

The following species, with those listed under outbreaks, were more numerous in 1946 than in 1945: aphids on chrysanthemums, columbines, cabbage, turnips, and roses, blister beetles, box elder bugs, chinch bugs, columbine leaf-miner, common stalk borer, corn root aphids, cutworms, European elm scale, false wireworms, fruit tree leaf-rollers, grasshoppers, garden webworms, hessian fly, iris borers, millipedes, stored grain pests, tabanids, wheat straw worm, white grubs, and wireworms.

The following species were as plentiful and destructive in 1946 as in 1945: ants, aphids on apples (Doniphan county), cherry and plum seedlings, bagworms, bot flies, codling moth, corn root worms, fleas, green striped maple worms, leafhoppers, juniper mealy bug, lice and mites on poultry and hogs, sheep ticks, squash bugs, termites, tomato horn worms, wheat stem maggots, *Cycocephala immaculatus*.

The following species were less plentiful and destructive in 1946 than in 1945: elm calligrapha, green bug, pea aphids, borers, cabbage worms, canker worms, cattle grubs, cattle lice, horn flies, house flies, screw worm flies, chiggers, oriental fruit moth, rose slugs, southwestern corn borer, tent caterpillars.

The following species were scarce or absent in 1946: Clover leaf weevils, Colorado potato beetle, European corn borer, Japanese beetle, fall webworms, fall armyworms, walnut caterpillars and other datanas.

## SOME NEW SPECIES OF DELPHACODES (Continued) WITH TWO OLD ONES

(Homoptera, Fulgoridae, Delphacinae)

R. H. BEAMER\*  
Lawrence, Kansas

### *Delphacodes fallax* Muir

*Delphacodes fallax* Muir, F., Bull. Exp. Station Hawaiian Sugar Planters Association. No. 18, Aug. 28, p. 33, 1926.

#### Brachypterous Form:

Resembles *D. fulvidorsum* (Metcalf) but elytra of male reaching tip of abdomen, genital capsule black on dorsum and aedeagus with lateral tooth at apex. Length ♂ 2 mm.; ♀ 2.2 mm.

**Structure:** Front slightly less than three times as long as wide, almost parallel margined, sides feebly converging on either end, distinctly tricarinate; crown almost as wide between eyes as long, definitely carinate; elytra widest near middle with apices broadly rounded, veins raised, in male reaching to tip of abdomen, in female covering next to last segment

**Color:** General ground color stramineous; in female ovipositor and sheath usually dark, sometimes ventral segments of abdomen more or less infuscated; in male elytra and abdomen, except large basal spot and dorsum of anal segment, black.

\*Contribution from the Department of Entomology, University of Kansas.

**Genitalia:** In lateral view anal segment with pair of large straight sword-shaped processes; aedeagus widest at base, about four times as long as basal width, almost straight, with a pair of lateral, retrorse, apical teeth, each almost as long as apical width of shaft; styles long, bent dorsally near base, apical third slightly curved caudally and tapered to rounded apices.

Holomorphotype ♂, allomorphotype ♀, 4 ♂ and 1 ♀ paramorphotypes, Brownsville, Tex., Dec. 29, 1945, R. H. Beamer; other paramorphotypes: 3 ♂ ♂ and 9 ♀ ♀, same place and collector, Dec. 27, 1945.

#### **Macropterous Form:**

Like the brachypterous form except elytra extend more than their length beyond abdomen, widest beyond cross veins, claval area often more amber colored and veins beyond cross veins darker.

Allotype ♀ and 4 ♀ parallotypes, Brownsville, Tex., Dec. 29, 1945, R. H. Beamer; swept in Palm Forest. 14 ♂ ♂ were also taken with the same data one of which was compared with the type of *D. fallax* Muir by Doctor Elwood Zimmerman.

Muir described this species from one specimen, a short winged ♂, Belem, Brazil, June, 1924. Now in Bernice P. Bishop Museum, Honolulu, Hawaii.

#### ***Delphacodes shermani* (Metcalf)**

*Liburnia shermani*. Metcalf, Z. P., Jour. Elisha Mitchell Soc. Vol. 38, p. 207, 1923.

#### **Brachypterous Form:**

Resembles *D. campestris* (VanD.) but both sexes with at least several black spots and male with two short, sharp spines on anal segment. Length ♂ 2.3 mm.; ♀ 3 mm.

**Structure:** Front with sides almost parallel on basal two thirds, slightly converging near apex, definitely more so on basal third, distinctly though lightly tricarinate; crown about one-third longer than width between eyes, carinae very faint; elytra broadest near middle, almost reaching tip of abdomen in male, ending near middle of abdomen in female, narrowing to rounded apices, semihyaline, veins heavier with sparsely set, long yellow setae, hind wings absent.

**Color:** General color buff; male with black spot above each coxa; entire front including areas beneath and back of eyes, except small area at base, a narrow dash either side on dorsum near base of abdomen, a broader cross band near middle and all of genital capsule, except extreme dorsum and anal tube, dark; female with black spots above hind and middle coxae and beneath ocelli, tan across front, a small indistinct dark spot on lateral margin of each dorsal sclerite of abdomen, ovipositor sheath darker.

**Genitalia:** In lateral view male anal segment with two short sharp processes; aedeagus about three times as long as wide, rather rectangular in shape with one strap-like tooth at outer ventral corner and several more or less definite teeth at outer dorsal edge; styles more or less avicephaliform with large head and small beak, in ventral view this head is still more pronounced.

Described from 1 ♂ and 6 ♀ ♀, Raleigh, N. C., in collection of Doctor

Z. P. Metcalf. Redescribed from 140 specimens taken in Douglas Co., Kans., 1945-1946.

***Delphacodes canina* n. sp.**

**Brachypterous Form:**

Resembles *Delphacodes parvula* (Ball) but definitely smaller, elytra scarcely longer than broad and aedeagus in lateral view not bent ventrally near tip. Length ♂, 2.0 mm.; ♀ 2.5 mm.

**Structure:** Front about twice as long as wide, widest just before apex, about one third narrower at base than at widest place, definitely tricarinate; crown definitely longer than shortest distance between eyes, carinae faint; elytra of male barely longer than wide, apices rounded, veins raised, elytra of female definitely longer than broad, apices sharper than in male; hind wings in both sexes mere pads.

**Color:** General color dirty stramineous; female with a variable number of darker spots on lateral margins of last two or three dorsal segments of abdomen; male with dorsum of abdomen more or less fumously lineate.

**Genitalia:** In lateral view anal segment large with a pair of very small caudo-dorsal teeth; aedeagus widest on outer third, slightly more than twice as long as greatest width, with four small teeth dorsally at basal third, a much larger one before broadly rounded apex, three smaller teeth on margin between this and opening and three blunt ones near middle of ventral margin; styles pediform with deeply hollowed foot and bifid toe.

Holotype ♂, allotype ♀, 1 ♂ and 9 ♀ paratypes, Santa Rita Mts., Ariz., Aug. 18, 1935, R. H. Beamer.

**Macropterous Form:**

Like the brachypterous form except with flight wings: Elytra extending about one third their length beyond abdomen, semihyaline with veins darker, widest near region of cross veins, apices rounded. Total length of body and wings ♂ 3.0 mm.; ♀ 3.3 mm.

Holomorphotype ♂, and allomorphotype ♀, Santa Rita Mts., Ariz., Aug. 18, 1935, R. H. Beamer.

Types in Snow Entomological Collections.

***Delphacodes caerulata* n. sp.**

**Brachypterous Form:**

Resembles *D. alexanderi* (Metc.) but more nearly black throughout, aedeagus straight without teeth at tip and styles slender with avicephali-form apices in lateral view. Length ♂ 2.1 mm.; ♀ 2.3 mm.

**Structure:** Front almost three times as long as wide, widest a little below the middle, slightly tapered toward each end although in middle region sides almost parallel, distinctly tricarinate; crown barely longer than wide, smooth on anterior half, distinctly carinate on basal; elytra broad reaching about to genital capsule in ♂, in ♀ extending on to 4th abdominal segment,

apices truncately rounded; hind wings reduced to a flap about one fifth size of eye.

**Color:** General color dark throughout; head, thorax, basal segment of abdomen and border of segment next genital capsule lighter; eyltra, most abdominal segments, and genital capsule except anal tube, coal black.

**Genitalia:** In lateral view, anal segment with two sharp processes; aedeagus long, widest near middle, sides almost parallel with row of teeth diagonally crossing shaft near middle; aedeagal brace about two thirds as long as style, rounded at apex; styles wide at base narrowed toward aicephaliform apices.

Holotype ♂, allotype ♀, 4 ♂ and 1 ♀ paratypes, Douglas Co., Kans., Aug. 27, 1945, R. H. Beamer; other paratypes: 3 ♂ ♂, Aug. 23, 1945, 2 ♂ ♂, Aug. 22, 1945, same place and collector; 12 ♂ ♂, Lawrence, Kans., Aug. 23, 1944, R. H. Beamer; 1 ♂, Medora, Kans., Aug. 5, 1945, R. H. Beamer; 8 ♂ ♂ Douglas Co., Kans., April 12, 1946, R. H. Beamer; 1 ♂ same place and collector April 16, 1946, and 1 ♂ April 18, 1946; 1 ♂ Lawrence, Kans., Sept. 4, 1944, R. H. Beamer.

**Macropterous Form:**

Like the short-winged form except eyltra whitish, semihyaline, widest beyond cross veins and extending one third their length beyond abdomen.

Holomorphotype ♂, Cherokee Co., Kans., Aug. 31, 1927, R. H. Beamer; paramorphotypes: 1 ♂, Douglas Co., Kans., Aug. 22, 1945, R. H. Beamer; 1 ♂, same place and collector, Aug. 27, 1945; 1 ♂, Lawrence, Kans., Sept. 4, 1944, R. H. Beamer.

Types in Snow Entomological Collections.

***Delphacodes peneparvula* n. sp.**

**Brachypterous Form:**

Resembles *D. parvula* (Ball) but posterior margin of male pygofer in lateral view scarcely concave, aedeagus almost straight and aedeagal brace not conspicuous. Length ♂ 2.5 mm.; ♀ 2.8 mm.

**Structure:** Front about twice as long as wide; widest on apical third, slightly narrowed toward either end, more so toward base, strongly tricarinate; crown about one third longer than basal width, carinae definite on basal half, apex broadly rounded; elytra semihyaline, reaching to about middle of abdomen, apices broadly rounded; rather widely separated on mesal line; hind wings mere pads about one third as large as an eye.

**Color:** General color stramineous, dorsum more or less lineate with darker; a dark spot below each ocellus, a second above middle coxae in ♀ and a third and larger spot above hind coxae in ♂.

**Genitalia:** In lateral view; male pygofer very slightly concave on posterior margin; anal segment without processes; aedeagus with sides almost parallel, enlarged at apex with row of about 10 teeth starting on dorsal margin at tip and curving to about ventral margin near middle of shaft, also 6 to 8 teeth on ventral margin on outer third; styles pediform with large heel.

Holotype ♂, allotype ♀, 24 ♂ and 25 ♀ paratypes, Meade Co., Kans.,

Aug. 14, 1945, R. H. Beamer. One paratype Wichita Nat., Forest, Okla., June 26, 1946, R. H. Beamer.

**Macropterous Form:**

Like the short winged form except both pairs of wings extending about one fourth their length beyond abdomen. Length ♂ 3.8 mm.; ♀ 3.8 mm.

Holomorphytype ♂, Benton, Ky., June 30, 1939, R. H. Beamer; allomorphytype ♀, Sinton, Tex., July 5, 1936, D. R. Lindsay; 1 ♀ paramorphytype, Wichita, Nat., Forest, Okla., June 27, 1936, R. H. Beamer; 1 ♀ paramorphytype, Meade Co., Kans., Aug. 14, 1945, R. H. Beamer.

Types in Snow Entomological Collections.

***Delphacodes perusta* n. sp.**

**Brachypterous Form:**

Resembles *Delphacodes analis* (Crawf.) but smaller, lacking tooth on ventro-caudal margin of anal segment and outer half of aedeagus pediform. Length ♂ 1.7 mm.; ♀ 2.0 mm.

**Structure:** Front slightly more than twice as long as wide, widest near middle, slightly narrowed to apex, more so on basal third, definitely tricarinate; crown slightly longer than width between eyes, carinae rather faint; elytra almost rectangular, broadly rounded at apices, extending to about middle of abdomen in both sexes.

**Color:** Female stramineous throughout with slightly darker ovipositor and sheath; male dirty grayish brown on head and pronotum to generally black on abdomen, with a large lighter spot on dorsum of abdomen at base and some lighter spots on lateral margins; legs much lighter.

**Genitalia:** In lateral view anal segment with a broad and short almost double tooth on each side; aedeagus six or so times as long as wide, pediform on outer half, more or less covered on that portion with fair sized teeth; styles widest at base, pediform on outer half.

Holotype ♂, allotype ♀, 55 ♂ and 38 ♀ paratypes, Dunkirk, N. Y., July 20, 1946, R. H. Beamer; other paratypes: 12 ♂♂ and 10 ♀♀, Fredonia, N. Y., July 21, 1946, L. D. Beamer; 8 ♀♀ and 7 ♂♂, Lancaster, N. Y., July 25, 1946, R. H. Beamer; 19 ♂♂ and 9 ♀♀, Rome, O., July 19, 1946, R. H. Beamer.

**Macropterous Form:**

Like the brachypterous except wings fully developed. Elytra extending at least one third their length beyond abdomen, whitish semihyaline with veins much darker. Both sexes quite dark in general appearance to naked eye.

Holomorphytype ♂, allomorphytype ♀, 28 ♂ and 31 ♀ paramorphytypes, Dunkirk, N. Y., July 20, 1946, R. H. Beamer.

All types in Snow Entomological Collections.

***Delphacodes nigriscutellata* n. sp.**

**Brachypterous Form:**

Resembles *D. shermani* (Metcalf) but crown black as well as front, scutel-

lum black and female generally without black marks. Length ♂ 2.3 mm.; ♀ 3.0 mm.

**Structure:** Front slightly more than twice as long as wide, greatest width beyond middle, slightly narrowed toward apex, more so, toward base, practically without carinae; crown slightly longer than width between eyes; elytra barely longer than wide, veins raised, apices almost truncate.

**Color:** General color stramineous; female with ovipositor and sheath slightly darker; male with front, including crown and genae, a large spot above middle coxae, scutellum, broad band across middle of abdomen and genital capsule except anal segment, black; elytra often embrowned, hyaline with veins darker, also a slightly darker spot above hind coxae.

**Genitalia:** In lateral view anal segment with a pair of long closely appressed processes; aedeagus broadest at base, about one third as wide as total length, rapidly narrowed at basal third to one third basal width, ventral margin incurved on apical third, apex narrowed and curved ventrally; styles with caudal projection near base, unevenly bilobed on apical third.

Holotype ♂, allotype ♀, 18 ♂ and 52 ♀ paratypes, Douglas Co., Kans., April 18, 1946, R. H. Beamer; other paratypes same place and collector: 15 ♂♂ and 10 ♀♀, April 24, 1946; 7 ♀♀, April 29, 1946; 4 ♂♂, April 12, 1946; 1 ♂ May 21, 1946.

#### **Macropterous Form:**

Like the brachypterous form but with flight wings. Elytra extending past abdomen by one third their length; widest in region of cross veins, apices rounded, hyaline, veins slightly darker.

Holomorphotype ♂, Meade Co., Kans., Sept. 13, 1944, R. H. Beamer; allomorphotype ♀, and 5 ♂♂ paramorphotypes, Douglas Co., Kans., April 18, 1946, R. H. Beamer; 1 ♂ and 1 ♀ paramorphotypes same place and collector April 16, 1946.

Types in Snow Entomological Collections.

This species was collected in Douglas Co., Kans., by sweeping around the edge of a marsh which had a fair stand of *Andropogon furcatus* Muhl. It was not taken in any other stand of this grass although several other locations were swept.

#### ***Delphacodes atridorsum* n. sp.**

#### **Brachypterous Form:**

Resembles *D. nitens* M. and G. but smaller, aedeagus bent dorsally almost at right angles and not enlarged at tip. Length ♂ 2.0 mm.; ♀ 2.2 mm.

**Structure:** Front about a third longer than wide, widest in the middle and narrowed about equally toward each end, with large median carina on apical half, evanescent at either end; crown about as wide as long, broadly rounded at apex, practically without carinae; pronotal carinae barely visible; elytra about as broad as long, barely reaching second abdominal segment, truncately rounded on apices; hind wings practically absent.

**Color:** Male dark brown to black except antennae, genae, clypellus, beak,

venter of thorax and legs stramineous; female stramineous, ovipositor and ocelli darker.

**Genitalia:** In lateral view genital capsule about rectangular; anal segment with a pair of long, sharp curved processes; aedeagus widest at base, almost half as wide as long, bent dorsally and strongly tapered on outer two thirds with about 8 teeth near base and 6 on dorsal margin just short of apex; styles widest at base, slightly curved dorsally, apices sharp on ventral margin, in caudal view oval at base with avicephaliform apex with sharp beak on inner margin.

Holotype ♂, allotype ♀, 6 ♂ and 2 ♀ paratypes, Lapine, Ore., July 2, 1935, R. H. Beamer.

Types in Snow Entomological Collections.

### *Delphacodes sagittata* n. sp.

#### **Brachypterous Form:**

Resembles *D. parvula* (Ball) but much smaller, no dark markings, with four short processes on anal segment and a more or less sagittate aedeagus. Length ♂ 1.8 mm.; ♀ 2.0 mm.

**Structure:** Front about one half as wide as long, widest on outer third, definitely narrowed toward each end more so toward base, definitely tricarinate; crown almost twice as long as wide, apex broadly rounded, carinae evident on basal half; elytra semi hyaline, sides almost parallel, apices broadly rounded, extending to about middle of abdomen; hind wings reduced to very small pads about one fourth as large as an eye.

**Color:** Stramineous throughout. . .

**Genitalia:** In lateral view anal segment with two pairs of short processes; aedeagus almost three times as long as greatest width, widest beyond middle, most of enlargement on ventral margin, one large sharp tooth on dorsal margin near tip and about five smaller ones on same margin near outer third; styles pediform, heel very large, base deeply concave.

Holotype ♂, allotype ♀, 1 ♂ and 5 ♀ paratypes, Okefenokee Swamp, Ga., July 25, 1939, R. H. Beamer.

All types in Snow Entomological Collections.

#### **Plate I**

1. Lateral view of genital capsule of male of *Delphacodes fallax* Muir.
- 1a. Caudal view of styles and aedeagal brace of *Delphacodes fallax* Muir.
- 1b. Lateral view of tip of aedeagus of *Delphacodes fallax* Muir.
- 1c. Dorso-ventral view of tip of aedeagus of *Delphacodes fallax* Muir.
2. Lateral view of genital capsule of male of *Delphacodes nigripennata* Beamer.
- 2a. Caudal view of styles and aedeagal brace of *Delphacodes nigripennata* Beamer.
- 2b. Lateral view of aedeagus, enlarged, of *Delphacodes nigripennata* Beamer.
3. Lateral view of genital capsule of male of *Delphacodes silvae* Beamer.
- 3a. Caudal view of styles and aedeagal brace of *Delphacodes silvae* Beamer.
- 3b. Lateral view of outer two thirds of aedeagus of *Delphacodes silvae* Beamer.
4. Lateral view of genital capsule of male of *Delphacodes sagae* Beamer.
- 4a. Caudal view of styles and aedeagal brace of *Delphacodes sagae* Beamer.
- 4b. Lateral view of aedeagus, enlarged, of *Delphacodes sagae* Beamer.
5. Lateral view of genital capsule of male of *Delphacodes hyalina* Beamer.
- 5a. Caudal view of styles and aedeagal brace of *Delphacodes hyalina* Beamer.
- 5b. Lateral view of aedeagus, enlarged, of *Delphacodes hyalina* Beamer.





***Delphacodes idonea* n. sp.****Macropterous Form:**

Resembles *Delphacodes wetmorei* M. and G. but much larger, the inturned dorso-caudal portion of pygofer single, about half as wide as same portion in *wetmorei* and aedeagus bent dorsally near base. Length ♂ 3.8 mm.; ♀, 4 mm.

**Structure:** Front slightly more than twice as long as wide, widest near middle, sides converging toward each end, more rapidly toward base, definitely tricarinate, median carina forked near margin of crown; crown definitely longer than basal width, definitely carinate, anterior margin truncate, basal fovea more than twice as wide as long, anterior fovea twice as long as basal width; elytra extending more than one third their length beyond body, gradually widening to beyond crossveins, apices broadly rounded, generally milky hyaline, veins darker.

**Color:** General color stramineous, area between carinae of front, a broad dorsal crossband, portions of sternum and most of ventral surface of abdomen except hind margins of segments, very dark.

**Genitalia:** In lateral view, pygofer with small caudo-ventral projection; anal segment with a pair of almost straight processes arising near middle closely appressed to segment; aedeagus about twice basal width, bent dorsally near base, median width about one third basal width, slightly enlarged to rounded apices; dorsal margin on outer fourth with about 12 sharp teeth, a row of about 6 teeth angling from dorsal to ventral margin near middle, numerous teeth on ventral margin of basal third; styles with sides almost parallel, slightly bifid at apices, slightly shorter than aedeagus in caudal view, knobbed at base, narrowed toward tips then enlarged at apices on both margins.

Holotype ♂, allotype ♀, 11 ♂ and 7 ♀ paratypes, Homestead, Fla., Aug. 9, 1930, L. D. Tuthill; other paratypes: 8 ♂ ♂ and 6 ♀ ♀; same time and place, R. H. Beamer; 2 ♂ ♂ and 6 ♀ ♀, same time and place, P. W. Oman; 4 ♂ ♂ and 6 ♀ ♀, Coconut Grove, Fla., Aug. 9, 1930, P. W. Oman; 15 ♀ ♀, same time and place, J. Nottingham; 1 ♂ and 7 ♀ ♀, same time and place, R. H. Beamer; 3 ♀ ♀, same time and place, L. D. Tuthill; 1 ♂, Morrison Field, West Palm Beach, Fla., Aug. 2, 1942, D. Elmo Hardy.

Types in Snow Entomological Collections.

**Plate II**

6. Lateral view of genital capsule of male of *Delphacodes lutea* Beamer.
- 6a. Caudal view of styles and aedeagal brace of *Delphacodes lutea* Beamer.
- 6b. Lateral view of aedeagus, enlarged, of *Delphacodes lutea* Beamer.
7. Lateral view of genital capsule of male of *Delphacodes lappae* Beamer.
- 7a. Caudal view of styles and aedeagal brace of *Delphacodes lappae* Beamer.
- 7b. Lateral view of aedeagus, enlarged, of *Delphacodes lappae* Beamer.
8. Lateral view of genital capsule of male of *Delphacodes shermani* (Metcalf).
- 8a. Caudal view of styles of *Delphacodes shermani* (Metcalf).
- 8b. Lateral view of aedeagus, enlarged, of *Delphacodes shermani* (Metcalf).
9. Lateral view of genital capsule of male of *Delphacodes bifurca* Beamer.
- 9a. Caudal view of styles and aedeagal brace of *Delphacodes bifurca* Beamer.
- 9b. Lateral view of aedeagus, enlarged, of *Delphacodes bifurca* Beamer.
10. Lateral view of genital capsule of male of *Delphacodes bocana* Beamer.
- 10a. Caudal view of styles and aedeagal brace of *Delphacodes bocana* Beamer.
- 10b. Lateral view of aedeagus, enlarged, of *Delphacodes bocana* Beamer.

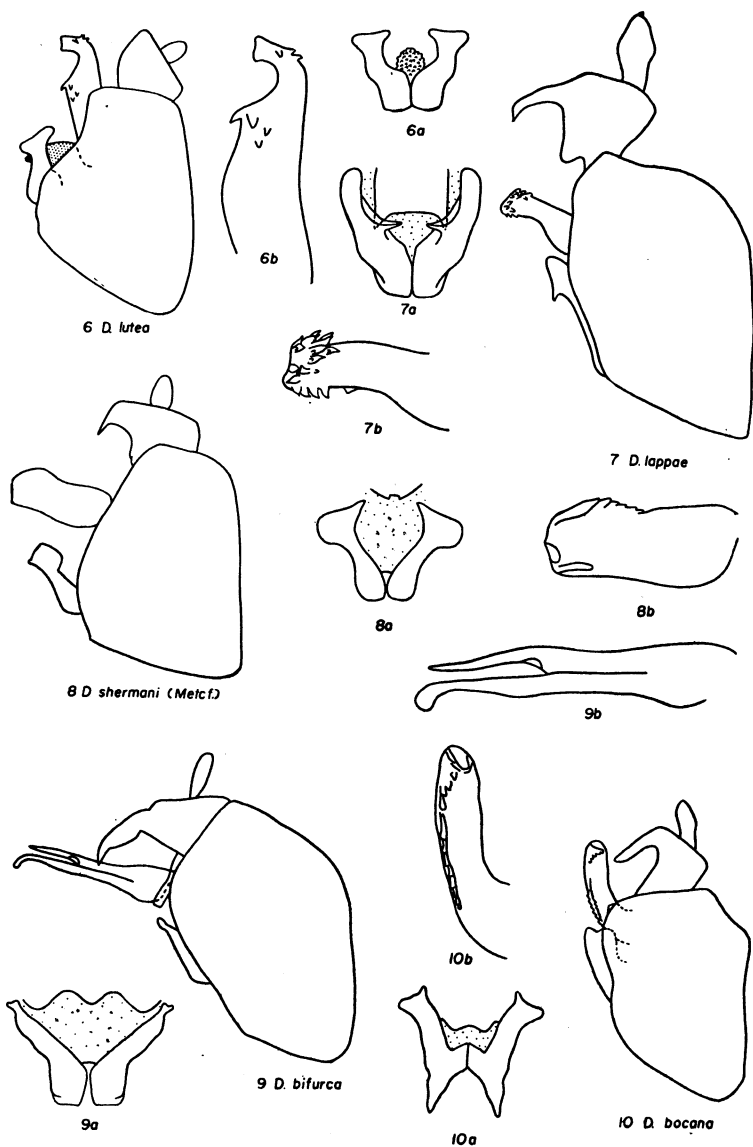


PLATE II

***Delphacodes angulata* n. sp.****Brachypterous Form:**

Resembling *Delphacodes caerulata* Beamer but pygofer greatly extended on outer dorsal corner, aedeagus bent dorsally near middle and processes on anal segment bent ventrally on outer half. Length ♂ 2.0 mm.; ♀, 2.5 mm.

**Structure:** Front slightly more than twice as long as wide, widest about middle, definitely narrowed toward base, very slightly narrowed to apex, distinctly but bluntly tricarinate; crown distinctly longer than broad, apex broadly rounded, carinae distinct; elytra broadly oval, reaching to genital capsule in ♂, to fifth segment of abdomen in ♀; hind wings tiny pads, less than one fourth size of eye.

**Color:** General color almost black; venter, except abdomen, front, vertex, pronotum, scutellum, dorsal cross band just before genital capsule in ♂ and anal tube in both sexes, lighter.

**Genitalia:** In lateral view pygofer greatly extended caudally on dorsal margin; anal segment with pair of long, sharp processes arising near middle of ventral margin, bent anteriorly almost at right angles near middle; aedeagus widest at base, bent dorsally near basal third with a diagonal row of about 8 teeth beginning on ventral margin at bend and ending on dorsal margin at beginning of rounded tip; styles widest at base, sinuate, gradually narrowing to a slightly bifid apex, aedeagal brace large, slightly narrowed toward tip, apex slightly concave.

Holotype ♂, allotype ♀, and 4 ♀ paratypes, Douglas Co., Kansas., April 12, 1946, R. H. Beamer; other paratypes; same place and collector, 4 ♂ ♂ and 1 ♀, April 18, 1946; same place and collector, 1 ♂, July 25, 1945; same place and collector, 8 ♂ ♂, Aug. 17, 1944; Lawrence, Kansas., 19 ♂ ♂, Aug. 23, 1944, R. H. Beamer, same place and collector, 2 ♂ ♂, Sept. 1, 1944; same place and collector, 4 ♂ ♂, Sept. 4, 1944; Welda, Kans., 1 ♂, Sept. 17, 1945, R. H. Beamer; Sterling, Kans., 1 ♂, Aug. 4, 1944, R. H. Beamer; Nickerson, Kans., 1 ♂, Aug. 4, 1945, R. H. Beamer. Medora, Kans., 2 ♂ ♂, Aug. 5, 1945, R. H. Beamer; Aransas Pass, Texas, 2 ♂ ♂, Jan. 2, 1946, R. H. Beamer.

**Macropterous Form:**

Resembling the brachypterous form but with elytra and hind wings ex-

**Plate III**

11. Lateral view of genital capsule of male of *Delphacodes canina* Beamer.
- 11a. Caudal view of styles and aedeagal brace of *Delphacodes canina* Beamer.
- 11b. Lateral view of aedeagus, enlarged, of *Delphacodes canina* Beamer.
12. Lateral view of genital capsule of male of *Delphacodes caerulata* Beamer.
- 12a. Caudal view of styles and aedeagal brace of *Delphacodes caerulata* Beamer.
- 12b. Lateral view of aedeagus, enlarged, of *Delphacodes caerulata* Beamer.
13. Lateral view of genital capsule of male of *Delphacodes peneparvula* Beamer.
- 13a. Caudal view of styles and aedeagal brace of *Delphacodes peneparvula* Beamer.
- 13b. Lateral view of aedeagus, enlarged, of *Delphacodes peneparvula* Beamer.
14. Lateral view of genital capsule of male of *Delphacodes perusta* Beamer.
- 14a. Caudal view of styles and aedeagal brace of *Delphacodes perusta* Beamer.
- 14b. Lateral view of aedeagus, enlarged, of *Delphacodes perusta* Beamer.
15. Lateral view of genital capsule of male of *Delphacodes nigriscutellata* Beamer.
- 15a. Caudal view of styles and aedeagal brace of *Delphacodes nigriscutellata* Beamer.
- 15b. Lateral view of aedeagus, enlarged, of *Delphacodes nigriscutellata* Beamer.

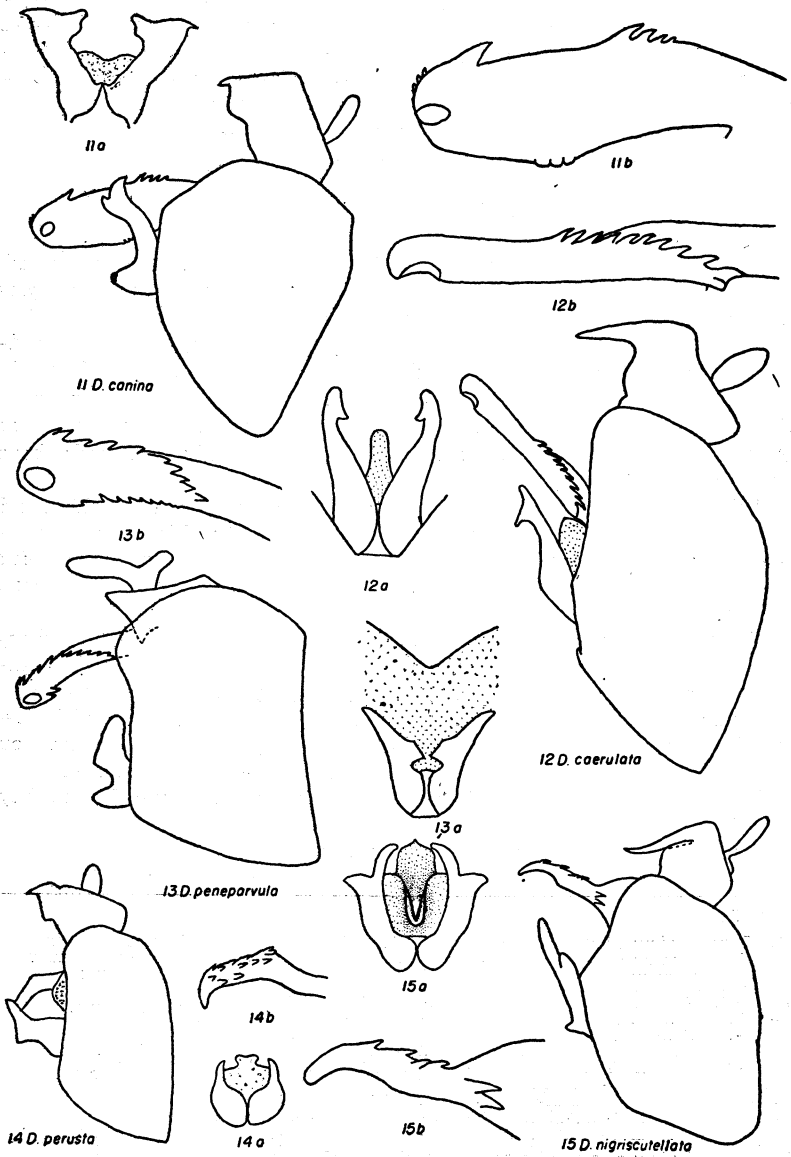


PLATE III

tending almost half their length beyond end of abdomen and general color usually much lighter.

Holomorphotype ♂, allomorphytype ♀, 6 ♂ and 4 ♀ paramorphotypes, Douglas Co., Kans., Aug. 30, 1938, trap light, P. B. Lawson; other paramorphotypes: same place and collector, trap light, 1 ♂, Aug. 28, 1928; Douglas Co., Kans., 1 ♂, Aug. 22, 1945, R. H. Beamer; Lawrence, Kansas., 1 ♂, Sept. 1, 1944, R. H. Beamer; Medora, Kans., S. Hills, 1 ♂, July 6, 1945, R. H. Beamer; Cherokee Co., Kans., 1 ♂, Sept. 19, 1945, R. H. Beamer.

Types in Snow Entomological Collections.

### *Delphacodes pediforma* n. sp.

#### Brachypterous Form:

Resembles *Delphacodes campestris* (V. D.) but larger, anal segment with a pair of long, sharp processes, aedeagus pediform on outer third and styles narrowed at apices. Length ♂ 2.8 mm.; ♀, 3.2 mm.

**Structure:** Front about twice as long as greatest width, widest near middle, narrowing toward both ends, slightly more so toward base, definitely tricarinate; crown longer than wide, not very plainly carinate, elytra with sides almost parallel, apices rounded, reaching almost to genital capsule in ♂ to middle of next to last segment in ♀; hind wings reduced to pads about one third as large as eye.

**Color:** General color stramineous; male with a dark spot above hind and middle coxae and in lateral angles of scutellum, abdomen black except narrow median dorsal longitudinal line, some spots along sides and upper third of genital capsule; female with indications of lateral longitudinal dark stripes on abdomen.

**Genitalia:** In lateral view genital segment with a pair of slender, sharp processes; aedeagus with sides almost parallel on basal three fourths, pediform on outer fourth, heel on dorsal margin, spiny on ventral margin just before foot; styles widest near middle, inner margin sinuate. In caudal view pygofer expanded, sunken; styles widest at base, sharply contracting on outer third; aedeagal brace broad, as long as wide, with apex rounded.

Holotype ♂, allotype ♀, 8 ♂ and 8 ♀ paratypes, Mt. Ranier, Wash., July 6, 1935, R. H. Beamer.

Types in Snow Entomological Collections.

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#### Plate IV

16. Lateral view of genital capsule of male of *Delphacodes atridorsum* Beamer.
- 16a. Caudal view of styles and aedeagal brace of *Delphacodes atridorsum* Beamer.
- 16b. Lateral view of aedeagus, enlarged, of *Delphacodes atridorsum* Beamer.
17. Lateral view of genital capsule of male of *Delphacodes sagitta* Beamer.
- 17a. Caudal view of styles and aedeagal brace of *Delphacodes sagitta* Beamer.
- 17b. Lateral view of aedeagus, enlarged, of *Delphacodes sagitta* Beamer.
- 17c. Ventral view of aedeagus, enlarged, of *Delphacodes sagitta* Beamer.
18. Lateral view of genital capsule of male of *Delphacodes idonea* Beamer.
- 18a. Caudal view of styles and aedeagal brace of *Delphacodes idonea* Beamer.
- 18b. Lateral view of aedeagus, enlarged, of *Delphacodes idonea* Beamer.
19. Lateral view of genital capsule of male of *Delphacodes angulata* Beamer.
- 19a. Caudal view of styles and aedeagal brace of *Delphacodes angulata* Beamer.
- 19b. Lateral view of aedeagus, enlarged, of *Delphacodes angulata* Beamer.
20. Lateral view of genital capsule of male of *Delphacodes pediforma* Beamer.
- 20a. Caudal view of styles and aedeagal brace of *Delphacodes pediforma* Beamer.
- 20b. Lateral view of aedeagus, enlarged, of *Delphacodes pediforma* Beamer.

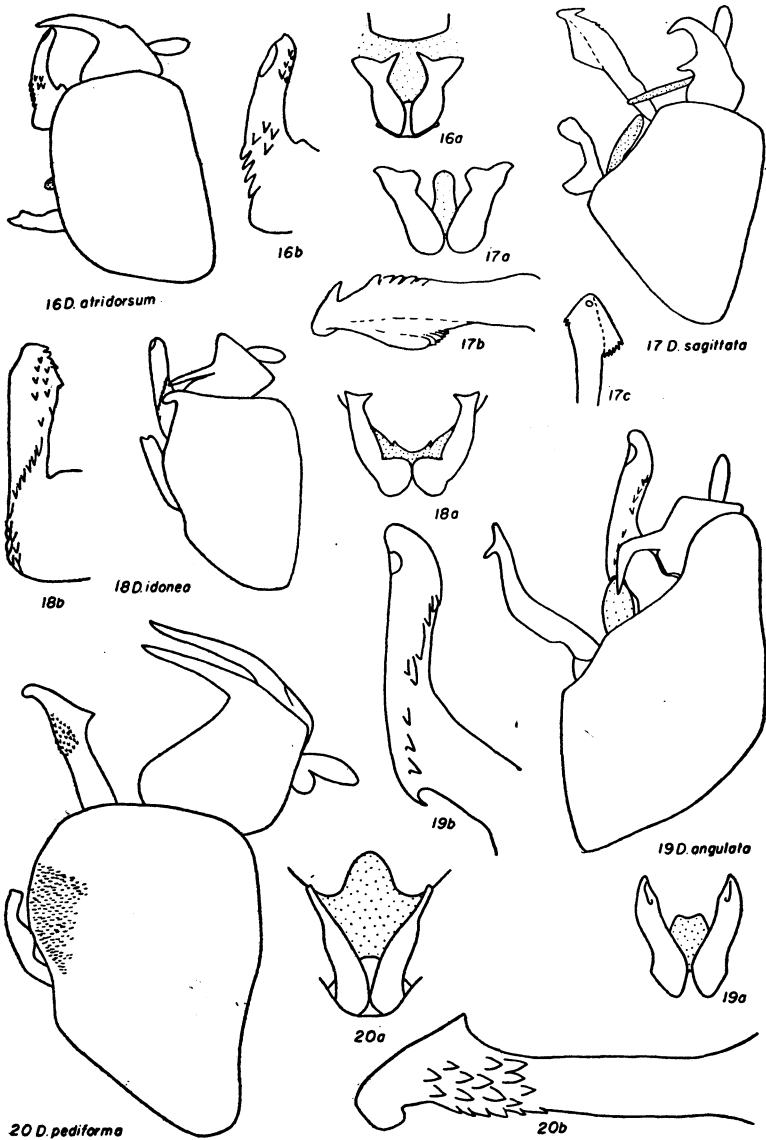


PLATE IV