

THE DONACIINAE, CRIOCERINAE, CLYTRINAE,  
CHLAMISINAE, EUMOLPINAE, AND  
CHRYSOMELINAE OF OKLAHOMA  
(CHRYSOMELIDAE, COLEOPTERA)

by

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## INTRODUCTION

The leaf beetles form a conspicuous segment of the coleopterous fauna of Oklahoma. Because no taxonomic paper on the Chrysomelidae existed for the state, the present work with the subfamilies Donaciinae, Criocerinae, Clytrinae, Chlamisinae, Eumolpinae, and Chrysomelinae of the eleven subfamilies found in Oklahoma was inaugurated.

The chrysomelids are a large family of small or medium-sized beetles. They are generally host specific and sometimes cause extensive damage to field crops and horticultural plants. However, the Donaciinae, Clytrinae, and Chlamisinae are of little economic interest. The economically important species belong to the Criocerinae, Eumolpinae, and Chrysomelinae. The larvae and adults of these feed on the foliage of plants, except the larvae of Eumolpinae which are primarily rootfeeders. Included in this work are 29 genera containing 59 species of which 54 species are known to occur in the state and five species are likely to occur here.

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## REVIEW OF THE LITERATURE

Approximately 140 species of Chrysomelidae are present in Oklahoma. This work includes 59 species of which seven have been recorded by Hatch and Ortenburger (1930), and Hatch (1930). The remaining records have been obtained from collections in the Entomology Museum at Oklahoma State University, Stovall Museum at the University of Oklahoma, and from literature, Blake (1955), Blackwelder (1939), Blackwelder and Blackwelder (1948), Marx (1957), and Leng (1920). Also used were Blatchley (1910), Brown (1943, 1956), Clavareau (1913 a, 1913 b, 1914), Crotch (1873), Dillon and Dillon (1961), Horn (1892), Schaeffer (1933), and Wilcox (1954, 1957).

Arnett's work (1960) has been of particular help in the identification of genera.

The synonymy used was adopted from literature cited above.

## SYSTEMATICS

### Key to the Subfamilies of Chrysomelidae

1. Head not inflexed, mouth anterior . . . . . 2  
Head inflexed, mouth turned caudad . . . . . 10
2. Abdominal sternites two to four narrowed medially;  
pygidium exposed . . . . . 3  
Abdominal sternites two to four not narrowed  
medially; pygidium not exposed . . . . . 5
3. Prosternum with lateral antennal grooves; body  
contractile . . . . . Chlamisinae  
Prosternum without antennal grooves; body not  
contractile . . . . . 4
4. Antennae serrate, dentate, or pectinate from  
beyond third or fourth segment . . . . . Clytrinae  
Antennae filiform or at most clavate . . . . . Cryptocephalinae
5. Pronotum without lateral margin . . . . . 6  
Pronotum with lateral margin . . . . . 7
6. Antennal insertions nearly approximate; first  
visible sternite as long as all others combined . . . Donaciinae  
Antennal insertions separated by entire width of  
front; first visible abdominal sternite no longer  
than second and third together . . . . . Criocerinae
7. Antennal insertions separated by entire front . . . . . 8  
Antennal insertions nearly approximate . . . . . 9

8. Third tarsal segment bilobed; procoxae round . . . Eumolpinae  
 Third tarsal segment not distinctly bilobed,  
 entire; procoxae transversely oval . . . . . Chrysomelinae
9. Metafemora slender, adapted for walking . . . . . Galerucinae  
 Metafemora swollen, adapted for jumping . . . . . Alticinae
10. Head exposed; pronotum and elytra without broadly  
 expanded margins . . . . . Hispinae  
 Head concealed; pronotum and elytra with broadly  
 expanded margins . . . . . Cassidinae

#### SUBFAMILY DONACIINAE

Characteristics: Oblong; head slightly narrowed behind the eyes, antennal insertions almost approximate and extending to middle of elytra; prothorax narrower than elytra, almost as wide as head; tarsal claws simple; abdomen with first visible sternite as long as the remaining four together. Donaciinae is represented by a single genus, Donacia.

#### Key to the species of Donacia

1. Middle tibiae with apical, tooth-like  
 projection on inner side near tibial  
 spur . . . . . Donacia piscatrix  
 Middle tibiae without apical tooth-like  
 projection . . . . . 2
2. Pronotum distinctly alutaceous, opaque . . . Donacia hypoleuca  
 Pronotum not alutaceous, shining . . . . . 3



3. Posterior femora reddish brown beneath,  
 black area above . . . . . Donacia cincticornis  
 Posterior femora black or metallic,  
 reddish brown basally . . . . . 4
4. Posterior femora gradually enlarged  
 from base, each with blunt tooth . . . . . Donacia aequalis  
 Posterior femora abruptly clavate from  
 middle, each with sharp tooth . . . . . Donacia texana

Genus Donacia Fabricius

Donacia Fab., 1775. System. Entomol., p. 195.

Donacia piscatrix Lacordaire

Donacia piscatrix Lac., 1845. Mem. Soc. Roy. Sci. Liege,  
 3(1): 113.

Donacia carolina Lac., 1845. Ibid., 3(1): 114.

Donacia cuprea Melsheimer, 1847. Proc. Acad. Nat. Sci.  
 Philadelphia, 3: 158.

Donacia congener Leconte, 1851. Proc. Acad. Nat. Sci.  
 Philadelphia, 5: 310.

Donacia alutacea Lec., 1851. Ibid., 5: 311.

Characteristics: Oblong; color variable, bronze, green or brownish yellow, shining; antennae reddish yellow with second segment about one-half length of third; pronotum quadrate, each side with two tubercles, anterior one most prominent, disk finely, sparsely, and shallowly punctate; elytral punctures coarse and in rows; length about 7.5 mm. Figure 1.

County records: McCurtain, Pushmataha.

Donacia hypoleuca Lacordaire

Donacia hypoleuca Lac., 1845. Mem. Soc. Roy. Sci. Liege

3(1): 101.

Characteristics: This species differs from the foregoing species in that the color varies from dark to light brownish yellow; pronotum alutaceous; posterior tibiae when viewed from behind are evenly and strongly bowed; length about 8.5 mm.

County records: Adair, Delaware, Leflore, Payne.

Donacia cincticornis Newman

Donacia cincticornis Newman, 1838. Entomol. Mag. London,

5: 391.

Donacia lucida Lacordaire, 1845. Mem. Soc. Roy. Sci. Liege,

3(1): 106.

Donacia rufipennis Lac., 1845. Ibid., 3(1): 110.

Donacia pulchella Leconte, 1851. Proc. Acad. Nat. Sci.

Philadelphia, 5: 312.

Donacia antillarum Suffrian, 1866. Arch. Naturgesch., Berlin,

32: 282.

Donacia cincticornis tryphera Schaeffer, 1925. Brooklyn Mus. Sci.

Bull., 3(3): 81.

Donacia cincticornis tenuis Schffr., 1925. Ibid., 3(3): 82.

Characteristics: This species differs from the foregoing species in that the color is brownish yellow and strongly shining, often with

greenish tinge, head and thorax darker; antennae with tips of segments almost black; hind femora swollen and armed with one to three teeth; disk of elytra with two feeble transverse impressions; length about 9.5 mm.

County records: Not represented in Oklahoma but likely to occur here.

Donacia aequalis Say

Donacia aequalis Say, 1824. J. Acad. Nat. Sci. Philadelphia,  
3(2): 428.

Donacia confusa Lacordaire, 1845. Mem. Soc. Roy. Sci. Liege,  
3(1): 109.

Characteristics: This species differs from the foregoing species in that the second and third joints of the antennae are equal; length about 6.0 mm.

County records: Not represented in Oklahoma but likely to occur here.

Donacia texana Crotch

Donacia texana Cr., 1873. Proc. Acad. Nat. Sci. Philadelphia,  
25: 22.

Donacia texana minor Schaeffer, 1925. Brooklyn Mus. Sci. Bull.,  
3(3): 72.

Characteristics: This species differs from the foregoing species in that the posterior femora are abruptly clavate from the middle; length about 7.0 mm.

County record: McCurtain.

## SUBFAMILY CRIOCERINAE

Characteristics: Oblong or elongate; antennae eleven segmented, inserted in front of eyes; prothorax much narrower than elytra and strongly constricted at middle; elytra with punctures in rows; first visible sternite no longer than second and third together. Criocerinae is represented by a single genus, Lema.

Key to the species of Lema

1. Ninth elytral striae interrupted at middle. . . . Lema sexpunctata  
    Ninth elytral striae not interrupted at middle . . . . . 2
2. Metasternum black . . . . . Lema nigrovittata  
    Metasternum not black . . . . . Lema trilineata

Genus Lema Fabricius

Lema Fab., 1798. Entomol. System. Suppl., p. 90.

Lema sexpunctata Olivier

Lema sexpunctata Ol., 1808. Entomol., 6: 738.

Lema sexpunctata albini Lacordaire, 1845. Mon. Phyt., 1: 483.

Lema sexpunctata ephippium Lac., 1845. Loc. cit.

Characteristics: Elongate; reddish yellow; antennae black; pronotum pale, nearly smooth with pleural areas of metathorax and legs (except base of femora) black; each elytron with black spots on humerus, middle, and near apex; underside usually pale (except metasternum); length about 5.0 mm. Figure 2.

County records: Alfalfa, Choctaw, Cleveland, McCurtain, Sequoyah.

Lema nigrovittata Guerin, 1829. Icon. Regne Anim. Inst., p. 262.

Characteristics: This species differs from the foregoing species in that the black lateral pronotal spots are present; elytra with black sutural and lateral vittae; underside black; length about 5.5 mm.

County record: Payne.

Lema trilineata Olivier

Lema trilineata Ol., 1808. Entomol., 6: 739.

Lema trilineata trivittata Say, 1824. J. Acad. Nat. Sci. Philadelphia, 3: 429.

Lema immaculicollis Chevrolat, 1835. Coleopt. Central Mexico, 2: fasc. 5, p. 112.

Lema trivirgata Leconte, 1859. Coleopt. Kansas, p. 22.

Lema notativentris Schaeffer, 1919. J. New York Entomol. Soc., 27: 307.

Lema trilineata californica Schffr., 1933. J. New York Entomol. Soc., 41: 301.

Lema nigrovittata Schffr., 1933 (not Guerin, 1829). Ibid., 41: 302.

Lema trilineata medionata Schffr., 1933. Ibid., 41: 303.

Lema nigrovittata auctt., not Guerin, 1829.

Characteristics: This species differs from the foregoing species in that the black spots on the pronotum are always on the disk; underside usually pale; length about 6.0 mm. Figure 3.

County records: Cherokee, Cleveland, Craig, McClain, Oklahoma, Payne.

## SUBFAMILY CLYTRINAE

Characteristics: Shape variable, short, subcylindrical; medium-sized; antennae short, widely separated, serrate; thorax margined on both sides; procoxae transverse, cavities closed behind; tarsal claws simple or toothed; elytra lobed laterally.

## Key to species of Clytrinae

1. Elytra pale; sometimes reddish . . . . . 2  
    Elytra not pale or reddish . . . . . 4
2. Pronotum pale . . . . . 3  
    Pronotum black . . . . . Anomoea mutabilis
3. Sutural and lateral margins of elytra pale . . . . . Anomoea hogei  
    Sutural and lateral margins of elytra black,  
    (Fig. 4) . . . . . Anomoea laticlavata
4. Color uniform black . . . . . Euryscopa subnigra  
    Color not uniform black . . . . . 5
5. Elytra with humeral red spots only . . . . . 6  
    Elytra with humeral and apical red spots,  
    (Fig. 6) . . . . . Babia quadriguttata
6. Color shining blue or greenish black, (Fig. 7) . . . . . Saxinis omogera  
    Color not shining blue or greenish black . . . . . 7
7. Labrum pale at sides, (Fig. 8) . . . . . Coscinoptera axillaris  
    Labrum black, (Fig. 9) . . . . . Megalostomis subfasciata

Genus Anomoea Agassiz

Anomoea Agassiz, 1846. (amend. pro Anomoia Dejean, 1835). Nomen.

Zool. Index Univ., p. 97.

Anomoea mutabilis Lacordaire

Anomoea luficauda Foersberg, 1821. Nova Acta Roy. Soc. Sci. Upsala,  
8: 258.

Anomoea mutabilis Lac., 1848. Mon. Phyt., 2: 137.

Characteristics: Male and female often differ from each other in form, coloration, and markings of elytra. Head more or less distinctly rugose in both sexes, either entirely red marked more or less with black or entirely black; antennae black, joints five to eleven serrate; pronotum entirely black or black with apical and lateral margins pale; elytra reddish with large submedian fascia, suture, apical and lateral margins behind the submedian fascia black; body beneath black, pubescence moderately long, dense, and white; length about 7.0 mm.

County record: Kiowa.

Anomoea hogei Jacoby

Anomoea hogei Jac., 1888. Biol. Central Am. Coleopt., 7(1): 66.

Characteristics: This species differs from the foregoing species in that the entire upper surface is pale; first four joints of antennae pale, remainder black.

County records: Alfalfa, Atoka, Cleveland, Cotton, Craig, Dewey, Latimer, Leflore, Oklahoma, Payne, Sequoyah.

Anomoea laticlavata Forester

Anomoea laticlavata Forest., 1771. Nova Spec. Inst., p. 27.

Characteristics: This species differs from the foregoing species

in that the elytra possess black fasciae or black sutural and lateral vittae. Figure 4.

County records: Alfalfa, Cleveland, Craig, Delaware, Leflore, McClain, McCurtain, Oklahoma, Payne.

Genus Euryscopa Lacordaire

Euryscopa Lac., 1848. Mon. Phyt., 2: 493.

Euryscopa subnigra Schaeffer

Euryscopa subnigra Schffr., 1905. Bull. Mus. Brooklyn, 6: 136.

Characteristics: Color black; head densely punctate, pubescent, labrum pale; thorax densely punctate, pubescent, legs densely pubescent; elytra shining, glabrous, punctate; body beneath densely pubescent, punctate; length about 6.0 mm. Figure 5.

County records: Bryan, Cimarron, Comanche, Garvin, Oklahoma.

Genus Babia Lacordaire

Babia Lac., 1848. Mon. Phyt., 2: 424.

Babia quadriguttata Olivier

Babia quadriguttata Ol., 1791. Enc. Meth. Inst., 6: 37.

Characteristics: Color black, shining; thorax a little narrower than elytra, sparsely punctate; each elytron with humeral and apical reddish-yellow spots; length about 3.0 mm. Figure 6.

County records: Dewey, Latimer, Muskogee, Oklahoma.

Genus Saxinis Lacordaire



Saxinis Lac., 1848. Mon. Phyt., 2: 478.

Saxinis omogera Lacordaire

Saxinis omogera Lac., 1848. Mon. Phyt., 2: 482.

Characteristics: Color shining blue or greenish black; thorax as wide as elytra, finely punctate; each elytron with a reddish-yellow spot on humerus; body beneath finely pubescent; length about 3.5 mm. Figure 7.

County records: Cleveland, Comanche, McClain, McCurtain, Oklahoma, Payne.

Genus Coscinoptera Lacordaire

Coscinoptera Lac., 1848. Mon. Phyt., 2: 511.

Coscinoptera axillaris Leconte

Coscinoptera axillaris Lec., 1868. Trans. Am. Entomol. Soc., 2: 56.

Characteristics: Head punctate, labrum pale at sides; legs sparsely pubescent; elytra with distinct humeral red spot, and pubescent; body beneath densely punctate, pubescent; length about 4.0 mm. Figure 8.

County records: Cleveland, McCurtain, Pushmataha.

Genus Megalostomis Lacordaire

Megalostomis Lac., 1848. Mon. Phyt., 2: 519.

Minturnia Lac., 1848. Ibid., 2: 520.

Megalostomis subfasciata (Leconte)

Coscinoptera subfasciata Lec., 1868. Trans. Am. Entomol. Soc.,

2: 56.

Megalostomis subfasciata : Horn, 1892. Trans. Am. Entomol. Soc.,  
19: 11.

Characteristics: Oblong, robust; color black; head usually densely punctate, pubescent, labrum black; pronotum moderately punctate, pubescent; each elytron with basal third red, sparsely punctate, pubescent; body beneath densely pubescent; length about 4.0 mm. Figure 9.

County records: Not represented in Oklahoma but likely to occur here.

#### SUBFAMILY CHLAMISINAE

Characteristics: Robust, ovate, cylindrical, with elevations or tubercles; head set into prothorax to the eyes, antennae widely separated, short, serrate and lie in grooves on side of prosternum; prothorax sinuate at base, fitted closely to elytra; scutellum broad, truncate behind with a median tooth in front that fits into notch in base of thorax; pygidium exposed. Chlamisinae is represented by a single species in Oklahoma.

#### Genus Exema Lacordaire

Exema Lac., 1848. Mon. Phyt., 2: 844.

#### Exema pennsylvanica Pierce

Exema pennsylvanica Pierce, 1940. Bull. Southern California Acad. Sci., 39: 18.

Exema conspersa auctt., in part. Brown, 1943. Canadian Entomol., 75: 123.

Characteristics: Oblong, robust; black; head and antennae marked

with yellow; anterior portion of pronotum with yellow area, disk with a few small yellow maculae, pronotum transverse, sides strongly narrowed apically, legs yellow, femora and tibiae may be blackish; elytra with a few yellow maculae, coarsely, densely punctate, with about ten coarse tubercles scattered over disk; length about 2.5 mm. Figure 10.

County record: Payne.

#### SUBFAMILY EUMOLPINAE

Characteristics: Oblong, convex seldom rounded or oval; color usually metallic or iridescent; head slightly deflexed, visible from above, eyes more or less emarginate, antennae usually long, filiform, widely separated at base; procoxae globose, separated by prosternum, procoxal cavities closed behind, tarsi broad, third segment bilobed; elytra rounded apically, entire.

#### Key to species of Eumolpinae

1. Anterior margin of prosternum arcuate forming postocular lobe, (Fig. 11) . . . . . 2
  - Anterior margin of prosternum without lobe . . . . . 10
2. Body above pubescent or scaly . . . . . 3
  - Body above glabrous . . . . . 5
3. Pronotal margin usually dentate; protibiae
  - toothed on inner side . . . . . Myochrous denticollis
  - Pronotal margin entire; protibiae simple . . . . . 4
4. Vestiture of long, hair-like scales . . . . . Glyptoscelis albida
  - Vestiture of broad, rather short scales . . . . . Glyptoscelis squamulata

5. Ocular grooves very wide above eyes; color  
 brown or dark metallic blue, green or bronze . . . . . 9  
 Ocular grooves narrow above eyes; color yellow,  
 orange, or black, without green, blue or bronze  
 luster . . . . . 6
6. Pronotum deeply, coarsely punctate . . . . . Paria sexnotata  
 Pronotum not deeply, coarsely punctate . . . . . 7
7. Elytra entirely black . . . . . Paria thoracica  
 Elytra not entirely black . . . . . 8
8. Elytra usually yellowish brown with black  
 spot at base, one at apical third, and a  
 small one on margin behind humerus . . . . . Paria fragariae  
 Elytra usually yellowish brown without spot  
 on margin behind humerus, may be entirely  
 black except for base and suture as in  
 Figure 13 . . . . . Paria quadriguttata
9. Elytral punctures in distinct regular rows. Typophorus viridicyaneus  
 Elytral punctures irregular or confused . . . . . Chrysochus auratus
10. Pronotum with distinct margins . . . . . 11  
 Pronotum without distinct margins . . . . . 18
11. Color metallic green or bronze . . . . . 12  
 Color not metallic green or bronze . . . . . 16
12. Front femur with minute tooth, (Fig. 12) . . . . . 13  
 Front femur without minute tooth . . . . . 14
13. Clypeus emarginate . . . . . Graphops curtipennis  
 Clypeus not emarginate . . . . . Graphops pubescens

14. Clypeus with rounded emargination . . . . . Graphops marcassita  
 Clypeus with emargination not rounded,  
 usually angular . . . . . 15
15. Clypeus with deep angular emargination . . . . . Graphops simplex  
 Clypeus with wide-angle emargination . . . . . Graphops smaragdula
16. Pronotum transverse; profemur with small  
 tooth; third antennal segment not longer  
 than second . . . . . Xanthonia villosula  
 Pronotum cylindrical; profemora unarmed;  
 third antennal segment longer than second . . . . . 17
17. Piceous or nearly black . . . . . Fidia longipes  
 Reddish to brown . . . . . Fidia viticida
18. Head with distinct grooves above eyes . . . . . 19  
 Head without distinct grooves above eyes . . . . . 20
19. Elytra dull yellow, each with two oblong  
 dark spots . . . . . Metachroma interrupta  
 Elytra dull yellow to black without spots . . . . . Metachroma angustulum
20. Pronotal margin irregular or undulating . . . . . 21  
 Pronotal margin regular and entire . . . . . 24
21. Prosternum narrow and contracted between  
 coxae . . . . . 22  
 Prosternum wide, nearly parallel sided . . . . . Rhabdopterus picipes
22. Color pale brown . . . . . Colaspis brunnea  
 Color not pale brown . . . . . 23
23. Color purplish black; thorax very closely,  
 deeply and somewhat irregularly punctate . . . . . Colaspis nigrocyanea

- Color metallic green, blue, or bronze;  
 thorax with evenly arranged, not very deep  
 or coarse punctures . . . . . Colaspis favosa
24. Pronotum with basal marginal line . . . . . 25  
 Pronotum without basal marginal line . . . . . Chrysodina globosa
25. Clypeus broad between insertions of antennae . . . Nodonota trestis  
 Clypeus contracted between insertions of  
 antennae . . . . . Nodonota clypealis

Genus Myochrous Erichson

Myochrous Er., 1847. Arch. Naturgesch., 8: 164.

Myochrous denticollis (Say)

Colaspis denticollis Say, 1824. J. Acad. Nat. Sci. Philadelphia,  
 3: 448.

Myochrous denticollis : Leconte, 1859. Writings of Thomas Say,  
 2: 215.

Characteristics: Oblong, convex; color brown, bronze; pronotum wider than long with three blunt teeth on margin, protibiae strongly toothed below middle; elytra with rows of closely, deeply impressed punctures; vestiture of small scales white and brown intermixed; length about 4.5 mm.

County records: Cleveland, Coal, Comanche, Logan, McCurtain, Muskogee, Ottawa, Wagoner.

Genus Glyptoscelis Leconte

Eumolpus Weber, 1801. Observ. Entomol., p. 28 (in part).

Glyptoscelis Lec., 1859. Proc. Acad. Nat. Sci. Philadelphia,  
11: 81.

Glyptoscelis albida Leconte

Glyptoscelis albida Lec., 1859. Proc. Acad. Nat. Sci. Philadelphia,  
11: 81.

Glyptoscelis albida yosemite Krauss, 1937. Univ. California Publ.  
Entomol., 7: 26.

Glyptoscelis albida diabolus Krauss, 1937. Loc. cit.

Characteristics: Oblong, oval; grayish black; eyes deeply emarginate opposite base of antennae; pronotum distinctly broader than long, not narrowed at base; elytra moderately punctate with long hair-like white or brownish pubescence; length about 8.0 mm.

County records: Oklahoma, Pawnee, Washington.

Glyptoscelis squamulata Crotch

Glyptoscelis squamulata Crotch, 1873. Proc. Acad. Nat. Sci.  
Philadelphia, 25: 36.

Characteristics: This species differs from the foregoing species in that the pubescence is of broad white or brownish scales; length about 7.0 mm.

County records: Latimer, Oklahoma, Pawnee.

Genus Paria Leconte

Paria Lec., 1858. Proc. Acad. Nat. Sci. Philadelphia, 10: 85.

Paria sexnotata (Say)

Colaspis sexnotata Say, 1824. J. Acad. Nat. Sci. Philadelphia,  
3: 445.

Paria sexnotata : Leconte, 1858. Proc. Acad. Nat. Sci. Philadelphia,  
10: 59.

Characteristics: Oblong, short; yellowish red; head coarsely punctate, frontal suture not impressed; pronotum coarsely, deeply punctate, front and hind femur with distinct tooth, posterior tarsal claws with inner lobe short, one half length of outer lobe; elytra coarsely, deeply punctate, striate, each elytron with three black spots, two near center may be confluent or may be joined to basal spot; aedeagus with lateral apical lobes small with a distinct notch between lateral and median lobes; length about 1.5 mm.

County records: Cleveland, Comanche.

Paria thoracica (Melsheimer)

Metachroma thoracicus Melsh., 1847. Proc. Acad. Nat. Sci. Philadelphia, 3: 168.

Paria thoracica : Wilcox, 1954. Bull. Ohio Biol. Survey, 43: 410.

Characteristics: This species differs from the foregoing species in that the color is entirely black; head and pronotum may be yellowish, punctation fine or absent; front femur without tooth, posterior claws with inner lobe long, three-quarters length of outer lobe; elytra moderately punctate, entirely black; aedeagus with lateral lobes large, nearly as long as median lobe, median lobe moderately broad; length about 3.5 mm.



County records: Cleveland, Comanche, McClain.

Paria fragariae Wilcox

Paria fragariae Wilcox, 1954. Bull. Ohio Biol. Survey, 43: 409.

Characteristics: This species differs from the foregoing species in that the color is usually yellowish brown; front and hind femora each with small tooth, posterior claws with inner lobe short, one-half length of outer lobe; each elytron usually with black spot at base, one at apical third and a small spot on margin behind humerus (may lack spots completely); aedeagus long, narrowed at apex, median lobe long, lateral lobes reduced; length about 3.0 mm. Figure 14.

County record: Cleveland.

Paria quadriguttata Leconte

Paria quadriguttata Lec., 1858. Proc. Acad. Nat. Sci. Philadelphia, 10: 86.

Paria saliceti Wilcox, 1954. Bull. Ohio Biol. Survey, 43: 408.

Characteristics: This species differs from the foregoing species in that the elytral punctures are fine, close, striae not impressed, pattern of elytra quite variable, may be entirely black with base and suture yellow as in Figure 13, may be yellowish brown with basal spot and two spots at apical third, spot on margin behind humerus lacking; aedeagus long, narrower at apex, median lobe broad, lateral apical lobes very much reduced; length about 4.0 mm.

County records: Oklahoma, Payne.

Genus Typophorus Erichson

Typophorus Er., 1847. Arch. Naturgesch., 18: 163.

Typophorus viridicyaneus (Crotch)

Paria viridicyaneus Crotch, 1873. Proc. Acad. Nat. Sci. Philadelphia, 25: 40.

Typophorus sturmi Lefevre, 1877. Ann. Soc. Entomol. France, 7: 317.

Typophorus chalceus Lef., 1877. Loc. cit.

Typophorus viridicyaneus : Lef., 1877. Loc. cit.

Characteristics: Oblong, oval; bluish green; antennae red, second segment distinctly shorter than third; elytra punctate, striate; length about 7.0 mm.

County records: Adair, Cleveland, Craig, Delaware, Okmulgee, Washington.

Genus Chrysochus Redtenbacher

Chrysochus Redt., 1845. Gatt. Deutsch. Käferfauna, p. 117.

Chrysochus auratus (Fabricius)

Chrysomela auratus Fab., 1775. System. Entomol., p. 101.

Chrysochus auratus : Marshall, 1865. J. Proc. Linn. Soc., Zool., 8: 49.

Characteristics: Oblong, convex; brilliant metallic green; head and pronotum with sparse, coarse, deep punctures intermingled with fine punctures; elytra finely, irregularly punctate; length about 9.5 mm.

County records: Adair, Beaver, Cherokee, Cleveland, Comanche, Craig, Love, Marshall, McCurtain, McIntosh, Oklahoma, Pawnee, Payne, Pittsburg, Washington, Woods.

Genus Graphops Leconte

Heteraspis Lec., 1859 (not Blanchard, 1845). Coleopt. of Kansas,  
p. 29.

Graphops Lec., 1885. Trans. Am. Entomol. Soc., 12: 26.

Graphops curtipennis (Melsheimer)

Eumolpus curtipennis Melsh., 1847. Proc. Acad. Nat. Sci. Philadelphia,  
3: 169.

Heteraspis curtipennis Leconte, 1859. Smithson. Contrib., p. 24.

Graphops curtipennis : Lec., 1885. Trans. Am. Entomol. Soc.,  
12: 26.

Characteristics: Oblong, oval; usually black with metallic bronze luster or copper; eyes prominent, clypeus slightly emarginate; pronotum with punctures in transverse lines forming wrinkles, profemur with small inconspicuous tooth as in Figure 12<sup>1</sup>; pubescence usually in lines converging towards suture at apex; body with short inconspicuous white pubescence; length about 3.0 mm.

County record: Beckham.

Graphops pubescens (Melsheimer)

Eumolpus pubescens Melsh., 1847. Proc. Acad. Nat. Sci. Philadelphia,  
3: 169.

Heteraspis pubescens Leconte, 1859. Smithson. Contrib., p. 23.

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<sup>1</sup>The tooth is located antero-ventrally toward the apex of the femur and is very easily overlooked because of its location and inconspicuousness. I have found that use of a light background and observation of the outline of the femur helps to make its detection easier.

Graphops pubescens : Lec., 1884. Trans. Am. Entomol. Soc., 12: 26.

Characteristics: This species differs from the foregoing species in that the clypeus is not emarginate; pronotum lacks transverse wrinkles formed by punctures, lightly pubescent; elytra with punctation not coarse, basal half of elytra with finer punctures in intervals, towards apex punctation becomes faint; length about 4.0 mm.

County records: Cleveland, Pawnee.

Graphops marcassita (Crotch)

Heteraspis marcassita Crotch, 1873. Proc. Acad. Nat. Sci.

Philadelphia, 25: 35.

Graphops marcassitus : Leconte, 1884. Trans. Am. Entomol. Soc.,  
12: 26.

Characteristics: This species differs from the foregoing species in that the emargination of clypeus is rounded; profemur without tooth; length about 3.0 mm.

County records: Not found in Oklahoma but likely to occur here.

Graphops simplex Leconte

Graphops simplex Lec., 1884. Trans. Am. Entomol. Soc., 12: 26.

Characteristics: This species differs from the foregoing species in that the color is usually metallic green; clypeus has deep angular emargination.

County records: Not found in Oklahoma but likely to occur here.

Graphops smaragdula (Leconte)

Heteraspis smaragdulus Lec., 1859. Smithson. Contrib., p. 23.

Graphops nebulosus Lec., 1884. Trans. Am. Entomol. Soc., 12: 26.

Graphops smaragdula : Blake, 1955. Bull. Mus. Comparative Zool.,  
p. 279.

Characteristics: This species differs from the foregoing species in that the color above is metallic green to blue-green and bronzish or copperish beneath with the legs also bronzish; clypeus with round emargination; length about 4.0 mm.

County record: Delaware.

Genus Xanthonia Baly

Xanthonia Baly, 1863. J. of Entomol., 2: 151.

Trichotheca Leconte, 1885. Trans. Am. Entomol. Soc., 12: 26.

Xanthonia villosula (Melsheimer)

Eumolpus villosula Melsh., 1847. Proc. Acad. Nat. Sci. Philadelphia,  
3: 169.

Eumolpus villosula plagiata Melsh., 1847. Loc. cit.

Xanthonia stevensi Baly, 1863. J. of Entomol., 2: 151.

Xanthonia villosula : Baly, 1863. Loc. cit.

Characteristics: Oblong; pale yellow or darker; head usually darker than elytra, antennae dull yellow; pronotum finely and densely punctate on disk, usually darker than elytra, legs dull yellow; elytra with close set rows of fine punctures, erect hairs in single row on each elytral interval; body covered with reddish-yellow pubescence; length about 3.0 mm.

County records: Adair, McCurtain.

Genus Fidia Baly

Fidia Baly, 1863. J. of Entomol., 2: 153.

Fidia longipes (Melsheimer)

Eumolpus longipes Melsh., 1847. Proc. Acad. Nat. Sci. Philadelphia,  
3: 169.

Pachnephorus viticola Uhler, 1855. Proc. Acad. Nat. Sci. Philadelphia, 7: 418.

Fidia longipes : Baly, 1863. J. of Entomol., 2: 153.

Characteristics: Oblong; piceous or nearly black; base of antennae pale; thorax narrower than elytra and longer than wide, tibiae and base of femora pale; elytra densely punctured; body densely clothed with gray pubescence; length about 3.5 mm.

County record: Adair.

Fidia viticida Walsh

Fidia viticida Walsh, 1867. Pract. Entomol., 2: 87.

Fidia murina Crotch, 1873. Proc. Acad. Nat. Sci. Philadelphia,  
25: 33.

Fidia lurida Lefevre, 1885. Mem. Soc. Roy. Sci. Liege, 11: 76.

Fidia viticida texana Schaeffer, 1934. J. New York Entomol. Soc.,  
41: 472.

Characteristics: This species differs from the foregoing species in that the color is dull reddish brown and the pubescence is grayish yellow.

County records: Caddo, Choctaw, Delaware, Leflore, Major, Pawnee.

Genus Metachroma Leconte

Metachroma Lec., 1858. Proc. Acad. Nat. Sci. Philadelphia, 10: 85.

Metachroma interrupta (Say)

Colaspis interrupta Say, 1824. J. Acad. Nat. Sci. Philadelphia,  
3: 448.

Metachroma interrupta : Leconte, 1858. Proc. Acad. Nat. Sci.  
Philadelphia, 10: 85.

Characteristics: Oblong; pale reddish brown; head sparsely punctate,  
distinct frontal impression; pronotum wider than long, sparsely punctate;  
each elytron with humeral sutural line and two oblong discal spots,  
piceous; length about 6.0 mm. Figure 15.

County record: Oklahoma.

Metachroma angustulum Crotch

Metachroma angustulum Cr., 1873. Proc. Acad. Nat. Sci. Philadelphia,  
25: 41.

Metachroma parallelum Horn, 1892. Trans. Am. Entomol. Soc.,  
19: 217.

Characteristics: This species differs from the foregoing species in  
that the elytra do not have spots.

County record: Cleveland.

Genus Rhabdopterus Lefevre

Rhabdopterus Lef., 1882. Mitth. Munch. Entomol., 2: 126.

Rhabdopterus Lef., 1885. Mem. Soc. Roy. Sci. Liege, 11: 78.

Rhabdopterus picipes (Olivier)

Colaspis picipes Ol., 1808. Entomol., 6: 886.

Chalcophana picipes Chevrolat, 1837. Dej. Cat., revised, p. 432.

Rhabdopterus picipes : Lefevre, 1885. Mem. Soc. Roy. Sci. Liege,  
9: 47.

Characteristics: Oblong, convex; dark brown to black, shining; head coarsely, sparsely punctate, antennae reddish yellow with apex often brown; pronotum wider than long, finely punctate; legs yellow; elytra coarsely and somewhat irregularly punctate; length about 5.0 mm.

County records: Bryan, Cherokee, Cleveland, McCurtain, Murray.

Genus Colaspis Fabricius

Colaspis Fab., 1801. System. Eleuth., 1: 411.

Colaspis brunnea (Fabricius)

Galeruca brunnea Fab., 1798. Entomol. System. Suppl., p. 94.

Colaspis brunnea : Fab., 1801. System. Eleuth., 1: 416.

Colaspis flavida Say, 1859. Longs Exped., 2: 196.

Colaspis costipennis Crotch, 1873. Proc. Acad. Nat. Sci. Philadelphia, 25: 44.

Colaspis brunnea crotchi Lefevre, 1884. Ann. Soc. Entomol. Belgium,  
28: 199.

Colaspis suilla Lef., 1885 (not Fabricius, 1801). Eumolp. Cat.,  
p. 33.

Colaspis flavicans Lef., 1885. Mem. Soc. Roy. Sci. Liege, 11: 33.

Colaspis brunnea floridana Schaeffer, 1934. J. New York Entomol.



Soc., 41: 471.

Characteristics: Oblong, oval; yellowish and not shining; head not coarsely punctate, distinct medial frontal impression present; pronotum not coarsely, deeply punctate; elytra with irregular rows of coarse, deep punctures; length about 5.0 mm. Figure 16.

County records: Adair, Cherokee, Delaware, Latimer, Osage, Payne.

Colaspis nigrocyanea Crotch

Colaspis nigrocyanea Cr., 1873. Proc. Acad. Nat. Sci. Philadelphia, 25: 45.

Characteristics: This species differs from the foregoing species in that the color is purplish black; head and pronotum coarsely and deeply punctate.

County record: Kiowa.

Colaspis favosa Say

Colaspis favosa Say, 1824. J. Acad. Nat. Sci. Philadelphia, 3: 447.

Characteristics: This species differs from the foregoing species in that the color is metallic green.

County records: Cleveland, Comanche.

Genus Chrysodina Baly

Chrysodina Baly, 1864. J. of Entomol., 2: 221.

Chalcoparia Crotch, 1873. Proc. Acad. Nat. Sci. Philadelphia, 25: 39.

Chrysodina globosa (Olivier)

Colaspis globosa Ol., 1808. Entomol., 6: 893.

Colaspis ovata Say, 1824. J. Acad. Nat. Sci. Philadelphia, 3: 442.

Chrysodina globosa : Baly, 1864. J. of Entomol., 2: 221.

Characteristics: Ovate, convex; dark blue or black shining; antennae pale; pronotum with apex only half as wide as base, finely punctate; elytra finely, evenly and densely punctate; length about 3.0 mm.

County records: Cleveland, Comanche, Grady, Murray.

Genus Nodonota Lefevre

Noda Chapuis, 1870. Gen. Coleopt., 10: 240.

Nodonota Lef., 1885. Mem. Soc. Roy. Sci. Liege, 11: 166.

Nodonota tristis (Olivier)

Colaspis tristis Ol., 1808. Entomol., 6: 889.

Colaspis pilula Germar, 1824. Nova Spec. Inst., p. 567.

Colaspis ovata Say, 1824. J. Acad. Nat. Sci. Philadelphia, 3: 442.

Nodonota tristis : Lefevre, 1885. Mem. Soc. Roy. Sci. Liege,  
11: 166.

Characteristics: Ovate, convex; bluish or bluish green, shining; clypeus broad between antennae, antennae pale at base, outer joints piceous; pronotum twice as wide as long, narrowed in front, finely punctate; elytra with irregular, coarse punctation; length about 3.5 mm.

County records: Delaware, Kiowa, Leflore, McIntosh, Ottawa, Pawnee, Payne, Sequoyah.

Nodonota clypealis Horn

Nodonota clypealis Horn, 1892. Trans. Am. Entomol. Soc., 19: 231.

Characteristics: This species differs from the foregoing species in that the clypeus is contracted between the antennal insertions; punctuation less distinct and more sparse.

County record: McCurtain.

#### SUBFAMILY CHRYSOMELINAE

Characteristics: Oval, convex; usually brightly colored; head inserted into prothorax to eyes, antennae widely separated at base, apical segments somewhat enlarged, eyes slightly emarginate; prothorax with side margins well defined, procoxae transverse, widely separated, third tarsal segment entire instead of bilobed; elytra convex, covering entire abdomen.

#### Key to the species of Chrysomelinae

1. Maxillary palpi with apical segment  
cylindrical or oval, attenuate toward apex;  
third tarsal segment usually bilobed or  
emarginate, sometimes simple . . . . . 13
- Maxillary palpi with apical segment  
subquadrangular or dilated, broadly truncate  
at apex; third tarsal segment entire or  
scarsely emarginate . . . . . 2
2. Claws connate, parallel and contiguous . . . . . 3
- Claws divergent or at least separated at  
base . . . . . 6
3. Pronotum brown with anterior angles pale,  
(Fig. 17) . . . . . Zygogramma exclamationis
- Pronotum entirely brown . . . . . 4

4. First and second interstices brown, forming  
a sutural vitta, (Fig. 18) . . . . . Zygogramma suturalis  
First and second interstices not forming a  
sutural vitta . . . . . 5
5. Second vitta twice interrupted, fourth vitta  
represented by a spot, (Fig. 19) . . . . . Zygogramma heterothecae  
Second vitta once interrupted, may be  
united with third vitta at apex, fourth  
vitta united with third at base, (Fig. 20) . . . Zygogramma disrupta
6. Maxillary palpi with apical segment  
shorter than preceding segment . . . . . 7  
Maxillary palpi with apical segment not  
shorter than preceding segment . . . . . 9
7. Mesosternum forming blunt tubercle between  
mesocoxae; profemora of male strongly  
toothed . . . . . Labidomera clivicollis  
Mesosternum without tubercle between  
mesocoxae; profemora of male simple . . . . . 8
8. Elytra vittate (Fig. 22) . . . . . Leptinotarsa decemlineata  
Elytra uniform in color . . . . . Leptinotarsa haldmani
9. Sides of pronotum not thickened; elytra  
dark without markings, margins may be pale . . . Chrysolina auripennis  
Sides of pronotum thickened; elytra pale  
with dark markings . . . . . 10
10. Elytra with regular vittae . . . . . 11  
Elytra maculate or with poorly defined vittae . . . . . 12

11. Pronotum brown with pale margins,  
 (Fig. 23) . . . . . Calligrapha praeclensis  
 Pronotum entirely brown, (Fig. 24) . . . . . Calligrapha bidenticola
12. Thorax at least partly pale,  
 (Fig. 25) . . . . . Calligrapha multipunctata bigsbyana  
 Thorax entirely dark, (Fig. 26) . . . . . Calligrapha scalaris
13. Elytra with spots . . . . . 14  
 Elytra without spots . . . . . Gastrophysa cyanea
14. Each elytron with a pattern of seven  
 dark spots of which two are median,  
 never elongate, often joined together  
 and to the suture to produce irregular  
 transverse band; rarely entirely pale,  
 sometimes with only the two median spots  
 present on each elytron, may be more or  
 less fused . . . . . 15  
 Each elytron with a pattern of seven  
 dark spots of which three are median,  
 always elongate, never joined to produce  
 transverse band; rarely with median and  
 posterior spots lacking, (Fig. 27) . . . . . Chrysomela scripta
15. Each elytron with the basal spots usually  
 joined, the median spots often joined and  
 nearly always reaching the suture, posterior  
 markings usually joined reaching the  
 suture, (Fig. 28) . . . . . Chrysomela interrupta

Each elytron with the basal and posterior markings usually lacking, median spots may be fused, (Fig. 29) . . . . . Chrysomela knabi

Genus Zygogramma Chevrolat

Zygogramma Chev., 1843. D'Orbigny, Dist. Univ. Nat. History, 3: 656.

Zygogramma exclamationis (Fabricius)

Chrysomela exclamationis Fab., 1798. Entomol. System. Suppl., p. 86.

Zygogramma exclamationis : Linell, 1896. J. New York Entomol. Soc.,  
4: 197.

Characteristics: Oval; brown; pronotum brown with anterior angles pale; elytra pale with vittae as in Figure 17; length about 8.0 mm.

County records: Beaver, Canadian, Cimarron, Cleveland, Comanche, Craig, Harper, Jackson, Kay, McCurtain, Noble, Osage, Payne, Pittsburg, Pontotoc, Sequoyah, Stephens, Washington, Woodward.

Zygogramma suturalis (Fabricius)

Chrysomela suturalis Fab., 1775. System. Entomol., p. 95.

Zygogramma suturalis : Linell, 1896. J. New York Entomol. Soc.,  
4: 197.

Zygogramma suturalis Johnson, 1941. Entomol. News, 52: 12.

Characteristics: This species differs from the foregoing species in that the pronotum is entirely brown; elytra with first and second interstices brown, forming sutural vitta as in Figure 18; length about 6.0 mm.

County records: Cleveland, Comanche, Craig, Dewey, Harper, Noble, Oklahoma, Okmulgee, Payne, Pawnee, Sequoyah.

Zygogramma heterotheca Linell

Zygogramma heterotheca Linell, 1896. J. New York Entomol. Soc.,  
4: 197.

Characteristics: This species differs from the foregoing species in that the second vitta is twice interrupted as in Figure 19; length about 5.0 mm.

County records: Alfalfa, Canadian, Cleveland, Grady, Grant, Hughes, McCurtain, Osage, Payne, Washita.

Zygogramma disrupta Rogers

Zygogramma disrupta Rogers, 1854. Proc. Acad. Nat. Sci. Philadelphia, 8: 34.

Characteristics: This species differs from the foregoing species in that the second vitta is interrupted once as in Figure 20; length about 6.5 mm.

County records: Alfalfa, Cleveland, Cimarron, Comanche, Grady, Grant, Harper, McClain, Oklahoma, Payne, Texas, Woodward.

Genus Labidomera Chevrolat

Labidomera Chev., 1843. D'Orbigny, Dict. Univ. History Nat.,  
3: 656.

Labidomera clivicollis (Kirby)

Chrysomela trimaculata Fabricius, 1775. System. Entomol., p. 95.

Chrysomela clivicollis Kirby, 1837. Fauna Bor. Am., 4: 213.

Labidomera clivicollis rogersi Leconte, 1858. Proc. Acad. Nat. Sci. Philadelphia, 10: 26.

Labidomera clivicollis : Linell, 1896. J. New York Entomol. Soc., 4: 195.

Characteristics: Oval, convex; bluish black; pronotum about three times as wide as long; elytral punctures fine, arranged in irregular double rows with color pattern as in Figure 21; length about 9.0 mm.

County records: Cleveland, Payne.

#### Genus Leptinotarsa Stål

Leptinotarsa Stål, 1858. Ofv. Vet. Akad. Forhandl., 15: 475.

Myocoryna Stål, 1858. Ibid., 15: 316.

Polygramma Motschulsky, 1860. Schrenck's Reisen Amurl., 2: 181.

#### Leptinotarsa decemlineata (Say)

Chrysomela decemlineata Say, 1824. J. Acad. Nat. Sci. Philadelphia, 3: 453.

Myocoryna multilineata Stål, 1859. Ofv. Vet. Akad. Forhandl., 16: 316.

Leptinotarsa decemlineata : Linell, 1896. J. New York Entomol. Soc., 4: 196.

Leptinotarsa tortuosa Tower, 1906. Carnegie Inst. Washington, Publ., 48: pl. 16.

Leptinotarsa pallida Tower, 1906. Loc. cit.

Leptinotarsa defectopunctata Tower, 1906. Loc. cit.: 255.



Leptinotarsa melanicum Tower, 1906. Ibid., 48: 266.

Leptinotarsa minuta Tower, 1906. Ibid., 48: 272.

Leptinotarsa immaculothorax Tower, 1906. Loc. cit.

Leptinotarsa albida Tower, 1906. Loc. cit.

Leptinotarsa rubrivittata Tower, 1906. Ibid., 48: 273.

Leptinotarsa obscurata Tower, 1906. Loc. cit.

Characteristics: Broadly oblong, convex; dull yellow; pattern of pronotum and elytra as in Figure 22, elytral vittae delimited by irregular rows of punctures; length about 8.0 mm.

County records: Alfalfa, Beckham, Caddo, Carter, Cleveland, Cimarron, Coal, Comanche, Cotton, Craig, Delaware, Ellis, Grady, Harmon, Harper, Johnson, Latimer, Leflore, Lincoln, McCurtain, McIntosh, Murray, Noble, Oklahoma, Osage, Ottawa, Pawnee, Payne, Pottawatomie, Sequoyah, Washington, Woods, Woodward.

Leptinotarsa haldmani (Rogers)

Doryphora haldmani Rogers, 1854. Proc. Acad. Nat. Sci. Philadelphia, 8: 30.

Leptinotarsa haldmani : Linell, 1896. J. New York Entomol. Soc., 4: 196.

Characteristics: This species differs from the foregoing species in that the color is uniform blue or green; elytra lacking vittae.

County record: Payne.

Genus Chrysolina Motschulsky

Chrysolina Motsch., 1860. Schrenck's Reisen Amurl., 2: 210.

Chrysomela auctt., not Linnaeus, 1758.

Chrysolina auripennis (Say)

Chrysomela auripennis Say, 1824. J. Acad. Nat. Sci. Philadelphia,  
3: 452.

Chrysomela inornata Rogers, 1854. Proc. Acad. Nat. Sci.  
Philadelphia 8: 36.

Chrysolina auripennis : Van Dyke, 1938. Bull. Brooklyn Entomol.  
Soc., 33: 53.

Characteristics: Oblong oval, convex; head, pronotum and appendages deep blue or violet with elytra varying from cupreous to bright green; head sparsely punctate; pronotum almost twice as wide as long, lateral grooves deep with coarse punctures at bottom of groove, disk finely, sparsely punctate; elytra coarsely, irregularly punctured; length about 8.0 mm.

County records: Beckham, Choctaw, Comanche, Garfield, Greer, Harmon, Kay, McCurtain, Payne, Roger Mills, Tillman.

Genus Calligrapha Chevrolat

Calligrapha Chev., 1837. Dej. Cat., p. 398.

Polyspila Hope, 1840. Coleopt. Man., 3: 165.

Metallographa Motschulsky, 1860. Schrenck's Reisen Amurl., 2: 198.

Boliographa Motsch., 1860. Loc. cit.

Calligrapha praeclsis (Rogers)

Chrysomela praeclsis Rogers, 1854. Proc. Acad. Nat. Sci.  
Philadelphia, 8: 35.

Calligrapha praecelsis : Crotch, 1873. Proc. Acad. Nat. Sci.

Philadelphia, 25: 48.

Characteristics: Broadly oval, convex; brown with pronotal apical and lateral margins yellowish white with suture and broad discal stripe brown, pattern as in Figure 23; length about 7.0 mm.

County record: Osage.

Calligrapha bidenticola Brown

Chrysomela similis Rogers, 1854 (not Muller, 1776). Proc. Acad.

Nat. Sci. Philadelphia, 8: 35.

Calligrapha similis : Linell, 1896. J. New York Entomol. Soc.,

4: 198.

Calligrapha bidenticola Brown, 1945. Canadian Entomol., 77: 122.

Characteristics: This species differs from the foregoing species in that the entire pronotum is brown; elytral pattern as in Figure 24; length about 6.5 mm.

County records: Dewey, McIntosh, Okmulgee, Ottawa, Pittsburg.

Calligrapha multipunctata bigsbyana (Kirby)

Chrysomela bigsbyana Kirby, 1837. Fauna Bor. Am., 4: 212.

Calligrapha bigsbyana : Linell, 1896. J. New York Entomol. Soc.,

4: 199.

Calligrapha multipunctata bigsbyana : Schaeffer, 1934. J. New York

Entomol. Soc., 41: 425.

Characteristics: This species differs from the foregoing species in that the color is green with the antennae and legs reddish, margins of pronotum and most of elytra pale yellow usually with poorly defined vittae,

pattern as in Figure 25; length about 7.0 mm.

County records: Cleveland, Oklahoma, Sequoyah.

Calligrapha scalaris (Leconte)

Chrysomela scalaris Lec., 1824. Ann. Lyc. Nat. History New York,  
1: 173.

Calligrapha scalaris : Linell, 1896. J. New York Entomol. Soc.,  
4: 199.

Calligrapha scalaris floridana Schaeffer, 1934. J. New York  
Entomol. Soc., 41: 476.

Characteristics: This species differs from the foregoing species in that the pronotum is entirely green; elytral pattern as in Figure 26; length about 8.5 mm.

County records: Garfield, Kay, Payne, Woodward.

Genus Gastrophysa Chevrolat

Gastrophysa Chev., 1837. Dej. Cat., 3: 405.

Gastroeidea Hope, 1840. Coleopt. Man., 3: 164.

Gastroidea Gemminger and Harold, 1874. Cat. Coleopt., 11: 3275.

Gastrophysa cyanea Melsheimer

Gastrophysa cyanea Melsh., 1846. Proc. Acad. Nat. Sci.  
Philadelphia, 3: 175.

Gastroidea cyanea caesia Rogers, 1854. Proc. Acad. Nat. Sci.  
Philadelphia, 8: 38.

Characters: Oblong oval, convex; dark blue to violet; head and

pronotum finely, moderately punctate; elytra finely, densely punctate;  
length about 5.0 mm.

County records: Carter, Cleveland, Comanche, Grady, Mayes,  
McIntosh, Murray, Payne, Sequoyah.

Genus Chrysomela Linnaeus

Chrysomela L., 1758. System. Nat., 10: 368.

Melasoma Stephens, 1834. Illust. British Entomol., 4: 350.

Microdera Steph., 1834. Ibid., 4: 351.

Lina Redtenbacher, 1849. Fauna Austr., p. 551.

Macrolina Motschulsky, 1860. Schrench's Reisen Amurl., 2: 198.

Linnaeidea Motsch., 1860. Ibid., 2: 199.

Strickerus Lucas, 1920. Coleopt. Berlin, p. 421.

Chrysomela scripta Fabricius

Chrysomela scripta Fab., 1801. System. Eleuth., p. 438.

Melasoma scripta : Melsheimer, 1853. Smithson. Inst., Washington,  
p. 124.

Melasoma 14-notata Melsh., 1853. Loc. cit., nomen nudum.

Melasoma variegata Melsh., 1853. Loc. cit., nomen nudum.

Plagioderma scripta : Stål, 1865. Nova Acta Roy. Soc Sci. Upsala,  
4: 294.

Lina scripta : Henshaw, 1885. Am. Entomol. Soc., Philadelphia,  
p. 110.

Melasoma lineatopunctata : Weise, 1916 (in part). Coleopt. Cat.,  
68: 142.

Chrysomela lineatopunctata : Beller and Hatch, 1932 (in part).

Univ. Washington Publ. Biol., 1: 99.

Characteristics: Oblong oval; dull reddish to yellow, dark areas with greenish reflection; pronotum dark, very finely punctate with margins yellow, coarsely and sparsely punctate; elytra coarsely, moderately punctate with each containing three median elongated spots as in Figure 27; length about 7.0 mm.

County records: Alfalfa, Bryan, Cherokee, Cleveland, Grady, McIntosh, Payne, Pushmataha, Washington.

Chrysomela interrupta Fabricius

Chrysomela interrupta Fab., 1801. System. Eleuth., p. 438.

Melasoma interrupta : Melsheimer, 1853. Smithson. Inst., Washington, p. 124.

Melasoma alni Melsh., 1853. Loc. cit., nomen nudum.

Plagioderia lapponica : Crotch, 1873 (in part). Proc. Acad. Nat. Sci. Philadelphia, 25: 53.

Melasoma interrupta discicollis Gemminger and Harold, 1874. Cat. Coleopt., 11: 3411, nomen nudum.

Melasoma 12-notata Gemminger and Harold, 1874. Loc. cit., nomen nudum.

Melasoma 4-punctata Gemminger and Harold, 1874. Loc. cit., nomen nudum.

Lina lapponica : Henshaw, 1885. Am. Entomol. Soc., Philadelphia, p. 110.

Lina interrupta : Hamilton, 1889. Trans. Am. Entomol. Soc., 21: 148.

Melasoma lapponica interrupta : Weise, 1916 (in part). Coleopt.

Cat., 68: 142.

Characteristics: This species differs from the foregoing species in that each elytron contains two median spots, not elongated, usually fused as in Figure 28; length about 8.5 mm.

County records: Canadian, Cleveland, Comanche, Ellis, Grady, Greer, Kiowa, Lincoln, McClain, Murray, Oklahoma, Osage, Payne, Woodward.

Chrysomela knabi Brown

Chrysomela interrupta : Rogers, 1856 (in part). Proc. Acad. Nat. Sci. Philadelphia, 8: 37.

Chrysomela interrupta 4-punctata Suffrian, 1858 (not Chrysomela quadripunctata Linnaeus, 1758). Entomol. Zeit. Stettin, 19: 389.

Plagioderia interrupta : Stål, 1865 (in part). Nova Acta Roy. Soc. Sci. Upsala, 4: 293.

Lina lapponica : Lugger, 1889. Univ. Minnesota Agr. Expt. Sta. Bull., 9: 55.

Lina interrupta : Blatchley, 1910. Coleopt. of Indiana, p. 1160.

Lina interrupta quadriguttata Schaeffer, 1928 (not Chrysomela quadriguttata Fabricius, 1781). Canadian Entomol., 60: 43.

Chrysomela interrupta quadriguttata : Beller and Hatch, 1932 (in part). Univ. Washington Publ. Biol., 1: 98.

Chrysomela knabi Brown, 1956. Canadian Entomol., 88: 34.

Characteristics: This species differs from the foregoing species in that each elytron contains only two median spots, basal and posterior spots lacking as in Figure 29; length about 7.5 mm.

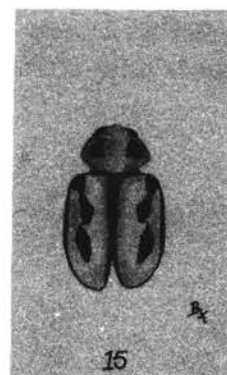
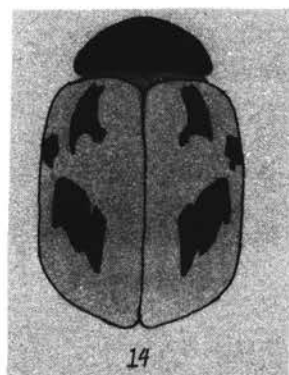
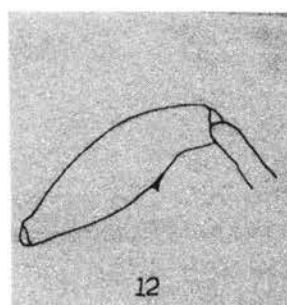
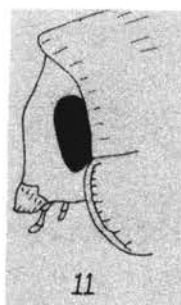
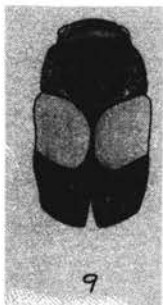
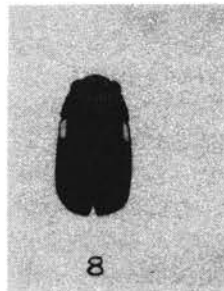
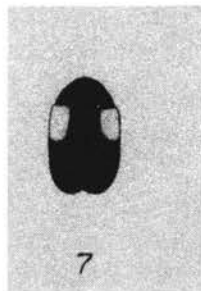
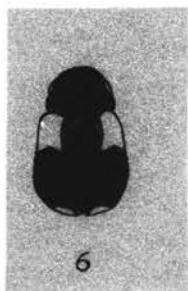
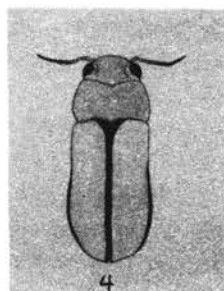
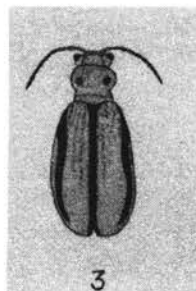
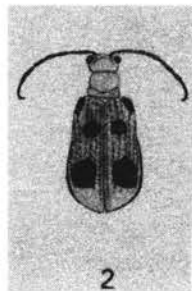
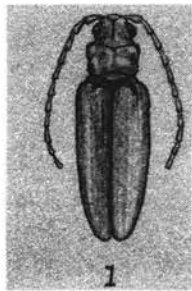
County records: Canadian, Carter, Cleveland, Oklahoma.

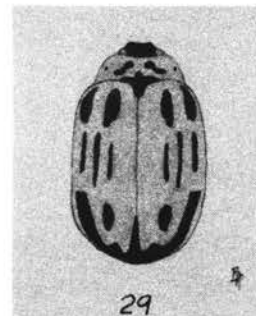
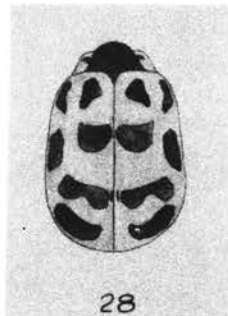
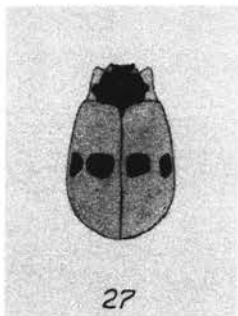
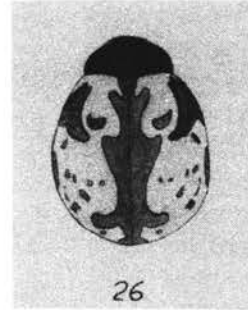
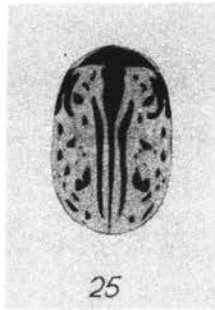
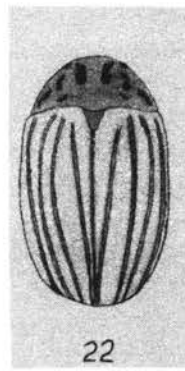
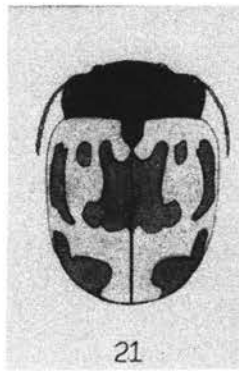
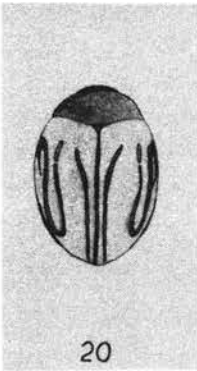
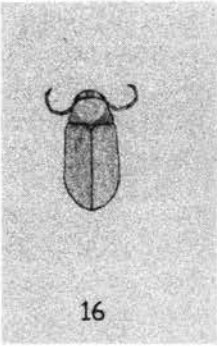
LITERATURE CITED

- Arnett, Ross H. 1960. The beetles of the United States. The Catholic University of America Press, Washington, D. C., pp. 1-1112.
- Blake, Doris H. 1955. A study of Leconte's species of the Chrysomelid genus Graphops with descriptions of some new species. Harvard Univ. Mus. of Comp. Zool., 113: 263-305.
- Blackwelder, R. E. 1939. Fourth supplement to Leng Catalogue of Coleoptera of America north of Mexico. J. D. Sherman, Mt. Vernon, New York, pp. 1-146.
- \_\_\_\_\_. and Ruth M. Blackwelder. 1948. Fifth supplement to Leng Catalogue of Coleoptera of America north of Mexico. J. D. Sherman, Mt. Vernon, New York, pp. 1-87.
- Blatchley, W. S. 1910. Coleoptera of Indiana. The Nature Publishing Co., Indianapolis, Indiana, pp. 1-1393.
- Brown, W. J. 1943. The Canadian species of Exema and Arthrochlamys (Coleoptera, Chrysomelidae). Canadian Entomol., 75: 120-130.
- \_\_\_\_\_. 1956. The new world species of Chrysomela. Canadian Entomol., 88(3): 1-54.
- Clavareau, H. 1913 a. Chrysomelidae: Sagrinae, Donaciinae, Orsodacinae, Criocerinae. In Coleopterorum Catalogus, 24(51): 1-103.
- \_\_\_\_\_. 1913 b. Chrysomelidae: Megascelinae, Megalopodinae, Clytrinae, Cryptocephalinae, Chlamydinae, Lamprosominae. In Coleopterorum Catalogus, 24(53): 1-215.
- \_\_\_\_\_. 1914. Chrysomelidae: Eumolpinae. In Coleopterorum Catalogus, 24(59): 1-215.
- Crotch, G. R. 1873. Materials for the study of the Phytophaga of the United States. Proc. Acad. Nat. Sci. Philadelphia, 25: 19-83.
- Dillon, Elisabeth S. and Lawrence S. Dillon. 1961. A manual of common beetles of Eastern North America. Row, Peterson and Co., Elmsford, New York, pp. 1-884.
- Hatch, Melville H. and A. I. Ortenburger. 1930. Records and new species of Coleoptera from Oklahoma. Univ. of Oklahoma Biol. Survey, 2(1): 1-14.



- \_\_\_\_\_. 1930. Records and new species of Coleoptera from Oklahoma and Western Arkansas with subsidiary studies. Univ. of Oklahoma Biol. Survey, 2(1): 15-26.
- Horn, George H. 1892. Studies in the Chrysomelidae. Trans. Am. Entomol. Soc., 19: 1-18, 196-234.
- Leng, C. W. 1920. Catalogue of the Coleoptera of America north of Mexico. J. D. Sherman, Mt. Vernon, New York, pp. 1-470.
- Marx, E. J. 1957. A review of the subgenus Donacia in the Western Hemisphere. Bull. Am. Mus. Nat. History, 112: 191-278.
- Schaeffer, Charles F. 1933. Short studies of Chrysomelidae. J. New York Entomol. Soc., 41: 297-325.
- Wilcox, John A. 1954. Leaf beetles of Ohio (Chrysomelidae, Coleoptera). Bull. Ohio Biol. Survey, 43: 1-505.
- \_\_\_\_\_. 1957. A revision of the North American species of Paria Leconte (Coleoptera: Chrysomelidae). New York State Mus. Sci. Service Bull., 365: 1-45.





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