

OKLAHOMA CICADIDAE (HOMOPTERA)

W. A. Drew, F. L. Spangler, and D. Molnar

Department of Entomology, Oklahoma State University, Stillwater, Oklahoma 74074

Twenty-four species of cicadas have been collected in Oklahoma. The purpose of this paper is to provide a convenient means by which these species may be identified. Four additional species that are likely to occur in the state have been included. Specimens examined may be found in the K. C. Emerson Entomology Museum, Oklahoma State University, and the Stovall Museum, University of Oklahoma.

Cicadas are most frequently observed during the late spring and throughout the summer. The peculiar vibrating sound produced by the males, often in chorus with numerous other males, is a familiar sound. Cicadas are typically found on tall grasses or clinging to the trunks and branches of trees. Female cicadas deposit their eggs under the bark of young tree branches and may cause appreciable damage.

Numerous articles by Davis (1-19) provide descriptions of Oklahoma species of cicadas. Papers by Lawson (20), Froeschner (21), and Simons (22) were of particular help in the preparation of this paper. The synonymy followed here is that of Metcalf (23) and Alexander and Moore (24). The distribution records are from specimens and records of the two above-mentioned museums as well as from the above literature.

KEY TO OKLAHOMA CICADIDAE

1. Medius (M) and cubitus (Cu) leaving arculus separately (Fig. 3. G) 2
Veins M and Cu leaving arculus together (Fig. 2. A) 7
2. Thorax almost entirely black, wing veins or basal areas of wings orange 3
Coloration not as described above .. 8
3. Anterior-most cross veins of front wings not clouded 4
Anterior-most cross veins of front wings covered by dark clouds 5
4. Wing spread 50 mm or more
Tibicinioides hesperia
Wing spread 45 mm or less
Okemagana synodica
5. Propleura reddish, lighter than pronotum
Magicicada septendecim

- and *Magicicada tredecim*
Propleura not reddish 6
6. Abdominal sterna black with a narrow apical band of brown or yellow, bands often interrupted medially; last tarsal segment with apical half or more black
Magicicada cassini
and *Magicicada tridecassini*
Abdominal sterna with brown or yellow apical bands, bands not interrupted; last tarsal segment brownish or yellow with at most the apical third dark
Magicicada septendecula
and *Magicicada tredecula*
 7. Number of cells anterior to Cu of hind wing reaching to wing margin is seven
Cicadetta calliope
Number of above cells is six
Cicadetta kansa
 8. Body length 15 mm or less 9
Body length greater than 15 mm 10
 9. Head distinctly wider than anterior margin of pronotum; general coloration black and straw yellow
Pacarina puella
Head slightly wider than front of pronotum; head and thorax light colored, without black
Beameria venosa
 10. 7th marginal cell of front wing little if any longer than wide
Cacama valvata
7th marginal cell 1-½ times or longer than wide 11
 11. Longitudinal veins of front wings clouded at apices
Neocicada hieroglyphica
Longitudinal veins of front wings not clouded 12
 12. Anterior-most cross vein almost vertical (angle greater than 45°) (Fig. 1. G) 13
Anterior-most cross vein strongly oblique (slanting at an angle of 45°) (Fig. 2. H) 15
 13. Head and pronotum grassy green
Diceroprocta azteca
Head and pronotum mostly black or black marked with light brown 14
 14. Cross veins infuscated
Diceroprocta eugraphica

- Cross veins not infuscated -----
Diceroprocta vitripennis
 15. Length of body less than 28 mm ----16
 Length of body 28 mm or more ----17
 16. Basal cell with a black mark; cross
 veins infuscated -- *Tibicen inauditus*
 Basal cell clear; cross vein clear -----
Tibicen auriferus
 17. Collar of pronotum light colored --18
 Collar of pronotum black -----24
 18. Dorsum of thorax greenish, no black

Tibicen superbus
 Dorsum of thorax with a black pattern
 ----- 19
 19. Wing length more than 50 mm -----
Tibicen auletes
 Wing length less than 50 mm ----20
 20. Dorsum of abdomen with pruinose
 spots -----21
 Dorsum of abdomen without spots --22
 21. Posterior margin of abdominal tergites
 edged with green or pale band -----
Tibicen dealbatus
 Posterior margin of tergites without
 pale band ----- *Tibicen dorsatus*
 22. Cross veins without distinct clouds --

Tibicen walkeri
 Cross veins with clouds -----23
 23. Mesonotum mostly black; sternum of
 abdomen without a medium dark black
 band ----- *Tibicen resh*
 Mesonotum with less than 1/2 the area
 black; sternum of abdomen usually
 with a medium dark band -----
Tibicen pruinosus
 24. Mesonotal disk black with a thin W
 pattern; lateral areas of mesonotum
 black ----- *Tibicen chloromerus*
 Mesonotal disk without a W or at most
 a confused W pattern; lateral areas
 brown ----- *Tibicen lycicus*

DESCRIPTIONS AND COUNTY DISTRIBUTION

Beameria venosa (Uhler) (Fig. 1. A).
 Length 12-13 mm. Veins M and Cu leave
 arculus separately instead of as a single
 vein, as in *Cicadetta*. The anterior two cross
 veins, especially the first, are nearly per-
 pendicular and located very near the middle
 of the cells anterior and posterior to them.
 Light green color. Dark markings wanting
 except for 2-4 brown bands extending pos-
 teriorly from the pronotal collar of some
 individuals.

County records. Cimarron, Cleveland,
 Cotton, Major, and Pawnee; June-July.

Cacama valvata (Uhler) (Fig. 1. C).
 Length, about 25 mm. Abdominal segments
 short; thus, a blunt-appearing abdomen.
 Coloration black except for light ridges on
 the cruciform elevation and some very
 small spots on the pronotum and meso-
 notum. Some white pruinosity may occur
 on sides or apex of abdomen.

County records. Cimarron and Harmon;
 June-July.

Neocicada hieroglyphica (Say). (Fig.
 1. E). Length, about 20-25 mm. Head and
 thorax yellowish-green with black mark-
 ings in the form of numerous lines and
 spots. Abdominal tergites straw-colored,
 lacking dark markings except for the last
 tergite which is usually black.

County records. Adair, Delaware, Lati-
 mer, and Payne; June-July.

Cicadetta calliope (Walk). (Fig. 2. A).
 Length, about 12-15 mm. At the base of the
 forewing, veins M and Cu leave the arculus
 as a single vein which divides shortly. The
 anterior cross veins are oblique and located
 distinctly before the middle of the cells
 anterior and posterior to them.

County records. Craig, Grady, Noble,
 Nowata, and Payne; June.

Cicadetta kansa (Davis) (Fig. 2. C).
 Length, about 13 mm. This species looks
 much like *Cicadetta calliope*. The two are
 easily separated by characters presented in
 the key. Also, *C. kansa* is uniformly green
 without black markings on thorax; *C.
 calliope* often has black markings on thorax.

County records. Comanche, Cleveland,
 and Noble; June-July.

Diceroprocta azteca (Kirkaldy) (Fig. 1.
 G). Length; about 21 mm. This species
 requires no additional description beyond
 that in the key.

County records. Caddo, Grady, Payne,
 and Tillman; July.

Diceroprocta eugraphica (Davis) (Fig.
 1. B). Length, about 18-24 mm. This is a
 dark-colored species and is immediately
 distinguishable from *D. azteca* (Kirk)
 by the lack of green.

County records. Ellis and Woods; August.

Diceroprocta vitripennis (Say) (Fig. 1.
 D). Length, about 20 mm. This species is

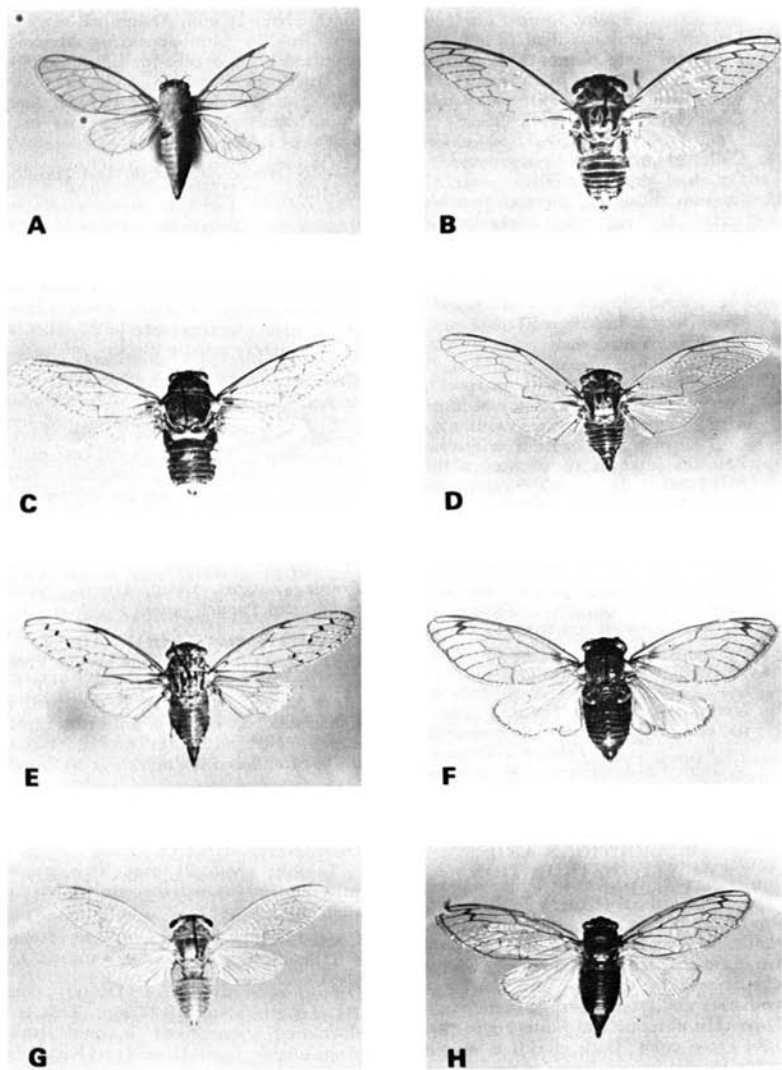


FIGURE 1. A. *Beameria venosa*. B. *Diceroprocta eugraphica*. C. *Cacama valvata*. D. *Diceroprocta vitripennis*. E. *Neocicada hieroglyphica*. F. *Magicicada cassini*. G. *Diceroprocta azteca*. H. *Magicicada septendecim*.

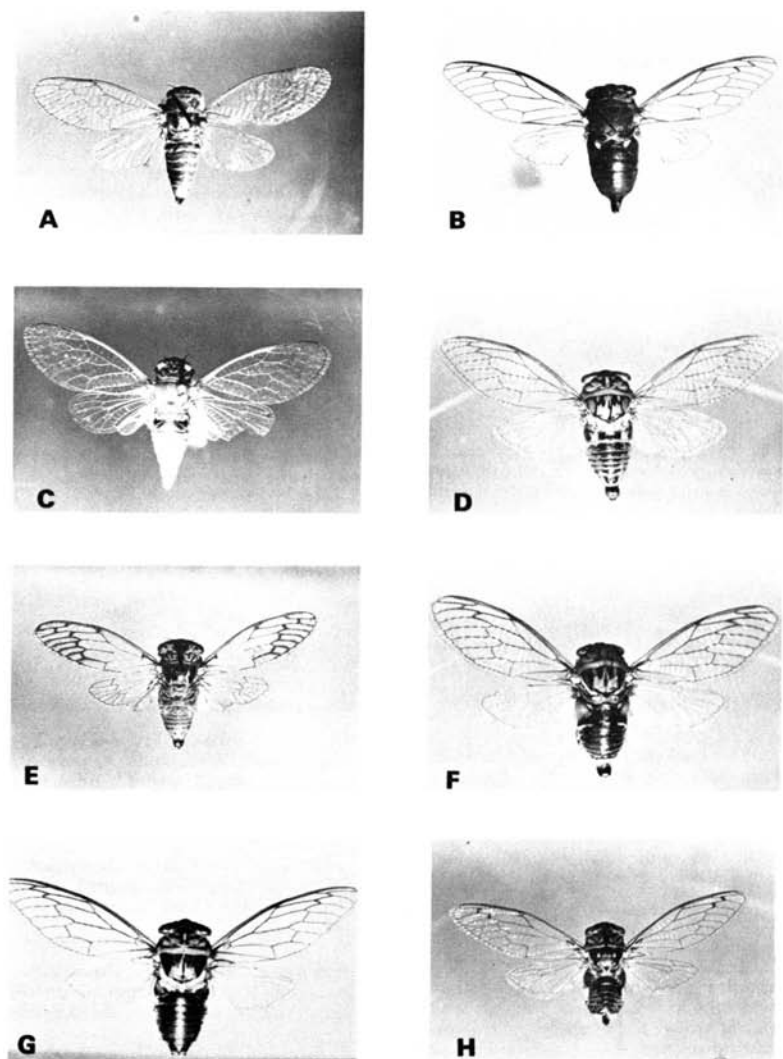


FIGURE 2. A. *Cicadetta calliope*. B. *Tibicen chloromerus*. C. *Cicadetta kansa*. D. *Tibicen dealbatus*. E. *Pacarina puella*. F. *Tibicen dorsatus*. G. *T. auletes*. H. *T. inanditus*.

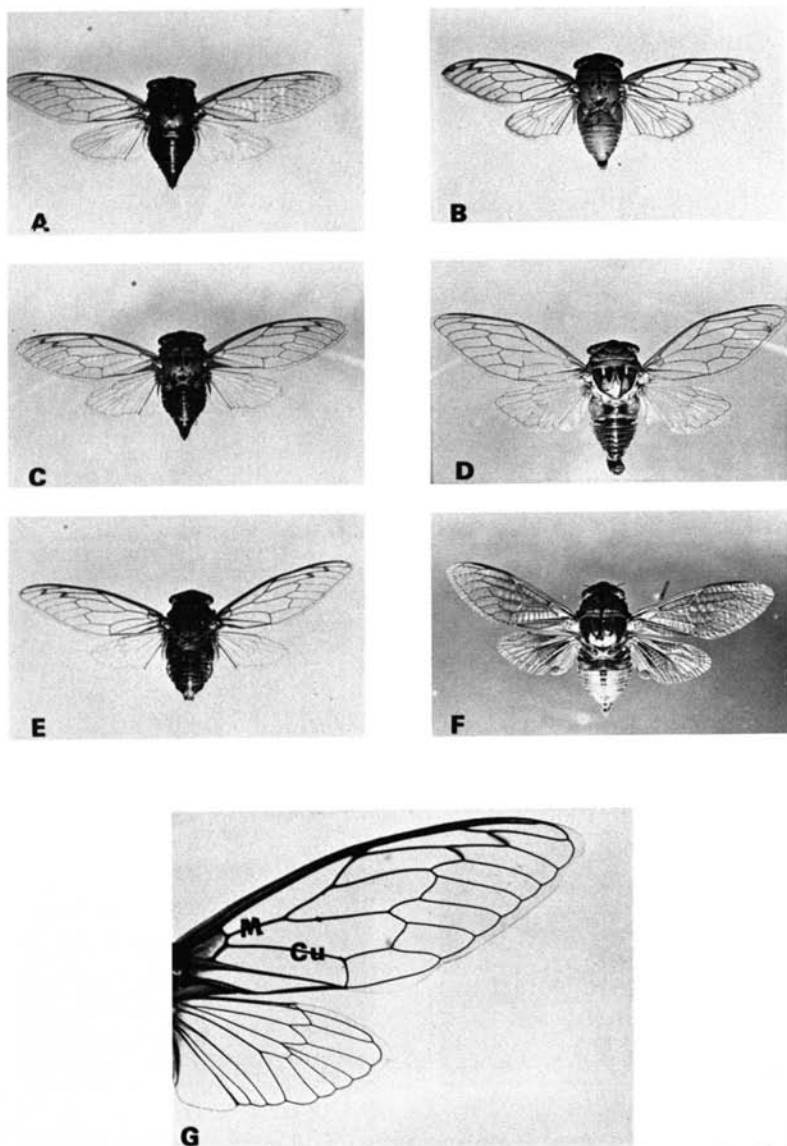


FIGURE 3. A. *Tibicen lyricen*. B. *T. superbus*. C. *T. pruinosis*. D. *T. walkeri*. E. *T. resb*. F. *Tibicinoides hesperia*. G. Right wings of *Tibicen chloromerus*, M=medius vein, Cu=cubitus vein.

usually greenish and black with clear cross veins. Sometimes the general color will be more of a straw color.

County records. Almost all counties; known distribution in the State ranges from Beaver county to the eastern border; May-August.

Magiccada. This genus consists of the periodical cicadas or the 17-year cicadas and the 13-year cicadas. Three species of 17-year cicadas have been identified in Oklahoma. In addition, an unnamed 13-year cicada has been reported from Oklahoma (25). That report probably refers to *Magiccada tredecim* Walsh and Riley. However, according to the study by Alexander and Moore (24) there are three species of 17-year cicadas [*M. septendecim* (L.), *M. cassini* (Fisher), and *M. septendecula* Alexander and Moore] and three species of 13-year cicadas [*M. tredecim* Walsh and Riley, *M. tredecassini* Alexander and Moore, and *M. tredecula* Alexander and Moore]. The 17-year cicada and the 13-year cicada of each pair cannot be distinguished morphologically; they can be separated if one knows the length of their life cycles or, as shown by Alexander and Moore (24), by their songs.

Magiccada cassini (Fisher) (Fig. 1. F). Length, about 24 mm. Other features as in the key; 17-year cycle.

County records. Many counties of northeastern half of Oklahoma; May-June.

Magiccada septendecim (L.) (Fig. 1. H). Length, about 28-30 mm. Other features as in the key; 17-year cycle.

County records. Carter, Jefferson, Pawnee, and Stephens; May-July.

Magiccada septendecula Alexander and Moore. Length, 19-27 mm. Other features as in the key; 17-year cycle.

County records. Payne; June.

Magiccada tredecassini Alexander and Moore. Description is same as that of *M. cassini* (Fisher); 13-year cycle.

Magiccada tredecim Walsh and Riley. Description is same as that of *M. septendecim* (L.); 13-year cycle.

Magiccada tredecula Alexander and Moore. Description is same as that of *M.*

septendecula Alexander and Moore; 13-year cycle.

Okanagana synodica (Say). Length, about 15-19 mm. This species has not been reported from Oklahoma; it has been collected in Kansas and Texas, and, therefore, is included in the key.

Pacarina puella Davis (Fig. 2. E). Length, about 13 mm. Medius and cubitus veins of the forewing leave the arculus separately. The anterior-most cross vein is nearly perpendicular. Cross veins are infuscated. Body background is light straw-colored with prominent black markings on the head, pronotum, and mesonotum.

County records. Harmon and Carter; June-July.

Tibicen auletes (Germar) (Fig. 2. G). Length, about 40-44 mm. Members of this species reach a greater average length than that of any other Oklahoma species. *T. auletes* can be distinguished from others of nearly the same size by its more extensive black marking and lack of dorsal row of pruinose spots on the abdomen.

County records. Atoka and Sequoyah; June-July.

Tibicen auriferus (Say). Length, 23-26 mm. Basal cell clear, as is the cross vein; abdomen with blackish tergites.

County records. Ellis, Grant, Harper, and Payne; August-October.

Tibicen chloromerus (Walker) (Fig. 2. B). Length, about 32-36 mm. This species is about the same size as *T. lyriceus*, but the two can be separated by color. Although both are predominately black, *T. chloromerus* is marked with green, whereas, *T. lyriceus* is marked with reddish brown.

County records. Cleveland, Pottawatomie, and Sequoyah; July-August.

Tibicen dealbatus (Davis) (Fig. 2. D). Length, about 35 mm. Head yellowish-green; thorax greenish marked with black; abdominal tergites black with pruinose spots and with posterior margins brown or yellowish.

County records. Found in almost all counties, including those at the extreme corners of the state; July-October.

Tibicen dorsatus (Say) (Fig. 2. F). Length, 31-38 mm. In males the uncus, when viewed caudally, appears to be triangular; the last ventral segment of the female has a rounded notch in the posterior margin which reaches about half way to the base; coloration of species resembles that of *T. dorsatus*, *T. dealbatus*, and *T. walkeri*.

County records. Caddo, Cleveland, Cimarron, Kay, Kiowa, Pawnee, Payne, Tillman, Woods, and Woodward; June-August.

Tibicen inauditus (Davis) (Fig. 2. H). Length, about 21 mm. A longitudinal black mark on the basal cell of the forewing is unique and characteristic of this species; black is the dominant color and there are limited straw-colored markings; posterior margin of the hind collar of pronotum is light and anterior margin is black.

County records. Cimarron; June-July.

Tibicen lyriceus (De Geer) (Fig. 3. A). Length, about 31-34 mm. Color is very distinctive, i.e., black with fulvous markings on the thorax and base of forewings green; forewings infuscated.

County records. Most counties including the extreme corners of the state; July-August.

Tibicen pruinosus (Say) (Fig. 3. C). Length, 29-37 mm. The species closely resembles *T. resb*. Average length, about 32 mm. The black markings on each side of the W mark taper posteriorly and may disappear, whereas in *T. resb* they are more extensive and reach the cruciform elevation. The first cross veins of the forewings are distinctly darkened.

County records. Collected from counties of the northeastern half of Oklahoma; July-October.

Tibicen resb (Haldeman) (Fig. 3. E). Length, 32-35 mm. Abdominal tergites are black with posterior borders often brown; head mostly black; thorax brownish-green, green, and black. First cross veins of forewings distinctly darkened. See number 23 in key for additional information.

County record. Collected from counties throughout the state; June-August.

Tibicen superbus (Fitch) (Fig. 3. B). Length, about 32 mm. Extensive green color over head and thorax make this species

readily distinguishable; only dark markings on the head and thorax are a black region between the eyes and four black areas which are usually present immediately behind the collar of the pronotum.

County records. Comanche, Kay, Kiowa, Payne, and Woods; July-August.

Tibicen walkeri Metcalf (Fig. 3. D). Length, 36-39 mm. A dorsal row of pruinose spots is lacking on the abdomen; first two cross veins of forewings are frequently not at all darkened; costal margin of forewing distinctly bent near the middle.

County records. LeFlore, McCurtain, Muskogee, Okfuskee, Pawnee, and Payne; July-August.

Tibicimoides hesperia (Uhler) (Fig. 3. F). Length, about 20 mm. Wing flaps marked with bright red-orange; longitudinal veins heavily infuscated from their bases to the cross veins; abdominal tergites light straw-colored except for a black median stripe tapering distally.

County records. Cimarron; June.

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