

## Oklahoma Treehoppers (Homoptera, Membracidae)

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Treehoppers are mostly active, rather abundant and often bizarre insects. They inhabit a variety of trees, principally oaks, and herbaceous vegetation. As would be expected in Oklahoma, the tree-inhabiting forms largely are found in the more wooded eastern sections, while those that frequent herbs or both herbs and trees are found rather widely distributed.

Until recently Oklahoma treehoppers have been neglected. References occur in certain of my previous papers (Dennis, 1960, 1962, 1963, 1964a, 1964b).

This paper includes keys for the determination of Oklahoma species as well as county distribution records and host plants when known. Specimens collected at both "black" and "white" light traps previously have been reported (Dennis, 1964a).

This work was supported in part by Frontiers of Science Foundation of Oklahoma. Special thanks are due James Harlow, Executive Vice President of this organization. The following people loaned material for study or participated in collecting: George Byers of the University of Kansas, W. A. Drew and James Shaddy of Oklahoma State University, Dan Shorter and LeRoy Rader of Northwestern State College, Thomas Gray and Foster Mayer of Southwestern State College, E. Phil Rouse of the University of Arkansas and two of my sons, Al and Roy Dennis. Richard Froeschner of the U.S. National Museum provided collection records. To all of these I wish to express my grateful appreciation.

### KEY TO SUBFAMILIES\*

- |       |   |                    |
|-------|---|--------------------|
| 1. a) | Scutellum distinctly visible .....  | I. Centrotinae     |
|       | b) Scutellum concealed by pronotum .....  | 2                  |
| 2. a) | Tibiae of first two pairs of legs foliaceous, tibiae of third pair of legs simple ..... | II. Membracinae    |
|       | b) Tibiae of all legs simple .....  | 3                  |
| 3. a) | Hind tarsi shorter than others .....  | III. Hoplophorinae |
|       | b) Hind tarsi at least as long as others .....  | IV. Smillinae      |

### I. SUBFAMILY CENTROTINAE

*Microcentrus caryae* (Fitch) is the only species of this subfamily known from Oklahoma.

\*All determinations have been made by me.



6. a) Suprahumeral horns minute ..... *Tortistilus curvata* (Caldwell) ..... 7  
 b) Suprahumeral horns not minute ..... 7
7. a) Pronotum brown with light transverse bands ..... 8  
 b) Pronotum green without transverse bands ..... 9
8. a) Pronotum very hairy, with two dark brown transverse bands; elytra clouded ..... *Stictocephala dicerus* (Say) ..... 9  
 b) Pronotum scantily haired, with sides ferruginous and lacking definite dark bands; elytra hyaline or nearly so ..... *Stictocephala albescens* (Van Duzee) ..... 9
9. a) Venter black; pronotum of male often strongly marked with black ..... *Stictocephala basalis* (Walker) ..... 10  
 b) Not as above ..... 10
10. a) Metopidium densely haired ..... *Spissistilus borealis* (Fairmaire) ..... 11  
 b) Metopidium at most scantily haired ..... 11
11. a) Larger, females 9-11 mm. long, males 8.0-9.1 mm. long ..... 12  
 b) Smaller, females 7.3-8.3 mm. long, males 7.2-7.4 mm. long ..... 13
12. a) Pronotum with metopidium concave ..... *Stictocephala taurina* (Fitch) ..... 13  
 b) Pronotum with metopidium convex or straight ..... *Stictocephala bubalus* (Fabricius) ..... 13
13. a) More robust; suprahumeral horns longer, somewhat recurved and elevated; 8-9 mm long ..... *Stictocephala constans* (Walker) ..... 14  
 b) More slender; suprahumeral horns shorter, only slightly recurved and elevated; 6-7 mm long ..... *Stictocephala palmeri* (Van Duzee) ..... 14

#### TRIBE TELAMONINI

##### Key to genera

1. a) Pronotum with dorsal horn or crest ..... 2  
 b) Pronotum without dorsal horn or crest; either low and rounded or high, compressed foliaceous ..... 6
2. a) Pronotum with horn on anterior part situated above or in front of the humeral angles ..... 3  
 b) Pronotum with a crest, most of which is situated behind the humeral angles ..... 4
3. a) Pronotum with horn extending anteriorly ..... *Thelia*  
 b) Pronotum with horn erect, compressed ..... *Glossonotus*
4. a) Pronotum with crest quadrangular, slightly sinuate or rounded above, variable but not definitely stepped, pyramidal or lobed ..... *Telamona*  
 b) Pronotum with crest neither quadrangular nor slightly sinuate nor rounded above but definitely stepped, pyramidal, or lobed ..... 5
5. a) Pronotum with crest having dorsum definitely stepped, anterior lobe high and rounded, posterior lobe lower and quadrangular ..... *Heltria*  
 b) Pronotum with crest pyramidal; posteriorly may be sinuate, with a slight step on the posterior slope, or with sinuation or step absent ..... *Palonica*
6. a) Pronotum low and rounding in frontal aspect ..... *Carynota*  
 b) Pronotum high, compressed and foliaceous ..... *Archasia*



Key to species of *Archasia*

1. a) Pronotum high and foliaceous, overhanging in front ..... *galeata* (Fabricius)
- b) Pronotum not overhanging in front ..... 2
2. a) Front of pronotum very nearly vertical ..... *belfragei* Stal
- b) Front of pronotum sloping posteriorly ..... *pallida* Fairmaire

## TRIBE POLYGLYPTINI

## Key to genera

1. a) Pronotum neither elevated nor rugose; elytra with terminal cell transverse ..... *Vanduzea*
- b) Pronotum elevated and rugose; elytra with terminal cell triangular ..... 2
2. a) Pronotum strongly elevated and with a deep median notch ..... *Entylia*
- b) Pronotum slightly elevated and slightly depressed before the middle ..... *Pubilia*

Key to species of *Vanduzea*

## Females

- Larger, 5.6-6.1 mm. long ..... *arquata* (Say)  
 Smaller, 4.2-4.8 mm. long ..... *triguttata* (Burmeister)

## Males

- Larger, 4.3-4.9 mm. long; abdominal tergite IX with oblique transverse carina not reaching the middle of posterior margin ..... *arquata* (Say)  
 Smaller, 3.6-3.9 mm. long; abdominal tergite IX with oblique transverse carina extending to below the middle of the posterior margin ..... *triguttata* (Burmeister)

*Entylia*

*Entylia bactriana* Germar is the only Oklahoma species of this genus.

Key to species of *Pubilia*

- Pronotum with conspicuous, elevated longitudinal ridges ..... *conca* (Say)  
 Pronotum with conspicuous, elevated reticulations ..... *reticulata* Van Duzee

## TRIBE SMILINI

## Key to genera

1. a) Corium without cross vein connecting the two inner longitudinal veins ..... *Smilia*
- b) Corium with cross vein connecting the two inner longitudinal veins ..... 2
2. a) Pronotum with dorsum regularly rounded, not at all compressed or elevated ..... *Ophiderma*
- b) Pronotum with dorsum compressed, usually moderately elevated, may be strongly elevated ..... 3
3. a) Pronotum moderately inflated before and behind mid-dorsal foveae ..... *Xantholobus*
- b) Pronotum very slightly or not at all inflated ..... *Cyrtolobus*

*Smilia*

The genus *Smilia* is represented in Oklahoma by *Smilia camelus* Germar.

Key to species of *Ophiderma*

## Females

1. a) Color bright green .....2
- b) Color gray, brown or black with lighter markings .....3
2. a) Larger (7.3-8.0 mm.); pronotum usually marked with reddish posteriorly ..... *flava* Goding
- b) Smaller (6.2-7.0 mm.); pronotum not marked with reddish..... *evelyna* Woodruff
3. a) Color rich brown with prominent, broad, yellow marginal vitta about halfway along pronotum ..... *flavicephala* Goding
- b) Not as above .....4
4. a) Elytra with dark band across the middle .....5
- b) Elytra without dark band across the middle .....7
5. a) Larger (7.4-8.8 mm.) ..... *salamandra* Fairmaire
- b) Smaller (5.7-6.2 mm.) .....6
6. a) Pronotum gray, without reddish shades; length 6.0-6.2 mm..... *grisea* Woodruff
- b) Pronotum testaceous to reddish-brown; length 5.7-6.1 mm..... *definita* Woodruff
7. a) Larger (7.4-8.8mm.); more robust; pronotum moderately hairy..... *salamandra* Fairmaire
- b) Smaller (6.3-6.9 mm.); more slender, pronotum densely hairy..... *pubescens* (Emmons)

## Males

1. a) Pronotum light brown, anterior half usually mottled with yellow-green, vittae and longitudinal dorsal stripe usually present on dorsal carina white to yellow ..... *evelyna* Woodruff
- b) Pronotum not as above .....2
2. a) Pronotum rich brown with prominent, broad, yellow marginal vitta about halfway along pronotum ..... *flavicephala* Goding
- b) Pronotum not as above .....3
3. a) Elytra with dark band across the middle .....4
- b) Elytra without dark band across the middle .....5
4. a) Smaller (5.0-5.5 mm.); more slender; pronotum light reddish-brown to dark brown to black, pattern well defined or obscured, scantily haired ..... *definita* Woodruff
- b) Larger (5.5-6.0 mm.); more robust; pronotum dark brown to black, pattern usually distinct, moderately hairy ..... *grisea* Woodruff
5. a) Pronotum reddish-brown to black, vittae usually bright yellow, may be paler; length 6.2-7.2 mm. .... *flava* Goding
- b) Pronotum not as above.....6
6. a) Smaller (5.5-6.0 mm.); pronotum dark brown to black with vittae distinct, moderately hairy ..... *grisea* Woodruff
- b) Larger (6.0-7.5 mm.); pronotum not as above .....7
7. a) Smaller (6.0-6.5 mm.); more slender, pronotum densely hairy, vittae distinct ..... *pubescens* (Emmons)
- b) Larger (6.8-7.5 mm.); more robust; pronotum moderately hairy, vittae varying from distinct to almost obscured ..... *salamandra* Fairmaire

Key to species of *Xantholobus*

## Females

1. a) Pronotum strongly elevated behind the humeral angles.....*muticus* (Fabricius) 2  
b) Pronotum lower ..... 2
2. a) Larger, at least 7.0 mm. long; pronotum light to dark brown with lateral narrow yellow border .....*lateralis* Van Duzee  
b) Smaller, not over 6.5 mm. long; pronotum not as above ..... 3
3. a) Length 5.9-6.4 mm.; pronotum pale yellowish, markings obscure.....*intermedius* (Emmons)  
b) Length 4.0 mm. or less; pronotum dark brown or black, often intensely so with obscure anteapical vitta .....*nitidus* Van Duzee

## Males

1. a) Pronotum dark fuscous to black with lateral narrow yellow border .....*lateralis* Van Duzee  
b) Pronotum not as above ..... 2
2. a) Larger, 6.8-7.1 mm. long .....*muticus* (Fabricius)  
b) Smaller, not over 6.4 mm. long ..... 3
3. a) Length 5.0-6.0 mm. ....*intermedius* (Emmons)  
b) Length 3.0-4.0 mm. ....*nitidus* Van Duzee

Key to species of *Cyrtolobus*

## Females

1. a) Pronotum green, without anterior oblique or anteapical vittae ..... 2  
b) Pronotum not as above ..... 4
2. a) Smaller (5.3-5.8 mm.) .....*inermis* (Emmons)  
b) Larger (6.5-7.6 mm.) ..... 3
3. a) Pronotum pale green, irrorate with white or paler green.....*dixianus* Woodruff  
b) Pronotum not as above .....*helena* Woodruff
4. a) Elytra with prominent dark band across the middle.....*pallidifrontis* (Emmons)  
b) Elytra not as above ..... 5
5. a) Pronotum brown with broad marginal yellow bands extending  $\frac{3}{4}$  of the way back; anteapical vitta yellow .....*flavolatus* Woodruff  
b) Pronotum not as above ..... 6
6. a) Larger (8.4 mm. or longer); pronotum abruptly elevated behind humeral angles .....*tuberosus* (Fairmaire)  
b) Smaller (7.7 mm. or shorter); pronotum not as above ..... 7
7. a) Larger (7.4-7.7 mm.); pronotum without anterior oblique vitta.....*arcuatus* (Emmons)  
b) Smaller (7.0 mm. or shorter); pronotum with anterior oblique vitta ..... 8
8. a) Pronotum deep reddish-brown with a prominent mid-dorsal spot; pronotum tapering to the apex which attains, or almost attains tip of elytra .....*fenestratus* (Fitch)  
b) Pronotum not as above ..... 9

9. a) Pronotum pale yellow green, vittae obsolete, metopidium showing gradations from no spotting through a dark spot on each side to being almost entirely dark ..... *maculifrons* (Emmons)  
 b) Pronotum not as above ..... 10
10. a) Pronotum with anteapical vitta ..... 11  
 b) Pronotum without anteapical vitta ..... 17
11. a) Elytra almost wholly reddish-brown ..... *fuscipennis* Van Duzee  
 b) Elytra not as above ..... 12
12. a) Pronotum gray before the anterior oblique vitta, gray to reddish behind ..... *griseus* Van Duzee  
 b) Pronotum not as above ..... 13
13. a) Pronotum highly arched, pale brown; metopidium often with black mottling; anterior oblique vitta bordered narrowly with reddish before and a wider red stripe behind ..... *fuliginosus* (Emmons)  
 b) Pronotum not as above ..... 14
14. a) Pronotum with a rather prominent brown or reddish-brown V-shaped mark between anterior oblique and anteapical vittae ..... 15  
 b) Pronotum not as above ..... 17
15. a) Pronotum strongly arched, with inflations before and behind mid-dorsal spot ..... *funkhouseri* Woodruff  
 b) Pronotum not as above ..... 16
16. a) Mid-dorsal spot closely approaching anterior oblique vitta, nearly cutting off the anterior arm of the brown V ..... *clarus* Woodruff  
 b) Pronotum not as above ..... *vau* (Say)
17. a) Pronotum with prominent reddish-brown supra-humeral bands, anterior oblique vitta bordered before by a narrow black line and behind by a brownish-black line arising broadly at the pronotum margin and narrowing superiorly ..... *discoidalis* (Emmons)  
 b) Pronotum not as above ..... *fuliginosus* (Emmons)

## Males

1. a) Pronotum with yellow or green markings ..... 2  
 b) Pronotum without yellow or green markings ..... 4
2. a) Pronotum greenish-yellow anteriorly, brown to black posteriorly ..... *helena* Woodruff  
 b) Pronotum not as above ..... 3
3. a) Pronotum bright green anteriorly with a broad anteapical brown band; irrorate with pale yellow, pale green or white ..... *dixianus* Woodruff  
 b) Pronotum brown with broad marginal yellow band extending  $\frac{3}{4}$  of the way back; anteapical vitta yellow ..... *flavolatus* Woodruff
4. a) Pronotum with distinct light border from eye to anterior oblique vitta ..... 5  
 b) Pronotum not as above ..... 6
5. a) Smaller (4.7-5.2 mm.); elytra mostly hyaline ..... *funkhouseri* Woodruff  
 b) Larger (5.5-5.7 mm.); elytra usually enfumed ..... *discoidalis* (Emmons)
6. a) Pronotum with anterior oblique vitta completely obliterated from basal  $\frac{1}{2}$  almost to dorsal carina; mid-elytral band often indicated ..... *pallidifrons* (Emmons)  
 b) Not as above ..... 7



7. a) Pronotum before anterior oblique vitta pale yellow-green, mottled with light brown or pale green, metopidium often with a pair of darker spots or one large spot, anterior oblique vitta frequently apparently transverse ..... *maculifrontis* (Emmons) 8  
 b) Pronotum not as above ..... 8
8. a) Elytra almost wholly reddish-brown ..... *fuscipennis* Van Duzee 9  
 b) Not as above ..... 9
9. a) Pronotum abruptly elevated behind humeral angles; longer (7.2 mm. or longer) ..... *tuberosus* (Fairmaire) 10  
 b) Pronotum not as above; shorter (6.4 mm. or shorter) ..... 10
10. a) Pronotum with mid-dorsal spot and anterior oblique vitta confluent ..... 11  
 b) Pronotum not as above ..... 12
11. a) Pronotum brown to black, border pale from eye to anterior oblique vitta ..... *discoidalis* (Emmons) 11  
 b) Pronotum dark testaceous, densely irrorate with black on metopidium and before anterior oblique vitta ..... *arcuatus* (Emmons) 11
12. a) Pronotum with vittae and mid-dorsal spot rather obsolete ..... *fenestratus* (Fitch) 13  
 b) Pronotum not as above ..... 13
13. a) Pronotum with brown V-shaped marking between anterior oblique vitta and mid-dorsal spot ..... 14  
 b) Pronotum not as above ..... 16
14. a) Anterior oblique vitta and anteapical vitta approaching and often confluent at margin of pronotum; arms of V of nearly uniform width ..... *vau* (Say) 15  
 b) Not as above ..... 15
15. a) Smaller (4.6-4.8 mm.) ..... *clarus* Woodruff 15  
 b) Larger (5.9-6.1 mm.) ..... *griseus* Van Duzee 15
16. a) Pronotum before anterior oblique vitta concolorous brown to black ..... *inermis* (Emmons) 17  
 b) Pronotum irrorate or mottled before anteapical vitta ..... 17
17. a) Smaller (5.1-5.7 mm.) ..... *fuliginosus* (Emmons) 17  
 b) Larger (6.2-6.4 mm.) ..... *arcuatus* (Emmons) 17

The following list enumerates county distributions and host records of Oklahoma treehoppers.

#### CENTROTINAE

*Microcentrus caryae* (Fitch)  
 County record: Pontotoc.  
 Host: Unknown.

#### MEMBRACINAE

*Campylenchia latipes* (Say)  
 County records: Alfalfa, Atoka, Bryan, Caddo, Carter, Choctaw, Cleveland, Creek, Custer, Garfield, Garvin, Harper, Hughes, Johnston, Kay, Kiowa, Latimer, LeFlore, Love, McClain, McCurtain, McIntosh, Marshall, Noble, Nowata, Osage, Pawnee, Payne, Pittsburgh, Pontotoc, Pottawatomie, Seminole, Sequoyah.  
 Hosts: alfalfa, black locust, "grass", little ragweed, *Psoralea tenuiflora* Pursh, "weeds", white sweet clover, yellow sweet clover.

*Enchenopa binotata* (Say)

County records: Cotton, Creek, Delaware, Dewey, McCurtain, Noble, Pawnee, Payne, Pontotoc, Seminole.

Hosts: black locust, buck brush, chinquapin oak, redbud, *Smilax* sp. *Smilax rotundifolia* L., white sweet clover.

## HOPLOPHORINAE

*Platycotis vittata* (Fabricius)

County records: Choctaw, Latimer, McCurtain.

Host: post oak.

## SMILIINAE, CERESINI

*Acutalis tartarea* (Say)

County records: Choctaw, Johnston, McCurtain, Pontotoc.

Host: "weeds."

*Microtalis calva* (Say)

County records: Adair, Bryan, Choctaw, Cotton, Creek, Custer, Delaware, Dewey, Garfield, Hughes, LeFlore, McCurtain, Marshall, Murray, Noble, Okmulgee, Payne, Roger Mills, Sequoyah.

Hosts: alfalfa, honey locust, giant ragweed, ironweed, "marsh weeds", post oak, yellow sweet clover.

*Spissistilus borealis* (Fairmaire)

County records: Alfalfa, Bryan, Carter, Choctaw, Cleveland, Delaware, Garvin, Johnston, LeFlore, McCurtain, Mayes, Payne, Sequoyah, Tillman.

Hosts: alfalfa, "weeds."

*S. festinus* (Say)

County records: Alfalfa, Atoka, Caddo, Choctaw, Cleveland, Comanche, Creek, Custer, Delaware, Dewey, Ellis, Garvin, Jackson, Kiowa, LeFlore, Logan, McCurtain, Murray, Noble, Okmulgee, Osage, Pawnee, Payne, Pushmataha, Sequoyah, Tillman, Tulsa, Washita.

Hosts: alfalfa, cotton, sweet clover.

*Stictocephala albescens* (Van Duzee)

County records: Caddo, Dewey, Pontotoc.

Host: white sweet clover.

*S. basalis* (Walker)

County records: Alfalfa, Mayes.

Host: sweet clover.

*S. bubalus* (Fabricius)

County records: Alfalfa, Beaver, Cherokee, Cleveland, Ellis, Garvin, Kay, McCurtain, Noble, Osage, Payne, Pontotoc, Roger Mills, Seminole, Sequoyah, Texas, Washington, Washita, Woodward.

Hosts: black locust, white sweet clover.

*S. constans* (Walker)

County records: Caddo, LeFlore, McCurtain, Pontotoc, Washita.

Hosts: haw, southern red oak.

*S. diceros* (Say)

County records: Alfalfa, Pushmataha, Sequoyah.

Host: unknown.

*S. lutea* (Walker)

County records: Atoka, Cleveland, Garvin, Hughes, Johnston, LeFlore, Love, McClain, McCurtain, Marshall, Murray, Noble, Pawnee, Payne, Pontotoc, Pottawatomie, Seminole.

Hosts: alfalfa, post oak, *Prunus sp.*, *Psoralea tenuiflora* Pursh, "weeds," white sweet clover, yellow sweet clover.

*S. palmeri* (Van Duzee)

County records: Latimer, LeFlore, McCurtain, Pawnee, Pontotoc.  
Hosts: chinquapin oak, "weeds."

*S. taurina* (Fitch)

County records: Adair, Cleveland, Delaware, Latimer, McCurtain, Mayes, Osage, Pontotoc, Woodward.  
Host: unknown.

*Tortistilus curvata* (Caldwell)

County record: Latimer.  
Host: unknown.

*T. inermis* (Fabricius)

County records: Atoka, Bryan, Canadian, Carter, Choctaw, Cleveland, Custer, Garvin, Jefferson, Johnston, Latimer, LeFlore, Love, Mayes, Murray, Noble, Payne, Pittsburg, Pontotoc, Pottawatomie, Tillman, Washita.  
Hosts: alfalfa, *Psoralea tenuiflora* Pursh, smooth sumac, Virginia creeper, "weeds," white sweet clover.

SMILIINAE, TELAMONINI

*Archasia belfragei* Stal

County record: Ottawa.  
Host: unknown.

*A. galeata* (Fabricius)

County records: Atoka, Choctaw, Pittsburg, Pontotoc, Stephens.  
Hosts: blackjack oak, chinquapin oak, post oak.

*A. pallida* (Fairmaire)

County record: McCurtain.  
Host: unknown.

*Carynota mera* (Say)

County records: Choctaw, Pontotoc.  
Host: bitternut hickory.

*Glossonotus acuminatus* (Fabricius)

County records: Carter, Pontotoc.  
Host: unknown.

*G. turriculatus* (Emmons)

County record: LeFlore.  
Host: unknown.

*Heliria cristata* (Fairmaire)

County record: Pontotoc.  
Host: unknown.

*Palonica pyramidata* (Uhler)

County records: Carter, Latimer, Payne.  
Host: blackjack oak.

*Telamona ampelopsidis* (Harris)

County record: Pottawatomie.  
Host: unknown.

*T. decorata* Ball

County records: Ottawa, Pottawatomie.  
Host: post oak.

- T. extrema* Ball  
County records: Latimer, Washington.  
Host: blackjack oak.
- T. monticola* (Fabricius)  
County records: Carter, Creek, Hughes, Kiowa, Murray, Noble, Nowata, Ottawa, Payne, Pontotoc, Pushmataha, Washita.  
Hosts: bitternut hickory, chinquapin oak, post oak, *Smilax* sp.
- T. reclinata* Fitch  
County records: Adair, McCurtain, Washington.  
Host: sweet gum.
- T. spreta* Goding  
County records: Pottawatomie, Woods.  
Host: unknown.
- T. tiliae* Ball  
County record: Pontotoc.  
Host: chinquapin oak.
- T. unicolor* Fitch  
County records: Creek, Delaware, Mayes, Pontotoc, Pushmataha.  
Host: bitternut hickory.
- T. westcotti* Goding  
County records: Delaware, Kiowa, McCurtain, Pontotoc.  
Host: unknown.
- Thelia bimaculata* (Fabricius)  
County record: Delaware.  
Host: unknown.

## SMILIINAE, POLYGLYPTINI

- Entylia bactriana* Germar  
County records: Atoka, Bryan, Caddo, Choctaw, Delaware, Johnston, McCurtain, Marshall, Ottawa, Payne, Pontotoc, Woodward.  
Hosts: cotton, giant ragweed, sweet gum, "weeds."
- Pubilia concava* (Say)  
County record: Pontotoc.  
Host: "weeds."
- P. reticulata* Van Duzee  
County records: Caddo, Garvin, Payne, Pontotoc.  
Hosts: alfalfa, black locust, ironweed, post oak, "weeds."
- Vanduzeea arquata* (Say)  
County records: Grady, Pawnee, Payne, Pontotoc, Seminole.  
Hosts: black locust, sweet clover, "weeds."
- V. triguttata* (Burmeister)  
County records: Beaver, Beckham, Blaine, Caddo, Cimarron, Cotton, Creek, Custer, Dewey, Ellis, Greer, Harmon, Harper, Jackson, Johnston, Kay, Kiowa, Love, McCurtain, Noble, Pawnee, Payne, Seminole, Texas, Tillman, Washita, Woods, Woodward.  
Hosts: alfalfa, bur oak, *Helianthus* sp., *Psoralea tenuiflora* Pursh, "weeds," white sweet clover, yellow sweet clover.

## SMILIINAE, SMILIINI

- Cyrtolobus arcuatus* (Emmons)  
County records: Adair, Choctaw, Cleveland, Coal, Delaware, Latimer, Marshall, Muskogee, Okmulgee, Pontotoc, Pottawatomie, Sequoyah.

Hosts: blackjack oak, post oak.

*C. clarus* Woodruff

County record: Latimer.

Host: unknown.

*C. discoidalis* (Emmons)

County records: Latimer, LeFlore, Washington.

Host: unknown.

*C. dixianus* Woodruff

County records: Atoka, Carter, Coal, Creek, Delaware, Haskell, Johnston, Lincoln, Love, McClain, McIntosh, Marshall, Muskogee, Pontotoc, Pottawatomie, Pushmataha, Sequoyah, Washita.

Hosts: blackjack oak, bur oak, post oak.

*C. fenestratus* (Fitch)

County records: Adair, Caddo, Carter, Cherokee, Choctaw, Love, McCurtain, Murray, Pontotoc, Pushmataha, Stephens, Washington, Woods.

Hosts: blackjack oak, post oak, Shumard's oak, southern red oak, "weeds", white oak.

*C. flavolatus* Woodruff

County record: LeFlore.

Host: unknown.

*C. fuliginosus* (Emmons)

County records: Adair, Atoka, Caddo, Coal, Cherokee, Creek, Delaware, Haskell, LeFlore, McCurtain, McIntosh, Mayes, Muskogee, Okmulgee, Osage, Payne, Pontotoc, Pushmataha, Sequoyah, Stephens, Washington.

Hosts: blackjack oak, black oak, post oak, Shumard's oak.

*C. funkhouseri* Woodruff

County record: McCurtain.

Host: unknown.

*C. fuscipennis* Van Duzee

County record: Ottawa.

Host: unknown.

*C. griseus* Van Duzee

County records: Johnston, Pontotoc.

Host: blackjack oak.

*C. helena* Woodruff

County records: Payne, Pontotoc.

Host: post oak.

*C. inermis* (Emmons)

County records: Atoka, Haskell, Latimer, LeFlore, Love, McIntosh, Muskogee, Osage, Payne, Pontotoc, Seminole, Sequoyah, Washington.

Hosts: bitternut hickory, blackjack oak, post oak, Shumard's oak, smooth sumac.

*C. maculifrontis* (Emmons)

County records: Atoka, Carter, Choctaw, Cleveland, Coal, Johnston, McCurtain, Marshall, Okmulgee, Pittsburg, Pontotoc, Seminole, Sequoyah, Stephens.

Hosts: bitternut hickory, blackjack oak, black oak, post oak, Shumard's oak, "weeds," white oak.

*C. pallidifrontis* (Emmons)

County records: Atoka, Carter, Choctaw, Cleveland, Coal, Hughes, Johnston, McClain, Pittsburg, Pontotoc, Seminole, Washington.  
Hosts: blackjack oak, chinquapin oak, post oak, "weeds."

*C. tuberosus* (Fairmaire)

County records: Atoka, Carter, Choctaw, Coal, Creek, Hughes, Johnston, Latimer, Love, McClain, McIntosh, Marshall, Murray, Muskogee, Nowata, Okmulgee, Ottawa, Payne, Pittsburg, Pontotoc, Pottawatomie, Stephens, Tulsa.  
Hosts: bitternut hickory, blackjack oak, black oak, chinquapin oak, hackberry, post oak.

*C. vau* (Say)

County records: Adair, Caddo, Carter, Choctaw, Cleveland, Hughes, Johnston, Latimer, LeFlore, McClain, McCurtain, Marshall, Mayes, Payne, Pittsburg, Pontotoc, Pushmataha, Seminole.  
Hosts: blackjack oak, chinquapin oak, post oak, Shumard's oak, sweet gum.

*Ophiderma definita* Woodruff

County record: LeFlore.  
Host: unknown.

*O. evelyna* Woodruff

County records: Cleveland, Creek, Delaware, Johnston, LeFlore, Love, McClain, Okfuskee, Payne, Pontotoc, Pottawatomie, Pushmataha, Seminole, Sequoyah, Washington.  
Hosts: blackjack oak, post oak, Shumard's oak, smooth sumac.

*O. flava* Goding

County records: Payne, Pontotoc.  
Hosts: blackjack oak, black oak, post oak.

*O. flavicephala* Goding

County records: LeFlore, Mayes, Payne, Pushmataha.  
Host: unknown.

*O. grisea* Woodruff

County records: Garvin, Pontotoc.  
Hosts: black locust, black oak.

*O. pubescens* (Emmons)

County records: Adair, Atoka, Carter, Cherokee, Choctaw, Coal, Cleveland, Creek, Delaware, Johnston, Latimer, McClain, McCurtain, McIntosh, Muskogee, Okmulgee, Osage, Payne, Pontotoc, Pottawatomie, Pushmataha, Seminole, Sequoyah, Washington, Washita.  
Hosts: blackjack oak, post oak, Shumard's oak, smooth sumac.

*O. salamandra* (Fairmaire)

County record: Pontotoc.  
Host: unknown.

*Smilia camelus* (Fabricius)

County records: Caddo, Carter, Cleveland, Comanche, Creek, Delaware, Dewey, Ellis, Garvin, Grant, Hughes, Johnston, Lincoln, Love, McClain, McCurtain, Marshall, Okmulgee, Payne, Pontotoc, Pottawatomie, Seminole, Sequoyah, Stephens, Washington, Washita.  
Hosts: blackjack oak, chinquapin oak, post oak, Shumard's oak, southern red oak.

*Xantholobus intermedius* (Emmons)

County record: McClain.  
Host: blackjack oak.

- X. lateralis* Van Duzee  
County record: Pontotoc.  
Host: bitternut hickory.
- X. muticus* (Fabricius)  
County records: Custer, Mayes, Payne, Pontotoc, Tulsa.  
Hosts: blackjack oak, bur oak.
- X. nitidus* Van Duzee  
County records: LeFlore, Pushmataha, Sequoyah.  
Host: "Brush."

## LITERATURE CITED

- Caldwell, J. S. 1949. A generic revision of the treehoppers of the tribe Ceresini in America north of Mexico, based on a study of the male genitalia. Proc. U.S. Nat. Museum 98 (3234): 491-521.
- Dennis, Clifford J. 1952. The Membracidae of Wisconsin. Trans. Wisconsin Acad. Sci. 41:129-152.
- ..... 1960. The genitalia of the buffalo treehopper, *Stictocephala bubalus* (Fabricius). Amer. Midland Naturalist 64 (2):459-473.
- ..... 1962. Headstand mechanism in *Telamona unicolor* Fitch (Homoptera, Membracidae). Entomol. News 73 (2): 44.
- ..... 1963. Membracidae in a southern Oklahoma woods. Proc. Oklahoma Acad. Sci. 43:95-98.
- ..... 1964a. Observations on treehopper behavior (Homoptera, Membracidae). Amer. Midland Naturalist 71 (2): 452-459.
- ..... 1964b. Membracidae of southeastern Oklahoma. Proc. Oklahoma Acad. Sci. 44:47-51.
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