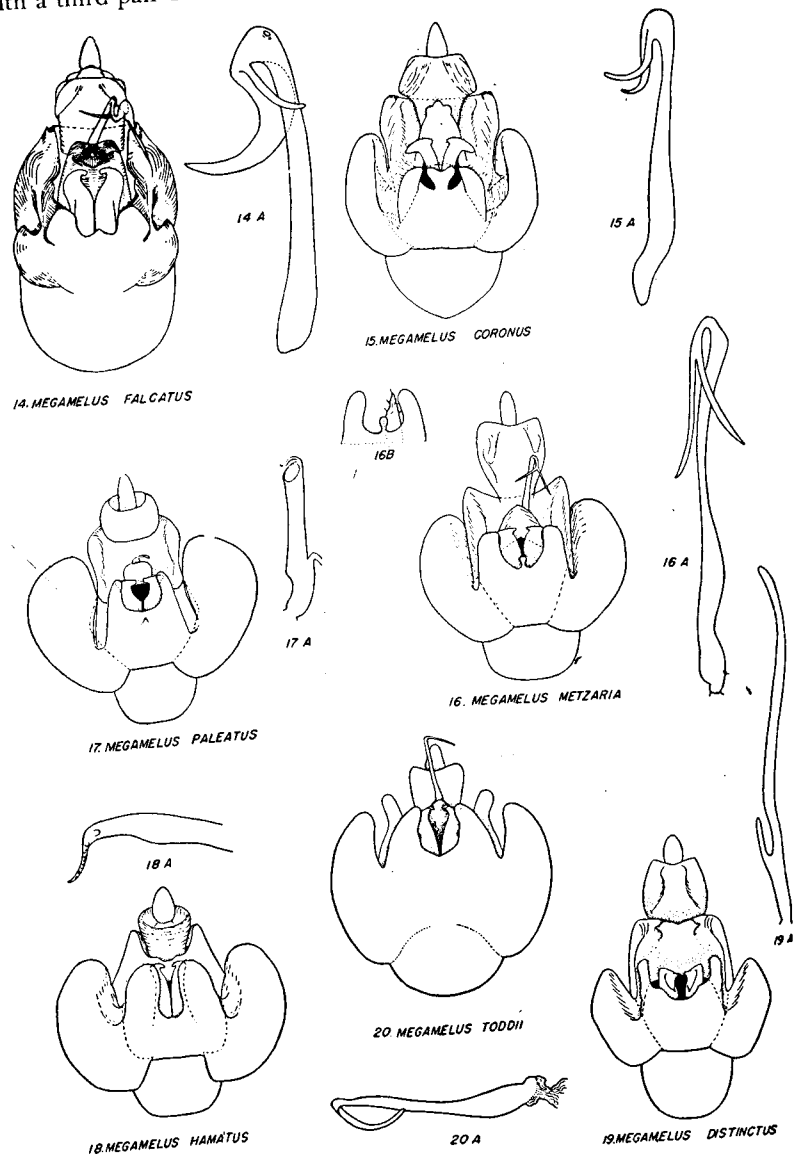
Types: Holotype ♂, in collection of Z. P. Metcalf. Specimens examined from Kansas, Illinois, Connecticut, New York, and Michigan.

Megamelus toddi n. sp.

MACROPTEROUS FORM. Resembling *M. paleatus* VanDuzee but smaller, darker brown and having the aedeagus tapered from tip to base instead of parallel-sided. Length 4 mm.

Color: General color brown. Elytra hyaline with fuscous spot on apices of clavi. Dorsum of thorax dark brown.

Genitalia: Genital capsule in ventral view with outer lobes of ninth segment rather short, slightly wider and of about same length as inner pair, with a third pair between these longer and narrower than either. Apices of



styles avicephaliform. Aedeagal brace indefinite, more or less spatulate. Aedeagus about half as long as capsule, tapered from base to apex, base several times wider than apex, fairly slender on outer two-thirds, about outer one-third recurved at less than a right angle. Anal segment without spurs or teeth.

Holotype ♂, allotype ♀, 1 ♀ and 15 ♂ paratypes: Hammond, Louisiana, June 22, 1948, E. L. Todd. Types in the Snow Entomological Museum.

Key to the Species of *Megamelus*

- | | |
|--|--------------------|
| 1. Male anal segment with processes | 2 |
| Male anal segment without processes | 5 |
| 2. Anal processes projecting anteriorly | 3 |
| Anal processes projecting posteriorly | <i>davisi</i> |
| 3. Apices of aedeagal brace turned ventrad | 4 |
| Apices of aedeagal brace not turned ventrad | <i>lunatus</i> |
| 4. Aedeagus with a large sword-like process near base | <i>notulus</i> |
| Aedeagus without such a process near base | <i>flavus</i> |
| 5. Aedeagal brace deeply split or excavated at apex | 6 |
| Aedeagal brace not deeply split or excavated at apex | 12 |
| 6. Sides of excavation with processes | 7 |
| Sides of excavation without processes | 8 |
| 7. With processes on inside of arms of excavation | <i>aestus</i> |
| With processes on outside of arms of excavation | <i>ungulatus</i> |
| 8. Sides of excavation almost touching | <i>bifidus</i> |
| Sides of excavation not almost touching | 9 |
| 9. Sides of aedeagal brace sharply recurved on outer third, apex sharp | <i>recurvatus</i> |
| Sides of aedeagal brace not sharply recurved, apices not sharp | 10 |
| 10. Aedeagus trifid at apex | 11 |
| Aedeagus not trifid at apex | <i>gracilis</i> |
| 11. Sides of aedeagal brace flat, bifid at apex | <i>trifidus</i> |
| Sides of aedeagal brace curved dorsally at tip, not bifid | <i>longicornis</i> |
| 12. Lobes at sides of styles bifid | <i>inflatus</i> |
| Lobes at sides of styles not bifid | 13 |

PLATE III

14. *Megamelus falcatus*, ventral view of genital capsule of male; 14a, lateral view of aedeagus, enlarged.
 15. *Megamelus coronus*, ventral view of genital capsule of male; 15a, lateral view of aedeagus, enlarged.
 16. *Megamelus metzaria*, ventral view of genital capsule of male; 16a, lateral view of aedeagus, enlarged; 16b, tip of style of holotype.
 17. *Megamelus paleatus*, ventral view of genital capsule of male; 17a, lateral view of aedeagus, enlarged.
 18. *Megamelus hamatus*, ventral view of genital capsule of male; 18a, lateral view of aedeagus, enlarged.
 19. *Megamelus distinctus*, ventral view of genital capsule of male; 19a, lateral view of aedeagus, enlarged.
 20. *Megamelus toddi*, ventral view of genital capsule of male; 20a, lateral view of aedeagus, enlarged.

13. Apex of aedeagus bifid14
 Apex of aedeagus not bifid17
 14. Bifid apex of shaft recurved15
 Bifid apex of shaft not recurved *lobatus*
 15. Processes at apex of aedeagus about same width16
 One process at apex of shaft much longer than other *falcatus*
 16. Apex of aedeagal brace trilobed *coronus*
 Apex of aedeagal brace more or less pointed *metzaria*
 17. Aedeagus long, cylindrical or flat18
 Aedeagus short, tubular, with sinuate process at apex19
 18. Aedeagus flat, apical third sharply narrowed, bent at almost right
 angles to shaft *hamatus*
 Aedeagus long and narrow with a heavy short process near
 base *distinctus*
 19. Aedeagus tapering from base to tip *toddi*
 Aedeagus not tapering from base to tip *paleatus*

ADDENDUM

In a previous article (One Old and Five New Species of Delphacine Fulgorids, Jour. Kansas Ent. Soc., 25: 111-115, 1952) the specific names of drawings 2 and 3 on page 113 were interchanged. The correct names are: 2. *Sogata meridiana*; and 3. *Sogata dorsolineata*.

RECORDS OF *MACRONOCTUA ONUSTA* GROTE, THE IRIS BORER, IN NEBRASKA (Noctuidae, Lepidoptera)

E. W. HAMILTON
 Lincoln, Nebraska

On April 25, 1952, a caterpillar from Lincoln, Nebraska, was brought in to the University of Nebraska, Entomology Department, and tentatively identified as *Macronoctua onusta* Grote. The identification was corroborated by a specialist of the Division of Insect Identification, Bureau of Entomology & Plant Quarantine. A previous departmental record shows the iris borer was also reported in Washington County, April 17, 1924. In both instances the caterpillars were found on iris bulbs. A search of the literature has shown no previous record of *M. onusta* being reported west of the Mississippi River up to 1953.

TWO NEW DIPTERA FROM THE PACIFIC COAST STATES

MAURICE T. JAMES
 State College of Washington
 Pullman, Washington

The present paper gives descriptions of two new Diptera, both from the Pacific Coast states and belonging to groups which have been given a comprehensive review within approximately the past decade. Descriptions are presented at this time chiefly in order to validate the names for use in other publications.

Family STRATIOMYIDAE *Stratiomys currani boharti*, n. sp.

This subspecies differs from the typical form in that the abdominal sterna are distinctly black-banded basally and the femora, in the females as well as in the males, are black except for their apices and very narrow bases. The black basal bands of the venter may occupy half or more of the respective sternum, as commonly is the case on segments 1 and 4, or may be very narrow and sometimes interrupted, as on segment 2.

Holotype female, Sierraville, 12 miles southeast, Sierra Co., California, July 4, 1953 (R. M. Bohart); from the collection of the University of California, Davis, to be placed in the California Academy of Sciences. *Allotype* male, same data. *Paratypes*, 6 females, 16 males, same data; 2 females, 2 males, Truckee, Nevada Co., California, July 5, 1953 (R. M. Bohart); 3 females, 1 male, King's Beach, 6 miles northwest, Placer Co., California, July 5, 1953 (R. M. Bohart); 1 female, 1 male, 6 miles west of Lakeview, Oregon, 5100 ft., July 8, 1937 (Bolinger, Jewett).

This form appears to be a well-marked subspecies in the Sierras and the Cascades, but it intergrades broadly with the typical form (described from southwestern Colorado and common in Utah) over an area ranging from lower altitudes in California, through Wyoming, into Utah. For example, in two females from Bishop, California, and from Yellowstone National Park, Wyoming, the abdominal sterna are narrowly black basally and the subapical half of each femur is black. An occasional Utah female shows a tendency toward blackening on the femora. The blacker character of the Pacific Coast form does not seem to be an expression of the melanistic tendency shown by some other members of this subfamily when they occur in the moist, cool habitats of high mountains, since the typical paler Colorado form also comes from the high mountains. Because of this and the distinctive character of the two forms which appear to be the extremes of a cline, it should be of value to give them distinctive subspecific names.

Family OMPHRALIDAE

Omphrale whittakeri, n. sp.

Related to *O. beameri* Hardy and *O. mirabilis* (Adams). The male traces to *O. mirabilis* in Hardy's key (Jour. Kansas Ent. Soc. 17:42-43, 1944) but