

# THE OHIO JOURNAL OF SCIENCE

PUBLISHED BY THE  
OHIO STATE UNIVERSITY SCIENTIFIC SOCIETY

VOLUME XVIII

MAY, 1918

No. 7

## TABLE OF CONTENTS

DELONG—Additional Records of Tennessee Cicadellidæ (Hemiptera-Homoptera) .....	233
FENTON—The Parasites of Leaf-Hoppers—Part II. ....	243
LYMAN AND BOWERS—The Digestibility of Soy Bean Meal by Man.....	279

## ADDITIONAL RECORDS OF TENNESSEE CICADELLIDÆ. (Hemiptera-Homoptera.)

DWIGHT M. DELONG.

Two years ago the first attempt was made at listing the Cicadellidæ (Jassoidea) found in Tennessee. At that time I published a paper\* containing records for some 212 species and varieties collected in various parts of the state, most of which were the records of the previous summer.

In view of the fact that the proof was not seen by the author after the manuscript was sent to press, a large number of errors, mostly typographical, occurred in this bulletin, which I will not attempt to correct here. In working over the material, however, I find that a few species have been incorrectly cited and I wish to change them at this time.

The species referred to as *Spangbergiella vulnerata* Uhl. should be *Spangbergiella mexicana* Bak. Also *Deltocephalus signatifrons* V. D. should be *D. sonorus* Ball.

The specimens described as *Typhlocyba nigridorsum* DeL. are no doubt extreme variations of *E. vulnerata* Fh. and with a good series of specimens, I would now place this form under *vulnerata* and very close to variety *nigra* Gill.

\* Tenn. State Board of Entomology, Bull. 17, 1916.

In spite of the fact that Mr. Van Duzee has placed *Typhlocyba morgani* DeL. as a variety under *Empoa querci* Fh., I am still certain that it is a good species and has no resemblance to *querci*. In fact it belongs in the Genus *Erythroneura* and I am sure Mr. Van Duzee has not seen specimens of this species. At the present time I have a good series and find them to be quite constant in their characters as described.

During the past two seasons additional material has been collected and the following pages include records for these as well as specimens unidentified at the time of publication of the previous paper. These are new records for the state, five of which are treated as new species and one as a new variety. The total now brings the list for Tennessee to 241 species and varieties.

Mr. Crumb has very kindly given to me his records of species not listed previously and I have mentioned his name as collector in each case. Specimens not otherwise designated were collected by the author.

**Macropsis occidentalis** (V. D.).

Two specimens referred to this species were taken at Clarksville, Tenn., July 5 and 17, 1915.

**Macropsis tristis** (V. D.).

Four specimens collected July 8 were swept from wild plum by Mr. Crumb at Clarksville, Tenn.

**Dræculacephala angulifera** (Walk.).

Collected at Hixon during July, August and September, 1915, Mr. Crumb.

**Gypona** sp.

The species referred to is a new one in manuscript at present and described by Gibson. I will not give the name here as I do not wish to make this a manuscript species. One specimen was collected at Clarksville, July 15.

**Gypona scarlatina** Fh.

Six specimens from Clarksville, collected June 21 to July 15, five of them by Mr. Crumb.

***Gypona spadix* n. sp.**

In general appearance resembling *scarlatina*, but shorter and more robust with reddish-brown color and distinct genitalia. Length, ♀ 9 mm. ♂ 8 mm.

Vertex decidedly produced, twice as long on middle as next the eye, width between the eyes slightly more than twice the length. Ocelli almost equidistant between eyes and middle line of vertex, and closer to anterior than to posterior margin. Pronotum twice as long as vertex and twice as wide as long. Elytra rather short and broad.

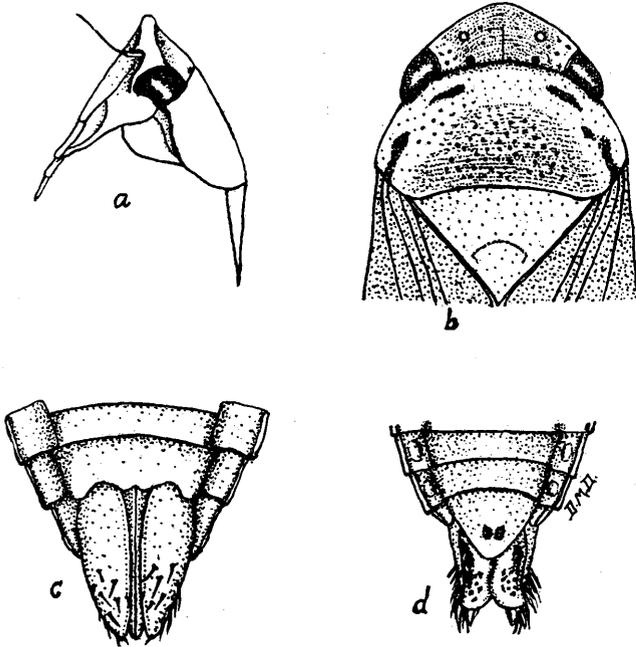


FIG. 1. *Gypona spadix* n. sp.

a, lateral view of head; b, dorsal view of head and pronotum; c, female genitalia; d, male genitalia.

Color: Face, eyes, loræ and genæ black or dark fuscous, sometimes narrowly margined with pale fuscous. Vertex, pronotum and scutellum brownish yellow, lightly flecked with bright red. Ocelli red, a pair of round spots behind these on the posterior margin of the vertex, brown. Posterior portion of pronotum and some irregular blotches on anterior half, darker. Elytra dull and rather dark chestnut brown; veins darker, dark bordered. In the female the outer veins are reddish in color. Cross veins between first and second sectors, those between apical and antiapical cells and the ends of claval veins along sutural line, black. Veins of apical cells rather heavily bordered with fuscous. Beneath yellow, bordered with fuscous, legs dirty yellow to fuscous.

Genitalia: Female last ventral segment almost one-half longer than penultimate. Posterior margin with narrowly rounded and prominent lateral lobes; broadly emarginate from these to a rather broad central lobe which is distinctly sinuate at the middle. Ovipositor dark in color. Male valve more than twice as long as preceding segment, gradually narrowed either side from base to roundly produced apex. Plates longer than valve, half as broad as long. Outer margin undulated, inner margins overlapping toward apex and convexly curved to outer apical margins.

Described from one female and two males from Clarksville, Tenn., collected August 7th, and a single female from Ulster County, N. Y. Kindly loaned by Dr. Herbert Osborn. Type, male specimen in author's collection.

This is different from any of the species described, so far as I can determine from descriptions and authentically identified specimens of most of the nearctic forms.

***Aligia modesta* (O. & B.).**

Four specimens were taken during July, 1917, at Clarksville.

***Scaphoideus carinatus* Osb.**

Three specimens from Clarksville, July 26, 28 and 29.

***Scaphoideus cinerosus* Osb.**

Two specimens, Clarksville, July 13 and 16.

***Scaphoideus opalinus* Osb.**

Five specimens swept from grasses in pasture land at Clarksville, July 13 and 23.

***Deltocephalus alboneura* n. sp.**

Resembling *D. vinnulus* Crumb in size and general appearance but with more conically produced head, distinctive coloring and genitalia. Length, 2 mm.

Vertex conically produced, twice as long at middle as next the eye, and slightly longer than width between the eyes. Pronotum longer than vertex, twice as wide as long, rather strongly produced on anterior margin. Elytra scarcely longer than abdomen, with reticulations on the clavus and middle antiapical cell divided.

Color: Face fuscous, marked with pale arcs and fading to dirty yellow above. Vertex dirty yellow with dark median impressed line on posterior two-thirds, a pair of spots at the apex, two either side along margin between these and the eyes, the inner one lying close to the eye, dark fuscous. A transverse fuscous band interrupted at the middle crosses the disc of vertex between anterior margin of eyes and terminates in a spot next either eye. Two oblique dashes either side of

median impressed line extend from this band to posterior margin, being close to and parallel with inner margins of eyes. Pronotum dark fuscous, outer margins, anterior median spot and five longitudinal vittæ, pale. Scutellum dark, a pale spot either side on outer margin half way to apex. Elytra dark fuscous, almost black, nervures pale, reflexed costal veins and inner apical cell broadly pale. Beneath black, keel of ovipositor and spots on pygofers pale. Legs dark set with white spines which are black at base.

Genitalia: Female last ventral segment concealed except a roundly produced lobe at either side of preceding segment and extending beyond its apex; penultimate segment scarcely produced beyond preceding segment at the lateral margins but strongly convexly rounded at middle to three times its length. The apex slightly notched either side of middle so as to produce three distinct lobes.

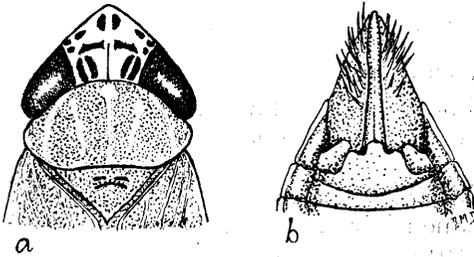


FIG. 2. *Deltoccephalus alboneura* n. sp.

a, dorsal view of head and pronotum; b, female genitalia.

Described from a single female specimen collected July 6, 1917, while sweeping short grasses on a rather steep hillside in an open woodland at the State Experiment Farm, Clarksville, Tenn. This specimen does not agree with any of the other described species and apparently is distinct. Type in author's collection.

#### ***Deltoccephalus vanduzei* G. & B.**

One specimen from Clarksville, July 13, 1917.

#### ***Deltoccephalus sonorus* Ball.**

Several specimens were taken during July and August at Clarksville and Tullahoma.

#### ***Euscelis striolus* (Fall.).**

Very abundant on grasses during July and August at Clarksville.

**Phlepsius carolinus** Lthr.

This species was recently described from a single female collected in South Carolina. During the past season I have been able to collect great numbers of both sexes in Tennessee and am describing the male genitalia here.

Male valve almost as long as last ventral segment, gradually and evenly sloping from lateral margins to obtusely angled apex. Plates almost as broad as valve at base and three times its length, very slightly concavely narrowed to rather broad, blunt and well rounded apices; outer margins set with about six large dark spines and very densely clothed with fine white hairs at basal lateral margins.

**Phlepsius altus** O. & B.

Abundant on short vegetation in open fields during August.

**Phlepsius slossoni** Ball.

Two specimens were collected by Mr. Crumb, October 8 and November 2 at Clarksville.

**Dorydiella floridana** Bak.

Two specimens from Clarksville, August 2, 1915, and September 3, 1914, were swept from tall grasses by Mr. Crumb.

**Thamnotettix morsei** Osb.

One specimen from Clarksville, October 11, 1916, by Mr. Crumb, and one collected at Elkmont, Tenn., September 27, by Mr. W. B. Cartright.

**Thamnotettix proprius** n. sp.

Resembling *shermani* and the other members of this group in general appearance, but with head narrower and more strongly produced, wing venation, coloration and genitalia distinct. Length, 4.5 mm.

Vertex angularly produced, as long as width between the eyes, twice as long as middle as next the eyes, slightly shorter than pronotum which is almost twice as wide as long. Elytra with the antiapical cells, especially the middle one and the cell just anterior to it, short. Two cross veins are found between the first and second sectors. Antennæ four and one-half times as long as vertex.

Color: Creamy white to light fuscous. Face with a heavy band just below margin of vertex, a pair of arcs beneath this, a spot next either eye, and one below each antenna, black. Vertex with a black band composed of three narrowly connected triangular spots either side of apex, interrupted on the middle line. A large ochraceous blotch either side of middle arises behind this and extends to pronotum which is crossed with five longitudinal white vittæ. Basal angles of scutellum

dark. Veins of elytra light, broadly margined with fuscous. Outer apical cell, a spot at apex of costal cell, one behind first cross vein, margin of clavus along suture, a spot at middle of outer clavus and antiapical cells broadly margined with dark fuscous. Venter dirty yellow, segments black at sides; male valve with a spot at apex and one either side at base, also a spot at base and outer margins of apical halves of plates, dark.

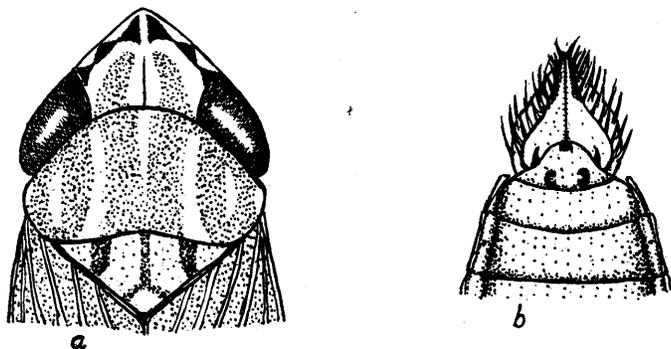


FIG. 3. *Thamnotettix proprius* n. sp.

a, dorsal view of head and pronotum; b, male genitalia; c, elytron.

Genitalia: Male valve almost as long as preceding segment, emarginate either side of roundly produced apex; plates narrow, more than twice as long as valve, gradually narrowed to long, acutely pointed tips and very thickly set with yellow and black hairs. Pygofers broad, seen at either side of plates.

Described from two male specimens swept from canebrake August 8 and September 1, 1917. They agree in the characters mentioned above and are distinct from the other species of the genus. Type in private collection of author.

**Chlorotettix** sp.

The species referred to here has been in manuscript for almost a year and has been submitted for publication. I will not give the name here as I do not wish to make it a manuscript species.

**Alebra albostriella** var **fulveola** (H. S.).

Several specimens were collected during June and July at Covington, Colliersville and Clarksville, Tenn.

**Alebra albostriella** var. **rubrafrons** n. var.

Resembling var. *fulveola* in form and size but with darker color and face and vertex bright red. Length, 4 mm.

In structural characters this form is closely related to *albostriella*. The head is not produced and broadly rounded. The comparative width between the eyes is slightly less and the posterior margin of the vertex is more emarginate, almost angularly excavated in some specimens. The wing venation is also different.

Color: Deep orange yellow, darker than in *fulveola*. Clypeus, frons, face and vertex densely and almost uniformly bright, cardinal red; ocelli and rudiments of the arcs on the front pale. Scutellum with basal angles light, the remainder often flecked with red and the apical margin always red. Elytra with apical portion smoky sub-hyaline.

Male pygofers more inflated than in *fulveola*.

These characters are constant and distinct in the five male specimens at hand, which were collected at Clarksville, July 11, 1917, while sweeping small shrubs in an open woodland at the Experiment Farm. The ranking of this form will depend entirely upon the possibility for variation in the wing venation and how much emphasis should be placed upon this character, for the venation here is different from *albostriella* and its other varieties.

**Alebra bicincta** n. sp.

Resembling *albostriella* in form and size but with two brown cross bands extending across elytra. Length, 4 mm.

Head broadly rounded, not produced, almost parallel margined with anterior margin of pronotum. Venation of wings slightly different from *albostriella*.

Color: Milky white tinged with yellow. Face, disc of pronotum, basal angles of scutellum, and sutural margins of the wing washed with yellow. Two rather broad transverse bands extending across elytra, dark brown or fuscous. The anterior of these is just behind the apex of scutellum and extends obliquely to the costal margin; the posterior one covers the entire apical portion to a little anterior of the cross veins. Beneath pale yellow, ovipositor dark fuscous.

Genitalia: Last ventral segment of female rather strongly and broadly roundly produced. Pygofers large, inflated.

Described from two female specimens taken at Clarksville, Tenn., August 13 and 31. The latter specimen was taken from sassafras while collecting at night with a flash-light. Type in private collection of author.

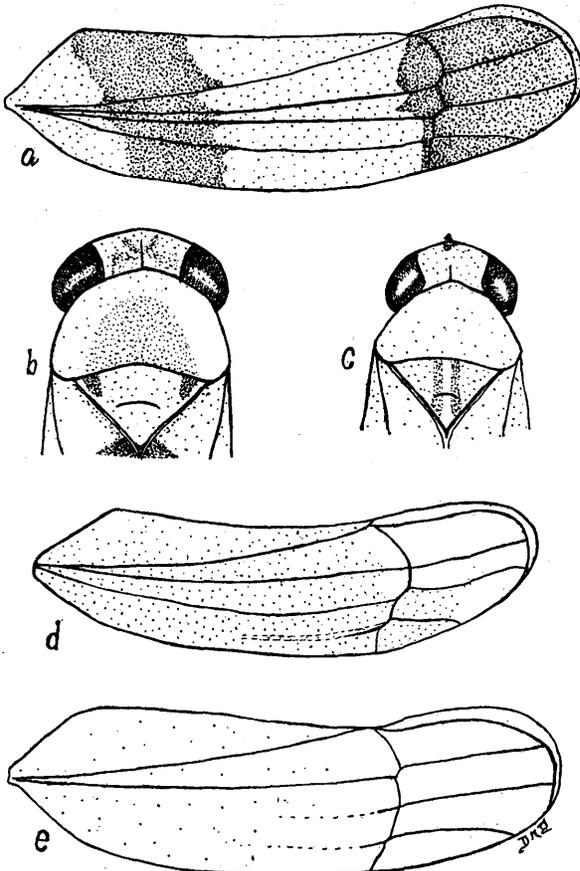


FIG. 4—*a, b, Alebra bicincta* n. sp. *a*, elytron; *b*, dorsal view of head and pronotum.  
*c, d, Alebra eburnea* n. sp. *c*, dorsal view of head and pronotum; *d*, elytron.  
*e*, elytron of *Alebra albostriella* var. *rubrafrons* n. var.

***Alebra eburnea* n. sp.**

Resembling *albostriella* somewhat in general appearance but smaller with very narrow head and distinct wing venation. Length, 3.2 mm.

Vertex slightly produced, rather broadly rounded. Width between the eyes one-half greater than length. Pronotum twice as wide as long and decidedly wider than head. Elytra distinctly longer than abdomen.

Color: Ivory white; face, vertex, pronotum and scutellum, creamy white, the latter with two somewhat darker lines extending across middle from pronotum to apex. Elytra milky white, opaque from base to beyond cross veins, tips smoky. Beneath creamy white, last ventral segment of female with a dark line one-half the way to base from middle of apical portion. Ovipositor yellow.

Genitalia: Female last ventral segment strongly rounded and slightly emarginate at middle.

Described from a single female from Covington, Tenn., swept from wild-grape June 18, 1915. By a comparison with the species of the genus this seems so distinct in size and form that I describe it here. Type in author's collection.

***Alebra fumida* Gill.**

A single specimen collected July 6 at Clarksville has been referred to this species. The specimen at hand is shorter and more robust than typical individuals of *fumida* which are from its type locality. It also has a different wing venation, but because of its marked resemblance in general appearance, I hesitate to describe it as a different form until more material is available for study.

***Dikraneura cruentata* Gill.**

Four specimens were collected during July. All of these lack color markings except the black lines on the cross veins. The specimens are decidedly smaller and have a different character of the wing from that pictured by Gillette, but no doubt belong here.

***Erythroneura hartii* Gill.**

Abundant on apple during July and August.

***Erythroneura rubroscuta* Gill.**

One specimen from Clarksville, June 30, 1915.

***Erythroneura comes* var. *maculata* Gill.**

Abundant on sycamore during August and September.