

NORTH AMERICAN DELTOCEPHALINE LEAFHOPPERS OF THE GENUS
AMPLICEPHALUS DeLONG WITH A NEW GENUS AND
NEW GENERIC COMBINATIONS
(HOMOPTERA: CICADELLIDAE)

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ABSTRACT—The North American species of *Amplicephalus* DeLong are re-described, revised, and keyed. Three species, *A. simplex* (Van Duzee), *A. littoralis* (Ball), and *A. osborni* (Van Duzee), previously assigned to *Amplicephalus* and *Lonatura nebulosa* Ball comprise the genus. A new genus, **Kausendria**, is erected for *A. kansiensis* (Tuthill). *A. lawsoni* (DeLong) is assigned to *Reventazonia* Linnavuori, a genus previously known only from Neotropical America. *Arundanus duplus* DeLong is reduced to a synonym of *R. lawsoni* (DeLong). All critical diagnostic features are illustrated. New distributional records and host plant data are included.

The genus *Amplicephalus* DeLong, last keyed and defined by Oman (1949:111–119 and 178–179), belongs to a large group of deltocephaline leafhoppers which share in common a linear connective solidly fused to the base of the aedeagus. Study of the five North American species listed by Oman (1949:179), as well as members of related genera, revealed that only three species listed in *Amplicephalus* were actually congeneric; and that a fourth species, *Lonatura nebulosa* Ball, also belonged in this species cluster. One of the remaining species of *Amplicephalus*, as listed by Oman, is assigned to *Reventazonia* Linnavuori, a Neotropical genus, and the other is assigned to a new genus.

Amplicephalus DeLong

Deltocephalus subgenus *Amplicephalus* DeLong, 1926c:83. Type-species: *Deltocephalus osborni* Van Duzee.

Small to moderately large deltocephaline leafhoppers (2.5–5.3 mm). Head wider than pronotum. Anterior margin of head rounded to face. Clypeal suture distinct or obscure. Ocelli close to eyes. Pronotum short or of moderate length. Forewings long, extending well beyond apex of abdomen, exposing a portion of genital segment or much shortened, rounded apically, exposing up to four segments dorsally, with or without extra crossveins in clavus. Male genitalia: valve small; plates subtriangular, small, spine-like setae uniseriate; pygofer strongly setose; aedeagus rather short, stout, trough-like, notched apically on ventral margin, gonopore not clearly delimited or only weakly so on dorsum. Pregenital sternum of female narrowed distally and exposing underlying sclerites laterally. Color stramineous to pale brown, usually with fuscus coronal markings.

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KEY TO NORTH AMERICAN SPECIES OF *Amplicephalus*

1. Aedeagus in lateral view avicephaliform apically (figs. 5, 9); style in dorsal view with lateral lobe undeveloped (figs. 2, 7) 2
 Aedeagus in lateral view not as above (figs. 15, 21); style in dorsal view with lateral lobe developed (figs. 12, 17) 3
2. Anterior margin of crown with four black spots (fig. 1) .. **simplex** (Van Duzee)
 Anterior margin of crown unmarked or with pair of vague, elongate, subtriangular, apical pale brown spots (fig. 6) **littoralis** (Ball)
3. Aedeagus in dorsal view with cleft or notch on ventral margin broad and deep (fig. 14), aedeagus in lateral view (fig. 15) subacute at apex
 **osborni** (Van Duzee)
 Aedeagus in dorsal view with cleft or notch on ventral margin comparatively narrow and not deep (fig. 18), aedeagus in lateral view (fig. 21) broadly rounded at apex **nebulosus** (Ball)

Amplicephalus simplex (Van Duzee)
 (Figs. 1-5)

Deltocephalus simplex Van Duzee, 1892:304.

Athysanus simplarius Osborn and Ball, 1902:249.

Deltocephalus (Amplicephalus) simplex Van Duzee: DeLong, 1926c:83.

Amplicephalus simplarius (Osborn and Ball): Oman, 1949:179.

Length. Males 4.5-5.0 mm. Females 5.0-5.3 mm.

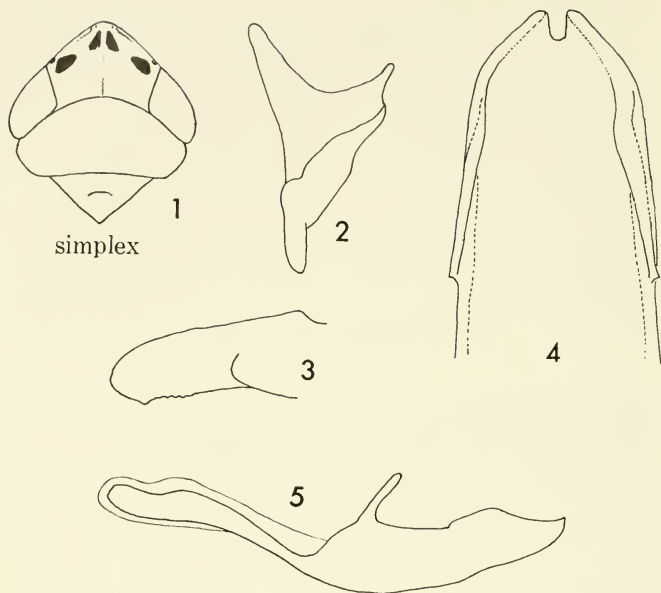
Structure. Crown in dorsal view (fig. 1) bluntly angular apically, interocular width greater than median coronal length; head in lateral view slightly flattened between eyes and convex anterior to eyes; clypeal suture distinct; forewings as long as or longer than abdomen; inner anteapical cell closed basally, rarely open; central anteapical cell divided, rarely undivided; outer anteapical cell normal to elongate; without extra crossveins in clavus.

Coloration. Venter of abdomen, thorax, and legs pale greenish yellow to pale brownish; abdominal and thoracic segments infuscated to entirely fuscus or black, legs without definite markings or setal sockets and irregular areas fuscus; face with clypeal arcs light brown to fuscus, area under antennal bases often fuscus; crown, pronotum, and scutellum stramineous to yellowish green (fig. 1); only distinct markings four fuscus to black spots along anterior margin of crown, apical pair triangular, lateral pair usually elongate oval; forewings hyaline or subhyaline with veins whitish to yellowish green.

Male genitalia. Aedeagus in lateral view (fig. 5) stout and broadly avicephaliform at apex; apical portion of aedeagus in dorsal view (fig. 4) with notch on ventral margin short and fairly wide; style in dorsal view (fig. 2) with mesal lobe stout and moderately long, lateral lobe not developed; stylar lobes in lateral view (fig. 3) with mesal lobe stout, subapical tooth on irregular ventral margin, lateral lobe short and blunt.

Female genitalia. Posterior margin similar to that of *littoralis*, but portion on each side of median lobe roundly produced (DeLong, 1926c:pl. 17, fig. 4b).

Records. The type locality is Canton Marsh, Maryland. My confirmed records: CONNECTICUT, Mystic; DELAWARE, Dover, Rehoboth; MARYLAND, Bay Ridge, Cape Anne, Canton Marsh, Chesapeake Bay.



Figs. 1-5. *Amplicephalus simplex* (Van Duzee): 1, head and thoracic dorsum; 2, style in dorsal view; 3, apical portion of style in lateral view; 4, apical portion of aedeagus in dorsal view; 5, aedeagus and connective in lateral view.

peake Beach, Crisfield, Deale, Piney Point; MASSACHUSETTS, New Bedford, Woods Hole; NEW JERSEY, Hoboken; NEW YORK, Astoria, Staten Island; VIRGINIA, Cape Charles, Norfolk, Virginia Beach.

Notes. The host plant of *simplex* is saltmeadow cordgrass, *Spartina patens*. Saltmeadow cordgrass is found coastally from Maine to Florida and west to Texas in eastern North America. The leafhopper undoubtedly has the same distributional pattern.

***Amplicephalus littoralis* (Ball)**

(Figs. 6-10)

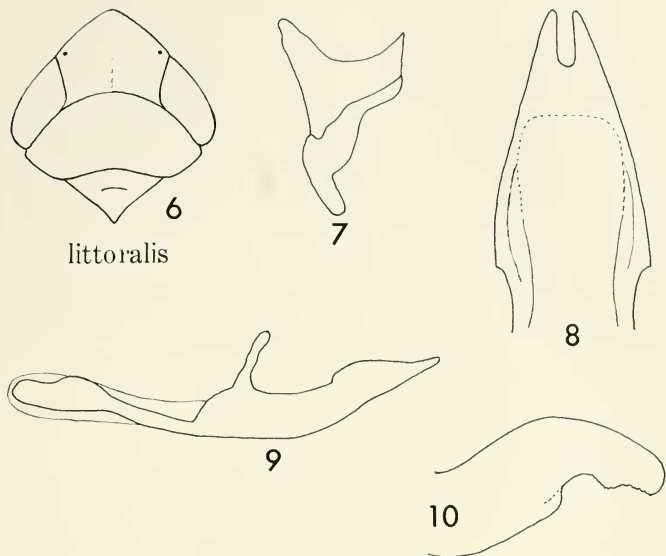
Deltocephalus littoralis Ball, 1905:120.

Deltocephalus (*Laevicephalus*)*littoralis* Ball: DeLong, 1926c:65.

Amplicephalus littoralis (Ball): Oman, 1949:179.

Length. Males 2.5-4.0 mm. Females 3.0-4.5 mm.

Structure. Crown in dorsal view (fig. 6) angular apically, interocular width



Figs. 6-10. *Amplicephalus littoralis* (Ball): 6, head and thoracic dorsum; 7, style in dorsal view; 8, apical portion of aedeagus in dorsal view; 9, aedeagus and connective in lateral view; 10, apical portion of style in lateral view.

greater than median coronal length; head in lateral view with crown flattened between eyes and convex anterior to eyes; clypeal suture distinct; forewings long, extending beyond abdomen, or somewhat shortened and exposing genital segment and last abdominal segment; inner anteapical cell closed basally, rarely open; central anteapical cell divided or not; outer anteapical cell normal to elongate, rarely open distally; clavus rarely with few extra crossveins.

Coloration. Venter of abdomen, thorax, and legs stramineous; usually without markings, setal sockets on legs and, at times, edges of abdominal segments darker; face stramineous with clypeal arcs light brown; crown, pronotum, and scutellum stramineous to pale yellowish green, usually unmarked (fig. 6); crown rarely with a pair of vague triangular spots at apex and vague blotches on disc; forewings subhyaline with veins whitish to pale yellowish green, rarely slightly fumose.

Male genitalia. Aedeagus in lateral view (fig. 9) with apex avicephaliform; apical portion of aedeagus in dorsal view (fig. 8) with cleft on ventral margin narrow and moderately deep; style in dorsal view (fig. 7) with mesal lobe stout and moderately long, lateral lobe not developed; stylar lobes in lateral view (fig. 10) with mesal lobe curved, produced at middle on irregular ventral margin, lateral lobe short and broad.

Female genitalia. Posterior margin of pregenital sternum with a distinct median lobe, darkened on each side (DeLong, 1926c:pl. 15, fig. 3a).

Records. The type locality is Cape May, New Jersey. My confirmed records: ALABAMA, Mobile; CONNECTICUT, Mystic; DELAWARE, Dover; FLORIDA, Cedar Keys, Ft. Myers, Jacksonville, Key West, Miami, Sanford, Sarasota, Tampa, Yankeetown; LOUISIANA, Buras; MARYLAND, Annapolis, Cambridge, Crisfield, Deale, Piney Point; MASSACHUSETTS, Woods Hole; MISSISSIPPI, Port Gibson, Ship Island; NEW JERSEY, Anglesea, Cape May; NEW YORK, Sea Cliff, Yaphank; SOUTH CAROLINA, Charleston; VIRGINIA, Norfolk, Onley, Virginia Beach.

Notes. The host plant of *littoralis* is seashore saltgrass, *Distichlis spicata*. Seashore saltgrass is found coastally from Nova Scotia to Florida and west to Texas in eastern North America. The leafhopper undoubtedly has the same distributional pattern.

Amplicephalus osborni (Van Duzee)
(Figs. 11-15)

Deltocephalus osborni Van Duzee, 1892:304.

Deltocephalus (Amplicephalus) osborni Van Duzee: DeLong, 1926c:83.

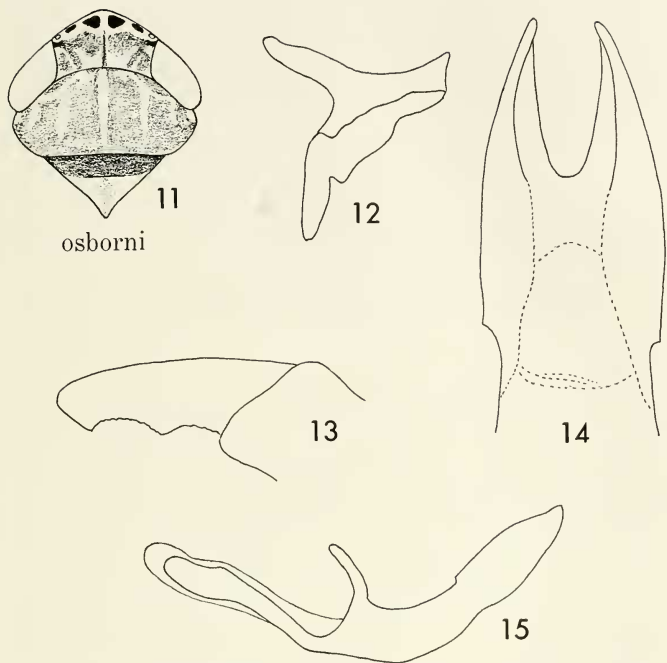
Amplicephalus osborni (Van Duzee): Oman, 1949:179.

Length. Males 4.6-5.0 mm. Females 5.0-6.0 mm.

Structure. Crown in dorsal view (fig. 11) bluntly angular apically, interocular width greater than median coronal length; head in lateral view with crown flattened between eyes and slightly convex anterior to eyes; clypeal suture obscure; forewings long, extending beyond abdomen, or slightly shortened, exposing tip of genital segment; inner anteapical cell closed basally, rarely open; central anteapical cell divided; outer anteapical cell normal to elongate; usually with some extra crossveins in clavus.

Coloration. Variable; venter of abdomen, thorax, legs and face tawny yellow; marked lightly to heavily with fuscus on edges of abdominal and thoracic segments, setal sockets on legs, bands on femora, and sometimes elsewhere on legs; facial markings light brown on clypeal arcs grading to heavily fuscus on clypeal arcs, sutures, upper edges of genae, and central area of clypellus; crown, pronotum, and scutellum tawny yellow, rarely unmarked, usually marked with light brown to black (fig. 11); anterior coronal margin with two to six variably shaped narrow spots, apical pair usually largest; discal coronal area with variable blotches, blotches sometimes wanting; pronotum with six darkened longitudinal bands or stripes, bands often obscure or wanting; scutellum usually darkened near anterior angles and at middle; forewings tawny yellow subhyaline with edges of veins narrowly to rather broadly infuscated.

Male genitalia. Aedeagus in lateral view (fig. 15) constricted near middle of shaft to produce large cephalic area; apical portion of aedeagus in dorsal view (fig. 14) with cleft on ventral margin wide and deep; style in dorsal view (fig. 12) with mesal lobe moderately long and stout, lateral lobe short and subacute; stylar lobes in lateral view (fig. 13), mesal lobe hooked near apex and expanded near middle on irregular ventral margin, lateral lobe short and blunt.



Figs. 11-15. *Amplicephalus osborni* (Van Duzee): 11, head and thoracic dorsum; 12, style in dorsal view; 13, apical portion of style in lateral view; 14, apical portion of aedeagus in dorsal view; 15, aedeagus and connective in lateral view.

Female genitalia. Posterior margin of pregenital sternum more or less trilobed with central lobe usually shorter and broader than lateral pair (DeLong, 1926c: pl. 17, fig. 5*b*).

Records. The type locality is Lancaster, New York. My confirmed records: COLORADO, Fort Collins, Greeley; ILLINOIS, Antioch, Danville, Fox Lake, Volo; IOWA, Ames; KANSAS, Atchison Co., Doniphan Co., Douglas Co., Greenwood Co., Onaga, Topeka; MARYLAND, Cambridge, College Park; MINNESOTA, Ramsey Co., Two Harbors; NEBRASKA, Ruhling; NEW JERSEY, Burlington Co., Seabrook; NEW YORK, Lancaster; NORTH CAROLINA, Raleigh; OKLAHOMA, Watts; ONTARIO, Toronto; TENNESSEE, Knoxville; WISCONSIN, Grand Rapids, Madison.

Notes. The exact host plant of this widespread species is not known. DeLong (1948:101) reported *osborni* as a fresh water marsh species in the *Calmagrostis* association. Others have reported this species from grasses near borders of swampy or marshy areas. More recent data show the host plant is probably a sedge, *Carex* sp.

***Amplicephalus nebulosus* (Ball), n. comb.**

(Figs. 16-24)

Lonatura nebulosa Ball, 1900: 341; Oman, 1949:176.

Deltocephalus sachalinensis Matsumura, 1915:168.

Deltocephalus nebulosus (Ball): DeLong, 1926b:101.

Lonatura rotunda Beamer, 1939:26.

Endria rotunda (Beamer): Oman, 1949:175; Beirne, 1956:113.

Endria nebulosa (Ball): Remane, 1961:73; Bei-Bienko, *et al.*, 1967:508; Vilbaste, 1969:3.

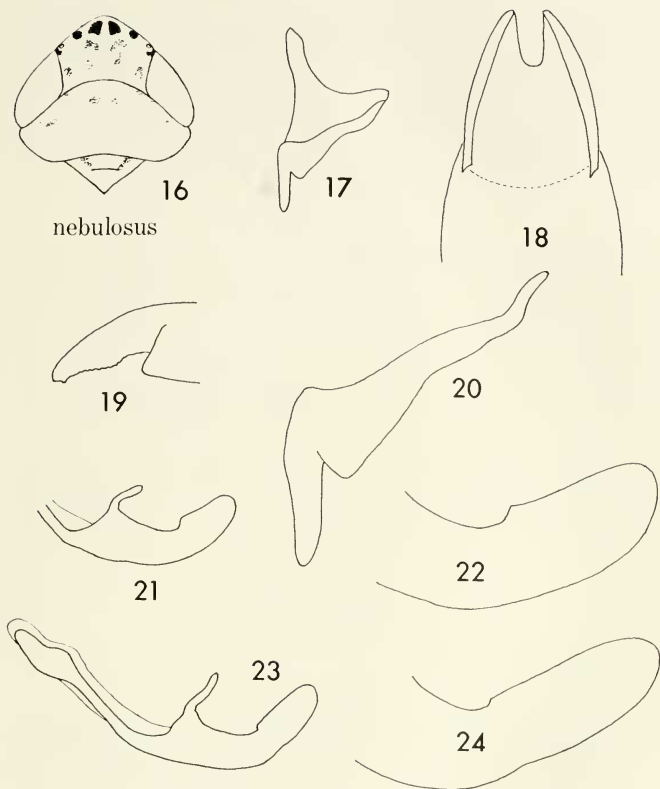
Length. Males 3.5-4.0 mm. Females 3.9-4.6 mm.

Structure. Crown in dorsal view bluntly angular apically (fig. 16), crown broad; head in lateral view with crown entirely convex, not flattened between eyes; ocelli small; clypeal suture obscure; forewings longer than abdomen, often with extra crossveins in claval areas, each appendix large, inner antepical cells closed basally, central antepical cells divided, outer antepical cells normal; or forewings much shortened, rounded apically, exposing genital segment and three and partial fourth abdominal segments, with or without extra crossveins in claval areas, each appendix and apical cells essentially vestigial, antepical cells greatly shortened, outer antepical cells and distal half of central antepical cells minute.

Coloration. Venter of abdomen, thorax, legs, and face pale yellowish brown; abdominal segments and thorax unmarked or variably infuscated; legs with setal sockets and some irregular banding fuscus; face without definite markings or clypeal arcs vaguely darker grading to forms with clypeal arcs, spot above each antennal base, all sutures, central portion of clypellus, irregular patches on and upper edges of genae, fuscus; crown, pronotum, and scutellum (fig. 16) with ground color of venter; anterior coronal margin with four distinct black spots between ocelli, central pair usually smaller and often subtriangular; coronal disc with pair of subapical anterior transverse brownish dashes and two or four brownish oblique spots or dashes posteriorly, dashes often poorly defined or absent; pronotum with four or six dark longitudinal bands or stripes, bands often vague or obsolete; scutellum unmarked to fuscus on all angles; forewings hyaline or subhyaline with veins sordid white or white, edges of veins not or only barely infuscated in short winged forms, edges of veins in long winged forms usually distinctly infuscated in antepical cells and claval areas.

Male genitalia. Aedeagus in lateral view (figs. 21, 23) short, stout, with broad cephalic area; apical portion of aedeagus in dorsal view (fig. 18) with cleft on ventral margin moderately wide and deep, gonopore poorly defined near apex; style in dorsal view (fig. 17) with mesal lobe moderate in length and width; lateral lobe short and broad; stylar lobes in lateral view (fig. 19) with tooth on irregular ventral margin of mesal lobe, lateral lobe short and subacute.

Female genitalia. Posterior margin of pregenital sternum with lateral margins broadly rounded and short wide tooth at middle (Remane, 1961:fig. 6).



Figs. 16-24. *Amplicephalus nebulosus* (Ball): 16, head and thoracic dorsum; 17, style in dorsal view; 18, apical portion of aedeagus in dorsal view; 19, apical portion of style in lateral view; 20, distal portion of style in dorsal view; 21, aedeagus in lateral view (Colorado); 22, distal portion of aedeagus in lateral view; 23, aedeagus and connective in lateral view (Germany); 24, distal portion of aedeagus in lateral view.

Records. The type locality is Fort Collins, Colorado. My confirmed records: COLORADO, Fort Collins; MANITOBA, Birch River, Cowan, Keld, Swan River; MINNESOTA, Two Harbors. I have also seen specimens from southern Bavaria, Germany.

Notes. The host plant of this species in Europe is the wide-spread

Eurasian reedgrass, *Calamagrostis epigejos*, now well established in North America. U.S. National Museum herbarium records report this grass from New York, Ontario, Iowa, Kansas, South Dakota, North Dakota, and Utah. There are no known host records for *nebulosus* in North America. *A. nebulosus* is known in Eurasia from southern Germany (Remane, 1961:73); Kursk Region of European U. S. S. R. (Beibienko, *et al*, 1967:508); Kongo Mt., Korea and the island of Sakhalin in Far Eastern U. S. S. R. (Vilbaste, 1969:3).

Kansendria, n. gen.

Type-species: *Polyamia kansiensis* Tuthill.

Moderately large deltocephaline leafhoppers (4.5 mm or more). Head wider than pronotum. Anterior margin of head rounded to face. Clypeal suture obscure or absent. Pronotum of moderate length. Forewings long and extending much beyond apex of abdomen, macropterous, usually with extra crossveins in clavus. Male genitalia: valve large; plates subtriangular, elongate, as long as pygofer, with submarginal spine-like setae uniseriate; pygofer strongly setose; aedeagus scaly, elongate, decurved; gonopore terminal; aedeagus fused with linear connective. Color stramineous or pale brownish with limited fuscus to black markings.

In Oman's key to the genera of North American Deltocephalini (1949:111-119), *Kansendria* will trace to couplet 127, *Amplicephalus* DeLong. It can be separated from that genus on the basis of the elongate, decurved, scaly aedeagus *versus* transverse or upturned non-scaly aedeagus.

Kansendria kansiensis (Tuthill), n. comb.

(Figs. 25-30)

Polyamia kansiensis Tuthill, 1930:46.

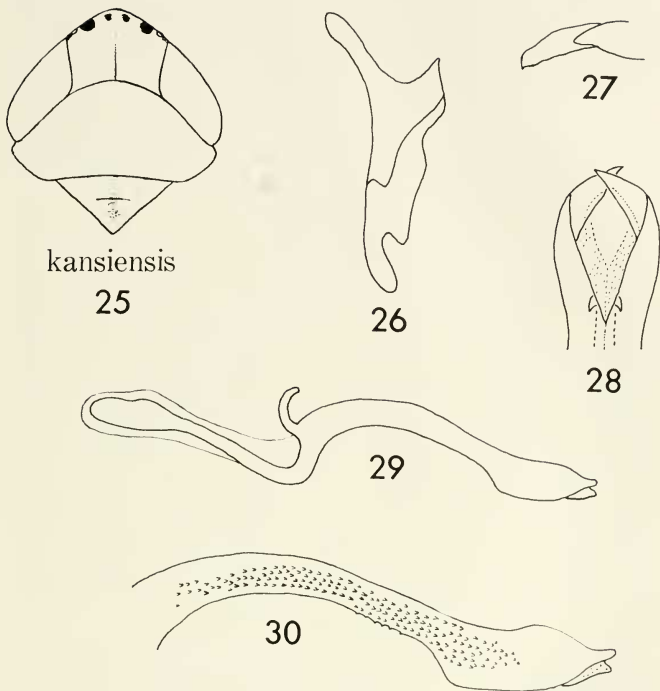
Amplicephalus kansiensis (Tuthill); Oman, 1949:179.

Length. Male 4.5-4.8 mm. Female 5.0-5.3 mm.

Structure. Head in dorsal view (fig. 25) bluntly angular apically, ocelli close to eyes; forewing with inner anteapical cell closed basally, central anteapical cell once or twice divided, outer anteapical cell elongate and, at times, divided.

Coloration. Variable; venter of abdomen, thorax, legs, and face sordid stramineous to pale brown, edges of abdominal segments and legs at times infuscated, face without definite markings or with clypeal arcs, sutures, upper edges of genae, lightly infuscated; crown, pronotum, and scutellum (fig. 25) with ground color of venter, only distinct markings four fuscus marginal coronal spots between ocelli, central pair smaller and sometimes faint; forewings yellowish to brownish subhyaline, veins narrowly margined with fuscus, apical cells often darkened distally.

Male genitalia. Aedeagus in lateral view (fig. 29) slender, elongate, decurved, apically enlarged, and longer than connective; aedeagal shaft (fig. 30) scaly; aedeagal apex in dorsal view (fig. 28) with gonopore at base of crossed distal forks; style in dorsal view (fig. 26) with mesal lobe narrowed basally and curved slightly laterad; lateral lobe bluntly produced; stylar lobes in lateral view (fig. 27)



kansiensis
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Figs. 25-30. *Kansendria kansiensis* (Tuthill): 25, head and thoracic dorsum; 26, style in dorsal view; 27, apical portion of style in lateral view; 28, apical portion of aedeagus in dorsal view; 29, aedeagus and connective in lateral view; 30, aedeagal shaft in lateral view.

with mesal lobe slightly hooked near apex on irregular ventral margin, lateral lobe acute.

Female genitalia. Pregenital sternum of female (Tuthill, 1930:fig. 4b) elongate, with median keel ending in a protruding, notched tooth on posterior margin, lateral margins narrowing distally to expose underlying sclerites on each side.

Type. Female, Saline Co., Kansas, 13 July 1923, R. H. Beamer, in Snow Entomological Collection, University of Kansas, Lawrence.

Records. The type locality is Saline Co., Kansas. My confirmed records: KANSAS, Decatur Co., Douglas Co., Ellsworth Co., Meade Co., Saline Co., Washington Co.

The unique aedeagus distinguishes *kansiensis* from all other North American leafhoppers. Externally, it resembles paler forms of *Endria inimica* (Say), but the genitalia of both sexes are of a different pattern. Nothing is known of its food or host plants.

Reventazonia lawsoni (DeLong), n. comb.
(Figs. 31–38)

Deltocephalus lawsoni DeLong, 1926a:89.

Arundanus duplus DeLong, 1941:634. **New synonymy.**

Amplicephalus lawsoni (DeLong): Oman, 1949:179.

Length. Male 4.0–4.4 mm. Female 4.3–5.0 mm.

Structure. Crown produced beyond eyes and bluntly angular apically (fig. 31); ocelli of moderate size and nearly touching eyes; crown in lateral view flattened between eyes and convex anterior to eyes; forewings long and extending well beyond apex of abdomen (males and some females) or with genital segment partly exposed (some females); forewing with inner antepical cell closed basally, rarely open; central antepical cell divided, rarely undivided; outer antepical cell normal.

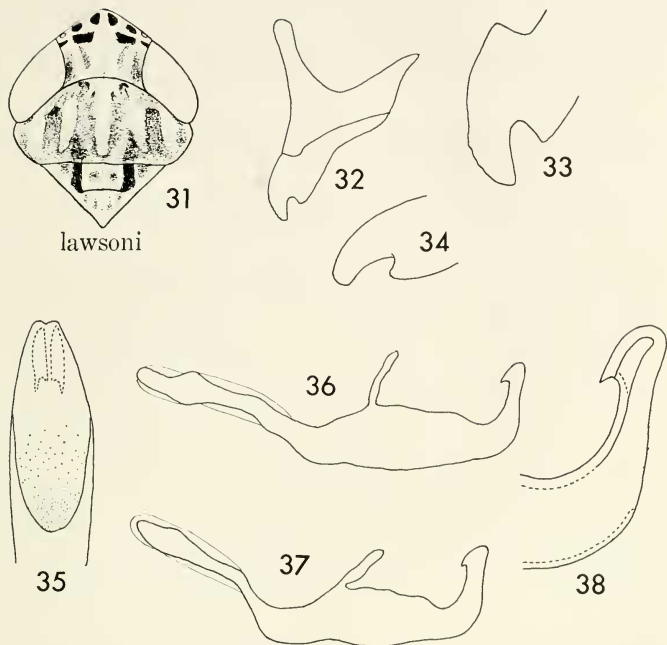
Coloration. Somewhat variable; venter of abdomen, thorax, legs, and face sordid stramineous to pale brown; edges of abdominal segments usually infuscated, setal sockets on legs darkened, at times with touches of fuscus elsewhere; face with clypeal arcs, lateral edges of clypellus, and at times spot or spots on genae near base of clypeus, fuscus; darkened clypeal arcs touch in upper portion only, central portion of clypeus and clypellus usually unmarked; crown pronotum, and scutellum (fig. 31) with ground color of venter; crown in well marked specimens with six variable black spots along anterior margin, pair of black subapical spots, and two pairs of light brown dashes on disc; pronotum with six variable brownish longitudinal stripes; scutellum usually with pair of pale brown to black narrow longitudinal stripes; forewings pale brown, subhyaline with edges of veins narrowly to rather broadly infuscated; apical cells at times darkened distally.

Male genitalia. Male plates sharply triangular, concave laterally, about as long as pygofer; aedeagus in lateral view (fig. 36–37) stout basally and broadly and sharply upturned distally; distal portion of aedeagus in lateral view (fig. 38) with hook on proximal margin; distal portion of aedeagus in posterior view (fig. 35) with exceptionally large subapical gonopore; style in dorsal view (fig. 32) with mesal lobe short and stout, lateral lobe broad and subacute; stylar lobes in lateral view (fig. 34) with mesal lobe curved and lateral lobe subacute.

Female genitalia. Pregenital sternum narrowing distally and exposing underlying sclerites laterally, posterior margin more or less trilobed with central lobe most clearly defined (DeLong, 1926a:fig. 3a).

Records. The type locality is Cherokee Co., Kansas. My confirmed records: ALABAMA, Marion Junction; GEORGIA, Prattsburg; KANSAS, Cherokee Co., Douglas Co., Garnett; MARYLAND, Beltsville, Cambridge, Potomac, Sparrows Point; MISSISSIPPI, Fulton, Vicksburg; TEXAS, Victoria.

Notes. The host plant of *lawsoni* is eastern gamagrass, *Tripsacum dactyloides*. Eastern gamagrass occurs from New York south to Florida,



Figs. 31-38. *Reventazonia lawsoni* (DeLong): 31, head and thoracic dorsum; 32, style in dorsal view; 33, stylar lobes in dorsal view; 34, distal portion of style in lateral view; 35, distal portion of aedeagus in posterior view; 36, aedeagus and connective in lateral view (Maryland); 37, same (Kansas); 38, distal portion of aedeagus in lateral view.

west to eastern Texas, and north to eastern Nebraska and southern Iowa.

The genus *Reventazonia* Linnavuori (1959:138) was described to include a single species, *Reventazonia atrifrons* Linnavuori, a Central American deltocephaline. We do not know the host plant of the type-species, but it could well prove to be a grass of the tribe Tripsaceae. The male genitalia of our North American species, *lawsoni*, and the Central American species, *atrifrons*, are similar, but *atrifrons* lacks the proximal hook on the apical portion of the aedeagus. There are other differences, too, which can best be seen by comparing figs. 36-37 and fig. 53g (Linnavuori, 1959:139).

In Oman's key to the genera of North American Deltocephalini (1949:111-119), *Reventazonia* will trace to couplet 127, *Amplicephalus* DeLong. It can be separated from that genus on the basis of a large ventral subterminal gonopore *versus* an ill defined dorsal gonopore.

REFERENCES

- Ball, E. D.** 1900. Additions to the western Jassid fauna. *Can. Ent.* 32:337-347.
 ———. 1905. Some new Homoptera from the South and Southwest. *Proc. Biol. Soc. Wash.* 18:117-120.
- Beamer, R. H.** 1939. Four new species of leafhoppers and notes on two others (Homoptera, Cicadellidae). *J. Kansas Ent. Soc.* 12:26-30.
- Bei-Bienko, G. Y. et al.** 1967. (English translation) Keys to the insects of the European USSR. *In keys to the fauna of the USSR* (84). 1:1-1214.
- Bierne, B. P.** 1956. Leafhoppers (Homoptera: Cicadellidae) of Canada and Alaska. *Can. Ent.* 88(supplement 2):1-180.
- DeLong, D. M.** 1926a. Three new species of Cicadellidae previously confused with related species. *Trans. Amer. Ent. Soc.* 52:89-92.
 ———. 1926b. The genus *Lonatura* Osborn and Ball (Homoptera, Cicadellidae). *Trans. Amer. Ent. Soc.* 52:93-102.
 ———. 1926c. A monographic study of the North American species of the genus *Deltocephalus*. *Ohio State Univ. Studies* 2(13):1-129.
 ———. 1941. The genus *Arundanus* (Homoptera, Cicadellidae) in North America. *Amer. Mid. Nat.* 25:632-643.
 ———. 1948. The leafhoppers, or Cicadellidae, of Illinois (Eurymelinae-Balcluthinae). *Bull. Ill. Nat. Hist. Sur.* 24(2):97-376.
- Linnavuori, R.** 1959. Revision of the Neotropical Deltocephalinae and some related subfamilies (Homoptera). *Ann. Zool. Soc. 'Vanamo'* 20(1):1-370.
- Matsumura, S.** 1915. Neue Cicadinen Koreas. *Trans. Sapporo Nat. Hist. Soc.* 5:154-184.
- Oman, P. W.** 1949. The Nearctic leafhoppers (Homoptera: Cicadellidae). A generic classification and check list. *Mem. Wash. Ent. Soc.* 3:1-253.
- Osborn, H. and E. D. Ball.** 1902. A review of the North American species of *Athysanus* (Jassidae). *Ohio Nat.* 2:231-256.
- Remane, R.** 1961. *Eudria nebulosa* (Ball), comb. nov. eine nearktische Zikade in Deutschland (Hom. Cicadina, Jassidae). *Bayerischen Ent. Nachr.* 10(7 and 9):73-76, 90-98.
- Tuthill, L. D.** 1930. Four new species of the *Deltocephalus* group (Homoptera, Cicadellidae). *J. Kansas Ent. Soc.* 3:44-47.
- Van Duzee, E. P.** 1892. A synoptical arrangement of the genera of the North American Jassidae, with descriptions of some new species. *Trans. Amer. Ent. Soc.* 19:295-307.
- Vilbaste, J.** 1969. An some East-Asiatic leafhoppers described by Professor S. Matsumura (Homoptera: Cicadinea: Jassidae). *Ins. Mats.* (supplement 6): 1-12.