

SOME NEW SPECIES OF DELPHACODES (Homoptera, Fulgoridae, Delphacinae)

Part IV

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31 *Delphacodes cornuta* n. sp.

Brachypterous Form:

Resembles *Delphacodes waldeni* (Metcf.) but with definite color on parts of elytra instead of just brown veins and aedeagus ending in a cornucopia-shaped apex. Length, ♂ 2.6 mm.; ♀ 2.8 mm.

Structure: First antennal segment about twice as long as wide; front about one-third longer than greatest width, slightly narrowed toward either end, more so toward base, strongly tricarinate; crown about as long as width between eyes; elytra slightly longer than wide, apices truncate, veins raised.

Color: General color brown; pronotum with three longitudinal light vittae; elytra of female with region between veins darker, in male border and claval veins lighter; abdomen in female with three more or less definite light longitudinal vittae, male with only median longitudinal stripe definite.

Genitalia: In lateral view pygofer much wider than long; narrowed dorsally; anal segment rectangular, widest at outer end with a pair of more or less triangular-shaped processes almost as long as segment arising at outer ventral corner; aedeagus about as long and wide as style, curved ventrally, sides almost parallel to outer third where it flares into a cornucopia-shaped, sharp apex; styles long, sides almost parallel throughout, sinuately curved with a broad tooth almost as long as width of shaft at inner apical corner; aedeagal brace about twice as wide as width of style and twice as long as own width, outer dorsal corner sharpened; in caudal view aedeagal brace scarcely projected dorsally; styles long, sinuate, avicephaliform, beak on outside.

Holotype ♂, La Belle, Fla., March 3, 1947, R. H. Beamer; allotype ♀ and one ♂ paratype, July 7, 16, 1939, R. H. Beamer; 1 ♂ paratype, Royal Palm State Park, Fla., March 16, 1947, L. D. Beamer. Types in the Snow Entomological Collections.

32. *Delphacodes quadridentis* n. sp.

Brachypterous Form:

Resembling *Delphacodes acuministyla* Dozier but males without brown tips to elytra and anal segment with two pairs of processes instead of one. Length ♂ 1.5 mm.; ♀ 1.8 mm.

Structure: First segment of antennae slightly longer than wide; front a little more than twice as long as wide, widest near apical third, considerably narrower at base than at apex, tricarinate, median carina quite heavy; crown slightly longer than wide, carinae definite; elytra almost twice as long as wide, apices rounded.

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

Color: General color of female stramineous, male with dorsum of about basal half of abdomen more or less dark brown and genital capsule except anal tube, black.

Genitalia: In lateral view, pygofer more or less rectangular, slightly longer on ventral margin; anal segment with two pairs of processes, one pair short and blunt, the other about three times as long as first, sharp; aedeagus narrowed near middle with margins almost parallel on outer half, dorsal margin with about seven teeth; aedeagal brace not visible; styles with sides almost parallel to slightly enlarged region just before apices; in caudal view aedeagal brace extended dorsally more than basal width, tip slightly bifid; styles rather short with avicephaliform apices, beak short, on inner margin.

Holotype ♂, allotype ♀, 31 ♂♂ and 37 ♀♀ paratypes, Ocean Springs, Miss., March 3, 1947, R. H. Beamer; other paratypes: 5 ♂♂ and 6 ♀♀, Ocean Springs, Miss., March 3, 1947, L. D. Beamer; 9 ♂♂ and 4 ♀♀, Sanford, Fla., March 11, 1947, R. H. Beamer; 3 ♂♂ and 1 ♀, Sanford, Fla., March 11, 1947, L. D. Beamer; 7 ♂♂ and 1 ♀, Naples, Fla., March 16, 1947, R. H. Beamer; 1 ♂ and 4 ♀♀, Mims, Fla., March 18, 1947, R. H. Beamer; 1 ♂, Hilliard, Fla., March 13, 1947, R. H. Beamer; 20 ♂♂ and 14 ♀♀, Punta Gorda, Fla., March 12, 1947, R. H. Beamer; 1 ♂, Zolpho Springs, Fla., July 15, 1939, R. H. Beamer; 5 ♂♂, Hilliard, Fla., Oct. 5, 1938, P. W. Oman; 1 ♂, Zolpho Springs, Fla., June 15, 1939, P. W. Oman.

Types and paratypes in Snow Entomological Collections, paratypes in United States National Museum.

33. *Delphacodes aetocephala* n. sp.

Brachypterous Form:

Resembling *Delphacodes parcula* Eall but anal segment of male with a pair of sharp processes and aedeagus in lateral view resembling the head of an eagle. Length ♂ 2.0 mm.; ♀ 2.5 mm.

Structure: First antennal segment slightly longer than wide, front almost twice as long as wide, widest near outer third, narrowed toward each end, more so toward base, barely more than half as wide at base as at widest place, strongly tricarinate; crown slightly longer than width at base, carinae definite; elytra semihyaline, almost twice as long as wide, apices rounded, veins raised with few long hairs.

Color: General color stramineous to cinereous, dorsum of abdomen more or less longitudinally lineate with darker.

Genitalia: In lateral view pygofer more or less rectangular, widest on venter; anal segment with pair of sharp processes; aedeagus widest at base, gently narrowed and strongly curved ventrally to sharp apex, avicephaliform; aedeagal brace narrow extending above level of edges of pygofer; styles more or less pediform, base strongly arcuate.

Holotype ♂, allotype ♀, 63 ♂♂ and 46 ♀♀ paratypes, Covington, La., Mar. 3, 1947, R. H. Beamer; other paratypes: 45 ♂♂ and 18 ♀♀, Slidell, La., Mar. 3, 1947, R. H. Beamer; 2 ♂♂, Pearlinton, Miss., Mar. 3, 1947, R. H. Beamer; 14 ♂♂ and 8 ♀♀, Ocean Springs, Miss., Mar. 3, 1947, R. H. Beamer;

3 ♂♂ and 2 ♀♀, same place and date, L. D. Beamer; 31 ♂♂ and 9 ♀♀, Mariana, Fla., Mar. 7, 1947, R. H. Beamer; 18 ♂♂ and 8 ♀♀, same place and date, L. D. Beamer; 1 pair, Sanford, Fla., July 22, 1926, E. D. Ball.

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

34. *Delphacodes turgida* n. sp.

Brachypterous Form:

Resembles *Delphacodes sagae* Beamer but females, crown, pronotum and scutellum of males stramineous instead of fumous, and dorsal margin of aedeagus greatly swollen near middle. Length ♂ 3.0 mm.; ♀ 4.0 mm.

Structure: First antennal segment twice as long as wide; front a little more than twice as long as wide, widest near apical third, narrowed toward each end, more so toward base, distinctly tricarinate; crown about one-third longer than wide, carinae visible; elytra of male not reaching genital capsule, opaque, apices rounded, veins raised, female with elytra, exposing last three abdominal segments, apices rounded, veins heavier.

Color: General color stramineous; in male elytra, spot above hind coxae, more than half of abdomen and all of genital capsule except dorsum dark brown to black; female with spot above hind coxae and some longitudinal lines on abdomen more or less slightly darkened.

Genitalia: In lateral view, pygofer somewhat extended on caudo-dorsal corner; anal segment with a pair of long, sharp, processes extending almost directly away from segment; aedeagus narrowest at base, curved ventrally throughout, greatly swollen on dorsal margin at middle with four sharp retrorse teeth on dorsal margins between swelling and apex; aedeagal brace visible, large, more or less rectangular in shape, with outer half of ventral margin, more or less serrate; styles narrowed on outer third to sharp apices, a large tooth on this margin at outer third; in caudal view styles almost straight, narrowed on outer margin on apical third; aedeagal brace about twice as wide at base as at apex, extended dorsally more than half length of styles, apex bifid with a retrorse tooth, about as long as half width of brace at apex on either side just before tip.

Holotype ♂, allotype ♀, 10 ♂♂ paratypes, Yankeetown, Fla., Mar. 9, 1947, R. H. Beamer; other paratypes: 4 ♂♂, same place and time, L. D. Beamer; 10 ♂♂ and 9 ♀♀, Melbourne, Fla., Mar. 17, 1947, R. H. Beamer; 2 ♂♂, Woodville, Fla., Mar. 7, 1947, R. H. Beamer; 2 ♂♂, Mims, Fla., Mar. 18, 1947, R. H. Beamer; 5 ♂♂ and 2 ♀♀, Palatka, Fla., Mar. 10, 1947, R. H. Beamer; 1 ♂, Okefenokee Swamp, Ga., Billy's Island, July 27, 1939, R. H. Beamer; 1 ♂, Sanford, Fla., Aug. 16, 1926, E. D. Ball; 1 ♂, Sanford, Fla., Feb. 22, 1926, E. D. Ball; 2 ♂♂, Sanford, Fla., Nov. 23, 1926, E. D. Ball; 1 ♂ and 3 ♀♀, New Smyrna, Fla., Oct. 30, 1927.

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

35. *Delphacodes adunca* n. sp.

Brachypterous Form:

Resembling *Delphacodes andromeda* (V.D.) but general color of elytra and abdomen much lighter and first pair of processes on anal segment short

and sharp-pointed instead of very wide, long, and with rounded apices. Length ♂ 1.5 mm.; ♀ 2.0 mm.

Structure: First segment of antenna about as broad as long; front not quite twice as long as wide, widest at middle, apex very slightly wider than base, distinctly tricarinate; crown one third longer than basal width, wider at apex than at base, carinae distinct; elytra about as wide as long, hyaline with apices rounded.

Color: General color stramineous, in male, front, anterior half of pronotum and all of scutellum except apex, black; abdomen more or less tinged with dark on basal half; genital capsule black except a portion of dorsum; a spot above middle and hind coxae darker; female about as in male but darker portions not jet black.

Genitalia: In lateral view, pygofer more or less rectangular with outer dorsal and ventral corners rounded off making posterior margin much shorter than anterior; anal segment with two pairs of processes, the first pair short and sharp, length about equal to basal width, second pair almost as long as aedeagus bent back dorsally near middle to almost touch first pair; aedeagus slightly wider, at apex than at middle, bent dorsally near base, then ventrally near outer third, outer half with numerous teeth well scattered over surface; aedeagal brace not visible in lateral view; styles with rather enlarged, more or less, serrated heels, sides slightly tapered to rounded apices with well marked angular hump on outer margins before apices; in caudal view, aedeagal brace extended dorsally about basal width, tip rounded; styles rather pediform on outer third, heel rather prominent on inner margins.

Holotype ♂, allotype ♀, 102 ♂♂ and 103 ♀♀ paratypes, Otter Creek, Fla., Mar. 9, 1947, R. H. Beamer; other paratypes: 3 ♂♂ and 3 ♀♀, same place and date, L. D. Beamer; 4 ♂♂, Raleigh, N. C., Oct. 16, 1938, P. W. Oman; 2 ♂♂, Hilliard, Fla., Oct. 5, 1938, P. W. Oman; 5 ♂♂, LaBelle, Fla., July 16, 1939, P. W. Oman; 8 ♂♂, Zolfo Springs, Fla., July 15, 1939, P. W. Oman; 4 ♂♂, New Port Ritchey, Fla., Oct. 7, 1938, P. W. Oman; 1 ♂, Sanford, Fla., Oct. 31, 1925, E. D. Ball.

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

36. *Delphacodes bifida* n. sp.

Brachypterous Form:

Resembles *Delphacodes campestris* (V.D.) but larger, male pronotum with dark spot back of each eye, elytra barely reaching genital capsule and anal segment with a pair of long processes. Length ♂ 2.8 mm.; ♀ 3.0 mm.

Structure: First segment of antennae twice as long as wide; front a little more than twice as long as wide, widest near basal third, narrowing toward either end, more so toward base, distinctly tricarinate; crown about as wide as long, carinae distinct; elytra reaching genital capsule, about twice as long as wide, semihyaline, veins raised and apices rounded.

Color: General color stramineous; front darkened between carinae in some specimens; pronotum with a brown spot back of each eye; scutellum

brown outside of lateral carinae; dorsum of abdomen mostly dark brown, lighter on basal segment and on genital capsule; darker spot above middle and hind coxae and below eyes; venter of abdomen of both sexes more or less embrowned.

Genitalia: In lateral view, pygofer more or less rectangular, wider on dorsal half than on ventral; anal segment with a pair of long, sharp processes extending more than their own width away from segment; aedeagus almost as broad as long, bifid almost half length; aedeagal brace long, triangular in shape; styles pediform in shape, heel sharp, toe narrow; in caudal view, aedeagal brace not extending dorsally; styles very small with heavy triangular bases and apices to narrowed and extended caudo-laterally.

Holotype ♂, Flagstaff, Ariz., Aug. 5, 1933, R. H. Beamer; allotype ♀, 2 ♂ and 5 ♀ paratypes, Santa Catalina Mts., Ariz., July 15, 1933, E. D. Ball; other paratypes: 2 ♂ ♂, Santa Catalina Mts., Ariz., June 29, 1933, E. D. Ball, 3 ♂ ♂, one long-winged, Santa Catalina Mts., Ariz., E. D. Ball; 3 ♂ and 3 ♀ ♀, Santa Catalina Mts., Ariz., June 29, 1933, E. D. Ball; 1 ♂, Chiricahua Mts., Ariz., July 18, 1934, E. D. Ball. There is also present 1 ♂ from Colorado and 1 ♂ from New York which seem to be this species but are not included in the type series.

Holotype and paratypes in Snow Entomological Collections; allotype and paratypes in United States National Museum.

37. *Delphatodes apicata* n. sp.

Brachypterous Form:

Resembling *Delphacodes campestris* (V.D.) but males without dark spot on sides of scutellum, styles pointed, and anal segment with a pair of processes. Length ♂ 2 mm.; ♀ 2.3 mm.

Structure: First segment of antennae slightly longer than wide; front less than twice as long as wide, widest near middle, narrowed toward each end, slightly narrower at apex, distinctly tricarinate; crown about as wide as long, carinae not distinct; elytra scarcely reaching middle of abdomen, semihyaline, veins raised, apices more or less truncate, shortest on inner margin.

Color: General color stramineous; male with abdomen mostly brown with a semblance of a median longitudinal light line and of a dark spot above middle and hind coxae; female much lighter with only a suggestion of darker spots on dorsum of abdomen.

Genitalia: In lateral view, pygofer much narrower on dorsal margin than ventral; anal segment with a pair of long sharp processes extended away from segment; aedeagus with broad base, narrowed to one third basal width near base, almost straight to apex with numerous spines on outer half; aedeagal brace almost as long and broad as length of aedeagus with posterior margin finely serrate; styles short, curved dorsally, narrowed on outer third to sharp apices; in caudal view, aedeagal brace slightly extended dorsally and greatly arched caudally; styles sinuate, narrowed greatly on outer third.

Holotype ♂, allotype ♀, 2 ♂ and 1 ♀ paratypes, San Francisco Mt., Ariz., Aug. 12, 1929, E. D. Ball; 1 ♂ paratype, same place and collector, Oct. 3, 1934.

Macropterous Form:

Like the brachypterous form except wings about one third longer than abdomen and general color darker which includes an embrowned scutellum except apex.

Holomorphotype ♂, Grand Canyon, Ariz., Aug. 11, 1927, R. H. Beamer; allomorphotype ♀, 3 ♂ and 2 ♀ paramorphotypes, San Francisco Mt., Ariz., Aug. 12, 1929, E. D. Ball; 2 ♂ paramorphotypes, Flagstaff, Ariz., Aug. 7, 1929, E. D. Ball.

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

38. *Delphacodes arcanastyla* n. sp.

Brachypterous Form:

Resembles *Delphacodes bifida* Emr. but in lateral view male with a pediform-shaped aedeagus, aedeagal brace not visible and styles not pediform. Length 2.5 mm.

Structure: First segment of antennae not quite twice as long as wide, widest about the middle, slightly narrowed toward each end, strongly tricarinate; crown about as long as wide, carinae definite; elytra reaching to genital capsule, semihyaline, apices rounded.

Color: General color stramineous; coxae, large spot above each coxae, genae, area between carinae of front, anterior two thirds of pronotum outside lateral carinae, scutellum outside lateral carinae, and most of abdomen dark brown.

Genitalia: In lateral view, pygofer nearly circular, strongly narrowed on ventral margin; anal segment with a pair of strong, rather blunt, processes extending away from segment; aedeagus not quite as broad at base as length, strongly pediform on outer half, heel and region basad thickly set with minute teeth; aedeagal brace and styles not visible in this view; in caudal view, styles long, diverging, sides sinuate, narrowed on outer third; aedeagal brace not extended dorsally nor caudally.

Holotype ♂, Hell's Crossing, Wash., July 6-7, 1935, R. H. Beamer.

Macropterous Form:

Like the brachypterous form except elytra about one third longer than abdomen and general color darker, especially the scutellum which is entirely black.

Holomorphotype ♂, Midland Co., Mich., May 26, 1945, R. R. Dreisbach; allomorphotype ♀, Paley Co., Mich., June 2, 1945, R. R. Dreisbach; 2 ♂ paramorphotypes, Amery, Wis., June 10, 1917, E. D. Ball.

Types in Snow Entomological Collections, paramorphotypes in United States National Museum.

39. *Delphacodes paransera* n. sp.

Brachypterous Form:

Resembles *Delphacodes arcanastyla* but in lateral view aedeagus many

times as long as wide, not pediform; aedeagal brace visible, long and almost parallel-sided; styles enlarged at apex. Length ♂ 3 mm.

Structure: First antennal segment a little longer than wide; front a little more than twice as long as wide, sides almost parallel, slightly narrowed at either end, distinctly tricarinate on apical two thirds; crown about as wide as long, carinae indefinite; elytra semihyaline, veins raised, reaching to next to the last abdominal segment, apices rounded.

Color: General color stramineous, large spot above middle and hind coxae, genae, spot on pronotum back of each eye, sides of scutellum at least and sometimes all of scutellum and most of abdomen dark brown; arc of front between carinae sometimes slightly darkened.

Genitalia: In lateral view, pygofer more or less rectangular, ventral margin curved, a tooth on caudal margin near ventral corner, dorsal margin about half as long as ventral; anal segment with a pair of sharp processes extending away from segment; aedeagus long and slender, sides almost parallel, slightly enlarged near apex on dorsal margin, slightly curved ventrally on outer third, many teeth on outer half; aedeagal brace greatly extended caudally, rectangular in shape, covered with many teeth; styles sinuate, avicephaliform at apices; in caudal view, slightly projected dorsally, broad and feebly bifid; styles slender, enlarged into avicephaliform apices with beak on inner margin.

Holotype ♂ and 1 ♂ paratype, Piedmont, South Dakota, July 17, 1937, R. H. Beamer; other paratypes: 3 ♂♂, Sturgis, South Dakota, July 21-25, 1947, H. C. Severin; 2 ♂♂, The Plains, Wanakena, N. Y., Aug. 3, 1920, C. J. Drake.

Type and paratypes in Snow Entomological Collections, paratypes in United States National Museum and collection of H. C. Severin, North Dakota State College.

40. *Delphacodes dentis* n. sp

Macropterous Form:

Resembling *Delphacodes puella* (V. D.) but pronotum without the white hind border and male anal segment with two pairs of processes instead of one. Length ♂ 3 mm.; ♀ 3.2 mm.

Structure: First segment of antennae twice as long as wide; front slightly more than twice as long as wide, widest near apical third, narrowed toward each end, base narrower than apex, definitely tricarinate, median carina forking before apex of crown; crown as wide as long, carinae distinct; elytra about one third longer than abdomen, semihyaline, veins darker.

Color: General color stramineous; venter of sternum more or less black, genae, area between frontal carinae, spot back of each eye, area of scutellum outside lateral carinae of scutellum and sometimes entire scutellum except apex, and almost entire abdomen dark brown to black.

Genitalia: In lateral view, pygofer more or less trapezoidal with a small tooth near dorsal third of caudal margin; anal segment with two pairs of processes, first pair very short and heavy, second pair many times longer

than wide; aedeagus widest at base, dorsal margin sinuate, two short teeth near middle of outer third; aedeagal brace visible, oval in outline; styles widest at base narrower near middle, slightly enlarged into more or less bifid apices. In caudal view, aedeagal brace narrow, extended dorsally about its own width, slightly excavated; styles widest at base, strongly constricted just beyond middle, enlarged at apices, slightly bifid.

Holotype ♂, allotype ♀, and 1 ♀ paratype, Brownsville, Texas, Dec. 27, 1945, R. H. Beamer; other paratypes: 1 ♂, Sinton, Texas, Dec. 25, 1945, R. H. Beamer; 3 ♂♂ and 4 ♀♀, McAllen, Texas, Dec. 30, 1945, R. H. Beamer.

Types in Snow Entomological Collections.

41. *Delphacodes dentipennis*, n. sp

Brachypterous Form:

Resembles *Delphacodes livida* Beamer, but wings hyaline, extending to end of abdomen and pygofer of male in lateral view with a large tooth near middle of caudal margin. Length ♂ 2.2 mm.

Structure: First antennal segment about twice as long as wide; front about twice as long as wide, widest near middle, very slightly narrowed toward each end, slightly more so toward base, distinctly tricarinate; crown slightly longer than wide, widest at apex, carinae fairly distinct; elytra extending to tip of abdomen, hyaline, veins thickened.

Color: General color dark; legs, antennae, ventral margins of pronotum, tip of scutellum, basal segment of abdomen, and anal tube stramineous.

Genitalia: In lateral view, pygofer slightly wider than long, longest near middle with a large tooth near middle of caudal margin; anal segment very large with a pair of very long, heavy, processes; aedeagus bent ventrally near base about twice as wide near outer third as near base, narrowed at apex, dorsal third of outer half covered with teeth, the basal ones quite large; aedeagal brace not visible; styles more or less pediform, heel and toe sharp; in caudal view, aedeagal brace not extended dorsally, very broad; styles widest at base, narrowed to apices with sharp tooth on inner margin near basal fourth.

Holotype ♂ and 8 ♂ paratypes in Mountain Lake, Va., Sept. 2, 1946, R. H. Beamer; other paratypes: 3 ♂♂, Storrs, Conn., Aug. 10, 1946, R. H. Beamer; 1 ♂, Colchester, Conn., Aug. 10, 1946, R. H. Beamer; 1 ♂, Rhineland, Wis., July 15, 1917, E. D. Ball.

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

42. *Delphacodes atralabis* n. sp.

Brachypterous Form:

Resembling *Delphacodes campestris* (V. D.) but male lacking dark spot on each side of scutellum and styles in caudal view narrowed on outer two-thirds. Length ♂ 2.2 mm.

Structure: First antennal segment about as long as wide; front about twice as long as wide, widest near middle, narrowed toward each end, more so toward apex, distinctly tricarinate; crown longer than wide, wider at apex than at base, carinae distinct; elytra semihyaline, extending slightly beyond middle of abdomen, apices rounded.

Color: General color stramineous with a large spot above middle coxae and styles black or dark brown; abdomen reddish yellow.

Genitalia: In lateral view, pygofer more or less rectangular, wider than long; anal segment without processes; aedeagus widest at base, narrowed on basal third to about one-third basal width, outer two-thirds evenly curved ventrally, with short tooth at apex on dorsal margin and four teeth near middle of outer third, aedeagal brace, large, triangular, apex sharp, bent somewhat ventrally; styles widest at base, narrowed to widen again just before more or less bifid apex; in caudal view, aedeagal brace not extended dorsally; styles widest at base, sharply narrowed at basal third, outer two-thirds with sides almost parallel, with small tooth on inner margin just before rounded apices.

Holotype ♂, Durham, New Hampshire, Aug. 12, 1946, L. D. Beamer; 2 ♂♂ paratypes same place and date, R. H. Beamer.

Macropterous Form:

Like the brachypterous form except the elytra about one-third longer than abdomen, widest at region of crossveins.

Holomorphotype ♂, Durham, New Hampshire, Aug. 12, 1946, R. H. Beamer.

Types in Snow Entomological Collections.

43. *Delphacodes arcuata* n. sp.

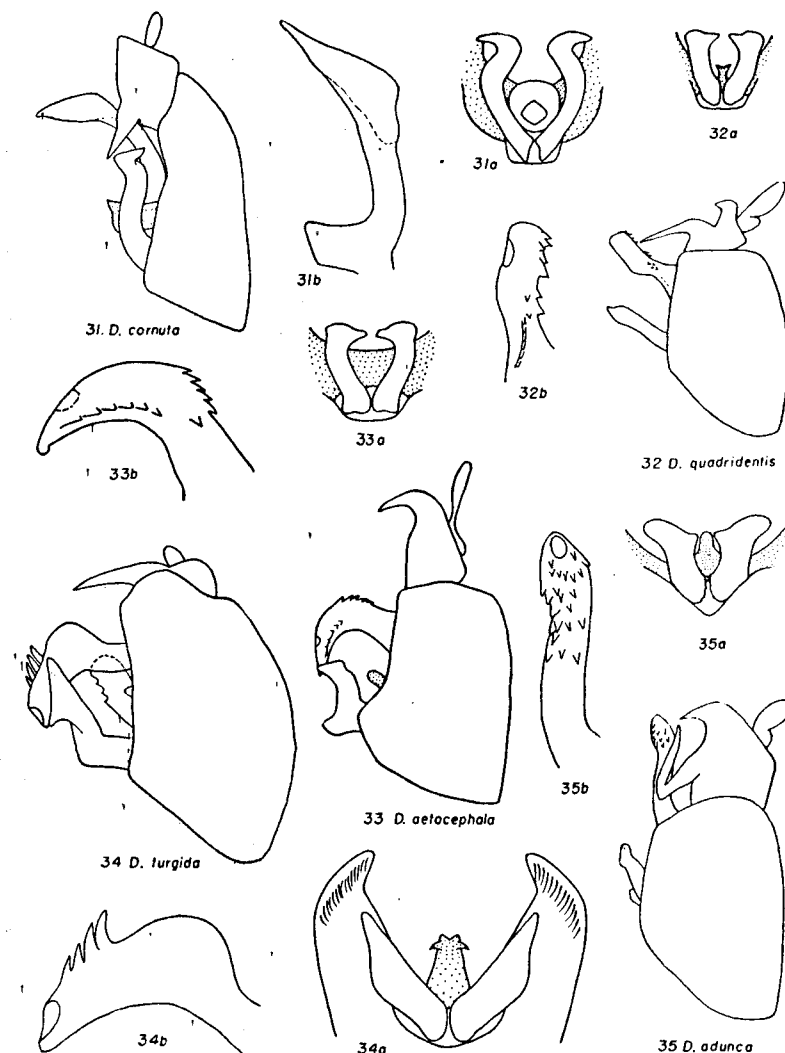
Brachypterous Form:

Resembling *Delphacodes quadrispinosa* M. and G. but males with posterior half of pronotum white instead of black and anal segment without processes instead of four. Length ♂ 2 mm.; ♀ 2.3 mm.

Structure: First segment of antennae about twice as long as wide; front slightly more than twice as long as wide, widest on apical third, slightly narrowed to apex, more so toward base, definitely tricarinate; crown longer than width at base, definitely carinate; elytra about twice as long as wide, reaching genital capsule, apices rounded, veins raised with raised spots fairly numerous.

Color: General color stramineous, male coxae and above, genae, clypellus, area between carinae of front and crown, small areas back of eyes, most of elytra except apical margin and spot on mesal margin before apex of clavus, most of dorsum of abdomen except basal segment, middle of last segment and anal segment and most of middle portions of ventral segments quite dark brown; females much the same but often generally much lighter.

Genitalia: In lateral view, pygofer more or less rectangular, widest on ventral margin, dorso-caudal corner slightly extended; anal segment without processes as such but outer dorsal corner extended slightly and outer ventral corner roundly extended; aedeagus long, generally curved dorsally, shaft slightly narrowed just before two sharp teeth on dorsal margin near outer fourth; another sharp spine on left side about opposite these; aedeagal brace not visible; styles widest on basal half, narrowed and more or less aviccephaliform on apices; in caudal view, aedeagal brace extended dorsally in a more or less triangular tooth; styles broadest at base with aviccephaliform apices.



EXPLANATION OF PLATE VII

31. Lateral view of genital capsule of male of *Delphacodes cornuta* Beamer.
 31a. Caudal view of styles and aedeagal brace of *Delphacodes cornuta* Beamer.
 31b. Lateral view of aedeagus enlarged of *Delphacodes cornuta* Beamer.
 32. Lateral view of genital capsule of male of *Delphacodes quadridentis* Beamer.
 32a. Caudal view of styles and aedeagal brace of *Delphacodes quadridentis* Beamer.
 32b. Lateral view of aedeagus enlarged of *Delphacodes quadridentis* Beamer.
 33. Lateral view of genital capsule of male of *Delphacodes actiocephala* Beamer.
 33a. Caudal view of styles and aedeagal brace of *Delphacodes actiocephala* Beamer.
 33b. Lateral view of aedeagus enlarged of *Delphacodes actiocephala* Beamer.
 34. Lateral view of genital capsule of male of *Delphacodes turgida* Beamer.
 34a. Caudal view of styles and aedeagal brace of *Delphacodes turgida* Beamer.
 34b. Lateral view of aedeagus enlarged of *Delphacodes turgida* Beamer.
 35. Lateral view of genital capsule of male of *Delphacodes adunca* Beamer.
 35a. Caudal view of styles and aedeagal brace of *Delphacodes adunca* Beamer.
 35b. Lateral view of aedeagus enlarged of *Delphacodes adunca* Beamer.

Holotype ♂, allotype ♀, 35 ♂ and 21 ♀, paratypes, Lower Maticumba Key, Fla., March 14, 1947, R. H. Beamer.

Macropterous Form:

Like the brachypterous form except the wings extend about one-third their length beyond abdomen and color in elytra more spotty. A long spot at apex of clavus much darker in both forms.

Holomorphotype ♂, allomorphotype ♀, 13 ♂ and 30 ♀ paramorphotypes, Lower Maticumba Key, Fla., March 14, 1947, R. H. Beamer; other paramorphotypes: 4 ♂ ♂ and 9 ♀ ♀, Ft. Pierce, Fla., Aug. 7, 1930, R. H. Beamer; 14 ♂ ♂ and 2 ♀ ♀, same place and date, P. W. Oman; 12 ♀ ♀, Sebring, Fla., Aug. 5, 1930, P. W. Oman; 1 ♂, Haw Creek, Fla.; 1 ♀, Ft. Myers, Fla., Aug. 14, 1930, J. O. Nottingham.

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

This is the species described by Muir and Giffard as *Delphacodes albo-notata* (Crawf.), Bull. Hawaiian Sugar Planters Association, p. 36, 1924. The type of *Delphacodes albonotata* (Crawf.) No. 15938 in the United States National Museum is a brachypterous ♂, of *Perigrinus mardis* Ashm.

44. *Delphacodes aculeata* n. sp.

Brachypterous Form:

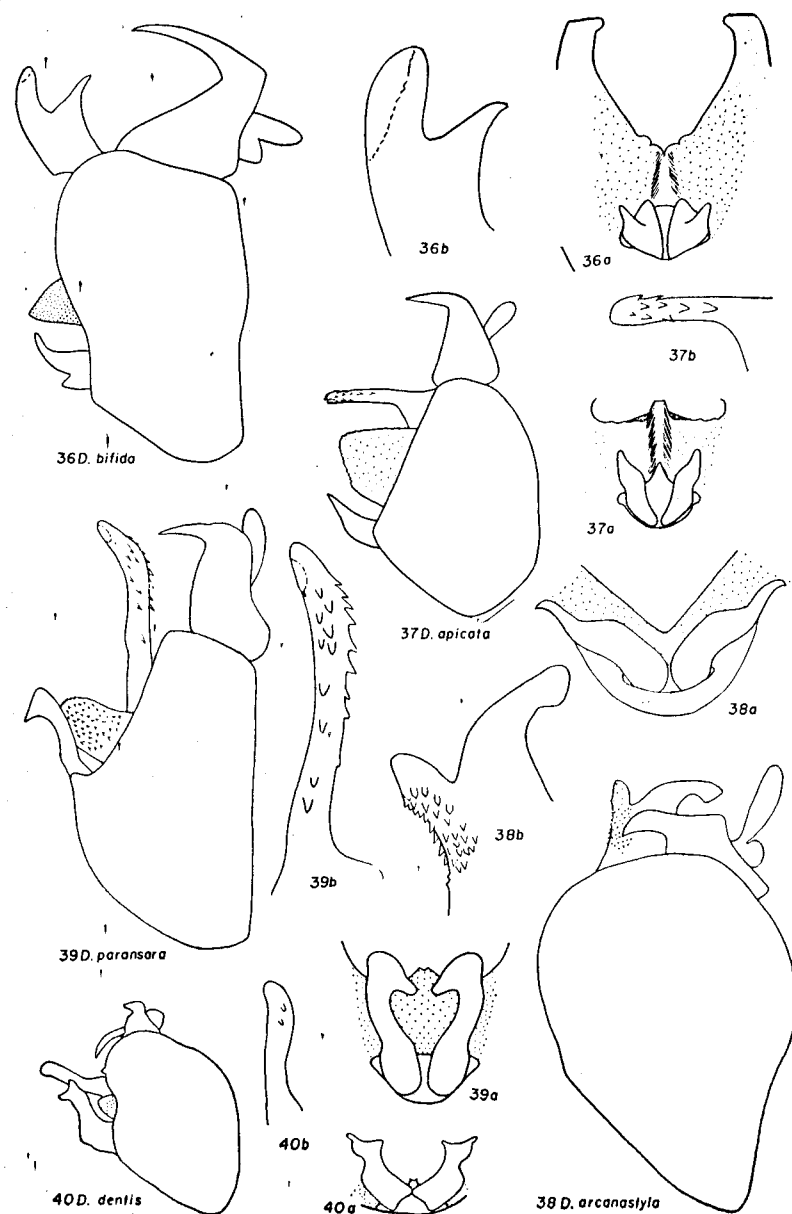
Resembling *Delphacodes penepuella* Beamer but first antennal segment about color of second segment (not black as in *D. penepuella*); elytra usually embrowned on most of the outer third; pygofer of male flaring and aedeagus straight. Length ♂ 1.7 mm.; ♀ 2 mm.

Structure: First segment of antennae about as wide as long; front about twice as long as wide, widest near apical third, narrowed toward each end, more so toward base, distinctly tricarinate; crown about one half longer than basal width, anterior fovea more, or less open at base, carinae definite; elytra barely reaching genital capsule, apices rounded.

Color: General color dark; legs and antenna stramineous, first segment of antennae about same color as second, carinae of front and crown, posterior half of pronotum, tip of scutellum, most of clavus and margin of apices of elytra almost white, darker spot at tip of clavus, basal segment of dorsum of abdomen yellowish, margins of segments and lateral margins of abdomen usually lighter.

EXPLANATION OF PLATE VIII

36. Lateral view of genital capsule of male of *Delphacodes bifida* Beamer.
 36a. Caudal view of styles and aedeagal brace of *Delphacodes bifida* Beamer.
 36b. Lateral view of aedeagus enlarged of *Delphacodes bifida* Beamer.
 37. Lateral view of genital capsule of male of *Delphacodes apicata* Beamer.
 37a. Caudal view of styles and aedeagal brace of *Delphacodes apicata* Beamer.
 37b. Lateral view of aedeagus enlarged of *Delphacodes apicata* Beamer.
 38. Lateral view of genital capsule of male of *Delphacodes arcanastyla* Beamer.
 38a. Caudal view of styles and aedeagal brace of *Delphacodes arcanastyla* Beamer.
 38b. Lateral view of aedeagus enlarged of *Delphacodes arcanastyla* Beamer.
 39. Lateral view of genital capsule of male of *Delphacodes paransara* Beamer.
 39a. Caudal view of styles and aedeagal brace of *Delphacodes paransara* Beamer.
 39b. Lateral view of aedeagus enlarged of *Delphacodes paransara* Beamer.
 40. Lateral view of genital capsule of male of *Delphacodes dentis* Beamer.
 40a. Caudal view of styles and aedeagal brace of *Delphacodes dentis* Beamer.
 40b. Lateral view of aedeagus enlarged of *Delphacodes dentis* Beamer.



Genitalia: In lateral view, pygofer semi-circular; anal segment with a pair of sharp processes, broad at base; aedeagus broadest at base, almost straight, narrowed evenly to apex, outer third evenly covered with retrorse teeth; aedeagal brace not visible in this view; styles more or less pediform, heels very large and rounded; in caudal view, aedeagal brace extended slightly dorsally, often bifid; styles broadest at base, apices more or less avicephaliform.

Holotype ♂, 6♂ and 1♀ paratypes, Otter Creek, Fla., March 9, 1947, R. H. Beamer; allotype ♀, 5♂ and 6♀ paratypes, Lamont, Fla., March 7, 1947, R. H. Beamer; other paratypes: 4♂♂, Yankeetown, Fla., March 9, 1947, L. D. Beamer.

Types in the Snow Entomological Collections.

45. *Delphacodes truncata* n. sp.

Brachypterous Form:

Resembling *Delphacodes waldeni* (Metcf.) but slightly smaller, veins of elytra not so brown, tips of elytra more nearly truncate and aedeagus with dorsal margin undulating. Length ♂ 2.3 mm.; ♀ 2.8 mm.

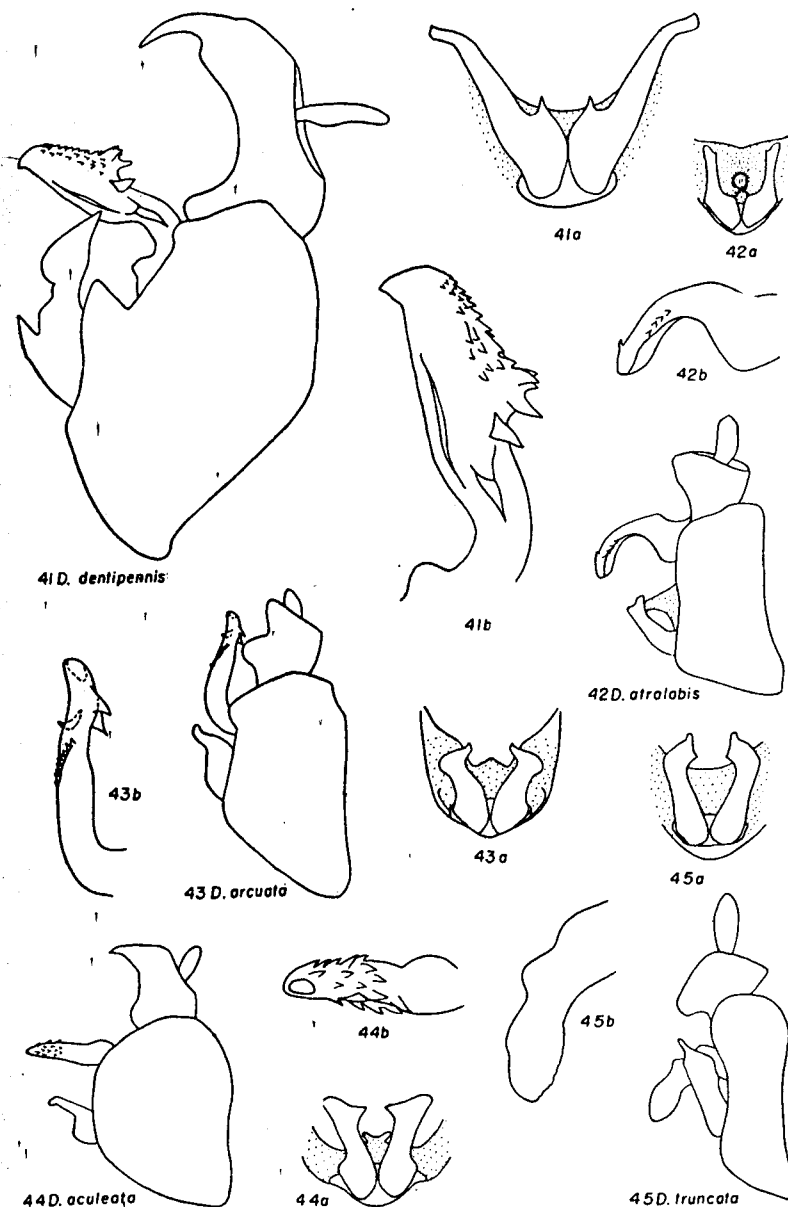
Structure: First segment of antennae about twice as long as wide; front slightly less than twice as long as wide, widest at middle, narrowed toward each end, more so toward base, distinctly tricarinate; crown definitely longer than basal width, apex rounded, wider than base, carinae definite on base, less distinct at apex; elytra semihyaline, about as long as wide, apices truncate, veins raised; genital capsule very narrow, retracted into abdomen, practically flush with surface.

Color: General color stramineous, coxae and spot above often darker, veins of elytra slightly embrowned, semblance of longitudinal rows of spots on abdomen, darker dorsolateral margin of each abdominal segment, often with a red spot, pygofer with parts much darker.

Genitalia: In lateral view, pygofer very short, more than twice as wide as long; anal segment without processes in ordinary sense, outer ventral corner more or less enlarged as an aedeagal guide; aedeagus with sides undulating, curved ventrally throughout; aedeagal brace not visible, styles widest just before apex, outer margins almost straight, inner sinuate, sharply narrowed on outer fifth; in caudal view, aedeagal brace not extended dorsally; styles widest at base, turned in on outer fourth.

EXPLANATION OF PLATE IX

41. Lateral view of genital capsule of male of *Delphacodes dentipennis* Beamer.
 41a. Caudal view of styles and aedeagal brace of *Delphacodes dentipennis* Beamer.
 41b. Lateral view of aedeagus enlarged of *Delphacodes dentipennis* Beamer.
 42. Lateral view of genital capsule of male of *Delphacodes atralabis* Beamer.
 42a. Caudal view of styles and aedeagal brace of *Delphacodes atralabis* Beamer.
 43. Lateral view of genital capsule of male of *Delphacodes arcuata* Beamer.
 43a. Caudal view of styles and aedeagal brace of *Delphacodes arcuata* Beamer.
 43b. Lateral view of aedeagus enlarged of *Delphacodes arcuata* Beamer.
 44. Lateral view of genital capsule of male of *Delphacodes aculeata* Beamer.
 44a. Caudal view of styles and aedeagal brace of *Delphacodes aculeata* Beamer.
 44b. Lateral view of aedeagus enlarged of *Delphacodes aculeata* Beamer.
 45. Lateral view of genital capsule of male of *Delphacodes truncata* Beamer.
 45a. Caudal view of styles and aedeagal brace of *Delphacodes truncata* Beamer.
 45b. Lateral view of aedeagus enlarged of *Delphacodes truncata* Beamer.



Holotype ♂, allotype ♀, 1♂ and 2♀ paratypes, Saucier, Miss., March 5, 1947, R. H. Beamer; other paratypes: 1♂, Ocean Springs, Miss., March 3, 1947, R. H. Beamer; 4♂♂ and 1♀, Ramsay, La., March 3, 1947, R. H. Beamer; 3♂♂ and 1♀, Sanford, Fla., March 11, 1947, R. H. Beamer; 3♀♀, same place and date, L. D. Beamer; 1♀, Otter Creek, Fla., March 3-9, 1947, R. H. Beamer; 2♂♂ and 1♀, Lamont, Fla., March 7, 1947, R. H. Beamer; 1♂, Mariana, Fla., March 7, 1947, R. H. Beamer; 1♀ and 1♂, Palatka, Fla., March 10, 1947, R. H. Beamer; 1♂, Mims, Fla., March 18, 1947, R. H. Beamer; 1♀, La Belle, Fla., March 13, 1947, R. H. Beamer; 8♂♂ and 2♀♀, Waycross, Ga., March 18, 1947, R. H. Beamer; 4♂♂, Cape Henry, Va., July 3, 1938, P. W. Oman; 1♀ Waycross, Ga., Oct. 5, 1938, P. W. Oman; 1♂, Eridu, Fla., July 11, 1939, P. W. Oman; 2♂♂, New Port Fitchey, Fla., Oct. 7, 1938, P. W. Oman; 1♂, Sanford, Fla., March 20, 1926, E. D. Ball.

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

Correction

On page 68 of the April issue of the *Journal* the figures for *M. bivittatus* and *M. mexicanus* under Gamma Benzene Hexachloride should be exchanged.

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SOME NEW SPECIES OF DELPHACODES (Homoptera, Fulgoridae, Delphacinae)

R. H. BEAMER*
Lawrence, Kansas

Part V

46. *Delphacodes sucinea* n. sp.

Brachypterous form:

Resembling a *Pissonotus* in general appearance and obviously closely related to *Delphacodes truncata* Beamer, according to genital structure. Can be separated from this species by being generally honey colored, by the narrow white stripe on apices of most elytra, by the sharp tooth on ventro-caudal margin of pygofer and by a pair of large, sharp processes on ventral margin of aedeagus near base. Length: ♂ 2mm; ♀ 2.2 mm.

Structure: First antennal segment slightly more than twice as long as wide; front scarcely one half longer than wide, widest at apical third, narrowed to each end, more so toward base, definitely tricarinate; crown almost twice as long as basal width, apex rounded, carinae distinct at base, almost absent at apex; elytra about as wide as long, veins indistinct, apices truncate, mesal margins extending farthest caudad; genital capsule narrowed, almost withdrawn into abdomen.

Color: General color honey brown, surface shiny; elytra usually with a white dash on apical margins; genital parts visible externally, almost black.

Genitalia. In lateral view: pygofer more than twice as wide as long with a prominent tooth at middle of caudo-ventral margin; anal segment more or less rectangular with outer caudal corners rather projecting, not considered processes; aedeagus curved ventrad at base, narrowed near outer third, apex rounded, a pair of large, sharp processes near basal third on ventral margin, aedeagal brace not visible; styles almost straight with sides nearly parallel, tapered on outer third to quite sharp apices; in caudal view: aedeagal brace not extended dorsad; styles with sides almost parallel, extended out on basal half, then curving in to angularly narrowed apices.

Holotype ♂, allotype ♀, 52♂ and 15♀ paratypes Saucier, Miss., March 5, 1947, R. H. Beamer; Other paratypes: 4♂♂ and 1♀, Ocean Springs, Miss., March 3, 1947, R. H. Beamer; 1♀ Live Oak, Fla., Jan. 1, 1931, P. W. Oman; 1♂ Hilliard, Fla., Oct. 5, 1938, P. W. Oman; 1♂, Zolfo Springs, Fla., July 15, 1939, P. W. Oman; 1♀ North of Picnic, Fla., Sept. 8, 1938, P. W. Oman.

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

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

47. *Delphacodes penelutea* n. sp.**Brachypterous form:**

Resembling *Delphacodes lutea* Beamer but elytra truncate at apices and extending only to about middle of abdomen, while in *lutea* the apices of elytra are rounded and extend almost to genital capsule. Length, ♂ 2.2 mm.; ♀ 2.3 mm.

Structure: First segment of antennae about as long as wide; front not quite twice as long as wide, widest near apical third, narrowed toward each end, more so toward base, distinctly tricarinate; crown about one-third longer than wide, apex rounded, carinae fairly distinct; elytra about as wide as long, semihyaline, veins thickened, apices truncate, extending about to middle of abdomen.

Color: General color stramineous, abdomen of male usually mostly quite dark brown.

Genitalia: In lateral view: pygofer more or less trapezoidal, dorsal margin definitely narrower than ventral; anal segment without processes; aedeagus about four times as wide at base as at ventral bend near apex, two teeth ventrally on each side near middle, 3-4 teeth on dorsal margin at bend, apex sharp; aedeagal brace triangular widest at base; styles almost straight, enlarged at apex; in caudal view: aedeagal brace not extended dorsad; styles widest at base, sinuate on outer margin, more or less bifid at apices.

Holotype ♂, allotype ♀, 40 ♂ and 22 ♀ paratypes, Saucier, Miss., March 5, 1947, R. H. Beamer; other paratypes: 1 ♂ and 3 ♀, Woodville, Fla., March 7, 1947, R. H. Beamer; 4 ♂ and 2 ♀, Naples, Fla., March 16, 1947, R. H. Beamer; 12 ♂ and 1 ♀, Homestead, Fla., March 14, 1947, R. H. Beamer; 2 ♂ same place and date, L. D. Beamer; 1 ♂ Wakulla, Fla., July 11, 1939, P. W. Oman; 1 ♂ Sanford, Fla., Jan. 15, 1926, E. D. Ball.

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

48. *Delphacodes paraparvula* n. sp.**Brachypterous form:**

Resembles *Delphacodes parvula* Ball, but anal segment of male with two pairs of processes instead of none. Length ♂ 1.5 mm.; ♀ 2.8 mm.

Structure: First segment of antennae twice as long as wide; front not quite twice as long as wide, widest near apical third, narrowed toward each end, distinctly tricarinate; crown about one-third longer than wide, apex rounded, carinae definite at base more or less obscure on apex; elytra semihyaline, about twice as long as wide, ending just before genital capsule, apices rounded, veins raised.

Color: General color stramineous, occasionally more or less indications of darker longitudinal rows of spots on abdomen, styles and processes of anal segment dark brown.

Genitalia: In lateral view; pygofer more or less rectangular, posterior ventral corner greatly extended; anal segment with two pairs of sharp processes, the first many times longer than second; aedeagus widest at base,

gently narrowing, curving ventrad from near middle to apex, with a pair of truncate teeth on right side near outer third and a pair of sharp teeth on left side in same position; aedeagal brace visible, oval in shape, notched on dorsal margin; styles with very large heels narrowed to more or less avicephaliform apices; in caudal view: aedeagal brace broad, extended dorsad about half its width; styles almost straight with avicephaliform apices, beaks on inner margin long and almost parallel sided.

Holotype ♂, allotype ♀, 7 ♂ and 2 ♀ paratypes. Pearlinton, Miss., March 3, 1947, R. H. Beamer.

Types and paratypes in Snow Entomological Collections.

49. *Delphacodes concava* n. sp.**Brachypterous form:**

Resembling *Delphacodes paraparvula* Beamer but elytra longer, usually reaching genital capsule, anal segment of male with one pair of processes, and aedeagal brace in caudal view undercut at each side. Length, ♂ 2.4 mm.; ♀ 2.7 mm.

Structure: First segment of antennae slightly more than twice as long as wide; front very slightly more than twice as long as wide, widest near apical third, slightly narrowed toward each end, definitely tricarinate; crown about one-third longer than basal width, apex rounded, carinae distinct; elytra semihyaline, about twice as long as wide, reaching or almost reaching genital capsule, apices rounded, veins thickened.

Color: General color stramineous, darker spot above middle and hind coxae and surrounding ocelli, abdomen generally dark brown with first segment golden yellow or dorsum.

Genitalia: In lateral view; pygofer about one-third wider than long, widest at base; anal segment with a pair of processes near middle; aedeagus widest at base, gradually narrowed and curved ventrad to tip, with four teeth on dorsal margin; aedeagal brace not visible; styles more or less pediform, narrowed on outer half; in caudal view: aedeagal brace extended dorsad about basal width, each margin undercut; styles narrowed in middle, apices avicephaliform, beak on inner margin, very broad.

Holotype ♂, allotype ♀, 24 ♂ and 7 ♀ paratypes, Woodville, Fla., March 7, 1947, R. H. Beamer; other paratypes: 4 ♂ and 4 ♀, Tallahassee, Fla., March 7, 1947, R. H. Beamer; 1 ♂ same place and date, L. D. Beamer; 1 ♂, Sanford, Fla., Jan. 7, 1925, E. D. Ball; 1 ♀ Sanford, Fla., Feb. 16, 1926, E. D. Ball; 3 ♀ Sanford, Fla., Aug. 9, 1926, E. D. Ball; 2 ♂, Sanford, Fla., July 22, 1926, E. D. Ball; 1 ♂ Way Cross, Ga., March 18, 1947, R. H. Beamer.

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

50. *Delphacodes ardentis* n. sp.**Macropterous form:**

Resembling *Delphacodes bocana* Beamer but dorsum darker, with a median longitudinal light stripe, aedeagal brace visible in lateral view and greatly extended dorsad in caudal view. Length, ♂ 3 mm.; ♀ 3.5 mm.

Structure: First segment of antennae about twice as long as wide; front slightly more than twice as long as wide, widest near apical third, narrowed toward each end, slightly more so toward base, distinctly tricarinate; crown a little longer than basal width, carinae distinct; elytra about one-third longer than abdomen, widest near apex.

Color: General color stramineous; spot on hind coxae darker; area between carinae of front dark brown to black; dorsum with median longitudinal, narrow white line; elytra semihyaline with veins much darker, especially on outer half.

Genitalia: In lateral view; pygofer more or less rectangular, ventral margin about twice as long as dorsal, with small tooth at posterior corner; anal segment with pair of straight, sharp-pointed processes; aedeagus almost straight, about three times as wide at base as on outer third, three or four teeth on dorsal margin of outer third, two larger ones on right side near middle; aedeagal brace visible, triangular in shape, narrowed at base; styles widest near apices, more or less pediform; in caudal view: aedeagal brace greatly extended dorsad, widest at base; styles more or less avicephaliform at apices with beak on inner margin.

Holotype ♂, allotype ♀, Palatka, Fla., March 10, 1947, R. H. Beamer; 2 ♂ paratypes, Royal Palm Park, Fla., March 16, 1947, R. H. Beamer.

Brachypterous form:

Like the macropterous form except hind wings wanting and front wings reaching about to tip of abdomen.

Holomorphotype ♂ and 1 ♀ paramorphotype, Palatka, Fla., March 10, 1947, R. H. Beamer.

All types in the Snow Entomological Collections.

51. *Delphacodes plenatra* n. sp

Brachypterous form:

Resembling *Delphacodes opaca* Beamer but smaller, aedeagus curved ventrad and genital capsule not flaring in caudal view. Length, ♂ 1.2 mm.; ♀ 1.6 mm.

Structure: First segment of antennae about as wide as long; front about one-third longer than wide, widest near outer third, narrowed toward each end, more so toward base, distinctly tricarinate, median carina enlarged; crown slightly longer than wide, carinae distinct; elytra about as wide as long, reaching to about second segment of abdomen, veins raised, apices rounded; genital capsule not flaring in caudal view.

Color: Male usually dark brown or black, female varying from stramineous to dark brown or black. Basal half of crown often much lighter.

Genitalia: In lateral view: pygofer about one-third longer on ventral than on dorsal margin; anal segment with one pair of more or less avicephaliform processes; aedeagus widest near middle, furcate on outer half, generally curved ventrad; aedeagal brace not visible; styles barely visible, apices narrowed; in caudal view: aedeagal brace not extended dorsad, slightly V-shaped; styles very large on basal half, narrowed to fourth basal width on outer half.

Holotype ♂, allotype ♀, 88 ♂ and 127 ♀ paratypes, Chino Valley, Ariz., July 12, 1947, R. H. Beamer; other paratypes: 18 ♂ and 8 ♀ ♀, Mescalera, N.M., June 27, 1947, R. H. Beamer; 16 ♂ ♂ and 10 ♀ ♀, Belen, N. M., July 1, 1947, R. H. Beamer; 51 ♂ ♂ and 21 ♀ ♀, Chiricahua Mts., Ariz., July 5, 1947, R. H. Beamer; 27 ♂ ♂ and 15 ♀ ♀, Vernal, Utah, Aug. 2, 1947, R. H. Beamer.

Macropterous form:

Like the brachypterous form except with flight wings which extend about one-third their length beyond the abdomen.

Holomorphotype ♀ and 8 ♀ paramorphotypes, Chino Valley, Ariz., Aug. 12, 1947, R. H. Beamer.

Types and paratypes in the Snow Entomological Collections.

52. *Delphacodes venusta* n. sp.

Macropterous form:

Resembling *Delphacodes gillettei* (Van D.) but much lighter in color, aedeagal brace of male extended dorsad in caudal view with undercut sides. Length to tip of wings, ♂ 5 mm.

Structure: First antennal segment about as long as wide; front twice as long as wide, widest near middle, narrowed toward each end, slightly more so toward base; crown distinctly longer than wide, carinae distinct; elytra extend about one-third their length beyond abdomen, widest beyond cross veins, veins raised.

Color: General color stramineous, an occasional specimen with usual darker regions, the average specimen with only a darker spot above hind coxae.

Genitalia: In lateral view: pygofer more or less rectangular; anal segment with one pair of heavy, sharp processes; aedeagus long, sinuate, enlarged on outer third with about three rows of short teeth; aedeagal brace narrow, sides parallel; styles pediform, apices narrowed; in caudal view: aedeagal brace extended dorsad, deeply undercut on either side, apex rounded; styles widest at base, narrowed to rather sharp apices.

Holotype ♂ and 17 ♂ paratypes, Ft. Davis, Tex., June 22, 1947, R. H. Beamer.

Types in the Snow Entomological Collections.

53. *Delphacodes compta* n. sp.

Brachypterous form:

Resembling *Delphacodes lineatipes* (Van D.) but with cross bands of white. Length, ♂ 1.7 mm.; ♀ 2 mm.

Structure: First segment of antennae slightly longer than wide; front one-third longer than wide, widest near apical third, narrowed to each end, more so toward base, strongly tricarinate; crown slightly longer than wide, widest at apex, carinae distinct; elytra as wide as long, apices truncate, venation not distinct.

Color: General color dark brown to black; carinae of front and crown stramineous, this light portion ending near middle of crown; posterior half of pronotum and apical third of elytra almost white; semblance of broad,

median, dorsal stripe on apical half of abdomen lighter, usually last three abdominal segments with a light spot on lateral margin; legs fulvous.

Genitalia: In lateral view: pygofer narrowed on dorsal margin, with definite tooth on caudo-ventral corner; anal segment without teeth in usual sense but with a short, sharp flange on caudo-dorsal corner; aedeagus widest at base, slightly narrowing and curving ventrad to tip with about four retrorse teeth on dorsal margin of outer half; aedeagal brace not visible; styles widest at base, tapering to apices; in caudal view; aedeagal brace not extended dorsad; styles widest at base, narrowing to more or less aviccephali-form apices with beak on inner margin.

Holotype ♂, allotype ♀, 33 ♂ and 28 ♀ paratypes, Del Mar, Calif., July 22, 1947, R. H. Beamer.

Types in Snow Entomological Collections.

54. *Delphacodes munda* n. sp.

Brachypterous form:

Resembling *Delphacodes campestris* (Van D.) but male with black spot on pronotum back of each eye and both sexes with region between frontal carinae brown to black. Length, ♂ 1.9 mm.; ♀ 2.3 mm.

Structure: First segment of antennae twice as long as wide; front slightly more than twice as long as wide, widest near middle, very slightly narrowed at apex, more so toward base, definitely tricarinate; crown as long as wide, carinae definite; elytra reaching genital capsule, apices rounded.

Color: General color stramineous; parts of coxae, spots above them, most of genae, area between frontal carinae, spot on pronotum back of each eye, sides of scutellum and more or less dorsum of abdomen brown or black.

Genitalia: In lateral view: pygofer about as long as wide; anal segment with a pair of curved, sharp-pointed processes, about as long as basal width; aedeagus widest at base, narrowed to apex, curving ventrad on outer third, four teeth on dorsal margin near base and about six teeth along ventral margin near middle; aedeagal brace not visible; styles widest at base, narrowed on outer third; in caudal view: aedeagal brace extended dorsad about its basal width; styles widest at base, almost parallel-sided on

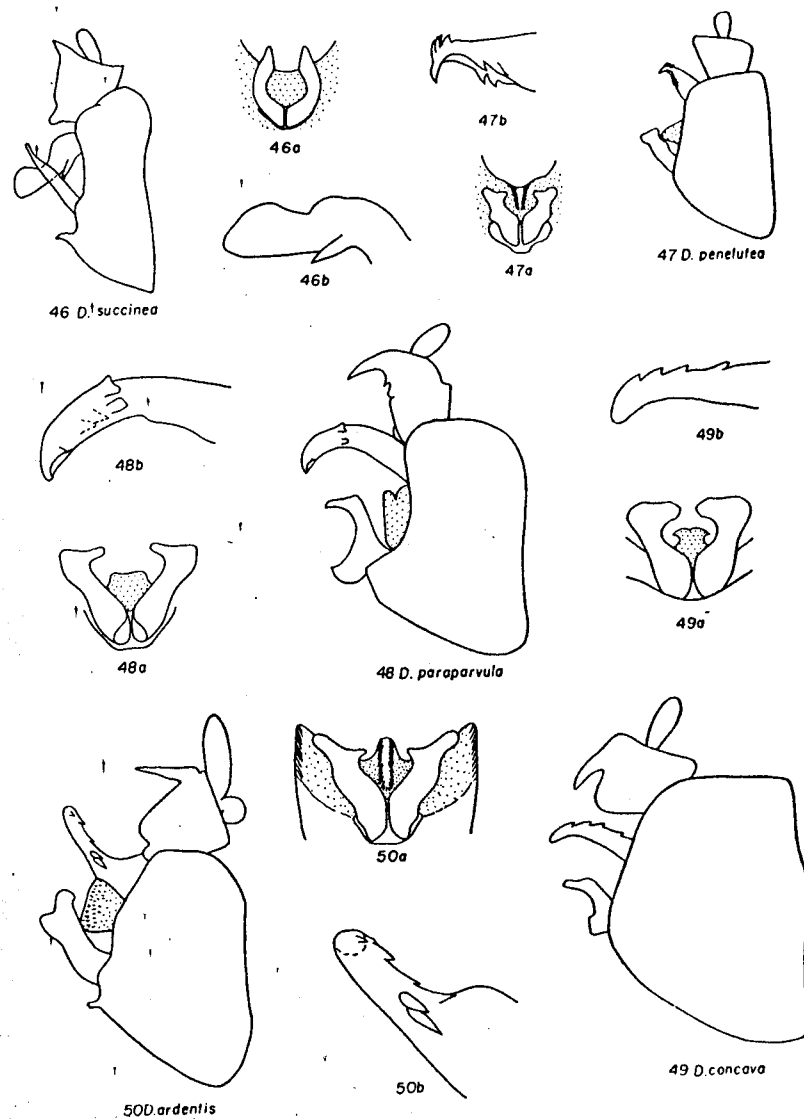


PLATE VII

46. Lateral view of genital capsule of male of *Delphacodes succinea* Beamer.
 46a. Caudal view of styles and aedeagal brace of *Delphacodes succinea* Beamer.
 46b. Lateral view of aedeagus enlarged of *Delphacodes succinea* Beamer.
 47. Lateral view of genital capsule of male of *Delphacodes penelutea* Beamer.
 47a. Caudal view of styles and aedeagal brace of *Delphacodes penelutea* Beamer.
 47b. Lateral view of aedeagus enlarged of *Delphacodes penelutea* Beamer.
 48. Lateral view of genital capsule of male of *Delphacodes paraparvula* Beamer.
 48a. Caudal view of styles and aedeagal brace of *Delphacodes paraparvula* Beamer.
 48b. Lateral view of aedeagus enlarged of *Delphacodes paraparvula* Beamer.
 49. Lateral view of genital capsule of male of *Delphacodes concava* Beamer.
 49a. Caudal view of styles and aedeagal brace of *Delphacodes concava* Beamer.
 49b. Lateral view of aedeagus enlarged of *Delphacodes concava* Beamer.
 50. Lateral view of genital capsule of male of *Delphacodes ardentis* Beamer.
 50a. Caudal view of styles and aedeagal brace of *Delphacodes ardentis* Beamer.
 50b. Lateral view of aedeagus enlarged of *Delphacodes ardentis* Beamer.

basal two-thirds, avicephaliform at apices, long, slender beak on inner margin.

Holotype ♂, allotype ♀, 1 ♂ and 1 ♀ paratype, Craig, Colo., August 3, 1947, R. H. Beamer.

Types in Snow Entomological Collections.

55. *Delphacodes alata* n. sp.

Brachypterous form:

Resembling *Delphacodes paraparvula* Beamer but aedeagus of male straight instead of curved ventrad. Length, ♂ 2 mm.; ♀ 2.5 mm.

Structure: First segment of antennae twice as long as wide; front about twice as long as wide, widest on apical third, narrowed toward each end, much more so toward base; crown one-third longer than wide, rounded at apex, carinae indistinct on anterior half; elytra about one-third longer than wide, apices narrowed and rounded, veins raised.

Color: General color stramineous; spot above hind coxae darker; only indications of other usual darker areas.

Genitalia: In lateral view: pygofer more or less rectangular, narrowed posteriorly; anal segment with two pairs of processes, the second very short; aedeagus long and straight, slightly tapered from base, a large, broad, flat process on left side of shaft near apex, another smaller serrated process on right side at tip; aedeagal brace small, more or less rectangular; styles pediform, heels large, tips bifid; in caudal view: aedeagal brace broad, slightly extended dorsad; styles enlarged at apices more or less avicephaliform.

Holotype ♂, allotype ♀, Big Pine Key, Fla., March 15, 1947, R. H. Beamer; paratypes: 2 ♂♂ and 1 ♀, Naples, Fla., March 16, 1947, R. H. Beamer; 1 ♂, Homestead, Fla., March 14, 1947, R. H. Beamer.

Types and paratypes in Snow Entomological Collections.

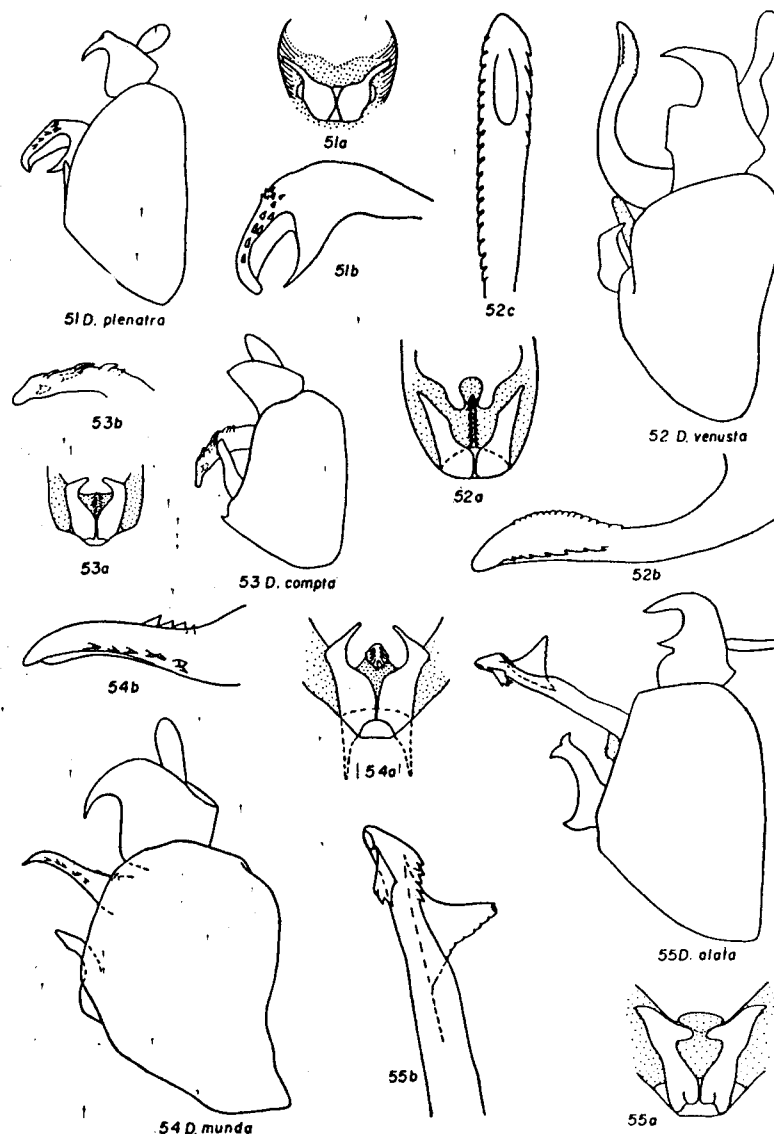


PLATE VIII

51. Lateral view of genital capsule of male of *Delphacodes plenatra* Beamer.
 51a. Caudal view of styles and aedeagal brace of *Delphacodes plenatra* Beamer.
 51b. Lateral view of aedeagus enlarged of *Delphacodes plenatra* Beamer.
 52. Lateral view of genital capsule of male of *Delphacodes venusta* Beamer.
 52a. Caudal view of styles and aedeagal brace of *Delphacodes venusta* Beamer.
 52b. Lateral view of aedeagus enlarged of *Delphacodes venusta* Beamer.
 52c. Ventral view of aedeagus enlarged of *Delphacodes venusta* Beamer.
 53. Lateral view of genital capsule of male of *Delphacodes compta* Beamer.
 53a. Caudal view of styles and aedeagal brace of *Delphacodes compta* Beamer.
 53b. Lateral view of aedeagus enlarged of *Delphacodes compta* Beamer.
 54. Lateral view of genital capsule of male of *Delphacodes munda* Beamer.
 54a. Caudal view of styles and aedeagal brace of *Delphacodes munda* Beamer.
 54b. Lateral view of aedeagus enlarged of *Delphacodes munda* Beamer.
 55. Lateral view of genital capsule of male of *Delphacodes alata* Beamer.
 55a. Caudal view of styles and aedeagal brace of *Delphacodes alata* Beamer.
 55b. Lateral view of aedeagus enlarged of *Delphacodes alata* Beamer.