



ILLINOIS
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Review of the New World Erythroneurini (Hemiptera: Cicadellidae: Typhlocybinae)

I. Genera *Erythroneura*, *Erasmoneura*, *Rossmoneura*, and *Hymetta*

Dmitry A. Dmitriev and Christopher H. Dietrich

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Plate 1. Photos of Erythroneurini. a – *Erythroneura palimpsesta* McAtee; b – *E. calycula* McAtee; c – *E. acuticephala* Robinson; d – *E. infuscata* Gillette; e – *Erasmoneura vulnerata* Fitch; f – *E. nigra* Gillette; g – *Rossmoneura carbonata* McAtee; h – *Hymetta balteata* McAtee. h – photo by Claude Pilon.

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(Hemiptera: Cicadellidae: Typhlocybinae).
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Abstract

This review provides descriptions, illustrations, keys for identification, and summaries of distributions and host plants for all known species of the genera *Erythroneura* (54 species), *Erasmoneura* (12 species), *Rossmoneura* (3 species), and *Hymetta* (5 species). *Erythroneura browni* sp.n., *E. ortha* sp.n., *E. carinata* sp.n., *E. glabra* sp.n., *E. bakeri* sp.n., *E. kerzhneri* sp.n. from Central and Eastern USA, *E. triapitsyni* sp.n. from New Mexico, *Erasmoneura margaritae* sp.n. from Illinois, and *E. emeljanovi* sp.n. from South Carolina are described as new. The following new synonyms are recognized: *Erythroneura prima* Beamer equals *E. maritima* Hamilton syn. n.; *E. diva* McAtee equals *E. tricineta* var. *complementa* McAtee syn. n.; *E. octonotata* Walsh equals *E. comes* var. *compta* McAtee syn. n., *E. cherokee* Robinson syn. n., *E. compta* var. *rufomaculata* McAtee syn. n., and *E. nigroscuta* Johnson syn. n.; *E. cymbium* McAtee equals *E. tricineta* var. *disjuncta* McAtee syn. n.; *E. calycula* McAtee equals *E. tricineta* var. *erasa* McAtee syn. n. and *E. tricineta* var. *noncincta* Johnson syn. n.; *E. ziczac* Walsh equals *E. ziczac* var. *walshi* Beamer syn. n.; *E. delicata* McAtee equals *E. comes* var. *accepta* McAtee syn. n., *E. scripta* Robinson syn. n., and *E. tudella* Robinson syn. n.; *E. rosa* Robinson equals *E. repetita* McAtee, syn. n.; *E. kerzhneri* sp.n. equals *E. vaga* sensu Beamer, 1938 (not Johnson, 1934); *Erasmoneura vulnerata* Fitch equals *E. gradata* Robinson syn. n.; *Erasmoneura fulmina* McAtee equals *E. bicolorata* Beamer syn. n.; *Erasmoneura nigra* Gillette equals *E. vulnerata* var. *decora* McAtee syn. n.; *Erasmoneura nigerima* McAtee equals *E. atrata* Johnson syn. n.; *Hymetta balteata* McAtee equals *H. trifasciata* var. *albata* McAtee syn. n. and *H. balteata* var. *mediana* Fairbairn syn. n.; *H. anthisma* McAtee equals *H. distincta* Fairbairn syn. n.; *Erasmoneura atra* Johnson, 1935 is restored and equal to *E. nigerima* sensu Beamer, 1946 (not McAtee, 1920). Neotypes are designated for *Erythroneura octonotata* Walsh, *E. tricineta* Fitch, and *Hymetta trifasciata* Say.

Keywords: Auchenorrhyncha, Homoptera, leafhopper, morphology, phylogeny, taxonomy, USA.

Introduction

The leafhopper tribe Erythroneurini is a diverse group of tiny, delicate leafhoppers that, in the New World, appears to be most diverse in the deciduous forests of temperate North America where species occur on a wide variety of woody host plants. In a recent paper (Dietrich and Dmitriev 2006), we proposed a revised genus-level classification for New World Erythroneurini, recognizing 18 New World genera, including three taxa previously treated as subgenera of *Erythroneura* (sensu lato). Species belonging to five genera restricted to South America, and the small North American genera *Aztegina* Dietrich and Dmitriev, *Hepzygina* Dietrich and Dmitriev, *Illinigina* Dietrich and Dmitriev, *Mexigina* Dietrich and Dmitriev, and *Nelionidia* Dietrich and Dmitriev were treated by Dietrich and Dmitriev (2006). In this and subsequent papers, we provide species-level treatments of the remaining genera of Erythroneurini known to occur in North America. This paper treats the genera *Erythroneura*, *Erasmoneura*, *Rossmoneura*, and *Hymetta*. Revisions of the genera *Erythridula*, *Eratoneura*, and *Zyginama* are in preparation.

Taxonomic study of New World Erythroneurini began with Fitch (1851), who described the genus *Erythroneura* based on four species and one variety from New York. Later, Oshanin (1912) designated *E. tricincta* Fitch as the type species. The genus was first revised by McAtee (1920), who described many additional species and varieties, and organized the species into six informal groups based on wing venation. McAtee (1918, 1919, 1920, 1924a, 1924b, 1924c, 1926) recognized species and varieties based on color pattern, usually selecting females as holotypes. Lawson (1920) and Robinson (1926) were the first to recognize the importance of the male genitalia for diagnosing species of *Erythroneura*, and provided the first drawings and descriptions of these structures. However, their keys continued to include only characters of the forewing venation and color pattern. Robinson recognized five groups of species within the genus. In a series of publications, Beamer (1927, 1929, 1930a, 1930b, 1931a, 1931b, 1931c, 1931d, 1932a, 1932b, 1932c, 1932d, 1932e, 1932f, 1932g, 1932h, 1932i, 1937, 1938, 1946) revised *Erythroneura* comprehensively, treating each of four species groups (Beamer 1938) in turn: (Beamer

1930b – *obliqua* group; Beamer 1931a–1932h – *maculata* group; Beamer 1938 – *comes* group; Beamer 1946 – *vulnerata* group). Beamer provided illustrations of the male genitalia for all known species, incorporated these characters into his keys, and associated males with most of the species and varieties that had been described by McAtee based on females. Johnson (1935) independently revised the species of *Erythroneura* from Ohio and provided a key for their identification. She described many new species in this and subsequent papers (Knull 1945, 1946, 1951a, 1951b, 1954a, 1954b, 1955). In his generic revision of Western Hemisphere Typhlocybinae, Young (1952) established subgenera for each of Beamer's species groups: *Erythridula*, *Eratoneura*, *Erythroneura*, and *Erasmoneura*, respectively, and included these in a new tribe, Erythroneurini, along with two other genera: *Zyginina* Fieber and *Hymetta* McAtee (revised by Fairbairn 1928b). After these revisions, H.H. Ross (with D.M. DeLong) and L.W. Hepner described about 300 additional species of *Erythroneura*. Dietrich and Dmitriev (2006) elevated the subgenera to the genus level, and transferred three species of *Erasmoneura* into the new genus *Rossmoneura*.

Species presently included in the four genera treated here are all apparently native to temperate North America, where they feed and oviposit mainly on woody deciduous hosts. A few species of *Erasmoneura* and *Rossmoneura* utilize herbs as hosts for both feeding and oviposition. Adults overwinter in leaf litter. In the spring, they emerge and feed on the new leaves of early emerging deciduous plants before migrating to their "definitive" summer host plants where they mate and lay the eggs (Ross and DeLong 1953). Most species oviposit and undergo nymphal development on a single (or a group of closely related) plant species. In the southern USA, they complete two or more generations per year, but in the North there may be but a single generation. In the fall, adults may again feed on variety host plants prior to seeking out winter shelter. Most New World species of Erythroneurini have no known economic importance, but a few are important pests of grape (McAtee 1920, Robinson 1926, Martinson and Dennehy 1995, Zimmerman et al. 1996, Duso, et al. 2005) and apple (Beamer 1930a).

Material and Methods

Few previous workers have specifically targeted Erythroneurini in their collecting, and specimens from trap catches and other general collecting that find their way into curated collections are often in very poor condition. Because of this, and due to time and budget constraints, this study focused only on collections known to contain large numbers of well-curved specimens of Erythroneurini, as well as those housing primary types: Illinois Natural History Survey (INHS), Ohio State University (OSU), University of Kansas Natural History Museum (KSEM), Mississippi State University, Mississippi Entomological Museum (MEM), Canadian National Collection of Insects, Arachnids and Nematodes (CNC), Smithsonian National Museum of Natural History (USNM), Colorado State University (CSUC), California Academy of Sciences (CAS). The numbers of studied specimens from each collection are summarized in Table 1. Future collecting will undoubtedly show that the distributions of most species are much broader than indicated on the maps accompanying individual species treatments. Although these maps show regional biases reflecting the locations and holdings of the studied collections, they are based on vouchered collection records and, thus, accurately reflect current knowledge of species distributions. The type locality is marked with a star on the maps.

Identification of species was mainly based on type material. In some cases, when the type was not located, or the holotype is a female (e.g., most McAtee's species), we followed Beamer's (1927, 1929, 1930a, 1930b, 1931a, 1931b, 1931c, 1931d, 1932a, 1932b, 1932c, 1932d, 1932e, 1932f, 1932g, 1932h, 1932i, 1937, 1938, 1946) interpretation, based on study of dissected male specimens that he labeled "allotype" to indicate that they had been compared to the female primary types of previous workers. Although Beamer's "allotypes" have no official standing in nomenclature, these dissected male specimens facilitate unambiguous interpretation of Beamer's concept of the species.

Morphological terminology follows Dietrich and Dmitriev (2006). Although individual genera, and in many cases species, have a characteristic color pattern, details and intensity may be highly variable both inter- and intraspecifically. Overwintering individuals tend to be more brightly colored than adults of the summer

generation of the same species. This has resulted in many species being described multiple times based on different color forms. Species of *Erythroneura* have the most diverse color patterns. In the descriptions below, the pattern of fully colored individuals is described, although completely or almost completely discolored forms are known for most species. Thus, identification keys are based mainly on male genitalia, with external characters used only for supplemental purposes.

Each species is illustrated by one or more habitus photos taken using a Microoptics digital imaging system. Original drawings were prepared only in cases where those available from other sources were deemed inaccurate. Thus, numerous figures are reproduced from other sources, as noted in the figure captions. Inconsistencies (e.g., in line thickness) among line drawings reflect differences in the drawing styles of previous authors. In all cases, figures reproduced from previous publications are either in the public domain or are reproduced with permission.

Line drawings of the male genitalia accompanying each species treatment are labeled as follows:

- a – habitus;
- b – pygofer or pygofer dorsal appendage, lateral view;
- c – style apex, broad aspect;
- d – aedeagus, lateral view;
- e – aedeagus, ventral view;
- f – connective.

Nomenclatural, distributional, morphological and host-plant data summarized below were extracted from a relational specimen-level database of Erythroneurini (Dmitriev & Dietrich, 2003 onwards), developed using the 3I software package (Dmitriev 2006). The online database provides more detailed information for each species, including a complete list of specimens examined, photos of type specimens, and interactive keys to species and genera.

In the species treatments below, only summer host plants are listed, although most species have also been collected from plants other than their oviposition hosts.

To examine the phylogenetic relationships among species, a matrix of 63 morphological characters was compiled for 73 species

of *Erythroneura*, *Erasmoneura* (excluding *E. bipentagona* Beamer), *Rossmoneura*, *Hymetta*, and 13 species from the related genera *Erythridula*, *Eratoneura*, *Illinigina*, and *Neoimbecilla*. *Erythridula* was selected as the outgroup based on results of a previous analysis (Dietrich and Dmitriev 2006). Phylogenetic analysis of this matrix was performed using PAUP* 4.0 (Swofford 1998) with 10,000 random addition sequences (nchuck = 5, chuckscore = 1), and subsequent TBR branch swapping on islands of most parsimonious trees. All multistate characters were treated as non-additive (unordered) except one: Articulation of dorsal pygofer appendage with three ordered states—articulated, not articulated but separated by suture, and fused. Characters were assigned different weights a priori based on their complexity and intraspecific variability. Complex characters

that varied little within species were assigned weight = 4; color pattern characters, which are highly variable within some species, were assigned weight = 1; all other characters were assigned weight = 2.

Branch support was measured by calculating the decay index (Bremer 1994) for each consistently resolved node on the most parsimonious trees. This was accomplished using the “enforce topological constraints” option to search for the shortest tree(s) not compatible with each node, using the heuristic search algorithm in PAUP*.

Specimens of newly described taxa are deposited in the insect collections of the Illinois Natural History Survey (Champaign), University of Kansas Natural History Museum (Lawrence), and Mississippi State University (Starkville).

Table 1. Collections and studied material.¹

#	Species	Museums							
		INHS	OSU	KSEM	MEM	CNC	USNM	CSUC	CAS
1	<i>Erythroneura kanwakae</i> Robinson	5	19	33	3	23			
2	<i>E. fiduciaria</i> Knull	43	27		2				
3	<i>E. prima</i> Beamer			9	1	35			
4	<i>E. diva</i> McAtee	6	76	78	53		2		
5	<i>E. browni</i> sp.n.	1			51				
6	<i>E. comes</i> Say	299	321	65	188	147			
7	<i>E. octonotata</i> Walsh	943	266	90	525		1		
8	<i>E. amanda</i> McAtee	12	14				1		
9	<i>E. nudata</i> McAtee	115	242	81	417	2	1		
10	<i>E. ortha</i> sp.n.	1			73				
11	<i>E. festiva</i> Beamer	167	57	158	34				
12	<i>E. gilensis</i> Beamer	2	46	27	8			2	
13	<i>E. pontifex</i> McAtee	126	36	28	7				
14	<i>E. palimpsesta</i> McAtee	21	13	8	6				
15	<i>E. beameri</i> Robinson	123	207	111	82	4			
16	<i>E. reflecta</i> McAtee	143	105	25	15		1		
17	<i>E. integra</i> McAtee	11	39	16	62	1	1		
18	<i>E. carinata</i> sp.n.	27			25				
19	<i>E. tricincta</i> Fitch	17	162	21	32	94			
20	<i>E. cymbium</i> McAtee	35	91	55	198		2		
21	<i>E. calycula</i> McAtee	54	203	119	292		2		
22	<i>E. vagabunda</i> Knull	12	25	1	1				
23	<i>E. aza</i> Robinson	16	13	3	17				
24	<i>E. glabra</i> sp.n.	3							
25	<i>E. elegantula</i> Osborn	173	16	165	22	4			
26	<i>E. acuticephala</i> Robinson	20	24	42	27				
27	<i>E. aclus</i> McAtee	155	97	67	199		1	3	
28	<i>E. bistrata</i> McAtee	130	103	321	431		2		
29	<i>E. prosata</i> Johnson	64	24		7				
30	<i>E. infuscata</i> Gillette	15	58	68	9		1	1	
31	<i>E. cancellata</i> McAtee	109	40	42	6		1		
32	<i>E. triapitsyni</i> sp.n.	19							

33	<i>E. bakeri</i> sp.n.	12			23				
34	<i>E. anfracta</i> Beamer	2	108	85	6	15			
35	<i>E. ziczac</i> Walsh	911	163	108	44	183	2		
36	<i>E. elegans</i> McAtee	217	370	59	2	5	1	7	
37	<i>E. delicata</i> McAtee	212	272	149	38	7	2		
38	<i>E. vitifex</i> Fitch	41	321	52	11	56	1	1	
39	<i>E. rubra</i> Gillette	63	195	103	46	2	1	2	
40	<i>E. vitis</i> Harris	932	424	146	287	212	2		
41	<i>E. coloradensis</i> Gillette	225	52	49	22	8	1	6	
42	<i>E. fraxa</i> Robinson	49	7	102	54				
43	<i>E. vaga</i> Johnson	41	64	1	79				
44	<i>E. kerzhneri</i> sp.n.			70	73				
45	<i>E. kennedyi</i> Knull		16						
46	<i>E. ancora</i> Beamer			3					
47	<i>E. tacita</i> Beamer			81	4	1			
48	<i>E. caetra</i> McAtee	19	4	141	5	14	1		
49	<i>E. rosa</i> Robinson	50	109	104	23	66			
50	<i>E. omaska</i> Robinson	244	22	67	74				
51	<i>E. rubrella</i> McAtee	987	31	77	26	59	1		
52	<i>E. corni</i> Robinson	66	60	155	646	23			
53	<i>E. bidens</i> McAtee	38	29	23	16	2	2		
54	<i>E. ontari</i> Robinson	19	110	141	11	84			
55	<i>Erasmoneura vulnerata</i> Fitch	805	487	76	809	71		5	
56	<i>E. fulmina</i> McAtee	20	18	19	3		2		
57	<i>E. variabilis</i> Beamer	242	227	404	7	178		2	
58	<i>E. nigra</i> Gillette	95	60	161	23	16	2	3	
59	<i>E. nigerrima</i> McAtee		14	105			1		
60	<i>E. atra</i> Johnson	46	72	22	25				
61	<i>E. caerulea</i> Beamer		37	28	1				
62	<i>E. rubricata</i> Van Duzee	24	8	405				1	1
63	<i>E. margaritae</i> sp.n.	17			1				
64	<i>E. emeljanovi</i> sp.n.			19					
65	<i>E. mixta</i> Beamer		9	188	1				
66	<i>E. bipentagona</i> Beamer			1					
67	<i>Rossmoneura carbonata</i> McAtee		3	218	6	132			
68	<i>R. tecta</i> McAtee	7	37	14	1		1		
69	<i>R. calva</i> Beamer			42	1	12			
70	<i>Hymetta kansasensis</i> Fairbairn	41	3	9	30				
71	<i>H. balteata</i> McAtee	52	164	24	58		2		
72	<i>H. anthisma</i> McAtee	27	72	19	1		1		
73	<i>H. trifasciata</i> Say	37	41		37				
74	<i>H. arizoniana</i> Fairbairn		102	17		1			

¹ The table shows the number of studied specimens from each collection. See “Material and Methods” for the museum abbreviations.

Results

The phylogenetic analysis of morphological data with *a priori* character weighting recovered 2,325 equally parsimonious trees of length 1,119, rescaled consistency index 0.236, and retention index 0.725. The 50% majority rule tree (Plate 2) recovered all included genera as monophyletic, although on some trees *Eratoneura* was paraphyletic with respect to *Erythroneura*, and many relationships within *Erythroneura* were poorly resolved.

Analysis of the same data with all characters having weight = 1 recovered 484 equally parsimonious trees of length 699. Although these

trees were 12 steps shorter than the trees obtained in the analysis based on weighted characters (length calculated based on all weights = 1), we prefer the latter estimate because it requires less homoplasy in the characters considered to be more reliable, and the consensus tree resulting from the analysis of equally weighted characters (not shown) was considerably less well resolved.

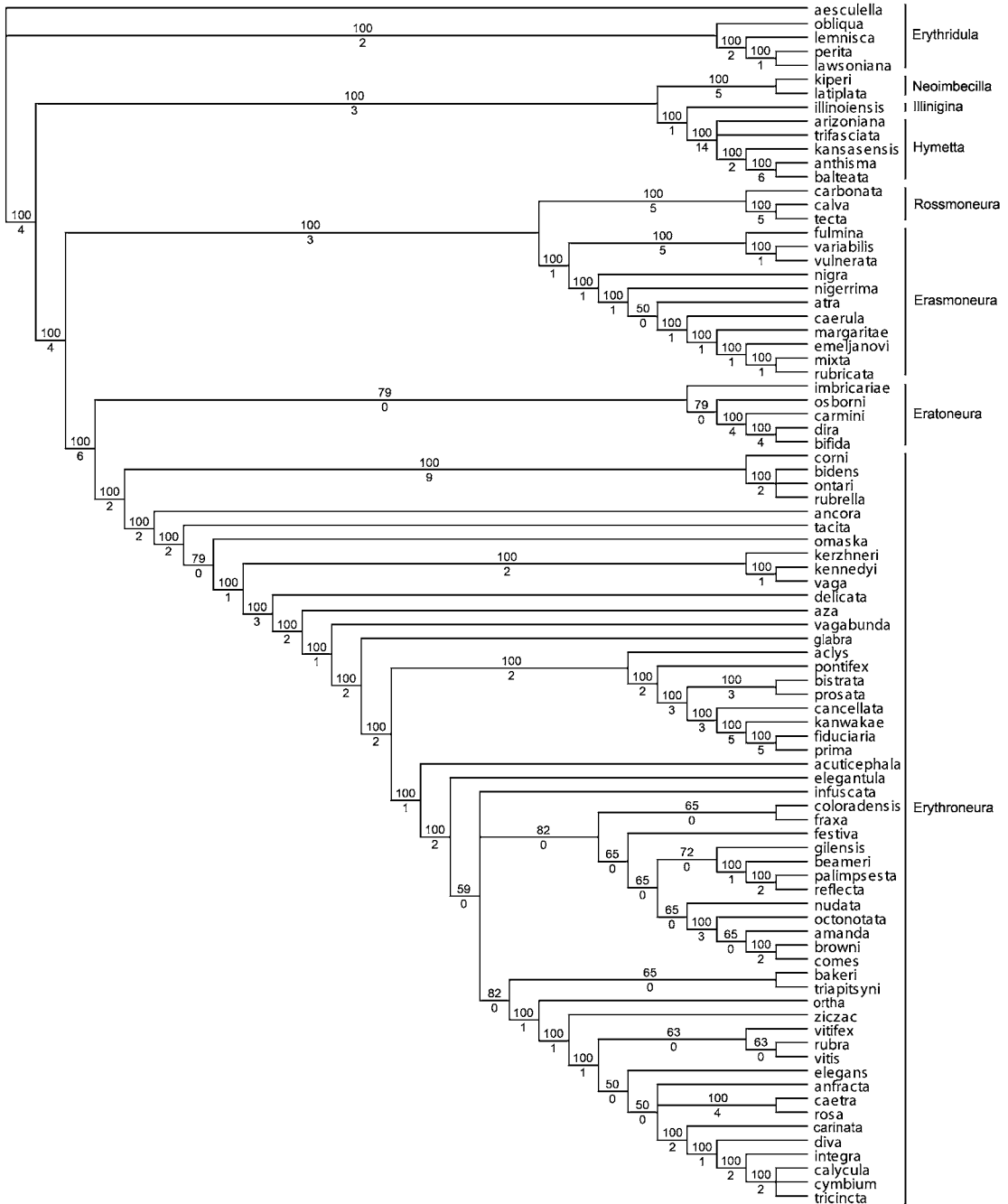


Plate 2. 50% majority rule tree from phylogenetic analysis. Percentage of the trees supporting the node are given above the branches, and decay indices are given below the branches.

Taxonomy

Tribe **Erythronurini** Young, 1952

Zyginae Zachvatkin, 1946:152, nom.nud.

Erythronurini Young, 1952:70 (Type:

Erythronura Fitch, 1851)

Bakerini Mahmood, 1967:21 (Type:

Bakera Mahmood, 1967)

Genus **Erythronura** Fitch, 1851

Erythronura Fitch, 1851:62

Eurythronura Rathvon, 1869:551, missp.

Erythronura Oshanin, 1912:114 (Type:

Erythronura tricincta Fitch, 1851 designated)

Erthronura Matsumura, 1932:190, missp.

Erythrouera Lindberg, 1948:161, missp.

Erythronura (*Erythronura*) Young, 1952:79

Description: Length 2.4–3.7 mm, relatively slender. Head narrower than pronotum; crown fore margin strongly produced and angulate medially; ocelli absent or vestigial. Face depressed in profile, less than 45° from horizontal; anteclypeus narrow in both sexes. Forewing outer apical cell about 2X as long as wide or longer; second apical cell quadrate (ir crossvein present); third apical cell parallel sided, straight; CuP longer than segment of CuA between Cu and MP; basal segment of MP longer than basal segment of CuA; inner apical cell with transverse base; Pcu not visible. Hindwing apex broadly rounded or truncate; submarginal vein not extended to wing apex; RA present; MP and CuA fused or separated by m-cu crossvein. Front femur AV row with one basal seta distinctly larger than others; PV row without fine basal setae. Pygofer apex not extended to apex of subgenital plate; dorsal emargination extended to base of segment; dorsolateral internal ridge absent; basolateral setae in distinct group, small; distal setae undifferentiated; sparse long fine setae present; apex with rigid setae on internal surface. Pygofer dorsal appendage immovably fused to margin, without basal suture, bifurcate near base, usually C-shaped, branches widely separated; ventral appendages absent. Subgenital plates free, lateral margin with angulate subbasal projection, section basad of medial constriction shorter than distal section; with four basal macrosetae uniseriate along margin; distinct marginal subbasal small rigid setae forming continuous row. Style preapical lobe prominent; apex usually with three points. Aedeagus articulated to con-

nective; dorsal apodeme broadly expanded in lateral view, usually triangular in ventral view, without sclerotized connection to anal tube or pygofer appendages. Aedeagus with preatrium short or long; shaft symmetrical, in most cases with ventral and/or distal processes. Connective without median anterior lobe; arms long; stem well developed; depressed. Anal tube without processes.

Coloration highly variable among, and in some cases within, species; usually white or yellow overall with orange, reddish, or brownish oblique vittae forming continuous zigzag pattern or broken into separate flecks; crossbands present in some species; forewing often with dark spot on costal margin, near apex of apical cell II, and at base of inner apical cell.

Distribution: Temperate North America; *E. elegantula* Osborn is known from Panama (apparently introduced). Species of *Erythronura* described from the Old World were listed as *incertae sedis* by Dietrich and Dmitriev (2006) and need to be transferred into other genera.

Host plants: Deciduous trees, shrubs, and vines; most species recorded from *Vitis* spp.

Key to Adult Males of *Erythroneura*

1. Pygofer dorsal appendage three-pointed (ventral branch bifurcate) (Fig. 1b)..... 2
 1'. Pygofer dorsal appendage two-pointed (C-shaped) (Fig. 4b). 4
 2(1). Aedeagus ventral processes distally bifurcate (Figs. 2d, 2e). 3
 2'. Aedeagus ventral processes not bifurcate, strongly sinuate in lateral view (Figs. 1d, 1e).
 1. *E. kanwaka* Robinson
 3(2). Lateral branch of aedeagus ventral process longer than medial branch (Fig. 2e).
 Anteclypeus pale. Larger (3.3–3.7 mm). 2. *E. fiduciaria* Knull
 3'. Lateral branch of aedeagus ventral process shorter than medial branch (Fig. 3e).
 Anteclypeus dark. Smaller (2.7–3 mm). 3. *E. prima* Beamer
 4(1). Aedeagus with ventral processes (Figs. 4d, 4e). 5
 4'. Aedeagus without ventral processes (Figs. 52d, 52e). 52
 5(4). Aedeagus ventral processes as long as shaft or longer (Figs. 4d, 4e). 6
 5'. Aedeagus ventral processes shorter than shaft (Fig. 46d). 46
 6(5). Aedeagus ventral processes bifurcated or with preapical projection (Figs. 6d1, 7d). 7
 6'. Aedeagus ventral processes simple (Fig. 10d). 11
 7(6). Aedeagus ventral process with short preapical projection (Fig. 6d1). 8
 7'. Aedeagus ventral process with two long branches subequal in length (Fig. 7d). 10
 8(7). Third point of style apex shorter than distance between other two points (Fig. 4c).
 Forewing with narrow red crossband (Fig. 4a). 4. *E. diva* McAtee
 8'. Third point of style apex longer than distance between other two points (Fig. 6c).
 Forewing without crossband. 9
 9(8). Apex of aedeagus extended well beyond bases of distal processes, with distinct spicules
 (Fig. 5e). 5. *E. browni* sp.n
 9'. Apex of aedeagus not extended beyond bases of distal processes, without spicules
 (Fig. 6e). 6. *E. comes* Say
 10(7). Aedeagus ventral processes bifurcate close to base (Fig. 7d). Clavus with black spot
 (Fig. 7a). 7. *E. octonotata* Walsh
 10'. Aedeagus ventral processes bifurcate more distad from base (Fig. 8d). Clavus without
 black spot; forewing with broad red crossband (Fig. 8a). 8. *E. amanda* McAtee
 11(6). Third point of style apex elongate, about as long or longer than distance between
 other two points (Fig. 16c). 12
 11'. Third point of style apex shorter than distance between other two points (Fig. 19c). 21
 12(11). Aedeagus ventral processes nearly parallel to each other (Fig. 9e). 13
 12'. Aedeagus ventral processes strongly divergent apically (Fig. 16e). 15
 13(12). Aedeagus ventral processes strongly sinuate in lateral view (Fig. 9d).
 9. *E. nudata* McAtee
 13'. Aedeagus ventral processes straight or only slightly sinuate in lateral view (Fig. 10d). 14
 14(13). Apex of aedeagus extended well beyond bases of distal processes, compressed, with
 distinct apical spicules. Aedeagus distal processes strongly divergent in ventral view (Fig. 10e).
 Anteclypeus pale. 10. *E. ortha* sp.n
 14'. Apex of aedeagus extended little beyond bases of distal processes, rounded in crosssection,
 without spicules. Aedeagus distal processes parallel in ventral view (Fig. 11e).
 Anteclypeus dark. 11. *E. festiva* Beamer
 15(12). Apex of aedeagus extended well beyond bases of distal processes (Fig. 11e). 16
 15'. Apex of aedeagus extended little if any beyond bases of distal processes (Fig. 16e). 18
 16(15). Shaft of aedeagus denticulate distally (Figs. 5d, 5e). 5. *E. browni* sp.n
 16'. Shaft of aedeagus smooth (Figs. 12d, 12e). 17
 17(16). Aedeagus ventral processes curved dorsad distally in lateral view (Fig. 12d).
 Vertex with orange pattern (Fig. 12a). 12. *E. gilensis* Beamer
 17'. Aedeagus ventral processes curved ventrad distally in lateral view (Fig. 13d). Vertex
 usually black (Fig. 13a). 13. *E. pontifex* McAtee
 18(15). Aedeagus distal processes only slightly divergent distally in ventral view (Fig. 14e); dorsal
 carina not reaching apex (Fig. 14d). 14. *E. palimpsesta* McAtee
 18'. Aedeagus distal processes strongly divergent distally in ventral view (Fig. 16e); dorsal carina
 reaching apex (Fig. 16d). 19

19(18). Aedeagus ventral processes abruptly bent laterad 90° distally in ventral view (Fig. 15e), sinuate distally in lateral view (Fig. 15d); shaft without distal vestiture..... 15. **E. beameri** Robinson

19'. Aedeagus ventral processes evenly curved distally in ventral view (Fig. 16e), straight or curved ventrally in lateral view (Fig. 16d); shaft with distal vestiture. 20

20(19). Aedeagus ventral processes strongly compressed basally (Figs. 16d, 16e). Forewing with oblique vittae forming continuous zigzag pattern (Fig. 16a). 16. **E. reflecta** McAtee

20'. Aedeagus ventral processes only slightly compressed (Figs. 17d, 17e). Forewing with broken oblique vittae (Fig. 17a). 6. **E. comes** Say

21(11). Forewing with narrow crossband (rarely incomplete) near midlength, apex dark, base pale; mesonotum dark (at least lateral triangles) (Figs. 17a, 20a). 22

21'. Color pattern not as above. 26

22(21). Ventral branch of pygofer dorsal appendage much longer than dorsal branch (Fig. 17b). 17. **E. integra** McAtee

22'. Branches of pygofer dorsal appendage of subequal length (Fig. 18b). 23

23(22). Aedeagus with strong dorsal keel, apex extended well beyond bases of distal processes (Figs. 18d, 18e). 18. **E. carinata** sp.n.

23'. Aedeagus without dorsal keel, apex extended little if any beyond bases of distal processes (Figs. 20d, 20e). 24

24(23). Aedeagus ventral processes strongly sinuate in lateral view, with apices curved dorsad (Fig. 19d). 19. **E. tricincta** Fitch

24'. Aedeagus ventral processes straight or with apices curved ventrad (Fig. 20d). 25

25(24). Aedeagus distal processes more slender, their apices more distal in lateral view (Fig. 20d). 20. **E. cymbium** McAtee

25'. Aedeagus distal processes broader, their apices more basal in lateral view (Fig. 21d). 21. **E. calycula** McAtee

26(21). Third point of style apex subequal to or longer than half distance between other two points (Fig. 22c). 27

26'. Third point of style apex shorter than half distance between other two points (Fig. 32c). 34

27(26). Aedeagus distal processes slender (Figs. 22d, 22e). 28

27'. Aedeagus distal processes broad (Figs. 25d, 25e). 30

28(27). Aedeagus ventral processes evenly divergent (Fig. 22e). 22. **E. vagabunda** Knull

28'. Aedeagus ventral processes parallel to each other on ventral side of aedeagus (Fig. 24e). ... 29

29(28). Shaft of aedeagus straight in lateral view, with dorsal distal lobe (Fig. 23d). 23. **E. aza** Robinson

29'. Shaft of aedeagus curved dorsally, without dorsal distal lobe (Fig. 24d). 24. **E. glabra** sp.n.

30(27). Aedeagus ventral processes parallel or slightly divergent in ventral view (Figs. 25e, 26e). Pronotum usually pale with Y-shaped orange vita medially (Fig. 26a). 31

30'. Aedeagus ventral processes strongly divergent apically in ventral view (Figs. 27e, 28e). Pronotum mostly dark brown (Figs. 27a, 28a). 32

31(30). Apex of aedeagus extended beyond bases of distal processes (Fig. 25e). Mesonotum with black basal triangles (Fig. 25a). 25. **E. elegantula** Osborn

31'. Apex of aedeagus not extended beyond bases of distal processes (Fig. 26e). Mesonotum without black basal triangles (Fig. 26a). 26. **E. acuticephala** Robinson

32(30). Aedeagus distal processes each with two sharp points, falcate distally in ventral view (Figs. 27d, 27e). Lateral margins of pronotum pale contrasting with dark brown medial area (Fig. 27a). 27. **E. aclys** McAtee

32'. Aedeagus distal processes each with one sharp point, diamond-shaped in ventral view (Figs. 28d, 28e). Lateral margins of pronotum usually dark, concolorous with medial area (Figs. 28a, 29a). 33

33(32). Scutellum pale. Forewing often with crossbands (Fig. 28a). 28. **E. bistrata** McAtee

33'. Scutellum dark. Forewings without crossbands (Fig. 29a). 29. **E. prosata** Johnson

34(26). Dorsum almost completely black (Fig. 30a). 30. **E. infuscata** Gillette

34 ⁷ . Ground color of dorsum various, but not black.	35
35(34). Aedeagus ventral processes strongly divergent apically (Fig. 32e).	36
35 ⁷ . Aedeagus ventral processes not or only slightly divergent apically (Fig. 36e).	38
36(35). Dorsal branch of pygofer dorsal appendage about half length of ventral branch (Fig. 31b). Aedeagus distal processes rounded in ventral view (Fig. 31e). Forewings with pale diamond-shaped transcommisural marking outlined with dark brown (Fig. 31a).	31. E. cancellata McAtee
36 ⁷ . Branches of pygofer dorsal appendage subequal in length (Fig. 32b). Aedeagus distal processes pointed in ventral view (Fig. 32e). Forewings with broken oblique vitae (Figs. 32a, 33a).	37
37(36). Aedeagus ventral processes narrowing distally in lateral view (Fig. 32d). Mesonotum with black lateral triangles (Fig. 32a).	32. E. triapitsyni sp.n.
37 ⁷ . Aedeagus ventral processes of even width in lateral view (Fig. 33d). Mesonotum without black triangles (Fig. 33a).	33. E. bakeri sp.n.
38(35). Aedeagus apex extended beyond bases of distal processes (Fig. 36e).	39
38 ⁷ . Aedeagus apex not extended beyond bases of aedeagus distal processes (Fig. 40e).	44
39(38). Aedeagus compressed, with strong dorsal keel (Fig. 34d).	40
39 ⁷ . Aedeagus rounded in crosssection, dorsal carina if present, feebly developed (Fig. 38d).	42
40(39). Aedeagus ventral processes strongly sinuate in lateral view (Fig. 34d).	34. E. anfracta Beamer
40 ⁷ . Aedeagus ventral processes straight in lateral view (Fig. 36d).	41
41(40). Shaft of aedeagus in ventral view extended more than twice its width beyond bases of distal processes (Fig. 35e). Forewings with continuous zigzag pattern (Fig. 35a).	35. E. ziczac Walsh
41 ⁷ . Shaft of aedeagus in ventral view not extended more than twice its width beyond bases of distal processes (Fig. 36e). Forewings with crossbands interrupted with red longitudinal veins (Fig. 36a).	36. E. elegans McAtee
42(39). Aedeagus with distal processes slender (Fig. 37d); apex of shaft beyond distal processes slightly broadened (Fig. 37e).	37. E. delicata McAtee
42 ⁷ . Aedeagus with distal processes flattened (Fig. 38d); apex of shaft beyond distal processes not broadened (Fig. 38e).	43
43(42). Second point of style apex longer than third (Fig. 38c). Aedeagus ventral processes convergent distally (Fig. 38e).	38. E. vitifex Fitch
43 ⁷ . Second point of style apex shorter than third (Fig. 39c). Aedeagus ventral processes divergent distally (Fig. 39e).	39. E. rubra Gillette
44(38). Second point of style apex longer than third (Fig. 40c). Forewing mostly dark with two pale narrow crossbands, sometimes interrupted with red longitudinal veins (Fig. 40a).	40. E. vitis Harris
44 ⁷ . Second point of style apex as short or shorter than third (Fig. 42c). Forewing without crossbands (Figs. 41a, 42a).	45
45(44). Aedeagus distal processes broadened distally in ventral view (Fig. 41e). Mesonotum with black lateral triangles. Forewing with broken oblique vittae (Fig. 41a).	41. E. coloradensis Gillette
45 ⁷ . Aedeagus distal processes diamond-shaped in ventral view (Fig. 42e). Mesonotum with red lateral triangles. Forewing with continuous zigzag pattern (Fig. 42a).	42. E. fraxa Robinson
46(5). Aedeagus with dorsal processes placed on phallobase or between phallobase and shaft of aedeagus (Figs. 43d, 45d).	47
46 ⁷ . Aedeagus without dorsal processes (Fig. 46d).	49
47(46). Aedeagus with unpaired small dorsal process on phallobase (Fig. 43d).	43. E. vago Johnson
47 ⁷ . Aedeagus with pair of long dorsal processes between aedeagus shaft and phallobase (Figs. 45d, 45e).	48
48(47). Third point of style apex longer than distance between other two points (Fig. 44c). Aedeagus distal processes shorter (Figs. 44d, 44e).	44. E. kerzhneri sp.n.
48 ⁷ . Third point of style apex shorter than distance between other two points (Fig. 45c). Aedeagus distal processes longer (Figs. 45d, 45e).	45. E. kennedyi Knull
49(46). Aedeagus ventral processes placed close to shaft (Fig. 46d). Dorsal branch of pygofer dorsal appendage subequal to ventral branch (Fig. 46b).	46. E. ancora Beamer

49'. Aedeagus ventral processes well separated from shaft (Fig. 47d). Dorsal branch of pygofer dorsal appendage much shorter than ventral branch (Fig. 47b). 50
50(49). Aedeagus ventral processes divergent (Fig. 47e). 47. **E. tacita** Beamer
50'. Aedeagus ventral processes parallel to each other (Fig. 48e). 51
51(50). Branches of pygofer dorsal appendages convergent distally in lateral view, ventral branch distally slightly curved upward (Fig. 48b). Aedeagus in ventral view broadened preapically (Fig. 48e). 48. **E. caetra** McAtee
51'. Branches of pygofer dorsal appendages strongly divergent in lateral view (Fig. 49b). Aedeagus in ventral view not broadened preapically (Fig. 49e). 49. **E. rosa** Robinson
52(4). Aedeagus with pair of large distal processes and pair of smaller preapical processes (Figs. 50d, 50e). Pygofer dorsal appendages short (Fig. 50b). 50. **E. omaska** Robinson
52'. Aedeagus without distal and preapical processes (Figs. 52d, 52e). Pygofer dorsal appendage long (Fig. 52b, 53b). 53
53(52). Aedeagus broad in ventral view, with strong dorsal keel (Figs. 51d, 51e). 51. **E. rubrella** McAtee
53'. Aedeagus slender in ventral view, without dorsal keel, with dorsal distal lobe (Figs. 52d, 52e). 54
54(53). Dorsal branch of pygofer dorsal appendage subequal to ventral branch (Fig. 52b). 52. **E. corni** Robinson
54'. Dorsal branch of pygofer dorsal appendage much shorter than ventral branch (Fig. 53b). ... 55
55(54). Ventral branch of pygofer dorsal process sinuate in lateral view (Fig. 53b). Larger (2.8–3.2 mm). 53. **E. bidens** McAtee
55'. Ventral branch of pygofer dorsal process evenly curved upward (Fig. 54b). Smaller (2.5–2.8 mm). 54. **E. ontari** Robinson

1. *Erythroneura kanwaka* Robinson, 1924 (Fig. 1)

Erythroneura kanwaka Robinson, 1924c:292

Description. Length 2.9–3.1 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe angulate apically; dorsal appendages three-pointed (ventral branch bifurcated), extended beyond pygofer apex. Second point of style apex well developed, third point shorter than second. Aedeagus with preatrium longer than shaft; shaft curved dorsally, slender in lateral view, depressed in crosssection; apex broadened in ventral view, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at apex; distal processes apical, flattened, directed dorsad. Dorsum yellow or white, with red or brownish color pattern; vertex with orange parallel submedial lines (often with lateral branch), midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum entirely pale; thoracic venter with dark mesosternum, remainder pale; forewing with oblique vittae forming continuous zigzag pattern; clavus with separate basal and distal vittae; dark spots at costal margin; apical cell II without distal spot; inner apical cell without brown spot.

Type locality: Holotype ♂, USA, Kansas, Douglas Co., IV 1924, (Robinson), (KSEM).

Distribution: Central and northeastern USA, southern Canada.

Host plants: *Ribes hirtellum*.

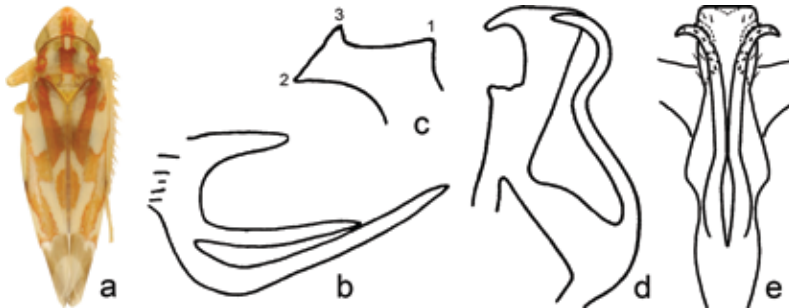


Figure 1. *E. kanwaka* Robinson. b, d – from Beamer 1938; c – from Hepner, unpublished.

2. *Erythroneura fiduciaria* Knull, 1951 (Fig. 2)

Erythroneura fiduciaria Knull, 1951a:170

Description: Length 3.3–3.7 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe angulate; dorsal appendages three-pointed (ventral branch bifurcated), extended beyond pygofer apex. Second point of style apex longer than third, third point very short. Aedeagus with preatrium longer than shaft; shaft curved dorsally, slender in lateral view, round in crosssection; with ventral processes placed basally, well separated from shaft, longer than shaft, divergent at apex, bifurcated, with lateral branch longer than medial one; distal processes apical, triangular. Dorsum yellow or white, with reddish-brown color pattern; vertex with orange parallel submedial lines with lateral branch, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum entirely pale; thoracic venter with dark mesosternum, remainder pale; forewing with oblique vittae forming continuous zigzag pattern; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II without distal spot; inner apical cell without brown spot.

Type locality: Holotype ♀, USA, Tennessee, Sevier Co., Great Smoky Mountain National Park, 21 VI 1942 (Knull), (OSU).



Distribution: Eastern USA.

Host plants: *Hamamelis virginiana*, *H. macrophylla*.

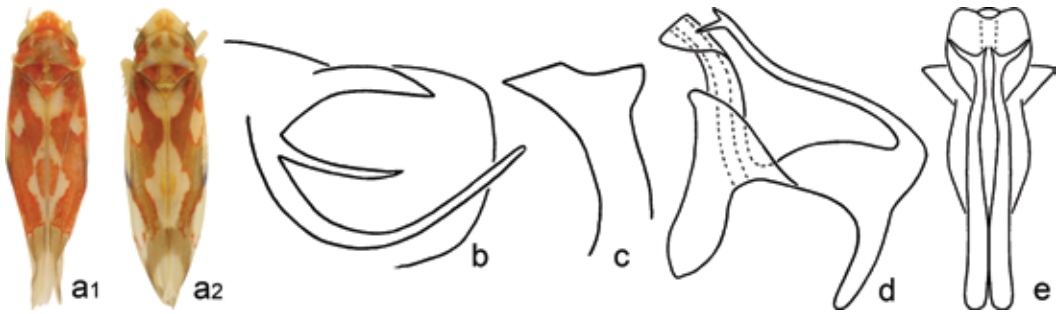


Figure 2. *E. fiduciaria* Knull. a1 – holotype; a2 – color variation.

3. *Erythronaura prima* Beamer, 1938 (Fig. 3)

Erythronaura prima Beamer, 1938:264

Erythronaura maritima Hamilton, 1987 in Hamilton & Langor, 1987:679 **syn.n.**

Description: Length 2.7–3 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded, dorsal appendages 3 pointed (ventral branch bifurcated), extended beyond pygofer apex. Second point of style apex longer than third; third point very short. Aedeagus with preatrium longer than shaft; shaft curved dorsally, slender in lateral view, round in crosssection; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at apex, with small preapical tooth; distal processes apical, triangular. Dorsum yellow or white, with reddish or brownish color pattern; vertex with orange parallel submedial lines (often with lateral branch), midline pale; anteclypeus brown; pronotum almost entirely dark; mesonotum pale, with dark lateral triangles; thoracic venter entirely dark; forewings with oblique vittae forming continuous zigzag pattern; clavus largely or entirely bright red or brownish; dark spot at costal margin; apical cell II without distal spot; inner apical cell without brown spot.



Type locality: Holotype ♂, USA, New Hampshire, Coos Co., Bretton Woods, 31 VIII 1934 (Beamer), (KSEM).

Distribution: North-central and northeastern USA, southeastern Canada.

Host plants: Unknown.

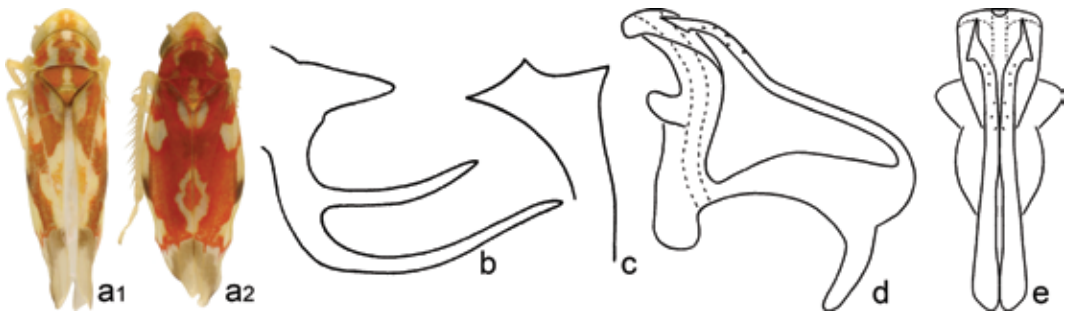


Figure 3. *E. prima* Beamer. a2 – var. *maritima*. b – from Beamer 1938.

4. *Erythroneura diva* McAtee, 1920 (Fig. 4)*Erythroneura tricincta* var. *diva* McAtee, 1920:308*Erythroneura tricincta* var. *rubravitta* Robinson, 1924b:156*Erythroneura tricincta* var. *complementa* McAtee, 1926:135**syn.n.***Erythroneura diva* Beamer, 1938:269

Description: Length 3–3.2 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendage not extended beyond pygofer apex, C-shaped, branches of subequal length. Second point of style apex longer than third; third point short; angle between basal and third points about 90°. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, broad in lateral view, round in crosssection, with dorsal carina, and distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus, with small preapical tooth; distal processes subapical, triangular. Dorsum yellow or white; anteclypeus pale, concolorous with rest of face; pronotum almost entirely red; coloration of mesonotum vary from entirely pale to dark, scutellum pale; thoracic venter entirely pale; forewing without (rarely with) oblique vittae, with red narrow cross-band near midlength and darkened apex; dark spot at costal margin; apical cell II without distal spot; inner apical cell without brown spot.

Type locality: Holotype ♀, USA, Maryland, Montgomery Co., Plummers Island, 26 VII 1914 (McAtee), (USNM).

Distribution: Central and eastern USA.

Host plants: *Vitis* spp.

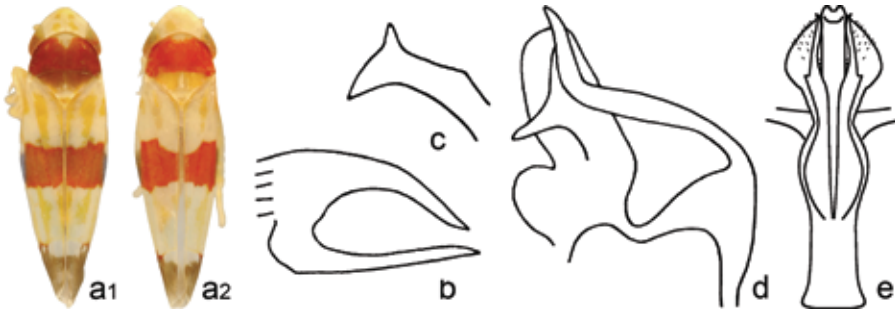


Figure 4. *E. diva* McAtee. a2 – var. *complementa*. b–d — from Beamer 1938.

5. *Erythroneura browni* Dmitriev & Dietrich **sp.n.** (Fig. 5)

Description: Length 2.7–3 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendage not extended beyond pygofer apex, C-shaped, branches subequal in size. Second point of style apex very short, tooth like; third point elongate, longer than distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium about as long as shaft; shaft straight and slender in lateral view, denticulate distally, round in crosssection, strongly extended beyond bases of distal processes, often with distal lobe strongly varying in length; apex truncate in posterior view, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at apex, often with small tooth near midlength; distal processes long, flattened, triangular. Coloration similar to that of *E. comes* Say. Dorsum yellow or white with orange color pattern; vertex with orange parallel submedial lines with lateral branch, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with



Y-shaped medial vitta; mesonotum entirely pale; thoracic venter entirely pale; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Diagnosis: *E. browni* sp.n. is similar to *E. comes* Say, but shaft of aedeagus extends well beyond the bases of the distal processes and is denticulate. It is also similar to *E. ortha* sp.n., but the aedeagus lacks a dorsal keel and has the ventral processes divergent apically.

Type locality: Holotype ♂, USA, Illinois, Brown Co., Siloam Springs, 19 IV 1960 (Ross & Cunningham), (INHS).

Studied material: Paratypes: 1 ♂, Arkansas, Marion Co., Yellville, 23 VIII 1962 (Hepner), (MEM); 4 ♂, Florida, Alachua Co., Gainesville, 30 VI–2 X 1970–1972 (Mead); 1 ♂, Florida, Lafayette Co., on *Vitis* sp., 1 VIII 1956 (Mead); 5 ♂, Illinois, Brown Co., Siloam Springs, (Ross & Cunningham); 8 ♂, Illinois, Brown Co., Siloam Springs, 29 IV 1960 (Ross & Cunningham); 1 ♂, Mississippi, Oktibbeha Co., State College, 4 III 1968 (Hepner), (MEM); 1 ♂ Texas, Marion Co., Jefferson, 3 VII 1962 (Hepner), (MEM); other studied material from Illinois, Arkansas, Mississippi excluded from type series.

Distribution: Central and southeastern USA.

Host plants: *Vitis* spp.

Note: This species is named in honor of Prof. Richard L. Brown, Director of the Mississippi Entomological Museum, who graciously loaned us the museum's entire *Erythroneura* collection and provided access to Leon Hepner's unpublished manuscripts, rearing records, notes, and illustrations.

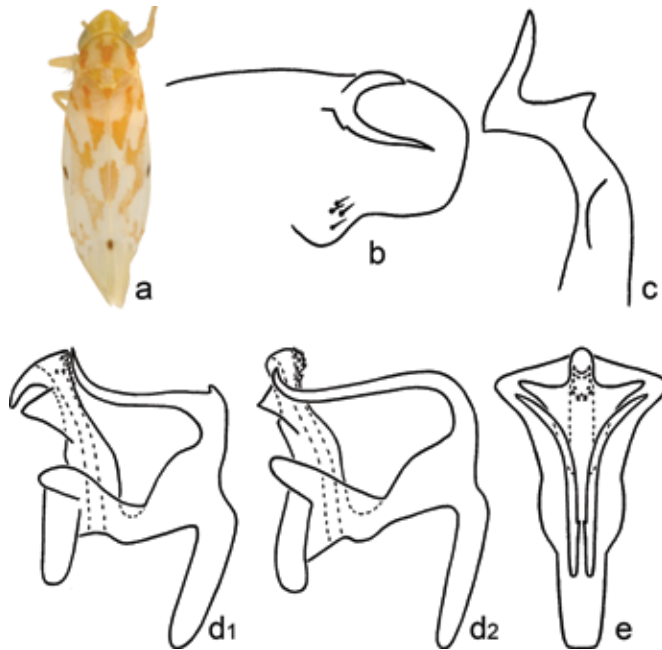


Figure 5. *E. browni* sp.n. d1, d2 – aedeagus variation.

6. *Erythroneura comes* (Say, 1825) (Fig. 6)*Tettigonia comes* Say, 1825:343*Erythroneura comes* Smith, 1890:447*Typhlocyba comes comes* Gillette, 1898:764*Erythroneura comes* Beamer, 1938:292, neotype designation

Eastern grape leafhopper



Description: Length 2.7–3 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches of subequal length. Second point of style apex very short, tooth like; third point elongate, longer than distance between other two points; angle between basal and third points less than 90° . Aedeagus with preatrium longer than shaft; shaft curved dorsally, broad in lateral view; round in crosssection; with dorsal carina, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft; divergent at apex, often with small tooth near midlength; distal processes apical, triangular. Dorsum yellow or white with orange color pattern; vertex with orange parallel submedial lines with lateral branch, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y- or V-shaped medial vitta; mesonotum entirely pale; thoracic venter entirely pale; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Neotype ♂, USA, Kansas, Leavenworth Co., 11 IV 1930 (Beamer), (KSEM).

Distribution: Central and eastern USA, southeastern Canada.

Host plants: *Vitis* spp.

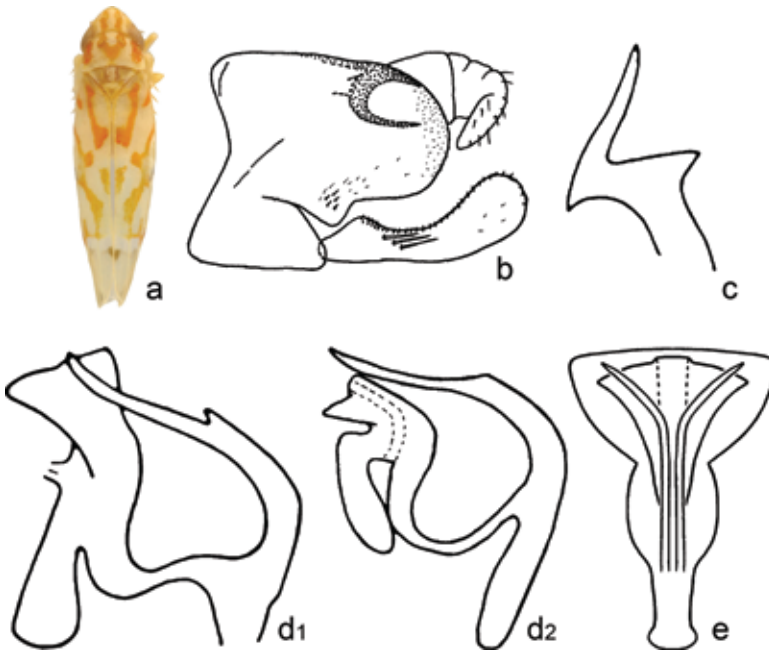


Figure 6. *E. comes* Say. c, d₁ –from Beamer 1938; b – from Dietrich & Dmitriev 2006; d₂ – from Hepner, unpublished.

7. *Erythreurea octonotata* Walsh, 1862 (Fig. 7)*Erythreurea octo-notata* Walsh, 1862:149*Erythreurea comes* var. *compta* McAtee, 1920:318 **syn.n.***Erythreurea octolineata* Lawson, 1922:336 missp.*Erythreurea cherokee* Robinson, 1924b:154 **syn.n.***Erythreurea compta* var. *rufomaculata* McAtee, 1924c:43 **syn.n.***Erythreurea nigroscuta* Johnson, 1934: 258 **syn.n.***Erythreurea rufomaculata* Oman, 1949:95 missp.

Description: Length 2.6–2.9 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-

shaped, branches of subequal length. Second point of style apex very short, tooth like; third point elongate, longer than distance between other two points; angle between basal and third point of style less than 90°. Aedeagus with preatrium longer than shaft; shaft stright and broad in lateral view, round in crosssection, with dorsal carina, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, bifurcated close to base; distal processes subapical, triangular. Dorsum yellow or white, with orange color pattern; coloration strongly varies; vertex unicolorous or with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y- or V-shaped medial vitta; mesonotum pale, usually with dark brown medial spot; thoracic venter entirely pale; forewing without oblique vittae or with broken oblique vittae; clavus with separate basal and distal vittae and dark brown spot near midlength, sometimes basal vitta bright red; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Neotype ♂, USA, Illinois, Champaign Co., St. Joseph, 3 IX 1916, (INHS) – here designated.

Distribution: Central and eastern USA.

Host plants: *Vitis* spp.

Note: The holotype, along with the rest of Walsh's collection, was destroyed in the Chicago fire of 1871. A neotype is here designated to fix the identity of the species.

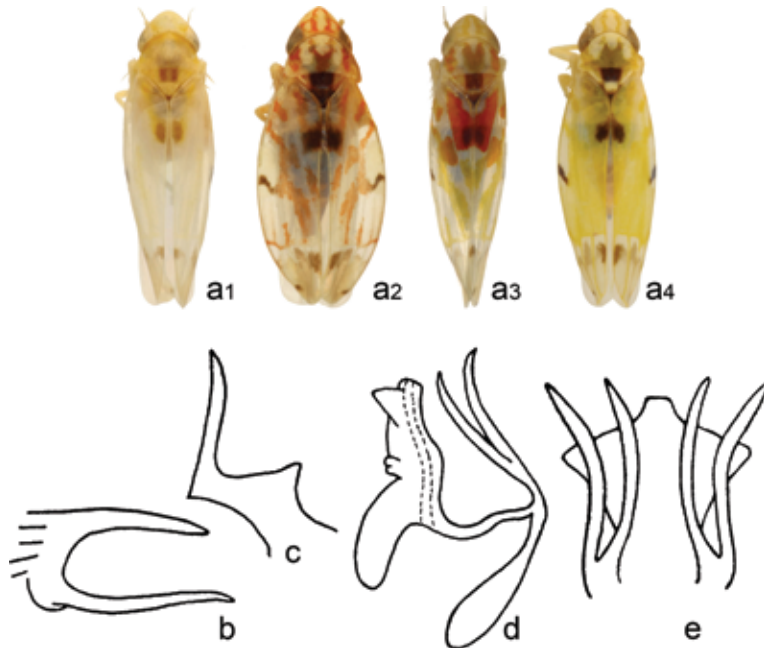


Figure 7. *E. octonotata* Walsh. a2 – var. *compta*; a3 – var. *rufomaculata*; a4 – var. *nigroscuta*. b, e – from Beamer 1938; c, d – from Hepner, unpublished.

8. *Erythroneura amanda* McAtee, 1920 (Fig. 8)*Erythroneura comes* var. *amanda* McAtee, 1920:319*Erythroneura amanda* Robinson, 1926:137

Description: Length 2.4–2.6 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches of subequal length. Second point of style apex very short, tooth like; third point elongate, about as long or longer than distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium longer than shaft; shaft straight and broad in lateral view, compressed in crosssection, with dorsal carina; ventral processes placed basally, well separated from shaft, longer than shaft, bifurcate near midlength, divergent at apex; distal processes subapical, triangular. Dorsum yellow or white; color pattern red and orange; vertex with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum almost entirely dark; thoracic venter entirely pale; forewing with broken oblique vittae and wide red crossband at base; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Holotype ♂, USA, Missouri, VII, on *Vitis* spp., (USNM).

Distribution: Central and southeastern USA.

Host plants: *Vitis* spp.

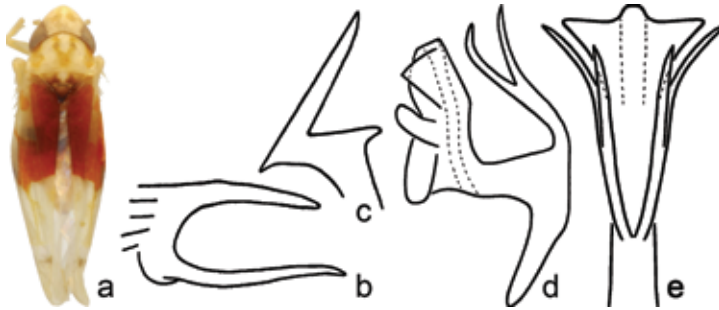


Figure 8. *E. amanda* McAtee. b, c – from Beamer 1938.

9. *Erythroneura nudata* McAtee, 1920 (Fig. 9)*Erythroneura comes* var. *nudata* McAtee, 1920:316*Erythroneura attenuata* Johnson, 1934:260*Erythroneura nudata* Beamer 1938:284

Description: Length 2.8–3.1 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches of subequal length. Second point of style apex very short, tooth like; third point elongate, longer than distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium longer than shaft; shaft straight and broad in lateral view, depressed in crosssection, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes apical or subapical, triangular. Coloration similar to that of *E. comes* Say.

Type locality: Holotype ♂, USA, Maryland, Anne Arundel Co., Odenton, 26 VII 1914 (McAtee), (USNM).

Distribution: Central and eastern USA, southeastern Canada.

Host plants: *Vitis* spp.





Figure 9. *E. nudata* McAtee. b, c – from Beamer 1938; d – from Hepner, unpublished.

10. *Erythroniura ortha* Dmitriev & Dietrich sp.n. (Fig. 10)

Description: Length 2.8–3 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended to pygofer apex, C-shaped, branches of subequal size. Second point of style apex very short, tooth like; third point elongate, longer than distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, broad in lateral view, compressed in crosssection, with dorsal carina and distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes subapical, flattened, triangular. Coloration similar to that of *E. comes* Say; dorsum yellow or white with orange color pattern; vertex with orange parallel submedial lines (often with lateral branch), midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y- or V-shaped medial vitta; mesonotum entirely pale; thoracic venter entirely pale; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.



Diagnosis: *E. ortha* sp.n. is similar to *E. comes* Say and *E. gilensis* Beamer, but the shaft of the aedeagus is produced well beyond the bases of the distal processes; and the ventral processes are parallel to each other on the ventral side of the aedeagus. It also differs from *E. comes* Say in having the shaft of aedeagus compressed with a strong dorsal keel.

Type locality: Holotype ♂, USA, Arkansas, Marion Co., Yellville, on *Cercis canadensis*, 23 VIII 1962 (Hepner), (INHS).

Studied material: Paratypes: 28 ♂, Arkansas, Marion Co., Yellville, on *Cornus* sp., *Cercis canadensis*, *Acer* sp., *Vitis* sp., 23 VIII 1962 (Hepner) (MEM). Other studied material from Florida, Illinois, Mississippi, New York, and Tennessee excluded from type series.

Distribution: Central and eastern USA.

Host plants: *Vitis* spp.

Note: The species name “*ortha*,” meaning “straight,” refers to the straight and parallel ventral processes of the aedeagus.

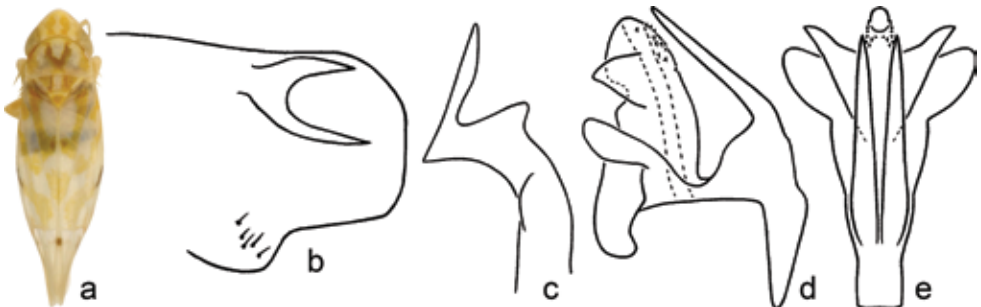


Figure 10. *E. ortha* sp.n.

11. *Erythroneura festiva* Beamer, 1938 (Fig. 11)*Erythroneura festiva* Beamer, 1938:290

Description: Length 2.6–2.7 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches of subequal size. Second point of style apex well developed; third point elongate, longer than distance between other two points; angle between basal and third points less than 90° . Aedeagus with preatrium longer than shaft; shaft curved dorsally, broad in lateral view, round in cross-section, with dorsal carina; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes subapical, triangular. Dorsum yellow or white with orange color pattern; vertex with orange parallel submedial lines with lateral branch, midline pale; anteclypeus brown; pronotum with Y- or V-shaped medial vitta; mesonotum pale, with red lateral triangles; thoracic venter entirely dark; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Holotype ♂, USA, Illinois, White Co., 31 III 1929 (Beamer), (KSEM).

Distribution: Central and eastern USA.

Host plants: *Vitis* spp.

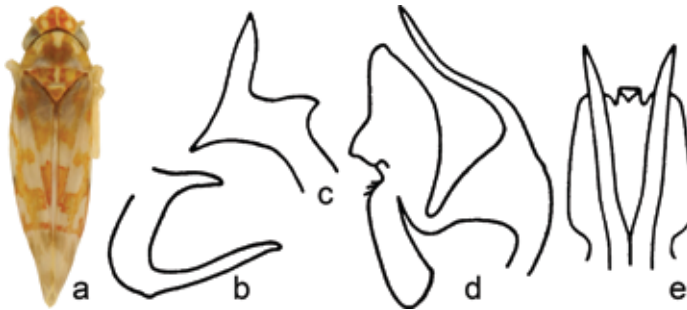


Figure 11. *E. festiva* Beamer. b–e – from Beamer 1938.

12. *Erythroneura gilensis* Beamer, 1929 (Fig. 12)*Erythroneura gilensis* Beamer, 1929:123

Description: Length 3.2–3.4 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; pygofer dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex very short, tooth like; third point elongate, longer than distance between other two points; angle between basal and third points less than 90° . Aedeagus with preatrium longer than shaft; shaft curved dorsally, broad in lateral view, round in cross-section, with dorsal carina; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at apex; distal processes subapical, triangular. Coloration similar to that of *E. comes* Say.

Type locality: Holotype ♂, USA, Arizona, Gila Co., 5 VIII 1927 (Beamer), (KSEM).

Distribution: Southwestern USA, northern Mexico.

Host plants: *Vitis arizonica*.





Figure 12. *E. gilensis* Beamer. b–e – from Beamer 1938.

13. *Erythreoura pontifex* McAtee, 1926 (Fig. 13)

Erythreoura comes var. *pontifex* McAtee, 1926:136

Erythreoura breakeyi Johnson, 1934:261

Erythreoura pontifex Beamer, 1938:279

Description: Length 2.8–3.1 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; pygofer dorsal appendages not extended beyond pygofer apex, C-shaped, with branches subequal in length. Second point of style apex very short, tooth like; third point elongate, longer than distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, broad in lateral view, round in crosssection; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at apex; distal processes subapical, triangular. Dorsum yellow or white, with reddish or brownish color pattern; vertex with large black area, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y- or V-shaped medial vitta; mesonotum pale, with red lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewing with oblique vittae forming continuous zigzag pattern; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell without brown spot.



Type locality: Holotype ♀, USA, Illinois, Washington Co., Du Bois, 24 V 1917 (McAtee), (INHS).

Distribution: Central and northeastern USA.

Host plants: *Vitis* spp.



Figure 13. *E. pontifex* McAtee. b, d, e –from Beamer 1938; c – from Hepner, unpublished.

14. *Erythroneura palimpsesta* McAtee, 1924 (Fig. 14, Plate 1a)
Erythroneura comes var. *palimpsesta* McAtee, 1924c:43
Erythroneura palimpsesta Johnson, 1935:107



Description: Length 2.8–3 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, with branches subequal in length. Second point of style apex very short, tooth like; third point elongate, longer than distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium longer than shaft; shaft curved dorsally, broad in lateral view, round in crosssection, with dorsal carina not reaching aedeagus apex; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at apex; distal processes apical, triangular. Dorsum yellow or white with reddish brown color pattern; vertex with parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum pale, with dark lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewing with oblique vittae forming continuous zigzag pattern; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Holotype ♂, USA, Illinois, Mason Co., Forest City, 3 IV 1917 (McAtee), (INHS).

Distribution: Central and eastern USA.

Host plants: *Parthenocissus quinquefolia*.



Figure 14. *E. palimpsesta* McAtee. b–e – from Beamer 1938.

15. *Erythroneura beameri* Robinson, 1924 (Fig. 15)

Erythroneura beameri Robinson, 1924a:61

Description: Length 2.8–3.2 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, with branches subequal in length. Second point of style apex very short, tooth like; third point elongate, longer than distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium longer than shaft; shaft curved dorsally, broad in lateral view, round in crosssection; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at apex; distal processes apical, triangular. Dorsum yellow or white with orange or reddish color pattern; vertex with oblique lateral vittae, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum pale, with reddish lateral triangles; thoracic venter entirely pale; forewing with oblique vittae forming zigzag pattern; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.



Type locality: Holotype ♂, USA, Kansas, Douglas Co., XI 1923, (Beamer), (KSEM).

Distribution: Central and eastern USA, southeastern Canada.

Host plants: *Vitis* spp.

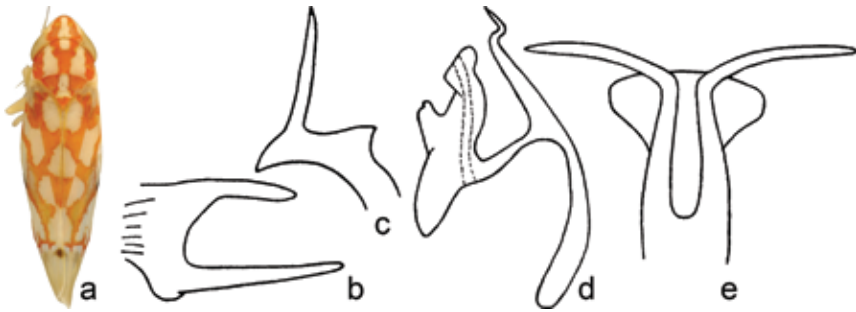


Figure 15. *E. beameri* Robinson. b, c, e – from Beamer 1938; d – Hepner, unpublished.

16. *Erythronera reflecta* McAtee, 1924 (Fig. 16)

Erythronera comes var. *reflecta* McAtee, 1924c:43

Erythronera portea Robinson, 1924b:154

Erythronera reflecta Beamer, 1938:283

Description: Length 3–3.3 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; pygofer dorsal appendages not extended beyond pygofer apex, C-shaped, with branches subequal in length. Second point of style apex very short, tooth like; third point of style apex elongate, longer than distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium longer than shaft; shaft curved dorsally, broad in lateral view, round in crosssection, with dorsal carina, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, compressed in basal half, divergent at apex; distal processes apical, triangular. Dorsum yellow or white with reddish or brownish color pattern; vertex with orange parallel submedial lines with lateral branch, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with V-shaped medial vitta; mesonotum pale, with dark lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewing with oblique vittae forming continuous zigzag pattern; clavus largely or entirely red or brown; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.



Type locality: Holotype ♀, USA, Maryland, Montgomery Co., Plummers Island, 14 XII 1913 (McAtee), (USNM).

Distribution: Central and eastern USA, southeastern Canada.

Host plants: *Vitis* spp.

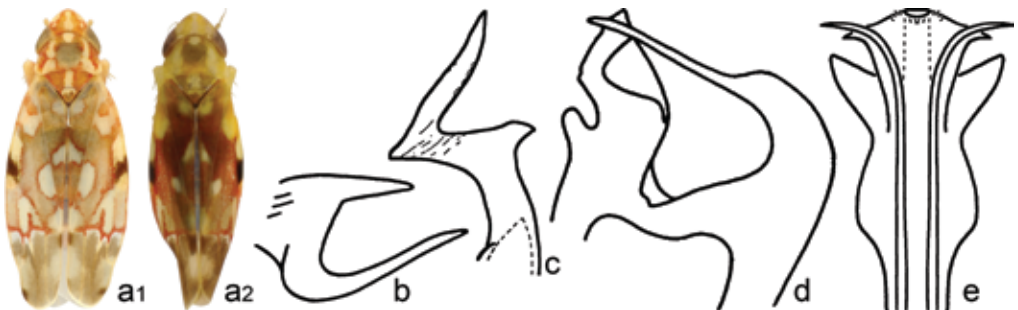


Figure 16. *E. reflecta* McAtee. a1 – holotype; a2 – color variation. b, d – from Beamer 1938; c – from Young 1952.

17. *Erythroneura integra* McAtee, 1920 (Fig. 17)*Erythroneura tricincta* var. *integra* McAtee, 1920:309*Erythroneura integra* Beamer, 1938:271

Description: Length 2.8–3.2 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, ventral branch much longer than dorsal. Second point of style apex longer than third; third point short; angle between basal and third points more than 90°. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, broad in lateral view, round in crosssection, denticulate distally; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes subapical, triangular. Dorsum yellow or white, with reddish or brown color pattern; vertex with orange parallel submedial lines (often with lateral branch), midline pale; anteclypeus pale, concolorous with rest of face; pronotum almost entirely dark; mesonotum pale, with reddish lateral triangles; thoracic venter entirely pale; forewings with oblique vitae, narrow crossband, and darkened apices; dark spot at costal margin; apical cell II without distal spot; inner apical cell without brown spot.

Type locality: Holotype ♀, USA, Maryland, Montgomery Co., Plummers Island, 28 III 1915 (McAtee), (USNM).

Distribution: Central and eastern USA.

Host plants: *Vitis* spp.

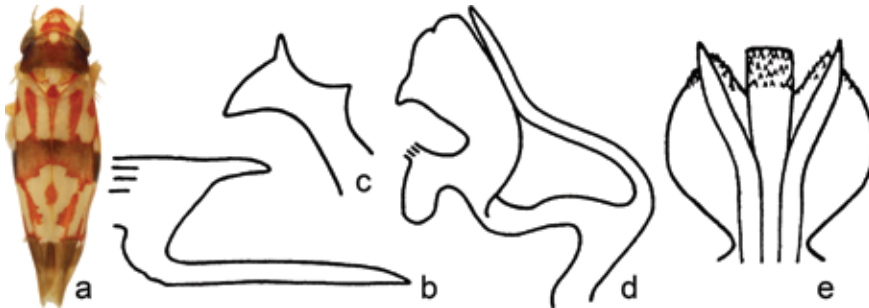


Figure 17. *E. integra* McAtee. b–e – from Beamer 1938.

18. *Erythroneura carinata* Dmitriev & Dietrich sp.n. (Fig. 18)

Description: Length 3–3.2 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex longer than third; third point short; angle between basal and third points about 90°. Dorsal apodeme broadly expanded in lateral view, triangular in ventral view, without distinct connection to anal tube or pygofer appendages. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, broad in lateral view, compressed in crosssection, with strong dorsal keel, extended far beyond bases of distal processes, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes long, subapical, flattened, triangular. Dorsum yellow or white, with reddish and brown color pattern; vertex with orange parallel submedial lines (often with lateral branch), midline pale; anteclypeus pale, concolorous with rest of face; pronotum almost entirely dark; mesonotum entirely dark, scutellum pale, contrasting with rest of mesonotum; thoracic venter entirely pale; forewing with oblique vitae, narrow brown crossband, and darkened apices; dark spot at costal margin; apical cell II with distal spot; inner apical cell without brown spot.



Diagnosis: *E. carinata* n.sp. is similar to *E. diva* McAtee and *E. cymbium* McAtee, but the aedeagus has a strong dorsal keel and its apex extends far beyond the bases of the distal processes.

Type locality: Holotype ♂, USA, Illinois, White Co., Gossett, 13 IV 1960 (Ross & Cunningham), (INHS).

Studied material: Paratypes 23 ♂, 3 ♀, USA, Illinois, White Co., Gossett, 13 IV 1960 (Ross & Cunningham), (INHS); other studied material from Georgia, Illinois, and Mississippi excluded from type series.

Distribution: Central and southeastern USA.

Host plants: *Vitis* sp.

Note: The species name “*carinata*,” meaning “keeled,” refers to the dorsally keeled aedeagal shaft.

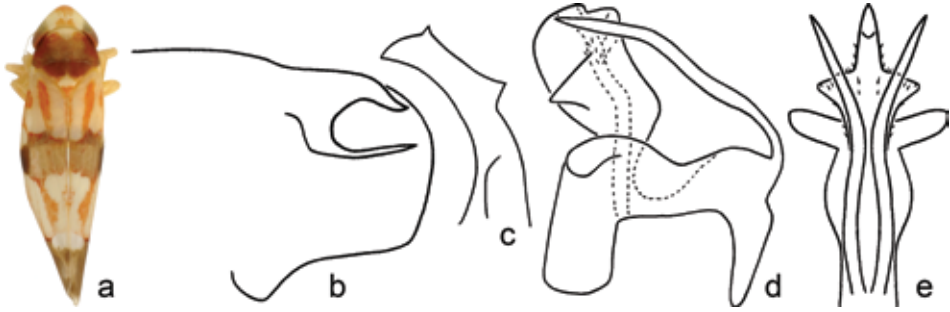


Figure 18. *E. carinata* sp.n.

19. *Erythroneura tricineta* Fitch, 1851 (Fig. 19)

Erythroneura tricineta Fitch, 1851:63

Erythroneura tricineta var. *a* Fitch, 1851:63

Threebanded leafhopper



Description: Length 2.9–3.3 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex longer than third; third point shorter than second; angle between basal and third points about 90°. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, broad in lateral view, round in crosssection; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes subapical, triangular. Dorsum yellow or white, with reddish and brown color pattern; vertex with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum mostly dark. Mesonotum dark basally, scutellum pale; thoracic venter entirely pale; forewing with or without oblique vittae, narrow crossband and darkened apices; dark spot at costal margin; apical cell II without distal spot; inner apical cell without brown spot.

Type locality: Neotype ♂, USA, Kansas, Cherokee Co., 10 IV 1936 (Beamer), (KSEM), here designated

Distribution: Central and eastern USA, southeastern Canada.

Host plants: *Vitis* spp.

Note: Because Fitch's holotype is lost, we designate a neotype to stabilize the concept of this species, the type of the genus. This concept equals that of the previous revisions (Beamer 1938, Young 1952).

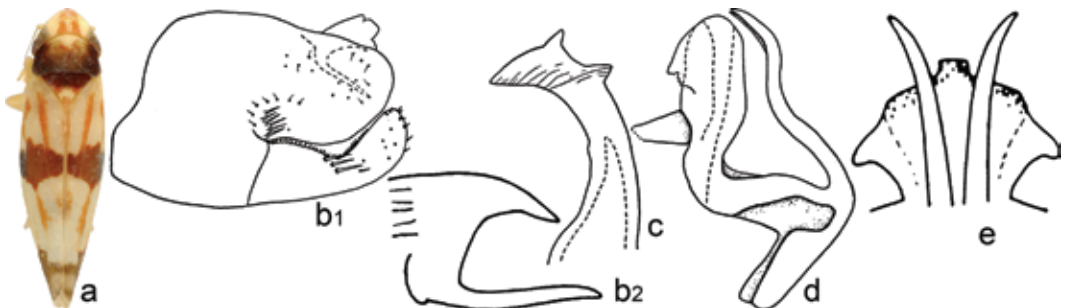


Figure 19. *E. tricineta* Fitch. b2, e – from Beamer 1938; b1, c, d – from Young 1952.

20. *Erythroneura cymbium* McAtee, 1920 (Fig. 20)*Erythroneura tricincta* var. *cymbium* McAtee, 1920:310*Erythroneura tricincta* var. *disjuncta* McAtee, 1920:310, **syn.n.***Erythroneura cymbium* Beamer, 1938:271

Description: Length 2.6–3 mm. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex longer than third; third point short; angle between basal and third points about 90°.

Aedeagus with preatrium about as long as shaft; shaft curved dorsally, broad in lateral view, round in crosssection; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes subapical, triangular. Dorsum yellow or white, with reddish and brown color pattern; vertex with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with dark posterior half, or at least posterior corners; mesonotum entirely pale; thoracic venter entirely pale; forewings with or without oblique vittae, with narrow crossband, and darkened apices; dark spot at costal margin; apical cell II without distal spot; inner apical cell without brown spot.

Type locality: Holotype ♀, USA, Michigan, Berrien Co., Benton Harbor, on *Vitis* sp., 28 V 1912 (Seigler), (USNM).

Distribution: Central and eastern USA, southeastern Canada.

Host plants: *Vitis* spp.

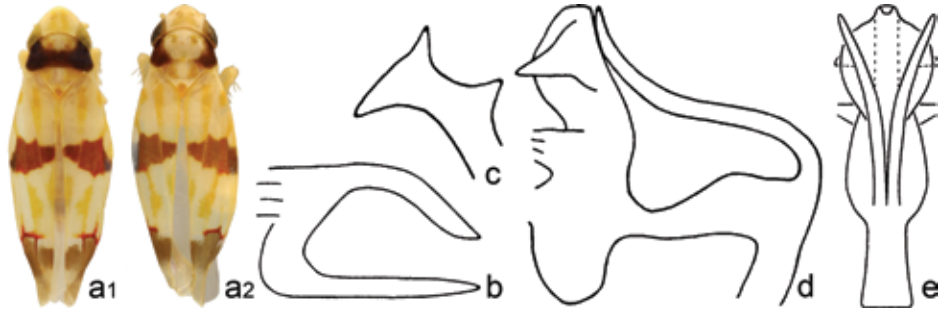


Figure 20. *E. cymbium* McAtee. a2 – var. *disjuncta*. b–d – from Beamer 1938.

21. *Erythroneura calycula* McAtee, 1920 (Fig. 21, Plate 1b)*Erythroneura tricincta* var. *calycula* McAtee, 1920:308*Erythroneura tricincta* var. *erasa* McAtee, 1920:309, **syn.n.***Erythroneura calycola* Osborn, 1932:515, missp.*Erythroneura tricincta* var. *noncincta* Johnson, 1934:261, **syn.n.***Erythroneura calycula* Beamer, 1938:270

Description: Length 2.6–3 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex longer than third; third point short; angle between basal and third points about 90°. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, slender in lateral view; depressed in crosssection; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes apical, triangular. Dorsum yellow or white, with reddish and brown color pattern; vertex with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with dark posterior corners; mesonotum with dark lateral triangles, or base entirely dark, scutellum pale; thoracic venter entirely pale; forewings with or without oblique vittae, with narrow crossband, and darkened apices; dark spot at costal margin; apical cell II without distal spot; inner apical cell without brown spot.



Type locality: Holotype ♂, USA, Maryland, Montgomery Co., Plummers Island, 14 XII 1913 (McAtee), (USNM).

Distribution: Central and eastern USA.

Host plants: *Vitis* spp.



Figure 21. *E. calycula* McAtee. a2 – var. *erasa*; a3 – var. *noncincta*. b, d – from Beamer 1938; c – from Hepner, unpublished.

22. *Erythroneura vagabunda* Knull, 1945 (Fig. 22)

Erythroneura vagabunda Knull, 1945:109

Description: Length 2.9–3.1 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point elongate, longer than half distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, slender in lateral view, denticulate distally, round in crosssection; ventral processes placed basally, well separated from shaft, longer than shaft, evenly divergent; distal processes long, subapical, slender. Dorsum yellow or white with orange color pattern; vertex with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum pale, with orange lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewing with broken oblique vittae; clavus with separate basal and distal vittae and dark brown spot near midlength; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.



Type locality: Holotype ♂, USA, Ohio, Lawrence Co., 29 IV 1934 (Caldwell), (OSU).

Distribution: Central and eastern USA.

Host plants: Unknown.



Figure 22. *E. vagabunda* Knull. d – from Knull 1945.

23. *Erythroneura aza* Robinson, 1924 (Fig. 23)*Erythroneura aza* Robinson, 1924c:291

Description: Length 2.9–3.1 mm. Abdomen. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point elongate, longer than half distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium longer than shaft; shaft straight and slender in lateral view, round in crosssection; apex slightly broadened in ventral view; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes long, subapical, slender. Dorsum yellow or white, with orange or reddish color pattern; vertex with parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum pale, with orange lateral triangles; thoracic venter entirely pale or with dark mesosternum; forewing with oblique vittae forming zigzag pattern; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Holotype ♂, USA, Kansas, Douglas Co., Lawrence, 15 XII 1923 (Robinson), (KSEM).

Distribution: Central and eastern USA.

Host plants: *Vitis* spp.

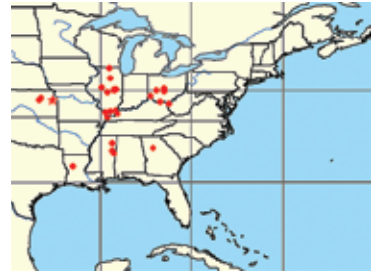


Figure 23. *E. aza* Robinson. b–e – from Beamer 1938.

24. *Erythroneura glabra* Dmitriev & Dietrich **sp.n.** (Fig. 24)

Description: Length 2.8–3 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point longer than half distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium about as long as shaft; shaft symmetrical, curved dorsally, broad in lateral view, round in crosssection; apex truncate in posterior view; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes long, subapical, slender. Coloration similar to that of *E. comes* Say: dorsum yellow or white with orange color pattern; vertex with orange parallel submedial lines (often with lateral branch), midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y- or V-shaped medial vitta; mesonotum pale, with orange lateral triangles; thoracic venter entirely pale; forewings with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Diagnosis: The coloration of new species similar to that of *E. comes* Say, and the male genitalia resemble those of *E. vagabunda* Knull, but the aedeagus shaft lacks distal denticuli and the ventral processes are parallel to each other.



Type locality: Holotype ♂, USA, Mississippi, Oktibbeha Co., State College, 4 I 1962 (Hepner), (INHS).

Studied material: Paratypes, 1 ♂, USA, Arkansas, Marion Co., Yellville, on *Cornus sp.*, 23 VIII 1962 (Hepner), (MEM); 1 ♂, Illinois, Clark Co., Rocky Branch, 25 VII 1954 (Cunningham), (INHS).

Distribution: Central and southeastern USA.

Host plants: Unknown.

Note: The species name “*glabra*,” meaning “bare,” refers to the lack of denticuli on the apex of the aedeagal shaft.

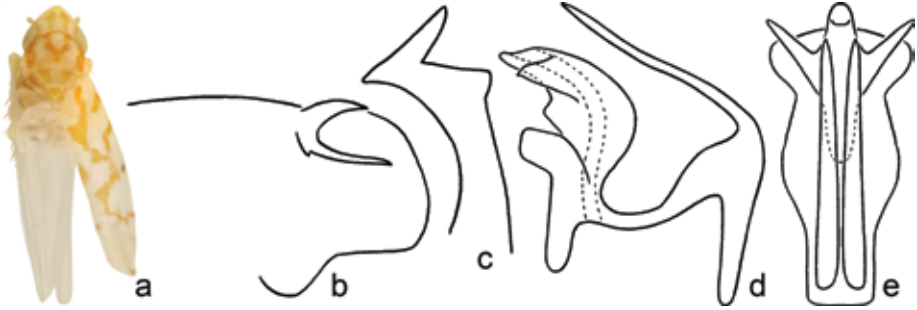


Figure 24. *E. glabra* sp.n.

25. *Erythreura elegantula* Osborn, 1928 (Fig. 25)

Erythreura elegantula Osborn, 1928a:289

Western grape leafhopper

Description: Length 2.8–3 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex longer than third; third point elongate, longer than half distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium longer than shaft; shaft curved dorsally, broad in lateral view, compressed in cross-section, with dorsal carina; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes, triangular. Dorsum yellow or white, with orange color pattern; vertex with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum pale, with black lateral triangles; thoracic venter entirely pale or with dark mesosternum; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Holotype ♀, Panama, Canal Zone (CMNH). Type was not studied.

Distribution: Western USA, southwestern Canada, Panama (apparently introduced).

Host plants: *Vitis* spp.



Figure 25. *E. elegantula* Osborn. b–e – from Beamer 1938.

26. *Erythroneura acuticephala* Robinson, 1924 (Fig. 26, Plate 1c)*Erythroneura acuticephala* Robinson, 1924a:61

Description: Length 2.6–2.9 mm. Abomen. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point elongate, longer than half distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, broad in lateral view; compressed in crosssection; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes apical, triangular. Dorsum yellow or white, with reddish or orange color pattern; vertex with parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum pale, with orange lateral triangles; thoracic venter entirely pale; forewing with oblique vittae forming continuous zigzag pattern; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.



Type locality: Holotype ♂, USA, Kansas, Douglas Co., XII 1923, (Robinson), (KSEM).

Distribution: Central and eastern USA.

Host plants: *Vitis* spp.

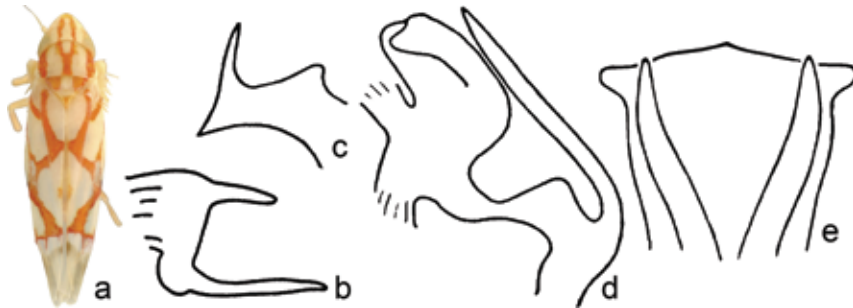


Figure 26. *E. acuticephala* Robinson. b, d, e – from Beamer 1938; c – from Hepner, unpublished.

27. *Erythroneura aelys* McAtee, 1920 (Fig. 27)*Erythroneura aelys* McAtee, 1920:290

Description: Length 2.7–3.1 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point longer than half distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, broad in lateral view, round in cross-section; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at apex; distal processes subapical, triangular. Dorsum yellow or white, with brown color pattern; vertex with large basal dark area, often extended onto thorax, midline dark; anteclypeus pale, concolorous with rest of face; pronotum dark with pale lateral margins; mesonotum entirely dark; thoracic venter entirely pale; forewings with oblique vittae forming continuous zigzag pattern; clavus largely brown; dark spot at costal margin; apical cell II without distal spot; inner apical cell without brown spot.



Type locality: Holotype ♂, USA, Maryland, Montgomery Co., Plummers Island, 21 XII 1913 (McAtee), (USNM). Type was not studied.

Distribution: Central and eastern USA.

Host plants: *Cercis canadensis*.



Figure 27. *E. aclys* McAtee. b–e – from Beamer 1938; a – original.

28. *Erythroniura bistrata* McAtee, 1920 (Fig. 28)

Erythroniura vitis var. *bistrata* McAtee, 1920:305

Erythroniura vitis var. *stricta* McAtee, 1920:306

Erythroniura rubranotum Robinson, 1924a:60

Erythroniura bistrata Johnson, 1934:262

Erythroniura vitis var. *fusco-clava* Beamer, 1927:31



Description: Body. Size 2.9–3.2 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point elongate, longer than half distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium longer than shaft; shaft curved dorsally, slender in lateral view, round in crosssection, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at apex; distal processes subapical, triangular. Dorsum yellow or white with reddish brownish color pattern, which strongly vary; vertex unicolorous pale or darkened posteriorly, midline pale; anteclypeus pale, concolorous with rest of face; pronotum almost entirely dark; mesonotum dark, with pale scutellum; thoracic venter entirely pale; forewing mostly dark with small pale spots or with two narrow pale crossbands; dark spot at costal margin; apical cell II without distal spot; inner apical cell without brown spot.

Type locality: Holotype ♂, Maryland, Montgomery Co., Plummers Island, 28 III 1915 (McAtee), (USNM).

Distribution: Central and eastern USA.

Host plants: *Cercis canadensis*.

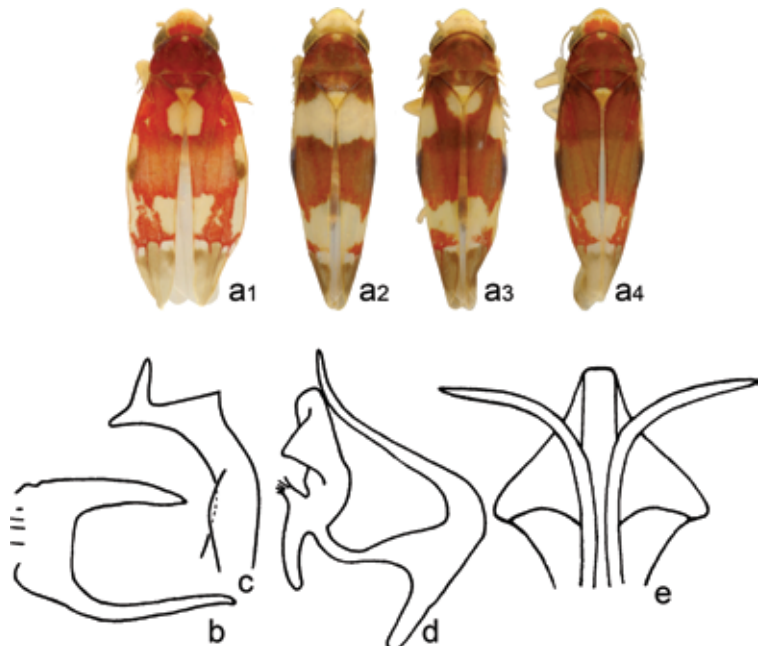


Figure 28. *E. bistrata* McAtee. a1 – holotype, a2 – var. *stricta*, a3 – var. *rubranota*, a4 – color variation. b, d, e – from Beamer 1938.

29. *Erythroneura prosata* Johnson, 1935 (Fig. 29)*Erythroneura infuscata* var. *prosata* Johnson, 1935:108*Erythroneura prosata* DeLong & Caldwell, 1937:81

Description: Length 2.8–3 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point elongate, longer than half distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium longer than shaft; shaft curved dorsally, slender in lateral view, round in crosssection, with dorsal carina, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at apex; distal processes subapical, triangular. Dorsum yellow or white, with reddish brown color pattern; vertex mostly dark, midline dark; anteclypeus pale, concolorous with rest of face; pronotum almost entirely dark; mesonotum with dark lateral triangles and dark apex of scutellum; thoracic venter with dark mesosternum, remainder pale; forewings mostly dark with small pale spots; dark spot at costal margin; apical cell II with distal spot; inner apical cell without brown spot.

Type locality: Holotype ♂, USA, Ohio, Pickaway Co., 31 III 1934 (Caldwell), (OSU).

Distribution: Central USA.

Host plants: *Rubus* spp. (?).

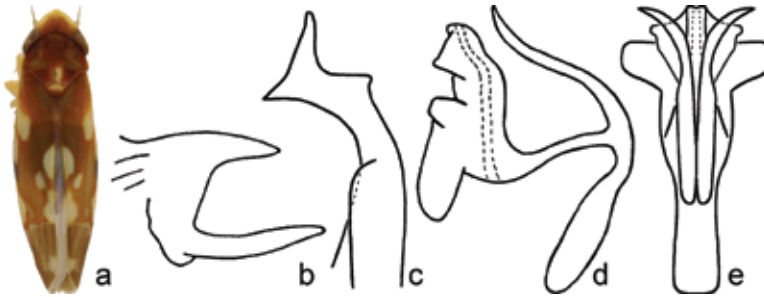


Figure 29. *E. prosata* Johnson. b –from Beamer 1938; d – from Hepner, unpublished.

30. *Erythroneura infuscata* (Gillette, 1898) (Fig. 30, Plate 1d)*Typhlocyba comes* var. *infuscata* Gillette, 1898:764*Erythroneura comes* var. *infuscata* Van Duzee, 1916:77*Erythroneura infuscata* McAtee, 1920:302

Description: Length 2.8–3 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point elongate, not longer than half distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium longer than shaft; shaft curved dorsally, broad in lateral view, compressed in crosssection, with strong dorsal keel; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at apex; distal processes subapical, triangular. Dorsum mostly black, with small pale spots at middle of mesonotum and at costal margin of wings; anteclypeus pale, concolorous with rest of face; thoracic venter entirely dark.

Type locality: Holotype ♀, USA, Mississippi, Oktibbeha Co., Agriculture College (MSU), (USNM).

Distribution: Central and eastern USA.

Host plants: Unknown.





Figure 30. *E. infuscata* Gillette. b-e – from Beamer 1938.

31. *Erythroneura cancellata* McAtee, 1920 (Fig. 31)

Erythroneura comes var. *cancellata* McAtee, 1920:320

Erythroneura cancellata Robinson, 1926:141

Description: Length 3.2–3.4 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, ventral branch about twice as long as dorsal branch. Second point of style apex well developed; third point subequal in size with second; angle between basal and third points about 90°. Aedeagus with preatrium longer than shaft; shaft curved dorsally, slender in lateral view, round in cross-section, with dorsal carina; ventral processes placed basally, well separated from shaft, longer than shaft, divergent only at apex; distal processes subapical, triangular. Dorsum yellow or white, with orange and brown color pattern; vertex with large basal dark area, often extended onto thorax, midline dark; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta or almost entirely dark; mesonotum pale, with brown lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewings with pale diamond-shaped transcommisural marking outlined with dark brown, with oblique vittae forming zigzag pattern; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.



Type locality: Holotype ♀, USA, Maryland, Montgomery Co., Plummers Island, 30 XI 1913 (McAtee), (USNM).

Distribution: Central and eastern USA.

Host plants: *Cercis canadensis*.

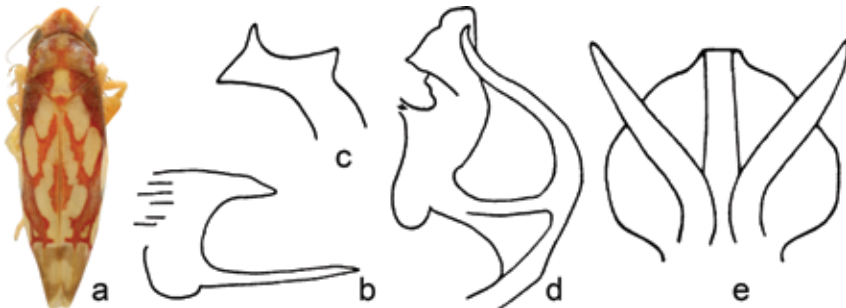


Figure 31. *E. cancellata* McAtee. b-e – from Beamer 1938.

32. *Erythroneura triapitsyni* Dmitriev & Dietrich **sp.n.** (Fig. 32)

Description: Length 2.7–2.9 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex longer than third; third point elongate, not longer than half distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium about as long as shaft; shaft symmetrical, curved dorsally, broad in lateral view, smooth, round in crosssection, with dorsal carina; apex truncate in posterior view; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at apex; distal processes long, subapical, flattened, triangular. Coloration similar to that of *E. elegantula* Osborn: dorsum yellow or white, with orange color pattern; vertex with orange parallel submedial lines (often with lateral branch), midline pale; anteclypeus pale, concolorous with rest of face; pronotum with V-shaped medial vitta; mesonotum pale, with black lateral triangles; thoracic venter entirely pale; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.



Diagnosis: The coloration of *E. triapitsyni* sp.n. is similar to that of *E. elegantula* Osborn. The male genitalia are similar to those of *E. bakeri* sp.n. but the aedeagus is round in crosssection.

Type locality: Holotype ♂, USA, New Mexico, Bernalillo Co., Albuquerque, Los Ranchos de Albuquerque, 4920 Rio Grande Blvd. NW, Anderson Valley, 35.084°N 106.651°W, on *Vitis sp.* (cultivated), 26 IX 2005 (Triapitsyn), (INHS).

Studied material: Paratypes: 7 ♂, 11 ♀, same locality as holotype, 26–28 IX 2005 (Triapitsyn), (INHS).

Distribution: New Mexico.

Host plants: *Vitis* spp.

Note: The species is named for Dr. Serguei Triapitsyn (University of California, Riverside), who collected the type series.

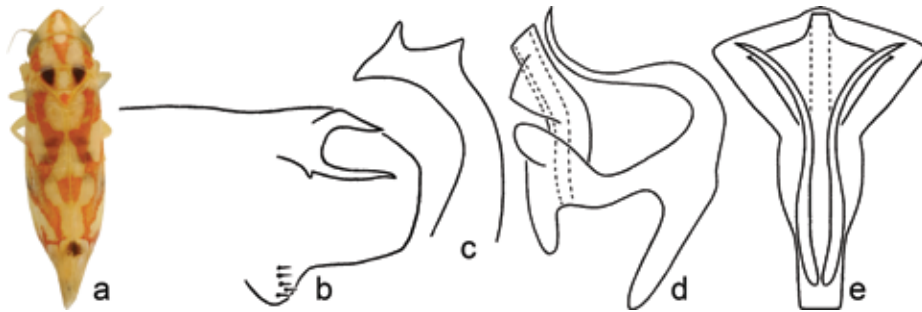


Figure 32. *E. triapitsyni* sp.n.

33. *Erythroneura bakeri* Dmitriev & Dietrich **sp.n.** (Fig. 33)

Description: Length 2.7–2.8 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point elongate, not longer than half distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium about as long as shaft; shaft symmetrical, curved dorsally, broad in lateral view, smooth, compressed in crosssection, with dorsal carina; apex truncate in posterior view; ventral processes



placed basally, well separated from shaft, longer than shaft, divergent at apex; distal processes long, subapical, flattened, triangular. Dorsum yellow or white, with red or orange color pattern; vertex with parallel submedial lines (often with lateral branch), midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum entirely pale; thoracic venter with dark mesosternum, remainder pale; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Diagnosis: *E. bakeri* sp.n. is similar to *E. triapitsyni* sp.n., but the aedeagus has a stronger dorsal carina, and the mesonotum lacks black lateral triangles.

Type locality: Holotype ♂, USA, Illinois, Fulton Co., Anderson Lake State Conservation Area, 8 IX 1954 (Ross), (INHS).

Studied material: Paratypes, 2 ♂, Illinois, Clark Co., Darwin, on *Quercus lyrata*, 15 IX 1953 (Ross), (INHS); 6 ♂, Illinois, Fulton Co., Anderson Lake State Conservation Area, 8 IX 1954 (Ross), (INHS); 2 ♂, Illinois, Jo Daviess Co., Blanding, on *Prunus virginiana*, 28 IV 1954 (Ross), (INHS); other studied material from Wisconsin, Kansas, Arkansas, Illinois, New York, and Florida excluded from type series.

Distribution: Central and eastern USA.

Host plants: *Vitis* spp.

Note: This species is named in memory of C.F. Baker (1872–1927), a pioneer in the study of Auchenorrhyncha.

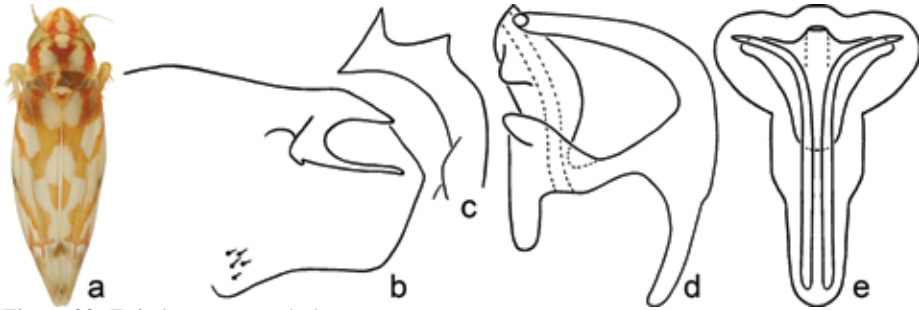


Figure 33. *E. bakeri* sp.n. a – holotype.

34. *Erythronera anfracta* Beamer, 1929 (Fig. 34)

Erythronera anfracta Beamer, 1929:123

Description: Length 3.1–3.3 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe angulate; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex longer than third; third point short; angle between basal and third points about 90°. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, broad in lateral view; compressed in crosssection, with strong dorsal keel; ventral



processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side; distal processes subapical, triangular. Dorsum yellow or white, with orange, reddish, or brownish color pattern; vertex with parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum pale, with dark lateral triangles; scutellum pale; thoracic venter with dark mesosternum, remainder pale; forewings with oblique vittae forming continuous zigzag pattern or interrupted with pale crossband; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Holotype ♂, USA, Arizona, Pinal Co., 6 VIII 1927 (Beamer), (KSEM).

Distribution: Arizona, Utah.

Host plants: *Vitis arizonica*.

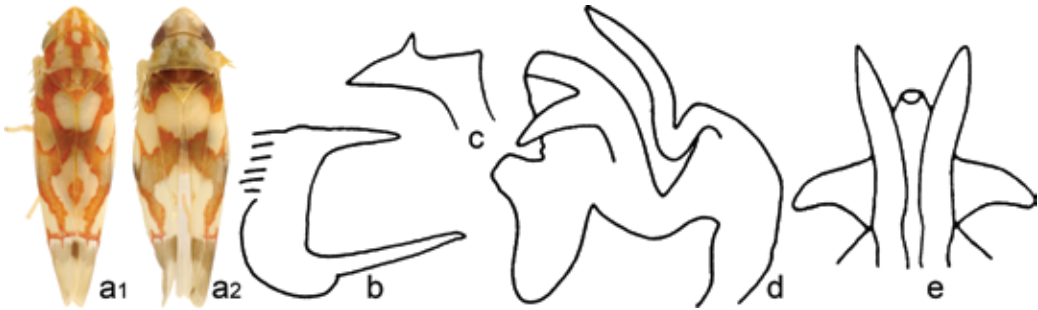


Figure 34. *E. anfracta* Beamer. a2 – color variation. b–e – from Beamer 1938.

35. ***Erythroneura ziczac*** Walsh, 1862 (Fig. 35)

Erythroneura ziczac Walsh, 1862:149

Typhlocyba zigzag Wirtner, 1904:227, missp.

Erythroneura ziczac Beamer, 1938:276, neotype designation

Erythroneura ziczac var. *walshi* Beamer, 1938:276, **syn.n.**

Erythroneura ziczac Kaloostian, 1952:20, missp.



Virginiacreeper leafhopper

Description: Length 2.8–3.1 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe angulate; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point elongate, not longer than half distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, broad in lateral view, compressed in crosssection, with strong dorsal keel, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes subapical, triangular. Dorsum yellow or white with reddish brown color pattern; vertex with parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y- or V-shaped medial vitta or almost entirely dark; mesonotum pale, with dark lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewings with oblique vittae forming continuous zigzag pattern; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Neotype ♂, USA, Illinois, Wabash Co., 31 III 1929 (Beamer), (KSEM).

Distribution: USA, southern Canada.

Host plants: *Vitis* spp.

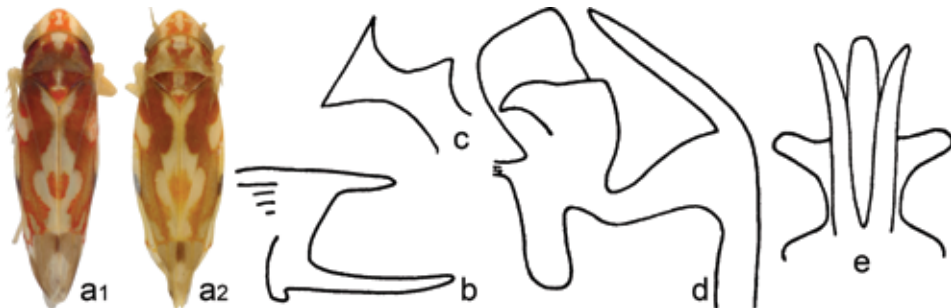


Figure 35. *E. ziczac* Walsh. a2 – var. *walshi*. b, d, e – from Beamer 1938; c – from Hepner, unpublished.

36. *Erythroneura elegans* McAtee, 1920 (Fig. 36)*Erythroneura comes* var. *elegans* McAtee, 1920:315*Erythroneura elegans* Robinson, 1926:137

Description: Length 2.7–2.9 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe angulate; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex longer than third; third point short; angle between basal and third points less than 90°. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, broad in lateral view, compressed in crosssection, with strong dorsal keel, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes subapical, triangular. Dorsum yellow or white, with reddish brown color pattern; vertex with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum pale, with dark lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewings with oblique vittae forming zigzag pattern, pale narrow crossband at middle interrupted with red longitudinal veins; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Holotype ♂, USA, Maryland, Montgomery Co., Plummers Island, 11 I 1914 (McAtee), (USNM).

Distribution: USA, southern Canada.

Host plants: *Vitis* spp.

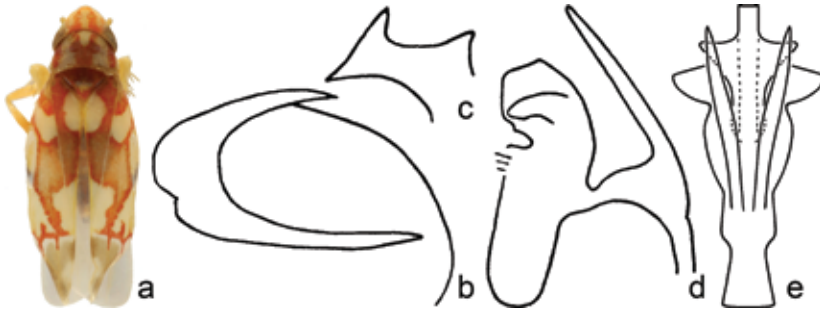


Figure 36. *E. elegans* McAtee. a – holotype. d – from Beamer 1938; b, c – from Hepner, unpublished.

37. *Erythroneura delicata* McAtee, 1920 (Fig. 37)*Erythroneura comes* var. *delicata* McAtee, 1920:317*Erythroneura comes* var. *accepta* McAtee, 1920:317, **syn.n.***Erythroneura lacta* Robinson, 1924a:62*Erythroneura scripta* Robinson, 1924c:290, **syn.n.***Erythroneura tudella* Robinson, 1924c:291, **syn.n.***Erythroneura delicata* Johnson, 1935:110*Erythroneura delictata* Young, 1952:80, missp.

Description: Length 2.9–3.2 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point subequal in size with second; angle between basal and third points about 90°. Aedeagus with preatrium longer than shaft; shaft curved dorsally, slender in lateral view, round in crosssection; apex usually broadened in ventral view; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes subapical, slender. Dorsum yellow or white, with orange color pattern; vertex with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum pale, with orange lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewing with broken oblique vittae; clavus with separate basal and distal vittae, in some cases with



dark brown spot at middle; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Holotype ♀, USA, Maryland, Montgomery Co., Plummers Island, 26 VII 1914 (McAtee), (USNM).

Distribution: Central and northeastern USA, southeastern Canada.

Host plants: *Vitis* spp.



Figure 37. *E. delicata* McAtee. a2 – var. *accepta*. b, d, e – from Beamer 1938; c – from Hepner, unpublished.

38. *Erythroneura vitifex* Fitch, 1856 (Fig. 38)

Erythroneura vitifex Fitch, 1856:392

Erythroneura vitifex Beamer, 1938:281, neotype designation

Erythroneura vitifex Padley, 1941:395, missp.

Description: Length 2.7–3 mm. Abdomen. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe angulate; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex longer than third; third point short; angle between basal and third points less than 90°. Aedeagus with preatrium longer than shaft; shaft curved dorsally, broad in lateral view, round in crosssection, with dorsal carina; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes subapical, triangular. Dorsum yellow or white, with red or orange color pattern; vertex with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum pale, with reddish lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewing with oblique vittae forming continuous zigzag pattern; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Neotype ♂, Canada, Ontario, Vineland, VIII 1922, (Robinson), (KSEM).

Distribution: USA, southern Canada.

Host plants: *Vitis* spp.

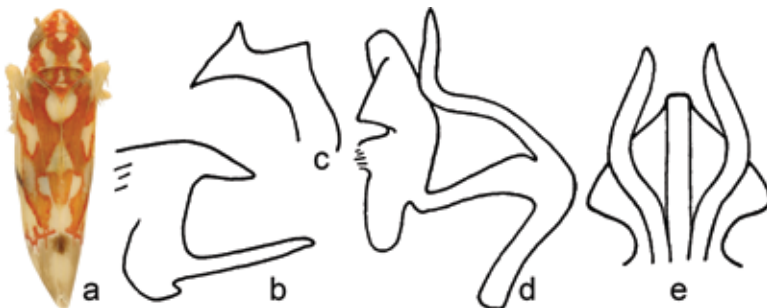


Figure 38. *E. vitifex* Fitch. b–e – from Beamer 1938.

39. *Erythroneura rubra* (Gillette, 1898) (Fig. 39)*Typhlocyba comes* var. *rubra* Gillette, 1898:764*Erythroneura comes* var. *rubra* Van Duzee, 1916:77*Erythroneura irrorata* Robinson, 1924b:154*Erythroneura rubra* Robinson, 1926:135

Description: Length 2.9–3.1 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe angulate; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point subequal in size with second; angle between basal and third points about 90°. Aedeagus with preatrium longer than shaft; shaft curved dorsally, broad in lateral view, round in crosssection, with dorsal carina, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes subapical, triangular. Dorsum yellow or white, with strongly developed reddish color pattern; vertex with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y- or V-shaped medial vitta; mesonotum entirely red; thoracic venter entirely dark; forewings with oblique vittae forming zigzag pattern; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell without brown spot.

Type locality: Holotype ♀, USA, Iowa, (Baker), (USNM).

Distribution: Central and eastern USA.

Host plants: *Vitis* spp.



Figure 39. *E. rubra* Gillette. b, d – from Beamer 1938; c – from Hepner, unpublished

40. *Erythroneura vitis* (Harris, 1831) (Fig. 40)*Tettigonia vitis* Harris, 1831:43*Erythroneura vitis* Fitch, 1851:63*Erythroneura vitis* var. *corona* McAtee, 1920:304, **syn.n.***Erythroneura comes* var. *venusta* McAtee, 1920:319*Erythroneura vitis* var. *flava* Robinson, 1924a:62

Grapevine leafhopper



Description: Length 2.8–3.1 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Second point of style apex longer than third; third point shorter than second; angle between basal and third points less than 90°. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, broad in lateral view, round in crosssection, with dorsal carina, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes apical, triangular. Coloration strongly varies; dorsum yellow or white, with reddish brown color pattern; vertex unicolorous pale or with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y- or V-shaped medial vitta or almost entirely dark; mesonotum entirely dark; thoracic venter with dark mesosternum, remainder pale; forewing with two pale crossbands of various width; dark

spot at costal margin; apical cell II without distal spot; inner apical cell without brown spot.

Type locality: Holotype [sex unknown], USA, New York, (Harris), (BSNH). Type was not studied.

Distribution: Eastern and southwestern USA, southeastern Canada.

Host plant: *Vitis* spp.

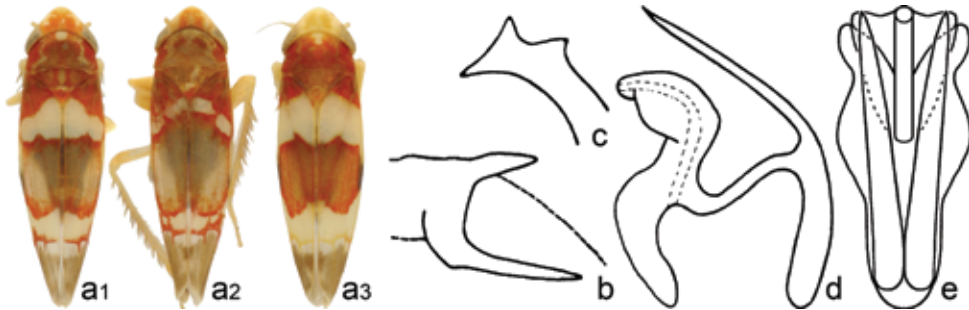


Figure 40. *E. vitis* Harris. a2 – var. *corona*; a3 – var. *flava*; b, c – from Beamer 1938; d – from Hepner, unpublished.

41. *Erythroneura coloradensis* (Gillette, 1892) (Fig. 41)

Typhlocyba vitifex var. *coloradoensis* Gillette, 1892:16

Typhlocyba vitifex var. *coloradensis* Gillette & Baker, 1895:113, emend.

Erythroneura comes var. *coloradensis* Van Duzee, 1914:57

Typhlocyba coloradensis Merrill, 1915:21, missp.

Typhlocyba colorado Gillette & List, 1921:20, missp.

Erythroneura coloradensis Robinson, 1926:134

Erythroneura coloradensis Beamer, 1938:278, lectotype designation



Description: Length 2.8–3.2 mm. 2S abdominal apodemes small, narrow, extended dorsomesad.

Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point of style apex not longer than half distance between other two points; angle between basal and third points less than 90°.

Aedeagus with preatrium longer than shaft; shaft curved dorsally, broad in lateral view, round in crosssection, with dorsal carina, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes apical, triangular. Dorsum yellow or white, with reddish or orange color pattern; vertex with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y- or V-shaped medial vitta; mesonotum pale, with black lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Lectotype ♂, USA, Colorado, (Gillette), (USNM).

Distribution: Central and southwestern USA, southeastern Canada.

Host plants: *Vitis* spp.

42. *Erythroneura fraxa* Robinson, 1924 (Fig. 42)

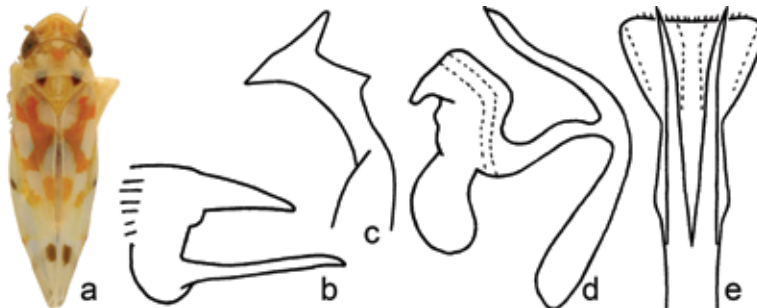


Figure 41. *E. coloradensis* Gillette. b – from Beamer 1938; d – from Hepner, unpublished.

Erythreurea fraxa Robinson, 1924c:292

Description: Length 2.9–3.2 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point not longer than half distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium longer than shaft; shaft straight in lateral view, slender in lateral view, round in crosssection, with distinct apical spicules; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes apical, triangular. Dorsum yellow or white, with orange or red color pattern; vertex with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum pale, with reddish lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewing with oblique vittae usually forming continuous zigzag pattern; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.



Type locality: Holotype ♀, USA, Kansas, Douglas Co., XII 1923, (Robinson), (KSEM).

Distribution: Central and eastern USA.

Host plants: *Cercis canadensis*.

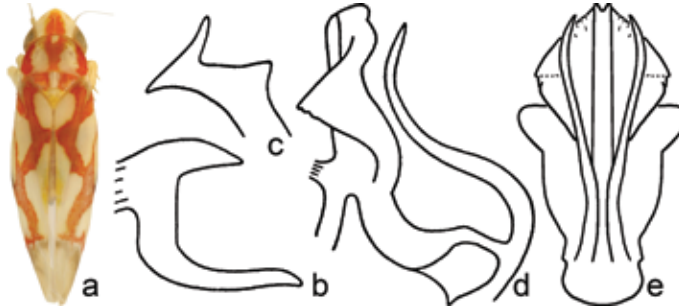


Figure 42. *E. fraxa* Robinson. b–d – from Beamer 1938.

43. *Erythreurea vaga* Johnson, 1934 (Fig. 43)

Erythreurea vaga Johnson, 1934:260

Description: Length 2.9–3.1 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point elongate, longer than distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium shorter than shaft; shaft curved dorsally, slender in lateral view, round in crosssection, with unpaired process on dorsal apodeme; ventral processes placed basally, close to shaft, shorter than shaft, parallel to each other on ventral side of aedeagus; distal processes apical, slender. Coloration similar to *E. comes* Say.



Type locality: Holotype ♂, USA, Ohio, Adams Co., Mineral Springs, 31 VIII 1931 (Osborn), (OSU).

Distribution: Central and eastern USA.

Host plants: *Cercis canadensis*.

Note: *E. vaga* sensu Beamer, 1938a equals *E. kerzhneri* sp.n.

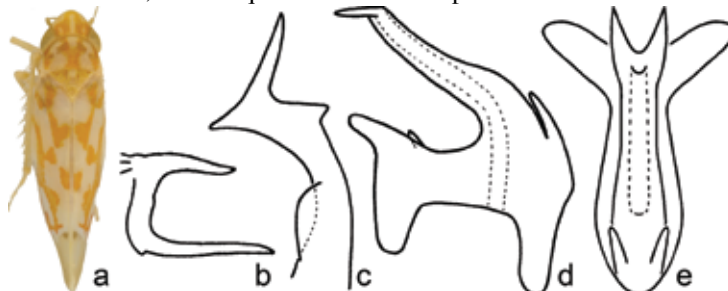


Figure 43. *E. vaga* Johnson. b – from Beamer 1938.

44. *Erythroneura kerzhneri* Dmitriev & Dietrich sp.n. (Fig. 44)
Erythroneura vaga Beamer, 1938:285 not Johnson, 1934,
 misid.



Description: Length 2.8–3.1 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex well developed; third point elongate, about as long as distance between other two points; angle between basal and third points less than 90° . Aedeagus with preatrium shorter than shaft; shaft symmetrical, curved ventrally, slender in lateral view, smooth or denticulate distally, round in crosssection; with pair of long dorsal processes between shaft and dorsal apodeme; apex of aedeagus broadened in ventral view; ventral processes placed basally, well separated from shaft, shorter than shaft, parallel to each other on ventral side of aedeagus, simple or bifurcated at apex; distal processes short, apical. Coloration similar to that of *E. kennedyi* Knull; dorsum yellow or white, with reddish or orange color pattern; vertex with orange parallel submedial lines (often with lateral branch), midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum pale, with reddish lateral triangles; thoracic venter entirely pale; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Diagnosis: *E. kerzhneri* sp.n. is similar to *E. kennedyi* Knull, but has the dorsal and distal processes of the aedeagus much shorter, the basal processes longer, and the third point of the style longer, about as long as distance between other points.

Type locality: Holotype ♂, USA, Arkansas, Washington Co., 30 VI 1940 (Sanderson), (KSEM).

Studied material: Paratypes: USA, 2 ♂, Arkansas, Miller Co., Fouke, 21 XII 1931 (Beamer), (KSEM); 2 ♂, Arkansas, Polk Co., 21 VIII 1928 (Beamer), (KSEM); 2 ♂, Illinois, Clay Co., 31 III 1929 (Oman), (KSEM); 1 ♂, Illinois, Clay Co., 31 III 1929 (Beamer), (KSEM); 8 ♂, Illinois, Clay Co., Flora, 31 III 1929 (Beamer), (KSEM). Other studied material from Illinois, Kansas, Louisiana, and Mississippi excluded from paratypes.

Distribution: Central and southeastern USA.

Host plants: *Ilex decidua*, *Ulmus alata*.

Note: The species named in honor of Prof. Izyaslav Kerzhner (Zoological Institute, Russian Academy of Sciences, St. Petersburg), Russian specialist on Heteroptera.



Figure 44. *E. kerzhneri* sp.n.

45. *Erythroneura kennedyi* Knull, 1945 (Fig. 45)

Erythroneura kennedyi Knull, 1945:109

Description: Length 2.9–3.1 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex longer than third; third point not longer than half distance between other two points; angle between basal and third points less than 90° . Aedeagus with preatrium shorter than



shaft of aedeagus; shaft straight and slender in lateral view, round in crosssection; with long dorsal processes between shaft and dorsal apodeme; ventral processes placed basally, close to shaft, shorter than shaft, parallel to each other on ventral side; aedeagus distal processes apical, slender. Dorsum yellow or white, with reddish or orange color pattern; vertex with parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum pale, with reddish lateral triangles; thoracic venter entirely pale; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Holotype ♂, USA, Ohio, Pickaway Co., 20 II 1934 (Caldwell), (OSU).

Distribution: Known only from type locality in Ohio.

Host plants: Unknown.

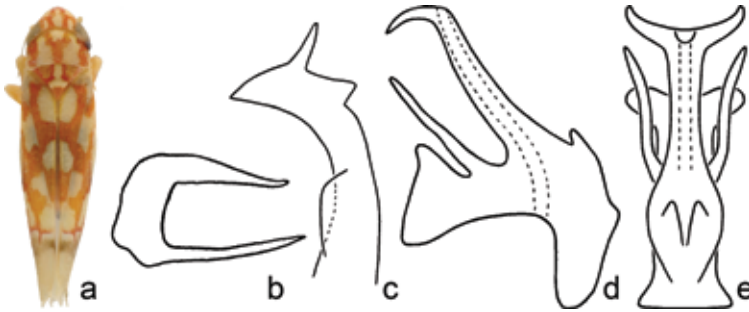


Figure 45. *E. kennedyi* Knull. b – from Knull 1945.

46. *Erythreura ancora* Beamer, 1929 (Fig. 46)

Erythreura ancora Beamer, 1929:122

Description: Length 3.1–3.2 mm. Male genitalia. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex longer than third; third point short; angle between basal and third points about 90°. Aedeagus with preatrium shorter than shaft; shaft curved dorsally, slender in lateral view, with small dorsal distal lobe; ventral processes placed basally, close to shaft, shorter than shaft; distal processes absent. Dorsum yellow, with orange color pattern; vertex with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum pale, with dark lateral triangles; thoracic venter entirely pale; forewings with oblique vittae usually forming zigzag pattern; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.



Type locality: Holotype, ♂, USA, Texas, Culberson Co., 10 VII 1927 (Beamer), (KSEM).

Distribution: Known only from type locality in Texas.

Host plants: Unknown.

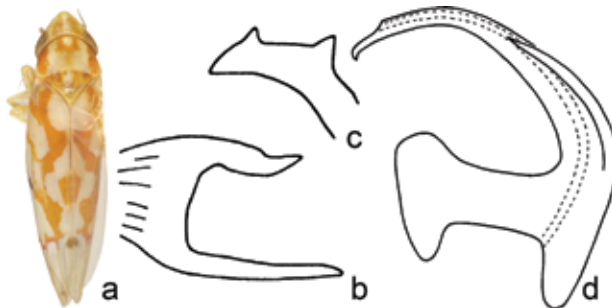


Fig. 46. *E. ancora* Beamer. b, c – from Beamer 1938.

47. *Erythroneura tacita* Beamer, 1938 (Fig. 47)*Erythroneura tacita* Beamer, 1938:293

Description: Length 3.1–3.5 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, dorsal branch strongly reduced, ventral branch much longer. Second point of style apex longer than third; third point very short; angle between basal and third points about 90°. Aedeagus with preatrium about as long as shaft; shaft curved dorsally, slender in lateral view, round in crosssection; ventral processes placed basally, well separated from shaft, shorter than shaft, evenly divergent; distal processes long, slender. Dorsum yellow or white, with reddish or orange color pattern; vertex with orange parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y-shaped medial vitta; mesonotum entirely pale; thoracic venter entirely pale; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Holotype ♂, USA, Washington, Ferry Co., Republic, 6 VIII 1931 (Beamer), (KSEM).

Distribution: Western USA, southwestern Canada.

Host plants: Unknown.

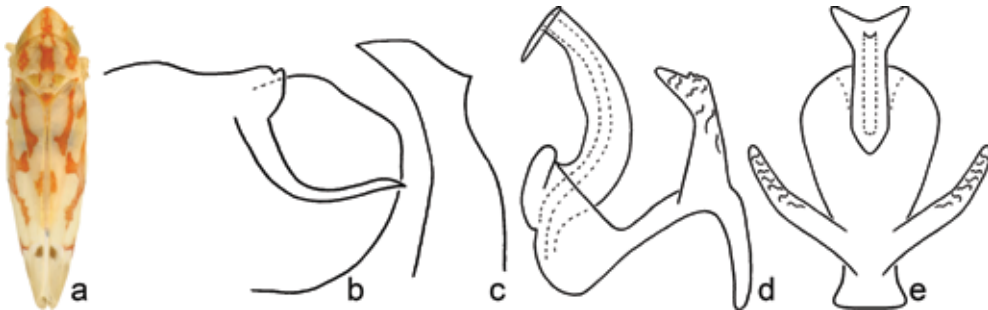


Figure 47. *E. tacita* Beamer.

48. *Erythroneura caetra* McAtee, 1924 (Fig. 48)*Erythroneura ligata* var. *caetra* McAtee, 1924b:130*Erythroneura ligata* var. *caetra* DeLong & Caldwell, 1937:79, missp.*Erythroneura caetra* Beamer, 1938:281

Description: Length 2.9–3.3 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe angulate; dorsal appendages extended beyond pygofer apex, C-shaped, ventral branch much longer than dorsal. Second point of style apex longer than third; third point of style apex very short or absent. Aedeagus with preatrium shorter than shaft; shaft curved dorsally, broad in lateral view, compressed in crosssection, with subapical dorsal lobe, with distinct apical spicules; ventral processes placed basally, well separated from shaft, shorter than shaft, parallel to each other on ventral side of aedeagus; distal processes apical, small, toothlike. Dorsum yellow or white with reddish brown color; vertex with parallel submedial lines, midline pale; anteclypeus dark; pronotum dark with pale lateral margins; mesonotum pale, with black lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewings with oblique vittae forming continuous zigzag pattern; clavus with continuous vitta parallel to suture; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Holotype ♀, USA, California, Monterey Co., Salinas, 26 IV 1908 (Ball), (USNM).

Distribution: Western USA, southwestern Canada.

Host plants: *Salix exigua*.



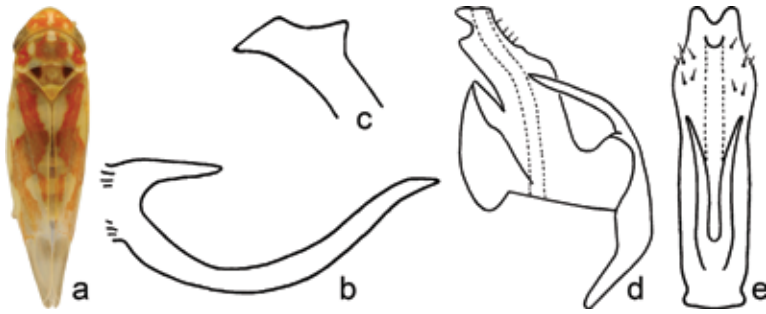


Figure 48. *E. caetra* McAtee. b, c – from Beamer 1938.

49. *Erythroneura rosa* Robinson, 1924 (Fig. 49)

Erythroneura rosa Robinson, 1924a:58

Erythroneura mallochi McAtee, 1924c:41

Erythroneura repetita McAtee, 1926:131, **syn.n.**



Description: Length 2.8–3.2 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe angulate; dorsal appendages extended beyond pygofer apex, C-shaped, ventral branch much longer than dorsal, branches strongly divergent. Second point of style apex longer than third; third point very short or absent. Aedeagus with preatrium shorter than shaft; shaft curved dorsally, broad in lateral view, compressed in crosssection, with subapical dorsal lobe, with distinct apical spicules; ventral processes placed basally, well separated from shaft, shorter than shaft, parallel to each other on ventral side of aedeagus; distal processes apical, small tooth-like. Dorsum yellow or white, with reddish or brownish color pattern; vertex with orange parallel submedial lines, midline pale; anteclypeus dark; pronotum dark with pale lateral margins or pale with two longitudinal strips; mesonotum pale, with dark lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewings with oblique vittae forming zigzag pattern or dark with two narrow crossbands; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.

Type locality: Holotype ♂, USA, Missouri, Jackson Co., Atherton, 19 V 1922 (Adams), (KSEM).

Distribution: Central and eastern USA, southern Canada.

Host plants: *Salix myricoides*, *S. babylonica*, *S. cordata*, *S. bebbiana*, *S. petiolaris*, *S. caprea*, *S. humilis*, *S. interior*.

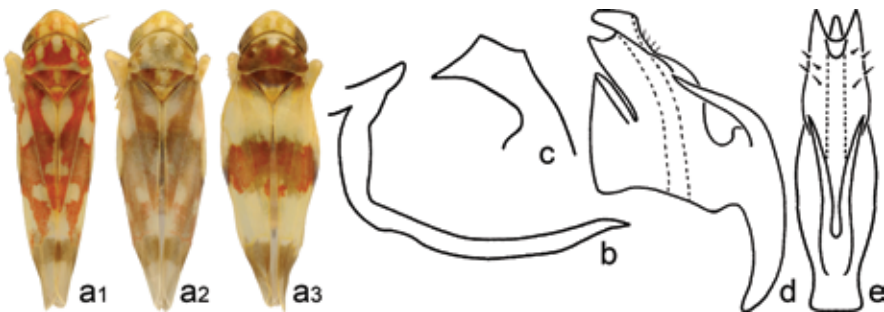


Figure 49. *E. rosa* Robinson. a2 – var. *mallochi*; a3 – var. *repetita*; b, c – from Beamer 1938.

50. *Erythroneura omaska* Robinson, 1924 (Fig.50)*Erythroneura omaska* Robinson, 1924a:62

Description: Length 3–3.2 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, C-shaped, branches subequal in length. Second point of style apex longer than third; third point short; angle between basal and third points about 90°. Aedeagus with preatrium shorter than shaft; shaft curved dorsally, slender in lateral view, denticulate distally, depressed in crosssection. Aedeagus with two dorsal processes arising near midlength of shaft; ventral processes absent; distal processes apical, slender. Dorsum yellow or white, with reddish or orange color pattern; vertex with parallel submedial lines, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with Y- or V-shaped medial vitta; mesonotum pale, with orange lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II with distal spot; inner apical cell with brown spot basally.



Type locality: Holotype ♂, USA, Kansas, Douglas Co., X 1923, (Robinson), (KSEM).

Distribution: Central and eastern USA.

Host plants: Unknown. Recorded from *Rubus* sp., *Vitis* sp., *Ilex decidua*.

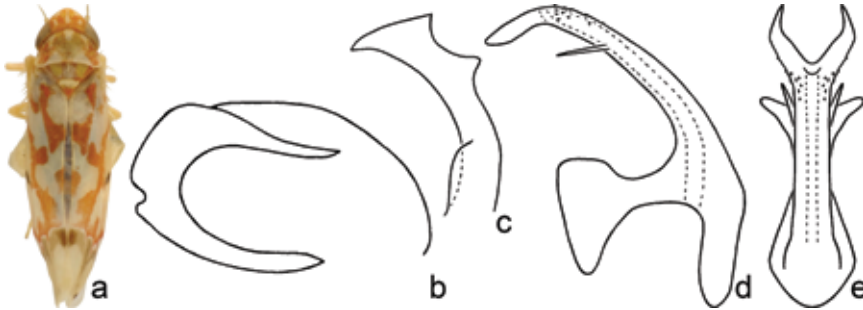


Figure 50. *E. omaska* Robinson. b – from Hepner, unpublished.

51. *Erythroneura rubrella* McAtee, 1920 (Fig. 51)*Erythroneura comes* var. *rubrella* McAtee, 1920:316*Erythroneura rubrella* Johnson, 1935:109

Description: Length 2.7–3 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe angulate; dorsal appendages extended beyond pygofer apex, C-shaped, ventral branch much longer than dorsal. Second point of style apex very short, tooth like; third point of style apex subequal in size with second; angle between basal and third points about 90°. Aedeagus with preatrium shorter than shaft; shaft straight and broad in lateral view, compressed in crosssection, with dorsal keel; apex of aedeagus acuminate in ventral view, with distinct apical spicules; ventral processes absent; distal processes absent. Dorsum yellow or white, with reddish color pattern; vertex with orange parallel submedial lines, midline red; anteclypeus dark; pronotum dark with pale lateral margins or pale with two longitudinal strips; mesonotum pale, with reddish lateral triangles; thoracic venter entirely dark; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II without distal spot; inner apical cell without brown spot.



Type locality: Holotype ♂, USA, Maryland, Montgomery Co., Plummers Island, 30 XI 1913 (McAtee), (USNM).

Distribution: Northwestern, central, and eastern USA, southern Canada.

Host plants: *Cornus pumila*, *C. stolonifera*.

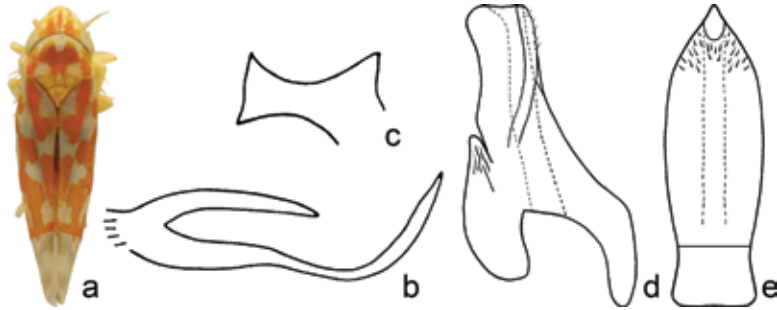


Figure 51. *E. rubrella* McAtee. b – from Beamer 1938; c – from Hepner, unpublished.

52. *Erythroneura corni* Robinson, 1924 (Fig. 52)

Erythroneura corni Robinson, 1924a:60

Erythroneura ornata Osborn, 1928b:364

Description: Length 2.6–3 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages extended beyond pygofer apex, C-shaped, branches very long of subequal length. Second point of style apex very short, tooth like; third point not longer than half distance between other two points; angle between basal and third points about 90°. Aedeagus with preatrium shorter than shaft; shaft curved dorsally, slender in lateral view, compressed in crosssection, with long dorsal distal lobe; apex acuminate in ventral view, with distinct apical spicules. Aedeagus without processes. Dorsum yellow or white, with orange or red color pattern; vertex with parallel submedial lines, midline red; anteclypeus dark; pronotum dark with pale lateral margins or pale with two longitudinal strips; mesonotum pale, with reddish lateral triangles; thoracic venter entirely dark; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II without distal spot; inner apical cell without brown spot.



Type locality: Holotype ♂, USA, Kansas, Douglas Co., X 1923, (Robinson), (KSEM).

Distribution: USA, southern Canada.

Host plants: *Cornus* spp.

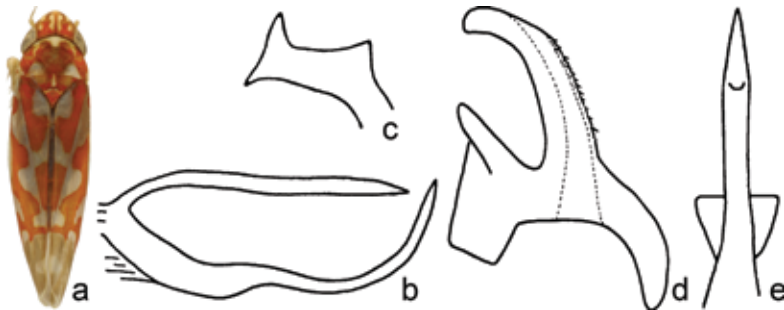


Figure 52. *E. corni* Robinson. b, c – from Beamer 1938; e – Hepner, unpublished.

53. *Erythroneura bidens* McAtee, 1924 (Fig. 53)

Erythroneura comes var. *bidens* McAtee, 1924a:39

Erythroneura comes var. *suffusa* McAtee, 1924a:39

Erythroneura bidens Beamer, 1938:287

Description: Length 2.8–3.2 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages extended beyond pygofer apex, C-shaped;



ventral branch about twice as long as dorsal, twisted and extended at apex. Second point of style apex very short, tooth like; third point subequal in size with second; angle between basal and third points about 90° . Aedeagus with preatrium shorter than shaft; shaft straight and slender in lateral view, compressed in crosssection, with long dorsal distal lobe; apex acuminate in ventral view, with distinct apical spicules. Aedeagus without processes. Dorsum yellow or white, with reddish or orange color pattern; vertex with parallel submedial lines, midline red; anteclypeus dark; pronotum dark with pale lateral margins or pale with two longitudinal strips; mesonotum pale, with reddish lateral triangles; thoracic venter entirely dark; forewing with broken oblique vittae; clavus with separate basal and distal vittae; dark spot at costal margin; apical cell II without distal spot; inner apical cell without brown spot.

Type locality: Holotype ♀, USA, Virginia, Fairfax Co., Scotts Run Nature Preserve, Stubblefield Falls, on *Pinus virginiana*, 23 X 1921 (Malloch), (USNM).

Distribution: Central and eastern USA.

Host plants: *Cornus* spp.

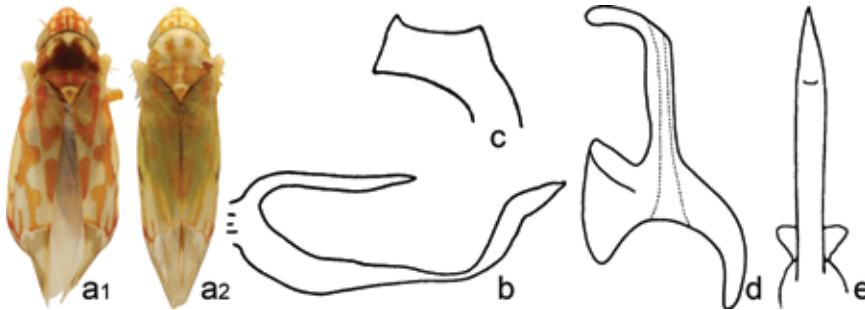


Figure 53. *E. bidens* McAtee. a1 – holotype; a2 – var. *suffusa*. b, c – from Beamer 1938; e – from Hepner, unpublished.

54. *Erythroneura ontari* Robinson, 1924 (Fig. 54)

Erythroneura ontari Robinson, 1924a:60

Description: Length 2.5–2.8 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages extended beyond pygofer apex, C-shaped; ventral branch about twice as long as dorsal. Second point of style apex very short, tooth like; third point subequal in size with second; angle between basal and third points about 90° .

Aedeagus with preatrium shorter than shaft; shaft straight and slender in lateral view, compressed in crosssection, with long dorsal distal lobe; apex acuminate in ventral view, with distinct apical spicules. Aedeagus without processes. Coloration similar to *E. corni* Robinson.

Type locality: Holotype ♂, Canada, Ontario, Vineland, I 1923, (Robinson), (KSEM).

Distribution: Northwestern, central, and eastern USA, southern Canada.

Host plants: *Cornus* spp.

Note: *E. ontari* Robinson may be a variant of *E. corni* Robinson rather than a distinct species. They are often collected together and differ primarily in the length of the dorsal branch of the pygofer process. However, intermediate forms were not found.

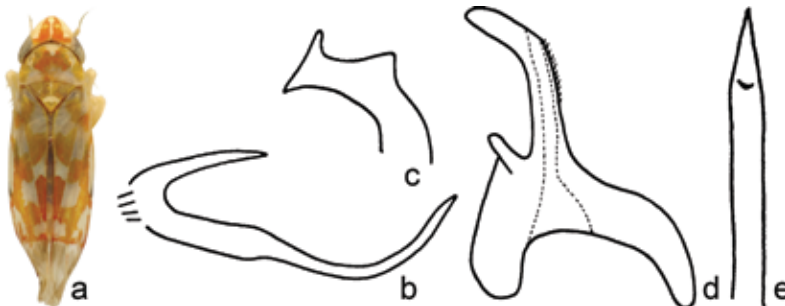


Figure 54. *E. ontari* Robinson. b, c – from Beamer 1938; e – Hepner, unpublished.

Genus *Erasmoneura* Young, 1952

Erythroneura (Erasmoneura) Young, 1952:80 (Type: *Erythroneura vulnerata* Fitch, 1851)

Erasmoneura Dietrich & Dmitriev, 2006:139

Description: Length 2.2–3.4 mm, relatively slender. Head narrower than pronotum; crown fore margin strongly produced and angulate medially; ocelli absent or vestigial. Face depressed in profile, less than 45° from horizontal; anteclypeus narrow in both sexes. Forewing outer apical cell short, less than 2X longer than width or about 2X as long as wide; second apical cell quadrate (ir crossvein present); third apical cell parallel sided, straight; CuP shorter than segment of CuA between Cu and MP; basal segment of MP shorter than basal segment of CuA; inner apical cell with distinctly angulate base; Pcu not visible. Hindwing with truncate apex; submarginal vein not extended to wing apex; RA present; MP and CuA fused for short distance or separated by m-cu crossvein, convergent distally. Front femur AV row with one basal seta distinctly larger than others; PV row without fine basal setae. 2S abdominal apodemes small, narrow, extended dorso-mesad. Pygofer apex not extended to apex of subgenital plate; dorsal emargination extended to base of segment; basolateral setae in distinct group, small; distal setae undifferentiated; long fine setae present or absent; apex with rigid setae on internal surface. Pygofer dorsal appendage movably articulated, or at least with distinct basal suture separating it from lobe; simple or bifurcate; ventral appendage absent. Subgenital plates free; lateral margin with angulate subbasal projection; section basad of medial constriction shorter than distal section; with 4 basal macrosetae, uniseriate along margin; marginal short rigid setae forming continuous row. Style preapical lobe prominent; apex with 3 points. Aedeagus articulated to connective; dorsal apodeme broadly expanded in lateral view, with distinct V-shaped ligaments connected to pygofer appendages; shaft symmetrical, with processes. Connective median anterior lobe absent; arms long; stem well developed, depressed. Anal tube without processes. Coloration variable.

Distribution: North America; *E. vulnerata* Fitch recently established in northern Italy (Duso et al., 2005).

Host plants: *Vitis* spp. and herbs.

Key to Species of the Genus *Erasmoneura*¹

- 1. Aedeagus shaft very short, with ventral processes; processes as long as or longer than shaft; without distal processes (Fig. 55e). Pygofer with dorsal appendage bifurcate (Figs. 55b, 56b). 2
- 1'. Aedeagus shaft long, without ventral processes, with distal processes (Fig. 58e). Pygofer with dorsal appendage not bifurcate (Fig. 58b). 4
- 2(1). Pygofer dorsal appendage bifurcate far from base, branches very short; dorsal branch slightly curved upward (Fig. 55b). 55. **E. vulnerata** Fitch
- 2'. Pygofer dorsal appendage bifurcate closer to base, branches longer than basal part of appendage; dorsal branch straight or curved downward (Figs. 56b, 57b). 3
- 3(2). Branches of pygofer appendage subequal in length (Fig. 56b). 56. **E. fulmina** McAtee
- 3'. Dorsal branch of pygofer appendage about twice as long as ventral (Fig. 57b). 57. **E. variabilis** Beamer
- 4(1). Third point of style apex shorter than half distance between other two points (Fig. 58c). 58. **E. nigra** Gillette
- 4'. Third point of style apex longer than half distance between other two points (Fig. 60c). 5
- 5(4). Third point of style apex more than 2X longer than distance between other two points (Fig. 59c). 59. **E. nigerrima** McAtee
- 5'. Third point of style apex as long or only slightly longer than distance between other two points (Fig. 60c). 6
- 6(5). Ground color of dorsum dark brown or black (Figs. 60a, 61a). 7
- 6'. Ground color of dorsum yellow, reddish, or light brown (Figs. 62a, 63a). 8
- 7(6). Aedeagus distal processes longer than dorsal distal lobe (Figs. 60d, 60e). Dorsum with pale spots (Fig. 60a). 60. **E. atra** Johnson

¹ *E. bipentagona* Beamer, known only from the female holotype, is not included.

- 7'. Aedeagus distal processes not longer than dorsal distal lobe (Figs. 61d, 61e). Dorsum without pale spots (Fig. 61a). 61. **E. caerulea** Beamer
- 8(6). Aedeagus depressed in crosssection, broad in ventral view (Figs. 62d, 62e). 9
- 8'. Aedeagus round in crosssection, slender in ventral view (Figs. 64d, 64e). 10
- 9(8). Aedeagus distal processes directed basad in ventral view (Fig. 62e). Vertex pale; forewing yellow or pink (Fig. 62a). 62. **E. rubricata** Van Duzee
- 9'. Aedeagus distal processes directed laterad in ventral view (Fig. 63e). Vertex and forewing reddish brown (Fig. 63a). 63. **E. margaritae** sp.n.
- 10(8). Shaft of aedeagus curved dorsally in lateral view; dorsal distal lobe longer than distal processes (Fig. 64d). 64. **E. emeljanovi** sp.n.
- 10'. Shaft of aedeagus curved ventrally in lateral view; dorsal distal lobe not longer than distal processes (Fig. 65d). 65. **E. mixta** Beamer

55. ***Erasmoneura vulnerata*** (Fitch, 1851) (Fig. 55, Plate 1e)
Erythroneura vulnerata Fitch, 1851:62
Typhlocyba vulneata Lugger, 1896:61, missp.
Erythroneura gradata Robinson, 1924a:58, **syn.n.**
Erasmoneura vulnerata Dietrich & Dmitriev, 2006:140



Description: Length 2.7–3.2 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages bifurcate far from base, not extended beyond pygofer apex, curved upward. Second point of style apex very short, toothlike; third point elongate, not longer than half distance between other two points; angle between basal and third points about 90°. Aedeagus with preatrium longer than shaft; shaft very short membranous, straight and broad in lateral view, round in crosssection; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at base, then parallel; distal processes absent. Dorsum white or yellow, with reddish or brownish color pattern; vertex mostly dark, with small pale spots, midline pale; anteclypeus brown; pronotum and mesonotum almost entirely dark; thoracic venter with dark mesosternum, remainder pale; forewing with reddish and brownish patches; clavus largely or entirely dark; dark spot at costal margin; apical cell II with distal spot; inner apical cell without brown spot.

Type locality: Holotype ♂, USA, New York, (NYSM).

Distribution: Central and eastern USA, southeastern Canada, northern Mexico, Italy (introduced, Duso et al., 2005).

Host plants: *Vitis* spp.

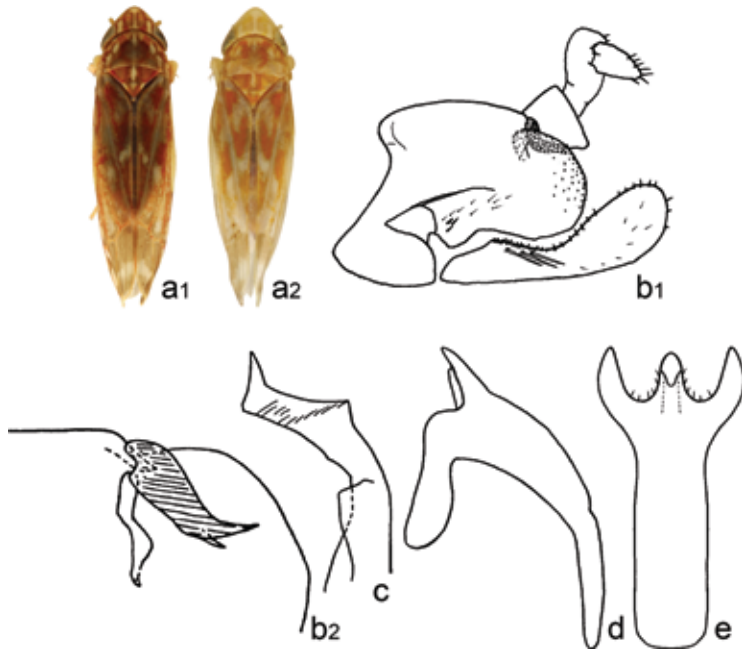


Figure 55. *E. vulnerata* Fitch. a2 – var. *gradata*. c – from Young 1952; b2 – from Ross 1965; b1 – from Dietrich & Dmitriev 2006.

56. *Erasmoneura fulmina* (McAtee, 1920) (Fig. 56)

Erythroneura vulnerata var. *fulmina* McAtee, 1920:274

Erythroneura pulchella Robinson, 1924b:155

Erythroneura bicolorata Beamer, 1937:11, **syn.n.**

Erythroneura fulmina Beamer, 1946:17

Erasmoneura fulmina Dietrich & Dmitriev, 2006:140

Description: Length 2.7–2.9 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages bifurcate near base, appendages parallel, not extended beyond pygofer apex, straight in lateral view. Second point of style apex very short, tooth like; third point elongate, longer than half distance between other two points; angle between basal and third points about 90°. Aedeagus with preatrium longer than shaft; shaft very short, membranous, straight and broad in lateral view, round in crosssection; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at base, then parallel; distal processes absent. Dorsum yellow or white, with reddish or brownish color pattern; vertex mostly dark, with small pale spots, midline pale; anteclypeus dark; pronotum almost entirely dark; mesonotum pale, with dark lateral triangles or entirely dark; thoracic venter entirely dark. Forewing with reddish brown and pale patches, in some cases basal half much darker than distal half; dark spot at costal margin; apical cell II with distal spot; inner apical cell without brown spot.



Type locality: Holotype ♀, USA, Maryland, Montgomery Co., Plummers Island, 1 VI 1907 (Fisher), (USNM).

Distribution: Central and eastern USA.

Host plants: *Vitis* spp.

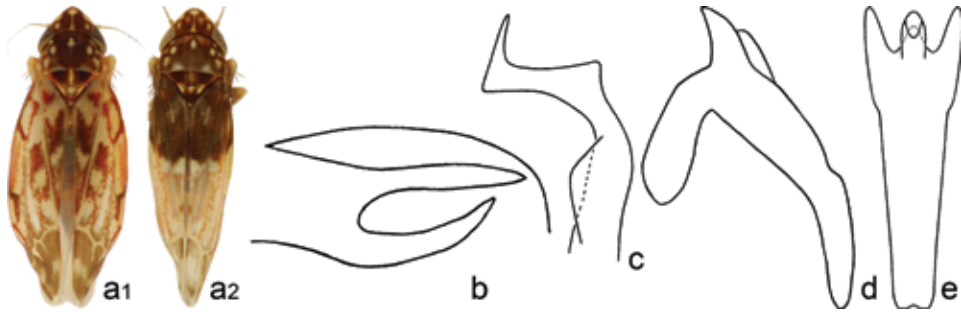


Figure 56. *E. fulmina* McAtee. a1 – holotype; a2 – var. *bicolorata*; b – from Hepner, unpublished.

57. *Erasmoneura variabilis* (Beamer, 1929) (Fig. 57)

Erythroneura variabilis Beamer, 1929:126

Erasmoneura variabilis Dietrich & Dmitriev, 2006:140

Variegated leafhopper

Description: Length 2.9–3.1 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages bifurcate near base, branches parallel to each other, not extended beyond pygofer apex. Second point of style apex very short, tooth like; third point elongate, not longer than half distance between other two points; angle between basal and third points about 90°. Aedeagus with preatrium longer than shaft; shaft very short, membranous, straight and broad in lateral view, round in crosssection; ventral processes placed basally, well separated from shaft, longer than shaft, divergent at base, then parallel; distal processes absent. Coloration similar to *E. vulnerata* Fitch.

Type locality: Holotype ♂, USA, Arizona, Yavapai Co., 9 VIII 1927 (Beamer), (KSEM).

Distribution: Arizona, California, northern Mexico.

Host plants: *Vitis* spp.

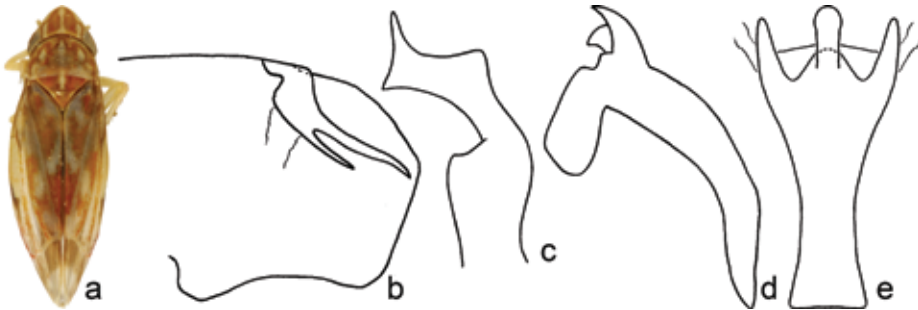


Figure 57. *E. variabilis* Beamer.

58. *Erasmoneura nigra* (Gillette, 1898) (Fig. 58, Plate 1f)

Typhlocyba vulnerata var. *niger* Gillette, 1898:765

Typhlocyba nigradorsum DeLong, 1916:110

Erythroneura niger Van Duzee, 1916:77

Erythroneura vulnerata var. *decora* McAtee, 1920:274, **syn.n.**

Erythroneura nigra Lawson, 1920:51

Erasmoneura nigra Dietrich & Dmitriev, 2006:140

Description: Length 2.7–3.1 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; pygofer dorsal appendages simple, not extended beyond pygofer apex,



slightly curved upward in lateral view. Second point of style apex very short, toothlike; third point elongate, not longer than half distance between other two points; angle between basal and third points about 90°. Aedeagus with preatrium about as long as shaft; shaft curved ventrally, broad in lateral view, round in crosssection, with long dorsal distal lobe; ventral processes absent; distal processes long, subapical. Dorsum mostly black, with pale specks. Vertex mostly dark, midline pale; anteclypeus pale, concolorous with rest of face; pronotum with three pale specks at anterior margin; mesonotum almost entirely dark; thoracic venter with dark mesosternum, remainder pale. Forewing dark, with some pale specks and pale transverse veins.

Type locality: Holotype ♀, USA, Kansas, Pottawatomie Co., Onaga, (Crevecoeur), (USNM).

Distribution: USA, southern Canada.

Host plants: *Polygonum* spp.

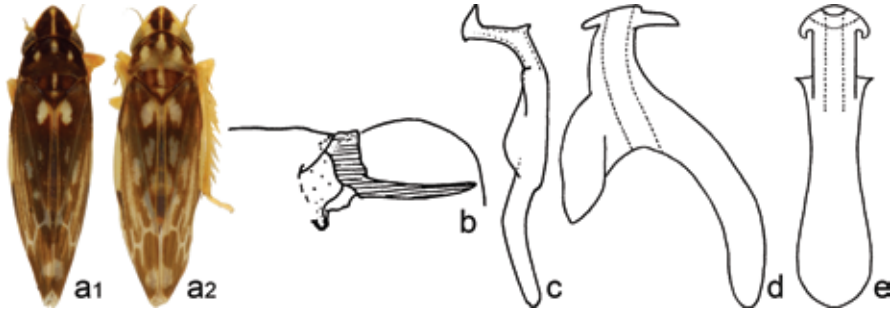


Figure 58. *E. nigra* Gillette. a2 – var. *decora*. b, c – from Ross 1965.

59. *Erasmoneura nigerrima* (McAtee, 1920) (Fig. 59)

Erythreurena vulnerata var. *nigerrima* McAtee, 1920:275

Erythreurena niger var. *nigerrima* Robinson, 1926:116

Erythreurena atrata Johnson, 1935:97, **syn.n.**

Erasmoneura nigerrima Dietrich & Dmitriev, 2006:140

Description: Length 2.2–2.5 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; pygofer dorsal appendages simple, movably articulated, extended beyond pygofer apex, curved downward in lateral view. Second point of style apex very short, tooth like; third point of style apex more than twice longer than distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium longer than shaft; shaft curved ventrally, broad in lateral view, with subapical dorsal lobe; ventral processes absent; distal processes long, subapical. Dorsum black, with pale fore margin of vertex, pale specks on pronotum and mesonotum, and costal margins of wings, crossveins pale; usually with red spot at costal margin of forewing at level of crossveins; anteclypeus pale, concolorous with rest of face; thoracic venter with dark mesosternum, remainder pale.



Type locality: Holotype ♀, USA, Virginia, Alexandria Co., Maywood, 20 II 1916 (McAtee), (USNM).

Distribution: Central and northeastern USA.

Host plants: Unknown.

Note: *E. nigerrima* McAtee was misidentified by Beamer (1946); see *E. atra* Johnson.

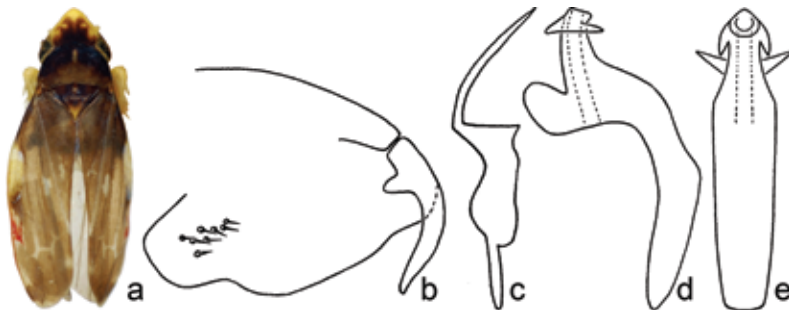


Figure 59. *E. nigerrima* McAtee. c – from Johnson 1935.

60. *Erasmoneura atra* (Johnson, 1935), **sp. revalid., new comb.** (Fig. 60)

Erythroneura atra Johnson, 1935:96

Erythroneura nigerrima Beamer, 1946:18 not McAtee 1920, misid.

Description: Length 2.6–2.9 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; pygofer dorsal appendages simple, not extended beyond pygofer apex, slightly curved upward in lateral view. Second point of style apex very short, toothlike; third point of style apex elongate, about as long or longer than distance between other two points; angle between basal and third points less than 90° . Aedeagus with preatrium about as long as shaft; shaft curved ventrally, slender in lateral view, round in crosssection, with long dorsal distal lobe; ventral processes absent; distal processes long, subapical. Coloration similar to *E. nigra* Gillette.

Type locality: Holotype ♂, USA, Ohio, Hocking Co., Conkles Hollow, Hocking State Forest, 15 IV 1934 (Caldwell), (OSU).

Distribution: Central and eastern USA.

Host plants: Unknown.

Note: *E. atra* Johnson was mistakenly synonymised with *E. nigerrima* McAtee by Beamer (1946).

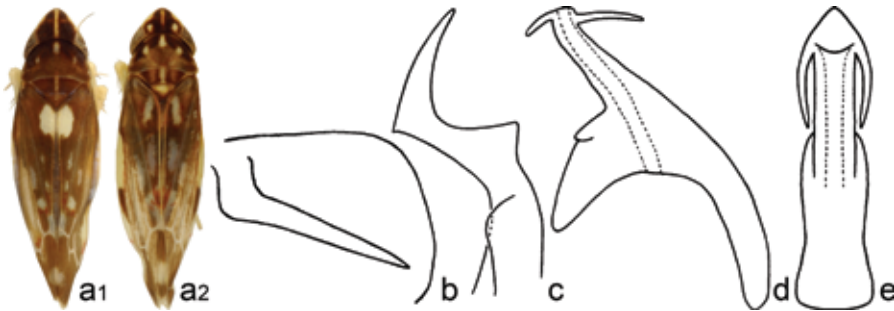


Figure 60. *E. atra* Johnson. a1, a2 – color variations; b – from Hepner, unpublished.

61. *Erasmoneura caerulea* (Beamer, 1937) (Fig. 61)

Erythroneura caerulea Beamer, 1937:10

Erasmoneura caerulea Dietrich & Dmitriev, 2006:140

Description: Length 3.1–3.4 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe angulate; pygofer dorsal appendages simple, not extended beyond pygofer apex, straight in lateral view. Second point of style apex very short, tooth like; third point of style apex elongate, longer than distance between other two points; angle between basal and third points less than 90° . Aedeagus with preatrium about as long as shaft; shaft straight and slender in lateral view; round in crosssection, with long dorsal distal lobe; ventral processes absent; distal processes long, subapical. Dorsum black; anteclypeus pale, concolorous with rest of face; thoracic venter with dark mesosternum, remainder pale.

Type locality: Holotype ♂, USA, Arkansas, Franklin Co., Barnes, 8 VI 1931 (Beamer), (KSEM).

Distribution: Central USA.

Host plants: Unknown.

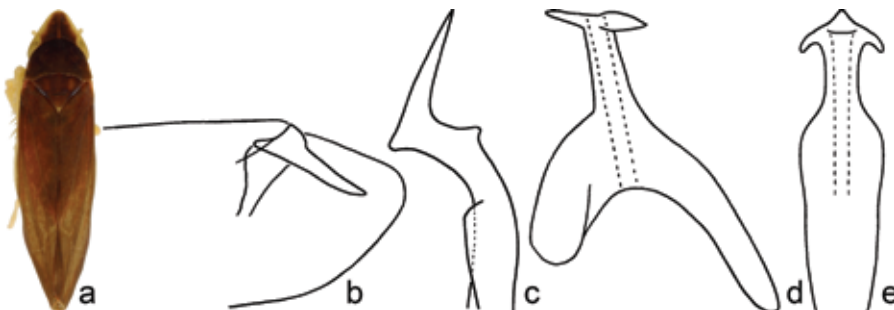


Figure 61. *E. caerulea* Beamer.

62. *Erasmoneura rubricata* (Van Duzee, 1909) (Fig. 62)*Typhlocyba rubricata* Van Duzee, 1909:229*Erythroniura rubricata* Van Duzee, 1916:77*Erasmoneura rubricata* Dietrich & Dmitriev, 2006:140

Description: Length 2.6–3 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; pygofer dorsal appendages simple, not extended beyond pygofer apex, slightly curved upward in lateral view. Second point of style apex very short, tooth like; third point of style apex elongate, about as long as distance between other two points; angle between basal and third points about 90°.

Aedeagus with preatrium longer than shaft; shaft straight and broad in lateral view; depressed in crosssection, with small dorsal distal lobe, with lateral lobes at base; distal processes long, apical. Uniformly yellow pronotum and forewings, except apices, pink; venter entirely pale.

Type locality: Lectotype ♀, USA, Florida, Putnam Co., Crescent City, Spring 1908, (Van Duzee), (CAS) – here designated.

Distribution: Central and southeastern USA.

Host plants: *Ascyrum hypericoides*, *Hypericum densiflorum*, *H. aspalathoides*, *H. prolificum*.

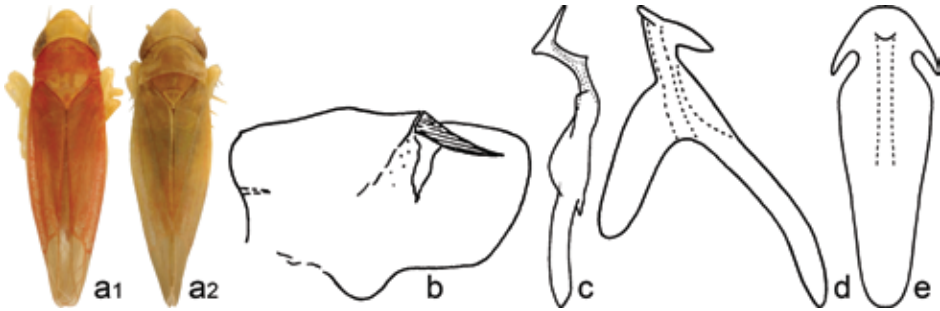


Figure 62. *E. rubricata* Van Duzee. a1, a2 – color variations; b, c – from Ross 1965.

63. *Erasmoneura margaritae* Dmitriev & Dietrich sp.n. (Fig. 63)

Description: Length 2.7–2.9 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe angulate; dorsal appendages with distinct basal suture, but not movably articulated, simple, not extended beyond pygofer apex, straight or very slightly curved in dorsal view, slightly curved downward in lateral view. Second point of style apex very short, tooth like; third point elongate, about as long as distance between other two points; angle between basal and third points about 90°. Aedeagus with preatrium shorter than shaft; shaft curved ventrally, slender in lateral view, smooth, depressed in crosssection, with long dorsal distal lobe, with lateral lobes at base; distal processes long, apical, slender. Dorsum reddish brown; vertex mostly dark, with small pale spots, midline pale or dark; anteclypeus pale, concolorous with rest of face; pronotum almost entirely dark, with three pale specks at anterior margin. Mesonotum almost entirely dark; thoracic venter with dark mesosternum, remainder pale; forewing almost entirely dark, with pale spot at costal margin, and smoked apices.

Diagnosis: *E. margaritae* sp.n. is similar to *E. rubricata* Van Duzee, but the aedeagus shaft is longer and curved dorsally, its dorsal distal lobe is longer, its distal processes are shorter and directed laterad, and the overall coloration is darker.

Type locality: Holotype ♂, USA, Illinois, Iroquois Co., on *Hypericum* sp., 25 IX 1962 (Ross & Ross), (INHS).



Studied material: Paratypes: 10 ♂, 4 ♀, the same label data (INHS, 1 ♂ MEM). Other studied material from Illinois excluded from paratypes.

Distribution: Illinois.

Host plants: *Hypericum sp.*

Note: The species is named after the first author's wife Margarita Dmitrieva.

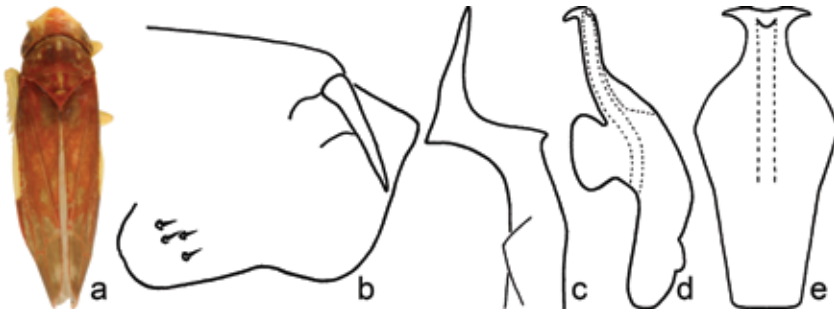


Figure 63. *E. margaritae* sp.n. a – holotype

64. *Erasmoneura emeljanovi* Dmitriev & Dietrich sp.n. (Fig. 64)

Description: Length 2.6–3 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe angulate; dorsal appendages with distinct basal suture, but not movably articulated, simple, not extended beyond pygofer apex, straight, slightly curved upward in lateral view; ventral appendages absent. Second point of style apex very short, toothlike; third point elongate, longer than distance between other two points; angle between basal and third points less than 90°. Aedeagus with preatrium about as long as shaft; shaft symmetrical, curved dorsally, slender in lateral view, smooth, round in crosssection, with long dorsal distal lobe; ventral processes absent; distal processes short, apical, toothlike. Coloration uniformly pale yellow, without pattern.

Diagnosis: *E. emeljanovi* sp.n. is similar to *E. mixta* Beamer, but the aedeagus shaft is curved dorsally, with the distal lobe much longer.

Type locality: Holotype ♂, USA, South Carolina, Marion Co., Mullins, on *Hypericum sp.*, 5 V 1932 (Oman), (KSEM).

Studied material: Paratypes: 9 ♂, 9 ♀, the same label data.

Distribution: Known only from type locality in South Carolina.

Host plants: *Hypericum sp.*

Note: The species is named in honor of Prof. Alexandr F. Emeljanov (Zoological Institute, Russian Academy of Sciences, St. Petersburg), Ph.D. advisor of the first author.

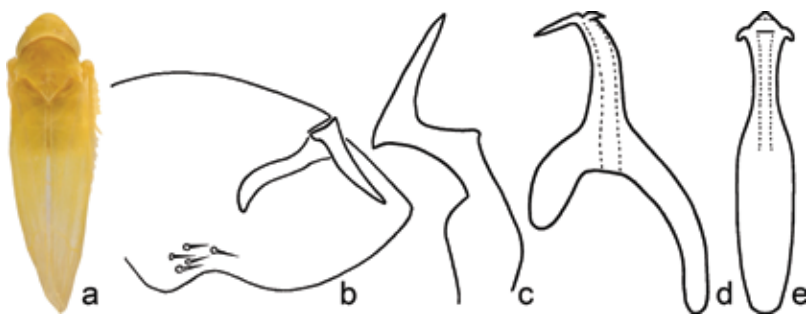


Figure 64. *E. emeljanovi* sp.n. a – holotype.

65. *Erasmoneura mixta* (Beamer, 1932) (Fig. 65)

Erythreurena mixta Beamer, 1932i:183

Erasmoneura mixta Dietrich & Dmitriev, 2006:140

Description: Length 2.4–2.7 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages simple, not extended beyond pygofer apex, slightly curved upward in lateral view. Second point of style apex very short, tooth like; third point of style apex elongate, about as long as distance between other two points; angle between basal and third points about 90°. Aedeagus with preatrium about as long as shaft; shaft curved ventrally, slender in lateral view, round in crosssection, with long dorsal distal lobe, with lateral lobes at base; distal processes long, apical. Dorsum yellow or pink; anteclypeus pale, concolorous with rest of face or darker; thoracic venter entirely pale or entirely dark.



Type locality: Holotype ♂, USA, Florida, Hillsborough Co., Plant City, on *Hypericum fasciculatum*, 15 VIII 1930 (Beamer), (KSEM).

Distribution: Southeastern USA.

Host plants: *Hypericum fasciculatum*, *H. aspalathoides*.

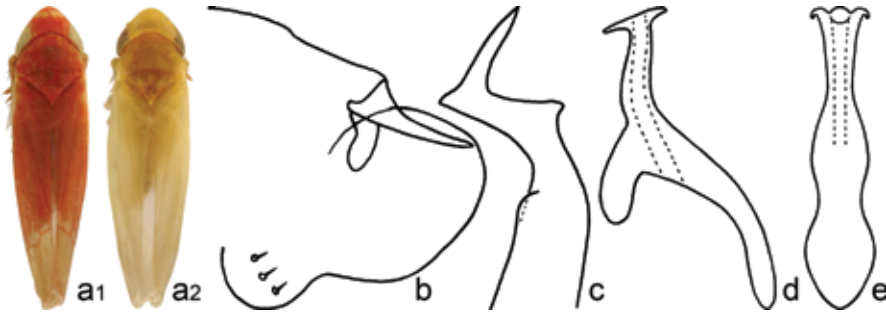


Figure 65. *E. mixta* Beamer. a1, a2 – color variations.

66. *Erasmoneura bipentagona* (Beamer, 1927) (Fig. 66)

Erythreurena bipentagona Beamer, 1927:31

Erasmoneura bipentagona Dietrich & Dmitriev, 2006:140

Description: Length 2.7 mm. Dorsum yellow with reddish brown color pattern; vertex unicolorous, pale; anteclypeus pale, concolorous with rest of face; pronotum almost entirely dark; mesonotum pale, with dark lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewings with oblique vittae forming zigzag pattern; clavus largely dark; dark spot at costal margin; apical cell II with distal spot; inner apical cell without brown spot.



Type locality: Holotype ♀, USA, Kansas, Douglas Co., (Beamer), (KSEM).

Distribution: Known only from the type locality in eastern Kansas.

Host plants: Unknown.

Notes: The species is known only from the female holotype. Based on the shape of female sternite VII and color pattern, it may be related to *E. margaritae*.



Figure 66. *E. bipentagona* Beamer.

Genus *Rossmoneura* Dietrich & Dmitriev, 2006*Rossmoneura* Dietrich & Dmitriev, 2006:148 (Type: *Erythroneura tecta* McAtee, 1920)

Description: Length 2.5–3.6 mm, moderately broad. Head narrower than pronotum; crown foremargin weakly produced, broadly rounded apically; ocelli absent; face depressed in profile, less than 45° from horizontal. Forewing outer apical cell about 2X as long as wide; second apical cell quadrate (ir crossvein present); third apical cell parallel sided, straight; CuP shorter than segment of CuA between Cu and MP; basal segment of MP shorter than basal segment of CuA; inner apical cell with distinctly angulate base; vannal vein on forewings not visible. Hindwing submarginal vein not extended to wing apex; RA vein present; MP and CuA touching at one point or separated by m-cu crossvein, convergent distally. Front femur AV row with one basal seta distinctly larger than others; PV row without fine basal setae. 2S abdominal apodemes narrow, or broad, extended to posterior margin of sternite III. Pygofer with apex not extended to apex of subgenital plate; lobe rounded; dorsal emargination extended to base of segment; basolateral setae in distinct group, small; with rigid setae on internal surface. Pygofer dorsal appendages not articulated; simple; ventral appendages absent. Sternite IX with median longitudinal internal ridge. Subgenital plates free; lateral margin with angulate subbasal projection; section basad of medial constriction shorter than distal section; with four basal macrosetae uniseriate along margin; with distinct marginal rigid setae forming continuous row. Style preapical lobe prominent; apex with three points; second point long, often longer than third; third point subequal in size or shorter than second; angle between basal and third points about 90°. Aedeagus articulated to connective; dorsal apodeme broadly expanded in lateral view, with distinct V-shaped ligaments connected to pygofer appendages; shaft without dorsal process; with small dorsal distal lobe; with unpaired short ventral process placed basally or near midlength of shaft, close to shaft. Connective median anterior lobe absent; arms long; stem well developed, depressed. Anal tube without processes. Dorsum yellow or white, with reddish brown color pattern; vertex usually with pair of dark preapical spots.

Distribution: Central and eastern USA, southern Canada.**Host plants:** Herbs.**Key to Species of the Genus *Rossmoneura***

1. Pygofer dorsal appendage straight in lateral view (Fig. 67b). 67. **R. carbonata** McAtee
 1'. Pygofer dorsal appendage curved upward in lateral view (Figs. 68b, 69b). 2
 2(1). Pygofer dorsal appendage only slightly curved in lateral view (Fig. 68b).
 68. **R. tecta** McAtee
 2'. Pygofer dorsal appendages hook-shaped in lateral view (Fig. 69b). 69. **R. calva** Beamer

67. *Rossmoneura carbonata* (McAtee, 1920) (Fig. 67, Plate 1g)*Erythroneura tecta* var. *carbonata* McAtee, 1920:289*Erythroneura carbonata* Beamer, 1946:22*Rossmoneura carbonata* Dietrich & Dmitriev, 2006:149

Description: Length 2.5–3 mm. 2S abdominal apodemes large, broad, reach 3S posterior margin. Pygofer lobe rounded; dorsal appendages extended beyond pygofer apex, straight in lateral view. Second point of style apex longer than third; third point very short. Aedeagus with preatrium about as long as shaft; shaft straight and broad in lateral view; round in crosssection, with small dorsal distal lobe; with ventral unpaired process arising near midlength of shaft; distal processes absent. Dorsum yellow or white, with brownish or reddish brown color pattern; vertex with pair of black preapical spots; anteclypeus brown or black. Pronotum mostly dark; mesonotum pale, with black lateral triangles; thoracic venter with dark mesosternum, remainder pale. Forewing mostly dark, with several pale specks, large spots at base and apex of clavus, and at costal margin.

Type locality: Holotype ♂, USA, Maryland, Montgomery Co., Plummers Island, 14 XII 1913

(McAtee), (KSEM).

Distribution: Central and eastern USA, southern Canada.

Host plants: *Steironema ciliatum*, *Glaux maritima*, *Lysimachia lanceolata*.

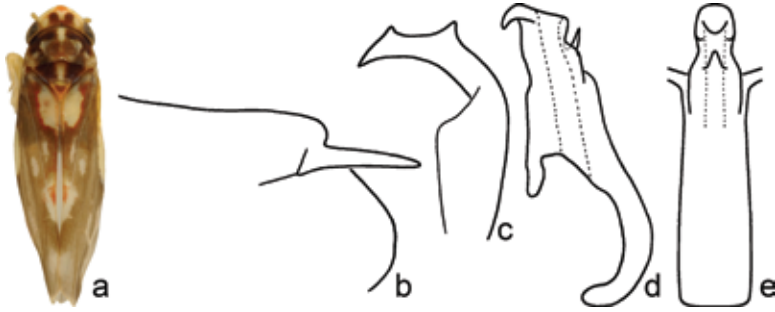


Figure 67. *R. carbonata* McAtee.

68. *Rossmoneura tecta* (McAtee, 1920) (Fig. 68)

Erythreura tecta McAtee, 1920:288

Erythreura sexpunctata Malloch, 1921:25

Rossmoneura tecta Dietrich & Dmitriev, 2006:149



Description: Length 3.1–3.6 mm. 2S abdominal apodemes small,

narrow, extended dorsomesad. Pygofer lobe rounded; dorsal ap-

pendages extended beyond pygofer apex, slightly curved upward

in lateral view. Second point of style apex longer than third; third

point very short. Aedeagus with preatrium about as long as shaft; shaft curved ventrally, broad in

lateral view; round in crosssection, with small dorsal distal lobe, ventral process unpaired, placed

basally, close to shaft, shorter than shaft; distal processes short, apical. Dorsum yellow or white,

with reddish or brownish color pattern; vertex with pair of black preapical spots; anteclypeus dark.

Pronotum dark with pale lateral margins or pale with two longitudinal strips; mesonotum pale,

with black lateral triangles; thoracic venter with dark mesosternum, remainder pale; forewing usu-

ally with oblique vittae forming zigzag pattern; clavus with separate basal and distal vittae.

Type locality: Holotype ♀, USA, Maryland, Montgomery Co., Plummers Island, among mullen

leaves, 25 I 1914 (McAtee), (USNM).

Distribution: Central and eastern USA.

Host plants: ? *Verbascum* sp.

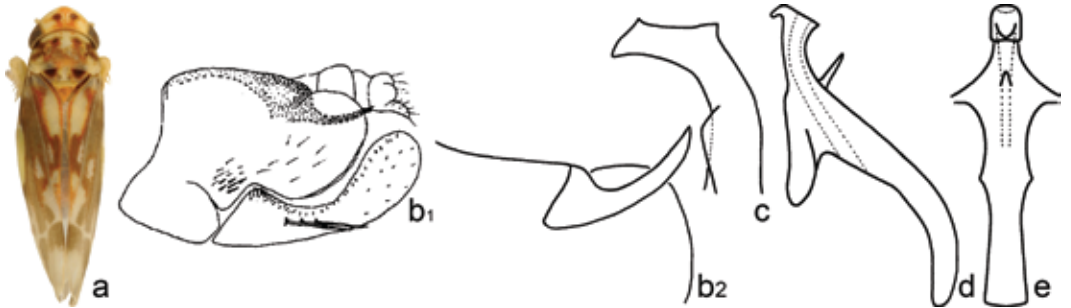


Figure 68. *R. tecta* McAtee. b1 – from Dietrich & Dmitriev 2006.

69. *Rossmoneura calva* (Beamer, 1946) (Fig. 69)*Erythroneura calva* Beamer, 1946:22*Rossmoneura calva* Dietrich & Dmitriev, 2006:149

Description: Length 3–3.6 mm. 2S abdominal apodemes small, narrow, extended dorsomesad. Pygofer lobe rounded; dorsal appendages not extended beyond pygofer apex, strongly curved upward in lateral view. Second point of style apex well developed; third point subequal in size to second. Aedeagus with preatrium about as long as shaft; shaft curved ventrally, broad in lateral view; round in crosssection, with small dorsal distal lobe; ventral process unpaired, arising near midlength of shaft; distal processes short, apical. Coloration similar to *R. carbonata* McAtee but paler and without dark spots on crown.

Type locality: Holotype ♂, Canada, Manitoba, Keld, 8 VIII 1937 (Beamer), (KSEM).

Distribution: North-central USA, southern Canada.

Host plants: Unknown.

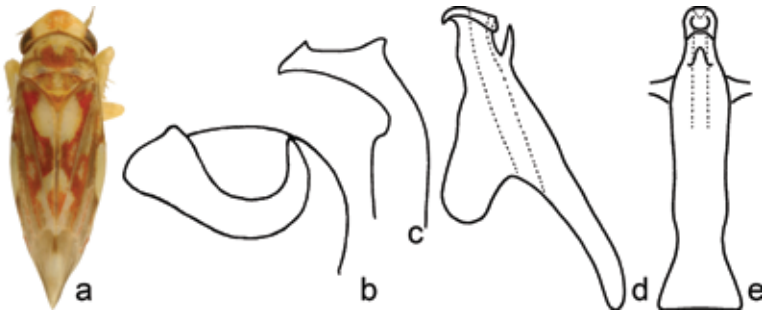


Figure 69. *R. calva* Beamer. b – from Hepner, unpublished.

Genus *Hymetta* McAtee, 1919*Hymetta* McAtee, 1919:121 (Type: *Tettigonia trifasciata* Say, 1825)

Description: Length 3–3.7 mm, moderately broad. Head narrower than pronotum; crown foremargin strongly produced and angulate medially; ocelli absent; face depressed in profile, less than 45° from horizontal. Forewing outer apical cell about 2X as long as wide; second apical cell quadrate (ir crossvein present); third apical cell widened distally, straight; CuP longer than segment of CuA between Cu and MP; basal segment of MP shorter than basal segment of CuA; inner apical cell with distinctly angulate base; Pcu not visible. Hindwing submarginal vein not extended to wing apex; RA present; MP and CuA touching at one point or separated by m-cu crossvein, convergent distally. Front femur AV row with one basal seta distinctly larger than others; PV row without fine basal setae. 2S abdominal apodemes large, broad, extended to posterior margin of sternite III. Pygofer apex not extended to apex of subgenital plate; lobe rounded; dorsal emargination extended to base of segment; basolateral setae in distinct group, small; apex with rigid setae on internal surface. Pygofer dorsal appendage with distinct basal suture, but not movably articulated, simple, not extended beyond pygofer apex, straight or very slightly curved in dorsal view, straight in lateral view; ventral appendage absent. Sternite IX without median longitudinal internal ridge. Subgenital plates free; lateral margin with angulate subbasal projection; section basad of medial constriction shorter than distal section; with four basal macrosetae, uniseriate, along margin; with distinct marginal rigid setae forming continuous row. Style preapical lobe prominent; apex truncate and expanded; third point absent. Aedeagus articulated to connective; dorsal apodeme broadly expanded in lateral view, triangular, without distinct connection to anal tube or pygofer appendages; preatrium about as long as shaft; shaft symmetrical, curved dorsally, broad in lateral view, without dorsal process, with basal processes, with or without distal processes. Connective median anterior lobe absent; arms long; stem well developed, depressed. Anal tube without processes. Dorsum yellow or white, with reddish or brown color pattern; vertex, pronotum, and mesonotum pale, apex of scutellum black; forewing with characteristic numerous irregular red or

brownish dots, with or without brown crossband; without dark spot at costal margin; apical cell II without distal spot; inner apical cell without brown spot.

Distribution: USA.

Host plants: Three species recorded from *Vitis* spp., host plants for other two species unknown.

Key to Species of the Genus *Hymetta*

- 1. Aedeagus with one pair of ventral processes; processes well separated from shaft (Fig. 71d). 2
- 1'. Aedeagus with two pairs of ventral processes; processes placed close to shaft (Figs. 73d, 74d). 4
- 2(1). Aedeagus with distal processes (Figs. 71d, 71e). 3
- 2'. Aedeagus without distal processes (Figs. 70d, 70e). 70. **H. kansasensis** Fairbairn
- 3(2). Aedeagus ventral processes evenly curved in lateral view; distal processes broad in lateral view (Fig. 71d). 71. **H. balteata** McAtee
- 3'. Aedeagus ventral processes S-curved in lateral view; distal processes narrow in lateral view (Fig. 72d). 72. **H. anthisma** McAtee
- 4(1). Aedeagus ventral processes narrow, shorter than shaft; shaft curved dorsad in lateral view (Fig. 73d). 73. **H. trifasciata** Say
- 4'. Aedeagus ventral processes as long or longer than shaft; one pair much broader than another; shaft straight in lateral view (Fig. 74d). 74. **H. arizoniana** Fairbairn

70. *Hymetta kansasensis* Fairbairn, 1928 (Fig. 70)

Hymetta kansasensis Fairbairn, 1928b:90

Description: Length 3.2–3.5 mm. Aedeagus depressed in crosssection; apex truncate in ventral view; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus; distal processes absent. Coloration as described for genus.

Type locality: Holotype ♀, USA, Kansas, Douglas Co., 1925 (Lawson), (KSEM).

Distribution: Central and southeastern USA.

Host plants: *Vitis* spp.

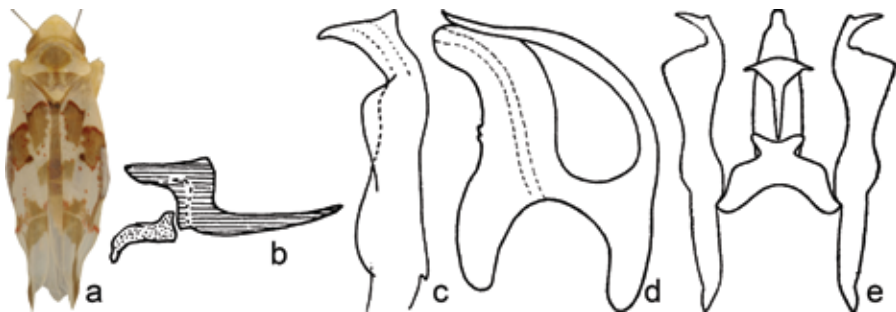


Figure 70. *H. kansasensis* Fairbairn. e – from Fairbairn 1928b; b, c – from Ross 1965.

71. *Hymetta balteata* McAtee, 1919 (Fig. 71, Plate 1h)
Hymetta trifasciata var. *balteata* McAtee, 1919:123
Hymetta trifasciata var. *albata* McAtee, 1919:123, **syn.n.**
Hymetta balteata Fairbairn, 1928b:88
Hymetta balteata var. *mediana* Fairbairn, 1928b:89, **syn.n.**

Description: Length 3.1–3.4 mm. Aedeagus compressed in crosssection; apex truncate in ventral view; ventral processes placed basally, well separated from shaft, shorter than shaft, parallel to each other on ventral side of aedeagus; distal processes apical, flattened, triangular. Coloration variable, either as described for genus or paler overall.

Type locality: Holotype ♀, USA, Maryland, Montgomery Co., Plummers Island, 14 XII 1913 (McAtee), (USNM).

Distribution: Central and eastern USA.

Host plants: *Vitis* spp.

Note: In the original description (McAtee 1919) recorded the collection date of the holotype incorrectly as 4 XII 1913.

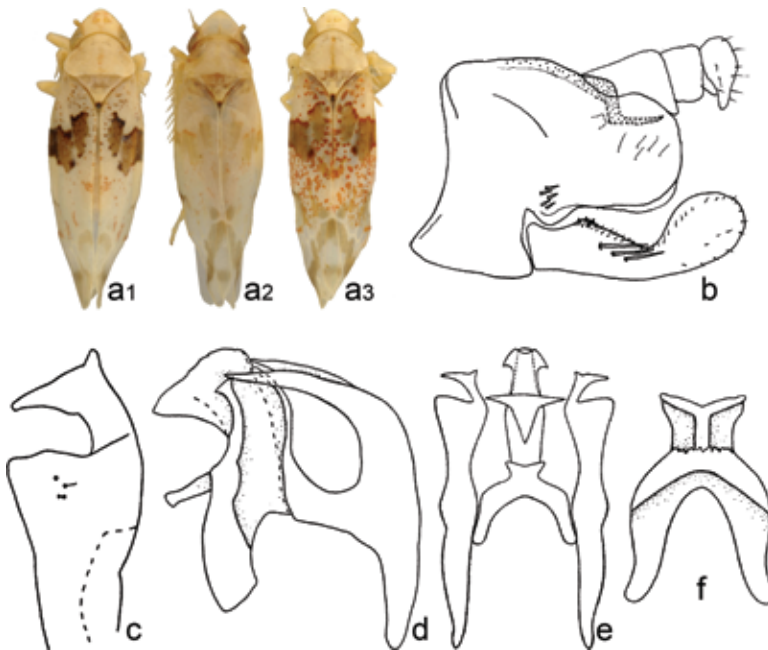


Figure 71. *H. balteata* McAtee. a2 – var. *albata*; a3 – var. *mediana*. e – from Fairbairn 1928b; c, d, f – from Young 1952; b – from Dietrich & Dmitriev 2006.

72. *Hymetta anthisma* McAtee, 1919 (Fig. 72)
Hymetta trifasciata var. *anthisma* McAtee, 1919:123
Hymetta distincta Fairbairn, 1928b:87, **syn.n.**
Hymetta balteata var. *anthisma* Fairbairn, 1928b:89
Hymetta anthisma Osborn, 1928b:352

Description: Length 3.3–3.6 mm. Aedeagus round in crosssection; apex truncate in ventral view; ventral processes placed basally, well separated from shaft, longer than shaft, parallel to each other on ventral side of aedeagus, sinuate in lateral view; distal processes subapical, slightly flattened. Coloration



typical for genus, wings usually densely covered with red dots.

Type locality: Holotype ♀, USA, Texas, Dallas, on *Vitis sp.*, 12 IX 1907, (USNM).

Distribution: Central and eastern USA.

Host plants: *Vitis* spp.

Note: Fairbairn (1928b) mistakenly listed *H. anthisma* McAtee as a variety of *H. balteata* McAtee. Young (1952) listed the former as a separate species.

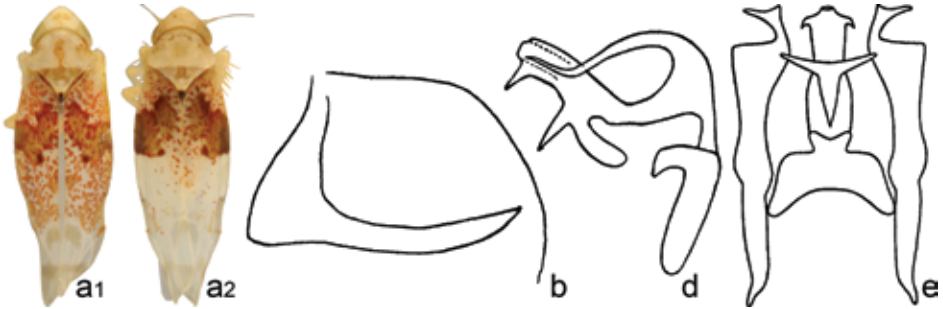


Figure 72. *H. anthisma* McAtee. a2 – var. *distincta*; d, e – from Fairbairn 1928b; b – from Hepner unpublished.

73. *Hymetta trifasciata* (Say, 1825) (Fig. 73)

Tettigonia trifasciata Say, 1825:343

Typhlocyba trifasciata Woodworth, 1889:213

Typhlocyba trifasciata Osborn, 1900:12, missp.

Erythronaura trifasciata Van Duzee, 1916:77

Hymetta trifasciata McAtee, 1919:121

Description: Length 3–3.4 mm. Aedeagus compressed in crosssection; apex acuminate in ventral view; two pairs of ventral processes placed basally, close to shaft, short; distal processes absent. Coloration as described for genus.

Type locality: Neotype ♂, USA, Illinois, Urbana, on *Cercis canadensis*, 19 IX 1934, (INHS) – here designated.

Distribution: Central and eastern USA.

Host plants: *Vitis* spp.

Note: Because Say’s holotype is lost, we designate a neotype to stabilize the concept of this species, the type of the genus. This concept equals that of previous revisers (Fairbairn 1928b, Young 1952).

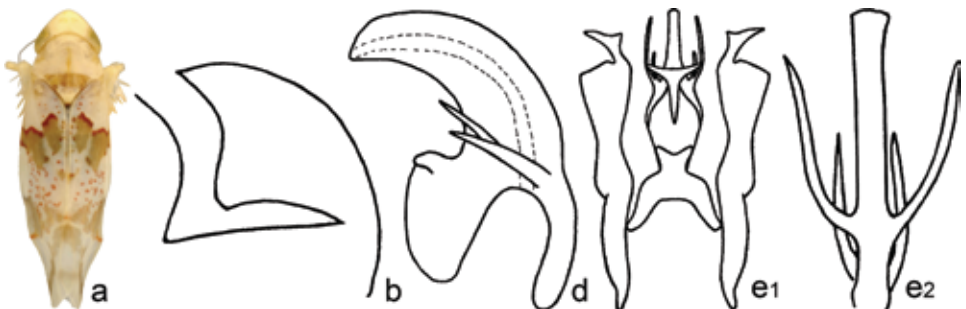


Figure 73. *H. trifasciata* Say. e1 – from Fairbairn 1928b; b, d, e2 – from Hepner unpublished.

74. ***Hymetta arizoniana*** Fairbairn, 1928 (Fig. 74)*Hymetta arizoniana* Fairbairn, 1928b:90

Description: Length 3.3–3.7 mm. Aedeagus round in cross-section; apex truncate in ventral view; two pairs of aedeagus ventral processes placed basally, close to shaft, placed basally; one pair of processes longer than shaft flattened, another pair not flattened, little shorter than shaft; distal processes absent. Coloration typical for genus.

Type locality: Holotype ♂, USA, Arizona, Coconino Co., 13 VIII 1927 (Beamer), (KSEM).

Distribution: Arizona.

Host plants: Unknown.

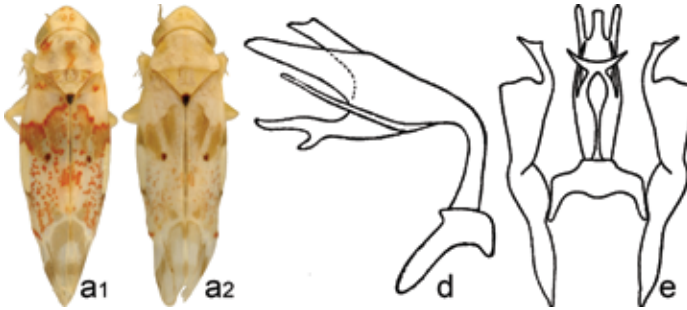


Figure 74. *H. arizoniana* Fairbairn. a1, a2 – color variations. d, e – from Fairbairn 1928b.

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