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The Leaf Beetles of Alabama (Coleoptera: Chrysomelidae)

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THE LEAF BEETLES OF ALABAMA (COLEOPTERA: CHRYSOMELIDAE)

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INTRODUCTION

IN THE EARLY DAYS of American entomology the collecting of insect specimens and recording of natural history data from the Deep South were sporadic and sparse. Areas particularly lacking in this type of study were western Georgia, Alabama, and Mississippi.

Working together, E. A. Schwarz and H. G. Hubbard collected beetles in the South. In the latter part of the 19th century they made many collecting trips to Florida in the interest of obtaining specimens for the Detroit Scientific Association, which they had founded *(50)*. Mr. Schwarz also collected Chrysomelidae at Selma, Alabama *(63)*, one of the first collections of this family from the State. Other collectors in the South at about the turn of the century, who collected beetles along with other insects, included F. Knab, H. S. Barber, and J. C. Bridwell.

More recently the results of surveys of Chrysomelidae of several Southern States have been published: Florida *(31)*, Georgia *(57)*, South Carolina *(67, 68)*, and Mississippi *(49)*. These are primarily checklists and are not descriptive or analytic. Such a checklist—without keys or descriptions—was compiled for Alabama by Loding *(75)*. Loding, an amateur naturalist, resided in Mobile and contributed more to the study of Alabama Coleoptera than anyone else. His catalogue listed 88 families, 1,041 genera, and 2,770 species and varieties, including 259 forms of 83 genera of Chrysomelidae. His collection is presently maintained at the University of Alabama, University, Alabama.

Although Loding's contribution to coleopterology was remarkable, it nevertheless does not discourage further investigations of

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this kind for the State. Additional distribution records are direly needed for zoogeographic studies and economic entomology. A thorough knowledge of the native fauna is valuable in recognizing introduced species, which are the potentially more dangerous economic pests.

Because the present work includes keys and descriptions, it is decidedly more useful than Loding's checklist. It also serves to identify a large percentage of the Chrysomelidae of the Southeastern United States. Based on records by Kirk *(67)*, 80.6 per cent of the South Carolina species of Chrysomelidae are common to Alabama and South Carolina. Based on Fattig's (57) list for Georgia, 93.3 per cent of that state's species are common to Alabama and Georgia

Other than the publication on work by Park *(82)* on the pselaphid beetles of Alabama, this bulletin is the only taxonomic paper for an entire Alabama beetle family.

COLLECTION AND PRESERVATION TECHNIQUES

Collecting of specimens by the senior author was begun in the spring of 1963 and continued through summer 1965. During this period trips were made to various locales throughout the State and samples taken from sites such as roadsides, state and national parks, county lakes, and national forests. Since the collecting localities covered all parts of the State and were often visited more than once, a fair representation of chrysomelid beetles from Alabama's various faunal zones is believed to have been obtained.

The most frequently employed collecting techniques were beating and sweeping various types of vegetation. This was also done at night to obtain the nocturnal forms. Collections at lights and from light traps were also made, even though only a small percentage of chrysomelids are positively phototropic. Finally, larvae and adults of particular species were sought by scanning the vegetation of known preferred host plants. (The presence of beetles is frequently indicated by feeding damage to the plants.) The immatures of a few species were reared to adults in the laboratory, but larvae collected are not treated in this paper. Adults were usually killed in a cyanide bottle and then mounted on insect

pins or points in the laboratory. Larvae were preserved in Hood's solution.

ADDITIONAL SOURCES

A few specimens of Alabama Chrysomelidae were in the Auburn University Entomology Museum when the authors began their survey. These were identified and utilized for distributional and seasonal data, and as models for descriptions.

Primary among other museum sources was the University of Alabama (UANH), which maintains the extensive Henry P. Loding collection of Coleoptera. Less numerous Alabama records were obtained from the F. R. Mason collection at the Academy of Natural Sciences of Philadelphia (ANSP), the Pennsylvania Department of Agriculture Insect Collection (PADA), and the Division of Insects, United States National Museum (USNM). The latter undoubtedly contains more examples than are recorded here.

Records were also obtained from the literature.

TAXONOMY

Identification of Alabama chrysomelids was accomplished by three methods. First, assembled specimens were compared with previously determined material. The sources of these identified specimens included the personal collection of the senior author and those of Henry P. Loding, the Pennsylvania Department of Agriculture, and the United States National Museum. The accuracy of previous identifications could be evaluated by the reputation of the respective taxonomists. Authorities on several genera were called on to make identifications and verifications, as noted in the acknowledgments. Finally, the taxonomic literature was utilized to obtain both original descriptions and subsequent revisions. References to these sources are frequently indicated in remarks under the various taxa. In making identifications, dissection of some specimens was necessary to examine the genitalic characters.

Because the purpose of the present study was faunistic and not revisionary, original taxonomic changes have been kept to a minimum. Only in a few instances have new synonymies or new spe-

cific validations been made. No name changes have been made in many groups where a more thorough taxonomic review is needed. These situations have been frequently indicated.

Some of the keys used are original and some are modifications of old ones. The adaptations were done chiefly to compensate for regional variations. In one case (properly credited) keys are quoted verbatim.

Incomplete generic and specific synonymies are presented in chronological sequence, including only original references to each name. Nomenclatorical changes are designated in bold-faced type. Complete citations of the majority of bibliographic sources, greatly abbreviated by the author, can be found in Blackwelder *(14)*.

Descriptions usually are brief. The more nondescript species have required longer diagnoses. Following the descriptions are the county distributions of each species. Superscripts have been employed to indicate the source of these records: 1 indicated specimens from the Auburn University Entomology Museum; 2 the Loding collection; 3 either Loding's catalogue (without further notation) or museum sources (credited by the respective abbreviations listed in the section "Additional Sources", p. 7).

Only species known to have been collected in the State are included. An asterisk (*) behind the species name indicates a new State record. The sequence of presentation of species within a genus follows that of its most recent revisor.

The figure given with the county distributions is the total number of specimens seen from the State.

A few discrepancies have been noted between Loding's collection and his catalogue. Either records have been erroneously included in his catalogue or the specimens are now missing from his collection.

Treatment of Loding's collection by the authors has been as follows. No specimens have been kept. Miscellaneous unidentified specimens have been determined and incorporated into the collection proper. (It was from some of this material that an undescribed species of *Disonycha* was discovered.) All original determination labels have been retained on the pins. The series of specimens of a species follows Loding's arrangement as closely as possible. To do this was at times quite difficult because of the great disarray and crowding of his specimens. Some of the same species were found in different sections of his collection. The reordering

of these beetles required the addition of 2 more Schmitt boxes, making a total of 12 for his Chrysomelidae. Some of the determination labels were folded and replaced on their respective pins when it was learned that the specimens were incorrectly identified or the names had changed. However, the authors are not responsible for the removal of determination labels from species of *Disonycha, Capraita,* or *Kuschelina.* Although these labels are still intact they were discovered to be no longer associated with specimens but simply placed as a group on three otherwise empty pins. As with the Auburn collection, Arnett *(1)* has been followed in arrangement of genera in the Loding collection. The arrangement of species usually follows that of the most recent generic revisor.

SYSTEMATICS

The family Chrysomelidae, along with the Cerambycidae and Bruchidae, has been placed by Crowson *(46)* in the Suborder Polyphaga, Series Cucujiformia, Superfamily Chrysomeloidea. The families of this superfamily share many characters, but members of the Chrysomelidae may be distinguished by their bilobed third tarsal segments (except in the subfamily Chrysomelinae where they are entire or nearly so); their relatively short antennae (usually less than two-thirds as long as the body), which are inserted on the front of the head; their entire or emarginate eyes (but when emarginate not surrounding the antennae); their general shape (convex oval or flattened); and their ecological habits (root or leaf-feeding).

KEY TO THE ALABAMA SUBFAMILIES OF CHRYSOMELIDAE

1. Head with vertex projecting strongly forward, mouth directed posteriorly (Fig. 1) 2
   Head normal, vertex not projecting forward, mouth anterior (Fig. 2) 3
2. Pronotum and elytra with broad marginal expansions, pronotal margins often covering head (Fig. 1) ..... Cassidinae (p. 189)
   Pronotum and elytra without broad marginal expansions; head never covered, exposed ..... Hispinae (p. 178)
3. Pygidium declivous, exposed, not covered by the elytra (Fig. 3); second and third visible abdominal sternites narrowed medially 4

Elytra covering pygidium, second and third visible abdominal sternites not narrowed medially 7

4. Body surfaces uniformly even, not tuberculate; pleura of prothorax without antennal grooves 5
Body surfaces rough or tuberculate (Fig. 4); pleura of prothorax with grooves for antennae ..... Chlamisinae (p. 56)

5. Antennae serrate or clavate-serrate; head prominent, exerted from prothorax 6
Antennae filiform or clavate; head deeply set into prothorax (Fig. 5) ..... Cryptocephalinae (p. 26)

6. Head constricted behind eyes; eyes large, deeply emarginate (Fig. 6) ..... Zeugophorinae (p. 22)
Head usually not constricted behind eyes; eyes usually not large, nor deeply emarginate ..... Clytrinae (p. 23)

7. Antennal insertions separated by entire width of frons; if approximate, 1st visible abdominal sternite no longer than 2nd and 3rd combined 8
Antennal insertions nearly approximate; 1st visible abdominal sternite as long as all others combined (Fig. 7) ..... Donaciinae (p. 10)

8. Prothorax with incomplete lateral margins; eyes prominent; head somewhat constricted behind eyes 9
Prothorax with complete lateral margins; eyes not prominent; head not especially constricted behind the eyes (Fig. 2) 10

9. Tarsal claws bifid (Fig. 8); prothorax sinuate laterally (Fig. 9); elytra with scattered pubescence ..... Orsodacninae (p. 15)
Tarsal claws simple; prothorax evenly convex laterally; elytra glabrous ..... Criocerinae (p. 16)

10. Antennae closely inserted on front of head 11
Antennal insertions separated by width of frons 12

11. Posterior femora enlarged, adapted for jumping (Fig. 10) ..... Alticinae (p. 122)
Posterior femora slender, not greatly enlarged ..... Galerucinae (p. 103)

12. Third tarsal segment bilobed (Fig. 11); procoxae round; cubital veins of wings present ..... Eumolpinae (p. 62)
Third tarsal segment entire or indistinctly bilobed (Fig. 12), if apparently distinctly bilobed then procoxae are transversely oval; cubital veins absent ..... Chrysomelinae (p. 90)

SUBFAMILY DONACIINAE

Head prominent, slightly narrowed behind the eyes. Eyes entire. Antennal insertions closely approximated. Prothorax subquadrate without lateral margins, narrower than elytra. Legs long, hind femora strongly enlarged and usually toothed below (Fig. 7). Larvae with 8th abdominal spiracles enlarged and produced into hooks posteriorly.

Members of this subfamily are aquatic or semiaquatic. In appearance they much resemble the Cerambycidae.

Key to the Alabama Genera of Donaciinae

1. Sutural margin of elytra straight to apex (Fig. 13) ....*Donacia* (p. 11)
   Sutural margin of elytra sinuate near apex (Fig. 14) ....*Plateumaris* (p. 15)

Genus *Donacia* Fabricius

Donacia Fabricius, 1775, Syst. Entomol. 195
Type-species: *Donacia crassipes* Fabricius.
Donacocia Gistl, 1857, Vacuna 2: 524.
Donaciella Reitter, 1920, Wien, Entomol. Ztg. 38: 27,38.
Pseudodonacia Reitter, 1920, Wien. Entomol. Ztg. 38: 26,27.
Cyphogaster Goecke, 1934, Kol. Rundschau 20(6): 215. Type-species: *Donacia provosti* Fairm. Subgenus.

Moderate-sized; elongate, slender; elytral apexes truncate or rounded; last ventral abdominal segment of male with deep fovea at apex; tarsi dilated, pilose beneath, 3rd segment bilobed and subequal to 2nd, 5th segment as long as 3rd and 4th combined; claws slightly appendiculate.

Key to the Alabama Species of *Donacia*
(Adapted from Marx *(76)*)

1. Posterior femora with one or more subapical teeth on ventral surface 5
   Posterior femora without subapical teeth on ventral surface 2
2. Posterior femora strongly clavate, narrower at base than at apex; strial punctures large, deep, and sometimes coalescent 3
   Posterior femora feebly clavate, as wide at base as at apex; strial punctures small ....*D. vicina* (p. 15)
3. Elytral intervals sparsely and often coarsely wrinkled, surface shining; pronotum irregularly sculptured with punctures, wrinkles, or smooth areas 4
   Elytral intervals densely and finely wrinkled, surface opaque; pronotum rugosely punctate throughout, sometimes mixed with deep transverse striae ....*D. rugosa* (p. 14)
4. Pronotum alutaceous; anterior lateral pronotal tubercles delimited above and behind by a deep groove (females) ....*D. rufa* (p. 14)
   Pronotum smooth, shining; anterior lateral pronotal tubercles not delimited above and behind by a deep groove ....*D. assimilis* (p. 12)
5. Middle tibiae without apical, tooth-like projection 6
   Middle tibiae with apical tooth-like projection medially near tibial spur ....*D. palmata* (p. 13)
6. Pronotal disc deeply and usually densely punctate with large punctures, rugose, or strigose 7
   Pronotal disc impunctate, or more or less shallowly and sparsely punc-

tate with small punctures, not rugose or densely strigose, sometimes finely wrinkled 9

7. Posterior femora reddish brown or at least half reddish brown 8
Posterior femora black or metallic, or with small, frequently indistinct, reddish brown area at bases ..... *D. subtilis* (p. 14)

8. Antennae with 3rd segment subequal to scape ..... *D. rugosa* (p. 14)
Antennae with 3rd segment distinctly shorter than scape (Fig. 13) ..... *D. aequalis* (p. 12)

9. Pronotum distinctly alutaceous, opaque 10
Pronotum not or slightly alutaceous, shining 11

10. Lateral pronotal margins strongly sinuate, anterior margin much wider than posterior margin ..... *D. rufa* (p. 14)
Lateral pronotal margins not or but feebly sinuate, anterior and posterior margins subequal ..... *D. hypoleuca* (p. 13)

11. Posterior femora with 1 subapical tooth; rarely with indistinct anterior denticle 12
Posterior femora with 2 distinct subequal teeth ..... *D. cincticornis* (p. 13)

12. Pronotum with triangular anterior impression bordered behind by oblique obtuse ridges, a distinct median line present (Fig. 13) ..... *D. aequalis* (p. 12)

Pronotal anterior impression absent, or if present not bordered behind by distinct oblique obtuse ridges ..... *D. cincticornis* (p. 13)

Donacia aequalis Say

Fig. 13

Donacia aequalis Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3(2): 428.
Donacia confusa Lacordaire, 1845, Mem. Soc. Roy. Sci. Liège 3(1): 109.

Oblong; black with piceous, bronze, blue, or green luster. Length 5.6-7.7 mm. Width 2.1-3.2 mm.

Alabama records: 169 specimens from Lee[1], Mobile[1,2,3], and Monroe[1] counties.

Seasonal distribution: April 20-July 10.

Remarks: Lee County specimens were collected on *Sagittaria* sp.

Donacia assimilis Lacordaire

Donacia assimilis Lacordaire, 1845, Mem. Soc. Roy. Sci. Liège 3(1): 153.
Donacia glabrata Schaeffer, 1919, Jour. N. Y. Entomol. Soc. 27: 313.

Elongate; greenish black. Legs reddish with black bands around thickest part of femora, or entirely reddish; posterior femora without subapical teeth on ventral surface. Length 8.8-10.9 mm. Width 3.0-3.5 mm.

Alabama records: 5 specimens from Autauga[3], Dallas[1], Mobile[2], and Russell[1] counties.

Seasonal distribution: May 30-August 28.

Remarks: The Russell and Dallas county specimens were taken on *Sparganium americanum*. Marx *(76)* reported this plant as a host in New Jersey. He further recorded "Prattville, Georgia," for 1 specimen. This should read Alabama. Marx does correctly record Prattville in Autauga County, Alabama, in the appendix.

Donacia cincticornis Newman

Figs. 7, 42

Donacia cincticornis Newman, 1838, Entomol. Mag. London 9: 391.
Donacia rufipennis Lacordaire, 1845, Mem. Soc. Roy. Sci. Liège 3(1): 110.
Donacia lucida Lacordaire, 1845, Mem. Soc. Roy. Sci. Liège 3(1): 106.
Donacia pulchella LeConte, 1851, Proc. Acad. Nat. Sci. Philadelphia 5: 312.
Donacia antillarum Suffrian, 1866, Arch. Naturgesch, Berlin 32: 282.
Donacia cincticornis var. *tryphera* Schaeffer, 1925, Brooklyn Mus. Sci. Bull. 3(3): 81.
Donacia cincticornis var. *tenuis* Schaeffer, 1925, Brooklyn Mus. Sci. Bull. 3(3): 85.

Elongate; brownish with faint metallic greenish luster shining from elytral punctures; pronotum glabrous, sides subparallel, anterior portion slightly wider than base. Length 7.0-8.88 mm. Width 2.5-3.0 mm.

Alabama records: 27 specimens from Baldwin[1], Lee[1], Mobile,[1,2,3] and Russell[1] counties.

Seasonal distribution: April 11-August 27.

Remarks: Alabama specimens have been taken on *Brasenia schreberi, Nymphoides aquaticum,* and *Nymphaea odorata.*

Donacia hypoleuca Lacordaire

Donacia hypoleuca Lacordaire, 1845, Mem. Soc. Roy. Sci. Liège 3(1): 101.

Elongate; brownish with very faint green luster visible from elytral punctures. Length 13.5 mm. Width 3.5 mm.

Alabama records: 2 specimens from Lee[1] and Mobile[2,3] counties.

Seasonal distribution: July 24-September 20.

Remarks: This species is attracted to light.

Donacia palmata Olivier

Donacia palmata Olivier, 1795, Entomologie, Paris, 4(75): 8-9.
Donacia claudicans Germar, 1821, Mag. Ent. Halle 4: 173-174.

Elongate; elytra pale brown with green or purple luster; pronotum purple with green luster, alutaceous, and with anterior lateral tubercles prominent. Males with first segment of anterior tarsi broadly dilated. Length 7.0-11.2 mm. Width 3.0-4.0 mm.

Alabama records: Colbert[3] County. No Alabama specimens were seen but Marx *(76)* saw a specimen of this species from "Wilson Dam F. Q."

Seasonal distribution: May 27.

Donacia rufa Say*

Donacia rufa Say, 1826, Jour. Acad. Nat. Sci. Philadelphia 5: 283.
Donacia tuberculata Lacordaire, 1845, Mem. Soc. Roy. Sci. Liège 3(1): 155.
Donacia rutila Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 159.

Oblong oval; light to dark bronze; lateral pronotal margins strongly sinuate, anterior portion much wider than posterior. Length 6.3-7.5 mm. Width 2.5-3.0 mm.

Alabama records: 29 specimens from Macon[1] and Lee[1] counties.

Seasonal distribution: June 2-July 9.

Remarks: All the beetles were taken on *Sagittaria* sp.

Donacia rugosa LeConte*

Donacia rugosa LeConte, 1878, Proc. Amer. Phil. Soc. 17: 415.

Elongate, metallic dark bronze; pronotum densely punctate; posterior femora reddish brown or conspicuously bicolored. Length 10.0 mm. Width 3.5 mm.

Alabama records: 1 specimen from Mobile[2] County.

Seasonal distribution: June 6.

Remarks: Marx *(76)* reports that *Pontederia cordata* is the most favored host plant.

Donacia subtilis Kunze

Donacia subtilis Kunze, 1818, Neue Schr. Naturf. Gesell. Halle 2(4): 12.
Donacia aenea Ahrens, 1810, Neue Schr. Naturf. Gesell. Halle 1(3): 21 (not Hoppe, 1795).
Donacia confluenta Say, 1826 (not 1827), Jour. Acad. Nat. Sci Philadelphia 5(2): 293.
Donacia aequalis Kirby, 1837, *in* Richardson, Fauna Boreali-Americana, pt. 4, p. 226.
Donacia aerea Lacordaire, 1845, Mem. Soc. Roy. Sci. Liège 3(1): 148.
Donacia confluens LeConte, 1851, Proc. Acad. Nat. Sci. Philadelphia 5: 312.
Donacia fulgens LeConte, 1851, Proc. Acad. Nat. Sci. Philadelphia 5: 312. **New synonymy.**
Donacia subtilis magistrigata Mead, 1938, Pan-Pacific Entomol. 14(3): 113. **New synonymy.**

Elongate; dark bronze, green or black; pronotum deeply and densely punctate. Length 7.0-9.1 mm. Width 2.3-3.3 mm.

Alabama records: 111 specimens from Dallas[1], DeKalb[1], Lee[1], and Mobile[1,2,3] counties.

Seasonal distribution: March 17-July 29.

Remarks: The combination of characters, viz. size of the eyes and coloration and shape of the hind femora, formerly used to distinguish *D. subtilis* Kunze from *D. fulgens* LeConte are quite variable. The 2 supposed species are sympatric, and in Alabama many intermediate forms are found in single

populations. Marx *(76)* noted that even the male genitalia were variable and not satisfactory for showing species distinctness. We, therefore, have proposed this new synonymy.

Donacia vicina Lacordaire

Donacia vicina Lacordaire, 1845, Mem. Soc. Roy. Sci. Liège 3(1): 154.

Elongate, piceous; pronotum deeply, moderately densely punctate; elytral interstrial intervals smooth, shining. Length 8.0-9.8 mm. Width 2.8-3.5 mm.

Alabama records: 5 specimens from Mobile[2,3] County.

Seasonal distribution: March 17-27.

Remarks: Loding and Th. Van Aller have collected these specimens at Spring Hill on *Sparganium* sp. *D. vicina* is usually broader, more shining above, and without subapical teeth on the hind femora, than its close relative *D. subtilis (76).*

Genus Plateumaris Thomson

Plateumaris Thomson, 1866, Skand. Col. 8: 121. Type-species: *Donacia nigra* Fabricius.

Juliusina Reitter, 1920, Best.-Tab. Eur. Col. 88: 41. Type-species: *Donacia braccata* Scopoli. Subgenus.

Sominella Jacobson, 1908, Horae Soc. Entomol. Ross. 38: 622. Subgenus.

Poecilocera Schaeffer, 1919, Jour. N. Y. Entomol. Soc. 27: 307, 308.

Moderate-sized; elongate oval; mandible prominent; elytral apexes rounded, sutural margin sinuate at apex (Fig. 14); legs stout, anterior femora thickened; first abdominal segment as long as 3 following.

Plateumaris flavipes lodingi (Schaeffer)

Donacia flavipes lodingi Schaeffer, 1925, Brooklyn Mus. Sci. Bull. 3(3): 129.

Elongate; dark bronze with metallic green, legs and antennae reddish brown tinged with dark bronze; lateral thoracic edges sinuate, thoracic tubercles prominent. Length 7.7-8.4 mm. Width 2.5-2.8 mm.

Alabama records: 12 specimens from Mobile[1,2,3] County.

Remarks: *Peltandra* sp. is the host *(94).* Two specimens, collected by Loding but belonging to the Auburn University collection, carry a Schaeffer determination label with a manuscript name which Marx (personal communication) also has seen on specimens, probably of the same series, in the Knaus collection of Kansas State University. The specimens in the Loding collection, however, carry Schaeffer's valid name, *D. flavipes lodingi (84).*

SUBFAMILY ORSODACNINAE

Genus *Orsodacne* Latreille

Orsodacne Latreille, 1802, Hist. Nat. Crust. Ins. III: 223.

Orsodacna Latreille, 1804, Sonnini's Buffon, Ins. 11: 305 (for *Orsodane* Lat.).

Orsodachna Leach, 1815, *in* Brewster's Edin. Encyc. 9(1): 113.

Eyes round, entire. Antennae long, slender, reaching base of elytra. Prothorax lacking distinct lateral margins, lateral teeth or tubercles; narrower at base than elytra. Elytra elongate; body flat and narrow. Anterior coxae separated, not prominent. Color extremely variable.

The following species is the only member of the genus reported from the United States *(1)*.

Orsodacne atra (Ahrens)

Figs. 8, 9

Orsodacne atra Ahrens, 1810, Neu. Schrift. Naturf. Ges. Halle 1(3): 46.
Orsodacne vittata Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3(1): 430.
Orsodacne armeniacae Germar, 1824, Insectorum species novae aut minus cognitae, descriptionibus illustratae, p. 526.
Orsodacne hepatica Say, 1826, Jour. Acad. Nat. Sci. Philadelphia 5(2): 281.
Orsodacne childreni Kirby, 1837, *in* Richardson, Fauna Boreali-Americana, pt. 4, p. 221.
Orsodacne tibialis Kirby, 1837, *in* Richardson, Fauna Boreali-Americana, pt. 4, p. 221.
Orsodacne inconstans Newman, 1838, Entomol. Mag. 5: 391.
Orsodacne ruficollis Newman, 1838, Entomol. Mag. 5: 392.
Orsodacne trivittata Lacordaire, 1845, Mem. Soc. Roy. Sci. Liège 3(1): 71.
Orsodacne luctuosa Lacordaire, 1845, Mem. Soc. Roy. Sci. Liège 3(1): 72.
Orsodacne tricolor Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 60.

"Elongate; prothorax without lateral margins, sides sinuate, widest at apical third; extremely variable in color, most of the color forms have been named; however, all these forms seem to constitute a single species. Length 4-8 mm. Width 1.5-3.3 mm." *(94)*.

Alabama records: Mobile[3] County.

Remarks: No specimens of this species from Alabama were seen although Loding *(75)* recorded it from Mobile County. The only *Orsodacne* in his collection were labeled "*Orsodachna childreni* Kirby" from "Golden, Col." and 4 labeled "*Orsodachna atra* Ahrens" from "Vernon, B. C." Arnett *(1)* reported that *O. atra* occurs on *Salix* blossoms in the spring, so it may occur in Alabama.

SUBFAMILY CRIOCERINAE

Oblong or elongate; antennae widely separated, inserted in front of eyes; prothorax much narrower than elytra at base; procoxae prominent, conical, nearly contiguous, in closed coxal cavities. Pupation in a distinct cocoon.

Key to the Alabama Genera of Criocerinae

1. Lateral margins of prothorax evenly convex; tarsal claws separate, divergent from base ..... *Crioceris* (p. 17)

Lateral margins of prothorax with a median constriction (Fig. 15); tarsal claws contiguous for at least basal third ..... *Lema* (p. 17)

Genus *Crioceris* Fabricius

Crioceris Fabricius, 1775, Syst. Entomol.: 118. Type-species: *Chrysomela asparagi* Linnaeus.

Moderate-sized, elongate; thorax narrower than elytra. Two introduced species occur in the United States but only the following occurs in Alabama.

Crioceris asparagi (Linnaeus)*

Chrysomela asparagi Linnaeus, 1758, Syst. Nat. p. 376.

Elongate; head and underside dark metallic blue; pronotum red, with or without 2 discal black spots; elytra yellow with metallic blue sutural vittae and humeral, median, and subapical fasciae. Length 5.6-6.3 mm. Width 2.1-2.5 mm.

Alabama records: 34 specimens from Lee[1] County.

Seasonal distribution: May 1-November 18.

Remarks: This species is an economic pest of asparagus *(Asparagus officinalis).*

Genus *Lema* Fabricius

Lema Fabricius, 1798, Supp. Entomol. Syst., 90. Type-species: *Chrysomela cyanella* Linnaeus.

Petauristes Latreille, 1829, *in* Cuvier Règne Animal 5: 136. Type-species *Lema crassipes Olivier.*

Bradylema Weise, 1901, Arch. Naturg. 67: 146. Type-species: *Lema grandis* Klug.

Pseudolema Pic (not Jacoby, 1903), 1928, Soc. Entomol. France, Bull. 1928: 96. Type-species: *Lema akinini* Heyd.

Sulcatolema Pic, 1928, Soc. Entomol. France, Bull. 1928: 96. Type-species: *Leptura coromandeliana* Fab.

Incisophthalma Heinze, 1929, Deutsche Entomol. Zeitschr. 1929: 289.

Bradylemoides Heinze, 1930, Rev. Zool. Bot. Afr. 20(1): 28.

Microlema Pic, 1932, Mel. Exot. Entomol. 60: 33 (n. name for *Pseudolema* Pic, 1928).

Quasilema Monrós, 1951, Acta Zool. Lilloana Tuc. 11: 468. Subgenus.

Neolema Monrós, 1951, l. c.: 472. Subgenus.

Hapsidolemoides Monrós, 1951, l.c.: 470. Subgenus.

Pachapsidolema Monrós, 1951, l.c.: 472. Subgenus.

Pachylema Monrós, 1951, l.c.: 473. Subgenus.

Elongate oval, thorax narrower than elytra. Color blue or black and red or yellowish orange in combinations of fasciae or maculae. Eyes large, more or less deeply emarginated on inner margin. Ninth elytral striae interrupted in middle in subgenus *Neolema;* entire in subgenus *Quasilema.*

Although Schaeffer *(87)* has written keys to all North American spec-

ies and recorded notes on certain ones, further investigation of the North American *Lema* is needed.

Key to the Alabama Species of *Lema*

1. Elytra uniformly dark blue or black, including the lateral margins 2
   Elytra bicolored 5
2. Vertex evenly convex, not bituberculate or only feebly so 3
   Vertex strongly bituberculate (Fig. 15) ....*L. (Q.) cornuta* (p. 19)
3. Head red, frons with or without black spot; pronotum alutaceous 4
   Head entirely black; pronotum shining, clear red ....*L. (Q.) collaris* (p. 19)
4. Frons alutaceous, strigosely punctate; abdomen black. Small species; 3.5 mm. ....*L. (Q.) maculicollis* (p. 19)
   Frons smooth, shining, punctulate; abdomen reddish orange. Large species; 4.9-5.6 mm. ....*L. (N.) sayi* (p. 21)
5. Elytra trivittate black, entire, common sutural and paired lateral vittae, or with vittae confluent apically from ⅔ of disc 6
   Elytra fasciate or maculate 9
6. Elytra vittae separate and distinct, not confluent 7
   Elytral vittae confluent apically from ⅔ of disc ....*L. (Q.) conjuncta* (p. 20)
7. Lateral elytral vittae narrow, occupying no more than last 2 intervals 8
   Lateral elytral vittae wide, occupying last 3 or more intervals ....*L. (Q.) trilineata trilineata* (p. 20)
8. Head with spot on interocular triangle and ocular orbits black, or medial spot connecting with ocular orbits and forming broad, transverse, interocular fascia ....*L. (Q.) trilineata medionata* (p. 20)
   Head pattern variable, with or without black markings, or almost entirely black, but interocular triangle always more or less pale and never with only black median spot. ....*L. (Q.) trilineata trivittata* (p. 21)
9. Elytra orange-red with black or blue-black spots on fasciae 10
   Elytra not as above, but with orange-red fascia medially connecting with orangish margins, thus separating basal and apical blue-black areas ....*L. (Q.) solani* (p. 19)
10. Legs largely black; tibiae without terminal spurs 11
    Legs entirely red, or red with tarsi only black; tibiae with terminal spurs ....*L. (N.) jacobina* (p. 21)
11. Elytra with several spots 12
    Elytra with wide, black common sutural vitta of irregular outline ....*L. (N.) ephippium* (p. 22)
12. Elytra with 6 black spots (paired humerals, medial and subapical suturals); medial and subapical suturals occasionally meeting, forming fasciae ....*L. (N.) sexpunctata* (p. 22)
    Elytra with a black, common, more or less triangular or subcordate, medial spot, black paired humeral spots, and black common subapical sutural spot ....*L. (N.) albini* (p. 22)

Subgenus *Quasilema* Monrós
Lema (Quasilema) cornuta Fabricius

Fig. 15

Lema cornuta Fabricius, 1801, Syst. Eleuth., p. 475.

Elongate; elytra shining dark blue-black or green-black; head and pronotum orange-red and shining; legs orange-yellow to pre-apex of femora, thence distally black. Length 5.3-6.7 mm. Width 2.1-2.5 mm.

Alabama records: 31 specimens from Chilton[1], Etowah[2], Houston[1], Lee[1], and Mobile[2] counties.

Seasonal distribution: May 31-August 11.

Remarks: We found that a preferred host plant for this species was *Commelina erecta.* Loding *(75)* recorded *Tradescantia* as a host.

The legs of 1 specimen from Lee County lacked the decidedly dark knees and thus approached the description of *L. simulans* Schaeffer, a species described from Kansas and noted by Schaeffer *(87)* to resemble *L. (Q.) cornuta.* One specimen of the Loding collection carried the red margined determination label of Schaeffer.

Lema (Quasilema) maculicollis Lacordaire

Lema maculicollis Lacordaire, 1845, Mem. Soc. Roy. Sci. Liège 3: 392.

Small, alutaceous; head and prothorax red, elytra black; venter black with red hues. Length 3.6 mm. Width 1.4 mm.

Alabama records: 1 specimen collected by Loding at Magazine Point, Mobile[2,3] County.

Seasonal distribution: April 1.

Lema (Quasilema) collaris Say*

Lema collaris Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3(2): 430.

Elongate; shining, completely deep blue-black except prothorax orange. Length 5.3-5.4 mm. Width 2.1 mm.

Alabama records: 2 specimens from Cleburne[1] County.

Seasonal distribution: July 24.

Remarks: These specimens were taken on *Commelina* sp. (probably *C. communis)* on Cheaha Mountain. This species resembles *L. longipennis* Linell.

Lema (Quasilema) solani Fabricius

Lema solani Fabricius, 1798, Supp. Entomol. Syst. p. 93.

Elongate; head, antennae, legs, and venter of pro-, meso-, and metathorax black; abdomen orange. Pronotum orange. Elytra black with broad orange medial fascia which connects to orange lateral margins. Length 5.6-7.0 mm. Width 2.8-3.0 mm.

Alabama records: 17 specimens from Butler[1], Lee[1], Marengo[1], and Mobile[2,3] counties.

Seasonal distribution: May 16-August 26.

Remarks: Two of Loding's specimens carried no data, while 1 had a Schaeffer determination label.

Lema (Quasilema) conjuncta Lacordaire

Lema conjuncta Lacordaire, 1845, Mem. Soc. Roy. Sci. Liège 3: 408.

Elongate; orange with black elytral vittae explanate and confluent apically from ⅔ of elytra. Antennal joints 2-11, tibiae, except for basal orange band, and tarsi black. Length 6.5-6.7 mm. Width 2.8-3.0 mm.

Alabama records: 2 specimens from Mobile[2,3] County.

Seasonal distribution: April 7-15.

Remarks: Loding's 2 specimens were not previously identified. One of these has 2 small black pronotal discal spots. Loding *(75)* credited Van Allen as having taken this species on *Aesculus* sp. It is suspected that *L. conjuncta* may be conspecific with *L. trilineata* (Olivier). Linell *(74)* also relates *L. conjuncta* with *L. confusa* Chevrolat.

Lema (Quasilema) trilineata trilineata (Olivier)

Crioceris trilineata Olivier, 1808, Entomologie 6: 739, t. 2, Fig. 34.

Robust, orange; antennal segments 2-11 black; elytra with 3 broad black vittae; common sutural and 2 laterals wider than 8th and 9th interstrial spaces. Length 7.0-8.4 mm. Width 3.3-3.5 mm.

Alabama records: 3 specimens from Mobile[2,3] County.

Seasonal distribution: May 19-July 20.

Remarks: All 3 specimens were probably seen by Schaeffer; his determination label is on 2 of them. One of these Schaeffer had labeled "*Lema trilineata* Oliv. var." This is probably the specimen he noted *(87)* to be an intergrade with *L. (Q.) trilineata medionata*, as it has a large median interocular spot and the ocular orbits black. Investigations into the variation of this species in Alabama would be useful, for as Schaeffer points out, 3 of 4 described subspecies have been collected here. As noted previously, *L. conjuncta* may be closely related to *L. trilineata*.

Kaufmann *(66)* reported the following hosts: *Datura stramonium*, *Physalis lanceolata*, *P. grandiflora*, *P. edulis*, *P. virginiana* var. *sonare*, and *Hyocyanus niger*.

The common name is three-lined potato beetle.

Lema (Quasilema) trilineata medionata Schaeffer

Lema trilineata medionata (sic.) Schaeffer, 1933, Jour. N. Y. Entomol. Soc. 41: 303 (erratum).

Robust, orange. Vittae narrow like subspecies *trivittata*, differing by head having pubescent, black frons and black ocular orbits. Length 7.0 mm. Width 3.3 mm.

Alabama records: 1 specimen from Mobile[2,3] County.

Seasonal distribution: May 13.

Remarks: This specimen, a paratype, was collected on Dauphin Island,

May 13. In addition to the printed label it also carries a hand written label: "On stems of *Amaranthus*, Mobile Bay, Oct. 15, 1927."

Lema (Quasilema) trilineata trivittata Say

Lema trivittata Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3: 429.
Lema trilineata trivittata Schaeffer, 1933, 320.

Robust, orange. Differs from nominate subspecies in having lateral black vittae only as wide as 8th and 9th interstrial spaces. Prothorax yellow-orange with or without black discal spots. Ocular orbits yellow-orange or black. Length 6.3-8.4 mm. Width 2.8-3.7 mm.

Alabama records: 16 specimens from DeKalb[1], Elmore[1], Lee[1], Mobile[2,3], and Tuscaloosa[1] counties.

Seasonal distribution: May 5-July 21.

Remarks: One specimen was taken in a light trap.

Subgenus *Neolema Monrós*

Lema (Neolema) sayi Crotch

Lema sayi Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia, 25: 25.

Elongate; head red, often with medial black spot on frons; pronotum entirely red or with disc with single large, or 2 or 3 small black spots; antennae, legs, and elytra black. Length 4.7-6.0 mm. Width 1.9-2.5mm.

Alabama records: 37 specimens from Choctaw[1], Dallas[1], Houston[1], Lee[1], Macon[1], Mobile [2,3], and Russell[1] counties.

Seasonal distribution: April 25-August 28.

Remarks: The host plant is *Commelina communis.*

Lema (Neolema) jacobina Linell*

Lema jacobina Linell, 1898, Proc. U. S. Nat. Mus. 20: 474.

Head and pronotum orange; elytra with margins broadly orange, disc blue-black. Antennae black, basal 4 segments and occasionally 11th bicolored with orange. Legs and venter orange; apexes of tarsal joints black. Length 4.6-5.3 mm. Width 2.1-2.5 mm.

Alabama records: 17 specimens from Cleburne[1] and Madison[1] counties.

Seasonal distribution: July 10-27.

Remarks: Specimens taken at Monte Sano were collected from *Commelina* sp. (probably *C. communis).* Kaufmann *(66)* listed *C. erecta* as host.

Linell's *(74)* description of *L. jacobina* indicated that an elytral spot, separate from the sutural dark area, was present on the apical fourth. In none of the specimens examined was there such a separate maculation but rather the disc had one entire dark area. In other respects these specimens fit Linell's description of *L. jacobina.* Although *L. jacobina* was described from San Diego, Texas, the Alabama series, differing in elytral maculation, was not given a subspecific designation since the species was described from only 1 specimen, which may or may not have been aberrant. [Sanderson (personal communication) remarked that *L. jacobina* keys out three places in his working key.]

Lema (Neolema) sexpunctata (Olivier)

Crioceris sexpunctata Olivier, 1808, Entomologie 6: 738.
Lema sexmaculata Germar, 1824, Insectorum species Nov. p. 526.

Robust; orange-red. Each elytron with small humeral and submedial spots and larger preapical spot. Submedial and preapical spots may merge medially with those of other elytron. Legs and antennae usually black. Length 4.9-6.3 mm. Width 2.1-3.0 mm.

Alabama records: 71 specimens from Cleburne[1], DeKalb[1], Houston[1], Lee[1], Madison[1], and Mobile[1,2] counties.

Seasonal distribution: April 10-September 21.

Remarks: The host is *Commelina communis.*

Lema (Neolema) albini Lacordaire

Lema albini Lacordaire, 1845, Mem. Soc. Roy. Sci. Liège 3: 492.

Robust; orange-red. Generally smaller than *L. sexpunctata* and having submedial spots confluent and subcordate, and preapical spots all merged medially. Length 4.4-5.6 mm. Width 1.9-2.5 mm.

Alabama records: 39 specimens from Clay[1], Houston[1], Lee[1], Macon[1], Mobile[1,2,3], and Russell[1] counties.

Seasonal distribution: April 25-August 8.

Remarks: Specimens have been seen from as far north as Carbondale, Illinois, but this is primarily a southern species. Most of the Alabama specimens are from the southeastern part of the State. It occurs in Florida and specimens have also been seen from Mexico.

Lema (Neolema) ephippium Lacordaire

Lema ephippium Lacordaire, 1845, Mem. Soc. Roy. Sci Liège 3: 483.

Robust; orange-red. Differs from *L. sexpunctata* and *L. albini* by having no humeral spots and having submedial and preapical spots fused into single black discal spot with irregular outline. Length 4.9 mm. Width 2.3 mm.

Alabama records: 1 specimen from Houston[1] County.

Seasonal distribution: April 25.

Remarks: Although Loding *(75)* recorded this species from Mobile County, his specimens identified as *"ephippiata"* are really *L. sexpunctata.*

SUBFAMILY ZEUGOPHORINAE

Genus *Zeugophora* Kunze

Zeugophora Kunze, 1818, N. Schr. Nat. Ges. Halle 2(4): 71. Type-species: *Crioceris subspinosa* Fabricius.
Pedrillia Westwood, 1864, Entomol. Soc. London, Trans. Ser. 3, 2: 280. Type-species: *P. longicornis* Westw.
Macrozeugophora Achard, 1914, Soc. Entomol. France, Bull. 83: 288. Type-species: *M. ornata* Ach.

Taraxis LeConte, 1850, *in* Agassiz, Lake Superior, 237.

Head usually constricted behind eyes. Eyes subemarginate or emarginate. Antennae extending beyond base of elytra, segments 4-11 widened, insertions widely separated and near front of eyes. Pronotum with pair of prominent lateral tubercles. Body elongate. Elytra broad, narrowed posteriorly, or narrow and subparallel. Apex of pygidium usually visible. Legs robust.

Larvae of most species are leaf miners in poplar. This is the only genus of the subfamily occurring in North America and the following is the only species occurring in Alabama.

Zeugophora atra Fall

Figs. 6, 16

Zeugophora atra Fall, 1926, Pan-Pacific Entomol. 2: 203.
Zeugophora abnormis auct. (not LeConte, 1850).

Elongate, dark brown; legs, gula, mentum, submentum, labrum, and clypeus yellow. Length 3.5 mm. Width 1.4 mm.

Alabama records: 1 specimen from Mobile[2,3] County.

Remarks: Z. *atra* appears to be primarily a northern or high altitude species. Fall *(54)* saw a specimen from the Yukon Territory and Leng *(73)* recorded this species (under its synonym, Z. *abnormis)* from Lake Superior, Washington, and New Mexico. The senior author has collected this species, along with Z. *varians* Crotch, in Montana. Loding's Alabama record seems a bit dubious, even though somewhat reinforced by a Georgia record *(57)*.

SUBFAMILY CLYTRINAE

Subcylindrical or compact; small to medium sized. Head deeply inserted in prothorax. Eyes usually small, not deeply emarginate. Antennae short, insertions widely spaced, serrate from beyond 4th segment. Procoxae transverse. Protibiae of some males longer than those of females. Pygidium visible.

Some authors *(44)* include as a composite group, formerly known as the "old Camptosomata", the following tribes under the Subfamily Clytrinae: Clytrini, Cryptocephalini, Chlamisini, and Lamprosomini. We treat these groups as separate subfamilies, following Clavareau *(45)*. As Arnett *(1)* points out, the classification of these family-group taxa needs more study. A. R. Moldenke, Stanford University, recently completed a revision of the Clytrinae *(79)*.

Key to the Alabama Tribes of Clytrinae

1. Tarsal claws simple 2
   Tarsal claws appendiculate ..... Tribe Babiini (p. 25)
2. Procoxae contiguous ..... Tribe Clytrini (p. 24)
   Procoxae separated ..... Tribe Megalostomini (p. 24)

Tribe Clytrini

Genus *Anomoea* Agassiz

Anomoea Agassiz, 1846, Nomen. Zool. Index Univ.
Euthyna Gistl, 1847, Handb. Naturges, 1850, 404.

Cylindrical, black and yellow colored species.

Only the following species represents the genus and tribe in Alabama.

Anomoea laticlavia laticlavia (Forster)

Fig. 17

Chrysomela laticlavia Forster, 1771, Novae species insectorum, cent. 1, p. 27.
Clythra ephippium Germar, 1824, Insectorum species Nov., p. 548.
Anomoea mutabilis Lacordaire, 1848, Mem. Soc. Roy. Sci. Liège 5: 137.
Clythra nigripes Fabricius, 1776, Genera insectorum, p. 221.
Clythra obsita Fabricius, 1775, Systema entomologiae, p. 106.
Clythra ruficauda Foersberg, 1821, Nov. Acta R. Societ. Sc. Upsala 8: 261.

Subcylindrical, yellow with elytral lateral and sutural margins narrowly black to broadly black, black bands in some cases meeting medially leaving only paired humeral and apical elytral spots yellow. Venter black, except prosternum and episternum. Antennae, protibiae, and all tarsi black. Length 6.6-9.0 mm. Width 3.2-4.2 mm.

Alabama records: 93 specimens from Barbour[1], Cleburne[1], DeKalb[1], Fayette[1], Houston[1], Lee[1], Macon[1], Marion[1], Marshall[1], Mobile[2], Talladega[1], Wilcox[1], and Winston[1] counties.

Seasonal distribution: April 23-August 14.

Remarks: Wilcox *(94)* reported this species to be found on *Lespedeza,* honey locust *(Gleditsia triacanthos),* and willow *(Salix* sp.). In Alabama, it has been collected on satsuma, which is a variety of *Citrus reticulata.* Locally it is known as the persimmon leaf beetle.

Tribe Megalostomini

Compact subcylindrical, small. Front coxae separated. Only the genus *Coscinoptera* is found in Alabama.

Genus *Coscinoptera* Lacordaire

Coscinoptera Lacordaire, 1848, Mem. Soc. Roy. Sci. Liège 5: 511.

The 2 Alabama species are black, pubescent beetles.

Key to the Alabama Species of *Coscinoptera*

1. Disc of thorax with a very narrow glabrous medial strip occasionally present basally; evenly pubescent and punctate, body ½ as wide as long ..... *C. aenescens* (p. 25)

Disc of thorax with distinct medial strip and paired lateral spots glabrous; body more than ½ as wide as long ..... *C. dominicana dominicana* (p. 25)

Coscinoptera dominicana dominicana (Fabricius)

Fig. 18

Clytra dominicana Fabricius, 1801, Syst. Eleuth. 2: 34.
Coscinoptera dorsalis LeConte, 1884, Trans. Amer. Entomol. Soc. 12: 25.

Robust cylindrical, shining black with white pubescense. Venter densely pubescent. Length 4.2-6.7 mm. Width 2.6-3.9 mm.

Alabama records: 18 specimens from Cleburne[1], DeKalb[1], Etowah[2], Lee[1], Mobile[2], and Winston[1] counties.

Seasonal distribution: March 3-June 27.

Remarks: This species has been collected in Alabama on *Quercus* sp., *Quercus marilandica*, and *Crataegus* sp.

Coscinoptera aenescens Crotch*

Coscinoptera aenescens Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 29.

Cylindrical; shining black with white pubesence. More narrow than *C. dominicana* and with pronotal differences as noted in the key. Length 4.4-4.9 mm. Width 2.1-2.5 mm.

Alabama records: 2 specimens from Marion[2] County.

Seasonal distribution: June 9.

Remarks: Two unidentified specimens, collected at Hackleburg, were found among the Loding material. This record considerably extends the range of the species to the west. Previously it was recorded from Georgia (57).

Tribe Babiini

Compact, tarsal claws appendiculate, procoxae contiguous, eyes emarginate.

Key to the Alabama Genera of Babiini

1. Basal-lateral lobe of elytra only slightly expanded; pygidium nearly covered by elytra; elytra glabrous, finely punctate ..... *Babia* (p. 25)
   Basal-lateral lobe of elytra large and round or angular; pygidium exposed; elytra rugulose, coarsely punctate ..... *Saxinis* (p. 26)

Genus *Babia* Lacordaire

Babia Lacordaire, 1848, Mem. Soc. Roy. Sci. Liège 5: 424
Harpasta Gistl, 1847, Handb. Naturges, 1850: 404.

One species occurs in Alabama.

Babia quadriguttata (Olivier)

Fig. 19

Cryptocephalus quadriguttata Olivier, 1791, Encyc. Meth. 6: 37.
Cryptocephalus quadriforis Newman, 1841, Entomol. 3: 78.

Broadly ovate; punctate shining black with red humeral and apical elytral spots. Antennae short, subserrate. Length 3.0-5.3 mm. Width 1.9-3.4 mm.

Alabama records: 15 specimens from Blount[3], Clay[1], DeKalb[1], Etowah[2,3], Lee[1], Marion[2], St. Clair[3], and Winston[1,2] counties.

Seasonal distribution: May 3-July 29.

Remarks: Loding *(75)* listed *B. tetraspilota* LeConte from Alabama, but we have identified his specimens as *B. quadriguttata.* Balsbaugh collected this species by sweeping *Hydrangea* sp. and Frank McQueen took a specimen on *Carya illinoensis.*

Genus *Saxinis* Lacordaire

Saxinis Lacordaire, 1848, Mem. Soc. Roy. Sci. Liège 5: 478.

One species is found in Alabama.

Saxinis omogera Lacordaire

Fig. 20

Saxinis omogera Lacordaire, 1848, Mem. Soc. Roy. Sci. Liège 5: 482.

Cylindrical; coarsely punctate, shining blue-green or black, humeri red. Antennae short, subserrate. Length 3.2-4.6 mm. Width 1.9-2.5 mm.

Alabama records: 20 specimens from Cleburne[1], DeKalb[1], Lee[1], Madison[1,2], Marion[1], Mobile[2], and Winston[1] counties.

Seasonal distribution: April 28-July 27.

Remarks: Loding *(75)* recorded *Ceanothus* sp. as a host plant. We have collected this species on *Hydrangea* sp.

SUBFAMILY CRYPTOCEPHALINAE

Compact, subcylindrical to subglobose, minute to small sized beetles. Head inserted into the prothorax. Eyes emarginate. Antennae usually long, filiform, but also short, subserrate. Prothorax at base subequal in width to elytra, and closely joined to elytra.

Perhaps more work should be done on redefining the tribes of the subfamily. For the present treatise, we have followed Arnett's classification *(1).*

Key to the Alabama Tribes of Cryptocephalinae

1. Prosternum longer than wide, claws usually simple 2
   Prosternum wider than long, claws usually appendiculate ..... Tribe Monachini (p. 40)
2. Pronotum margined at base, basal edge even, not crenulate .....

---------- Tribe Pachybrachini (p. 27)
Pronotum not margined at base, basal edge crenulate ----------
---------- Tribe Cryptocephalini (p. 42)

Tribe Pachybrachini

Subcylindrical beetles. Pronotum margined at base, basal edge not crenulate; anterior margin of prosternum sinuate at middle. Anterior femora usually incrassate.

Key to the Alabama Genera of Pachybrachini

1. Prosternum flat anteriorly, but posteriorly depressed along the lateral edges ---------- *Griburius* (p. 27)
   Prosternum sulcate, being shallowly depressed medially ----------
   ---------- *Pachybrachis* (p. 27)

Genus *Griburius* Haldeman

Griburius Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia 1: 245.
Scolochrus Suffrian, 1852, Linn. Entomol. 7: 104.

A revision of the eastern species of the genus is currently in progress by George B. Vogt, United States Department of Agriculture.

Only 1 species of *Griburius* has been recorded from Alabama.

Griburius scutellaris (Fabricius)

Fig. 21

Cryptocephalus scutellaris Fabricius, 1801, Syst. Eleuth. 2: 54.

Robust cylindrical, shining black. Lateral margins and occasionally medial and paired basal spots of prothorax yellowish orange. Scutellum and medial and apical elytral fascia yellow-orange. Length 4.7-6.3 mm. Width 3.0-3.6 mm.

Alabama records: 12 specimens from Mobile[2,3] County.

Seasonal distribution: April 10-June 16.

Remarks: Loding took 1 specimen at Spring Hill on *Quercus* sp. Three records were from the F. R. Mason collection (ANSP).

Genus *Pachybrachis* Chevrolat

Pachybrachis Chevrolat, 1837, in Dejean, Cat. Coleopt. ed. 2: 420.
Pachybrachys Redtenbacher, 1845, Gatt. deutsch. Käferfauna: 118.
Chloropachys Rey, 1883, Rev d' Entomol. II: 263.
Pachystylus Rey, 1883, Rev d' Entomol. II: 263.

Small cylindrical beetles, prosternum sulcate; middle tibiae with terminal spur (except *P. hepaticus*).

The genus is large, consisting of about 160 North American species. A revision involving biological studies of this difficult group would be very useful.

Key to the Alabama Species and Subspecies of *Pachybrachis*

1. Front femora thickened, at least the middle tibiae with spurs 2
   Front femora not thickened, tibiae without spurs ..... *P. hepaticus* (p. 40)
2. Elytra vittate 3
   Elytra not vittate 6
3. Punctation of elytra confused 4
   Punctation of elytra in nearly regular series 5
4. Pronotum dull, strongly alutaceous, closely punctate; the punctures of irregular shape; basal margin medially black ..... *P. viduatus* (p. 38)
   Pronotum more shining, sparsely punctate, the punctures round; basal margin medially yellow ..... *P. bivittatus* (p. 36)
5. Pronotum densely strigosely punctate ..... *P. othonus othonus* (p. 37)
   Pronotum neither densely nor strigosely punctate ..... *P. litigiosus* (p. 37)
6. Dorsum with black or dark brown markings, markings larger than punctures 7
   Dorsum entirely yellow, only punctures darker ..... *P. lodingi* (p. 30)
7. Dorsum wholly or in great part black 8
   Dorsum yellow or brown with black or dark brown markings 17
8. Anterior tibiae without terminal spurs 9
   Anterior tibiae with spurs 10
9. Legs entirely black ..... *P. trinotatus* (p. 38)
   Legs with yellow spots on femora ..... *P. pulvinatus* (p. 39)
10. Dorsal pale areas generally broad and definite in outline 11
    Dorsal pale areas usually irregular, small and inconspicuous (except some *P. luridus*) 12
11. Elytra with broad, irregular or indented median red fascia, often interrupted at the suture; red apical spot present ..... *P. subfasciatus* (p. 31)
    Elytra with obscure narrow, interrupted subsutural vitta and external margins faintly yellowish ..... *P. nigricornis* (p. 37)
12. Front claws of male small; not larger than middle or hind claws 13
    Front claws of male enlarged, larger than middle or hind claws 15
13. Entirely black or nearly so, elytra never with numerous small yellow spots; eyes of male separated by 3 times length of basal antennal segment 14
    Black, sometimes with few, but usually with numerous small yellow spots on the elytra; eyes of male separated by twice the length of the basal antennal segment ..... *P. atomarius* (p. 32)
14. Prothoracic punctation subequal in coarseness to those of elytra ..... *P. stygicus* (p. 33)
    Prothoracic punctation distinctly finer than those of the elytra and more evenly distributed ..... *P. carbonarius* (p. 38)
15. Length of basal antennal segment twice its width; anterior tarsal claws

of male about ½ or more larger than hind claws 16
Length of basal antennal segment 1½ times its width; anterior tarsal claws of males about ¼ larger than hind claws *P. vestigialis* (p. 33)

16. Eyes of male separated by fully twice the length of the basal antennal segment ..... *P. confusus* (p. 39)
Eyes of male separated by a distance 1½ or less times the length of the basal antennal segment ..... *P. luridus* (p. 39)

17. Eyes of the male separated by a distance equal to or greater than the length of the basal antennal segment. 18
Eyes of the male separated by a distance less than the length of the basal antennal segment ..... *P. pectoralis* (p. 30)

18. Eyes in the male separated by a distance not greater than the length of the basal 2 segments of the antennae 19
Eyes in the male separated by a distance greater than the length of the basal 2 segments of the antennae 21

19. Elytral shield absent or inconspicuous; striae absent from elytral disc; disc closely, confusedly punctate 20
Elytral shield prominent, convex; striae prominent, except for small postscutellar area, where punctures are somewhat confused; interstrial spaces convex ..... *P. tybeensis* (p. 32)

20. Antennae elongate, slender, the 10th segment 4 to 5 times as long as wide ..... *P. luridus* (p. 39)
Antennae shorter, thicker, the 10th segment 2 to 3 times as long as wide ..... *P. femoratus* (p. 31)

21. Anterior tarsal claws of male not appreciably enlarged 22
Anterior tarsal claws of male about ½ or more larger than hind claws ..... *P. confusus* (p. 39)

22. Size small (2.8-4.2 mm.), pronotal M not sharply defined, or if somewhat definite, then the punctation not evenly distributed 23
Size large (4.0-5.0 mm.), pronotum densely, evenly punctate; reddish orange with black M of decided definition. ..... *P. pulvinatus* (p. 39)

23. Pronotal and elytral markings regular and sharply outlined 24
Pronotal and elytral markings irregular, diffuse 25

24. Postscutellar maculation cordate ..... *P. tridens* (p. 35)
Postscutellar area variable, either the yellow ground color predominant or broadly covered with black, not cordate ..... *P. m-nigrum* (p. 38)

25. Nearly completely black with few to numerous, scattered, yellow or dirty yellow spots 26
Black not the predominant ground color 27

26. Basal antennal joint bicolored, at least in the male ..... *P. atomarius* (p. 32)
Basal antennal joint black, or with at most the tip vaguely paler ..... *P. vestigialis* (p. 33)

27. Ectal surface of basal antennal segment bicolored or entirely light brown or yellow 28

Ectal surface of basal antennal segment entirely dark brown to black ..... *P. cephalicus* (p. 33)

28. Frons without ocular lines 29
Frons with ocular lines ..... *P. obsoletus* (p. 36)

29. Elytral striae usually broken and irregular except toward the declivity 30
Elytral striae especially even and continuous from base to apex ..... *P. luctuosus* (p. 35)

30. Marginal interspace of elytra punctate nearly throughout its length ..... *P. spumarius* (p. 34)
Marginal interspace of elytra impunctate or nearly so ..... *P. varians* (p. 35)

Pachybrachis lodingi Bowditch

Pachybrachys lodingi Bowditch, 1909, Canadian Entomol. 41: 243.

Robust, dirty yellow, slightly shining. Front yellow with dark brownish medial mark. Antennal bases dark brown; ocular lines short, contiguous to the eyes. Pronotum not closely punctate, punctures brownish black. Elytral punctures usually in strial rows. Pygidium and legs yellow; thoracic venter black, mesepimeron often yellow; abdominal sternites varying from entirely yellowish to nearly completely black. Length 2.5-3.3 mm. Width 1.4-1.9 mm.

Alabama records: 15 specimens from Baldwin[2] and Mobile[2] counties.

Seasonal distribution: May 4-July 24.

Remarks: The Loding collection contains specimens which are probably paratypes. In addition to 8 identified specimens, Loding's collection also had 7 unidentified ones. *Ambrosia* was recorded as a host plant in Loding's catalogue *(75)*; however, none of the specimens indicate this host record.

Pachybrachis pectoralis (Melsheimer)

Cryptocephalus pectoralis Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 171.

Pachybrachis sobrinus Haldeman, 1848, Jour, Acad. Nat. Sci. Philadelphia, new series 1: 262.

Pachybrachis oculatus Suffrian, 1852, Linn. Entomol. 7: 178. **New synonymy.**

Pachybrachys sticticus Blatchley, 1910, Coleopt. Ind., p. 1130. **New synonymy.**

Narrow, dull yellow mottled with brown or black. Head yellow, occiput black varying to light brown connecting with a narrow frontal black or brown medial line; punctate, dark areas more closely so; frontal ocular lines distinct, indistinct or absent; eyes separated in male by ¾ length of basal antennal segment. Pronotum yellow with 3 subbasal and 2 small discal dark spots, punctation closer in these areas. Elytra yellow with humeral and subapical lateral spots more prominent; rather distinct striae marked with brownish punctures, which are confusedly and more densely prominent behind scutellum. Pygidium black basally, apical ⅔ yellow with some faint

brownish marks. Anterior tibiae with inner margin varying from noticeable sinuation to completely smooth edge. Length 2.5-3.3 mm. Width 1.2-1.6 mm.

Alabama records: 14 specimens from Barbour[1], Madison[1,2,3], and Mobile[2] counties.

Seasonal distribution: May 5-July 27.

Remarks: This species includes the category *P. sobrinus* (Haldeman). We found that the two characters Fall used to separate these forms, i.e. the ocular lines and the sinuation of the anterior tibiae, are variable, and that intermediate degrees occur between the two extremes of these characters. The species has been swept from *Quercus*.

Pachybrachis femoratus (Olivier)

Cryptocephalus femoratus Olivier, 1808, Entomologie 6: 810.
Cryptocephalus sparsus Suffrian, 1841, Entomol. 5: 78.
Pachybrachys characteristicus Suffrian, 1852, Linn. Entomol. 7: 176. **New synonymy.**

Dull yellow, varying to dull gray or whitish yellow, thickly mottled with black or brown punctures. Head yellow with occiput, median frontal vitta, and areas between antennal bases and upper lobes of eyes black and usually connected. Front strongly, closely punctate. Pronotum marked with black areas in which punctation is closer. Elytra confusedly punctate basomedially, short series of punctures elsewhere. Three indistinct black lateral spots, and a single, ill-defined, somewhat oblique, black subapical spot. Pygidium black basally, yellow apically, black wedge projecting medially into yellow from basal area; also single lateral black areas which are either separate spots or continuous with basal area. Venter mostly black, abdominal sternites sometimes yellow laterally, especially the 5th. Legs yellow, femora and tibiae with black or brown median spots. Length 2.5-3.5 mm. Width 1.4-2.1 mm.

Alabama records: 43 specimens from Baldwin[1], Etowah[2], and Mobile[2,3] counties.

Seasonal distribution: March 29-July 12.

Remarks: As Fall *(51)* indicated that a geographical gradation occurs between the northern, darker form *(P. femoratus)* and the lighter, southern form *(P. characteristicus)*, he suggested that these two names are possibly synonyms. We, therefore, compared male genitalia of specimens in Loding's collection, which were determined by Fall. We concluded that the two forms are conspecific. Thus, *P. characteristicus* Suffrian is here placed as a new synonym of *P. femoratus* Olivier. *Quercus nigra* was the host plant for specimens taken in Baldwin County. Loding *(75)* and Fall *(51)* also recorded "oak" for both *P. characteristicus* and *P. femoratus*.

One of the Mobile County records is a USNM specimen.

Pachybrachis subfasciatus LeConte

Pachybrachys subfasciatus LeConte, 1848, Ann. Lyc. Nat. Hist. N. Y. 4: 173.

Pachybrachys biguttatus Suffrian, 1852, Linn. Entomol. 6: 176.

Prothorax black with orange margins. Elytra black with orange fascia interrupted at middle, and orange apical spots. Length 3.2-4.2 mm. Width 1.8-2.3 mm.

Alabama records: 7 specimens from DeKalb[1], Lee[1], Marion[1], and Mobile[2,3] counties.

Remarks: Loding *(75)* listed this species as *P. dilatatus* Suffrian. According to Fall *(51)*, however, the true *P. dilatatus* is a species occurring only on St. Catherine's Island, Georgia. Even though Fall compared the types of both *P. dilatatus* and *P. subfasciatus*, it is difficult to distinguish these species by his descriptions and diagnostic characters. Specimens collected by V. M. Kirk in South Carolina appear specifically distinct from *P. subfasciatus* and may be true *P. dilatatus*.

Pachybrachis tybeensis Fall

Pachybrachys tybeensis Fall, 1915, Trans. Amer. Entomol. Soc. 41: 388.

Yellow with reddish brown punctures and indistinct markings. Head yellow, occiput brownish; frons slightly concave (in the female) and brownish, without ocular lines. Pronotum yellowish with reddish brown marks, these more closely punctate; distinctly narrowed anteriorly; side margins very slightly less punctate, smoother. Elytra confusedly punctate behind scutellum, punctation elsewhere arranged in short series, interstrial spaces rather convex; shield distinct. Pygidium red-brown basally, apical portion yellow. Venter red-brown, 5th abdominal segment yellow. Legs yellow with slightly darker marks around femora. Length 3.3 mm. Width 1.8 mm.

Alabama records: 1 specimen from Lee[1] County.

Seasonal distribution: June 11.

Remarks: Additional material and study may indicate that this species is conspecific with *P. confederatus* Fall.

Pachybrachis atomarius (Melsheimer)

Cryptocephalus atomarius Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 170.

Pachybrachys infaustus Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia, new series, 1: 262.

Pachybrachys atomus Bowditch, 1909, Canadian Entomol. 41: 319.

Dark brown or black, irregularly mottled with yellow or dirty yellow; luster dull. Frons of males often yellow with inverted dark Y, branches of which arise from antennal bases. Eyes not prominent. Pronotum often with median anterior yellow vitta. Elytra dark brown with small dirty yellow spots. Pygidium entirely black. Length 2.5-3.2 mm. Width 1.4-1.6 mm.

Alabama records: 11 specimens from Etowah[2], Marion[1,2], Mobile[2], and Winston[2] counties.

Seasonal distribution: May 8-July.

Remarks: Since Fall *(51)* pointed out that this species was difficult to distinguish from several others, the male genitalia of several specimens of this complex were compared. We concluded that it is distinct. Blatchley, accord-

ing to Fall *(51)*, reported that *P. atomarius* could be collected from "the foliage of the greater ragweed, wahoo and other plants."

Pachybrachis vestigialis Fall*

Pachybrachys vestigialis Fall, 1915, Trans. Amer. Entomol. Soc. 41: 415.

Dark brown or black, irregularly mottled with yellow. Frons black with 2 usually small, but sometimes larger, yellow spots between eyes; occasionally 2 small yellow spots on the corners of clypeus. Pronotum black with occasional short anterior medial yellow vitta and less frequent obscure paired yellow discal spots. Elytra usually black with scattered yellow spots, median discal paired spots rather beady in appearance. Pygidium usually entirely black but with small oval yellow spots in some specimens. Length 2.8-3.0 mm. Width 1.5-1.6 mm.

Alabama records: 7 specimens from DeKalb[1], Lee[1], Marion[1], and Shelby[1] counties.

Seasonal distribution: April 24-September 18.

Remarks: Comparisons of the aedeagi of this species and *P. atomarius* indicate that the 2 species are quite distinct, although Fall *(51)* indicated possible conspecificity when describing *P. vestigialis.*

Pachybrachis stygicus Fall

Pachybrachys stygicus Fall, 1915, Trans. Amer. Entomol. Soc. 41: 416.

Black, occasionally with few very small yellow specks on elytra, lustre dull. Eyes distant, without ocular lines. Pronotum alutaceous, punctures about as coarse as elytral punctation. Basal margin of elytra faintly yellow in some specimens. Length 2.5-3.5 mm. Width 1.2-2.1 mm.

Alabama records: 7 specimens from Chambers[3], Etowah[2], Houston[1], Lee[1], and Winston[1] counties.

Seasonal distribution: May 1-August 10.

Remarks: Examination of aedeagi proved the distinctness of this species from the similar *P. atomarius* and *P. vestigialis.* No determined material was present in Loding's collection (the Chambers County record is in the USNM), but one undetermined specimen from Tumblin Gap was identified by us.

Pachybrachis cephalicus Fall

Pachybrachys cephalicus Fall, 1915, Trans. Amer. Entomol. Soc. 41: 418.
Pachybrachys dixianus Fall, 1915, Trans. Amer. Entomol. Soc. 41: 419. (var.). **New synonymy.**
Pachybrachys parvus Fall, 1915, Trans. Amer. Entomol. Soc. 41: 419 (var.). **New synonymy.**

Robust, mottled dark brown and yellow, lustre dull. Frons closely punctate, yellow, with vertical medial line, small V arising from each antennal base, and vertex dark brown, varying to wider areas of brown which leave 2 yellow spots between eyes. Eyes prominent, extending beyond apical width of pronotum. Pronotal punctation dense, predominantly dark brown mottled with yellow. Elytra dull yellow with dense brownish punctures. Pygidium

black with 2 oval yellowish spots and duller markings. Length 2.5-3.5 mm. Width 1.4-1.8 mm.

Alabama records: 8 specimens from Etowah[2], Mobile[2], and Randolph[3] counties.

Seasonal distribution: May 10-June 8.

Remarks: The species, as treated here, includes Fall's varietal forms *dixianus* and *parvus (51)*. We did not treat these as subspecies because we could not correlate these geographically. However, comparison of the aedeagi of variety *dixianus* and *P. cephalicus* indicated that these 2 forms are indeed conspecific. Seven of the 8 specimens studied were probably "cotypes."

It should be noted that the distribution of the species and its varieties as listed in the Loding catalogue *(75)* are in error. Mobile County is the type locality for the nominate form; it is not the type locality for varieties *dixianus* or *parvus*. No specimens from Loding's collection nor any reference by Fall *(51)* indicated that material existed from St. Clair County *(75)*.

The Randolph County record *(51)* is a single specimen in the USNM. No host plants have been recorded.

Pachybrachis spumarius Suffrian

Pachybrachys spumarius Suffrian, 1852, Linn. Entomol. 6: 179.
Pachybrachis roboris Fall, 1915, Trans. Amer. Entomol. Soc. 41: 420. **New synonymy.**

Yellow with close, brown, rust or black punctures and spots. Head rusty or black, closely punctate, inner margins of upper eye lobes bordered with yellow; ocular lines absent. Pronotum strongly punctate, lateral margins varying from punctate to impunctate; rusty to black with some smooth yellow spots. Elytra densely confusedly punctate, either with 1 or 2 distinct, partially oblique discal costae, or smoother. Pygidium brown or black with 2 oval yellow subapical, and paired smaller lateral spots. Venter varying from brown to black, 5th abdominal segment greatly yellowish. Legs brown or black with apexes of femora yellow. Length 2.4-3.5 mm. Width 1.3-2.1 mm.

Alabama records: 81 specimens from Baldwin[3], Coffee[1], Coosa[1], Etowah[2], Lee[1], Macon[1], Madison[1], Marion[1], Mobile[2,3], Walker[1], and Winston[1] counties.

Seasonal distribution: May 24-September 17.

Remarks: We are here proposing new synonymy: *P. spumarius* Suffrians (= *P. roboris* Fall). "Cotypes" of *P. roboris* in the Loding collection were not specifically different from 3 females, also of that collection, of *P. spumarius*. (The latter material had been compared with the Suffrian type by Bowditch as indicated by Bowditch's labels: "*Pachybrachys spumarius* Suff. typical, t. Bow.") The basic character which Fall used to distinguish *P. roboris*, viz. pronotal margins being entirely punctate, is variable and is not suitable for distinguishing this species.

Cornus sp., *Salix* sp., and *Alnus* sp. are plants from which we have taken single specimens; these occurrences may be accidental. Fall *(51)* records *Quercus bicolor* and quotes Blatchley's records of *Quercus* sp., *Hydrangea* sp., and *Ceanothus* sp.

Pachybrachis luctuosus Suffrian

Pachybrachys luctuosus Suffrian, 1858, Linn. Entomol. 12: 401.

Small, robust, somewhat resembling *P. varians* in shape. Head with distinctly outlined black markings on frons and occiput, black areas distinctly and closely punctate, yellow areas smoother. Eyes widely separated (nearly 3 times length of basal antennal segment). Pronotum yellow with wide, poorly defined black M, more strongly punctate on black areas. Elytra nearly regularly striate, striae black and deeply impressed; coloration yellow with rather widely confluent black spots. Pygidium black with yellow spots on lateral edges near abdomen. Legs yellow with black femoral bands and slightly darker tibial apexes. Length 2.8 mm. Width 1.6 mm.

Alabama records: 1 specimen from Cleburne[1] County.

Seasonal distribution: July 10.

Remarks: *Pinus virginiana* is very likely the host plant. The field notes of the collector, M. E. Dakin, indicate that he was collecting Orthoptera from these trees on the day and at the place where this beetle was taken. Fall *(51)* recorded that E. A. Schwarz also listed *Pinus* as a host. From the description given by Fall *(51)*, this specimen appears to be intermediate in color between *P. carolinensis* and *P. luctuosus*, perhaps approaching more closely the latter since it is rather dark. Perhaps, as Fall *(51)* indicated, the above two names are synonyms.

Pachybrachis varians Bowditch

Pachybrachys varians Bowditch, 1909, Canadian Entomol. 41: 321.

Robust, yellow. Head, yellow, occiput, and upright frontal wedge, and a small band from antennal base to upper lobe of eye black, closely punctate. Eyes prominent, rather widely separated in male. Pronotum punctate, yellow with median Y and lateral subbasal spot black, varying in size. Elytra yellow, usually with 3 submarginal and sometimes with 3 small discal spots black. Pygidium yellow; base, median wedge, and apical margin black. Venter black, lateral margins of abdomen yellow. Legs yellow with darker area at base of anterior femora. Length 2.5-3.2 mm. Width 1.3-1.8 mm.

Alabama records: 13 specimens from Lee[1] and Mobile[2,3] counties.

Seasonal distribution: May 2-September 13.

Remarks: Further study may reveal that *P. quadrioculatus* Fall *(51)*, *P. osceola* Fall *(51)*, *P. varians* Bowditch *(32)*, and *P. conformis* Suffrian (92) are all synonyms, in which case *P. conformis* would take priority.

No host plants have been recorded during this study, but Blatchley *(31)* recorded that in Florida this species occurs ". . . on natal grass and low herbage in dry soil."

Specimens in Loding's collection from Mobile are probably paratypes.

Pachybrachis tridens (Melsheimer) *

Cryptocephalus tridens Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 172.

Pachybrachys mollis Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia, new series 1: 263.

Pronotum yellow with median Y and subbasal spots black. Elytra yellow, marked with black cordate subbasal spot joining discal spot, which in turn connects with apical–most of three lateral black spots; maculations rather sharply defined. Length 3.3 mm. Width 2.5 mm.

Alabama records: 1 specimen from Madison[1] County.

Seasonal distribution: July 27.

Pachybrachis obsoletus Suffrian

Pachybrachys obsoletus Suffrian, 1852, Linn. Entomol. 7: 200.

Yellow, strongly marked with black, varying to nearly completely yellow with brown maculations. Head yellow with vertex black or brown, frons with or without median black vitta; strongly punctate. Pronotum yellow with black M varying to orange-yellow with 3 basal and 2 discal light brown spots; punctures usually somewhat larger than elytral punctation. Elytral maculation somewhat resembling that of *P. tridens,* but not nearly so sharply outlined: a subcordate spot behind scutellum, paired subapical spots, and 3 marginal spots on each elytron. Varies from strongly black to nearly completely yellow. Two large calli, about half as long as elytra, present from 2nd striae mesad. Pygidium black basally, with lateral edges of abdomen yellow. Legs yellow, femora sometimes with dark mid area. Length 2.3-3.5 mm. Width 1.2-1.9 mm.

Alabama records: 15 specimens from Clay[1], Coffee[1], Dallas[1], Lee[1], and Marshall[1] counties.

Seasonal distribution: June 25-July 27.

Remarks: The Coffee County specimens were swept from *Cornus florida* and a Clay County specimen was taken from *Salix* sp. Alabama specimens are usually much lighter in color than ones from Pennsylvania, Illinois, and the District of Columbia. Four specimens from Alberta, Canada, (Loding collection) and 1 from Iowa (Auburn Entomological Museum), however, are lighter than the Alabama specimens. Male genitalia of specimens from Alberta, Pennsylvania, and Alabama were compared and all appeared to be conspecific. No males of the similar *P. tridens* were seen. *P. obsoletus* does, however, differ in the aedeagi from *P. peccans* Suffrian.

Pachybrachis bivittatus (Say)

Cryptocephalus bivittatus Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3: 440.

Pachybrachys viduatus Suffrian, 1852, Linn. Entomol. 7: 156.

Pachybrachys albescens Suffrian, 1858, Linn. Entomol. 12: 404.

Dorsum yellow. Pronotal spot black (or occasionally red), M-shaped, or grading to completely dark discal area. Each elytron with black sutural vitta interrupted in middle and 3 black marginal spots. Venter black. Length 3.9-4.6 mm. Width 2.1-2.5 mm.

Alabama records: 11 specimens from Lee[1], Tallapoosa[1], Walker[1], and Winston[2,3] counties.

Seasonal distribution: May 12-August 13.

Remarks: This species has been taken by beating *Salix* sp. One specimen was taken in a light trap.

Pachybrachis litigiosus Suffrian

Pachybrachys litigiosus Suffrian, 1852, Linn. Entomol. 7: 217.

Pronotum black, finely alutaceous to feebly shining, sparsely punctate; 2 oblique basal spots, medial apical vitta, and lateral margins yellow. Elytra yellow; margins, common sutural, paired discal, and lateral vittae black; striae distinct and regular throughout. Humeri distally and tibiae proximally yellow. Venter black. Length 3.3-4.2 mm. Width 1.9-2.5 mm.

Alabama records: 13 specimens from Baldwin[2], Cleburne[1], DeKalb[1], Lee[1], and Mobile[2,3] counties.

Seasonal distribution: May 6-August 15.

Remarks: Our specimens were compared with one in the Loding collection which Bowditch had compared with the type. *Alnus* sp. has been a recorded host plant.

Pachybrachis othonus othonus (Say)

Cryptocephalus othonus Say, 1825, Amer. Entomol. II. p. 28.
Pachybrachys marginaticollis Rand, 1838, Boston Jour. Nat. Hist. 2: 46.

Pronotum black; anterior medial vitta extending ⅔ length of pronotum and margins yellow; densely strigosely punctate. Elytra yellow with sutural, paired discal, and submarginal vittae black; striae distinct. Length 3.3-4.0 mm. Width 2.0-2.5 mm.

Alabama records: 8 specimens from Etowah[2], Mobile[2,3], Randolph[3], and Winston[1] counties.

Seasonal distribution: June 3-27.

Remarks: The Mobile specimen (Loding collection) was compared with the type by Bowditch. Balsbaugh noted food plants to be *Comptonica peregrina* in Pennsylvania and *Amorpha canescens* in South Dakota. Wilcox *(94)* lists *Fraxinus* sp. and *Ulmus* sp. as hosts in Ohio. The Randolph County record is from Fall *(51)*.

Pachybrachis nigricornis (Say) *

Cryptocephalus nigricornis Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3: 436.

Black, pronotum and elytra margined with yellow or red-yellow. Head alutaceous, vertex sparsely, finely, punctate, frons more coarsely punctate; eyes of female separated by slightly more than their vertical length. Pronotum coarsely, densely punctate, the sides smooth. Elytra regularly striate with margins and interrupted subsutural and medial vittae red-yellow, vittae more pronounced apically. Pygidium and venter black. Legs black, femoral apexes yellow. Length 3.0-3.4 mm. Width 1.7-1.8 mm.

Alabama records: 1 specimen from Cleburne[1] County.

Seasonal distribution: May 3.

Remarks: This specimen was taken on *Senecio* sp.

Pachybrachis carbonarius Haldeman

Pachybrachys carbonarius Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia, new series 1: 260.

Completely black, pronotum alutaceous and more finely, closely punctate than elytra. Basal elytral margin and apex in a few specimens rufous. Length 2.8-3.3 mm. Width 1.6-2.1 mm.

Alabama records: 9 specimens from DeKalb[1], Lee[1], and Mobile[2,3] counties.

Seasonal distribution: March 29-July 9.

Remarks: In Alabama it has been obtained by sweeping *Quercus* sp.

Pachybrachis viduatus (Fabricius)

Cryptocephalus viduatus Fabricius, 1801, Syst. Eleuth. I, p. 49.

Pronotum orange with large black M which contacts margin only midbasally; coarsely, closely punctate. Elytra yellow, sutural and lateral margins black; paired discal vittae and submarginal vittae black, the latter usually interrupted subapically; closely, confusedly punctate. Length 4.0-4.9 mm. Width 2.3-2.8 mm.

Alabama records: 12 specimens from Mobile[2,3] County.

Seasonal distribution: May 10-July 10.

Remarks: Fall *(51)* noted that this species is closely related to *P. pulvinatus* and *P. trinotatus*. Comparison of male genitalia of these species confirms this.

Pachybrachis m-nigrum (Melsheimer)

Cryptocephalus m-nigrum Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 170.

Pachybrachys intricatus Suffrian, 1852, Linn. Entomol. 7: 180.

Pronotum black (a black M) with medial apical and 2 basal spots, lateral and apical margins orange-yellow. Elytra orange-yellow, with black suture, 2 medial and 3 lateral spots, all of which are confluent to various degrees. Frons black with eye spots, clypeus yellow. Length 4.0-4.6 mm. Width 2.3-2.5 mm.

Alabama records: 2 specimens from Lawrence[1] and Tuscaloosa[2] counties.

Seasonal distribution: June 28.

Remarks: the specimen in the Loding collection was among undetermined material.

Pachybrachis trinotatus (Melsheimer)

Fig. 22

Cryptocephalus trinotatus Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 170.

Black, pronotum with single medial apical and 2 basal spots, lateral and anterior margins reddish orange. Front with 2 small reddish orange spots between eyes. Length 4.9-5.6 mm. Width 2.8-3.2 mm.

Alabama records: 2 specimens from Mobile[2] County.

Seasonal distribution: June 4.

Remarks: Although Madison County was listed in the Loding catalogue, no specimens from there were found in his collection. The aedeagus was dissected for comparison with other species.

Pachybrachis pulvinatus Suffrian

Pachybrachys pulvinatus Suffrian, 1852, Linn Entomol. 7: 151.

Black, pronotum much like *P. trinotatus,* i.e. with anterior medial and paired basal spots, lateral and anterior margins red-orange, basal margin partly orange and apical margin occasionally partly black. Elytra differ being black with basal, lateral discal, and apical orange spots of various size and poor definition. Frons usually with 2 orange spots near eyes. Length 3.7-4.9 mm. Width 2.1-2.5 mm.

Alabama records: 6 specimens from Mobile[2,3] County.

Seasonal distribution: April 11-August 17.

Remarks: Since this species appears to be closely related to *P. trinotatus,* male genitalia of both species were compared. The results indicated they were distinct. One of the specimens in Loding's collection was compared with the Suffrian type by Bowditch.

Pachybrachis confusus Bowditch

Pachybrachys confusus Bowditch, 1909, Canadian Entomol. 41: 365.

Pachybrachys proximus Bowditch, 1909, Canadian Entomol. 41: 360 (name preoccupied).

Dark brown or black, much resembling *P. vestigialis* Fall. Head usually with clypeus and 2 interocular spots yellow. Pronotum with yellow, nearly impunctate, anterior medial vitta, and often 2 basal, and occasionally 2 discal feeble yellow spots. Elytra black with yellow spots. Length 2.8-3.9 mm. Width 1.6-2.1 mm.

Alabama records: 22 specimens from Coffee[1], Etowah[2], Lee[1], Madison[1], and Mobile[2] counties.

Seasonal distribution: May 10-August 10.

Remarks: Males of *P. confusus* differ from those of *P. vestigialis* by having the front tarsal claws strongly enlarged. In both sexes of *P. confusus* the pronotum is duller and not so black as in *P. vestigialis.* Both pronotal and elytral punctures are more deeply impressed in *P. vestigialis.* Loding failed to include this species for Alabama, although his collection contained 7 identified specimens, including a probable paratype from Mobile, labeled by Bowditch *(32).* In addition to these, 11 unidentified specimens were among his material.

Pachybrachis luridus (Fabricius)

Cryptocephalus luridus Fabricius, 1798, Supp. Entomol. Syst. p. 109.

Cryptocephalus femoratus Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3: 440.

Cryptocephalus aesculi Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 171.

Pachybrachys moerens Stål, 1857, Öfv. Svenska Vet.-Akad. Förh. 14: 63.

Pachybrachys nigrinus Blatchley, 1910, Coleopt. Ind. p. 1130 (var.).

Pachybrachys festivus Fall, 1915, Trans. Amer. Entomol. Soc. 41: 469 (var.).

Pronotum with disc completely black, lateral margins red, or disc black with red medial vitta and subbasal spots, varying to completely red. Elytra completely black or with a few yellow specks, especially at apex. Length 3.0-4.4 mm. Width 1.8-2.5 mm.

Alabama records: 41 specimens from Baldwin[1], Cleburne[1], DeKalb[1], Etowah[2], Lee[1], Madison[1], Mobile[2], and Winston[1] counties.

Seasonal distribution: March 22-July 29.

Remarks: This species has been swept from *Quercus niger* and *Senecio* sp. Male genitalia of 2 specimens were examined.

Pachybrachis hepaticus (Melsheimer)

Cryptocephalus hepaticus Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 171.

Light brown to dark brown irregularly clouded with yellow, elytral apex usually yellowish. Eyes small, remote; anterior femora not enlarged. Length 2.3-2.8 mm. Width 1.4-1.8 mm.

Alabama records: 10 specimens from Baldwin[2], Lee[1], and Mobile[2,3] counties.

Seasonal distribution: March 23-September 13.

Tribe Monachini

Compact, keg-like. Prosternum wider than long (at least those species in Alabama). Claws appendiculate; antennae short and subserrate. Only the genus *Lexiphanes* Gistl occurs in North America.

Genus *Lexiphanes* Gistl

Lexiphanes Gistl, 1848, Naturge. Thier.: 123. Type-species: *Cryptocephalus saponatus* Fabricius.

Monachus Chevrolat, 1837, *in* Dejean, Cat. Coleopt.: 425 (not Fleming, 1825; not Kaup, 1829).

Monachulus Leng, 1918, Jour. N. Y. Entomol. Soc. 26: 208.

Compact, small beetles. Piceous, brownish black or blue, some species occasionally marked with red. Head hypognathous, hidden in prothorax; eyes emarginate; antennae subserrate. Pronotum strongly convex, marked with red in one species. Elytra striate, striae becoming more obscure apically. Tarsi usually appendiculate.

A revision of the North American species of *Lexiphanes* has recently been completed *(2)*.

Key to the Alabama Species of *Lexiphanes*

1. Interstrial space between marginal and submarginal striae convex along entire length of elytra. Small species (length 1.58-2.25 mm.) ..2
   Interstrial space between marginal and submarginal striae not convex for entire length of elytra. Large species (length 2.16-3.08 mm.) ..... *L. saponatus* (p. 41)
2. Last ventral abdominal segment with a fovea—females 3
   Last ventral abdominal segment uniformly convex without a fovea—males 4
3. Last ventral abdominal segment with a callus on either side of the fovea; pronotum with no, or very obscure punctures along basal line; 2.08-2.23 mm. long ..... *L. affinis* (p. 41)
   Last ventral abdominal segment without a callus on either side of the fovea; pronotum with a basal line of punctures; 1.91-2.25 mm. long ..... *L. seminulum* (p. 42)
4. Last ventral abdominal segment and abdominal intercoxal process punctate; pronotum with no, or very obscure, punctures along basal line; 1.75-2.08 mm. long ..... *L. affinis* (p. 41)
   Last ventral abdominal segment impunctate; abdominal intercoxal process rugose; pronotum with a basal line of punctures; 1.58-2.00 mm. long ..... *L. seminulum* (p. 42)

Lexiphanes saponatus (Fabricius)

Cryptocephalus saponatus Fabricius, 1801, Syst. Eleuth. 2, p. 55.
Monachus ater Haldeman 1849, Jour. Acad. Nat. Sci. Philadelphia, new series 1: 264.
Monachulus viridanus Fall, 1927, Canadian Entomol. 59: 139.

Piceous black, brownish black, blue or violet. Head flat, smooth, rugose, or rugulose and occasionally punctate. Pronotum dull or shining, occasionally punctate basomedially. Elytra equally glossy or more shining than pronotum, with 10 rows of strial punctures (excluding marginal striae). Venter and legs also dark, of same color as rest of body. Length 2.2-3.1 mm. Width 1.5-2.0 mm.

Alabama records: 65 specimens from Autauga[1], Barbour[3], Choctaw[1], Clay[3], Covington[3], Dallas[1], Houston[1], Lee[1], Lowndes[1], Macon[1] Marshall[1], Mobile[2,3], Talladega[1], and Tallapoosa[1] counties.

Seasonal distribution: June 3-October 20.

Remarks: The county records appended by the superscript 3, in this case, are from Balsbaugh *(2)*. In Alabama the species has been recorded from the following plants: *Sambucus canadensis, Cephalanthus occidentalis,* and *Eupatorium purpureum.*

Lexiphanes affinis (Haldeman)

Monachus affinis Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia, new series 1: 264.

Monachus auritus Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia, new series 1: 264.

Monachus thoracica[us] Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 31.

Piceous or black; head, antennae prothorax, and legs partly or entirely yellow-red. Shape similar to *L. seminulum*, but more robust, especially the pronotum. Elytra with deeply impressed submarginal striae and distinct punctures. Females with callus on either side of the fovea on 5th abdominal segment. Length 1.7-2.2 mm. Width 1.3-1.7 mm.

Alabama records: 5 specimens from Choctaw[1], Mobile[3], and Winston[1] counties.

Seasonal distribution: June 27.

Remarks: The Mobile County records are from Balsbaugh (2). It is unusual that a female of *L. seminulum* was taken along with the Winston County specimen of *L. affinis*, a male. These were swept simultaneously from *Oenothera* sp.

Lexiphanes seminulum (Suffrian)

Fig. 23

Monachus seminulum Suffrian, 1858, Linn. Entomol. 12: 344.

Piceous, tarsi, first 3 antennal segments, clypeus, and labial palpi tawny. Pronotum less robust than *L. affinis*, dull and rugulose, with vague punctules and basal row of punctures. Elytra with deeply impressed submarginal striations and punctures. Length 1.6-2.3 mm. Width 1.2-1.5 mm.

Alabama records: 2 specimens from Lee[1] and Winston[1] counties.

Seasonal distribution: June 14-27.

Remarks: The Lee County specimen was taken on *Sambucus canadensis* and the Winston County specimen was taken on *Oenothera* sp. with a female of *L. affinis*.

Tribe Cryptocephalini

Compact, robust to cylindrical small beetles. Head sunken into prothorax; eyes usually emarginate; antennae usually long, filiform. Pronotum not margined posteriorly; hind edge crenulate.

Key to the Alabama Genera of Cryptocephalini

1. Claws simple 2
   Claws appendiculate 3
2. Front edge of pronotum laterally sinuous or toothed ..... *Bassareus* (p. 52)
   Front edge of pronotum laterally straight ..... *Cryptocephalus* (p. 43)
3. Segments 6 to 11 of antennae widened ..... *Diachus* (p. 54)
   Segments 7 to 11 of antennae widened ..... *Triachus* (p. 56)

Genus *Cryptocephalus* Müller

Crytocephalus Müller, 1764, Fauna Insect. Frid. p. xiii. Type-species: *Chrysomela sericea* L.

Homalopus Chevrolat, 1837, [In DeJean] Cat. des Coleopt. de la Coll. . . . DeJean, livr. 5, p. 422. Type-species: *Cryptocephalus loreyi* Solier.

Physicerus Chevrolat, 1837, [In DeJean] Cat. des Coleopt. de la Coll. . . . DeJean, livr. 5, p. 420. Type-species: *Cryptocephalus speciosus* Guerin.

Strigophorus Chevrolat, 1837, [In DeJean] Cat. des Coleopt. de la Coll. . . . DeJean, livr. 5, p. 422. Nomen nudum.

Disopus Chevrolat, 1837, [In DeJean] Cat. des Coleopt. de la Coll. . . . DeJean, livr. 5, p. 425. Type-species: *Chrysomela pini* L.

Protophysus Chevrolat, 1837, [In DeJean] Cat. des Coleopt. de la Coll. . . . DeJean, livr. 5, p. 422. Type-species: *Cryptocephalus lobatus* F.

Dicenopsis Saunders, 1842, Ann. Mag. Nat. Hist. 10(62): 70. Type-species: *Dicenopsis haematodes* Boisd.

Anodonta Saunders, 1843, Ann. Mag. Nat. Hist. 11(67): 66. Type-species: *Anodonta roei* Saunders.

Idiocephala Saunders, 1845, Trans. Entomol. Soc. London 4(2): 142. Type-species: *Anodonta roei* Saunders.

Proctophysus Redtenbacher, 1845, Gatt. der deutschen Kaefer-Fauna. . . Wien, p. 118.

Taxaris Gistel, 1848, Natur. des Thierreichs für höhere Schulen. . . Stuttgart, p. 123.

Canthostethus Haldeman, 1849, Jour. Acad. Nat. Sci. Phila. 1: 245. Type-species: *Canthostethus rugicollis* Haldeman.

Mecostethus Stål, 1858, Öfv. Svenska Vet. Akad. Förh. 14: 61. Type-species: *Mecostethus sahlbergi* Stal.

Euphyma Baly, 1877, Trans. Entomol. Soc. London pt. 3, p. 224. Type-species: *Idiocephala flaviventris* Saunders.

Stegnocephala Baly, 1877, Trans. Entomol. Soc. London pt. 1, p. 32. Type-species: *Cryptocephalus hemixanthus* Suffrian.

Ceropachys Burlini, 1953, Cr. Soc. Sci. Nat. Maroc, Rabat, No. 5, p. 75. Type-species: *Cryptocephalus kocheri* Burlini.

Heterodactylus Medvedev, 1963, Akad. Nauk Kirghiz. SSR, Ent. Rabot Shorn, 2: 38. Type-species: *Cryptocephalus macrodactylus* Gebler.

Asiopus Lopatin, 1965, Ceskoslov. Spolec. Entomol. Casopis 62: 452. Type-species: *Cryptocephalus flavicollis* F.

Burlinius Lopatin, 1965, Ceskoslov. Spolec. Entomol. Casopis 62: 455. Type-species: *Cryptocephalus fulvus* Goeze.

Small to moderate sized beetles. Eyes emarginate, antennae filiform. Tarsal claws simple.

The genus *Cryptocephalus* in Alabama includes 21 species. Specimens of 17 of these were seen by the authors from either the Loding or the Auburn collections. The other 4 species were reported by White *(93)* in his review of the genus. *Cryptocephalus albicans* Haldeman, *C. cuneatus* Fall, *C. egregius* Schaeffer, and *C. luteolus* Newman may eventually be found in Alabama since they have been collected in at least one of the bordering states.

Key to the Alabama Species and Subspecies of *Cryptocephalus*

1. Prothorax entirely black or dark red, elytra each with humeral and apical red spots 2
   Prothorax pale or with other markings 4
2. Basal spot not attaining scutellum 3
   Basal spot attaining scutellum ..... *C. notatus quadrimaculatus* (p. 49)
3. Basal spot at its apex attaining at least first interval and often suture ..... *C. binominis binominis* (p. 45)
   Basal spot at its apex rarely extending inward beyond 3rd interval ..... *C. quadruplex* (p. 49)
4. Elytra pale and immaculate, vittate, fasciate, or maculate 5
   Elytra entirely black ..... *C. nanus* (p. 48)
5. Elytra entirely pale without markings 6
   Elytra with definite markings 8
6. Pronotum smooth, punctate, but not rugulose 7
   Pronotum rugulose ..... *C. schreibersii* (p. 50)
7. Pronotum densely, somewhat strigosely punctate; large species (length 4.6-5.8 mm.) ..... *C. obsoletus obsoletus* (p. 49)
   Pronotum sparsely punctate; small species (length 2.3-2.5 mm.) ..... *C. pumilus* (p. 49)
8. Elytra vittate 9
   Elytra maculate or fasciate 17
9. Punctures at elytral apex confused and completely obscuring inner and outer rows of punctures 10
   Puncture at elytral apex not or but slightly confused, inner and outer rows of punctures always distinct and usually clearly meeting 11
10. Pronotum not rugulose ..... *C. incertus* (p. 47)
    Pronotum rugulose ..... *C. schreibersii* (p. 50)
11. Pronotum not as below 12
    Pronotum with a broad, arched, longitudinal, median, dark spot, bordered each side by generally distinct yellow stripes ..... *C. trivittatus* (p. 50)
12. Anterior margin of prosternum with a stout spine or distinct V-shaped lobe 13
    Anterior margin of prosternum simple, evenly arcuate, or with a broadly rounded or slightly pointed lobe 14
13. Elytral vittae indistinct, light to dark reddish, rarely partly black; striae more distinct, discal intervals convex; discal pronotal punctures separated on an average by about their diameters, tending to become strigate ..... *C. obsoletus obsoletus* (p. 49)
    Elytral vittae quite distinct, black, rarely dark red; striae finer, discal intervals flat; discal pronotal punctures round, separated on an average by 2 or more times their diameters ..... *C. venustus* (p. 51)
14. Elytral epipleuron partly black, lateral raised margin yellow to orange;

pronotum normal to somewhat gibbous 15
Elytral epipleuron all or mostly black, lateral raised margin dark or black; pronotum gibbous to strongly gibbous ..... *C. gibbicollis gibbicollis* (p. 47)

15. Averaging smaller (length 4.0-5.7 mm.); males and females 16
Averaging larger (length 5.4-6.7 mm.); females ..... *C. bispinus* (p. 46)

16. Outer elytral vitta complete ..... *C. calidus* (p. 46)
Outer elytral vitta interrupted once, twice, or nearly absent, sometimes confluent with inner vitta ..... *C. insertus* (p. 47)

17. Pronotum vittate 18
Pronotum not vittate 19

18. Elytra yellow with basal band deeply emarginate mesad of humeri, and with 4 medial and 4 subapical spots brown ..... *C. bivius* (p. 46)
Elytra yellow with 2 discal fasciae, 4 subapical and several lateral spots black ..... *C. leucomelas leucomelas* (p. 51)

19. Pronotum smooth, punctate or impunctate; elytra not as below 20
Pronotum longitudinally rugulose; elytra dirty yellow, occasionally with 3 faint brown narrow zigzag fasciae ..... *C. schreibersii* (p. 50)

20. Pronotum not fasciate, at times with a small darker discal spot 21
Pronotum shining, impunctate, with a broad brown fascia the lateral ends of which taper and meet the pronotal edge ..... *C. trizonatus* (p. 48)

21. Elytra dark with yellow spots 22
Elytra light with dark spots 23

22. Each elytron with 8 spots ..... *C. guttulatus* (p. 47)
Each elytron with 6 spots, basal 2 more or less confluent ..... *C. badius* (p. 45)

23. Each elytron with 3 basal spots, 2 lateral spots, 2 subapical spots, and large common discal spot all brown ..... *C. mutabilis* (p. 48)
Elytra with brown spots; paired, oblique basal spots, and paired discal, which connect along the suture with paired subapical spots ..... *C. tinctus* (p. 50)

Cryptocephalus badius Suffrian

Cryptocephalus badius Suffrian, 1852, Linn. Entomol. 6: 315.

Elongate. Head brownish with yellow in emarginations of eyes and on clypeus. Pronotum brownish, impunctate, shining. Elytra brownish with 12 yellow spots; 4 basal ones somewhat confluent, 2 medial, 2 subapical, and 2 apical. Length 4.2 mm. Width 2.5 mm.

Alabama records: 3 specimens from Colbert[2,3], Houston[1], and Lee[1] counties.

Seasonal distribution: June 16-August 10.

Cryptocephalus binominis binominis Newman

Cryptocephalus binominis Newman, 1841, Entomol. 5: 78.

Pronotum usually black or else dark red throughout. Each elytron black

or dark red with light orange to red spots. Humeral spot attaining suture at its posterior end. Basal spot never touching humeral spot. Length 3.6-4.8 mm.

Alabama records: No specific county listed.

Remarks: White *(93)* recorded this species from Alabama and indicated that a single specimen was taken on *Pinus sylvestris.*

Cryptocephalus bispinus Suffrian

Cryptocephalus bispinus Suffrian, 1858, Linn. Entomol. 12: 347.

Pronotum red to orange with lighter basal oblique spots, lateral and apical margin orange or yellow, rarely almost entirely red. Elytra creamy yellow to orange with 2 dark orange to red or even black vittae: from base of 2nd, 3rd, and 4th intervals to apex of 1st interval always complete, and one from humerus to apex of 4th, 5th, and 6th intervals, nearly always complete. Length 4.0-6.7 mm.

Alabama records: No specific county listed.

Remarks: White *(93)* recorded this species from Alabama. He also stated that males of *bispinus* from the Southeastern States will key to *C. calidus* Suffrian. Only the females in this part of their range are distinguishable.

Cryptocephalus bivius Newman

Cryptocephalus bivius Newman, 1840, Mag. Nat. Hist. 4: 347.

Elongate. Head with frons yellow, clypeus red-brown, and occiput dark brown. Pronotum yellow with 4 broad, sometimes confluent brownish black vittae. Elytra yellow with 4 large, somewhat confluent, basal spots, 4 distinct medial and 4 distinct apical brownish spots. Length 5.3 mm. Width 3.2 mm.

Alabama records: Mobile [2,3] County.

Remarks: The only specimen seen was collected or reared (?) November 12 from *Taxodium distichum.* The specimen carries a Schaeffer determination label.

Cryptocephalus calidus Suffrian

Cryptocephalus calidus Suffrian, 1852, Linn. Entomol. 6:241.

Cryptocephalus carinatus LeConte, 1880, Trans. Amer. Entomol. Soc. 8: 202.

Pronotum orange to dark red, usually with 2 light, oblique basal spots and with lateral and apical margins yellowish or lighter. Elytra creamy yellow to orange with dark vittae. Each elytron with 2 longitudinal black vittae: from base of 2nd, 3rd, and 4th intervals to or near apex of 2nd interval, and from humerus to apex of 4th and combined 5th, 6th, and 7th intervals, frequently interrupted once. Length 4.2-5.6 mm.

Alabama records: No specific county listed.

Remarks: White *(93)* reported this species from Alabama and indicated that *Lathyrus japonicus* and *Lespedeza cuneata* are host plants.

Cryptocephalus gibbicollis gibbicollis Haldeman

Cryptocephalus gibbicollis Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia 1: 252.

Pronotum orange to red, nearly always with 2 vague oblique, yellowish spots at base; lateral and apical margins more or less yellow. Elytra creamy yellow to very light orange with black markings. Each elytron with 2 complete black vittae: from base of 2nd, 3rd, and 4th intervals to apex of 2nd interval; from humerus to apex of 7th to 4th intervals. Anterior margin of prosternum in both sexes somewhat produced into broad lobe. Length 5.2-7.1 mm.

Alabama records: No specific county listed.

Remarks: White (93) reported this species from Alabama and listed *Kalmia angustifolia* as a host plant.

Crytocephalus guttulatus Olivier

Cryptocephalus guttulatus Olivier, 1808, Entomol. ou Hist. Nat. des Insectes . . . Coléoptères VI, p. 815.

Cryptocephalus lautus Newman, 1840, Mag. Nat. Hist. 4: 250.

Oblong. Head yellow, frons medially more brownish. Pronotum strongly convex, tan, anterior margin and posterior corners sometimes yellow; impunctate, shining. Elytral ground color usually black but varying at times to brown; elytra with 6 basal, 4 medial, 4 subapical, and 2 apical yellow spots. Length 4.2-5.6 mm. Width 2.5-3.2 mm.

Alabama records: 6 specimens from Baldwin[1], Dallas[1], Lee[1], and Mobile[2] counties.

Seasonal distribution: May 1-August 24.

Cryptocephalus incertus Olivier

Cryptocephalus incertus Olivier, 1808, Entomol. ou Hist. Nat. des Insectes . . . Coléoptères VI, p. 814.

Cryptocephalus lineolatus Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia 1: 249.

Elongate. Head brown, inner margin of eyes yellow. Pronotum brown; lateral and anterior margins, and 2 oblique basal spots yellow, shining, moderately punctate. Elytra yellow with brown sutural vitta and 2 brown lateral vittae, the latter originating basally from 4th and 5th interstrial spaces and then shifting to 5th and 6th, and finally to 6th alone or with connections to either 5th or 7th. Length 3.0-3.9 mm. Width 1.8-2.3 mm.

Alabama records: 9 specimens from Baldwin[1], Houston[1], and Mobile[2,5] counties.

Seasonal distribution: April 18-August 14.

Cryptocephalus insertus Haldeman

Cryptocephalus insertus Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia 1: 252.

Cryptocephalus ellipsoidalis Casey, 1884, Bull. Brooklyn Entomol. Soc. 7: 66.

Robust. Head brown, yellow around medial margin of eyes or more broadly yellow. Pronotum rusty brown with margins and 2 oblique basal spots yellow, impunctate, shining. Elytra yellow with 2 oblique black vittae, medial vitta originating midbasally and extending to ¾ sutural length; lateral vitta originating at humerus and extending posteriorly to in front of apex. Either vitta sometimes interrupted. Prosternum truncate anteriorly, posterior corners as processes projecting caudally; surface flat, feebly convex, or medially carinate. Length 4.2-7.0 mm. Width 2.5-4.2 mm.

Alabama records: 28 specimens from Baldwin[1], Chilton[1], Etowah[2], Franklin[1], Henry[1], Lee[1], and Mobile[2,3] counties.

Seasonal distribution: June 3-November 1.

Remarks: Five of the Alabama records are ANSP specimens.

Cryptocephalus leucomelas leucomelas Suffrian

Cryptocephalus leucomelas Suffrian, 1852, Linn. Entomol. 7: 36.

Elongate. Head shining; yellow, clypeus brown. Pronotum yellow, with 4 black vittae. Elytra yellow with black pre- and postmedial fasciae; paired sutural spots and lateral marginal spots. Length 4.6-5.8 mm. Width 2.5-3.2 mm.

Alabama records: 10 specimens from Etowah[2], Lee[1], and Tuscaloosa[2] counties.

Seasonal distribution: June 24-July 31.

Remarks: The species has been swept from *Salix* sp.

Cryptocephalus mutabilis Melsheimer

Cryptocephalus mutabilis Melsheimer, 1848, Proc. Acad. Nat. Sci. Philadelphia 3: 172.

Cryptocephalus dispersus Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia 1: 248.

Cryptocephalus discoideus Suffrian, 1852, Linn. Entomol. 7: 49.

Robust. Head yellow, antennal sockets and vertex brown. Pronotum brown, margined with yellow and occasionally with 2 oblique yellow basal spots; shining, faintly punctate. Elytra yellow with large central spot, 6 small basal spots, 2 or 4 midlateral spots, and 4 apical spots brown. Length 5.3-6.8 mm. Width 3.3-4.2 mm.

Alabama records: 7 specimens from Jackson[2] and Mobile[2,3] counties.

Seasonal distribution: June 26-August 5.

Cryptocephalus nanus Fabricius

Cryptocephalus nanus Fabricius, 1801, Syst. Eleuth. II, p. 56.

Oblong. Head tan, shining. Pronotum strongly convex, impunctate, shining, tan, base a bit more yellowish. Scutellum tan. Elytra black, striae deeply impressed. Prosternum emarginate anteriorly. Length 3.2 mm. Width 1.8 mm.

Alabama records: 1 specimen from Mobile [2,3] County.
Seasonal distribution: May 29.

Cryptocephalus notatus quadrimaculatus Say

Figs. 3, 5

Cryptocephalus quadrimaculatus Say, 1824, Desc. of Coleopt. Insects . . . Acad. Nat. Sci. Philadelphia 3: 441.

Oblong. Head black. Pronotum black, shining. Elytra black with red humeral spots which extend across base and back from humeri along sides; apical spots red. Length 4.4-5.8 mm. Width 2.5-3.3 mm.

Alabama records: 15 specimens from Lee[1], Marion[1], and Mobile[2,5] counties.

Seasonal distribution: April 21-June 11.

Remarks: The subspecies *C. n. quadrimaculatus* Say was the only one seen from Alabama. Five specimens were in the F. R. Mason collection (ANSP).

Cryptocephalus obsoletus obsoletus Germar

Cryptocephalus obsoletus Germar, 1824, Insectorum sp. nov. au minus cognitae, p. 559.
Cryptocephalus ornatus Suffrian [not Fabricius], 1852, Linn. Entomol. 7: 229.

Robust, yellow. Head yellow. Pronotum yellow, densely punctate, punctures slightly strigose. Elytra yellow, humeri dark brown, 2 obsolescent oblique vittae occasionally present on each elytron. Length 4.6-5.8 mm. Width 2.8-3.7 mm.

Alabama records: 14 specimens from Lee[1] and Mobile[2,3] counties.

Seasonal distribution: May 5-October 25.

Cryptocephalus pumilus Haldeman

Cryptocephalus pumilus Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia 1: 249.
Cryptocephalus pseudolus Suffrian, 1858, Linn. Entomol. 12: 373.

Oblong, very small, entirely yellowish to dirty yellow. Pronotum shining, sparsely punctate. Elytral striae not deeply impressed, 7th short. Prosternum flat, apical margin truncate. Length 2.3-2.5 mm. Width 1.2-1.4 mm.

Alabama records: 6 specimens from Mobile[2,3] County.

Seasonal distribution: May 3-October 28.

Cryptocephalus quadruplex Newman

Cryptocephalus quadruplex Newman, 1841, The Entomol. 1: 78.
Cryptocephalus quadriguttulus Suffrian, 1852, Linn. Entomol. 7: 65.

Elongate. Head black. Pronotum black. Elytra black with 4 red spots: 2 apical spots and 2 shoulder spots, posterior portions of latter broad medially. Length 3.2-4.9 mm. Width 1.8-2.8 mm.

Alabama records: 12 specimens from Cleburne[1], Etowah[2], Lee[1], Madison[1], Marion[1], Mobile[2], Tallapoosa[1], and Wilcox[1] counties.

Seasonal distribution: April 21-July 11.

Cryptocephalus schreibersii Suffrian

Cryptocephalus rugicollis Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia 1: 258 (preoccupied).

Cryptocephalus schreibersii Suffrian, 1852, Linn. Entomol. 6: 288.

Elongate. Head brown, inner margins of eyes and genae yellow: frons coarsely punctate. Pronotum brown, margins yellow: longitudinally rugulose. Elytra yellow, occasionally with faint zigzag fasciae. Length 3.5-4.6 mm. width 1.9-2.5 mm.

Alabama records: 13 specimens from Lee[1], Macon[1], Mobile[2,3], Russell[1], and Tallapoosa[1] counties.

Seasonal distribution: March 16-November 22.

Remarks: This species has been taken in light traps and by beating or sweeping. We have noted *Juniperus virginiana* as the host for a single specimen.

Cryptocephalus tinctus LeConte*

?*Cryptocephalus fasciatus* Say, 1824, Desc. of Coleopt. Insects . . . Acad. Nat. Sci. Philadelphia 3: 437.

Cryptocephalus tinctus LeConte, 1880, Trans. Amer. Entomol. Soc. 8: 203.

Elongate. Head brown, inner margins of eyes and clypeus yellow, frons deeply, densely punctate. Pronotum shining, punctate, yellow with brown medial area. Elytra yellow; humeri, confluent oblique basal spots, and medial fascia connecting with subapical fascia brown. Elytral apexes without strial impressions, roughly concave and deeply punctate. Prosternum anteriorly truncate. Length 4.2 mm. Width 2.5 mm.

Alabama records: 1 specimen from Baldwin[1] County.

Seasonal distribution: March 20.

Remarks: Balsbaugh collected this single specimen by sweeping an ericaceous plant, 6 miles west of Alabama Highway 63 at the Styx River.

Cryptocephalus trivittatus Olivier

Cryptocephalus trivittatus Olivier, 1808, Entomol., ou Hist. Nat. des Insectes . . . Coléoptères VI., p. 824.

Cryptocephalus lixus Newman, 1840, Mag. Nat. Hist. 4: 250.

Cryptocephalus vittatus Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia 1: 250 [preoccupied, original spelling *vitatus*].

Robust. Head yellow, alutaceous; antennal bases and vertex brown, connected by faint brown triangle in some specimens, clypeal suture a deep groove. Pronotum yellow, alutaceous, faintly, densely punctate with brown medial and paired lateral, broad, arched vittae. Elytra yellow, striae deeply impressed, sutural vitta, 2 long lateral vittae from humeri, and 2 short basal

mid-elytral vittae brown, the latter sometimes absent. Length 3.5-4.4 mm. Width 2.1-2.8 mm.

Alabama records: 5 specimens from Escambia[1], Mobile[2,3], and Tallapoosa[1] counties.

Seasonal distribution: July 9-29.

Cryptocephalus trizonatus Suffrian

Cryptocephalus tricinctus Suffrian, 1852, Linn. Entomol. 7: 34 [preoccupied].
Cryptocephalus trizonatus Suffrian, 1858, Linn. Entomol. 12: 372.

Oblong. Head with frons light yellow; clypeus and antennal bases light brown, occiput dark brown. Pronotum shining, impunctate; yellow with medial brown fascia. Elytra yellow with post basal and subapical fasciae, and apical margin brown. Length 3.9 mm. Width 2.5 mm.

Alabama records: 1 specimen from Franklin[2,3] County.

Seasonal distribution: June 10.

Remarks: This specimen was taken by Loding at Rockwood.

Cryptocephalus venustus Fabricius

Cryptocephalus venustus Fabricius, 1787, Mantissa Insect. I., p. 79.
Cryptocephalus ornatus Fabricius, 1798, Supp. Entomol. Syst. p. 106 [preoccupied].
Cryptocephalus cinctipennis Randall, 1838, Boston Jour. Nat. Hist. 2: 45. **New synonymy** [subsp.].
Cryptocephalus hamatus Melsheimer, 1848, Proc. Acad. Nat. Sci. Philadelphia 3: 173. **New synonymy** [subsp.].
Cryptocephalus simplex Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia 1: 249. **New synonymy** [subsp.].
Cryptocephalus flaccidus Suffrian, 1852, Linn. Entomol. 6: 239.
Cryptocephalus ornatulus Clavareau, 1913, Coleopt. Cat. pars. 53, p. 194. **New synonymy** [subsp.]

Robust. Head yellow, frons marked with brown. Pronotum rusty brown with margins and 2 oblique basal spots yellow, densely punctate. Elytra yellow with 2 black oblique vittae, medial originating midbasally and terminating along the suture about ¾ back; lateral originating at humerus and ending just before apex. Prosternum with apical lobe or cusp, posterior edge entire. Length 5.3-6.1 mm. Width 3.5-4.0 mm.

Alabama records: 9 specimens from Baldwin[1], Etowah[1], Lee[1], Macon[1], Mobile[2], Tuscaloosa[2], and Wilcox[1] counties.

Remarks: This species is very similar to *C. insertus* Haldeman. It differs by having the anterior prosternal lobe and the pronotum punctate. Specimens from the Southern United States tend to be a bit larger than those from the North.

Besides *C. insertus*, another similar form is *Cryptocephalus obsoletus* Germar, which also has a densely punctate pronotum and a prosternal anterior lobe, but this species differs by having the elytral vittae obsolete.

Although White *(93)* uses subspecific names for different infraspecific forms, he admits that these forms are not correlated geographically. We have chosen not to use the subspecific names of this species, but rather to

consider them as new synonyms of *C. venustus* Fabricius, at least until such time as the various color variants are more thoroughly studied.

Genus *Bassareus* Haldeman

Bassareus Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia 1(4): 246.

Small, compact species. Eyes emarginate, antennae long, filiform. Front edge of prothoracic flanks sinuous or toothed. Tarsal claws simple.

This group probably does not deserve separate generic status. The only character distinguishing it, viz. the presence of sinuous or toothed anterior lateral edges of the prosternum, appears to be variable. Further study is warranted. The species, too, are difficult to recognize and a revision of the group would also be desirable.

Key to the Alabama Species of *Bassareus*

1. Anterior lateral edges of prosternum sinuate 2
   Anterior lateral edges of posternum with an acute tooth ..... *B. brunnipes* (p. 52)
2. Elytra each with 2 or more red or yellow spots 3
   Elytra vittate, or black with pale margins, or black with only paired apical spots ..... *B. literatus* (p. 54)
3. Elytra black or mahogany, each with a small apical and a larger medial lateral red spot 4
   Elytra black or piceous, with more numerous pale yellow spots ..... *B. formosus* (p. 53)
4. Pronotum uniformly deep red ..... *B. detritus* (p. 53)
   Pronotum black or black with yellow spots ..... *B. mammifer* (p. 53)

Bassareus brunnipes (Olivier)

Cryptocephalus brunnipes Olivier, 1791, Encyc. Method., Insects Cir-Gyr VI. p. 618.

Cryptocephalus congestus Fabricius, 1798, Supp. Entomol. Syst. p. 107.

Robust. Head red-brown, inner margins of eyes and genae yellow; shining but very faintly alutaceous. Pronotum dull, alutaceous, densely, shallowly punctate; red-brown with lateral corners, narrow apical margin and oblique spots yellow. Elytra black, each with 4 small basal, 2 medial, 2 subapical and single apical spots yellow. Anterior lateral edges of prosternum with acute tooth. Males having prosternum with medial lobe; their 1st ventral abdominal segment with processes at hind corners of intercoxal piece reaching posterior edge of 5th sternite. Length 4.7-5.4 mm. Width 2.8-3.5 mm.

Alabama records: 37 specimens from Autauga[1], Choctaw[1], Coffee[1], Jackson[1], Lamar[1], Lee[1], Macon[1], and Mobile[2] counties.

Seasonal distribution: April 10-August 15.

Remarks: This species can be confused with *Bassareus clathratus* (Melsheimer), a smaller, more northern species, and with *Bassareus formosus* (Melsheimer).

Single specimens have been swept from *Alnus* sp., *Diospyos* sp., and *Cephalanthus occidentalis.*

Bassareus detritus (Olivier)

Cryptocephalus detritus Olivier, 1808, Entomologie, VI, p. 814.
Cryptocephalus binominis Newman, 1841, The Entomol. 5: 78.
Cryptocephalus distinctus Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia, new series 1: 255.

Robust. Head slightly convex, entirely red, finely alutaceous. Pronotum shining, impunctate, red. Elytra with 2 transverse medial and 2 apical red spots. Anterior lateral edges of prosternum sinuous. Length 4.6 mm. Width 2.8 mm.

Alabama records: 1 specimen from Tuscaloosa[2,3] County.

Seasonal distribution: June.

Remarks: Loding *(75)* records H. H. Smith as the collector of the only known specimen. This specimen differs from LeConte's diagnosis of the species in having the pronotum shining and the head not marked with white. This species appears to be closely related to *B. mammifer* (Newman) and perhaps does not deserve specific rank.

Bassareus mammifer (Newman)

Cryptocephalus mammifer Newman, 1840, Mag. Nat. Hist. 4: 250.

Robust. Head moderately convex; labrum tan; occiput, medial frontal area and frontal space between antennal bases black. Pronotum shining black with lateral corner spots, narrow apical edge, and 2 oblique basal spots yellow. Elytra dark mahogany (to black in specimens from other than Alabama) with 2 discal spots and 2 apical spots red. Length 4.6 mm. Width 2.8 mm.

Alabama records: 1 specimen from Mobile[2] County.

Remarks: Although Loding *(75)* recorded this species from "over state," only one specimen from Alabama was found in his collection. This was the varietal form known as *pretiosus* (Melsheimer), which has the discal red spots connecting to the basal margin through the 3rd, 5th, and 6th interstrial spaces, and a small red spot behind the scutellum.

Bassareus formosus (Melsheimer) *

Cryptocephalus formosus Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 173.
Cryptocephalus guttatus Haldeman, 1849, Jour. Acad. Nat. Sci. Philadelphia, new series 1: 247.

Oblong. Head red-brown with yellow in emarginations of eyes and faintly on clypeus. Pronotum alutaceous, finely punctate, red-brown or black with calosity at posterior corners and 2 basal oblique yellow spots. Elytra brown or black, each with 3 basal, 2 medial, 2 subapical, and 1 apical yellow spots. Anterior lateral edges of prosternum sinuate. Males with medial prosternal lobe; caudal processes of intercoxal piece of 1st sternite short, not reaching

posterior edge of 5th sternite, more closely approximate than those of *B. brunnipes*. Length 3.7-4.4 mm. Width 2.1-2.5 mm.

Alabama records: 3 specimens from Blount[2], DeKalb[1], and Macon[1] counties.

Seasonal distribution: May 18-June 6.

Remarks: Intermediates between this species and *B. brunnipes* have been seen. The character of the anterior lateral edges of the prosternum is variable, especially in two specimens of a series from Mississippi.

Bassareus literatus (Fabricius)

Cryptocephalus literatus Fabricius, 1801, Syst. Eleuth., I. p. 50.

Elongate. Head varying from completely yellow to completely black, clypeus sloping caudad from frons. Pronotum dull, alutaceous, completely orangish-red to nearly completely black, only small orangish-red marks along lateral margins and paired anterior and posterior lateral spots. Elytra deeply striate, interstrial spaces strongly convex, varying from completely black with orange yellow apexes to black with 3rd, 7th, and marginal interstrial spaces usually completely yellow, and 5th vaguely yellow at base. Anterior lateral edges of prosternum sinuate. Length 3.2-4.4 mm. Width 1.8-2.5 mm.

Alabama records: 20 specimens from Baldwin[1], Lee[1], Marion[1], and Mobile[2,3] counties.

Seasonal distribution: April 9-July 12.

Remarks: This is the only vittate species of *Bassareus* in Alabama.

Two specimens of this species, collected by Loding, were found in the F. R. Mason collection (ANSP).

Genus *Diachus* LeConte

Diachus LeConte, 1880, Trans. Amer. Entomol. Soc. 8: 196.

Fabricianus Weise, 1895, Dtsch. entomol. Z.: 58.

Minute, oblong beetles. Antennal segments 6 through 11 explanate. Eyes at least partially emarginate. Tarsal claws appendiculate.

This genus and the next, *Triachus*, are possibly more closely related to *Lexiphanes* than they are to *Cryptocephalus* and *Bassareus*. There are reasons for their removal from the Cryptocephalini and placement in either the Monachini or in their own tribe. A review of the species of *Diachus* would be valuable.

Key to the Alabama Species of *Diachus*

1. Scutellum obtusely triangular 2
   Scutellum acutely triangular; prothorax and legs usually yellow-orange; elytra metallic green ..... *D. chlorizans* (p. 55)
2. Elytra bronzed; pronotum orangish laterally, dark bronzed medially ..... *D. auratus* (p. 55)
   Elytra and pronotum a dull yellow brown with a slight bronzed lustre ..... *D. squalens* (p. 55)

Diachus auratus (Fabricius)

Fig. 24

Cryptocephalus auratus Fabricius, 1801, Syst. Eleuth. 2: 57.

Cryptocephalus aeneus Olivier, 1808, Entomol. . . . Coleopt. 6: 916.

Cryptocephalus chalconotus Mannerheim, 1843, Bull. Soc. Imp. Nat. Moscow 10: 312.

Cryptocephalus viridis Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 174.

Oblong. Head yellow-orange bronzed, alutaceous, sparsely punctate; eyes slightly emarginate. Pronotum orange laterally becoming dark bronzed medially; alutaceous. Elytra alutaceous, striae becoming obsolete beyond middle; dark green bronze. Length 1.8-2.1 mm. Width 1.1-1.2 mm.

Alabama records: 59 specimens from Clay[1], DeKalb[1], Houston[1], Lee[1], Marion[1], Mobile[2], and Wiston[1] counties.

Seasonal distribution: April 8-September 17.

Remarks: We have swept this species from *Sambucus canadensis* and *Salix* sp.

Diachus squalens (Suffrian)*

Cryptocephalus squalens Suffrian, 1852, Linn. Entomol. 6: 73.

Oblong. Head with clypeus and labrum yellow, frons and occiput more orange; finely alutaceous; eyes slightly emarginate. Pronotum alutaceous, dull yellow-brown. Elytra shining, striae obsolete posteriorly; dull yellow-brown. Length 1.8 mm. Width 1.1 mm.

Alabama records: 2 specimens from Houston[1] and Mobile[2] counties.

Seasonal distribution: April 25.

Remarks: The more recent specimen was captured in Chattahoochee State Park. Loding's specimen was among unidentified material in his collection.

Diachus chlorizans (Suffrian)*

Cryptocephalus chlorizans Suffrian, 1852, Linn. Entomol. 6: 76.

Oblong. Head with genae, clypeus and frons yellow, occiput orange; very faintly alutaceous; eyes deeply emarginate. Pronotum impunctate, shining, yellow-orange, strongly convex. Elytra metallic blue-green, striae deeply impressed, lateral interstrial spaces convex. Length 1.8-2.1 mm. Width 0.9-1.1 mm.

Alabama records: 40 specimens from Etowah[2], Lee[1], Madison[1], Marion[1], and Winston[1] counties.

Seasonal distribution: June 2-July 24.

Remarks: The host plant is *Rhus* sp. *Diachus luscus* (Suffrian), which was recorded from Georgia *(88)*. It is possibly difficult to distinguish from *D. chlorizans*. No determined specimens of *D. luscus* were seen.

Genus *Triachus* LeConte

Triachus LeConte, 1880, Trans. Amer. Entomol. Soc.: 197.

Minute, ovate beetles. Antennal segments 7 through 11 explanate. Eyes small, widely spaced, minutely emarginate. Tarsal claws appendiculate.

Key to the Alabama Species of *Triachus*

1. Piceous, antennae and tibiae paler with yellow ..... *T. atomus* (p. 56)
   Completely testaceous yellow ..... *T. cerinus* (p. 56)

Triachus atomus (Suffrian)

Cryptocephalus atomus Suffrian, 1853, Linn. Entomol. 7: 74.

Ovate. Head sparsely punctate; frons and occiput piceous, clypeus dark yellow-brown; antennae dark yellow; eyes small, widely spaced, round, minutely emarginate. Pronotum piceous, shining, punctate-striate, strial lines not impressed. Legs and venter same color as elytra except tibiae yellow-brown. Length 1.4-1.6 mm. Width 0.8-0.9 mm.

Alabama records: 4 specimens from Baldwin[1] and Mobile[2] counties.

Seasonal distribution: March 31-April 19.

Triachus cerinus LeConte

Triachus cerinus LeConte, 1880, Trans. Amer. Entomol. Soc. 8: 197.

Compact ovate. Head shining, impunctate, testaceous yellow; eyes small, round, widely spaced, and very minutely emarginate. Pronotum testaceous yellow, shining, usually impunctate. Elytra testaceous yellow, punctate-striate, punctures feebly impressed distally. Length 1.2-1.8 mm. Width 0.7-1.1 mm.

Alabama records: 25 specimens from Baldwin[1], Choctaw[1], Houston[1], Lee[1], and Mobile[2,3] counties.

Seasonal distribution: May 2-August 10.

Remarks: One specimen in Loding's collection, which may be *T. vacuus* LeConte, has faint pronotal punctures and darker basal and mid-elytral clouded markings. Specimens collected in Choctaw County also have faint elytral clouds. These variations at first were suspected to be intergrades with *T. vacuus* LeConte. We have since seen several specimens of *T. vacuus* from South Carolina in the collection of V. M. Kirk. These have the pronotum distinctly punctate and are probably specifically distinct.

SUBFAMILY CHLAMISINAE

Compact, robust, small beetles (2-5 mm.). Head inserted into prothorax. Eyes emarginate. Antennae short, serrate from 5th or 6th segments apically, fitting into grooves in prosternum. Pronotum and elytra usually with tubercles; elytral suture serrate, each elytron dove-tailing with opposite member. Pygidium exposed, usually characteristically sculptured.

The 2 genera of Chlamisinae, *Chlamisus* Rafinesque and *Exema* Lacordaire, are closely related but quite distinct in North America *(65)*. However, on a world-wide basis the genera are perhaps less distinct. Chûjô *(44)* synonymized the 2 genera. More study is needed from a cosmopolitan viewpoint to resolve the difficulty of generic definitions. In this work, we are following Karren *(65)* in considering the 2 genera distinct.

Key to the Alabama Genera of Chlamisinae

1. Antennae becoming broader and serrate from the 5th segment distad; the 5th segment subequal in diameter to the 6th; usually metallic species ..... *Chlamisus* (p. 57)

   Antennae becoming broader and serrate from the 6th segment distad, the 5th segment smaller than the 6th; usually dull, non-metallic species ..... *Exema* (p. 59)

Genus *Chlamisus* Rafinesque

Chlamisus Rafinesque, 1815, Analyse Nat. Tab. l'Univ.: 116.

Chlamys Knoch, 1801, Neue Beytr. Insektenk. 1: 122 (not Röding *in* Bolten, 1798).

Arthrochlamys Ihering, 1904, Rev. Mus. paulista 6: 642.

Boloschesis Jacobson, 1924, Rev. russe Entomol. 18: 239.

Myochlamys Ihering 1904, An. Mus. Buenos Aires (3)7: 106.

Genus *Chlamisus* Rafinesque

Robust. Metallic coppery or bronzish; roughly sculptured, with depressions, carinae, or tubercles.

Four species are recorded from Alabama. Brown *(33, 35)* indicated that food plant associations are very useful in making identifications.

Key to the Alabama Species of *Chlamisus*

1. Legs, antennae, clypeus, and frons not completely orange—either partly or entirely black 2

   Legs, antennae, clypeus, and frons completely orange ..... *C. foveolatus* (p. 59)

2. Pronotum highly metallic iridescent; strongly, regularly strigose; larger species (length 3.3-5.3 mm.) 3

   Pronotum dull or shining, but not strongly regularly strigose; larger species (length 2.8-3.2 mm.) ..... *C. tuberculatus* (p. 58)

3. Prosternal plate laterally emarginate—goblet shaped; host blackberry *(Rubus* sp.) ..... *C. plicatus* (p. 58)

   Prosternal plate feebly emarginate laterally—subtriangular; host—blueberry *(Vaccinium* sp.) ..... *C. cribripennis* (p. 58)

Chlamisus tuberculatus (Klug)

Chlamys tuberculatus Klug, 1824, Entomol. Mono. p. 122.

Robust. Head black, labrum, antennae, maxillary palpi yellow-red; strongly alutaceous, punctate with large punctures; deep fovea on vertex between eyes. Pronotum with gibbosity bituberculate at peak, tubercle on lateral sides of gibbosities, paired tubercles laterad of the above, and paired tubercles on frontal surface of gibbosites; black, shining, moderately strigate-rugose, punctate with large punctures. Elytra dull, alutaceous, black, punctate, tuberculate, discal tubercles connecting with lateral ones by curving ridge, more shining and slightly dark cupreous. Scutellum shining black; posterior corners more elevated. Prosternum rugose, triangular. Pygidium with fine, distinct longitudinal median carina; surface strongly alutaceous to finely rugose; with calosities and moderately large punctures. Venter with very large punctures. Legs black, tarsi yellowish red, tibiae apically faintly reddish. Length 3.0 mm. Width 2.1 mm.

Alabama records: 1 specimen from Etowah[2] County.

Seasonal distribution: June 3-8.

Remarks: This single specimen was unidentified in Loding's collection. Loding caught it at Tumblin Gap. It is apparently intermediate between *C. tuberculatus* (Klug), described from Savannah, Georgia, and *C. quadrilobatus* Schaeffer, described from Texas. We have assigned it to *C. tuberculatus.*

Chlamisus plicatus (Fabricius)*

Clythra plicata Fabricius, 1798, Supp. Entomol. Syst. p. 111.

Subglobose, very robust; rusty metallic to blue-black, occasionally bronze-green metallic. Head alutaceous, sparsely punctate; emarginations of eyes yellow. Pronotum bituberculate, strongly strigosely sculptured, shining metallic. Scutellum alutaceous, truncate posteriorly, narrowing anteriorly, anterior margin with medial denticle projecting into pronotum. Elytra strongly tuberculate, dull, alutaceous; often partly or entirely blue-black. Venter of same color as dorsum; with numerous pock mark depressions. Prosternum goblet shaped. Pygidium alutaceous, with sparse large punctures, and median carina, varying from non-vermiculate to slightly vermiculate along carina. Length 3.3-5.3 mm. Width 2.3-4.2 mm.

Alabama records: 83 specimens from Baldwin[1], Choctaw[1], Elmore[1], Escambia[1], Houston[1], Lee[1], Macon[1], Marion[1], Mobile[2], and Talladega[1] counties.

Seasonal distribution: March 17-October 28.

Remarks: The preferred host for this species is blackberry, *Rubus* sp. Several larvae were collected from this plant and reared to the adult stage. Loding's specimens were misidentified as *Chlamys foveolata* Knoch.

Chlamisus cribripennis (LeConte)*

Chlamys cribripennis LeConte, 1878, Proc. Amer. Phil. Soc. 17: 614.

Robust, coppery red. Head strongly alutaceous, finely punctate; antennae

and emarginations of eyes yellow; clypeus slightly emarginate. Pronotum with gibbosity feebly divided; strigosely punctate on tubercles, rugose along sides. Elytra with tubercles, the juxtascutellar less strongly evident. Prosternal margins sinuate, thus somewhat goblet shaped. Pygidium with large alutaceous punctures; inter-punctule spaces smoother, shining. Length 3.3-3.9 mm. Width 2.5-3.0 mm.

Alabama records: Macon[1], Mobile[2], and Winston[1] counties.

Seasonal distribution: March 28-June 3.

Remarks: These records extend the known distribution of this species for a considerable distance. The species was previously recorded from Michigan, Ontario, and Quebec *(33)*.

Brown *(33)* recorded its food plant as *Vaccinium angustifolium*. One Alabama specimen was collected on a species of blueberry, *Vaccinium* sp., in Tuskegee National Forest.

The prosternum appears to differ from the northern forms in being more deeply emarginate, thus goblet shaped.

Chlamisus foveolatus (Knoch)

Chlamys foveolata Knoch, 1801, Neue Beyträge zur Insect. I., p. 130.

Chlamys affinis Klug, 1824, Entomol. Mono. p. 115.

Chlamys assimilis Klug, 1824, Entomol. Mono. p. 239.

Chlamys polycocca Lacordaire, 1848, Mem. Soc. Roy. Sci. Liège 5: 704.

Oblong. Head with occiput and vertex black, alutaceous, labrum orange, smooth; antennae orange, its anterior surface alutaceous; eyes emarginate. Pronotum black, rugose. Elytra black, tubercles with acute ridges running from one to another. Venter black; legs completely orange. Pygidium alutaceous, strongly punctate, with 1 strong mesal and 2 lesser lateral carinae. Prosternum broad between mesocoxae. Length 2.8-3.2 mm. Width 1.8-1.9 mm.

Alabama records: 2 specimens from Mobile[2] and Winston[1] counties.

Seasonal distribution: March 3-June 27.

Remarks: Even though Loding *(75)* recorded the Alabama distribution of this species as "over state," it is possible that he was misidentifying the species. The specimens labeled *C. foveolatus* in his collection were *C. plicatus* (Fabricius). It is possible that the labels were mixed after he identified the beetles, since this part of his collection was in great disarray.

Genus *Exema* Lacordaire

Exema Lacordaire, 1848, Mon. Phytoph 2: 634, 844 (Part.).

Subquadrate or subpentagonal. Moderately small species (2.1-3.5 mm.). Black to dark brown, usually marked with yellow on head, pronotum, elytra and legs; sometimes coppery metallic.

Six species are recorded from Alabama.

Key to the Alabama Species of *Exema*

1. Tarsal claws simple; cuticle all or in part black, not or only slightly metallic; pronotum at least in part rugose or striopunctate, tip of aedeagus rounded or slightly flanged 2

   Tarsal claws toothed; cuticle yellow, marked with black, or metallic; pronotum punctate; tip of aedeagus round, truncate or highly flanged 5

2. Frons in emargination of eye yellow; face of male mostly yellow; frontal slope of male pronotum always yellow; pronotum in part striopunctate 3

   Frons in emargination of eye black; face of male black with a yellow pattern; frontal slope of male pronotum black or with reduced yellow markings; entire pronotum highly rugose or striopunctate ..... *E. canadensis* (p. 61)

3. Nontubercular surface of pronotum not rough, striopunctate throughout, punctures oval to elliptical 4

   Nontubercular surface of pronotum rough, coarsely punctate anteriorly, punctures round and deep, especially on yellow areas of male; punctures elongate posteriorly ..... *E. neglecta* (p. 61)

4. Cuticle slightly metallic; pronotal punctures elliptical, tubercles numerous, large; gibbosity high, flat in dorsal outline ..... *E. elliptica* (p. 62)

   Cuticle dull or shiny black; pronotal punctures oval to elliptical, tubercles sparse, small; gibbosity evenly rounded ..... *E. byersi* (p. 61)

5. Cuticle not coppery but yellow and black; tip of aedeagus truncate or rounded, with lateral and ventral hairs only; male with front and middle tibial spines; female with small auxiliary sclerites, sometimes inconspicuous. ..... *E. dispar* (p. 62)

   Cuticle coppery to dark brown or black with coppery reflections; tip of aedeagus greatly flanged laterally and truncate with dorsal, transverse row of long hairs; males with front tibial spine only; female with large auxiliary sclerites ..... *E. gibber* (p. 60)

Exema gibber (Fabricius)

Fig. 4

Clytra gibber Fabricius, 1798, Supp. Entomol. Syst. p. 112.

Chlamys nodulosa Blatchley, 1913, Canadian Entomol. 45: 22.

Oblong. Dark brown-bronze. Antennae with scape pale; remaining segments becoming darker at apex; yellow smooth spot on frons between eyes; yellow triangle between antennae above clypeus. Males with spinulae on 1st and 5th abdominal sterna. No spine on apex of middle tibia. More punctate and tuberculate than other *Exema* species but pronotum without striae or rugose lines. Length 2.8-3.2 mm. Width 1.9-2.1 mm.

Alabama records: 5 specimens from Mobile[2,3] County.

Seasonal distribution: March 29-April 10.

Remarks: Karren *(65)* gives hosts as *Quercus* sp., *Myrica cerifera, Crataegus, Carya illinoensis,* and *Lichi chinensis.* Dekle as cited by Karren *(65)* also lists *Baccharis halimifolia, Rubus* spp., and *Salix* sp.

Exema canadensis Pierce

Exema dispar canadensis Pierce, 1940, Bull. So. Calif. Acad. Sci. 39: 10.
Exema canadensis Pierce, Brown, 1943, Canadian Entomol. 75: 124.

Oblong. Shiny black with yellow or yellow-black markings. Antennal scape yellow, flagellum becoming dark brown at apex; face with longitudinal yellow bar next to each eye and transversely connected to central yellow spot which merges with triangular frontal spot covering carinal area. Pronotum highly rugose, with long, slender punctures. Male foveal area with numerous and large recurved hairs. Length 2.5-2.8 mm. Width 1.8-1.9 mm.

Alabama records: 16 specimens from Coffee[1], Etowah[2], Lee[1], Limestone[1], Macon[1], Madison[1], and Mobile[2] counties.

Seasonal distribution: April 10-July 23.

Remarks: Karren *(65)* listed the following hosts: *Solidago altissima, S. neglecta, Corylus* sp., *Sambucus canadensis,* blossoms of *Prunus virginiana, Ulmus* sp., *Ambrosia* sp., *Verononia* sp., *Salix* sp., *Betula* sp., *Fragaria* sp., *Cornus* sp., *Haplopappus phyllocephalus, Erigeron quercifolius,* and *Rubus* sp.

Exema neglecta Blatchley

Exema neglecta Blatchley, 1920, Canadian Entomol. 52: 69.

Oblong. Black except yellow on entire frons, anterior half of pronotum, spot on anterior coxa, entire anterior femur, subapical and subbasal rings on middle tibia and middle femur; tarsomeres brown-yellow. Anterior pronotal yellow area spotted irregularly with black and black punctures. Highly punctate. Posterior lateral slopes of pronotum with rugose lines, punctures large and distinct. Claws simple. Length 2.5-2.8 mm. Width 1.8-1.9 mm.

Alabama records: 4 specimens from Baldwin[1], Lee[1], and Mobile[2] counties.

Seasonal distribution: June 24-July 10.

Remarks: *Exema canadensis* Pierce is more common in Alabama and is possibly conspecific with *E. neglecta.* Karren *(65)* indicates that the genitalia of the 2 species are "quite similar." Host plants include *Baccharis halimifolia, Chondrophora virgata, Eupatorium* sp., *Arundinaria* sp., *Solidago* sp., and *Strophostyles helvola.*

Exema byersi Karren

Exema byersi Karren, 1966, Univ. Kans. Sci. Bull. 46: 670.

Oblong. Black with yellow or yellow-brown markings. Antennae and labrum yellow-brown, mouth parts darker; head entirely yellow, except genae black, clypeus and antennal sockets brown, and punctures on vertex and front black. Frontal slope of pronotum yellow. Front femur and all tibiae with subbasal and subapical yellow rings, middle femur with wide subbasal ring, hind femur black. Length 2.6 mm. Width 1.7 mm.

Alabama records: Mobile[3] County.

Seasonal distribution: March 15-June.

Remarks: Hosts include *Echinacea angustifolia, Fraxinus pennsylvania, Asclepias tuberosa,* and *Gutierrezia dracunculoides.*

Exema eliptica Karren

Exema elliptica Karren, 1966, Univ. Kans. Sci. Bull. 46: 672.

Shiny black to slightly metallic, except for yellow or yellow-brown markings. Antennae yellow, mouth parts light brown, labrum shiny; face yellow except for light brown antennal bases, genae and basal clypeus; black spot or patch of black punctures on vertex. Frontal slope of pronotum with yellow band ½ width of head including eyes. Pronotal gibbosity high, appears flat from lateral aspect, with large, rounded tubercles and carinae; pronotum deeply striopunctate on flanks giving highly rugose effect. Length 2.8-3.1 mm. Width 1.8-2.1 mm.

Alabama records: No specimens have thus far been collected in Alabama; however, the species has been taken in Florida, Georgia, and Texas and it probably occurs in Alabama.

Remarks: Karren *(65)* indicates that this species is very closely related to *E. neglecta, E. elliptica,* and *E. byersi,* differing from these species in its strikingly elevated pronotum and its distribution. The host plants of *E. elliptica* include *Iva fructescens* and *Baccharis halimifolia.*

Exema dispar Lacordaire

Exema dispar Lacordaire, 1848, Mem. Soc. Roy. Sci. Liège 5: 850.
Exema pennsylvanica Pierce, 1940, Bull. So. Calif. Acad. Sci. 39: 18.

Black variegated with spots of yellow on most of body and with large yellow areas on head and anterior slope of the pronotum. Last tarsomere short, only about ⅓ longer than 3rd. Length 2.3-2.4 mm. Width 1.55-1.6 mm.

Alabama records: 13 specimens from Clay[1], DeKalb[1], Franklin[1], Jefferson[1], Macon[1], Marshall[1], and Mobile[3] counties.

Seasonal distribution: May 3-September 18.

Remarks: The Mobile County record was noted by Karren *(65).* Host plants include several genera of composites such as *Ambrosia, Helianthus,* and *Eupatorium.* The authors labeled their study material *E. pennsylvanica* Pierce, which Karren *(44)* placed in synonomy.

SUBFAMILY EUMOLPINAE

Subglobose to oblong oval, small to medium beetles of dull or metallic coloration. Head deflexed anteriorly, eyes entire or very minutely emarginate, antennae filiform. Procoxae round, globose; separated by prosternum and closed behind. Third tarsal segment deeply bilobed. Elytra covering pygidium.

Because the tribes require redefinition—the only published work on them being that of Chapuis *(44)*—this work follows Arnett *(1)* by giving only the tribal names and not the characterizations for these taxa.

Key to the Alabama Tribes and Genera of Eumolpinae

1. Pronotum with postocular lobes, formed by cephalad extensions of the proepisterna 2
   Pronotum without postocular lobes, the anterior portions of the proepisterna not produced cephalad 7
2. Dorsum glabrous 4
   Dorsum pubescent or scaly ..... (Tribe Myochroini) 3
3. Protibiae with a tooth on mesal surface near apex; margin of pronotum usually with 3 teeth ..... *Myochrous* (p. 79)
   Protibiae simple; pronotal margins entire ..... *Glyptoscelis* (p. 80)
4. Meso and metatibiae without corbels (entire) 6
   Meso and metatibiae with subapical corbels (emarginate on outer edge) ..... (Tribe Typophorini) 5
5. Ocular sulci very wide above eyes, nearly joined across the frontal suture; color dark metallic blue, green or bronze ..... *Typophorus* (p. 81)
   Ocular sulci narrow above eyes, not joined across frontal suture; color yellow, brown, orange, or black, without green, blue, or bronze luster ..... *Paria* (p. 82)
6. Tarsal claws simply divergent ..... (Tribe Corynodini) ..... *Chrysochus* (p. 89)
   Tarsal claws divaricate ..... (Tribe Edusellini) ..... *Tymnes* (p. 78)
7. Pronotum without distinct lateral margins 8
   Pronotum with lateral margins 10
8. Head without supraorbital grooves, dorsum lacking metallic luster ..... (Tribe Leprotini) 9
   Head with supraorbital grooves; dorsum with metallic luster (Tribe Scelodontini) ..... *Graphops* (p. 69)
9. Pronotum transverse; profemora with small tooth; 3rd antennal segment not longer than 2nd ..... *Xanthonia* (p. 72)
   Pronotum cylindrical; femora unarmed; 3rd antennal segment longer than 2nd ..... *Fidia* (p. 73)
10. Supraorbital grooves indistinct 11
    Supraorbital grooves distinct ..... (Tribe Metachromini) ..... *Metachroma* (p. 74)
11. Lateral margins of pronotum irregular or sinuous ..... (Tribe Colaspini) 12
    Lateral margins of pronotum regular and entire 13
12. Prosternum narrow and contracted between coxae ..... *Colaspis* (p. 66)
    Prosternum wide, lateral sides nearly parallel ..... *Rhabdopterus* (p. 68)
13. Pronotum with basal marginal line ..... (Tribe Iphimeini) ..... *Nodonota* (p. 64)
    Pronotum without basal marginal line ..... (Tribe Chrysodinini) ..... *Chrysodina* (p. 64)

Tribe Chrysodinini

Genus *Chrysodina* Baly

Chrysodina Baly, 1864, Jour. Entomol. Soc. London 2: 221.
Spintherophyta Chevrolat, 1837, *in* Dejean, Cat. Coleopt. ed. 2: 410.
Chalcoparia Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 1873: 39.

Subglobose, shining. Pronotal lateral margins regular and entire; without basal marginal lines.

Wilcox (unpublished notes) indicated that *Spintherophyta* Lefèvre, 1875, is the correct generic name for this genus. This name has not been used here as no published reference to this new synonymy is known to the authors.

Only one species is known to occur in the United States, *C. globosa* (Olivier), which is characterized below.

Chrysodina globosa (Olivier)

Colaspis globosa Olivier, 1808, Entomol. . . Coleopt. VI., p. 893.
Chrysodina ovata Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3: 442.

Subglobose. Very shiny, dark coppery brown. Legs, antennae, and labrum red-brown. Length 2.5-2.8 mm. Width 1.8-1.9 mm.

Alabama records: 2 specimens from Lee[1] County.

Seasonal distribution: June 9.

Remarks: Although we could not associate these beetles with any particular plant in Alabama, Balsbaugh has collected them in large numbers on sweetfern, *Comptonia pergina,* in Pennsylvania.

Tribe Iphimenini

Genus *Nodonta* Lefèvre

Nodonota Lefèvre, 1885, Mem. Soc. Sci. Liége (2)11: 166.
?*Noda* Chevrolat, 1837, *in* Dejean, Cat. Coleopt. ed. 2 (not Schellenberg, 1803; not Erichson, 1843; not Matsummura, 1935).
Colaspomorpha Weise, 1899.

Oblong oval. Pronotal lateral margins regular and entire, with basal marginal line. Antennae long, slender.

Wilcox (unpublished notes) indicated that the generic name *Nodonota* is technically improper. *Brachypnoea* Gistle, 1848, has priority as a replacement name for the preoccupied senior synonym, *Noda* Chevrolat, 1837. Further research may reveal that the International Commission on Zoological Nomenclature should be petitioned to suppress *Brachypnoea* as a *nomen oblitum.* Until this question is resolved we prefer to use *Nodonota.*

Three species are known from Alabama.

Key to the Alabama Species of *Nodonota*

1. Elytra without costiform elevations leading caudally from humeri in either sex; pronotal punctures well separated and round 2

Elytra with distinct costiform elevations leading caudally from humeri, at least in female; pronotal punctures, especially at sides, substrigose ..... *N. puncticollis* (p. 65)

2. Clypeus strongly constricted by antennal bases; lateral margin of pronotum not rounded to base, pronotum widest at base ..... *N. clypealis* (p. 65)

Clypeus not constricted; lateral margin of pronotum strongly rounded to base, pronotum widest at basal third ..... *N. tristis* (p. 65)

Nodonota tristis (Olivier)

Colaspis tristis Olivier, 1808 Entomol. Coleopt. VI, p. 889.
Colaspis pilula Germar, 1824, Insect. Sp. Nov. p. 567.

Oblong oval. Blue, dark blue, blue-green, or dark green-black; shining; antennae brown, legs brown or sometimes as dark as body. Elytral punctation usually in rows. Length 3.3-4.0 mm. Width 2.1-2.5 mm.

Alabama records: 183 specimens from Butler[1], Clarke[1], Clay[1], Cleburne[1], DeKalb[1], Lawrence[1], Lee[1], Limestone[1], Macon[2], Madison[1], Marion[1], Marshall[1], Monroe[1], Tallapoosa[1], Walker[1], Wilcox[1], and Winston[1] counties.

Seasonal distribution: May 14-August 15.

Remarks: We collected this species from *Salix* sp. and *Amaranthus spinosus*. Although Loding recorded it from "over state," no Alabama specimens were seen in his collection.

Nodonota clypealis Horn

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

Oblong oval. Shining green-black or blue. Base of clypeus strongly emarginate between antennal insertions. Antennal segments 1 through 6 brown, 7 through 11 black, pubescent. Legs black, tarsi dark brown. Pronotal punctation fine, moderately close. Elytral punctures tending to be in rows. Length 3.3-4.4 mm. Width 1.9-2.8 mm.

Alabama records: 338 specimens from Baldwin[1], Choctaw[1], Cleburne[1], Coffee[1], Dallas[1], DeKalb[1], Lamar[1], Lee[1], Limestone[1], Lowndes[1], Macon[1], Madison[1], Marshall[1], Mobile[2,3], Russell[1], Tallapoosa[1], and Winston[1] counties.

Seasonal distribution: April 3-August 6.

Remarks: This species is often collected with specimens of *N. tristis* (Olivier). We have collected it on *Amaranthus spinosus*.

Nodonota puncticollis (Say)

Colaspis puncticollis Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3: 444.
Colaspis humeralis LeConte, 1858, Proc. Acad. Nat. Sci. Philadelphia 10: 85.
Nodonota strigicollis Lefèvre, 1875, Rev. Mag. Zool. III, p. 112.

Oblong oval. Bronze-green or blue-green metallic, shining. Pronotum alutaceous, closely punctate with longitudinally strigose punctures. Elytra with costiform elevations leading caudally from humeri. Legs usually black but occasionally red-yellow. Length 3.3-4.6 mm. Width 1.9-2.5 mm.

Alabama records: 22 specimens from Cleburne[1], Lee[1], Macon[1], Mobile[2,3], and Tallapoosa counties.

Seasonal distribution: April 12-June 4.

Remarks: This species is taken less frequently than the other members of the genus in Alabama.

Tribe Colaspini

Genus *Colaspis* Fabricius

Colaspis Fabricius, 1801, Syst. Eleuth. I.: 411.
Maecolaspis Bechyne, 1950, Mitt. Münchn. Entomol. Ges. 40: 275, 279.

Type-species: *Colaspis occidentalis* Linnaeus.

Anterior margin of pronotum without post-ocular lobes, lateral margins irregular or undulating. Prosternum wide, lateral margins subparallel. Tarsal claws broadly appendiculate; all tibiae entire, not emarginate.

Key to the Alabama Species of *Colaspis*

1. Yellow or brown, elytra costate 2
   Bright metallic green, coppery green, or purple; elytra without costae ..... *C. favosa* (p. 68)
2. Each elytron with 7 costae subequal in width to intercostal spaces, the latter with 2 irregular rows of punctures 3
   Each elytron with 4 costae, intervals between them wider and with more numerous punctures 4
3. Venter and epipleura dark brown ..... *C. brunnea brunnea* (p. 66)
   Venter and epipleura light brown ..... *C. brunnea flavida* (p. 67)
4. Smaller beetles (length 3.9-5.1 mm.); brown, elytra with yellow costae; penis shorter than internal sac 5
   Larger beetles (length 5.3-6.5 mm.); brown, elytra with thin brown costae; penis subequal in length to the internal sac ..... *C. pini* (p. 68)
5. Males without median tubercle on 5th abdominal sternite ..... *C. costipennis* (p. 67)
   Males with median tubercle on 5th abdominal sternite ..... *C. flavocostata* (p. 67)

Colaspis brunnea brunnea (Fabricius)

Galeruca brunnea Fabricius, 1798, Supp. Entomol. Syst., p. 94.

Oblong oval. Yellow-brown. Pronotum moderately punctate. Elytra costate with 7 costae per elytron, costae subequal or a little wider than intercostal spaces, spaces with 2 close irregular rows of punctures. Venter, especially abdomen, and epipleura dark brown, sometimes tinged with green. Length 4.4-4.9 mm. Width 2.1-2.5 mm.

Alabama records: 18 specimens from Cleburne[1], DeKalb[1], Lee[1], Limestone[1], Macon[1], and Madison[1] counties.

Seasonal distribution: July 9-August 18.

Remarks: This subspecies, the northern form, has a dark venter. North Alabama appears to be a zone of intergradation between the 2 subspecies. Some specimens were seen which are difficult to place in either subspecies. Commonly, this species is known as the grape colaspis (*Vitis* sp.).

Colaspis brunnea flavida Say

Colaspis flavida Say, 1859, Long's Exped. II., 196. (ab.) [from Clavareau].
Colaspis flavicans Lefèvre, 1885, Mem. Soc. Roy. Sci. Liège, new series, 11: 33.

Oblong oval. Like nominate subspecies but with venter and epipleura light brown. Aedeagus broader at apical third; rounding and ending with medial denticle. Length 3.9-5.1 mm. Width 1.9-2.8 mm.

Alabama records: 166 specimens from Baldwin[1], Barbour[1], Clay[1], Cleburne[1], Coosa[1], Crenshaw[1], DeKalb[1], Escambia[1], Houston[1], Lee[1,2], Limestone[1], Macon[1], Madison[1], Marion[1], Marshall[1], Randolph[1], Tallapoosa[1], Tuscaloosa[1], Wilcox[1], and Winston[1] counties.

Seasonal distribution: June 3-August 26.

Remarks: This species is attracted to light.

Colaspis costipennis (Crotch)

Colaspis costipennis Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 44 (nec Lefèvre, 1877).

Oblong oval. Pronotum brown, usually with green reflections, punctate. Elytra brown with 4 yellow costae of variable width per elytron, and 2 rows of double-set irregular punctures between costae. Venter and epipleura dark brown; 5th abdominal sternite of males medially finely rugulose anteriorly and shining posteriorly. Aedeagus with lateral sides of ventral piece subparallel, of thinner sclerotization than at apex. Length 3.9-4.9 mm. Width 2.1-2.8 mm.

Alabama records: 20 specimens from Choctaw[1], Lee[1], and Mobile[2] counties.

Seasonal distribution: April 10-August 28.

Colaspis flavocostata Schaeffer

Colaspis flavocostata Schaeffer, 1934, Jour. N. Y. Entomol. Soc. 41: 470.

Oblong oval. With same morphological features as *C. costipennis* (Crotch), except males with median tubercle on 5th abdominal sternite. Aedeagus also indistinguishable from that of *C. costipennis* (Crotch). Length 4.6-5.1 mm. Width 2.5-2.8 mm.

Alabama records: 8 specimens from Baldwin[1], Houston[1], and Mobile[2] counties.

Seasonal distribution: May 2-16.

Remarks: It is quite probable that *C. flavocostata* Schaeffer and *C. costipennis* (Crotch) are conspecific, the only known difference being the denti-

cle or tubercle on the 5th abdominal sternite of males of the former. This may only be a character differing geographically. Barber *(8)* also substantiates the similarity of male genitalia. "The aedeagus of the hologype [of *C. flavocostata*] is of the form usual in the *brunnea–costipennis* series. . ."

Colaspis pini Barber

Colaspis pini Barber, 1937, Proc. Entomol. Soc. Wash. 38: 200.

Elongate. Brown, sometimes with very faint green reflections. Pronotum closely punctate. Elytra with 4 thin costae and 4 rows of irregularly set punctures between the costae. Aedeagus long and thin; penis subequal in length to the internal sac. Length 5.3-6.5 mm. Width 2.5-3.5 mm.

Alabama records: 11 specimens from Baldwin[1], Clay[1], Cullman[1], Lee[1], Mobile[1], Tallapoosa[1], and Wilcox[1] counties.

Seasonal distribution: May 6-August 18.

Remarks: This species is attracted to light, where most of the Auburn material was obtained. Barber *(8)* in his description of the species stated that its host plant is pine *(Pinus* sp.).

Colaspis favosa Say

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

Oblong oval. Metallic green, coppery green, or purple. Pronotum punctate. Elytra punctate with no costae. Length 4.6-5.8 mm. Width 2.5-3.2 mm.

Alabama records: 29 specimens from Baldwin[1], Lee[1], Macon[1], Mobile[2], Russell[1], and Wilcox[1] counties.

Seasonal distribution: May 18-August 27.

Remarks: Loding *(75)* notes that this species is a pest of azaleas (*Rhododendron* sp.). It is attracted to lights.

Genus *Rhabdopterus* Lefèvre

Rhabdopterus Lefèvre, 1885, Mem. Soc. Sci. Liége (2)11: 16, 46.
Rhabdophorus Lefèvre, 1878, Mitt. Münch. Entomol. Ver. 2: 126 (not Agassiz, 1846).

Possessing the major diagnostic characters of the genus *Colaspis* but with prosternum narrow, contracted between coxae.

This genus, for the most part, is composed of groups of "sibling species." The known Alabama species are generally separable on the characters given below.

Key to the Alabama Species of *Rhabdopterus*

1. Legs and antennae dark brown or black; dentiform process of aedeagus short, broad and usually strongly constricted at base ..... *R. picipes* (p. 69)

   Legs and antennae light brown or white; dentiform process of aedeagus rounded or tapering toward tip ..... *R. praetextus* (p. 69)

Rhabdopterus picipes (Olivier)

Colaspis picipes Olivier, 1808, Entomol. . . . Coleopt. VI. p. 886.
Rhabdopterus blatchleyi Bowditch, 1921, The Entomol. 54: 234.

Convex, elongate. Dark brown to nearly black, shining with faint metallic bronze or greenish reflections. Resembles *R. praetextus* (Say). Legs and antennae dark brown to nearly black; apexes of femora and bases of tibiae of the near black specimens red-brown. Aedeagus with apical margin longer and very heavily sclerotized, dentiform process short, broad and usually strongly constricted at base. Length 5.4-6.5 mm. Width 3.0-3.7 mm.

Alabama records: 14 specimens from Baldwin[1], Choctaw[1], Escambia[1], Lee[1], Madison[1], and Mobile[2,3] counties.

Seasonal distribution: May 10-August 27.

Remarks: This species is primarily restricted to the coastal plain: ". . . it appears that *picipes* occupies the coastal lowlands from the Mississippi Delta to Rhode Island and is in contact along the inland margin of its area with the pale-legged, smaller species *praetextus* (Say) . . ." *(9)*. Alabama records generally tend to substantiate this observation.

We have collected a single specimen by sweeping *Commelina communis* and have taken others at lights.

Rhabdopterus praetextus (Say)*

Colaspis praetextus Say, 1824, Proc. Acad. Nat. Sci. Philadelphia 3: 442.

Convex, elongate. Dark brown, shining, faintly metallic green. Pronotum and elytra punctate, elytral punctation confused basally but tending to be in rows or striae apically. Legs and antennae light brown or white. Aedeagus with apical sclerotized margin narrow, dentiform process rounded or tapering toward tip. Length 4.6-6.1 mm. Width 2.5-3.2 mm.

Alabama records: 8 specimens from Cleburne[1], Macon[1], and Tallapoosa[1] counties.

Seasonal distribution: June 20-August 18.

Remarks: In addition to the 8 specimens, there are in the Auburn Entomology Museum 13 unidentified females which are unassociated with males —males being necessary for positive identification. These are probably *R. praetextus* (Say) since they have white legs and antennae, but are possibly *R. deceptor* Barber, which has not been reported from Alabama. The latter species is distributed from Iowa to Alberta to New York and Texas *(9)*. It, too, has white legs but is distinguishable by the male aedeagus.

Tribe Scelodontini

Genus *Graphops* LeConte

Graphops LeConte, 1884, Trans. Amer. Entomol. Soc. 12: 25. Type-species: *Graphops nebulosa* LeConte.

Heteraspis LeConte, 1859 (not Blanchard, 1845; not Chevrolat, 1845).

Small, robust, usually metallic bronze beetles. Head with supraorbital

ocular sulci. Pronotum laterally margined and with anterior margin straight ventrolaterally.

The genus has been recently revised by Blake *(22)*, who studied and pictured the LeConte types. However, Blake is in error in attributing feminine gender to the name *Graphops*, which derives, as she points out, from γραφω, to carve, and ωψ, eye. The latter attributes the gender to the generic name, which is masculine, the usual classical gender for ωψ. Even if ωψ is considered a Greek noun of variable gender, then *Graphops* still should be considered masculine, because LeConte *(72)*, the first to utilize the name, considered it to be masculine. (See Article 30, Agreement in gender (a) (i) (2), International Code of Zoological Nomenclature, 1964).

Key to the Alabama Species of *Graphops*

1. Apical clypeal margin not deeply, angulately emarginate; entire, shallowly indented, or with rounded emargination 2
   Apical clypeal margin deeply, angulately emarginate 5
2. Elytral length approximately twice that of prothorax 3
   Elytra considerably more than twice as long as prothorax ..... *G. pubescens* (p. 70)
3. Elytra without conspicious patch of white pubescence on either side of scutellum; prothoracic punctation transversely strigose; or surface rugose 4
   Elytra with conspicuous patch of white pubescence on either side of scutellum; prothorax shining punctate ..... *G. floridanus* (p. 72)
4. Elytra robust, margins convex; bronzy or dark coppery ..... *G. curtipennis curtipennis* (p. 71)
   Elytra more slender, margins more nearly parallel; shinier, copper colored or metallic green ..... *G. curtipennis schwarzi* (p. 71)
5. Ocular sulci not connected by transverse sulcus across front of head ..... *G. simplex* (p. 71)
   Ocular sulci connected by transverse sulcus which separates frons and clypeus ..... *G. varians* (p. 72)

Graphops pubescens (Melsheimer)

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

Elongate. Metallic bronze, pubescent. Apical margin of clypeus subtruncate. Pronotum moderately closely punctate, lateral punctures somewhat transversely strigose. Elytra elongate, more than 2 times length of pronotum. Anterior femora with small denticle on ventral surface. Length 3.3-4.0 mm. Width 1.8-2.1 mm.

Alabama records: 12 specimens from Chambers[1], Cleburne[1], Lawrence[1], Lee[1], and Mobile[2,3] counties.

Seasonal distribution: April 7-July 30.

Remarks: this species has been collected on evening primrose, *Oenothera*.

Graphops curtipennis curtipennis (Melsheimer) *

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

Robust, metallic bronze. Head alutaceous, finely punctate; coronal suture deep; apical clypeal margin very slightly transversely strigose or with interpunctal spaces slightly rugose. Elytra broad, somewhat pubescent in streaks converging medially toward apex. Anterior femora with or without small denticles on ventral surface. Length 2.8-3.5 mm. Width 1.6-1.9 mm.

Alabama records: 6 specimens from Madison[1], Marion[1], and Mobile[2,3] counties.

Seasonal distribution: July 10-11, February ("II").

Remarks: This species is very similar to *G. floridanus* Blake, which differs primarily by having the elytra with pubescent juxtascutellar patches. Although we have been unable to determine host plants, Blake *(22)* reported *Hypericum perforatum* as one.

Graphops curtipennis schwarzi Blake

Graphops schwarzi Blake, 1955, Bull. Mus. Comp. Zool. Harvard 113: 277 (subsp.).

Robust, shining coppery or metallic green. Head strongly alutaceous, closely, evenly punctate; coronal suture not so deeply impressed as nominate subspecies. Pronotum alutaceous, transversely rugose. Elytra alutaceous, pubescent, with common sutural and 2 each lateral, smoother, glabrous streaks converging toward apex; sides not as convex as in nominate subspecies. Anterior femora usually with minute ventral denticle. Length 2.5-3.3 mm. Width 1.4-1.8 mm.

Alabama records: 12 specimens from Baldwin[1], Escambia[1], Henry[1], and Mobile[2,3] counties.

Seasonal distribution: April 2-July 10.

Remarks: Blake *(22)* quoted Blatchley as recording *Hypericum hypericoides* as a host plant in Florida. We collected the Escambia County series (six specimens) from *Cyrilla racemiflora.*

Mobile County records are in the Loding collection and from Blake *(22).*

Morphologically *G. curtipennis* is similar to *G. floridanus* Blake and *G. marcassitus* (Crotch).

Graphops simplex LeConte*

Graphops simplex LeConte, 1884, Trans. Amer. Entomol. Soc. 12: 26.

Robust. Very dark green-black, shining. Head strongly alutaceous, pubescent, punctate; apical margin of clypeus deeply, obtusely, emarginate. Pronotum finely alutaceous, broad, shining, densely punctate. Elytra broad, finely alutaceous, densely punctate, sparsely pubescent apically. Length 3.3-3.7 mm. Width 1.9-2.1 mm.

Alabama records: 2 specimens from Dallas[1] and Lee[1] counties.

Seasonal distribution: April 19-May 13.

Graphops varians LeConte*

Graphops varians LeConte, 1884, Trans. Amer. Entomol. Soc. 12: 26.

Robust. Metallic bronze black, pubescent. Apical margin of clypeus deeply, acutely emarginate. Ocular sulci connected by a transverse sulcus between frons and clypeus. Pronotum densely punctate. Elytra basally striate-punctate with large punctures; striae laterally and apically obsolete. Length 5.1-5.3 mm. Width 2.8-3.0 mm.

Alabama records: 2 specimens from Mobile[2] County.

Seasonal distribution: May 5-6.

Remarks: These 2 specimens were discovered among unidentified material in Loding's collection.

Graphops floridanus Blake

Graphops floridanus Blake, 1955, Bull. Mus. Comp. Zool. Harvard 113: 296.

Robust, dark metallic bronze black. Head alutaceous, finely punctate, coronal suture very shallow. Pronotum shining, alutaceous, thinly pubescent laterally. Elytra broad, pubescent, with faint indications of clear streaks, and 2 thicker pubescent patches next to scutellum. Anterior femora usually with small denticle on ventral surface. Length 2.8-3.2 mm. Width 1.6-1.8 mm.

Alabama records: 3 specimens from Choctaw[1] and Mobile[2,3] counties.

Seasonal distribution: May 9-August 1.

Remarks: The Choctaw County specimen was collected on *Cyrilla racemiflora,* also a host plant for *G. curtipennis.* Since this species and *G. floridanus* are morphologically so similar, it is possible that these forms are conspecific.

Tribe Leprotini

Genus *Xanthonia* Baly

Xanthonia Baly, 1863, Jour. Entomol. 2: 151. Type-species: *Xanthonia stevensi* Baly (= *X. villosula* Melsheimer).

Trichothera LeConte, 1885 (not Baly, 1860).

Small, pubescent species. Pronotum transverse, lacking postocular lobes and lateral margins. Anterior femora often with ventral tooth.

There are at present only 4 species of *Xanthonia* described from North America. Of these, *X. decemnotata* (Say) and *X. villosula* (Melsheimer) were listed by Loding *(75)* for Alabama. In this paper we have included only *X. decemnotata* because this is the only species we could conclusively identify. Other specimens that we or Loding collected are possibly of 2 undescribed species, recognized by D. M. Anderson (USNM), or *X. villosula* (Melsheimer).

Xanthonia decemnotata (Say)

Colaspis decemnotata Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3: 445.

Red-brown. Elytral disc irregularly closely punctate; humeri usually

marked with small black spot; larger black spot between humeri and scutellum, disc with median sutural black vitta and 3 smaller lateral spots and 2 subapical black spots per elytron; entire elytral coloring varying to largely black due to coalescence of maculae. Length 3.3 mm. Width 1.8-1.9 mm.

Alabama records: 3 specimens from Lee[1] and Mobile[2] counties.

Seasonal distribution: April 10-May 17.

Genus *Fidia* Baly

Fidia Baly, 1863, Jour. Entomol. London 2: 153.

Subelongate pubescent beetles. Pronotum cylindrical, lacking postocular lobes and lateral margins. Third antennal segment ¼ longer than 2nd.

According to the most recent classification of *Fidia* (83), 2 species, *F. longipes* (Melsheimer) and *F. viticida* Walsh, occur in Alabama. However, we suspect that these 2 forms are conspecific. Since we have collected a third form, which may be the true *F. viticida,* we propose that a restudy of the genus would be appropriate, especially since characters previously used to distinguish these species seem to be variable.

Key to the Alabama Species of *Fidia*

1. Color mahogany brown; pronotal punctation apparently finer; frons usually with coronal suture glabrous ..... *F. viticida* (p. 73)

   Color varying from fulvous to black (but not mahogany brown); pronotal punctation apparently coarser; frons usually with coronal suture not distinctly glabrous ..... *F. longipes* (p. 73)

Fidia viticida Walsh

Fidia viticida Walsh, 1867, Pract. Entomol. 2: 87.
Fidia murina Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 33.
Fidia lurida Lefèvre, 1885, Mem. Soc. Roy. Sci. Liège, new series, 11: 76.
Fidia texans Schaeffer, 1934, Jour. N. Y. Entomol. Soc. 41: 472 (var.).

Elongate. Head densely pubescent except for glabrous line over coronal suture; labrum, clypeus, and frons same color, mahogany brown. Pronotum finely, densely punctate, pubescent. Elytra striate-punctate, pubescent. Femora, tibiae, and tarsi all one color, mahogany brown. Length 4.9-7.0 mm. Width 2.5-3.5 mm.

Alabama records: 9 specimens from Lee[1], Macon[1], Mobile[2], and Montgomery[1] counties.

Seasonal distribution: June 1-August 20.

Fidia longipes (Melsheimer)

Eumolpus longipes Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 169.
Pachnephorus viticola Uhler, 1855, Proc. Acad. Nat. Sci. Philadelphia 7: 418.

Elongate. Head pubescent, but not densely so, moderately closely punctate, punctures moderately large; color entirely black or with frons and labrum dark brown, clypeus red, or entirely light brown with genae above eyes black. Pronotum, closely, coarsely punctate, pubescent. Elytra striate-punctate. Color of pronotum and elytra varying from fulvous to black, elytral suture usually becoming darker first. Legs entirely fulvous to entirely black, femoral apexes becoming darker first. Length 4.0-6.1 mm. Width 1.9-2.8 mm.

Alabama records: 18 specimens from Choctaw[1], Lee[1], Macon[1], Madison[2], Mobile[2], Monroe[2], Tallapoosa[1], Wilcox[1], and Winston[1,2] counties.

Seasonal distribution: May 19-August 1.

Tribe Metachromini

Genus *Metachroma* Chevrolat

Metachroma Chevrolat, 1837, *in* Dejean, Cat. Coleopt. ed. 3: 436.
Atrachela Gistel, 1848, Naturge. Thierr.: 123.

Pronotum laterally margined, without postocular lobes, eyes with supraocular impression. Middle and posterior tibiae emarginate on outer edge near apex.

There are 10 reasonably distinct Alabama species in this genus. The most recent treatment of these as a group was by Blake *(25)*.

Key to the Alabama Species of *Metachroma*

1. Clypeo-frontal suture obliterated, supraorbital groove not extending on frons 2
   Clypeo-frontal suture distinctly grooved and formed by oblique extension of supraorbital groove 6
2. Pronotum punctate 3
   Pronotum impunctate, smooth shining ..... *M. laevicollis* (p. 75)
3. Pronotum not dull black, pronotal punctures round 4
   Pronotum dull black, longitudinally strigosely punctate ..... *M. quercatum* (p. 77)
4. Lateral elytral margins strongly rounded 5
   Lateral elytral margins subparallel ..... *M. interruptum* (p. 75)
5. Elytra shining yellow brown; prothorax, scutellum, and usually sutural edges deep reddish brown; length averaging 3.7 mm. ..... *M. texanum* (p. 78)
   Elytra brown, tinged with metallic green, umbones, submarginal streaks and apexes yellow; head and prothorax piceous, tinged with metallic green; length averaging 3.4 mm. ..... *M. longicollis* (p. 75)
6. Thorax sparsely punctate or quite smooth 7
   Thorax densely punctate, sometimes opaque and strigose 9
7. Frons and clypeus densely, coarsely punctate; clypeus sometimes rugose ..... *M. luridum* (p. 76)
   Frons and clypeus sparsely finely punctate or impunctate 8

8. Head and prothorax pale reddish brown; elytra pale yellow or pale yellow with suture basally black; average length 4.1 mm. ..... *M. pallidum* (p. 77)

   Head and prothorax deeper reddish brown, or prothorax often deeper brown on lateral areas; elytra shining yellow brown; average length 3.5 mm. ..... *M. pellucidum* (p. 77)

9. Pronotal punctures dense and strigose; color black, or black with red elytral humeri and apexes ..... *M. quercatum* (p. 77)

   Pronotal punctures dense but distinct, scarsely strigose; yellow brown or prothorax and elytra margined with piceous 10

10. Prothorax approximately twice as wide as long, elytra with pale margins ..... *M. orientale* (p. 77)

    Prothorax not twice as wide as long, elytra often with margin dark ..... *M. marginale* (p. 76)

Metachroma interruptum (Say)

Colaspis interrupta Say, 1823, Jour. Acad. Nat. Sci. Philadelphia 3: 448.

Elongate, subparallel. Head strongly punctate, frontoclypeal suture absent. Pronotum red-brown with darker brown discal markings, punctate. Elytra yellow with brown vittae extending from humeri, interrupted half way back and then extending to apical declivity. Brown vittae sometimes obscure. Length 5.3-5.4 mm. Width 2.5-2.8 mm.

Alabama records: 3 specimens from Baldwin[1,2] and Mobile[2] counties.

Seasonal distribution: June 21, July 10.

Remarks: Further specimens of this species may show that it is conspecific with *M. angustulum* Crotch. *M. interruptum* has been collected on *Taxodium* sp.

Metachroma laevicollis Crotch

Metachroma laevicollis Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 43.

Elongate oval, yellow testaceous. Head smooth, shining, coronal suture faintly indicated, but fronto-clypeal suture entirely wanting; very few fine scattered punctures on occiput. Pronotum smooth, shining, impunctate. Elytra shining, punctate-striate, 8th and 9th striae short but not confused. Length 2.8-3.7 mm. Width 1.4-2.1 mm.

Alabama records: 14 specimens from Baldwin[1], DeKalb[1], Escambia[1], Lee[1], Madison[1], and Mobile[2] counties.

Seasonal distribution: June 27-August 27.

Remarks: This species is attracted to lights.

Metachroma longicollis Jacoby

Metachroma longicollis Jacoby, 1891, Biol. Cent.-Amer. Supp., p. 234.
Metachroma aeneicolle Horn, 1892, Trans. Amer. Entmol. Soc. 19: 210.

New synonymy.

Elongate oval. Head and thorax piceous, tinged with metallic green, punctate. Elytra punctate-striate, dark brown tinged with metallic green, umbones, lateral submarginal streaks and apexes dirty yellow varying to elytra nearly entirely dirty yellow or brighter yellow. Length 3.0-3.7 mm. Width 1.4-2.1 mm.

Alabama records: 49 specimens from Baldwin[1], Butler[1], Covington[1], Crenshaw[1], Dallas[1], Houston[1], Lee[1], Lowndes[1], Macon[1], Mobile[2], Randolph[1], Russell[1], Tallapoosa[1], and Wilcox[1] counties.

Seasonal distribution: April 3-August 26.

Remarks: Blake *(25)* recognized that *M. aeneicollis* and *M. longicollis* were the same species. However, she was not justified in retaining *aeneicollis* as a subspecies of *longicollis* only because their type localities are widely separated. Subspecies also need to differ taxonomically by some characters.

All the specimens of this species in Loding's collection (5 from Coden and 1 from Dog River) and 1 from Houston County in the Auburn collection have the elytra entirely yellow (except for a small dark sutural vitta in one), and the pronotal punctation weak.

Metachroma luridum (Olivier)

Colaspis lurida Olivier, 1808, Entomol. . . Coleopt. VI. p. 892.
Metachroma vicina Crotch, 1873, Proc. Acad. Nat. Sci, Philadelphia 25: 43.

Elongate subparallel. Head and thorax dark brown. Head with clypeofrontal suture impressed, clypeus and frons punctate. Pronotum strongly punctate. Elytra light brown, smooth, shining, striate-punctate on disc, elsewhere striae obsolete. Length 3.3-3.9 mm. Width 1.8-2.1 mm.

Alabama records: 6 specimens from Mobile[2,3] County.

Seasonal distribution: July 10-July 21.

Remarks: Although specimens seen were in Loding's collection, he did not report this species for the state in his catalogue *(75)*. His material was included among other species. Blake *(25)* listed "Oak Grove" as a locality for a specimen collected by H. Soltan.

Metachroma marginale Crotch

Metachroma marginale Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 43.

Elongate oblong oval, somewhat shiny, pale yellow brown; pronotum deeper yellow, often with pronotal and elytral margins piceous. Head coarsely punctate throughout and more so on clypeus. Clypeal-frontal suture distinct. Prothorax flat, densely punctate and elytra with regular closely set, small, striate punctures, becoming indistinct at apex. Length 4.2-5.1 mm. Width 2.0-2.5 mm.

Alabama records: Baldwin[3], Mobile[3], and Randolph[3] counties.

Remarks: These records are from Blake *(25)* who recorded a host note by C. A. Reed, viz. "destroying new growth of pecan trees."

Metachroma orientale Blake

Metachroma orientale Blake, 1970, Smith. Cont. Zool. No. 57: 8.
Metachroma pallidum Crotch (not Say), 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 43.

Oval, brown-yellow. Head with clypeus strongly punctate, frons less densely; clypeo-frontal suture deeply impressed. Pronotum alutaceous, densely punctate. Elytra shining, striate-punctate, punctures finer towards apex.

Alabama records: 6 specimens from Baldwin[2] and Mobile[2] counties.

Seasonal distribution: April 1-July.

Remarks: Loding erroneously determined these specimens as *M. pallidum,* and until Blake's *(25)* recent paper we erroneously labeled them as *M. puncticollis* LeConte.

Metachroma pallidum (Say)

Colaspis pallidum Say, 1842, Jour. Acad. Nat. Sci. Philadelphia 3: 446.
Metachroma lateralis Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 44 (var.).

Broadly ovate, yellow, pronotum and head red. Head shining, clypeus and frons impunctate, occiput and vertex slightly punctate, clypeo-frontal suture very distinctly indicated, coronal suture faintly discernable. Pronotum shining, finely punctate. Elytra broad, striae-punctate, punctures fine, obliterated at apex. Length 3.2-3.9 mm. Width 1.8-2.5 mm.

Alabama records: 17 specimens from Baldwin[1], Lee[1], Madison[1], Marshall[1], Mobile[2], Tallapoosa[1], and Winston[1] counties.

Seasonal distribution: May 13-October 29.

Metachroma pellucidum Crotch

Metachroma pellucidum Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 43.

Oval, shining, yellow-brown, usually with deeper reddish brown head and prothorax. Head obsoletely and finely punctate over occiput; frons often impunctate; clypeal-frontal suture distinct. Pronotum finely punctate. Elytra convex, without conspicuous intra humeral sulcus; fine punctation fading away laterally and apically. Length 3.4-3.8 mm. Width 1.8-2.2 mm.

Alabama records: Limestone[3] County.

Remarks: This record is from Blake *(25).*

Metachroma quercatum (Fabricius)

Colaspis quercata Fabricius, 1801, Syst. Eleuth. 1: 417.

Elongate oval, black with antennae and legs yellow, occasionally elytral humeri and apexes red. (One specimen entirely red-yellow.) Head alutaceous, faintly punctate; coronal and clypeo-frontal sutures absent, or if indicated, not deeply impressed. Pronotum longitudinally strigosely punctate. Elytra punctate in rows but striae not impressed. Length 3.3-4.6 mm. Width 1.8-2.5 mm.

Alabama records: 19 specimens from Baldwin[1], Mobile[2], and Tallapoosa[1] counties.

Seasonal distribution: March 29-May 8.

Remarks: This species has been collected by beating *Quercus niger*. It has also been taken at lights.

Metachroma texanum Schaeffer

Metachroma texanum Schaeffer, 1919, Jour. N. Y. Entomol. Soc. 27: 327.

Oval, shining yellow-brown with prothorax, scutellum, and usually sutural edges deep reddish brown. Head obsoletely and faintly punctate on frons and occiput; clypeal-frontal suture absent. Pronotum densely and finely punctate. Elytra without depressions and with straight rows of punctures distinct to apex. Length 3.5-3.8 mm. Width 1.8-2.0 mm.

Alabama records: Mobile[3] County.

Remarks: This record is from Blake *(25)*, who credited Loding for collection of the specimen.

Tribe Edusellini

Genus *Tymnes* Chapuis

Tymnes Chapuis, 1874, *in* Lacordaire, Hist. Nat. Ins., Gen. Col., 10: 310.

Anterior margin of pronotum laterally arcuate, forming postocular lobes. Prosternum convex and contracted between coxae. Tibiae entire, tarsal claws divaricate.

Three species are recorded from the Eastern United States. Perhaps 3 exist, but their descriptions and diagnoses are based on characters of an incongruous nature. A thorough restudy of the genus would be desirable.

Key to the Alabama Species of *Tymnes*

1. Sides of metasternum very coarsely, closely punctate ..... *T. metasternalis* (p. 78)
   Sides of metasternum comparatively smooth ..... *T. tricolor* (p. 79)

Tymnes metasternalis (Crotch)

Typophorus metasternalis Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 38.

Elongate, shining brown or slightly bronzed. Head and pronotum densely punctate. Sides of metasternum punctate. Length 6.7-7.7 mm. Width 3.8-4.0 mm.

Alabama records: 3 specimens from Etowah[1] and Winston[2] counties.

Seasonal distribution: June 3.

Remarks: *Tymnes metasternalis* Crotch can be confused with *T. tricolor* (Fabricius). It differs only by the degree of punctation. The two may be conspecific, *T. tricolor* possibly being the predominant northern form.

Tymnes tricolor (Fabricius)*

Chrysomela tricolor Fabricius, 1792, Entomol. Syst. I., p. 316.
Colaspis viridis Fabricius, 1801, Syst. Eleuth. I., p. 413.
Tymnes verticalis Chapius, 1874, Genera des Coléoptères X, p. 311.

"Oblong; dark brown or more often metallic bronze, blue or green; legs and antennae yellow brown." *(94).* Length 6.7 mm. Width 3.3 mm.

Alabama records: 1 specimen from Elmore[1] County.

Seasonal distribution: April 1.

Remarks: Because only a single specimen of this variably colored species was on hand, the description follows Wilcox. This beetle had a green pronotum, blue elytra, and yellow legs.

Tribe Myochroini

Genus *Myochrous* Erichson

Myochrous Erichson, 1847, Arch. Naturgesch. 13(1): 164.

Oblong beetles with vestiture of scales. Lateral margins of pronotum usually dentate. Anterior tibiae toothed on medial surface near apex.

Three species are known from Alabama. Blake *(19)* has recently revised the genus.

Key to the Alabama Species of *Myochrous*

(Adapted from Blake *(19))*

1. Deep piceous, often with bronzy luster, covered by gray scales mixed with darker brown ones 2

   Red-brown or coppery, covered by yellow or pale brown scales, sometimes mixed with darker brown ..... *M. floridanus* (p. 80)

2. Prothorax large, approximately as wide as elytra, pinched in conspicuously behind eyes and depressed along basal margin; beetle relatively short and broad ..... *M. ranella* (p. 80)

   Prothorax not so large and not conspicuously pinched in behind eyes; beetle more slenderly oblong ..... *M. denticollis* (p. 79)

Myochrous denticollis (Say)

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

Broadly oblong, black with bronzy lustre, with pubescence of gray scales mixed with darker brown ones. Pronotal margins with 3 teeth, pronotal width much greater than length, surface of confluent shallow punctures. Elytral punctures in rows, easily visible through scales. Length 5.1-5.3 mm. Width 2.4-2.5 mm.

Alabama records: 3 specimens from Lee[1], Montgomery[3], and Tallapoosa[1] counties.

Seasonal distribution: June 1-July 2.

Remarks: No specimens of this species were seen in Loding's collection, although he reported it in his catalogue *(75)*. The Montgomery County record is from Blake *(19)*, who reported that this is an economic species, known as the "southern corn leaf-beetle" *(Zea mais)*.

Myochrous *ranella* Blake

Myochrous ranella Blake, 1950, Proc. U.S. Nat. Mus. 101: 25.

Broadly oblong, convex, shining black or with bronze luster, and with broad brown and white scales. Pronotal length ⅓ of total length, width subequal to elytral width, lateral margins 3-toothed, and convex; anterior lateral margins distinctly narrowed, concave behind eyes. Elytral punctures not as crowded as in *M. denticollis*. Length 4.7-4.9 mm. Width 2.5 mm.

Alabama records: 2 specimens from Mobile[2,3] County.

Seasonal distribution: August 10.

Remarks: Blake *(19)*, when describing this species, listed Delchamps and Mobile as localities of additional specimens (not paratypes) she had seen. The scales are broader than those of *M. denticollis*.

Myochrous floridanus Schaeffer

Myochrous floridanus Schaeffer, 1934, Jour. N. Y. Entomol. Soc. 41: 472.

Elongate, deep red-brown to piceous with yellow and brown scales. Pronotum not quite as broad as long, with 3-toothed lateral margins; deeply rugosely punctate. Elytral punctures in closely spaced rows. Venter black, shining metallic bronze. Length 5.3-6.5 mm. Width 2.5-3.2 mm.

Alabama records: Baldwin[1] and Mobile[2,3] counties.

Seasonal distribution: April-August 28.

Remarks: Blake *(19)*, who recorded specimens from Mobile County for the first Alabama records, noted that ". . . its reddish-brown coloring and yellowish scales differentiate this species from *denticollis* and *ranella*. The prothorax is more coarsely punctate than in *M. denticollis* and is also more convex."

Genus *Glyptoscelis* Chevrolat

Glyptoscelis Chevrolat, 1837, *in* Dejean, Cat. Coleopt., ed. 2: 414.

Large species (8.0-11.0 mm.). Densely clothed with recumbent hairs or scales. Pronotum without postocular lobes, lateral margins entire. Prosternum longer than wide.

Two species are known from Alabama. Krauss *(69)* and Blake *(24)* have made comparatively recent revisions of the genus.

Key to the Alabama Species of *Glyptoscelis*

1. Vestiture of mixed brown and white hairs; lateral margins of pronotum converging toward base ..... *G. pubescens* (p. 81)

   Vestiture of white scales; lateral margins of pronotum not converging toward base ..... *G. albicans* (p. 81)

Glyptoscelis pubescens (Fabricius)

Cryptocephalus pubescens Fabricius, 1777, Gen. Insect., p. 220.
Eumolpus hirsutus Gmelin, 1790, (1788 ed.) Linné's Syst. Nat. . . .,edit 13, I. pt. 4, p. 1703.
Eumolpus hirtus Olivier, 1808, Entomol. . . . Coleopt. VI., p. 906.
Eumolpus pini Say, 1827, Jour. Acad. Nat. Sci. Philadelphia 5: 295.

Elongate oval. Pitch black or metallic bronze; vestiture of mixed brown and white long hairs. Pronotum narrowing at base, closely punctate, punctures oval. Elytra irregularly, densely, finely punctate. Length 8.8-10.9 mm. Width 4.2-5.4 mm.

Alabama records: 24 specimens from Baldwin[1], Lee[1], Marshall[1], and Mobile[2] counties.

Seasonal distribution: March 19-June 22.

Remarks: This species feeds on *Pinus taeda.*

Glyptoscelis albicans Baly*

Glyptoscelis albicans Baly, 1865, Trans. Entomol. Soc. London p. 334.
Glyptoscelis liebecki Blatchley, 1910, Coleopt. of Ind., p. 1137.

Elongate oval. Head and pronotum black, elytra deep red-brown. Vestiture of prostate scales. Pronotal margins subparallel at base, punctures round. Elytra irregularly densely, finely punctate. Length 8.4-9.1 mm. Width 4.4-4.9 mm.

Alabama records: 3 specimens from Mobile[2] County.

Seasonal distribution: April 1-May 25.

Remarks: These specimens were among undetermined material in Loding's collection. The species is also known from Indiana, Illinois, Arkansas, Louisiana, and Texas. The Alabama specimens were taken at Calvert.

Tribe Typophorini

Genus *Typophorus* Erichson

Typophorus Erichson, 1847, Arch. Naturgesch. 13(1): 163.
?*Hydrotica* Gistl, 1848, Nat. Thierr. XI.: 123.

Large (4.0-5.0 mm.), metallic species. Head with ocular sulci wide above eyes. Pronotum with postocular lobes. Meso and metatibiae emarginate near apex.

Only the following species occurs in North America. It is represented by the northern subspecies, which extends as far south as Nicaragua. The nominate subspecies occurs from Colombia to Argentina.

Typophorus nigritus viridicyaneus (Crotch)

Fig. 11

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

Typophorus storkani Bechyne, 1953, Entomol. Arbeit. Mus. G. Frey 4: 26-303.

Large ovate. Head with ocular sulci usually connected by distinct clypeo-frontal suture, but suture may also be obsolete. Color metallic blue, blue-green, green or bronze-green. Length 6.7-8.8 mm. Width 4.0-5.3 mm.

Alabama records: 14 specimens from Coosa[1], Lee[1], Macon[1], Mobile[2], and Winston[1] counties.

Seasonal distribution: May 24-July 24.

Remarks: This beetle is known as the sweetpotato leaf-beetle. It has been collected on *Convolvulus* sp. In the material from the State, northern specimens tend to be more blue while those from south Alabama are more bronze-green, similar to several specimens seen from Texas and Mexico. The generic character of the clypeo-frontal suture connecting the ocular sulci, while constant and distinct in Mexican material, breaks down in Alabama specimens. Wilcox *(94)* indicates that the extra width of the ocular sulci above the eyes in *Typophorus* will permit its distinction from *Paria*. *Typophorus* also can be differentiated from *Paria* because of the larger size and metallic hues of the former.

Genus *Paria* LeConte

Paria LeConte, 1858, Proc. Acad. Nat. Sci. Philadelphia 1858: 86 (not Gray, 1868).

Ovate, yellow, orange, brown, or black beetles. Ocular sulci not joined across frons and narrow above eyes. Pronotum laterally margined, anterior pronotal margin arcuate beneath, forming postocular lobes. Elytra glabrous, punctate-striate. Anterior and posterior tibiae often with small denticle. Middle and hind tibiae with ciliate corbels. Tarsal claws bifid.

A revision of the genus by Wilcox *(94)* greatly increased the taxonomic stability of the group and more recently Balsbaugh *(5)* contributed to the biological and distributional knowledge of several species. However, more data of a biological nature as well as further distributional records are needed to better comprehend these beetles.

Key to the Alabama Species of *Paria*

1. Marginal bead between disc and epipleura of elytra becoming rounded and indistinct behind middle 2

   Marginal bead of elytra acute and distinct to apex, may unite with inner margin of epipleura but not becoming indistinct before joining inner margin of epipleura 5

2. Front femur with small but distinct tooth 3

   Front femur without tooth 4

3. Dark areas (elytra maculae) not especially shining; elytral disc more convex, having greatest elevation ⅔ from base ..... *P. fragariae fragariae* (p. 86)

   Dark areas (elytral maculae), and in some specimens entire elytra ex-

cept apex, piceous, shining; elytral disc especially flat, not elevated at apical ⅔ ..... *P. fragariae kirki* (p. 86)

4. Elytra completely black or dark brown, rarely with faint indications of basal and postmedial darker spots; host: goldenrod *(Solidago* sp.) and aster *(Aster* sp.) ..... *P. thoracica* (p. 88)

   Elytra not completely dark, usually pale in large part, may have suture, basal and postmedial spots black, or spots may join to form vittae, or elytra may be dark with pale lateral and apical margins; host: St.-John's-wort *(Hypericum* sp.) ..... *P. sellata* (p. 88)

5. Pronotal punctation indistinct to coarse but with the punctures not at all confluent 6

   Pronotal punctation fine to coarse with at least some of the punctures confluent ..... *P. sexnotata* (p. 85)

6. Hind femur with tooth 7

   Hind femur without tooth ..... *P. quadriguttata* (p. 84)

7. Front femur without tooth 8

   Front femur with tooth 12

8. Pronotum with punctures of moderate size ..... *P. quadriguttata* (p. 84)

   Pronotum impunctate or with very fine punctures 9

9. Each elytron with basal and postmedial dark spot, or longitudinal stripe, or elytra dark with pale lateral and apical margins; pronotum pale 10

   Elytra entirely black or dark brown, pronotum pale or dark ..... *P. thoracica* (p. 88)

10. Length 3.5 mm. or longer; inner lobe of tarsal claw about ½ length of outer lobe 11

    Length less than 3.5 mm.; inner lobe of tarsal claw longer than ½ length of outer lobe 16

11. Elytra vittate or with entire discal area black (very rarely colored as *canella);* on St.-John's-wort *(Hypericum* sp.) ..... *P. sellata* (p. 88)

    Elytra pale with suture, basal and postmedian spot dark. ..... *P. canella* (p. 89)

12. Space between ocular sulcus and compound eye, at point nearest eye, equal to diameter of facet or more 13

    Space between ocular sulcus and compound eye, at point nearest eye, equal to ½ diameter of facet or less 14

13. Aedeagus with distinct lateral apical lobes; host *Juniperus virginiana* ..... *P. sexnotata* (p. 85)

    Aedeagus with faintly indicated lateral apical lobes; host willow *(Salix* sp.) ..... *P. quadriguttata* (p. 84)

14. Abdomen and metasternum entirely pale 15

    Abdomen and metasternum mostly black (very rarely pale) 19

15. Pronotal punctures very small or absent; form robust, convex, elytral disc with 2 (1 on each elytron) distinct intrahumeral callosities; pos-

terior elytral spots well forward (about ½ the elytral length); New York to Texas and South Dakota ..... *P. opacicollis opacicollis* (p. 87)
Pronotal punctures indistinct to moderate in size; form more elongate, subquadrate; elytral disc more evenly convex; posterior elytral spots laterally extending forward and posteriorly from elytral declivity 16

16. Clypeus smooth between punctures, not alutaceous ..... *P. quadriguttata* (p. 84)
Clypeus strongly alutaceous 17

17. Each elytron usually pale with small intrahumeral elongate dark spot and 2 distinct posterior discal dark spots, the more caudad being mesal; host: white cedar *(Chamaecyparis thyoides)* ..... *P. blatchleyi* (p. 85)
Each elytron with 2 large elongate discal spots, spots frequently extending laterad to elytral margin at two places 18

18. Length 3.5-3.9 mm., mean 3.7 mm. long; intrahumeral callosities not especially distinct, elytral disc more nearly flat; host: bald cypress *(Taxodium distichum)* ..... *P. wilcoxi* (p. 87)
Length 2.5-3.8 mm., mean 3.1 mm. long; intrahumeral callosities more distinct, although disc still flat; host: wild rose *(Rosa* sp.) ..... *P. fragariae kirki* (p. 86)

19. Clypeus alutaceous, punctures close; aedeagus with moderately developed lateral apical lobes 20
Clypeus smooth, not alutaceous, punctures few, distant; aedeagus with small, indistinct lateral lobes; host: willow *(Salix* spp.) ..... *P. quadriguttata* (p. 84)

20. Elytra usually pale with basal and postmedial black spot, occasionally entirely black, base rarely pale and elytral apexes rarely dark in darker specimens 21
Elytra usually black with narrow basal and scutellar area pale, rarely pale with spots; host: dogwood *(Cornus* spp.) ..... *P. scutellaris* (p. 87)

21. Length, 2.5-3.8 mm., mean 3.1 mm. long; intrahumeral callosities more distinct; host: strawberry *(Fragaria* sp.), *(Rubus* sp.), and rose *(Rosa* sp.) 22
Length, 3.5-3.9 mm., mean 3.7 mm. long; intrahumeral callosities not especially distinct, elytral disc more nearly flat; host: bald cypress *(Taxodium distichum)* ..... *P. wilcoxi* (p. 87)

22. Dark areas (elytral maculae) not especially shining; elytral disc more convex, having greatest elevation ⅔ from base ..... *P. fragariae fragariae* (p. 86)
Dark areas (elytral maculae) and in some specimens entire elytra except apex piceous, shining; elytral disc especially flat, not elevated at apical ⅔ ..... *P. fragariae kirki* (p. 86)

Paria quadriguttata LeConte*

Paria quadriguttata LeConte, 1858, Proc. Acad. Nat. Sci. Philadelphia 10: 86.
Paria saliceti Wilcox, 1954, Ohio Biol. Sci. Bull. 43: 408.

Elongate. Brown-yellow, maculation variable. Vertex alutaceous with close, coarse punctures, coronal suture impressed. Clypeus smooth or very faintly alutaceous, moderately punctate. Pronotum moderately fine to coarsely punctate. Elytra brown-yellow with juxtahumeral and 2 confluent discal spots just before declivity black, varying to disc entirely black with lateral and apical margins yellow from declivity, or elytra entirely black. Marginal bead of elytron acute to apex. Metasternum and abdomen black with pale margins. Length 3.5-4.2 mm. Width 1.9-2.5 mm.

Alabama records: 6 specimens from Lee[1] and Mobile[2] counties.

Seasonal distribution: May 15, June 2.

Remarks: Loding *(75)* recorded *P. quadriguttata* LeConte as a variety of *P. canella* (Fabricius), from "over state." However, his specimens determined as such were in reality *P. fragariae* Wilcox, a species not then recognized.

The identification of the Lee County material was made by Wilcox, who doubtfully referred the single specimen with completely dark elytra to this species. These specimens were collected by sweeping *Salix*, the preferred host. Sycamore *(Plantanus occidentalis)* and poplar *(Populus* spp.) also are food plants *(95)*.

Paria blatchleyi Wilcox*

Paria blatchleyi Wilcox, 1957, N. Y. State Mus. and Sci. Soc. Bull. 365: 19.

Elongate. Brown-yellow with an intrahumeral and 2 discal spots before apical declivity black, either 1 or both of latter occasionally obsolete. Coronal suture impressed; vertex alutaceous, closely moderately punctate; clypeus shining. Pronotum alutaceous, moderately punctate. Marginal bead of elytron acute to apex. Sutural margin usually brown from half to apex. Abdomen entirely pale. Front and hind femora each with tooth. Length 3.0-4.0 mm. Width 1.6-2.4 mm.

Alabama records: 76 specimens from Baldwin[1], Escambia[1], and Mobile[2] counties.

Seasonal distribution: April 4-July 21, January 21.

Remarks: the authors collected large series of *P. blatchleyi* from *Chamaecyparis thyoides* in both Baldwin and Escambia counties; previously no host plant had been recorded.

P. blatchleyi is very closely related to *P. sexnotata* (Say), and may be conspecific.

Paria sexnotata (Say)*

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

Elongate. Brown-yellow with an intrahumeral and 2 usually confluent discal black spots just before apical declivity. Head yellow with broad, black, elongate, frontal spot; coronal suture impressed; vertex shining but slightly alutaceous; punctation coarse; clypeus shining, smooth or alutaceous, punc-

tation coarse, sparse. Emargination of eye depressed. Pronotum smooth (or alutaceous, *fide* Wilcox *(95);* punctation moderately deep, rarely confluent. Marginal bead of elytron acute to apex. Abdomen baso-medially black, margins and apex yellow. Front and hind femora each with tooth. Length 3.3-3.5 mm. Width 1.9-2.1 mm.

Alabama records: 5 specimens from DeKalb[1] and Russell[1] counties.

Seasonal distribution: March 16-August 28.

Remarks: These specimens were collected on *Juniperus virginiana.* Loding recorded *P. sexnotata* as a variety of *P. canella* (Fabricius) from Mobile County, but no specimens bearing such a determination were found in his collection. *P. sexnotata* is also closely related to *P. juniperi* Blatchley, which has yet to be found in Alabama.

Paria fragariae fragariae Wilcox

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

Moderately robust. Coloration variable. Pronotum entirely light red-brown to nearly entirely black, but with anterior and posterior margins slightly red; smooth to alutaceous and slightly punctate. Elytra yellow with black intrahumeral spot usually reaching base, black discal spot before declivity, and sinuate black spot along lateral margins. Elytral marginal bead usually distinct to apexes; femoral tooth present on both pro- and metatibiae, although not always distinctly so, especially on profemora; venter usually black, at least mostly dark; clypeus alutaceous and closely punctate, and frons and vertex more densely and coarsely punctate. Length 2.5-3.9 mm. Width 1.4-2.1 mm.

Alabama records: 2 specimens from Marion[1] and Marshall[1] counties.

Seasonal distribution: July 12-28.

Remarks: This species is the strawberry rootworm, which for years was erroneously called *Paria canella* (Fabricius).

Paria fragariae kirki Balsbaugh

Fig. 25

Paria fragariae kirki Balsbaugh, 1970, Ann. Entomol. Soc. Amer. 63: 455 (subsp.).

Subquadrate, the lateral margins of elytra nearly parallel. Color variable, entirely black except for head and legs and usually elytral apexes which are entirely red-brown, or pronotum red-brown and with no indications of a fascia, elytra quite shiny and red-tan with irregular red-brown or black maculae. Both pro- and metafemoral teeth present. Aedeagus with apex notched and with distinct median piece. Length 2.5-3.8 mm. Width 1.3-2.2 mm.

Alabama records: 113 specimens from Houston[1] County.

Seasonal distribution: April 4-August 10.

Remarks: This species has been taken in Alabama on *Rubus* sp. and *Rosa* sp. in addition to strawberries.

Paria wilcoxi Balsbaugh

Fig. 26

Paria wilcoxi Balsbaugh, 1970, Ann. Entomol. Soc. Amer. 63: 458.

Subquadrate, elytral lateral margins subparallel. Shining, pronotum widest at basal third, very minutely and indistinctly alutaceous anteriorly and laterally, moderately densely punctate, punctures coarse, with very broad discal red-brown fascia on red-brown to tannish background. Elytra quite shiny, punctate-striate, tannish with piceous maculae, 3rd interstrial space with posterior extension from another fascia, thin posterior fascia connecting laterally to anterior fascia via thin streak running mainly through 7th interstrial space. Both pro- and metafemoral teeth present. Length 3.5-3.9 mm. Width 2.0-2.2 mm.

Alabama records: 6 specimens from Baldwin [1] County.

Seasonal distribution: April 19-August 10.

Remarks: Balsbaugh (5) recorded bald cypress, *Taxodium distichum*, as the host plant.

Paria scutellaris (Notman)

Typophorus canellus scutellaris Notman, 1920, Jour. N. Y. Entomol. Soc. 28: 194.

Moderately robust. Head and pronotum orange-red or latter black. Elytra entirely yellow-brown or with humeral and discal spot just before apical declivity black, spots frequently confluent, or elytra entirely black except for very small basal spot near scutellum being lighter. (Typical specimens have pronotum orange-red and the elytra black except for the scutellar area along base and suture.) Frons and vertex alutaceous, latter with large close punctures. Clypeus alutaceous, strongly, sparsely punctate. Pronotum usually shiny but occasionally faintly alutaceous, finely to moderately punctate. Marginal bead of elytra acute to apex. Front and hind femora with teeth. Length 3.5-4.2 mm. Width 2.1-2.5 mm.

Alabama records: Baldwin[1], Clay[1], Houston[1], Lee[1], Limestone[1], Lowndes[1], Madison[1], and Marion[1] counties.

Seasonal distribution: May 3-July 12.

Remarks: The Clay County specimens may have been swept from *Cornus*. It is one of the recorded hosts of the beetle and occurs in the area from which the specimens were taken. Wilcox (5), who determined all but one of these specimens, indicated that difficulty is often encountered in separating *P. scutellaris* from *P. fragariae* or *P. quadrinotata*, two species to which *P. scutellaris* is closely related. The Baldwin County records were collected by sweeping at night. May 3 to July 12 is the known Alabama seasonal distribution.

Paria opacicollis opacicollis LeConte

Paria opacicollis LeConte, 1859, Smiths. Contr. Knowl. 2: 23.
Paria laevicollis Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 40.
Paria histrio Lefèvre, 1877, Ann. Soc. Entomol. France (9), 7: 319.

Moderately robust, convex. Dorsum brown-yellow with suture darker brown and with black spot on intrahumeral callus and single black spot on disc just before apical declivity, or occasionally spots may be lacking. Clypeus, frons, and occiput alutaceous; coronal suture impressed. Emargination of eye depressed. Pronotum alutaceous or nearly shining, faintly or not at all punctate. Elytra smooth, shining, punctures small. Marginal bead entire to apex. Hind femora with tooth; anterior femora with or without tooth. Length 3.0-4.0 mm. Width 1.5-2.3 mm.

Alabama records: 8 specimens from Barbour[1], Lawrence[1], Macon[1], and Mobile[2] counties.

Seasonal distribution: May 26-September.

Remarks: Loding's specimens were mistakenly identified as *P. canella* (Fabricius). The host for *P. opacicollis* is oak, *Quercus* sp.

Paria thoracica (Melsheimer)

Metachroma thoracica Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 168.

Robust, convex. Head, prothorax, and elytra entirely black; or head, prothorax, and scutellum orange-red and elytra black; or head, prothorax, and elytra mahogany brown, latter often with 4 black spots as in *P. canella.* Head with clypeus, frons, and vertex strongly alutaceous, latter very finely to moderately punctate. Coronal suture impressed. Pronotum alutaceous, impunctate or very finely, sparsely punctate. Elytra strongly convex, smooth or alutaceous. Marginal bead of elytron acute to apex or becoming indistinct beyond middle. Front femora without tooth; hind femora with tooth. Length 3.0-3.9 mm. Width 1.8-2.3 mm.

Alabama records: Baldwin[1], DeKalb[1], Escambia[1], Houston[1], Lee[1], Lowndes[1], Macon[1], and Mobile[2] counties.

Seasonal distribution: April 25-August 26.

Remarks: Specimens of *P. thoracica* from Alabama appear to be less "typical" of the species than more northern ones. A much higher percentage of northern *P. thoracica* are entirely black, whereas more Alabama *P. thoracica* are mahogany brown. Series from Lowndes, Macon, and Lee counties are seemingly intermediate between *P. thoracica* and *P. sellata.* Further biological data might help to resolve the status of this complex.

Host plants for *P. thoracica* are: goldenrod *(Solidago* sp.), aster *(Aster* sp.), clover *(Trifolium* sp.), strawberry, *Fragaria virginiana;* and *Amaranthus retroflexus (95).* Alabama specimens have been collected from clover.

Paria sellata (Horn)

Typophorus canellus sellatus Horn, 1892, Trans. Amer. Entomol. Soc. 19: 208.

Typophorus canellus vittatus Horn, 1892, Trans. Amer. Entomol. Soc. 19: 208.

Robust, convex. Head, prothorax, and elytra orange-yellow, the latter with disc black, lateral margins of black area being sinuate. In a few speci-

mens medial area of disc slightly lighter, indicating 4 elytral spots as seen in *P. canella.* Clypeus, frons, and vertex alutaceous, vertex not at all, or slightly punctate; coronal suture faintly impressed. Pronotum alutaceous, very finely punctate. Elytra strongly convex, shining. Marginal bead of elytra becoming indistinct beyond middle and not reaching apex. Front femora without tooth; hind femora with tooth. Length 3.3-4.7 mm. Width 1.9-2.8 mm.

Alabama records: Clay[1], Cleburne[1], DeKalb[1], Lee[1], Macon[1], Madison[1], Mobile[2], Tallapoosa[1], and Winston[1] counties.

Seasonal distribution: June 1-August 26.

Remarks: As indicated in the discussion under *P. thoracica, P. sellata* and *P. thoracica* are closely related. Future work may indicate that these 2 forms are conspecific. This supposition is somewhat substantiated by host records. Although St.-John's-wort, *Hypericum,* and basil, *Pycnanthemum,* are hosts of *P. sellata,* goldenrod, *Solidago,* is a plant upon which both *P. thoracica* and *P. sellata* will feed (95).

Paria canella (Fabricius)

Cryptocephalus canellus Fabricius, 1801, Syst. Eleuth. II, p. 52.
Metachroma robusta Blatchley, 1924, Canadian Entomol. 56: 168.

Robust, convex. Head, prothorax, and elytra orange-yellow. Clypeus smooth or alutaceous; vertex alutaceous, finely punctate; coronal suture impressed. Pronotum alutaceous, finely punctate. Elytra strongly convex, shining; either entirely orange-yellow with suture brown, or with the intrahumeral callus and a discal spot just before the apical declivity brown to black. Marginal bead of elytron distinct to apex. Front femora without tooth; hind femora with tooth. Length 3.6-4.4 mm. Width 2.1-2.5 mm.

Alabama records: 9 specimens from Baldwin[1], Escambia[1], Lee[1], and Tallapoosa[1] counties.

Seasonal distribution: June 26-August 27.

Remarks: *Paria canella* appears to be a coastal plain species and seems to be closely related to both *P. sellata* and *P. thoracica.* More study needs to be done on its biology. We have collected a pair of *P. canella* in Florida on *Hypericum* sp.

Tribe Corynodini

Genus *Chrysochus* Redtenbacker

Chrysochus Redtenbacker, 1845, Gatt. Deutsch. Käferfauna, 117. Type-species *C. pretiosus* Schneid. (= *C. asclepiodeus* Pallas).

Medium to large beetles of high metallic irridescence. Anterior margin of pronotum forming postocular lobes. Tibiae entire and tarsal claws simply divergent.

One species with 2 subspecies is found in North America.

Chrysochus auratus auratus (Fabricius)

Chrysomela aurata Fabricius, 1775, Syst. Entomol. p. 101.

Oblong convex. Shining metallic green, often with blue lustre or coppery

reflections. Length 10.2-10.3 mm. Width 5.3-5.4 mm.

Alabama records: 9 specimens from Cleburne[1], Lee[1], and Madison[2] counties.

Seasonal distribution: June 9-July 6.

Remarks: This species is widely distributed over the United States from the Atlantic to the Pacific. Northeastern specimens have much copper coloration and those in California, Washington, and Oregon, which are the subspecies *C. a. cobaltinus*, are entirely cobalt blue. Those of Alabama are intermediate between these two extremes, being mostly green. The food plant is *Apocynum* sp.

SUBFAMILY CHRYSOMELINAE

Convex, round, or oval, often brightly colored. Head partly inserted into prothorax (to the eyes). Eyes slightly emarginate. Antennae moderately long, clavate, insertions separated by width of frons. Pronotum at least slightly convex and nearly as wide basally as elytra; lateral margins defined. Procoxae transversely oval. Third tarsal segment usually entire. Elytra covering pygidium and with wide epipleura.

This is a rather large subfamily of world-wide distribution. Although predominantly temperate, many species are tropical. There are 5 tribes containing 10 Alabama genera.

Key to the Alabama Tribes of Chrysomelinae

(Adapted from Wilcox in Arnett *(1)*)

1. Procoxal cavities open behind 2
   Procoxal cavities closed behind ..... Tribe Entomoscelini
2. Maxillary palpi with apical segment subquadrangular or dilated, broadly truncate at apex; 3rd tarsal segment entire or scarcely emarginate 3
   Maxillary palpi with apical segment cylindrical or oval, attenuate toward apex; 3rd tarsal segment usually bilobed or emarginate, sometimes simple 4
3. Claws connate, parallel and contiguous at base ..... Tribe Zygogrammini
   Claws divergent or at least separated at base ..... Tribe Doryphorini
4. Shining black, usually with bronze or green luster; lateral margins of pronotum, elytra, and narrow discal stripe on each elytron pale ..... Tribe Prasocurini
   Not black with bronze or green luster; elytral stripes (usually 4 short dark ones) only in *Chrysomela scripta* group ..... Tribe Chrysomelini

Tribe Zygogrammini

Vittate species. Procoxal cavities open behind; tarsal claws simple, connate, parallel, and contiguous at base. Apical segment of maxillary palpi subquadrangular or dilated, apically truncate.

Only the genus *Zygogramma* Chevrolat occurs in Alabama.

Genus Zygogramma Chevrolat

Zygogramma Chevrolat, 1837, *in* DeJean, Cat. Coleopt. ed. 2: 398.
Zygosphila Achard, 1923, Fragm. Entomol., 53.

Oval, convex beetles. Head and pronotum brown, elytra yellow and vittate or graphically colored with brown. Procoxal cavities open behind, tarsal claws simple, connate, parallel, and contiguous at base.

Two species, one with 2 subspecies, are found in the State.

Key to the Alabama Species of *Zygogramma*

1. Elytral vittae present, uninterrupted 2
   Elytral vittae obsolete, interrupted ..... *Z. heterothecae* (p. 92)
2. Lateral vittae broad, not split, 3rd interstrial space yellow, 5th brown ..... *Z. suturalis suturalis* (p. 91)
   Lateral vittae split, 3rd and 5th interstrial spaces nearly completely yellow ..... *Z. suturalis casta* (p. 91)

Zygogramma suturalis suturalis (Fabricius)

Chrysomela suturalis Fabricius, 1775, Syst. Entomol. p. 95.
Chrysomela pulcra Fabricius, 1792, Entomol. Syst. I., p. 313.

Oval, strongly convex. Head and pronotum brown to dark brown, sparsely irregularly punctate. Elytra yellow with common sutural vitta brown to second row of strial punctures and with brown lateral vittae from 3rd to about 7th striae, 7th medially notched on lateral margin. Elytral epiplurae pale anteriorly but posteriorly brown usually about ½ elytral length. Length 5.1-6.6 mm. Width 3.9-4.2 mm.

Alabama records: 43 specimens from Barbour[1], Jackson[1], Lawrence[1], Lee[1], Limestone[1], Macon[1], Marion[1], Marshall[1], Mobile[2], Randolph[1], Tallapoosa[1], and Winston[1] counties.

Seasonal distribution: June 13-October 12.

Remarks: This species feeds on *Ambrosia artemisiifolia.*

Zygogramma suturalis casta Rogers

Chrysomela casta Rogers, 1854, Proc. Acad. Nat. Sci. Philadelphia 8: 33 (aberr.).
Chrysomela festiva Fabricius, 1775, Syst. Entomol. p. 100.

Oval, strongly convex. Differs from nominate subspecies by having the brown lateral vitta divided into two narrower vittae connected at apex. Elytral epipleurae nearly completely yellow. Length 5.6 mm. Width 4.2 mm.

Alabama records: 1 specimen from Macon[1] County.

Seasonal distribution: June 11.

Remarks: *Zygogramma suturalis casta* appears to be a more northern form, but its geographic limits are not known. The variation may be clinal rather than in a pattern indicative of subspecies. Possibly the name *casta* should be placed in synonymy with *suturalis.*

Zygogramma heterothecae Linell

Zygogramma heterothecae Linell, 1896, Jour. N. Y. Entomol. Soc. 4: 197.

Oval, convex. Head and pronotum brown. Elytra yellow, sparsely punctate with brown punctures; each elytron with brown sutural and subsutural obsolescent vittae; laterad of these vittae, 3 tandem, obsolescent brown spots; and laterad of these spots an obsolescent sinuate vitta. One or 2 brown spots along margin. Length 4.9-5.8 mm. Width 3.5-4.1 mm.

Alabama records: 2 specimens from Mobile[2,3] County.

Seasonal distribution: August 8.

Remarks: This species is also known from Kansas, Colorado, New Mexico, and Texas.

Tribe Doryphorini

Oval, very convex species. Procoxal cavities open behind. Apical segment of maxillary palpi subquadrangular or dilated, apically truncate. Tarsal claws simple, divergent from base. Third tarsal segment very slightly emarginate (nearly entire).

Four genera occur in Alabama.

Key to the Alabama Genera and Subgenera of Doryphorini

(Adapted from Arnett *(1)*)

1. Maxillary palpi with apical segment shorter than preceding, truncate 2

   Maxillary palpi with apical segment not shorter than preceding, dilated, truncate 3

2. Mesosternum forming blunt tubercle between mesocoxae; profemora of male strongly toothed ..... *Labidomera* (p. 92)

   Mesosternum not raised above level of prosternum; profemora of male simple ..... *Leptinotarsa* (p. 93)

3. Sides of pronotum not thickened; dark, elytra without spots, margins sometimes pale ..... *Oreina* (p. 97)

   Sides of pronotum thickened; elytra pale with dark markings delimited by punctures ..... 4 *Calligrapha* (p. 94)

4. Elytra pale with longitudinal dark stripes, without numerous spots; penis with apical spiculi ..... *Calligrapha (Bidensomela)* (p. 94)

   Elytra pale with numerous small dark spots, spots may rarely form irregular stripes but these forms also have separate spots; penis with lateral apical spiculi, without truncate projection ..... *Calligrapha (Calligrapha)* (p. 94)

Genus *Labidomera* Chevrolat

Labidomera Chevrolat, 1837, *in* DeJean, Cat. Coleopt., ed. 2: 397.
Paropsimena Motschoulsky, 1860, *in* Schrenck, Reisen u. Forsch. Amur-

Lande, 2, Lief. 2, Col., 192.

Broadly oval, convex beetles of large size. Apical segment of maxillary palpi broadly dilated and truncate on apical margin, longer than penultimate segment. Mesosternum strongly convex forming blunt tubercle between mesocoxae.

One species occurs in Alabama.

Labidomera clivicollis (Kirby)

Chrysomela clivicollis Kirby, 1837, Insects in Richardson's Fauna Bor. Americana IV, p. 213.
Chrysomela trimaculata Fabricius, 1775, Syst. Entomol., p. 95.

Broadly oval, convex. Head, prothorax, venter, and legs blue-black. Elytra yellow with broad sinuate anterior fasciae, 2 large subapical spots and suture blue-black. Length 9.1-9.8 mm. Width 6.8-7.0 mm.

Alabama records: 5 specimens from Baldwin[1] and Mobile[2] counties.

Seasonal distribution: July 3-26.

Remarks: Wilcox *(94)* reported this species to be common in Ohio on swamp milkweed, *Asclepias incarnata.*

Genus *Leptinotarsa* Stal

Leptinotarsa Stål, 1858, Öfv. Svenska Vet.-Akad. Förh., 15: 475.
Myocoryna Stål, 1859, Öfv. Vetemsk, Akad. Förh. 16: 316 (not Chevrolat, 1837).
?Polygramma Chevrolat, 1837, *in* Dejean, Cat. Coleopt., ed. 2: 397.

Large, oval, convex, vittate species. Apical segment of maxillary palpi not as wide as and shorter than penultimate. Mesosternum flat or very slightly convex.

Two species occur in Alabama.

Key to the Alabama Species of *Leptinotarsa*

1. Elytral black vittae margined by irregular rows of punctures; the 2nd and 3rd vittae confluent apically ..... *L. decemlineata* (p. 93)
   Elytral black vittae margined by regular straight rows of punctures; the 3rd and 4th vittae confluent apically ..... *L. juncta* (p. 94)

Leptinotarsa decimlineata (Say)

Fig. 12

Chrysomela decimlineata Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3: 453.
Leptinotarsa multilineata Stål, 1859, Öfv. Svenska Vet. Acad. For. 16: 316.

Broadly ovate, convex. Yellow, head with median frontal black spot. Pronotum marked with black spots, 2 median spots elongate and often convergent basally. Elytra with suture and 5 discal black vittae, 2nd and 3rd

joined at apex. Elytral strial punctures in irregular rows. Length 7.0-10.5 mm. Width 5.3-8.1 mm.

Alabama records: 34 specimens from Baldwin[1], Cleburne[1], Jackson[1], Lee[1], Macon[1], and Mobile[1,2] counties.

Seasonal distribution: April 8-September 22.

Remarks: This is the economically important Colorado potato beetle. In Alabama it has been collected from the egg-plant, *Solanum melongena.*

Leptinotarsa juncta (Germar)

Chrysomela juncta Germar, 1824, Insect. Sp. Nov. . . p. 590.

Broadly oval, convex. Yellow. Head with 2 black spots on clypeus and A-shaped spot on frons, sometimes interrupted into 2 or 3 spots. Pronotum marked with numerous black spots, 2 median spots more elongate. Each elytron with 5 black vittae, 3rd and 4th connected apically. Elytral strial punctures in regular rows. Length 10.2-11.9 mm. Width 6.7-8.4 mm.

Alabama records: 18 specimens from Baldwin[1], Dallas[1], Lee[1], and Mobile[2] counties.

Seasonal distribution: April 15-October 18.

Remarks: This, the false potato beetle, feeds on *Solanum carolinense,* according to Wilcox *(94).*

Genus *Calligrapha* Chevrolat

Calligrapha Chevrolat, 1837, *in* Dejean, Cat. Coleopt., ed. 2(5): 398.
Polyspila Hope, 1840, Coleopt. Man. 3: 165.
Phyllis Gistl, 1848, Nat. Thierr., 123 (not Gistl, 1834; not Robineau-Desvoidy, 1830).
Metallographa Motschoulsky, 1860, *in* Schrenck, Reisen u. Forsch. Amur-Lande, 2, Lief. 2, Col., 198.
Boliographa Motschoulsky, 1860, *in* Schrenck, Reisen u. Forsch. Amur-Lande, 2, Lief. 2, Col., 198.
Graphicallo Monrós, 1955, Coleopt. Bull. 9: 57. Type-species: *Calligrapha lunata* F. Subgenus.
Bidensomela Monrós, 1955, Coleopt. Bull. 9: 54. Type-species: *Calligrapha bidenticola* Brown. Subgenus.
Calligramma Monrós, 1955. Coleopt. Bull. 9: 56. Type-species: *Calligrapha cephalanti* Schw. Subgenus.
Acalligrapha Monrós, 1955, Coleopt. Bull. 9: 55. Type-species: *Calligrapha praecelis* Rog. Subgenus.
Coreopsomela Monrós, 1955, Coleopt. Bull. 9: 55. Type-species: *Calligrapha californica* Linell. (Subgenus).

Oval convex beetles. Maxillary palpi with apical segment dilated, truncate. Sides of pronotum thickened. Elytra pale with longitudinal dark stripes in subgenus *Bidensomela;* elytra pale with numerous small spots in subgenus *Calligrapha.*

Brown *(34)* studied the Canadian species of this genus and indicated that studies involving food plants are necessary. Such work needs to be done over wide areas to ascertain geographical ranges and determine what geo-

graphical variation occurs among these cryptic species. Five species are presently known from Alabama.

Key to the Alabama Species of *Calligrapha*

1. Elytra spotted or with poorly defined vittae 2
   Elytra not spotted but with regular vittae ..... *C. (B.) bidenticola* (p. 96)
2. Sutural and subsutural vittae separate, not confluent 3
   Sutural and subsutural vittae confluent ..... *C. (C.) scalaris* (p. 96)
3. Pronotum always entirely dark green or blue-green 4
   Pronotum yellow with discal brown markings or sometimes with narrow basal transverse green fascia ..... *C. (C.) multipunctata multipunctata* (p. 95)
4. Pronotum distinctly alutaceous ..... *C. (C.) philadelphica* (p. 96)
   Pronotum shining blue-green ..... *C. (C.) amelia* (p. 95)

Calligrapha (Calligrapha) amelia Knab

Calligrapha amelia Knab, 1909, Proc. Entomol. Soc. Wash. 11: 86.

Oval, convex. Head, pronotum, and venter dark shining metallic green. Legs and elytra yellow, the latter marked with black spots. Resembles *C. (C.) philadelphica* but differs in having subsutural vittae extending further posteriorly (usually beyond the apical declivity). Arcuate band entire or interrupted, if interrupted posterior portion often boomerang-shaped. Subsutural spots of apical declivity not joined to sutural stripe. Length 8.1-9.1 mm. Width 4.9-6.1 mm.

Alabama records: 5 specimens from Tuscaloosa[2] County.

Seasonal distribution: June 19-20.

Remarks: Although no Alabama host plant records were seen, Wilcox *(94)* indicated that alder *(Alnus* sp.) was a host.

Calligrapha (Calligrapha) multipunctata multipunctata (Say)

Chrysomela multipunctata Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3: 450.

Elongate oval. Front of head shining green, punctate, clypeus red. Pronotum yellow with red discal markings, sometimes with narrow transverse green basal fascia. Elytra with subsutural vittae separate from sutural vittae, terminating at and not confluent with posterior subsutural spots of apical declivity; arcuate bands represented by only anterior and posterior spots. Length 7.4-8.1 mm. Width 4.7-5.3 mm.

Alabama records: 10 specimens from Bullock[1], Lee[1], and Tuscaloosa[2,3] counties.

Seasonal distribution: April 17-June 20.

Remarks: The northern subspecies, *C. (C.) multipunctata bigsbyana* (Kirby), differs in having the pronotum blue-green bordered anteriorly and laterally with yellow. These beetles are said to feed on willow *(94)*.

Calligrapha (Calligrapha) philadelphica (Linnaeus)*

Chrysomela philadelphica Linnaeus, 1758, Syst. Nat. ed. 10, p. 372.
Chrysomela ruficornis Olivier, 1970, Encyc. Méthod. Hist. Nat. Insectes, V., p. 503.
Chrysomela decipiens Weber, 1801, Obser. Entomol., Cont. Nov. . . . p. 52.

Elongate oval. Head, prothorax and venter dark blue-green. Elytra yellow with black markings. Sutural and subsutural vittae separate. Sutural vittae usually obsolete from basal 3rd but in some beetles extending to apical 4th. Length 8.2 mm. Width 4.9 mm.

Alabama records: 1 specimen from Lee[1] County.

Seasonal distribution: May 1.

Remarks: The host plant is *Cornus stolonifera.*

Calligrapha (Calligrapha) scalaris (J. E. LeConte)

Chrysomela scalaris J. E. LeConte, 1824, Ann. Lyc. Nat. Hist. N. Y. 1: 173.
Chrysomela multiguttis Stål, 1865, Mono. des Chrysomélides de l'Amérique Nov. Act. Soc. Sci. Upsaliensis, ser. 3, 5: 261 (III).

Oval, convex. Head, prothorax and venter shining, dark blue-green. Elytra bright yellow with shining dark blue-green spots. Sutural and subsutural vittae confluent, reaching apex, either abruptly angulately narrowed or tapering just before apex; subsutural spots of apical declivity confluent with subsutural vittae. Length 7.7-8.2 mm. Width 4.4-5.1 mm.

Alabama records: 3 specimens from Lee[1] and Mobile[1] counties.

Seasonal distribution: February 10-July 7.

Remarks: American elm is the recorded preferred host *(94,34).* No hosts were noted for the Alabama specimens.

Calligrapha (Bidensomela) bidenticola (Brown)

Calligrapha bidenticola Brown, 1945, Canadian Entomol. 77: 122.
Chrysomela similis Rogers, 1854, Proc. Acad. Nat. Sci. Philadelphia 8: 35 (not Müller, 1776).

Broadly oval, convex. Head, prothorax, and venter brown, alutaceous. Elytra yellow with three broad dark brown vittae, sutural vitta extending from base to apex or just before apex, its width of 2 interstrial spaces per elytron; 2nd interstrial space not reaching base and emarginate there between it and first interstrial space; lateral vittae neither touching base nor reaching apex but occasionally subapically confluent with sutural vitta, its width from distinct 3rd stria laterad to about indistinct 8th, being laterally emarginate at ½ the elytral length. Length 6.5-7.4 mm. Width 4.4-4.7 mm.

Alabama records: Dallas[1], Jackson[1], Macon[1], Marion[1], and Mobile[1,2] counties.

Seasonal distribution: March 15-September 12.

Remarks: This species very closely resembles *Zygogramma suturalis* (Fabricius), which was how Loding's specimens were identified. It differs most noticeably from Z. *suturalis* in having divaricate tarsal claws. Host plant

records for *C. (B.) bidenticola* include *Bidens* spp., *Ambrosia* sp., and *Coreopsis* sp. *(94)*. We have swept a single specimen from *Cornus* sp.

Monrós *(80)* claimed to have seen specimens from Alabama which were intermediate between typical *C. (B.) bidenticola,* a northern and western subspecies, and *C. (B.) bidenticola meridionalis* Monrós, a subspecies from Florida.

A single specimen in Loding's collection, "Mt. Sano VI•18•1934 H. P. Loding", appears to be closely intermediate between *C. (B.) bidenticola* and *C. (Acalligrapha) pracecelsis* Rogers. It may be a hybrid of these 2 species. Its pronotal shape more closely resembles that of *C. (B.) bidenticola,* but the coloration is more that of *C. (A.) pracecelsis,* being brown and laterally margined with yellow. The scutellar shape is that of *C. (A.) praecelsis,* being more nearly equilaterally triangular and not as apically accuminate as is *C. (B.) bidenticola.* In elytral markings it more nearly resembles *C. (B.) bidenticola,* the emarginations of the lateral vittae reaching as far mesad as the 4th striae. Further collecting at Monte Sano from the host plants of the 2 species should shed more light on the status of this form.

Genus *Oreina* Chevrolat

Chrysomela Linnaeus, 1758, Syst. Nat. ed. 10, 368 (part). Type-species: *Chrysomela trisitis* Fabricius.

Oreina Chevrolat, 1837, *in* Dejean, Cat. Coleopt. ed. 3, 402.

Polysticha Hope, 1840, Col. Mand. 3: 164.

Atecha Chevrolat, 1843, Dict. Univ. 2: 282.

Chrysolina Motschulsky, 1860, Schrenck's Reisen Amurl. 2: 210. Type-species *Chrysomela staphylea* L.

Anopachys, Centoptera, Chalcoidea, Chrysomorpha, Colophodes, Colaphoptera, Colophosoma, Craspeda, Dlochrysa, Heliostola, Hoplosoma, Lithoptera, Ovomorpha, Ovosoma, Ovostoma, Pleurosticha, Stichoptera, Stichosoma, Taeniosticha, Timarchoptera, Threnosoma, Zeugotaenia Motschulsky, 1860, Schrenck's Reisen Amurl. 2: 190-216.

Chrysochloa Marseul, 1886, Abeille 24:26.

Hypericia, Sphaeromela Bedel, 1892, Faune Col. Bassin Seine 5: 258, note, 260, note.

Cystocnemis Jacobson, 1894, Deutsche Entomol. Zeits. 1894: 104 (not Motschulsky).

Minckia Strand, 1935, Falia Zool.-hydrobiol. 7: 292 (for *Hoplosoma* Motschulsky).

Timarchomina, Timarcholina, Pierryvettia, Menthastriella, Chrysolinopsis, Euchrysolina, Taeniochrysea, Chrysocrosita, Erythrochrysa, Maenadochrysa, Allochrysolina, Melasomoptera, Caudatochrysa, Allohypericia, Ghesqiuerita, Naluhia, Bechyné, 1950, Entomol. Arb. Mus. Frey 1: 51-171.

Palaeosticta, Polystictella Bechyné, Entomol. Arb. Mus. Frey 3: 383, 384.

Oval convex beetles. Pronotal lateral submarginal sulci with large deep punctures. Anterior coxal cavities open posteriorly, tarsal claws simple, divergent. Interior border of elytral epipleuron posteriorly ciliate.

Two species of *Oreina* occur in Alabama: *O. subopaca* (Rogers) and *O. auripennis* (Say). Brown *(37)* recently revised this genus, calling it *Chryso-*

lina Motschulsky. We have followed Gressitt and Kimoto *(59)* in using the name *Oreina* Chevrolat.

Key to the Alabama Species of *Oreina*

(Adapted from Brown *(37)*)

1. Elytra green, brassy green, or coppery red, or black-brown and feebly bronzed but not concolorous with darker pronotum; underside and legs usually very dark blue. Pronotal sulci not deeper basally ---------- *O. auripennis* (p. 98)

   Entire insect black or black-brown; elytra and pronotum very feebly bronzed, concolorous. Pronotal sulci slightly deeper near base ---------- *O. subopaca* (p. 98)

Oreina auripennis (Say)

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

Chrysomela inornata Rogers, 1856, Proc. Acad. Nat. Sci. Philadelphia 8: 36 (form).

"Except the elytra, very dark blue or black; elytra varying from bright green through brassy green to coppery red. . . Pronotal sulci strongly impressed from base to apex, not more strongly impressed basally. . . Length 7.0-9.3 mm." *(37)*.

Alabama records: Mobile[3] County.

Remarks: Loding's collection did not contain specimens of *O. auripennis* from Alabama but Brown's record was possibly collected by him.

Oreina subopaca (Rogers)

Chrysomela subopaca Rogers, 1856, Proc. Acad. Nat. Sci. Philadelphia 8: 36.

Chrysomela cribraria Rogers, 1856, Proc. Acad. Nat. Sci. Philadelphia 8: 36.

Elongate oval, convex. Black or black-brown dorsally. Venter black. Pronotal sulci strongly impressed basally, less strongly impressed at middle and apex. Elytra punctate, punctures tending to be in rows but not striate. Length 7.0-9.1 mm. Width 4.7-6.0 mm.

Alabama records: 4 specimens from Mobile[2,3] County.

Seasonal distribution: February 15-July 24.

Tribe Chrysomelini

Elongate, convex, unicolorous, or maculate beetles. Procoxal cavities open behind. Apical segment of maxillary palpus cylindrical or oval, apically attenuate. Third tarsal segment usually deeply emarginate (bilobed?), but also simple. Tarsal claws simple, divergent.

The following 4 genera occur in Alabama.

Key to the Alabama Genera of Chrysomelini

(Adapted from Wilcox in Arnett *(1)*)

1. Prosternum produced posteriorly as a distinct process 2
   Prosternum not produced behind as a process; on *Rumex* spp. or *Polygonum* spp. ..... *Gastrophysa* (p. 100)
2. Third tarsal segment distinctly emarginate and bilobed; on Cruciferae ..... *Phaedon* (p. 99)
   Third tarsal segment scarcely or not at all emarginate; on *Alnus* spp., *Salix* spp. ..... *Chrysomela* (p. 100)

Genus *Phaedon* Latreille

Phaedon Latreille, 1829, *in* Cuvier, Regne Anim. ed. 2, 5: 151. Type-species: *Chrysomela carniolica* Dufn.

Alitene Gistl, 1857, Vacuna, 2: 530.

Orthosticha Motschulsky, 1860, Schrinck's Reisin Amurl. 2: 196. Type-species: *Plagiodera Bonariense* Sahlb.

Emmetrus Motschulsky, 1860, l.c., 221. Type-species: *Chrys. betulae* F.

Small, oval, convex species. Pronotum evenly convex, without lateral sulci. Procoxal cavities open behind, prosternum widened posteriorly as process; 3rd tarsal segment distinctly emarginate and bilobed; claws simple.

Key to the Alabama Species of *Phaedon*

1. Broadly oval; anterior pronotal margin strongly arcuate caudad, subparallel to posterior margin ..... *P. viridis* (p. 99)
   Elongate oval; anterior pronotal margin medially straight ..... *P. purpurea* (p. 99)

Phaedon purpurea Linell*

Phaedon purpurea Linell, 1898, Proc. U. S. Nat. Mus. 20: 482.

Phaedon purpurescens Hatch, 1928, Pan-Pacific Entomol. 5: 61.

Elongate oval, dorsum evenly but not strongly convex. Head, prothroax, scutellum, and venter dark green-black. Anterior pronotal margin medially not strongly arcuate but straight. Elytra dark violet black. Pronotum alutaceous. Tarsal claws of normal size. Length 4.2 mm. Width 2.5 mm.

Alabama records: 1 specimen from DeKalb[1] County.

Seasonal distribution: May 18.

Remarks: This species was collected in DeSoto State Park. It represents a considerable extension of the range of this species, being previously reported from Utah and southern Arizona *(56)*.

Phaedon viridis (Melsheimer)*

Gastrophysa viridis Melsheimer, 1846, Proc. Acad. Nat. Sci. Philadelphia 3: 175.

Phaedon aeruginosus Suffrian, 1858, Stettiner Entomol. Zeitung 19: 395 (var.).
Phaedon microreticulatus Hatch, 1928, Pan-Pacific Entomol. 5: 46.
Phaedon dietrichi Hatch, 1928, Pan-Pacific Entomol. 5: 46.
Phaedon oklahomensis Hatch, 1931, Pan-Pacific Entomol. 7: 103 (var.).

Broadly oval. Black with very slight cupreous hue. Anterior pronotal margin medially strongly arcuate caudad, paralleling posterior margin. Pronotum finely alutaceous, less shining than elytra. Tarsal claws small. Length 3.2-3.3 mm. Width 2.3-2.5 mm.

Alabama records: 4 specimens from Fayette[1] and Lee[1] counties.

Seasonal distribution: March 23-24, and overwintering adults November 27.

Remarks: This species was collected on turnips.

Genus *Gastrophysa* Chevrolat

Gastrophysa Chevrolat, 1857, *in* DeJean, Cat. Col. 405, 429. Type-species: *Chrysomela polygoni* L.
Gastroeidea Hope, 1840, Col. Man. 3: 164.
Gastroidea Gemminger & Harold, 1874, Cat. Col. 11: 3403 (emend.).

Oblong somewhat convex, metallic beetles. Apical segment of maxillary palpi oval attenuate. Prosternum short, narrow, terminating between anterior coxae. Third tarsal segment bilobed.

One species has been found in Alabama.

Gastrophysa cyanea Melsheimer*

Gastrophysa cyanea Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 175.
Gastrophysa caesia Rogers, 1856, Proc. Acad. Nat. Sci. Philadelphia 8: 38 (var.).

Oblong oval, convex. Uniformly green or blue metallic. Densely punctate, elytra more coarsely so than head and pronotum. Length 4.4-5.3 mm. Width 2.5-3.9 mm.

Alabama records: 261 specimens from Colbert[1], Lee[1], Macon[1], and Marengo[1] counties.

Seasonal distribution: April 9-June 11.

Remarks: Differences in color can possibly be correlated geographically, an hypothesis which may be confirmed by further study. Of a series of 50 specimens from Colbert Co. collected by G. W. Folkerts, 98 per cent were blue and 2 per cent green. From several populations from Lee and Macon counties, 49 per cent of 76 beetles were blue and 41 per cent green. The majority of specimens were taken from *Rumex altissimus*. April 9 through June 11 is the seasonal distribution of this new State record.

Genus *Chrysomela* Linnaeus

Chrysomela L., 1758, Syst. Nat. Ed. 10, 368. Type-species: *Chrysomela populi* L.
Melasoma Stephens, 1831, Illust. Brit. Entomol., Mandib. 4: 349.

Gymnota Gistl, 1837, Syst. Ins. Col.: 403.
Lina Megerele, 1837, *in* Dejean, Cat. Col., 402. Type-species: *Lina populi* L.
Microdera Stephens, 1839, Man. Brit. Col., 307. Type-species: *Chrysomela vigintipunctata* Fabricius (subgenus).
Macrolina Motschulsky, 1860, Schrenck's Reisen Amurl. 2: 198. Type-species: 20-punctata F.
Macromela Chûjô, 1958, Taiwan Mus. Quart. Jour. 11 (1-2): 31. Type-species: *C. (Macromela) maculicollis insularis* Chûjô. Subgenus.
Strickems Lucas, 1920, Cat. alphabet. gen. subgenera. Col. I: 413.

Elongate, subconvex, usually maculate species. Apical segment of maxillary palpi oval attenuate. Pronotum with lateral submarginal sulci. Metasternum produced between mesocoxae. Tibiae grooved externally.

Three species have been found in Alabama.

Key to the Alabama Species of *Chrysomela*

1. Elytral margins not subparallel, more arcuate; elytra red-yellow with intermediate median spots short, broad; length of spots much less than 5 times their width 2
   Elytral margins subparallel; elytra yellow with 3 median spots elongate, intermediate spot 5 to 6 times as long as width ..... *C. scripta* (p. 102)
2. Breeds on *Alnus* spp.; elytral maculation black with blue reflections, broadly confluent, especially subapical spots ..... *C. interrupta* (p. 101)
   Breeds on *Salix* spp. elytral maculation black without blue reflections, subapical spots fused by their lateral portions only ..... *C. knabi* (p. 101)

Chrysomela interrupta Fabricius

Chrysomela interrupta Fabricius, 1801, Syst. Eleuth. I, p. 438.

Elongate oval. Head, pronotum between lateral sulci, sucal spots, and venter blue, green-black. Elytra red-yellow (red in living specimens) with 2 basal, 3 median, and 2 subapical black spots, basal spots nearly always fused to each other (94 out of 102 examined), middle 3 spots usually fused to each other and also the suture (96 out of 102 examined), and subapical spots always broadly fused to each other and suture. Length 6.0-8.4 mm. Width 3.9-4.9 mm.

Alabama records: 104 specimens from Baldwin[2], Chambers[3], Clay[1], Lee[1], and Mobile[2] counties.

Seasonal distribution: March 23-May 24.

Remarks: The preferred host plants for this species are *Alnus* spp., upon which it can most easily be collected in the early spring. Loding *(75)* recorded this as *Lina lapponica* (Linnaeus). The Chambers County record was cited by Brown *(36)*.

Chrysomela knabi Brown*

Chrysomela interrupta 4-punctata Suffrian, 1858, Entomol. Ztg. Stettin 19: 389.

Lina interrupta quadriguttata Schaeffer, 1928, Canadian Entomol. 60: 43 (not *Chrysomela quadriguttata* Fabricius, 1781).
Chrysomela knabi Brown, 1956, Canadian Entomol. 88 (supp. 3): 34.

Elongate oval. Head, pronotum between lateral sulci, sulcal spots, and venter black. Elytra red-yellow (red in living specimens) with 2 basal, 3 medial, and 2 subapical spots black; basal 2 spots usually fused apically; medial 2 separate, and apical 2 usually fused by their lateral portions, the more anterior of these subapical spots confluent with the suture. Length 6.7 mm. Width 3.9 mm.

Alabama records: 2 specimens from Calhoun[1] and Walker[1] counties.

Seasonal distribution: May 22-June 2.

Remarks: The preferred host of this species is *Salix* sp. from which the above specimens were taken. *Chrysomela knabi* can be distinguished by its host preference and with more difficulty by the lesser degree of fusion of its elytral maculation. Its black spots also lack the bluishness of those of *C. interrupta*.

Chrysomela scripta Fabricius

Fig. 2

Chrysomela scripta Fabricius, 1801, Syst. Eleuth. I., p. 438.

Elongate. Head, pronotum and venter as in *C. interrupta*. Elytra with margins more nearly parallel, yellow with sutural stripe, 2 basal, 3 medial, and 2 subapical spots black, spots not confluent and medial ones elongate. Length 6.0-10.0 mm. Width 3.5-5.3 mm.

Alabama records: 92 specimens from Baldwin[1], Franklin[1], Houston[1], Jefferson[1], Lee[1], Macon[1], Mobile[2], Monroe[1], Shelby[1], and Wilcox[1] counties.

Seasonal distribution: April 1-September 18.

Remarks: *Salix* sp. is this beetle's preferred host. Loding (75) referred to them as *Lina scripta* (Fabricius).

Tribe Prasocurini

Small, vittate species. Procoxal cavities open behind. Apical segment of maxillary palpus cylindrical or oval, distally attenuate. Third tarsal segment apparently distinctly bilobed; tarsal claws simple, divergent.

Of the 2 North American genera, only *Hydrothassa* Thomson has been found in the State.

Genus *Hydrothassa* Thomson

Hydrothassa Thomson, 1866, Skand. Col. 8: 279.
Eremosis Gozis, 1882, Rev. d'Ent. 1: 207.

Elongate, slightly convex, shining black with 4 pale elytral vittae. Basal margin of pronotum without an elevated bead. Elytral sutural stripe black, abruptly widened basally. Maxillary palpi conical, attenuate. Procoxal cavities open behind. Tarsal claws simple.

One of four North American species occurs in Alabama.

Hydrothassa vittata (Olivier)

Helodes vittata Olivier, 1807, Entomol. 5: 595.
Helodes trivittata Say, 1826, Jour. Acad. Nat. Sci. Philadelphia 5: 289.
Prasocuris varipes LeConte, 1866, Pract. Entomol. 2: 9.

Elongate. Head and venter black, except proepisterna red-yellow. Pronotum medially black, laterally red-yellow, more widely so apically. Elytra black with red-yellow margins and each with a discal vitta, lateral black vittae not reaching base, interstrial spaces impunctate. Length 4.4 mm. Width 2.0 mm.

Alabama records: 1 specimen from Baldwin[2,3] County.

Seasonal distribution: May 7.

Remarks: Loding *(75)* called this beetle *Prasocuris vittata* (Olivier). We have collected this species in Pennsylvania on *Ranuculus* sp.

Tribe Entomoscelini

Only 1 species, an introduced beetle native to Brazil and Argentina *(13)*, occurs in the State. It is characterized below:

Genus *Microtheca* Stål

Microtheca Stål, 1860, Öfu. Vet. Akad. Förh 17: 464.

Procoxal cavities closed behind; prosternum broadly widened basally.

Microtheca ochroloma Stål

Microtheca ochroloma Stål, 1860, Öfu. Svenska Vet-Akad. Förh. 17: 464.

Oval. Head, pronotum, and venter black. Pronotum punctate with large punctures. Elytra brown, margined with yellow, each with 4 punctate striae terminating at apical declivity. Length 4.2-6.0 mm. Width 2.5-2.8 mm.

Alabama records: Baldwin[1], Lee[3], and Mobile[1] counties.

Seasonal distribution: April 4-May 14.

Remarks: Although Arnett *(1)* reported that this species feeds on Cruciferae, the large series in the Auburn Entomological Museum from Mobile County was collected by W. T. Seibels on corn *(Zea mais)*. The single Baldwin County record was taken by C. R. Patrick. F. E. Guyton (personal communication) collected this species in Lee County, but it is not certain that the species is established there.

SUBFAMILY GALERUCINAE

Small to large, oval or elongate beetles. Head not inserted deeply into prothorax. Antennae usually long and closely inserted at base. Eyes entire. Pronotum laterally margined, anterior margin entire or emarginate. Elytra entire, having more or less a soft appearance. Procoxae usually contiguous; hind femora slender, adapted for walking.

Tribes, subtribes, and genera in the Galerucinae have been redefined by Wilcox *(96)*. Tribal distinction for Alabama's 2 tribes is given in the following key. No definitions are given for the subtribes, but they are listed.

Key to the Alabama Tribes of Galerucinae

1. Aedeagus with prominent basal spurs; or if without spurs, constricted just before basal margin; last ventral abdominal segment never with an apical lobe ..... Tribe Galerucini

   Aedeagus lacking prominent basal spurs; or if with spurs, not constricted just before basal margin; last ventral abdominal segment of male nearly always with distinct rectangular or curved apical lobe ..... Tribe Luperini

Key to the Alabama Genera and Subgenera of Galerucinae

(Adapted from Wilcox *(96)*)

1. Tarsal claws bifid or simple 2

   Tarsal claws appendiculate 12

2. Posterior tibia with apical spur; elytra usually glabrous or with a few, scattered, erect hairs; elytra distinctly wider than pronotum at base; aedeagus without prominent basal spurs 11

   Posterior tibia without apical spur; or if spur is present, then elytra are densely and finely pubescent; pronotum at base nearly as wide as elytra; aedeagus with prominent basal spurs 3

3. Smaller than 12.0 mm. in length; or if longer than 12.0 mm. elytra vittate 4

   Large, 13.0 mm. or longer, elytra not vittate ..... *Monocesta* (p. 106)

4. Aedeagus normal, not deflexed; if apex of aedeagus is strongly deflexed, then basal ⅓ is cylindrical, not flattened; tarsal claws bifid in both sexes 5

   Aedeagus long, flat, C-shaped with apex strongly deflexed; dull testaceous and black; female with simple tarsal claws ..... *Erynephala* (p. 114)

5. Pronotum approximately twice as broad as long; aedeagus pointed or rounded, not truncate at apex 6

   Pronotum very short, broad, width approximately 2½ times length at middle; aedeagus short, truncate ..... *Derospidea* (p. 108)

6. Third antennal segment longer than 4th 7

   Third antennal segment shorter than 4th ..... *Trirhabda* (p. 106)

7. Front coxae not separated by prosternum; middle coxae closely approximate but rarely in actual contact; pronotum not polished and impunctate; male with broad, often curved, apical spur on middle tibiae 8

   Front coxae narrowly but distinctly separated by prosternum; middle coxae separated by approximately ½ coxal width; pronotum polished and nearly impunctate, except in depressions; all tibiae lacking apical spurs in both male and female; aedeagus long, moderately curved,

with apex and orifice symmetrical; 4.5-6.0 mm. long; on *Nuphar* sp., *Polygonum* sp., *Myrica* sp., and *Brassenia* sp.
Pyrrhalta subgenus *Galerucella* (p. 109)

8. Elytra with distinct dark stripes 9
Elytra without distinct dark stripes 10

9. Elytra pale yellow (darker in overwintering form) with broad black stripe extending from humerus nearly to apex, also usually with short subscutellar stripe; elytra without darkened suture or subsutural stripe; aedeagus short, thick; apex asymmetrical, point to the right side; 6.0-6.5 mm. long; on elm *(Ulmus* sp.) .....
Pyrrhalta subgenus *Xanthogaleruca* (p. 110)

Elytra pale, each with at least 3 dark stripes, 1 of which is subsutural; aedeagus long, slender, slightly curved, symmetrical; 3.5-6.5 mm. long; on Compositae ..... *Ophraella* (p. 111)

10. Body oval, usually strongly convex; aedeagus symmetrical, orifice very near apex, small, without weakly sclerotized area above it; 4.5-6.5 mm. long; on *Solidago* sp. (Compositae) ..... *Ophraella* (p. 111)
Body usually more oblong, not as convex; aedeagus strongly asymmetrical, apex with point turned to left; orifice large with weakly sclerotized area above it; 4.0-6.5 mm. long; on plants from various families
Pyrrhalta subgenus *Tricholochmaea* (p. 110)

11. Each elytron pale with suture and a broad discal stripe black or brown; 3rd antennal segment at least twice as long as 2nd, nearly as long as 4th; all tibiae with apical spurs in both sexes, outer edges of tibiae not carinate ..... *Acalymma* (p. 117)

Elytra entirely dark or pale, maculate, or vittate; if vittate, then 3rd antennal segment is little longer than 2nd, 2nd and 3rd together not so long as 4th; protibiae without apical spurs in male, female with spurs, outer edges of tibiae more or less carinate .....
Diabrotica subgenus *Diabrotica* (p. 115)

12. Procoxal cavities closed 13
Procoxal cavities open 14

13. Antennal segment 3 distinctly longer than 4; elytra red or testaceous with black markings, without metallic luster; antennal segments 3 and 4 modified in males of some species ..... *Cerotoma* (p. 118)

Antennal segment 4 distinctly longer than 3; elytra pale or dark brown, may have faint blue luster, but if so, pronotum is as dark as elytra or strongly alutaceous ..... *Calomicrus* (p. 119)

14. Elytral epipleural fold well defined 15
Elytral epipleural fold extremely narrow, indistinct .....
Phyllobrotica (p. 120)

15. Mesotibiae without a deep, inner, subapical notch; antennae not as below ..... *Calomicrus* (p. 119)

Mesotibiae with deep, inner, subapical notch; antennae with only 10 segments, segment 3 nearly 4 times length of 2 ..*Phyllecthris* (p. 118)

Tribe Galerucini

Last ventral abdominal segment of males with a median, apical semicircular depression. Abdominal apex may be emarginate behind depression. Tarsal claws usually bifid. Anterior and posterior tibiae rarely with apical spurs. The larvae occur on leaves *(96).*

Genus *Monocesta* Clark

Monocesta Clark, 1865, Ann. Mag. Nat. Hist. (3)16 (94): 257, 264. Type-species: *Monocesta imperialis* Clark.

Large beetles, at least 11 mm. long. Elytra pubescent. Procoxal cavities open behind. Tibiae without apical spurs. Tarsal claws bifid.

Only the following species occurs in North America.

Monocesta coryli (Say)

Galleruca coryli Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3: 455.

Large, posteriorly broadened beetles; dull, dirty yellow-brown with subapical dark brown fascia on declivity, with or without 2 basal dark brown spots or single fascia, spots, or fascia with metallic blue-green lustre. Length 11.2-15.4 mm. Width 6.4-9.8 mm.

Alabama records: 19 specimens from Chambers[1], Elmore[1], Jefferson[1], Lee[1], Madison[2,3], Talladega[3], and Tallapoosa[1] counties.

Seasonal distribution: June 9-October 9.

Remarks: This distinctive beetle is known as the larger elm leaf-beetle. In life its coloration is brighter.

Genus *Trirhabda* LeConte

Trirhabda LeConte, 1865, Proc. Acad. Nat. Sci. Philadelphia. Type-species: *Trirhabda nitidicollis* LeConte.

Trirrhabda Gemminger & Harold, 1876, Cat. Coleopt. 12: 3575 (error or emendation for *Trirhabda* LeConte).

Elongate beetles. Head usually with a black median frontal spot. Third antennal segment shorter than 4th. Elytra usually vittate, pubescent. Procoxal cavities open behind. Tibiae carinate externally. Tarsal claws bifid.

Three Alabama species are known.

Key to the Alabama Species of *Trirhabda*

1. Elytra with lateral sutural vittae united before or slightly behind middle or with traces of median vitta coalescing with lateral vitta 2

   Elytra with lateral and sutural black vittae distinct and not united before apex, no median vitta 3

2. Small (5.0-9.0 mm. long); elytra not densely pubescent, lateral and sutural vittae united behind middle; on *Solidago* sp. ....*T. virgata* (p. 108)

   Large (7.0-12.0 mm. long); elytra finely and densely pubescent, vittae coalescing shortly behind middle; on *Baccharis* sp. ..... *T. bacharidis* (p. 107)

3. Occipital spot small, oblong, not forming transverse band or extending broadly down front; elytra densely pubescent, finely punctate; 7.0-10.0 mm. long; on *Solidago* sp. .....*T. canadensis* (p. 107)

   Occipital spot usually widely oblong or extending broadly down front; elytra not densely pubescent; on *Solidago* sp. .....*T. virgata* (p. 108)

Trirhabda bacharidis (Weber)

Galleruca bacharidis Weber, 1801, Observationes Entomol. p. 57.
Trirhabda tomentosa LeConte, 1865, Proc. Acad. Nat. Sci. Philadelphia 17: 220.

Elongate, posteriorly broadened. Head brown with punctate, black, transverse, oval frontal spot. Pronotum with large median and two lateral discal black spots; medial frontal fovea and transverse discal depression present, latter laterally anteriorly arcuate. Elytra pubescent, closely punctate; brown with broad sutural and submarginal black vittae usually fusing from ½ elytral length posteriorly. Length 7.7-10.5 mm. Width 3.3-5.8 mm.

Alabama records: 52 specimens from Baldwin[1], Houston[1], Lee[1], and Mobile[1,2,3] counties.

Seasonal distribution: May 3-24.

Remarks: The host plant for this species is the groundsell-tree, *Baccharis halimifolia,* although W. T. Seibels collected several specimens in Mobile County on slash pine *(Pinus* sp.).

The larvae are unusual among the chrysomelids in being colored with striking metallic hues. Last instar larvae, collected April 12, emerged May 3 as adults. The larvae pupated on the soil.

Trirhabda canadensis (Kirby)*

Galleruca canadensis Kirby, 1837, Fauna Bor.-Americana, pt. 4, p. 219.
Trirhabda canadensis var. *tomentosa* Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 56.

Elongate. Head yellow-brown with a black fronto-occipital spot, its lateral edges subparallel; frons and clypeus shining, glabrous; occiput rugose, pubescent. Pronotum yellow with round medial discal and pair of round lateral marginal spots; surface alutaceous or glabrous, with sparse punctures, with deeply concave discal furrows. Elytra yellow-brown with broad sutural and lateral submarginal black vittae, vittae usually contiguous apically. Length 8.4 mm.

Alabama records: 1 specimen from Winston[1] County.

Seasonal distribution: June 26.

Remarks: This single specimen represents a considerable extension of the species' range, i.e., from Maryland south to Alabama. It appears to differ

from the northern specimens particularly in having the pronotal surface nearly completely glabrous and shining. Goldenrod *(Solidago* spp.) is its host plant *(16).*

Trirhabda virgata LeConte

Trirhabda virgata LeConte, 1865, Proc. Acad. Nat. Sci. Philadelphia 17: 220.

Oblong elongate. Head yellow-brown with black occiput extending broadly down frons; black area closely punctate, alutaceous. Pronotum yellow-brown, alutaceous, with black medial and 2 lateral discal spots. Elytra yellow-brown with broad sutural and lateral black vittae, vittae frequently confluent from apex cephalad, sometimes nearly completely black except for yellow-brown margins; elytral sculpture densely, confluently punctate, moderately pubescent. Length 6.8-8.4 mm. Width 3.5-4.2 mm.

Alabama records: 18 specimens from Etowah[2,3], Jackson[2,3], and Madison[1,2,3] counties.

Seasonal distribution: June 19-July 27.

Remarks: We have collected these beetles on *Solidago* spp.

Genus *Derospidea* Blake

Derospidea Blake, 1931, Proc. U. S. Nat. Mus. 79(2): 32. Type-species: *Trirhabda brevicollis* LeConte.

Pronotum short, broad, width at middle 2½ times length. Elytra pubescent, vittate. Procoxal cavaties open behind. Mesotibiae of male usually with broad, curved apical spur. Tarsal claws bifid. Penis short, truncate, not deflexed.

This genus closely resembles *Trirhabda* but differs most noticeably by its short prothorax.

Derospidea brevicollis (LeConte)

Trirhabda brevicollis LeConte, 1865, Proc. Acad. Nat. Sci. Philadelphia 17: 221.

Elongate. Head yellow-brown with brown spot on occiput; coronal suture impressed from occiput to clypeus. Prothorax yellow-brown, very short, its width decidedly greater than twice its length; with a dark brown subtriangular median spot whose base is anterior, and brown lateral submarginal spots; with deep concave discal furrows. Elytra yellow-brown, pubescent, finely, closely punctate, with broad brown sutural, and pair of broad brown submarginal vittae. Length 6.5-9.5 mm. Width 3.3-5.0 mm.

Alabama records: 13 specimens from Baldwin[2], Marengo[1], and Mobile[2] counties.

Seasonal distribution: May 7.

Remarks: Several living larvae, collected in Marengo County, were submitted to the senior author for identification along with some host plant material. Because of its poor condition, the plant material could not be identified. However, Blake *(16)* said that the prickly-ash, *Zanthoxylum* sp. and

orange, *Citrus aurantium,* are the known preferred food plants of this beetle.

Seven adults were reared from the above mentioned larvae, but they did not properly harden or darken. Five larvae were preserved. The larvae differed from those of *Trirhabda* spp. in being white, rather than dark metallic. They pupated in the soil, rather than upon it.

Genus *Pyrrhalta* Joannis

Pyrrhalta Joannis, 1866, L'Abeille 3: 82. Subgenus. Type-species: *Galeruca viburni* Paykull.

Galerucella Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia, 1873: 55. Subgenus. Type-species: *Chrysomela nymphaeae* Linnaeus.

Hydrogaleruca Laboissiere, 1922, Rev. Zool. Africaine 10: 33. Type-species: *Chrysomela nymphaeae* Linnaeus.

Neogalerucella Chûjô, 1962, Philippine Jour. Sci. 91: 38. Subgenus. Type-species: *Chrysomela tennella* Linnaeus.

Xanthogaleruca Laboissiere, 1934, Ann. Soc. Entomol. France 103: 67. Subgenus. Type-species: *Chrysomela luteola* Muller.

Tricholochmaea Laboissiere, 1932, Bull. Mus. Hist. Nat., Paris (2)4: 963. Subgenus. Type-species: *Galerucella semifulva* Jacoby.

Oval elongate species. Head with coronal suture usually as an impressed median line; antennae about ½ total length. Pronotum with median impression and 2 lateral discal fovae. Elytra irregularly punctate. Anterior coxal cavities open. Tibiae lacking terminal spurs but carinate externally.

Wilcox *(96)* recognized 3 subgenera of the genus in North America. These are distinguished in the key to genera and subgenera of the Galerucinae. He commented that the genus is in need of a thorough revision.

Pyrrhalta (Galerucella) Crotch

The species *P. (G.) nymphaeae* (Linnaeus) is the only member of this subgenus known in North America.

Pyrrhalta (Galerucella) nymphaeae (Linnaeus)*

Chrysomela nymphaeae Linnaeus, 1758, Syst. Nat. ed. 10: 376.

Galeruca femoralis Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 161.

Galleruca marginella Kirby, 1837, Fauna Bor.-Americana, pt. 4, p. 308.

Galleruca sagittariae Kirby, 1837, Fauna Bor.-Americana pt. 4, p. 219 (not Gyllenhal).

Galleruca luctuosa Mannerheim, 1852, Bull. Soc. Sup. Nat. Moscow 25: 368.

Oblong, brown tinged with black. Head brown, occiput and vertex black. Prothorax brown, medial discal area smooth, glabrous, impunctate, shining, but sometimes finely alutaceous. Elytra brown; humeri black with indistinct vittae extending partially caudad from them; punctate, densely, finely pubescent. Prosternum comparatively wide, separating anterior coxae. Apical tibi-

al spurs lacking. Aedeagus long, slender, and symmetrical. Length 5.3-6.0 mm. Width 2.7-2.8 mm.

Alabama records: 82 specimens from Lee[1] and Russell[1] counties.

Seasonal distribution: March 16-August 2.

Remarks: This species is also widely distributed in Europe. In Alabama a very large population was seen living and feeding on the floating leaves of *Brassenia schreberi* at McCann's Pond, at Seale. There adults were taken as early as March 16 while larvae, pupae, and adults were collected August 2.

Pyrrhalta *(Xanthogaleruca)* Laboissiere

The species *P. (X.) luteola* (Muller) is the only species of this subgenus known in North America.

Pyrrhalta (Xanthogaleruca) luteola (Müller)*

Chrysomela luteola Müller, 1766, Melang. Soc. Roy. Turin 3: 187.
Chrysomela xanthomelaena Schrank, 1781, Enumeratio Insectorum Austraiae Indigenorum, p. 78.

Elongate. Head yellow with black, punctate frontooccipital spot and 2 black shining clypeal callosities. Pronotum yellow, shining with black medial and paired lateral discal spots. Elytra yellow, closely punctate, pubescent, with entire broad, black, lateral vittae and a short midbasal brown narrow vittae. Length 6.1-6.8 mm. Width 2.8-3.5 mm.

Alabama records: 70 specimens from Chambers[1], Conecuh[1], Lee[1], Tallapoosa[1], and Tuscaloosa[1] counties.

Seasonal distribution: March 12-October 9.

Remarks: This species is commonly known as the elm leaf-beetle *(Ulmus* sp.). It is an introduced European species. Here it is a serious pest of elm. One specimen was taken at light.

Pyrrhalta (Tricholochmaea) Laboissiere

Broad, convex. Red, testaceous, brown, or rarely black, but not vittate. Procoxal cavities open. Prosternum not extending between coxae. Middle tibiae of male with a broad apical spur. Epipleura normal. Aedeagus with acute apical tip turned to left; orifice large, asymmetrical, and dorsally weakly sclerotized.

Wilcox *(96)* indicated that the larvae feed on plants of various families and that pupation takes place in the soil.

Key to the Alabama Species of *Pyrrhalta (Tricholochmaea)*

1. Side margins of elytra thickened or with a convexity between the declivity and the epipleural edge, most noticeable toward base; color blood red; elytra rugosely punctate; pubescence sparse ..... *P. (T.) rufosanguinea* (p. 111)

   Side margins of elytra without or with but feeble indication of convexity between the declivity and the epipleural edge, color dark red-

brown; elytra not rugosely, but fairly closely, strongly punctate; strongly pubescent ..... *P. (T.) perplexa* (p. 111)

Pyrrhalta (Tricholochmaea) rufosanguinea (Say)*

Galleruca rufosanguinea Say, 1827, Jour. Acad. Nat. Sci. Philadelphia 5(3): 299.

Oval, convex, blood red. Antennae, tarsi, and apical portions of tibiae black. Elytra densely, confluently, punctate; pubescent. Length 4.7-5.8 mm. Width 2.5-3.2 mm.

Alabama records: 3 specimens from Lee[1] County.

Seasonal distribution: May 26-July 12.

Remarks: The host plant for this beetle is azalea, *Rhododendron* spp.

Pyrrhalta (Tricholochmaea) perplexa (Fall)*

Gallerucella perplexa Fall, 1924, Maine Agr. Exp. Sta., Bull. 319, p. 90.

Oval, dirty red-brown. Head rogose, frons and occiput red-brown, clypeus yellow; antennae black. Pronotum unicolorous, finely rugose, pubescent. Elytra strongly pubescent, closely punctate with rather large punctures. Venter dirty yellow-brown. Tarsi and tibiae black. Length 6.5 mm. Width 3.5 mm.

Alabama records: 1 specimen from Tuscaloosa[2] County.

Remarks: The Loding collection contains a single unidentified specimen of this species. It closely resembles *P. decora* (Say) and *P. alni* (Fall). Further study of this species complex is needed.

Genus *Ophraella* Wilcox

Ophraella Wilcox, 1965, N. Y. State Mus. & Sci. Soc. Bull. 400: 43. Type-species: *Galleruca notata* Fabricius.

Pale yellow-brown species, usually with narrow black elytral stripes, or elytra entirely pale. Elytra usually rather densely pubescent. Third antennal segment longer than 4th. Procoxae not divided by prosternum; procoxal cavities open. Aedeagus slender and symmetrical.

Key to the Alabama Species of *Ophraella*

1. Broadly oval and strongly convex; pronotum strongly convex with distinct lateral callosities, lateral depressions obsolete; aedeagus nearly symmetrical at apex 2

   Body more depressed; pronotum lacking definite lateral callosities, lateral depressions well defined 3

2. Upper surface virtually glabrous; pronotum smoother and more shining, punctation sparser and unevenly distributed; 5.0-6.5 mm. long; on goldenrod (*Solidago* sp.) ..... *O. cribrata* (p. 112)

   Upper surface conspicuously pubescent with a mixture of erect and

subrecumbent hairs; pronotum densely and rugosely punctate; 4.5-6.0 mm. long; on *Solidago* sp. ..... *O. americana* (p. 112)

3. Elytra vittate 4
   Elytra with lateral and sutural margins orange-yellow, disc coarsely punctate and either entirely black, or black apically with basal indications of 3 black vittae per elytron ..... *O. conferta* (p. 113)
4. Sutural vitta usually present (occasionally obsolescent in *O. integra* and *O. notata)* with 3 discal vittae 5
   Sutural vitta always entirely absent; with 3, usually entire, black discal vittae ..... *O. conferta* (p. 113)
5. First discal vitta long, greater than 3 times length of scutellum 6
   First discal vitta short, about 2 or 3 times length of scutellum ..... *O. notata* (p. 114)
6. First discal and sutural vittae joining at apex ..... *O. integra* (p. 113)
   First discal vitta joining sutural or becoming obsolete at middle of elytra ..... *O. notulata* (p. 114)

Ophraella americana (Fabricius)

Galleruca americana Fabricius, 1801, Syst. Eleuth. 1: 489.

Oval, convex, strongly pubescent with erect, bristly setae. Head brown, frons rugose-punctate, coronal suture dark brown. Pronotum rugosely punctate. Elytra brown, closely punctate with large, sometimes confluent punctures; each elytron usually with 3 black or dark brown narrow vittae, the median most frequently and the others occasionally obsolete or obsolescent. Length 4.2-7.0 mm. Width 2.1-3.8 mm.

Alabama records: 14 specimens from Baldwin[1], Calhoun[1], Marion[1], Mobile[2,3], and Winston[1] counties.

Seasonal distribution: January 25-September 17.

Remarks: The food plant of these beetles has not been recorded. We have referred to this species 2 smaller specimens from Mobile County. Both of these have the conspicuous bristly pubescence and large elytral punctures of *americana;* however, they are smaller (4.2-5.1 mm. in length) and the smaller of the 2 has only median indications of the medial and lateral vittae. The subsutural vitta is completely absent. Loding had identified this smaller specimen as *Galerucella americana,* but he incorrectly called the 3 larger specimens *G. sexvittata.*

Ophraella cribrata (LeConte)*

Galeruca cribrata LeConte, 1865, Proc. Acad. Nat. Sci. Philadelphia 17: 215.

Oval, convex, dirty yellow-brown. Coronal suture of head impressed, darker brown. Pronotum irregularly punctate, medial disc smoother, alutaceous; glabrous or nearly so. Elytra with 3 brown vittae; densely punctate with large punctures; very sparsely pubescent, setae short. Length 6.0-6.8 mm. Width 3.2-4.0 mm.

Alabama records: 8 specimens from Cleburne[1], Lawrence[1], Madison[1], and Marion[1] counties.

Seasonal distribution: May 3-July 27.

Remarks: Woods *(97)* recorded goldenrod *(Solidago* sp.) as the host plant.

Ophraella conferta (LeConte)*

Galeruca conferta LeConte, 1865, Proc. Acad. Nat. Sci. Philadelphia 17: 215.

Broadly oval. Head brown with median black frontal wedge. Basal antennal segments brown basally, black apically, apical segment entirely black. Pronotum brown with elongate median and irregularly shaped lateral black discal spots; rugosely punctate, pubescent. Elytra brown, densely punctate, pubescent; with 3 narrow, long, subparallel, black vittae; or disc partly or entirely black, lateral and sutural margins orange-yellow. Length 5.1-6.1 mm. Width 2.5-3.7 mm.

Alabama records: 57 specimens from Autauga[1], Chambers[3], Clay[3], Coosa[1], Lee[1], Limestone[1], Lowndes[1], Madison[1], Mobile[2,3], and Shelby[3] counties.

Seasonal distribution: May 5-August 13.

Remarks: The food plant of *O. conferta* is not known. However, this species may not be specifically distinct from *O. sexvittata* (LeConte) *(94, 53)*, for which goldenrod *(Solidago* sp.) has been a recorded host *(94)*.

Specimens from Mobile County have the elytra nearly entirely black except for the margins. The other beetles, collected in Clay and Macon counties, also have this appearance. However, these with further study may prove to be specifically distinct. Their elytral punctures are larger and coarser, and their elytral pubescense is quite sparse.

The superscript [3] for distribution records refers to material seen in the USNM.

Ophraella integra (LeConte)*

Galeruca integra LeConte, 1865, Proc. Acad. Nat. Sci. Philadelphia 17: 218.

Elongate oval, dull yellow. Head usually with black median frontal spot, but occasionally lacking this. Pronotum pubescent, punctate, somewhat smoother, shining on medial disc; usually with, but also without, 3 black discal spots. Elytra closely punctate, with fine pubescense; 3 narrow black vittae per elytron, 1st discal vitta confluent with sutural at apex. Length 4.7-5.8 mm. Width 2.1-2.8 mm.

Alabama records: 13 specimens from Autauga[1], Lee[1], Pickens[1], and Mobile[2] counties.

Seasonal distribution: June 2-July 20.

Remarks: Ten specimens of this species were collected by a home gardner on a plant he called "waxweed" *(?Cuphea petiolata)*.

Ophraella notulata (Fabricius)

Galleruca notulata Fabricius, 1801, Syst. Eleuth. 1: 489.

Oblong, yellow. Head yellow with black occipital spot. Pronotum with median and paired lateral discal black spots. Elytra closely punctate, pubescent with erect and recumbent setae; sutural vittae usually beginning only at basal third, 1st discal beginning at base, then running obliquely and merging with sutural at about elytral half, 2nd discal extant only in apical half, lateral vittae wider beginning at humeri and terminating subapically. Length 4.2-5.3 mm. Width 1.8-2.8 mm.

Alabama records: 54 specimens from Barbour[1], Cleburne[1], Coosa[1], Dallas[1], DeKalb[1], Escambia[1], Etowah[2], Houston[1], Jefferson[1], Lawrence[1], Lee[1], Limestone[1], Macon[1], Madison[1], Marion[1], Mobile[2,3], Shelby[1], and Talladega[1] counties.

Seasonal distribution: May 19-September 18.

Remarks: Ragweed, *Ambrosia artemisiifolia* L., is the host plant for this beetle (97). Some specimens also have been taken in light traps.

Ophraella notata (Fabricius)*

Galleruca notata Fabricius, 1801, Syst. Eleuth. 1: 488.

Oblong oval, dirty yellow-brown. Head with narrow median frontal black spot. Pronotum with elongate median and round lateral discal black spots. Elytra finely closely punctate, pubescent; black sutural vittae beginning from basal fourth, lateral vittae running from humeri to pre-apex. Length 4.0-5.8 mm. Width 2.1-2.8 mm.

Alabama records: 34 specimens from Baldwin[1], Lee[1], Madison[1], and Mobile[2] counties.

Seasonal distribution: June 4-November 2.

Remarks: Woods (97) reported boneset, *Eupatorium perfoliatum*, as host. The writers have taken a single specimen from *Aster strigosus*.

Genus *Erynephala* Blake

Erynephala Blake, 1936, Jour. Wash. Acad. Sci. 26: 425. Type-species: *Galeruca maritima* LeConte.

Medium sized (6.0-8.0 mm.), elongate, subparallel beetles. Color brown-yellow, often with black markings. Procoxal cavities narrowly open behind. Tibiae without apical spurs. Tarsal claws simple.

Only 1 species occurs in Alabama.

Erynephala puncticollis (Say)

Galleruca puncticollis Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3: 458. *Galeruca erosa* LeConte, 1885, Trans. Amer. Entomol. Soc. 13: 28.

Elongate, brown-yellow. Head closely cribrate, frontal suture with narrow dark brown line, or more rarely occiput and upper frons black. Pronotum moderately scabrose. Elytra finely pubescent; closely, finely, punctate; with

submarginal black vittae and narrower, interrupted black or brown subsutural vittae. Length 6.1-7.4 mm. Width 3.1-3.5 mm.

Alabama records: 8 specimens from Mobile[2,3] County.

Seasonal distribution: April 8-May 7.

Remarks: The specimens studied appear to be intermediate between typical *E. puncticollis* and *E. puncticollis* var. *texana* Schaeffer. Further, a single specimen with black occiput and frons appears intermediate between *E. puncticollis* and the eastern species, *E. maritima* (LeConte).

Tribe Luperini

Males have the last ventral abdominal segment's apical lobe either rectangular or absent. The coronal suture is rarely visible. The mandibular teeth are usually acute and the tibiae usually have apical spurs. The larvae are subterranean *(96)*.

Subtribe Diabroticina

Genus *Diabrotica* Chevrolat

Diabrotica Chevrolat, 1837, *in* Dejean, Cat. Coleopt., ed. 3, p. 404. Type-species: *Crioceris fucata* Fabricius.

Medium sized, elongate or oval. Head not deeply inserted into prothorax. Antennae slender, longer than ½ the body length, segment 2 slightly shorter than 3. Pronotum subquadrate, disc bifoveate. Procoxae touching, cavities open behind. Tibiae with apical spurs (except protibiae of males) and with carinae on outer edges. Tarsal claws bifid.

Key to the Alabama Species of *Diabrotica*

1. Elytra yellow or green, unicolorous or with fasciae or maculae 2
   Elytra entirely black ..... *D. cristata* (p. 116)
2. Elytra green or yellow, without black spots 3
   Elytra yellow or green-yellow with black spots ..... *D. undecimpunctata howardi* (p. 115)
3. Elytra unicolorous green or yellow-green with plicae extending apically from humeri ..... *D. longicornis barberi* (p. 116)
   Elytra light green with yellow spots and fasciae; without longitudinal plicae ..... *D. balteata* (p. 116)

Diabrotica undecimpunctata howardi Barber

Diabrotica undecimpunctata howardi Barber, 1947, Proc. Entomol. Soc. Wash. 49: 153. (subsp.) (new name for *Chrysomela duodecompunctata* Fabricius, 1775).

Chrysomela duodecmpunctata Fabricius, 1775, Syst. Entomol. p. 103 (not Linnaeus, 1758).

Oval. Head, antennae (except basal 3 segments which are yellow), tibiae, tarsi, femoral apexes, metasternum, and episterna black. Pronotum and ely-

tra green-yellow (without green in dried specimens), the pronotum shining, impunctate; the elytra finely, moderately punctate, with paired humeral, two confluent subscutellar, 4 separate mid-elytral and 4 separate preapical black spots. Length 4.6-7.7 mm. Width 2.5-4.2 mm.

Alabama records: 41 specimens from Baldwin[1], Clay[1], Covington[1], Dallas[1], Etowah[2], DeKalb[1], Lee[1], Madison[1], and Mobile[2] counties.

Seasonal distribution: January 1-December 31.

Remarks: Because of its economic importance as a pest of corn *(Zea mays)* and cucurbits, this species is commonly known both as the southern corn rootworm and the spotted cucumber beetle. It may be taken at any time of the year.

Diabrotica balteata LeConte

Diabrotica balteata LeConte, 1865, Proc. Acad. Nat. Sci. Philadelphia p. 213.

Diabrotica sallei Baly, 1886, Jour. Linn. Soc. Zool. 19: 227.

Oval. Head with frons and occiput red, clypeus yellow. Pronotum light green. Elytra light green with 4 basal yellow spots and 3 yellow fasciae interrupted at suture and placed at elytral half, at ¾ elytral length, and at apex. Length 5.6-6.3 mm. Width 2.8-3.2 mm.

Alabama records: 20 specimens from Baldwin[1], Houston[1], Lee[1], and Mobile[2] counties.

Seasonal distribution: June 30-December 29.

Remarks: This species, also, is of economic importance. It is known as the banded cucumber beetle.

Diabrotica longicornis barberi Smith and Lawrence*

Diabrotica longicornis barberi Smith and Lawrence, 1967. Univ. of Calif. Pub. in Entomol. 45: 87.

Elongate, light green; antennae, clypeus, tibiae laterally, humeri, metasternum and episterna green-brown. Elytra irregularly closely, coarsely punctate, with several plicae extending diagonally from humeri. Length 5.3 mm. Width 2.1 mm.

Alabama records: 2 specimens from Jackson[1] and Limestone[3] counties.

Remarks: This is the northern corn rootworm. The Limestone County record is from Dr. Ray F. Smith (personal communication).

Diabrotica cristata (Harris)

Galeruca (Adimonia) cristata Harris, 1837, Trans. Hartf. Nat. Hist. Soc. 1: 90.

Galleruca atripennis Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3(2): 461 (Not Fabricius, 1801).

Elongate, black. Eyes usually black, occasionally red. Prothorax orange, shining, with 2 discal fovea. Elytra with oblique plicae extending mesad from humeri. Abdomen of females yellow; males black. Length 4.2-5.3 mm. Width 1.9-2.5 mm.

Alabama records: 57 specimens from Colbert[2], Marion[2], and Winston[1] counties.

Seasonal distribution: June 3-27.

Remarks: A large series of this species was collected by the senior author on the Ohio spiderwort, *Tradescantia ohiensis* Raf. Loding recorded this species as *D. atripennis* (Say), a synonym *(89)*.

Genus *Acalymma* Barber

Acalymma Barber, 1947, Proc. Entomol. Soc. Wash. 49: 154. Type-species: *Acalymma gouldi* Barber.

Small beetles. Head not inserted into prothorax to eyes, antennae longer than ½ of body length, slender; 2nd segment about ½ length of 3rd. Pronotum without spots, bifoveate, fovea separated by less than their diameters. Elytra carinate, punctate and vittate. All tibiae with apical spurs in both sexes.

Key to the Alabama Species of *Acalymma*

1. Elytral black vittae wider than yellow vittae, abdomen yellow ..... *A. vinctum* (p. 117)
   Elytral yellow vittae wider than black vittae, abdomen black ..... *A. vittatum* (p. 117)

Acalymma vinctum (LeConte)

Diabrotica vincta LeConte, 1878, Proc. Amer. Philos. Soc. 17: 416.

Elongate. Head, antennae, tarsi, tibiae, and femoral apexes brown-black. Pronotum orange-yellow, shining, bifoveate. Elytra black with narrow discal vittae and margins yellow. Prosternum, mesosternum, and abdomen yellow. Length 4.7-6.0 mm. Width 2.3-3.2 mm.

Alabama records: 11 specimens from Lee[1] and Mobile[2,3] counties.

Seasonal distribution: May 10-September 17.

Remarks: This species is attracted to light. It probably feeds on cucurbits (Cucurbitaceae).

Acalymma vittatum (Fabricius)

Crioceris vittata Fabricius, 1775, Syst. Entomol. p. 122.
Cistela melanocephala Fabricius, 1775, Syst. Entomol. p. 118.
Cryptocephalus (Cistela) americanus Gmelin, 1790, Linne Syst. Nat. 1(4): 1715 (replacement name for *Cistela melanocephala* Fabricius).

Elongate. Head and venter except prothorax black. Prothorax yellow, pronotum shining, bifoveate. Elytra yellow with sutural and submarginal vittae black; yellow vittae wider than black vittae. Legs yellow except tarsi, femoral apexes, and tibial bases black. Length 4.7-6.0 mm. Width 2.5-3.2 mm.

Alabama records: 18 specimens from Baldwin[1], Dale[1], Dallas[1], DeKalb[1], Lee[1], and Mobile[2] counties.

Seasonal distribution: May 8-November 14.

Remarks: These beetles are attracted to light and are economic pests of cucurbits (Cucurbitacea).

Genus *Cerotoma* Chevrolat

Cerotoma Chevrolat, 1837, *in* Dejean, Cat. Coleopt., ed. 3, p. 403. Type-species: *Crioceris caminea* Fabricius.
Cerotana Bowditch, 1913, Psyche 20: 126 (error for *Cerotoma).*
Ceratoma Guerin, 1953, Coleopt. Brasil (error for *Cerotoma).*
Andrector Horn, 1872, Trans. Amer. Entomol. Soc. 4: 152. Type-species: *Andrector sexpunctatus* Horn.

Oval, yellow or orange species marked with black. Third antennal segment longer than 4th. Procoxal cavities closed behind; tarsal claws appendiculate. Only 1 species of this genus occurs in Alabama.

Cerotoma trifurcata (Forster)

Chrysomela trifurcata Forster, 1771, Nov. Spec. Ins. 1: 29.
Crioceris caminea Fabricius, 1801, Syst. Eleuth. 1: 459.
Galeruca fibulata Germar, 1824, Ins. Spec. Nov., p. 601.

Oval yellow or orange, with black head, meso- and metathorax and abdomen; elytra with only triangular scutellar spot black or more frequently with scutellar spot, 3 tandem subsutural spots and submarginal vitta black. Length 4.2-6.0 mm. Width 2.1-3.3 mm.

Alabama records: 62 specimens from DeKalb[1], Houston[1], Jackson[1], Lawrence[1], Lee[1], Limestone[1], Macon[1], Marion[1] Marshall[1], Mobile[1,2], Randolph[1], St. Clair[1], Tallapoosa[1], and Talladega[1] counties.

Seasonal distribution: February 6-September 21.

Remarks: This species is economically known as the bean leaf beetle. It feeds on legumes (Leguminosae).

Genus *Phyllecthris* Dejean

Phyllecthris Dejean, 1837, Cat. Coleopt. ed. 3, p. 406 (ed. 2, p. 382). Type-species: *Galeruca dorsalis* Olivier.

Elongate, dorsally glabrous, black and yellow or orange beetles. Antennae long, 2nd and 3rd joints together shorter than 4th. Pronotum subquadrate, lateral margins with bead; with prebasal lunate depression. Elytral epipleura distinct but narrowing apically. Procoxal cavities open behind. Meso and metatibiae with terminal spurs, mesotibiae of males apically incised. Tarsal claws appendiculate.

Key to the Alabama Species of *Phyllecthris*

1. Large, 5.0-6.5 mm in length; elytra entirely black ..... *P. dorsalis* (p. 119)
   Small, 3.0-4.0 mm. in length; elytra black with suture and margins yellow ..... *P. gentilis* (p. 119)

Phyllecthris dorsalis Olivier

Galeruca dorsalis Olivier, 1808, Ent. 6: 646.
Galleruca atriventris Say, 1824, Proc. Acad. Nat. Sci. Philadelphia 3(2): 461.

Oblong oval. Head entirely yellow-orange, alutaceous; frontal tubercles and clypeus shining. Antennae black. Pronotum usually bicolored yellow-orange and black; lateral marginal beads and medial basal spot yellow-orange, disc laterally and apically black; with shallow prebasal depression. Elytra black, alutaceous. Scutellum yellow-orange. Length 5.7-6.5 mm. Width 2.8-3.3 mm.

Alabama records: 5 specimens from Madison[2,3] and Mobile[2,3] counties.

Seasonal distribution: April 6-June 11.

Phyllecthris gentilis LeConte

Phyllechthrus gentilis LeConte, 1865, Proc. Acad. Nat. Sci. Philadelphia, 1865, p. 208.
Phyllechthrus nigripennis LeConte, 1868, Trans. Amer. Entomol. Soc. 2: 58.

Elongate. Head yellow. Pronotum yellow with sublateral broad, black vittae; subbasal transverse fovea. Elytra black, sutural, apical, and lateral margins yellow. Venter yellow except 5th visible abdominal segment black. Legs yellow, tibiae apically and laterally, tarsi dorsally brownish. Length 3.0 mm. Width 1.3 mm.

Alabama records: 1 specimen from Winston[1] County.

Seasonal distribution: June 3.

Remarks: Loding's Alabama report *(75)* of this species was based on an apparently misidentified specimen, which the senior author determined as *P. dorsalis*. The only true *P. gentilis* from Alabama was collected by the senior author. Wilcox *(94)* claims *Lespedeza* as a host plant while Horn *(23)* reported *Robinia pseudoacacia* as such.

Subtribe Monoleptina

Genus *Calomicrus* Stephens

Calomicrus Stephens, 1831, British Entomol., Mandib. 4: 293. Type-species: *Crioceris circumfusus* Marsham.
Monolepta Chevrolat, 1837, *in* Dejean, Cat. Coleopt. ed. 3, p. 407 (ed. 2, p. 383). Type-species: *Crioceris bioculata* Fabricius.
Luperodes Motschulsky, 1858, Etud. Entomol. 7: 102. Type-species: *Luperodes alboplagiatus* Motschulsky.

Oval or elongate oval, more or less convex. Prothorax more narrow than elytra; pronotum with or without distinct depression; elytral punctation confused. Antennae normal, segments unmodified. Legs normal and tibiae of both sexes all without apical spurs. Last ventral abdominal segment of male with large, nearly square, apical lobe. Procoxal cavities open or closed. Aedeagus symmetrical.

Wilcox *(96)* reviewed the generic limits and included species.

Calomicrus brunneus (Crotch)

Luperus brunneus Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 44.
Luperodes davisi Leng, 1911, Jour. N. Y. Entomol. Soc. 19: 194.

Oblong oval. Head, prothorax, and femora dirty yellow-brown (or prothorax less frequently dark brown). Elytra elongate, more or less evenly convex; dark brown, shining, finely, closely punctate; sparsely setose laterally and apically. Metasternum, abdominal sternites, tibiae, and tarsi dark brown, pubescent. Procoxal cavities either open or closed posteriorly. Length 3.2-4.2 mm. Width 1.6-2.1 mm.

Alabama records: 98 specimens from Bibb[1], Choctaw[1], Clay[1], Etowah[2], Lamar[1], Lee[1], Madison[2], Randolph[1], Russell[1], and Tuscaloosa[2] counties.

Seasonal distribution: June 3-October 20.

Remarks: This species is commonly known as the corn silk beetle and is frequently a pest on corn *(Zea mays)*, okra *(Hibiscus esculentus)*, and cotton *(Gossypium herbaceum) (18)*. It was formerly listed by Loding (75) as *Luperodes davisi* Leng, a name which Blake *(18)* had synonymized with *L. brunneus*. Wilcox *(96)* transferred *L. brunneus* to the genus *Calomicrus*.

Subtribe Luperina

Genus *Phyllobrotica* Chevrolat

Phyllobrotica Chevrolat, 1837, *in* Dejean, Cat. Coleopt., ed. 3, p. 405.

Type-species: *Chrysomela quadrimaculata* Linnaeus.

Elongate, small to medium sized black and yellow beetles. Prothorax with semicircular prebasal transverse depression. Elytra subparallel, epipleural fold extremely narrow, indistinct. Procoxal cavities open behind; tarsal claws appendiculate.

Key to the Alabama Species of *Phyllobrotica*

1. Frons and occiput of head black, clypeus and labrum yellow 2
   Head entirely yellow 3

2. Elytra yellow with black subsutural and submarginal vittae ..... *P. vittata* (p. 121)
   Elytra black with sutural and lateral margins yellow, sometimes with faint yellowish indications at basal ⅓ slightly mesad of a line from humeri ..... *P. stenidea* (p. 121)

3. Tibial apexes dark brown or black, bases yellow; humeri usually pale; last ventral abdominal segment of male with shallow longitudinal depression ..... *P. discoidea* (p. 121)
   Tibiae entirely yellow; black areas of elytra covering humeri; last ventral abdominal segment of male with deep nearly circular depression ..... *P. limbata* (p. 121)

Phyllobrotica vittata Horn

Phyllobrotica vittata Horn, 1893, Trans. Amer. Entomol. Soc. 20: 98, 100.

Elongate. Head and antennae black, clypeus and labrum yellow. Pronotum yellow, alutaceous, with a transverse subbasal depression. Elytra yellow with subsutural and submarginal black vittae, lateral edges parallel. Venter and legs yellow, tarsi slightly brown. Male with 5th visible abdominal sternite larger than first 3 combined and with longitudinal bowl-shaped depression; hind femora of male somewhat enlarged. Fifth abdominal sternite of female subequal in length with first 4 and evenly convex. Length 5.3-5.8 mm. Width 2.1-2.5 mm.

Alabama records: 3 specimens from Etowah[2,3], Jefferson[2], and Marion[2,3] counties.

Seasonal distribution: June 3-25.

Phyllobrotica stenidea Schaeffer

Phyllobrotica stenidea Schaeffer, 1932, Canadian Entomol. 64: 238.

Elongate. Head and antennae black, clypeus and labrum yellow. Pronotum yellow, smooth. Elytra black with narrow sutural, apical, and lateral margins with very faint yellow areas at basal ⅓ just slightly mesad from a line parallel with humeri; surface finely punctate, alutaceous. Venter brown, except prothorax and mesosternum yellow; legs yellow, tarsi brown.

Alabama records: 1 specimen from Clarke[2] County.

Seasonal distribution: May 15.

Remarks: It is possible that if more specimens of this infrequently collected species are assembled, it and *P. vittata* Horn may be found to be conspecific.

Phyllobrotica discoidea (Fabricius)

Galleruca discoida Fabricius, 1801, Syst. Eleuth. 1: 485.

Galleruca circumdata Say, 1824, Jour. Acad. Nat. Sci. Philadelphia, vol. 3, p. 457.

Elongate. Head, prothorax, meso and meta thorax ventrally, femora and bases of tibiae yellow. Antennae, elytra except margins, tibial apexes, and abdomen black. Elytra moderately coarsely punctate, and very slightly costate in some specimens. Fifth visible abdominal sternite of male with shallow longitudinal depression. Length 5.8-7.0 mm. Width 2.3-2.5 mm.

Alabama records: 9 specimens from Mobile[1,2] County.

Seasonal distribution: May 19-July 25.

Phyllobrotica limbata (Fabricius)

Galleruca limbata Fabricius, 1801, Syst. Eleuth. 1: 486.

Elongate. Closely resembling *P. discoidea*. Humeri and tarsi usually dark, but tibiae yellow. Elytra finely punctate. Fifth abdominal sternite of males with deep nearly circular depression. Length 6.0-6.1 mm. Width 2.7-2.8 mm.

Alabama records: 3 specimens from Lee[1], Madison[2], and Mobile[2] counties.

Seasonal distribution: June 3-July 20.

SUBFAMILY ALTICINAE

Minute to medium, oval or elongate, relatively compressed to convex beetles. Antennae generally at least ½ body length and rather closely inserted, usually 3rd antennal segment equal to or longer than 4th. Eyes entire. Prosternal process separating procoxae. Metafemora enlarged and adapted for jumping; metatibiae with apical spur.

No satisfactory tribal arrangement has thus far been proposed for the North American species. The Alticinae comprise the largest subfamily in the Chrysomelidae. Alticid species, particularly the smaller ones, are known as flea beetles because of their jumping ability. Many are of economic importance.

Key to the Alabama Genera of Alticinae

1. Apical segment of posterior tarsi strongly swollen distally 2
   Apical segment of posterior tarsi not swollen 7
2. Elytra punctate-striate or punctate-substriate 3
   Elytral punctures confused 5
3. Elytra densely pubescent 4
   Elytra glabrous ..... *Pachyonychus* (p. 127)
4. Procoxal cavities open, vestiture of appressed green setae ..... *Pseudolampsis* (p. 126)
   Procoxal cavities closed, pubescense erect or suberect, of long brown or gray setae ..... *Distigmoptera* (p. 126)
5. All tarsal claws appendiculate; pronotal width subequal to twice its length at middle 6
   Posterior tarsal claws not appendiculate, pronotal width subequal to ⅔ its length at middle ..... *Pachyonychis* (p. 125)
6. Size large (4.0-8.0 mm.), covex; lateral margins narrow or lacking; antennae moderately stout, usually less than ½ the body length; front vertical; eyes small, distant (interocular space ½ width of head); interocular depression indistinct ..... *Kuschelina* (p. 128)
   Size small (3.0-6.0 mm.), depressed; lateral margins explanate; antennae slender, at least ½ body length; front oblique; eyes often large, closely set (interocular space usually less than ½ width of head); interocular depression distinct ..... *Capraita* (p. 135)
7. Apical spur of posterior tibiae terminating in single point 8
   Apical spur of posterior tibiae distally bifurcate or broadly truncate ..... *Dibolia* (p. 176)
8. Antennae 11-segmented 9

Antennae 10-segmented ..... *Psylliodes* (p. 177)

9. Tarsal claws simple or appendiculate 10
Tarsal claws bifid ..... *Blepharida* (p. 124)

10. Pronotum with prebasal transverse impression, or with short, paired, latero-basal, longitudinal impressions, or with both transverse and longitudinal impressions 11
Pronotum lacking distinct impressions 22

11. Elytral punctation confused 12
Elytra regularly punctate-striate 15

12. Prebasal transverse pronotal impression not laterally delimited by longitudinal furrows 13
Prebasal transverse pronotal impression interrupted by longitudinal lateral impressions running to base ..... *Monomacra* (p. 153)

13. Color dark, usually metallic; green, blue, purple, bronze, or brown-blue 14
Color deep red or orange-brown with antennae, scutellum, legs and venter usually black or dark brown ..... *Strabala* (p. 153)

14. Prebasal pronotal impression consisting of a pair of distinctly impressed lateral arches; setae of anterior pronotal angles placed somewhat caudad of angle ..... *Syphraea* (p. 152)
Prebasal pronotal impression a single weakly impressed, continuous transverse arch; setae of anterior pronotal angles placed in the angle ..... *Altica* (p. 147)

15. Procoxal cavities closed 16
Procoxal cavities open ..... *Hornaltica* (p. 154)

16. Elytra pubescent 17
Elytra glabrous (apical margin occasionally with a few setae) 18

17. Prebasal transverse pronotal impression laterally interrupted by short longitudinal impressions; on Solanaceae ..... *Epithrix* (p. 156)
Prebasal transverse pronotal impression not laterally interrupted by short longitudinal impressions; on *Rhus* sp. ..... *Orthaltica* (p. 158)

18. Pronotum with prebasal transverse impression 19
Pronotum lacking prebasal transverse impression but having pair of short, lateral, basal longitudinal sulci ..... *Mantura* (p. 160)

19. Prebasal transverse pronotal impression laterally interrupted by short longitudinal impressions 20
Prebasal transverse pronotal impression not laterally interrupted by short longitudinal impressions; on *Rhus* sp. ..... *Orthaltica* (p. 158)

20. Elytra glabrous 21
Elytra pubescent ..... *Epithrix* (p. 156)

21. Color shining black or dull yellow-brown without metallic luster ..... *Epithrix* (p. 156)
Color metallic green, blue, purple, bronze; or dull yellow-brown with faint green luster along suture near scutellum ..... *Crepidodera* (p. 155)

22. Elytra regularly punctate-striate 23
Elytra impunctate, or very faintly punctate-striate, or with punctures confused 24

23. Middle and posterior tibiae with corbel ..... *Chaetocnema* (p. 161)
Middle and posterior tibiae without corbels ..... *Glyptina* (p. 174)

24. Anterior coxal cavities open 25
Anterior coxal cavities closed ..... *Systena* (p. 165)

25. Basal posterior tarsal segment shorter than ½ length of hind tibia 26
Basal posterior tarsal segment long (greater than ½ length of hind tibia) ..... *Longitarsus* (p. 168)

26. Longer than 3 mm. 27
Shorter than 3 mm. 29

27. Frons with prominent calli surmounted by distinct sulci, frons unevenly punctate; pronotum pale or dark; elytra not vittate 28
Frontal calli reduced, lacking distinct superior sulci, frons usually evenly punctate; pronotum completely dark; elytra entirely dark, or each with sinuous vitta, or vittae reduced to 2 spots ..... *Phyllotreta* (p. 170)

28. Elytra impunctate to vaguely punctate-striate; frontal calli small, separated by faint line ..... *Aphthona* (p. 176)
Elytra irregularly punctate, frontal calli separated by distinct impression ..... *Palaeothona* (p. 173)

29. Elytra not vittate 30
Elytra vittate ..... *Disonycha* (p. 139)

30. Color not red or orange-brown (if pale in this manner than appendages and scutellum also pale) 31
Color deep red or orange-brown with antennae, scutellum, legs and venter usually dark ..... *Strabala* (p. 153)

31. Anterior tibiae without apical spurs 33
Anterior tibiae with apical spur 32

32. Prebasal pronotal impression consisting of a pair of distinctly impressed lateral arches; setae of anterior pronotal angles placed somewhat caudad of angle ..... *Syphraea* (p. 152)
Prebasal pronotal impression of a single weakly impressed, continuous transverse arch; setae of anterior pronotal angles placed in the angle ..... *Altica* (p. 147)

33. Pronotum widest at middle, mesosternum truncate at apex between middle coxae ..... *Luperaltica* (p. 159)
Pronotum usually widest at base, mesosternum emarginate at apex between middle coxae ..... *Disonycha* (p. 139)

Genus *Blepharida* Chevrolat

Blepharida Chevrolat, 1837, *in* Dejean, Cat. Coleopt. l. 5., 2nd ed., p. 394.

Broadly oval, convex. Head rather deeply inserted into prothorax. Anten-

nal insertions widely separated, 11th segment with small movable 12th segment. Procoxal cavities closed behind. Last tarsal segment of hind tarsi not globosely inflated. Tarsal claws bifid.

Only the following species occurs in North America.

Blepharida rhois (Forester)

Fig. 27

Chrysomela rhois Forester, 1771, Nov. Spec. Ins., p. 21.
Chrysomela stalida Fabricius, 1775, Syst. Entomol., p. 98.
Chrysomela meticulosa Olivier, 1807, Entomol. Colept. 5, p. 531.
Blepharida atripennis Horn, 1895, Proc. Calif. Acad. Sci., 6: 249.
Blepharida dorothea Mignot, 1971, Coleopt. Bull. 25: 13. **New synonymy.**

Oval, quite convex. Head and prothorax yellow. Elytra regularly striate-punctate, red-brown mottled with yellow. Length 6.3-7.7 mm. Width 3.9-4.9 mm.

Alabama records: 13 specimens from Lee[1], Madison[1], and Mobile[1,2] counties.

Seasonal distribution: April 11-July 1.

Remarks: These beetles occur on *Rhus* spp. We disagree with Mignot's *(78)* conclusion that the mottled forms of North American *Blepharida* are a species distinct from the more vittate individuals. Instead we consider the variation observed in several characters to be intraspecific, although somewhat geographically delineated. Our study of South Dakota *Blepharida* specimens substantiates this conclusion.

Genus *Pachyonychus* Melsheimer

Pachyonychus Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 158-181. Type-species: *Pachynoychus paradoxus* Melsheimer.

Elongate. Head broad, oval, not deeply inserted into prothorax. Maxillary palpi stout, robust. Prothorax with basal transverse impression. Procoxal cavities closed behind. Posterior tibiae longitudinally bicarinate, with single apical spur. Last segment of posterior tarsi globosely inflated.

Only one species occurs in North America.

Pachyonychus paradoxus Melsheimer

Pachyonychus paradoxus Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 163.

Elongate. Head, prothorax, and venter yellow or red-yellow. Elytra striate-punctate, black or brown with suture broadly yellow or red-yellow. Length 3.5-4.4 mm. Width 1.8-2.1 mm.

Alabama records: 6 specimens from Lee[1], Macon[1], Marion[1], and Winston[2] counties.

Seasonal distribution: April 13-June 17.

Remarks: This species has been collected by beating *Smilax* sp.

Genus *Distigmoptera* Blake

Distigmoptera Blake, 1943, Proc. Entomol. Soc. Wash. 45: 209. Type-species: *Distigmoptera apicalis* Blake.

Conspicuously pubescent. Head and thorax coarsely punctate. Elytra coarsely striate-punctate with distinct depressions. Procoxal cavities closed. Apical segments of posterior tarsi globosely swollen.

Balsbaugh *(4)* described a new species of *Distigmoptera* from South Carolina, which conceivably could occur also in Alabama.

Key to the Alabama Species of *Distigmoptera*

1. Larger beetles (3.9-4.0 mm. long); both sexes fully winged ..... *D. pilosa* (p. 126)

   Smaller beetles (2.5 mm. long); males wingless or brachypterous ..... *D. impennata* (p. 126)

Distigmoptera pilosa (Illiger)

Fig. 28

Haltica pilosa Illiger, 1807, Mag. Insektenk. 6: 105.

Elongate, pubescent. Head with clypeus elongate, narrowed between antennal insertions, black, coarsely punctate; antennal segments 1-6 fulvous, 7-11 dark brown. Elytra dark brown, coarsely punctate, punctures tending to be in striae but confused somewhat just before the large midelytral foveae; pubescense consisting of both fine recumbent and erect setae. Length 3.9-4.0 mm. Width 1.8-1.9 mm.

Alabama records: 3 specimens from Etowah[2] and Mobile[2,3] counties.

Seasonal distribution: April 20-June 3.

Distigmoptera impennata Blake*

Distigmoptera impennata Blake, 1943, Proc. Entomol. Soc. Wash. 45: 216.

Oval, pubescent. Head dark brown, shining, impunctate on medial portion of frons but coarsely punctate nearer eyes, each puncture bearing an erect seta; with deep depression between frontal tubercles. Pronotum uneven, coarsely punctate, pubescent with long setae, shining between punctures. Elytra brown, the humeri yellow-brown; striate-punctate with large punctures; discal depression slightly beyond basal ⅓ behind the prominent mid-basal callosities; pubescense erect. Males wingless or brachypterous. Length 2.5 mm. Width 1.4 mm.

Alabama records: 1 specimen from Mobile[2] County.

Seasonal distribution: July 2.

Genus *Pseudolampsis* Horn

Pseudolampsis Horn, 1889, Trans. Amer. Entomol. Soc. 16: 174. Type-species: *Hypolampsis quattata* LeConte.

Clypeus elongate, truncate. Thorax much narrower than elytra. Pubescent, punctate-striate. Procoxal cavities open behind. Posterior tibiae not sulcate, with small spur. Last segment of hind tarsi globosely inflated, tarsal claws bifid.

Pseudolampsis guttata (LeConte)

Fig. 29

Hypolampsis guttatus LeConte, 1884, Trans. Amer. Entomol. Soc. 12: 29.
Distigmoptera darwini Scherer, 1964, Entomol. Arb. Mus. Frey 15(1): 297.

Robust. Head red-brown, clypeus elongate, narrowed at base of antennae. Prothorax subquadrate, shining dark brown, punctate, pubescent, angles with long setae. Elytra nearly twice as wide as pronotum at base, striate-punctate, umbones and basal callosities dark brown with disc medially lighter brown, moderately pubescent with yellow-green vestiture. Length 2.5. Width 1.3 mm.

Alabama records: 2 specimens from Mobile[2,3] County.

Seasonal distribution: June-July.

Remarks: Balsbaugh *(4,5)* gives additional distribution records of this species, extending its range east to South Carolina and south to Brazil and Uruguay.

Genus *Pachyonychis* Clark

Pachyonychis Clark, 1860, Cat. Halticidae in Brit. Mus. pt. I.: 61, 290.
Type-species: *Pachyonychis paradoxus* Clark.
Hamletia Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 56, 59.
Type-species: *Hamletia dimidiaticornis* Crotch.

Head not deeply inserted into prothorax. Prothorax slightly wider at base than long. Procoxal cavities open behind. Posterior tibiae sulcate externally, and with small tooth before apical corbel, apex with curved spur. Pro and mesotarsal claws appendiculate, posterior tarsi with last segment globose, claws simple.

The genus is monotypic. Mignot *(77)* discussed nomenclatural confusion concerning the generic name.

Pachyonychis paradoxus Clark

Pachyonychis paradoxus Clark, 1860, Cat. of the Halticidae in the coll. of the British Mus. I., p. 63.
Hamletia dimidiaticornis Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 58.

Elongate, oval. Head and prothorax shining black, with faint mahogany brown indications, especially brown spot on frons immediately above frontal tubercles. Pronotum finely alutaceous, faintly punctate. Antennae with basal 3 segments fulvous, segments 4-9 dark brown to black, segments 10-11

white-yellow. Elytra green-brown; closely, irregularly punctate. Legs and last 2 abdominal segments yellow. Length 5.3 mm. Width 2.5 mm.

Alabama records: 1 specimen from Mobile[2,3] County.

Seasonal distribution: October 20.

Remarks: V. M. Kirk collected 2 of these beetles, which the senior author identified, in bogs in South Carolina.

Genus *Kuschelina* Bechyné

Kuschelina Bechyné, 1955, Bull. Inst. Roy. Sci. Nat Belgique 31(19): 110.

Medium (4.0-8.0 mm long), convex species. Antennae moderately stout, usually less than ½ body length. Frons wide with at least ½ head's width between eyes. Lateral margins narrow or lacking. Prothorax nearly as wide as elytra. Elytra often vittate; confusedly punctate or smooth and glabrous. Anterior coxal cavities open behind. Posterior tarsi with basal segment short and apical segment globosely inflated.

The North American species of *Kuschelina* were treated by Blake *(15)* in Series A of the genus *Oedionychus* Berthold. Bechyné's (10) interpretation of the genus is followed here. The true *Oedionychus*, he claims, are a few wingless species of the Mediterranean region *(11)*.

Key to the Alabama Species of *Kuschelina*

1. Pronotum yellow or red-brown, sometimes spotted or fasciate, head dark or pale 2
   Pronotum entirely dark, head always dark ..... *K. concinna* (p. 129)
2. Head dark, usually with pale markings on front 3
   Head pale, may have dark markings 6
3. Pronotum fasciate or spotted 4
   Pronotum immaculate, pale yellow ..... *K. interjectionis* (p. 130)
4. Elytra entirely dark 5
   Elytra entirely pale yellow-brown or with vittae ..... *K. fimbriata* (p. 131)
5. Elytra black with blue or green luster, feebly shining; abdomen black with yellow margin ..... *K. vians* (p. 129)
   Elytra very dull black; abdomen yellow with only faint median trace of yellow-brown ..... *K. discicollis* (p. 130)
6. Elytra not vittate 7
   Elytra vittate 9
7. Elytra dull, oblong oval 8
   Elytra brilliantly shining, green, blue, or purple ..... *K. gibbitarsa* (p. 131)
8. Elytra with only margins pale, disc and remainder of elytra completely dark; head yellow ..... *K. thoracica* (p. 130)
   Elytra entirely yellow-brown, or with broad, piceous, median vitta nearly covering each elytron; suture dark; head darker .....

K. fimbriata (p. 131)

9. Elytra with 3 or 5 vittae 10
Elytra with 2 vittae ..... *K. fimbriata* (p. 131)

10. Elytra with 3 vittae or interrupted traces of an additional pair 11
Elytra with 5 vittae (Fig. 30) ..... *K. petaurista* (p. 131)

11. Elytra with paired medial and single sutural vitta "*K. miniata* complex" 12
Elytra with paired submarginal vittae and single sutural vitta, maybe spots or interrupted traces of medial vittae ..... *K. petaurista* (p. 131)

12. Elytral dark vittae not conspicuously narrow, medial usually curving mesad at apex 13
Elytral dark vittae narrow, usually red-brown, medial often interrupted and not curving mesad at apex ..... *K. miniata* (p. 132)

13. Small (4.7-6.7 mm.), elytra more coarsely and densely punctate 14
Large (5.5-8.0 mm.), elytra smooth, shining, faintly and sparsely punctate ..... *K. floridana* (p. 134)

14. Elytral vittae less wide, not as coarsely punctate as *horni*, alutaceous; venter deep brown 15
Elytral vittae wide, deep piceous, coarsely, densely punctate; venter and legs piceous ..... *K. horni* (p. 133)

15. Aedeagus with small fovea on ventral plate near apex 16
Aedeagus without apical, ventral-plate fovea ..... *K. fallax* (p. 133)

16. Elytra with dark vittae wide, sometimes apically confluent, finely, densely, punctate; 3rd and 4th antennal segments subequal; ventral aedeagal fovea deep ..... *K. ulkei* (p. 132)
Elytra with dark vittae not so wide, coarsely punctate; 4th antennal segment longer than 3rd; ventral aedeagal fovea shallow ..... *K. perplexa* (p. 134)

Kuschelina concinna (Fabricius)

Galleruca concinna Fabricius, 1801, Syst. Eleuth. I., p. 499.

Elongate oval. Black, often with green or purple hues, especially the elytra. Venter black, abdomen margined with yellow. Frontal calli distinct on either side of a distinct median depression; frons dark red. Pronotum and elytra strongly alutaceous, pronotum finely punctate, but more coarsely so in the prebasal area. Length 6.0-7.7 mm. Width 2.8-4.0 mm.

Alabama records: 12 specimens from Baldwin[3], Mobile[2], Tuscaloosa[3], and Wilcox[1] counties.

Seasonal distribution: January 20, April-July.

Remarks: Although Loding *(75)* recorded this species from Baldwin and Tuscaloosa counties, specimens from these localities are no longer in his collection.

Kuschelina vians (Illiger)

Haltica vians Illiger, 1807, Mag. Insektenk., 6: 83.
Haltica abdominalis Olivier, 1808, Entomol. . . . Coléoptères 6: 679.

Oedionychis scripticollis LeConte, 1860, Proc. Acad. Nat. Sci. Philadelphia 12: 321.

Oedionychis vians badia Blake, 1927, Proc. U. S. Nat. Mus. 70(23): 14 (var.).

Elongate oval. Black with faint green or purple hues. Frontal calli prominent, frons with red median spot. Pronotum punctate; yellow with broad black fascia. Elytra alutaceous, basomedially punctate. Venter black, abdomen margined with yellow. Length 5.3-6.5 mm. Width 2.6-3.5 mm.

Alabama records: 16 specimens from Cleburne[1], Houston[1], Lee[1], Marion[1], and Mobile[2,3] counties.

Seasonal distribution: January 1-December 30.

Remarks: Loding *(75)* noted that these beetles are "taken year round" in Mobile County. Closer investigations into the biology of this species and *K. concinna* may show that these forms are conspecific. Much of their morphology relates them.

Kuschelina discicollis (Crotch)

Oedionychis vians discicollis Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 61 (var.).

Oblong oval. Dull black, finely reticulate. Frons of head with red median area. Pronotum orange with broad black fascia. Elytra entirely dull, densely, finely punctate. Abdomen yellow, first 2 or 3 segments basally black. Length 8.1-8.9 mm. Width 4.2-4.9 mm.

Alabama records: 3 specimens from Mobile[2,3] County.

Seasonal distribution: April 7-15.

Remarks: This species can usually be distinguished from the similar appearing *K. vians* by its larger size and much duller surface sculpture.

Kuschelina interjectionis (Crotch)

Oedionychis interjectionis Crotch, 1889, Proc. Acad. Nat. Sci. Philadelphia 25: 61.

Oedionychis gracilis Jacoby, 1886, Biol. Ent. Amer., Coleopt. 6(1): 420.

Elongate oblong. Shining, pale yellow. Vertex and occiput shining black. Elytra with irregular black sutural and marginal vittae connecting at apex and occasionally at apical declivity. Length 5.4-6.5 mm. Width 2.5-3.5 mm.

Alabama records: 5 specimens from Mobile[2,3] County.

Seasonal distribution: March-June 4.

Remarks: "Tallow weed *(Euphorbia antisyphilitica)*" was reported by Blake *(15)* as a plant upon which adults and eggs had been taken.

Kuschelina thoracica (Fabricius)

Altica thoracica Fabricius, 1775, Syst. Entomol., p. 821.

Chrysomela flava Gmelin, 1790, Syst. I., pt. 4, p. 1691.

Broadly oblong oval. Head orange, punctate, occiput impunctate and sometimes with black median spot. Prothorax orange, punctate, with 7 usually confluent piceous spots. Elytra black or blue-black, punctate, lateral

margins orange from base to about half. Venter and femora orange, tibiae and tarsi black. Length 6.1-8.4 mm. Width 3.3-4.2 mm.

Alabama records: 16 specimens from Lee[1], Macon[1], and Mobile[2,3] counties.

Seasonal distribution: January 14, April 8-July 16.

Kuschelina fimbriata (Forster)

Chrysomela fimbriata Forster, 1781, Nov. Spec. Ins., p. 25.
Altica suturella Say, 1826, Jour. Acad. Nat. Sci. Philadelphia 5: 299.
Oedionychis circumcincta Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 62.

Elongate. Head alutaceous, coarsely punctate; clypeus yellow, frons and occiput orange varying to black. Pronotum punctate, yellow or orange with 5 brown or black maculae, frequently lateral pairs confluent or occasionally all 5 spots merging. Scutellum and suture of elytra black, elytra densely punctate and otherwise entirely yellow or yellow with broad medial fasciae and narrow lateral margins black. Venter dark brown-yellow. Length 5.8-8.4 mm. Width 3.2-4.4 mm.

Alabama records: 32 specimens from Lee[1] and Mobile[1,2,3] counties.

Seasonal distribution: March 17-August 18.

Remarks: The lighter non-vittate form is more common among the specimens seen.

Kuschelina gibbitarsa (Say)

Altica gibbitarsa Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 4: 83.

Oval, moderately convex, strongly shining. Head, venter, and prothorax yellow, pronotum with 4 black spots, median 2 confluent as short transverse fascia, lateral 2 sometimes obsolescent. Elytra shining green, closely finely punctate. Length 5.4-6.3 mm. Width 3.2-3.9 mm.

Alabama records: Mobile[2,3] and Tuscaloosa[2] counties.

Seasonal distribution: February 11-June 19.

Remarks: Species of mints have been reported as host for this beetle *(15)*.

Kuschelina petaurista (Fabricius)

Fig. 30

Galleruca petaurista Fabricius, 1801, Syst. Eleuth., I., p. 495.
Oedionychis petaurista brevilineata Horn, Trans. Amer. Entomol. Soc. 16: 186 (var.).
Oedionychis petaurista pallida Blake, 1927, Proc. U. S. Nat. Mus. 70(23): 23 (var.).

Broadly oval. Head red-brown, coarsely punctate, antennae brown-black. Pronotum punctate, yellow with brown or black transverse fascia, posterior margin of which is bisinuate, paralleling base; anterior margin transverse medially and with oblique lateral edges. Elytra yellow, closely punctate, with 5 black vittae, sutural and marginal sometimes connected at apex. Length 6.3-8.8 mm. Width 3.7-5.3 mm.

Alabama records: 23 specimens from Baldwin[1], Choctaw[1], Jefferson[2], Lawrence[1], Lee[1], Macon[1], Mobile[2], Tallapoosa[1], and Winston[1] counties.

Seasonal distribution: March 28-August 1.

Remarks: Loding's collection contains 4 specimens which have pronotal and elytral markings of a variety noted by Blake *(15)* for specimens from Texas and Oklahoma. Perhaps this form represents an undescribed subspecies. In it the posterior oblique margins of the pronotal spots converge and the medial elytral fascia are either absent or obsolescent.

Kuschelina miniata (Fabricius)

Galleruca miniata Fabricius, 1801, Syst. Eleuth. I., p. 495.
Oedionychis jocosa Harold, 1876, Col. Heft., 15: 124.

Oblong oval. Head red-brown, alutaceous, coarsely punctate; antennae with 3rd segment shorter than 4th. Pronotum alutaceous, moderately closely finely punctate; pale dirty yellow with an irregular brown fascia. Elytra evenly, but not strongly convex; moderately shining, closely punctate; dirty yellow-brown with dark red-brown narrow sutural and median vittae, median vittae not greatly curving mesad at apex, sutural vittae usually very narrow or even obsolete. Venter dark red-brown. Aedeagus 1.7 mm., its proximal end asymetrical, ejaculatory guide W-shaped, medial section of this plate narrow, lateral plates very gradually tapering distad, ventral plate evenly convex at apex, without fovea. Length 4.7-6.0 mm. Width 2.8-3.9 mm.

Alabama records: 30 specimens from Baldwin[1], Lee[1], and Mobile[2,3] counties.

Seasonal distribution: June 8-September 20.

Remarks: Loding *(75)* collected these beetles on *Hypericum setosum*. The senior author collected a series of these beetles in Baldwin County on palmetto, *Sabal* sp.

This species is one of a complex in which the component units are among the most difficult to determine of the North American chrysomelid fauna. Examination of the aedeagi is probably the most accurate method of identification. Blake *(21)* remarked concerning the recognition of *miniata:* "This is distinguished mainly by the median elytral vitta which is straight, narrow, and not curved at the apex toward the suture as it is in others of the group. Usually the markings are paler also, being reddish brown, and the beetle is smaller and not very convex."

Kuschelina ulkei (Horn)

Oedionychis ulkei Horn, 1889, Trans. Amer. Entomol. Soc. 16: 188.

Oblong oval, convex, shining. Head red-brown, alutaceous, coarsely punctate; antennal 3rd and 4th segments subequal in length. Prothorax feebly alutaceous, yellow with red-brown fascia, finely and moderately densely punctate. Elytra closely punctate, yellow with brown sutural and medial vittae wider than lighter vittae. Venter and legs dark red-brown. Aedeagus 1.6 mm. long, broad with proximal end only very slightly asymmetrical, apex

rather sharply tapered to point, ventral plate with deep fovea. Length 5.3-6.0 mm. Width 3.2-3.5 mm.

Alabama records: 2 specimens from Mobile[2,3] County.

Seasonal distribution: June 12-July 24.

Remarks: Blake *(21)* recorded that Loding took this species from *Hypericum setosum* at Mobile. These specimens were not seen among the Loding collection and may have been retained by Mrs. Blake for the National Collection.

Concerning the recognition of this species, Blake *(21)* said: "The oval convex shape, fine punctation, wide dark elytral vittae, and the subequal 3rd and 4th antennal joints distinguish this species. It seems to be confined to the southeastern states."

Kuschelina horni Harold

Oedionychis horni Harold, 1881, Berliner Entomol. Zeit. p. 142.

Broadly oval, slightly convex, shining, not alutaceous. Head red-brown, coarsely punctate. Pronotum yellow with red-brown fascia, in some beetles this fascia is black medially. Elytra shining, closely, deeply punctate; yellow with wide black sutural and medial vittae, medial vittae meeting sutural at apex in some specimens. Venter and legs deep red-brown to piceous. Aedeagus 1.7 mm. long, much resembling that of *K. miniata,* proximal end subsymmetrical, ejaculatory guide W-shaped, medial section of this plate slightly wider than that of *K. miniata,* lateral plates very gradually tapering distad, ventral plate evenly convex at apex, without fovea. Length 4.9-6.7 mm. Width 3.3-4.2 mm.

Alabama records: 40 specimens from Chambers[3], Cleburne[1], Etowah[3], Madison[1], and Mobile[1,2,3] counties.

Seasonal distribution: April 1-September 22.

Remarks: Specimens from Mobile County collected by Loding bear a label indicating their host as *Dasystoma bignoniiflora.* We have taken a single specimen from *Aureolaria* sp. upon which it may only have been resting. Localities in Etowah and Chambers counties were recorded by Blake *(21),* but material from these places was not seen, it most likely being retained in the USNM.

This species is one of the "*miniata* complex" which needs more investigation before the true relationships between it and its relatives are known. Mrs. Blake *(21)* distinguished *K. horni* as follows: "The coarse, dense punctation and broad dark elytral vittae as well as the flatness of the beetle differentiate this species from the others. In addition, the surface is shining and not at all alutaceous."

Kuschelina fallax (Melsheimer)

Oedionychis fallax Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 162.

Oblong oval, moderately convex. Head shining, red-brown, coarsely punctate. Prothorax light yellow with irregular red-brown fascia, slightly alutaceous, finely punctate; yellow with black sutural and median fascia;

sometimes faint indications of narrow brown fasciae in the yellow vittae (remnants of red stripes of living beetles). Dark vittae usually as wide as or wider than yellow, median turning mesad toward suture at apex. Venter dark red-brown, tibiae and tarsi piceous. Aedeagus 1.8 mm. long, proximal opening to penis narrow on ventral surface, ejaculatory guides deeply, acutely emarginate, ventral plate gradually tapering to short tip, rounded at apex, not foveate. Length 4.9-5.8 mm. Width 2.8-3.2 mm.

Alabama records: 6 specimens from Lee[1] and Mobile[1,2,3] counties.

Seasonal distribution: April 1-October 1.

Remarks: Only males from which the aedeagi were examined were positively identified. Females of this species may be in the Auburn collection but they are not distinguishable from females of the other species of the "*miniata* complex."

Blake *(21)* remarked concerning the recognition of this species: "All have rather convex elytra and remnants of the orange red stripe in the pale vitta. In all, the median dark vitta is as wide if not wider than the pale one, and the elytral punctation is coarse and dense."

Kuschelina perplexa (Blake) *

Oedionychus perplexus Blake, 1952, Proc. Entomol. Soc. Wash. 56:

Oblong oval, shining. Head red-brown; sparsely coarsely punctate. Pronotum shining, finely, sparsely punctate; yellow with irregular red-brown fascia. Elytra shining, closely punctate; yellow with sutural and median vittae, dark median vitta usually not as wide as yellow vitta and yellow sometimes with faint brown indication of red narrow vittae of living specimens. Venter and legs red-brown; tibiae and tarsi darker. Aedeagus 1.8 mm. long, both proximal and distal ends tapering, sides of penis subparallel, ejaculatory guide apically bifurcate, ventral plate shallowly foveate. Length 4.7-5.3 mm. Width 2.8-3.4 mm.

Alabama records: 4 specimens from Dallas[1], Lee[1], Mobile[2], and Tallapoosa[1] counties.

Seasonal distribution: July 10-October.

Remarks: We have been able to identify only males, this species also being a member of the "*miniata* complex."

Mrs. Blake *(21)* remarked of it: "This species has never been recognized as distinct from *miniatus*. It differs from *miniatus* in that the narrow median elytral vitta curves towards the suture at the apex and the aedeagus has a little hollowed out spot on the ventral side and is acutely tipped below."

Kuschelina floridana (Blake) *

Oedionychus floridanus Blake, 1952, Proc. Entomol. Soc. Wash. 56:

Oblong oval, moderately convex. Head mahogany brown, shining, with few deep punctures near eyes. Antennae black, 3rd segment shorter than 4th. Pronotum impunctate, faintly alutaceous, shining, dirty yellow-brown with obscure darker fascia. Elytra dirty yellow with black sutural and median vittae, latter not wider than light vittae, shining, finely to moderately punctate. Venter and legs mahogany brown. Aedeagus 2.5 mm. long; base

asymmetrical, right basal side shorter; ejaculatory guide bifurcate at base, narrow at basal ⅓, then broadening toward apex, apex of guide truncate and ½ wider than base of guide. Length 5.8-7.7 mm. Width 3.9-4.9 mm.

Alabama records: 43 specimens from Mobile[1,2] County.

Seasonal distribution: April 1-August 20.

Remarks: The present study material indicates that *K. weismani* (type locality North Carolina) and *K. floridana* are possibly conspecific. The distal end of the aedeagal ejaculatory guide of Alabama specimens, which we are calling *K. floridana,* is more nearly like that of Florida specimens of *K. floridana,* but the proximal portion of the ejaculatory guide resembles the bifurcate form of those of *K. weismani.* Alabama specimens are likewise intermediate in size and coarseness of punctation between those 2 species. New synonymy is not proposed here but further investigations should be made.

Genus *Capraita* Bechyné

Capraita Bechyné, 1957, Ann. Mus. Civ. Storia Nat. Giacomo Doria 69: 51-74.

Chloephaga Weise, 1899, Deutsche Entomol. Zeitschr. 1899: 138 (not Eyton, 1838).

Small (3.0-6.0 mm.), depressed. Antennae slender, at least ½ body length. Eyes often large and closely set. Lateral margins usually explanate. Prothorax at base nearly as wide as elytra. Elytra confusedly punctate or impunctate and glabrous. Prosternum wide between open anterior coxae, at least ½ coxal width. Apical hind tarsal segment globose, basal joint comparatively short.

In placing the following species in *Capraita,* we are following Bechyné *(11),* who first separated the species of *Oedionychus* Series B *(52)* from the true *Oedionychus* (apterous Mediterranean forms). At the time of this split (1955), these North American species were placed in *Chloephaga* Weise, which name has since been proven to be a junior generic homonym. The new name, *Capraita* Bechyné *(12)* replaced *Chloephaga* Weise.

Key to the Alabama Species of *Capraita*

1. Elytra with inconspicuous umbones and basal callosities; explanate margins narrow 2
   Elytra with distinct umbones and basal callosities; explanate margins wide 3
2. Elytra entirely dark blue-black (Fig. 31) ..... *C. indigoptera* (p. 136)
   Elytra black with margins yellow or yellow with large discal black spot ..... *C. thyamoides* (p. 136)
3. Dorsal profile broadly oval, sides of elytra arcuate 4
   Dorsal profile elongate, sides of elytra subparallel 5
4. Elytra dark brown-black with apex broadly and lateral margins narrowly light yellow-brown ..... *C. saltatra* (p. 137)
   Elytra entirely dark brown-black ..... *C. quercata* (p. 137)

5. Head coarsely punctate 6
   Head faintly punctate, nearly smooth 7
6. Pronotum coarsely punctate, elytra irregularly fasciate and maculate ..... *C. sexmaculata* (p. 137)
   Pronotum impunctate or only with very fine punctures, elytra with red sinuate sutural vitta or rarely entirely red with faint yellow spots ..... *C. suturalis* (p. 137)
7. Elytra with prominent basal callosities; eyes large, interocular space subequal to ⅓ width of head 8
   Elytra lacking basal callosities; flatter, less convex; eyes small, interocular space subequal to ½ width of head ..... *C. circumdata* (p. 138)
8. Small (length 3.5-4.7 mm.), elytral punctation fine 9
   Large (length 4.7-5.6 mm.), elytral punctation coarse ..... *C. scalaris* (p. 139)
9. Pronotum and elytra dark brown or black, lateral margins pale ..... *C. obsidiana obsidiana* (p. 138)
   Pronotum and elytra yellow marked with dark brown or black fasciae and spots, not entirely dark with light margins ..... *C. obsidiana blakeae* (p. 138)

Capraita indigoptera (LeConte)

Fig. 31

Oedionychis indigopthera LeConte, 1878, Proc. Amer. Philos. Soc. 17: 416.

Elongate oval. Head and pronotum red-brown; elytra blue-black. Head alutaceous, finely sparsely punctate. Antennal segments 1 through 4 smoother, dark red-brown, 5 through 11 finely reticulate, black. Pronotum alutaceous, very finely punctate. Elytra alutaceous, densely punctate, not very convex, entirely blue-black; humeri only slightly prominent with slight interhumeral depressions. Length 3.5-4.9 mm. Width 1.9-2.5 mm.

Alabama records: 21 specimens from Lee[1], Macon[1], and Mobile[2,3] counties.

Seasonal distribution: April 7-September 13.

Capraita thyamoides (Crotch) *

Oedionychis thyamoides Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 63.

Oval. Head and prothorax yellow brown, elytra black with yellow margin of variable width. Head alutaceous, relatively coarsely but sparsely punctate. Prothorax alutaceous, finely punctate. Elytra alutaceous, densely, strongly punctate; margin moderately explanate. Length 4.2-4.6 mm. Width 2.3-2.5 mm.

Alabama records: 2 specimens from Marion[1] and Marshall[1] counties.

Seasonal distribution: July 12-28.

Remarks: Blake *(15)* recorded *Teucrium canadense* as host plant.

Capraita saltatra (Blatchley)

Oedionychis saltatra Blatchley, 1923, Canadian Entomol. 55: 32.

Oval. Head and prothorax yellow-brown. Elytra piceous with lateral margins near humeri narrowly yellow and apexes yellow or dirty brown (lighter than disc). Surface shining, not at all or slightly alutaceous. Length 4.2-4.9 mm. Width 2.5-3.0 mm.

Alabama records: 6 specimens from Lee[1], Mobile [2,3], and Russell[1] counties.

Seasonal distribution: January 14, March 16-August 10.

Remarks: These beetles have been taken January 14 under bark (75). It is possible that comparisons of the aedeagi will further indicate the conspecificity of this and *C. quercata* (Fabricius). There are specimens in Loding's collection from Chastang, Mobile County, January 14, which are intermediate between these two species.

Capraita quercata (Fabricius)

Galleruca quercata Fabricius, 1801, Syst. Eleuth. I., p. 495.

Oval. Head and prothorax yellow-brown. Elytra entirely piceous with lateral margins near humeri slightly ferruginous. Surface minutely alutaceous. Length 4.2-5.4 mm. Width 2.5-3.3 mm.

Alabama records: 8 specimens from Baldwin[1] and Mobile[1,2,3] counties.

Seasonal distribution: January 1-July.

Remarks: *Capraita saltatra* may be found to be conspecific with *C. quercata.*

Capraita sexmaculata (Illiger)

Haltica sexmaculata Illiger, 1807, Mag. Insektenk. 6: 104.
Haltica palliata Randall, 1838, Boston Jour. Nat. Hist. 2: 47.
Chloephaga creticus Jacoby, 1886, Entomol. Zeit. 47: 215.

Oblong. Head alutaceous, clypeus and frons yellow-brown, vertex dark brown, punctate with wide punctures. Pronotum strongly alutaceous, coarsely punctate, light yellow to tan laterally and midbasally, remainder of disc with brown to black irregular maculae. Elytra densely, coarsely punctate with submarginal plica; yellow with piceous maculae: humeral spots, basal medial cordate spot, confluent mid- and subapical lateral spots, and elongate broad medial subapical spots, latter occasionally as broad fascia. Length 3.2-4.0 mm. Width 1.8-2.1 mm.

Alabama records: 16 specimens from Baldwin[3], Clay[1], DeKalb[1], Houston[1], Lee[1], Mobile[2,3], and Tallapoosa[1] counties.

Seasonal distribution: January 9, April 25-June 25.

Remarks: *Capraita sexmaculata* has been reported from on *Fraxinus* sp. and *Chionanthus virginica (15).*

Capraita suturalis (Fabricius)

Galleruca suturalis Fabricius, 1801, Syst. Eleuth. I., p. 499.

Oblong oval. Frons and vertex usually red-brown but in some specimens yellow. Pronotum yellow. Elytra yellow (entirely so in some examples), but

usually with midbase, scutellar area, and suture red, or rarely varying to nearly entirely red with only faint subapical yellow spots and lateral margins lighter basally. Length 3.8-4.4 mm. Width 2.1-2.5 mm.

Alabama records: 19 specimens from Baldwin[1] and Mobile[2,3] counties.

Seasonal distribution: March 31-August 27.

Remarks: We have collected this species in Baldwin County both in the day and at night by beating plants of the Family Ericaceae.

Capraita circumdata (Randall)

Haltica circumdata Randall, 1838, Boston Jour. Nat. Hist. 2: 48.

Aedionychis limbalis Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 162.

Oedionychis quercata Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 63 (not Fabricius).

Oblong oval. Head, prothorax, and mesothorax ventrally, yellow-brown; occiput slightly darker. Elytra black, margined with yellow, margin slightly wider at apex, rarely with two small oblique yellow spots at basal ⅓; somewhat shining, sides subparallel, margin explanate; umbone well defined with depression between it and basomedial callosity. Metasternum and abdomen black. Length 3.9-4.9 mm. Width 2.1-2.8 mm.

Alabama records: 80 specimens from DeKalb[1], Etowah[1], Lee[1], Macon[1], Madison[1], Mobile[3], Tallapoosa[1], and Winston[1,2] counties.

Seasonal distribution: March 27-August 3.

Remarks: We have most frequently taken these beetles by beating *Vaccinium* spp.; however, Blake *(15)* has taken them on *Fagus grandifolia, Juglans cinerea, Plantago lanceolata,* and *Verbena urticifolia.* We also collected a single specimen on *Rubus* sp. upon which it may have been only resting.

Capraita obsidiana obsidiana (Fabricius)

Galleruca obsidiana Fabricius, 1801, Syst. Eleuth. I., p. 499.

Oedionychis quercata Horn, 1889, Trans. Amer. Entomol. Soc. 16: 194 (not Fabricius).

Oblong oval. Labrum and clypeus yellow, frons and occiput black, alutaceous, punctate. Pronotum alutaceous, finely punctate, lateral margins yellow. Elytra black, basally alutaceous, punctate; lateral margins yellow to basal ⅓, apexes yellow forming an arcuate emargination into black color of disc. Length 3.5-4.2 mm. Width 2.0-2.5 mm.

Alabama records: 24 specimens from Barbour[2], Houston[1], and Mobile[3] counties.

Seasonal distribution: April 25-August 10.

Remarks: Nearly all of the Houston County specimens were taken by beating *Vaccinium* sp.

Capraita obsidiana blakeae (Leng and Mutchler)

Oedionychis obsidiana flava Blake, 1927, Proc. U. S. Nat. Mus. 70(23): 40 (var.) (not Gmelin).

Oedionychis obsidiana blakeae Leng and Mutchler, 1933, 2nd & 3rd Supp. to Cat. of Coleopt. of America N. of Mexico, p. 45.

Oblong oval. Labrum and clypeus yellow, frons and occiput dark brown to piceous, alutaceous, punctate. Pronotum alutaceous, very finely punctulate, yellow with two brown discal spots, spots frequently confluent. Elytra yellow, punctate with black maculae of various configurations; sometimes basal or subapical fasciae, or lateral spots joined in tandem. Length 3.9-4.7 mm. Width 1.9-2.5 mm.

Alabama records: 44 specimens from Baldwin[1], Barbour[2], Clay[1], Lee[1], Lowndes[1], Macon[1], Marengo[1], Mobile[2], and Talladega[1] counties.

Seasonal distribution: March 27-August 27.

Remarks: This subspecies has also been collected on *Vaccinium* sp. Specimens intermediate between the lighter forms of *C. obsidiana blakeae* and the nominate subspecies have been collected in Baldwin County.

Capraita scalaris (Melsheimer)

Oedionychis scalaris Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 163.

Oedionychis lobata LeConte, 1859, Coleopt. Kans., p. 24.

Broadly oblong oval. Head yellow, sometimes with brown spot on occiput, eyes large and closely set. Pronotum 2½ times as wide as long, yellow, with broad explanate margin. Elytra shining, rather strongly, closely punctate; umbones distinct with depression between them and basomedial callosities; yellow with black markings: usually suture irregularly vittate to apical declivity, often with postbasal, midelytral, and preapical fasciae. Length 4.7-5.6 mm. Width 2.5-2.8 mm.

Alabama records: 5 specimens from Lee[1], Macon[1], and Mobile[2] counties.

Remarks: Blatchley, according to Blake *(15)*, collected this species in Florida on ericaceous plants. Since there is some difficulty encountered in separating specimens of this species from those of *C. obsidiana blakeae*, aedeagi were extracted and compared. The results of the comparison indicated the specific distinctness of these forms. "It is to be separated from the banded forms of *obsidiana* var. *flava* (synonym of *blakeae* L. & M.) by its relatively larger size and coarser punctation" *(15)*.

Genus *Disonycha* Chevrolat

Disonycha Chevrolat, 1837, *in* Dejean, Cat. Coleopt. p. 414. Type-species: *Crioceris collata* Fabricius.

Glabrous. Head with rather distinct clypeal carina. Prothorax without subbasal transverse impressions; hind angles obliquely truncate. Procoxal cavities open behind. Posterior tibiae with short apical spur; not deeply grooved. Posterior tarsi with 1st segment subequal to twice length of 2nd; apical segments not globose. Tarsal claws divaricate, appendiculate.

The genus is one of loose definition because of few outstanding characters *(17)*. Certain species of *Altica* with no pronotal basal impressions can be confused with *Disonycha*.

Key to the Alabama Species of *Disonycha*

1. Elytra entirely unicolorous, margins concolorous with disc 2
   Elytra bicolored 5
2. Dorsum bicolored, elytra black, blue or green and pronotum yellow, with or without spots 3
   Dorsum unicolorous, either entirely black in relatively fresh specimens, or fusco-testaceous in old, faded museum specimens ..... *D. funera* (p. 146)
3. Head entirely dark 4
   Head bicolored ..... *D. collata* (p. 145)
4. Head coarsely, densely punctate, legs entirely dark ..... *D. triangularis* (p. 146)
   Head smooth, or sparsely punctate on occiput and frons, legs dark but femora pale at base ..... *D. xanthomelas* (p. 146)
5. Elytra either vittate or black, with broad or narrow margins always pale 6
   Elytra vittate with dark lateral margins ..... *D. glabrata* (p. 145)
6. Elytra not vittate 7
   Elytra vittate 8
7. Elytra black with narrow yellow margins (dark form) ..... *D. arizonae* (p. 142)
   Elytra pale with broad discal dark spot ..... *D. discoidea discoidea* (p. 143)
8. Elytra with 3 vittae 9
   Elytra with 5 vittae 10
9. Elytra distinctly punctate ..... *D. discoidea abbreviata* (p. 144)
   Elytra very indistinctly punctate ..... *D. leptolineata* (p. 144)
10. Head partly or entirely dark 11
    Head entirely pale (sometimes tip of mandibles, darkened) ..... *D. caroliniana* (p. 143)
11. Head not entirely dark 12
    Head entirely dark except antennal sockets ..... *D. pensylvanica* (p. 141)
12. Pronotum uneven, with lateral callosities, elytra of females costate 13
    Pronotum evenly convex, without depressions or callosities, elytra of females not costate 14
13. Head densely and usually rugosely punctate, with at most a narrow dark occipital band or spot, not extending to tubercles ..... *D. alternata* (p. 142)
    Head not densely or rugosely punctate, with broad dark occipital band extending to and often covering the frontal tubercles ..... *D. procera* (p. 141)

14. Median elytral vitta not nearer to submarginal vitta than to sutural vitta 15

Median elytral vitta conspicuously near submarginal vitta ..... *D. alabamae* (p. 144)

15. Pronotum smooth, shining, not or very minutely alutaceous, elytra finely to indistinctly punctate 16

Pronotum distinctly alutaeceous; elytra densely punctate ..... *D. arizonae* (p. 142)

16. Smaller (5.1-7.0 mm.), oval or oblong oval; pronotum immaculate, rarely with 2 small brown spots 17

Larger (6.0-7.7 mm.), broadly oval; pronotum with 2 apical median brown or black spots and sometimes faint brown indications of lateral spots ..... *D. fumata lodingi* (p. 143)

17. Pronotum less convex; scutellum pale; median vittae broader than sutural and submarginal and usually short, ending at apical declivity ..... *D. balsbaughi* (p. 145)

Pronotum convex; scutellum dark; median vittae not noticeably broader than others, extending beyond apical declivity (Fig. 32) ..... *D. admirabilis* (p. 144)

Disonycha pensylvanica (Illiger)

Haltica pensylvanica Illiger, 1807, Mag. Insektenk. 6: 146.
?Galleruca sexlineata Olivier, 1808, Entomol. 6: 642.
Disonycha pennsylvanica parva Blatchley, 1922, Jour. N. Y. Entomol. Soc. 29: 16 (var.).

Elongate. Head black with yellow ring around antennal insertions. Prothorax yellow with black pronotal discal spot. Elytra yellow with broad sutural, medial, and submarginal vittae; epiplurae black on mesal margin; elytra costate in females. Venter black with apical abdominal segment yellow; legs black. Length 5.1-6.5 mm. Width 2.5-3.0 mm.

Alabama records: 18 specimens from Dallas[1], Houston[1], Lee[1], Macon[1], and Mobile[2,3] counties.

Seasonal distribution: March 29-August 28.

Remarks: *Disonycha pensylvanica* has been collected on *Polygonum* sp. *(17)*. Our specimens for the most part were collected from aquatic habitats. One specimen was taken at light.

Disonycha procera Casey*

?Haltica vicina Kirby, 1837, Fauna Boreali Amer. 4: 217.
?Disonycha limbicollis pallipes Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 64 (var.).
Disonycha procera Casey, 1884, Contributions, pt. 2, p. 182.
Disonycha pennsylvania Horn, 1889, Trans. Amer. Entomol. Soc. 16: 202.
Disonycha pallipes Blake, 1930, Bull. Brooklyn Entomol. Soc. 25: 212.
Disonycha nigriventris Schaeffer, 1931, Jour. N. Y. Entomol. Soc. 39: 282.

Elongate. Head black, clypeus yellow. Prothorax yellow with pronotum having triangular black medial discal spot and occasionally brown lateral callosities. Elytra rather strongly punctate, yellow with black sutural, medial, and submarginal vittae, costate in females; mesal edge of epipleurae black. Margins of abdomen and legs yellow. Length 6.5-6.7 mm. Width 2.8-3.9 mm.

Alabama records: 3 specimens from Dallas[1], and Mobile[2] counties.

Seasonal distribution: June 14.

Remarks: *Disonycha procera* is reported to have fed on *Polygonum* sp. *(17)*.

Disonycha alternata (Illiger)

Fig. 10

Haltica alternata Illiger, 1807, Mag. Insektenk. 6: 144.
?Altica quinquevittata Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 4: 88.
Disonycha alternata Strum, 1843, Cat., p. 283.
Disonycha quinquevittata Horn, 1889, Trans. Amer. Entomol. Soc. 16: 203.
Disonycha quinquevittata punctigera Schaeffer, 1931, Jour. N. Y. Entomol. Soc. 39: 279 (var.).

Oblong oval. Head yellow or red-yellow, labrum and occiput dark brown or black; frons with deep medial fovea, vertex coarsely punctate. Pronotum yellow with lateral callosities usually red-brown and 2 medial discal black spots. Elytra yellow with sutural, medial, and submarginal black vittae. Apexes of tibiae and tarsi black. Length 7.9-9.1 mm. Width 3.3-4.6 mm.

Alabama records: 79 specimens from Clarke[1,2], Escambia[1], Lee[1], Macon[1], Mobile[2], Monroe[1], and Tuscaloosa[2] counties.

Seasonal distribution: May 5-August 5.

Remarks: This species feeds on *Salix* sp. An interesting observation of apparent mimicry was noted when a single ground beetle, *Lebia vittata* (Fabricius), a predator of chrysomelids, was taken along with large numbers of *D. alternata* in Macon County (see also Balsbaugh *(3)*).

Disonycha arizonae Casey*

Disonycha arizonae Casey, 1884, Contributions, pt. 1, p. 52.
Disonycha glabrata Jacoby, 1884, Biol. Centr. Amer. 6(1): 311.
Disonycha davisi Schaeffer, 1924, Jour. N. Y. Entomol. Soc.

Oval. Head yellow, labrum light brown to black. Pronotum yellow (red in fresher specimens), alutaceous, strongly punctate, with 2 black discal spots. Elytra strongly punctate, yellow with sutural, medial, and submarginal vittae or entirely black with narrow yellow margin. Length 6.0-7.4 mm. Width 3.2-3.8 mm.

Alabama records: 8 specimens from Clay[1], Lee[1], Macon[1], Marion[1], and Tallapoosa[1] counties.

Seasonal distribution: April 13.

Remarks: Two specimens of the dark form, which was first observed by Blake *(20)*, were among the above specimens from Marion County.

Disonycha caroliniana (Fabricius)

Crioceris caroliniana Fabricius, 1775, Syst. Entomol. p. 122.
?Cistela svittata Fabricius, 1792, Entomol. Syst. pt. 2, p. 47.
?Cistela vittata Fabricius, 1801, Syst. Eleuth. I, p. 491.
Disonycha pulchra Casey, 1884, Contributions I., p. 51.

Oval. Head entirely pale yellow, vertex and frons smooth, shining tubercles not prominent. Pronotum evenly convex, smooth shining, yellow with 2 discal black spots. Elytra very finely alutaceous, shining, yellow with black sutural, medial, and submarginal vittae. Venter pale; tibiae and tarsi dark brown or black. Length 5.3-7.7 mm. Width 2.8-4.2 mm.

Alabama records: 14 specimens from Covington[1], Lee[1], Macon[1], Marion[1], and Mobile[2] counties.

Seasonal distribution: April 7-September 13.

Remarks: John Durant collected a series of 3 beetles in Macon County on *Pinus taeda*. This is perhaps the first recorded host species of this beetle.

Disonycha fumata lodingi Schaeffer

Disonycha lodingi Schaeffer, 1919, Jour. N. Y. Entomol. Soc. 27: 337.

Broadly oval. Head yellow, labrum black; antennae long (to at least ½ body length). Pronotum evenly convex, shining yellow with 2 black discal spots. Elytra yellow with black sutural, medial, and submarginal vittae. Venter and femora red-yellow, tibiae and tarsi black; apical tarsal segment and claws brown. Length 6.0-7.7 mm. Width 3.5-4.6 mm.

Alabama records: 11 specimens from Mobile[1,2,3] County.

Seasonal distribution: April 1-September 26.

Remarks: Beetles of this species have been collected in saline marshes *(75)* at Delchamps, the type locality of the subspecies. This subspecies can be distinguished from *D. caroliniana* by its dark labrum and longer antennae.

Disonycha discoidea discoidea (Fabricius)

Galleruca discoides Fabricius, 1792, Entomol. Syst. I., p. 25.
Disonycha nigridorsis Sturns, 1876, Cat., *in* Gemminger and Harold, Cat. Coleopt., p. 3497.

Oval. Head shining, yellow, labrum usually yellow but occasionally brown. Pronotum entirely yellow. Elytra broadly ovate, yellow with black discal spot leaving broad yellow margin; humeri black in 1 specimen. Length 7.0-8.2 mm. Width 4.0-4.6 mm.

Alabama records: 14 specimens from Chambers[3], Cleburne[1], Colbert[3], Lee[1], Macon[1], Madison[1], and Tuscaloosa[2] counties.

Seasonal distribution: April 16-September.

Remarks: These beetles feed on *Passiflora lutea (17)* and *P. incarnata* (G. W. Folkerts, personal communication). Chambers and Colbert county records are from Blake *(17)*.

Disonycha discoidea abbreviata Melsheimer*

Disonycha abbreviata Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 163.

Oval. Head orange-yellow, tips of mandibles brown. Pronotum shining orange-yellow. Scutellum yellow. Elytra yellow with black sutural and medial vittae, margins broadly orange-yellow. (In older pinned specimens, elytral margins, pronotum and head yellow.) Outer edge of tibiae and tarsi black. Length 6.3 mm. Width 3.3 mm.

Alabama records: 7 specimens from Cleburne[1] and Macon[1] counties.

Seasonal distribution: March 29-May 16.

Disonycha leptolineata Blatchley

Disonycha abbreviata leptolineata Blatchley, 1917, Canadian Entomol. 40: 143 (var.).

Oblong oval. Head entirely yellow. Pronotum yellow, finely alutaceous and minutely punctate. Elytra yellow with black sutural and median vittae, submarginal area translucent as if indicating red hues of fresher specimens. Tarsi and tibiae on outer surface brown. Length 6.5 mm. Width 3.3 mm.

Alabama records: 2 specimens from Lee[1] and Mobile[3] counties.

Seasonal distribution: July 12.

Remarks: The variety *texana* Schaeffer was recorded from Mobile County by Loding *(75);* however, no specimens of this form were found in his collection.

Disonycha alabamae Schaeffer

Disonycha alabamae Schaeffer, 1919, Jour. N. Y. Entomol. Soc. 27: 337.

Oblong oval. Head yellow, labrum brown. Prothorax alutaceous, finely punctate. Scutellum black. Elytra yellow with black sutural, median, and narrow submarginal vittae; median vittae situated much nearer submarginal than sutural, only narrow vitta of yellow between these. Length 5.8 mm. Width 3.2 mm.

Alabama records: 2 specimens from Mobile[2,3] and Randolph[1] counties.

Remarks: This is apparently a rare species, known only from the type locality, Citronelle, Alabama, Randolph County, Alabama, Columbus, Texas, and recently from Long Island, New York, the latter in the V. M. Kirk Collection. G. W. Folkerts collected the Randolph County specimen on *Talinum teretifolium.*

Disonycha admirabilis Blatchley*

Fig. 32

Disonycha admirabilis Blatchley, 1924, Jour. N. Y. Entomol. Soc. 32: 90.

Oval. Head yellow, labrum brown. Pronotum shining, smooth or extremely finely alutaceous, or faintly punctate, entirely yellow or rarely with 2 brown discal spots. Elytra yellow with sutural, medial, and submarginal vittae. Tibiae and tarsi brown. Length 5.1-6.7 mm. Width 2.5-3.3 mm.

Alabama records: 63 specimens from Clay[1], Cleburne[1], Etowah[1], Houston[1], Jackson[1], Lee[1], Macon[1], Mobile [1,2], Tallapoosa[1], Wilcox[1], and Winston[1] counties.

Seasonal distribution: April 1-November 27.

Remarks: Although one of the most commonly collected species of *Disonycha, D. admirabilis* had not previously been recorded from Alabama. *Cassia* sp., a "wild legume," and *Polygonum* sp. are the noted host plants *(17).*

Disonycha balsbaughi Blake

Disonycha balsbaughi Blake, 1970, Proc. Entomol. Soc. Wash. 72: 320.

Oblong oval. Head pale yellow except for brown mouth parts. Pronotum not very convex, smooth, shining, nearly impunctate, and entirely pale. Elytra yellow with medial vittae broader than others and frequently reaching only to apical declivity. Apical half of tibiae and tarsi dark. Length 5.5-7.0 mm. Width 3.0-3.5 mm.

Alabama records: 4 specimens from Jackson[3] and Winston[3] counties.

Seasonal distribution: June 17-19.

Remarks: These 4 unusual specimens were discovered in Loding's collection and were sent to Mrs. Doris H. Blake at the Smithsonian Institution who confirmed our opinion that they were new *(26).*

Disonycha glabrata (Fabricius)

Crioceris tomentosa Fabricius, 1775, Syst. Entomol., p. 122 (not Linnaeus).
Crioceris glabrata Fabricius, 1781, Spec. Insectorum, I., p. 156.
Altica vittata Olivier, 1789, Encycl. Meth. IV., p. 105.
Altica alternata Latreille, 1833, *in* Voy. Humboldt, Zool. II., p. 39.
Disonycha horticola Chevrolat, 1837, *in* Dejean Cat.
Disonycha albicollis Sturns, Cat., p. 283.

Elongate. Head yellow, labrum, frons, vertex, and occiput black. Pronotum shining yellow with single median or 3 discal black spots. Elytra yellow with wide black sutural, median, and marginal vittae (margin itself, black). Venter yellow or brown, except metasternum black; legs black or brown or yellow with apexes of tibiae, knees, and dorsal surface of femoral apexes dark brown or black. Length 5.4-6.5 mm. Width 2.8-3.4 mm.

Alabama records: 149 specimens from Baldwin[1], Butler[1], Colbert[1], DeKalb[1], Elmore[1], Houston[1], Lee[1], Limestone[1], Macon[1], Marengo[1], Marshall[1], Mobile [1,2,3], Talladega[1], Tallapoosa[1], Wilcox[1], and Winston[1] counties.

Seasonal distribution: March 19-September 6.

Remarks: This very common flea beetle feeds normally on *Amaranthus spinosus,* but it was also collected by sweeping *Salix* sp. and *Trifolium incarnatum.*

Disonycha collata (Fabricius)

Crioceris collata Fabricius, 1801, Syst. Eleuth. I., p. 463.
?Disonycha collaris Dejean, 1837, Cat. p. 414.
Disonycha mellicollis Horn, 1889, Trans. Amer. Entomol. Soc. 16: 211.

Oval. Head with vertex and frons shining metallic green or blue; clypeus yellow; labrum brown. Prothorax and femora yellow. Elytra shining metallic blue or green. Abdomen yellow laterally, darker brown to black medially. Tarsi, and tibiae apically, black. Length 4.6-5.3 mm. Width 2.3-3.0 mm.

Alabama records: 21 specimens from Lee[1] and Mobile[1,2] counties.

Seasonal distribution: January 3-July 2.

Remarks: This flea-beetle feeds on *Portulaca* sp., *Amaranthus* sp., spinach *(Atriplex oleracea)*, beet *(Beta vulgaris)*, chickweed *(Stellaria* spp.), and lettuce *(Latuca* sp.) *(17)*.

Disonycha xanthomelas (Dalman)

Haltica collaris Illiger, 1807, Mag. Insektenk. 6: 126.
Haltica xanthomelas Dalman, 1823, Analecta Entomol., p. 79.
Disonycha xanthomelaena Gemminger and Harold, 1889, Cat. Coleopt. p. 3497.
Disonycha merdivora Melsheimer, 1853, Cat., p. 122.

Elongate oval. Head shining black. Prothorax yellow. Elytra punctate, shining black with faint green hint. Prosternum and abdomen yellow ventrally; meso and metathorax ventrally black. Legs black, bases of femora yellow. Length 4.9-6.5 mm. Width 2.5-3.9 mm.

Alabama records: 8 specimens from Henry[1], Lee[1], and Mobile[2] counties.

Seasonal distribution: May 5-July 2.

Remarks: This is commonly called the spinach flea beetle. Chickweed *(Stellaria media)*, *Chenopodium album*, *Amaranthus spinosus*, spinach *(Atriplex oleracea)*, and beet *(Beta vulgaris)* are its food plants *(17)*.

Disonycha triangularis (Say)*

Altica triangularis Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 4: 84.
Haltica puncticollis Kirby, 1837, Fauna Boreali Amer. 4: 218.

Oblong oval. Head black, coarsely punctate. Prothorax brown-yellow with 2 round black discal spots and sometimes with small black dash midway between these; alutaceous, closely, finely punctate. Elytra black, alutaceous, densely punctate. Venter entirely black except for yellow prothorax. Length 5.8-6.5 mm. Width 2.8-3.5 mm.

Alabama records: 4 specimens from Lee[1], Macon[1], and Russell[1] counties.

Seasonal distribution: May 5-July 18.

Remarks: This species is commonly called the three-spotted flea beetle. It could easily be cited as an example of the frequent inappropriateness of common names in that the pronotal spotting is usually bimaculate rather than trimaculate in Alabama specimens.

Disonycha funerea (Randall)

Haltica funerea Randall, 1838, Boston Jour. Nat. Hist. 2, p. 47.

"Elongate oval, entirely lusterless black except the last 2 or 3 ventral seg-

ments, which are more or less pale yellow; antennae short and heavy." *(17)*. Length 6.0 mm. Width 3.0 mm.

Alabama records: 1 specimen from Mobile[2,3] County.

Remarks: Mrs. Blake *(17)* remarked, "This is the most curious and probably one of the rarest of North American species of *Disonycha*." Since the preceding was written the Loding specimen has become even more curious. It has faded, losing all its blackness, until it is now fusco-testaceous. The 4th and 5th ventral abdominal segments are still lighter yellow. Using Mrs. Blake's key to species, this beetle has faded so much that it now keys to *D. antennata* Jacoby, a species of tropical Florida and Mexico. Proper identification as *D. funera* (Randall) was accorded by two determination labels on the specimen pin, one of Schaeffer's and one unrecognized.

Genus *Altica* Fabricius

Altica Fabricius, 1775, Syst. Entomol. 112. Type-species: *Chrysomela oleracea* L.
Graptodera Chevrolat, 1845, *in* d'Orbigny, Dict. Univ. Hist. Nat. 6: 307.
Rybakowia Jacobson, 1892, Horae Soc. Entomol. Ross. 25: 465.
Haltica Chapuis, 1875; Heikertinger, 1912; Maulik, 1926; Chen, 1933; Chûjô, 1935, Chen, 1936.

Oblong or oval, small to medium sized, black, blue, green, or bronzed flea beetles. Head usually deeply inserted. Frontal tubercles rounded and distinctly delimited, not merging with mesal margin of eyes. Antennae ½ body length. Pronotum with usually distinct single prebasal transverse impression; anterior pronotal corner setae placed in the front angles. Elytral punctures mostly confused. Anterior coxal cavities open behind. Posterior tibiae with short apical spur.

Eleven species of *Altica* are treated here from Alabama, 3 new ones being added to Loding's list. Species included by Loding but now deleted are *Strabala rufa* (Illiger), transferred from *Altica*, and *A. bimarginata* Say, of which no specimens from Alabama were seen, not even in Loding's collection.

The species in North America are sorely in need of a taxonomic review. There are no adequate keys for identification of this group of about 58 species.

Key to the Alabama Species of *Altica*

1. Elytra not plicate 2
   Elytra with submarginal longitudinal plicae, host *Prunus sp.* ..... *A. ignita* (p. 149)
2. Legs yellow or red-brown 3
   Legs dark 5
3. Elytra bronze, prothorax nearly as wide as elytra at base 4
   Elytra metallic or brown-blue, much wider than prothorax at base ..... *A. ludoviciana* (p. 151)

4. Small (2.5-3.5 mm.), elongate oval; pronotal groove usually distinct ..... *A. knabi* (p. 151)
   Larger (3.9-4.7 mm.), elongate subparallel; pronotal groove obsolete ..... *A. polita* (p. 151)
5. Prebasal pronotal impression obsolescent or obsolete 6
   Prebasal pronotal impression distinct to lateral margins 7
6. Elongate, color green-blue; hosts *Oenothera* sp., *Cakile edentula* ..... *A. foliaceae* (p. 150)
   Elongate oval; color of elytra purple, head and thorax bronze; host *Heuchera americana* ..... *A. heucherae* (p. 149)
7. Color and shape not as in *chalybea;* smaller than 4.5 mm. 8
   Broadly oval, shining deep blue; over 4.5 mm. long; host *Vitis* spp. ..... *A. chalybea* (p. 148)
8. Base of pronotum evenly arcuate or but feebly sinuate; color and shape not as below 9
   Base of pronotum strongly sinuate; green, oval, convex. ..... *A. viridana* (p. 149)
9. Elongate or elongate oval, blue or green, hosts other than *Parthenocissus* sp. 10
   Rather broadly oval, blue or purplish blue with a hint of green, host *Parthenocissus* sp. ..... *A. woodsi* (p. 148)
10. Elongate, metallic green or green-black, hosts *Chrysobalanus oblongifolius, Polygonum glacum* ..... *A. vaccinia* (p. 150)
    Elongate oval, green-blue or black-blue, host *Ludwigia palustris* ..... *A. litigata* (p. 150)

Altica chalybea Illiger

Haltica chalybea Illiger, 1807, Mag. Insektenk. 6: 115.
Haltica vitivora Thomas, 1834, *in* Sillim. Amer. Jour. 26: 113.

Broadly oval, convex. Shining deep blue, finely punctate. Venter more black. Antennae piceous, ½ body length. Thorax slightly narrower than elytra; prebasal marginal line distinct and entire across pronotum. Length 4.7-5.6 mm. Width 2.5-3.5 mm.

Alabama records: 62 specimens from Baldwin[1,2], Clarke[2], Lee[1], Macon[1], and Mobile[2] counties.

Seasonal distribution: March 20-June 5.

Remarks: This species, commonly known as the grape flea beetle, is often a pest on that plant. Some of the Alabama specimens were collected from muscadine, *Vitis rotundifolia,* and are somewhat larger than northern examples. These may eventually prove to be specifically distinct from the northern, more "typical" form.

Altica woodsi Isely*

Haltica woodsi Isely, 1920, USDA, Washington, Bull. 901, p. 11.

Oval, convex. Deep purple with indications of blue or green lustre. Ven-

ter with less metallic lustre. Antennae ½ the body length. Prebasal pronotal impression slightly sinuate laterad. Elytral punctation slightly coarser than that of *A. chalybea*. Length 3.5-4.2 mm. Width 1.9-2.1 mm.

Alabama records: 2 specimens from Lee[1] County.

Remarks: This species is smaller than *A. chalybea* and more coarsely punctate. The Alabama material was compared with determined specimens from Pennsylvania and Ottawa, Ontario, the latter a gift of W. J. Brown, who collected them on Virginia creeper (*Parthenocissus* sp.).

Altica heucherae Fall*

Haltica heucherae Fall, 1920, Psyche 27: 109.

Elongate oval. Head and thorax metallic bronze, alutaceous. Elytra purple-violaceous, alutaceous, sparsely, moderately coarsely punctate. Prebasal pronotal impression feeble, not strongly impressed. Length 3.2 mm. Width 1.8 mm.

Alabama records: 1 specimen from Marion[1] County.

Seasonal distribution: June 2.

Remarks: We collected this single specimen on *Heuchera americana* whose leaves were well chewed by insects. W. J. Brown, who also had examined this beetle, informed the authors (personal communication) that it was not a specimen of *A. viatica* Blatchley, the type of which Brown had seen. *Altica viatica* has a deeper pronotal groove. It is through its more shallow pronotal sulcus that our specimen also differs slightly from Fall's description of *A. heucherae*. However, the other features and evidence of host plants rather forcefully refer it to the species *A. heucherae*. Fall (52) recorded *Heuchera hispida* as a host. This then constitutes a considerable extension of the species' range (from Manitoba, Canada).

Altica ignita Illiger

Haltica ignita Illiger, 1807, Mag. Insektenk. 6: 117.

Oval, convex. Shining metallic blue with purple reflections or more nearly completely metallic purple. Prebasal pronotal impression deep, entire across the pronotum. Elytra moderately coarsely punctate, sides usually with faint submarginal plica. Length 3.2-3.7 mm. Width 1.8-1.9 mm.

Alabama records: 21 specimens from Cleburne[1], Lee[1], Lowndes[1], Macon[1], and Mobile[2,3] counties.

Seasonal distribution: March 31-July.

Remarks: This species is readily collected by beating the branches of the wild plum, *Prunus americana*, in spring and early summer.

Altica viridana Schaeffer

Haltica kalmiae viridana Schaeffer, 1932, Bull. Brooklyn Entomol. Soc. 27: 240.

Oval, convex. Shining metallic green. Pronotum finely punctulate. Prebasal marginal line deeply impressed, sinuate. Basal margine of pronotum sinuate. Elytra moderately punctate, punctures tending somewhat to be in

rows. Prosternum, elytral epipleura, antennae, and tibiae ventrally dark brown. Length 3.3 mm. Width 1.9 mm.

Alabama records: 1 specimen from Mobile[2] County.

Remarks: This single specimen was collected by Loding at Magazine Point, Mobile County. No date of collection was given. In Pennsylvania, the senior author has collected this species by beating *Kalmia* sp.

Altica litigata Fall

Haltica litigata Fall, 1910, Trans. Amer. Entomol. Soc. 36: 154.

Elongate oval. Dark metallic green-blue. Pronotum impunctate, strongly alutaceous; prebasal transverse line distinct but not deeply impressed. Elytra rather coarsely punctate, punctures somewhat in double rows separated by very slight dull costae or ridges. Tarsi, tibiae, and antennae dark brown. Length 3.2-4.4 mm. Width 1.6-2.1 mm.

Alabama records: 144 specimens from Baldwin[1,2], Chilton[1], Choctaw[1], Jackson[2], Lee[1], Madison[1], Montgomery[1], and Mobile[1,2,3] counties.

Seasonal distribution: March 10-December.

Remarks: This species is often attracted to light. Adults have been taken from the host plant, *Ludwigia palustris* var. *americana*.

Altica vaccinia Blatchley

Haltica vaccinia Blatchley, 1921, Jour. N. Y. Entomol. Soc. 48: 95.

Elongate, convex. Head and thorax shining metallic green; elytra shining metallic green, brassy green, or green- or purple-black. Pronotum with prebasal transverse impression entire but not especially deep; surface punctulate, shining or alutaceous. Elytra alutaceous, rather coarsely, irregularly punctate. Tarsi and apexes of posterior tibiae brown. Length 3.2-3.9 mm. Width 1.6-1.9 mm.

Alabama records: 51 specimens from Baldwin[1,2,3] and Mobile[2] counties.

Seasonal distribution: April 4-October 5.

Remarks: Identification of this species was verified by comparison with a Blatchley "cotype" in the USNM. Although the specific name indicated an association with the plant *Vaccinium*, Alabama specimens have been collected by the senior author on *Chrysobalanus oblongifolius* and by Loding on *Polygonum glaucum*.

Altica foliaceae LeConte

Haltica foliaceae LeConte, 1858, Proc. Acad. Nat. Sci. Philadelphia 9: 86.
Haltica punctipennis LeConte, 1859, Col. of Kans., p. 25.

Elongate. Metallic green-blue or green with hint of blue. Head, pronotum, and elytra alutaceous. Elytra very finely punctulate. Pronotal prebasal transverse impression feeble or obsolete. Length 4.0-5.3 mm. Width 1.9-2.5 mm.

Alabama records: 205 specimens from Autauga[1], Baldwin[1,2], Barbour[1], Clarke[1], Cleburne[1], Coffee[1], Dallas[1], Escambia[1], Henry[1], Houston[1], Lee[1], Macon[1], Marshall[1], Mobile[2,3], Montgomery[1], Pike[1], Tallapoosa[1], and Wilcox[1] counties.

Seasonal distribution: April 17-October 4.

Remarks: These beetles can most easily be collected by sweeping the evening primrose, *Oenothera* sp. However, a large series was collected from *Cakile edentula.*

The "3" records from Mobile County are from the USNM.

Altica knabi Blatchley

Haltica knabi Blatchley, 1910, Col. of Ind., p. 1200.

Elongate oval. Dark bronze, antennae and legs red-brown. Head, pronotum, and elytra alutaceous, the latter punctate. Pronotal prebasal transverse impression shallow. Length 2.5-3.5 mm. Width 1.2-1.8 mm.

Alabama records: 9 specimens from Baldwin[2], Barbour[1], Etowah[2], Franklin[1], Lee[1], Mobile[2,3], and Winston[1] counties.

Seasonal distribution: May 11-September 17.

Remarks: For identification of this species we are indebted to W. J. Brown. Until we sent him material of this species we had been calling these specimens *A. fuscoaenea* Melsheimer. Although most collections commonly refer to these as *A. fuscoaenea,* the true *A. fuscoaenea,* according to Mr. Brown who has examined Melsheimer's type, is more oval and very rare. Mr. Brown (personal communication) also stated that *Oenothera biennis* is the host plant for *knabi.*

The "3" record for Mobile County refers to a single specimen seen in the USNM.

Altica polita Olivier

Haltica polita Olivier, 1808, Entomol., p. 706.

Elongate, subparallel. Dark brown with slight green hue. Antennae, legs, and venter red-brown. Prothorax as wide as elytra, lateral body outline nearly straight with only slight emargination at base of prothorax. Head more shining, prothorax and elytra alutaceous, impunctate or sparsely, very finely punctate. Pronotum nearly evenly convex, pronotal prebasal transverse impression nearly obsolete. Length 3.9-4.7 mm. Width 1.8-2.1 mm.

Alabama records: 17 specimens from Baldwin[2,3], Cherokee[1], Cleburne[1], Lee[1], Macon[1], and Mobile[2] counties.

Seasonal distribution: April 30-September 13.

Altica ludoviciana Fall

Haltica ludoviciana Fall, 1910, Trans. Amer. Entomol. Soc. 36: 157.

Elongate. Dark brown with indication of blue; legs and antennae red-brown. Pronotum shining, finely punctate; prebasal transverse impression obsolete; base of pronotum considerably narrower than base of elytra but slightly wider than apex of pronotum. Elytra subparallel, shining, punctate, punctures tending to be in paired rows; humeral umbones prominent. Legs yellow-brown. Length 4.6 mm. Width 2.1 mm.

Alabama records: 1 specimen from Mobile[2,3] County.

Seasonal distribution: August 12.

Remarks: The only Alabama specimen of this species is in Loding's collection, having been collected by him and identified by Schaeffer.

Genus *Syphraea* Baly

Syphraea Baly, 1876, Trans. Entomol. Soc. London, p. 447.

Oval, compact, small black or blue-black flea beetles. Frontal tubercles obliquely elongate, not distinctly laterally margined but merging into mesal margin of eyes. Pronotal prebasal transverse impression angled at meson, forming a pair of arches; anterior corner setae inserted somewhat behind the front angles. Anterior coxal cavities open behind.

W. J. Brown (personal communication) suggested to us that S. *nana* (Crotch) possibly was misclassified in the genus *Altica*. After Dr. Gerhard Scherer, Museum G. Frey, Tutzing, West Germany, examined it and S. *nigritula* (Linell) he suggested transferring both of these species to *Syphraea* Baly.

Key to the Alabama Species of *Syphraea*

1. Anterior femora yellow-brown, first 4 antennal segments light brown ..... *nigritula* (p. 152)
   Anterior femora and first 4 antennal segments dark brown ..... *nana* (p. 152)

Syphraea nigritula (Linell)*

Haltica nigritula Linell, 1897, Proc. U. S. Nat. Mus. 20: 484.
Syphraea nigritula (Linell), **new combination.**

Oval, convex. Shining black with metallic deep blue-green reflections. Antennal segments 1-4 yellow-brown, 5-11 brown. Legs yellow-brown, posterior femora brown. Venter black. Pronotum strongly convex, finely punctate, prebasal transverse impression deep. Elytra coarsely, irregularly punctate. Length 1.8-2.5 mm. Width 0.9-1.2 mm.

Alabama records: 18 specimens from Houston[1] County.

Seasonal distribution: July 9-August 10.

Remarks: These beetles were collected by sweeping roadside vegetation. Although very similar in appearance to S. *nana* (Crotch), they differ by their larger size and greater yellowness of their appendages.

Syphraea nana (Crotch)

Fig. 43

Haltica nana Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 72.
Haltica nanula LeConte, 1884, Trans. Amer. Entomol. Soc. 11: 29.
Syphraea nana (Linell), **new combination.**

Oblong oval, convex. Shining black with faint hint of deep blue or green. Antennae brown. Femora dark brown or black, tibiae, femoral apexes, and bases of tibiae somewhat lighter brown. Length 1.4-2.1 mm. Width 0.8-1.2 mm.

Alabama records: 155 specimens from Lee[1], Marion[1], and Winston[1] counties.

Seasonal distribution: July 11-29.

Remarks: This minute flea beetle lives and feeds on *Crotonopsis elliptica*, a plant of shallow soil on rock outcroppings. All of the above specimens were definitely collected from this host. Six beetles, possibly of this species, were found in Loding's collection. Because of non-association with food-plant material, his specimens were not conclusively determined.

Genus *Strabala* Chevrolat

Strabala Chevrolat, 1837, *in* Dejean, Cat. Coleopt. 3rd ed. livr. 5, p. 413.

Oval, yellow-orange brown or red-brown, legs, venter, antennae, and scutellum usually dark. Antennae moderately stout, not reaching middle of elytra. Pronotum flat, with indistinct transverse subbasal depression not laterally limited by longitudinal depression. Elytra irregularly, closely punctate. Anterior coxal cavities open behind. Posterior tibiae with an apical spur. Apical segment of posterior tarsi not globosely inflated. Claws appendiculate.

The nominate form of following species occurs in Alabama. A smoother, less distinctly punctate subspecies, S. *rufa floridana* Blake, occurs in Florida.

Strabala rufa (Illiger)

Fig. 33

Haltica rufa Illiger, 1807, Mag. Insektenk. 6: 152.

Oval. Head, pronotum, and elytra dull red-brown. Elytra closely punctate. Antennae, eyes, scutellum, venter from mesosternum caudad, and legs, except posterior femora, black. Length 4.4-5.0 mm. Width 2.5-3.2 mm.

Alabama records: 16 specimens from Baldwin[1], Clay[1], Escambia[1], Houston[1], Lee[1], Macon[1], and Mobile[2] counties.

Seasonal distribution: March 17-October 1.

Genus *Monomacra* Chevrolat

Monomacra Chevrolat, 1837, *in* Dejean, Cat. Coleopt., 3rd ed. (5): 389.
Lactica Erichson, 1847, Arch. Naturg. 13: 173.
Camoena Baly, 1862, Jour. Entomol. 1: 458 (not Herrich-Schaeffer, 1868).
Medonia Baly, 1865, Jour. Entomol. 1: 459 (not Candeze, 1860).
Halticodes Blackburn, 1896, Trans. Roy. Soc. South Australia 20: 41.

Head inserted into prothorax as far as eyes, frontal tubercles not prominent, antennae over ½ body length, 3rd segment shorter than 4th. Pronotum shining with deep transverse prebasal impression limited laterally by longitudinal impression to base, space between impression and basal margin flat. Elytra oval. Procoxal cavities open behind. Anterior and middle tibiae bisulcate on lateral side, hind tibiae with short sulcus and row of ciliae on outer edge. Tarsal claws appendiculate.

The 2 Alabama species formerly were classified in the genus *Lactica* Erichson.

Key to the Alabama Species of *Monomacra*

1. Elytra yellow ..... *M. tibialis* (p. 154)
   Elytra blue ..... *M. iris* (p. 154)

Monomacra tibialis (Olivier)

Lactica tibialis Olivier, 1808, Entomol. 6: 697.
Lactica ocreata Say, 1832, Ins. La., p. 7.
Lactica religata Jacq. du Val. 1856, Hist. phys. Cuba Ins. VII, p. 311.
Lactica xanthochroa Harold, 1875, Col. Hefte XIII, p. 89.

Oval, shining yellow. Antennal segments 2 or 3-11, eyes, and legs from femoral apexes to and including tarsi black. Length 3.3-4.6 mm. Width 1.6-2.3 mm.

Alabama records: 39 specimens from Baldwin[2], Cleburne[1], Dallas[1], Etowah[2], Lee[1], Macon[1], Madison[2], and Winston[1] counties.

Seasonal distribution: April 21-August 5.

Remarks: This species can be collected at lights or by beating *Passiflora incarnata.*

Monomacra iris (Olivier)

Lactica iris Olivier, 1808, Entomol. 6: 702.
Lactica specularis Harold, 1875, Col. Hefte XIII, p. 89.

Oval. Head and prothorax shining yellow. Elytra shining metallic blue-purple. Antennal segments 1-3 yellow, 4-11 black. Front and middle legs yellow but their tibiae black on lateral surfaces. Metasternum, abdomen, and posterior legs black. Length 3.3-4.6 mm. Width 1.8-3.6 mm.

Alabama records: 19 specimens from Cleburne[1], Lee[1], Limestone[2], Macon[1], and Tuscaloosa[2,3] counties.

Seasonal distribution: June 14-July 24.

Remarks: We collected this species by beating *Phytolacca americana* and *Passiflora incarnata.*

Genus *Hornaltica* Barber

Hornaltica Barber, 1941, Proc. Entomol. Soc. Wash. 43: 66.

Head set in prothorax to eyes, antennae less than ½ body length. Pronotum with transverse prebasal impression limited laterally by short longitudinal impressions to base. Elytra glabrous, striate-punctate, striae becoming obsolete at apex. Anterior coxal cavities open behind.

Key to the Alabama Species of *Hornaltica*

1. Elytra black, thorax red-yellow ..... *H. bicolorata* (p. 155)
   Dorsum entirely yellow-brown ..... *H. atriventris* (p. 155)

Hornaltica bicolorata (Horn)*

Fig. 36

Diphaulaca bicolorata Horn, 1889, Trans. Amer. Entomol. Soc. 16: 234.

Broadly oval, convex. Head and prothorax shining, dark red-yellow. Elytra shining black; venter from mesothorax caudad, black. Legs yellow-brown. Prothorax with prebasal transverse impression, limited laterally by longitudinal impressions. Elytra striate-punctate, striae becoming obsolete apically. Length 2.1-2.3 mm. Width 1.2-1.3 mm.

Alabama records: 3 specimens from Baldwin[1] and Choctaw[1] counties.

Seasonal distribution: August 27-28.

Remarks: The specimens seen may have been swept from *Acalypha* sp.

Hornaltica atriventris (Melsheimer)

Crepidodera atriventris Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 165.

Broadly oval, convex, yellow-brown, abdomen black. Head with frontal tubercles not prominent. Pronotum with prebasal transverse impression limited laterally by short longitudinal impressions. Length 1.6-1.9 mm. Width 0.9-1.1 mm.

Alabama records: 35 specimens from Baldwin[1], Clay[1], Coosa[1], Houston[1], Lee[1], Limestone[1], Macon[1], Madison[1,3], and Mobile[2,3] counties.

Seasonal distribution: March 28-August 28.

Remarks: Wilcox *(94)* gives *Acalypha* spp. as the host for these flea beetles but we have collected some by sweeping *Vicia* sp. and *Brassica* sp.

Genus *Crepidodera* Chevrolat

Crepidodera Chevrolat, 1837, *in* Dejean, Cat. Coleopt. 3rd ed., 415. Type-species: *Chrysomela nitidula* Fabricius.

Chalcoides Foudras, 1859, Hist. Nat. Col. France, Altisides, 312.

Foudrasia des Gozis, 1882, Soc. Entomol. France, Ann. Ser. 6, 1 (Bull.): CXXXIV (new name for *Chalcoides* Foudras).

Oval or elongate oval, shining. Pronotum with prebasal transverse impression limited laterally by longitudinal furrows to base; punctate. Elytra glabrous, regularly punctate-striate. Anterior coxal cavities closed behind. Tarsal claws appendiculate.

Two species have been found in Alabama. It is possible that *Crepidodera violacea* (Melsheimer), a feeder on *Prunus* or *Crataegus*, will eventually be collected in the State.

Key to the Alabama Species of *Crepidodera*

1. Elytra unicolorous green, blue-green, or bronze green ..... *C. nana* (p. 156)

   Elytra red-yellow with faint green lustre, suture dark green ..... *C. longula* (p. 156)

Crepidodera nana (Say)

Fig. 37

Altica nana Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 3: 86.
Haltica opulenta LeConte, 1858, Proc. Acad. Nat. Sci. Philadelphia 9: 86.
?*Chalcoides chittendeni* Heikertinger.

Oval. Shining metallic green, blue-green, or bronze-green. Head smooth with setigerous punctures in supra-orbital groove; antennae yellow. Pronotum coarsely punctate. Elytral punctures coarse, in regular striae. Legs usually entirely yellow. Length 2.5-3.3 mm. Width 1.1-1.8 mm.

Alabama records: 187 specimens from Baldwin[1], Blount[1], Clarke[1], Clay[1], Cleburne[1], Crenshaw[1], Elmore[1], Escambia[1], Etowah[2], Franklin[1], Houston[1], Jefferson[1], Lawrence[1], Lee[1], Macon[1], Marion[1], Marshall[1], Mobile[2], Shelby[1], Tallapoosa[1], and Walker[1] counties.

Seasonal distribution: March 20-September 18.

Remarks: The host plant for this common flea beetle is *Salix* sp.

Crepidodera longula Horn*

Crepidodera longula Horn, 1889, Trans. Amer. Entomol. Soc. 16: 239.

Elongate oval. Shining red-yellow, with slight greenish lustre. Head smooth, shining with setigerous puncture close to supra-orbital groove. Pronotal punctures both coarse and fine, not especially dense. Elytral suture dark green, color wider and more intense at base and narrowing toward apex. Legs and venter also red-yellow. Length 2.8 mm. Width 1.4 mm.

Alabama records: 1 specimen from Marion[1] County.

Seasonal distribution: July 12.

Remarks: Only a single specimen of this apparently rare beetle has been collected, probably by beating *Salix*. (Trees of this genus occurred at the collection site and Horn *(63)* in his description of this species also recorded *Salix* sp. as the host plant.) W. J. Brown (personal communication), however, recognizes a second, similar species of which this specimen may be an example. More study is needed to determine the proper application of names.

Genus *Epithrix* Foudras

Epithrix Foudras, 1860, Ann. Soc. Linn. Lyon (new series) 6: 147.

Broadly oval to oblong or elongate oval. Head with frontal tubercles often transverse, frons with V-shaped sulcus from clypeal carina, reaching over eyes. Anterior angles of pronotum obliquely truncate. Elytra pubescent, usually distinctly so. Anterior coxal cavities closed behind; tarsal claws appendiculate.

In addition to the 5 species listed below, a 6th, possible new species was seen in Loding's collection. This was collected at "Tumblin Gap, Ala. June 3-8 '11" (Etowah County). Although an unsuccessful attempt was made to identify it when the senior author visited the USNM, it is not being described as new in this paper. Further study should be made to ascertain its proper status.

Key to the Alabama Species of *Epithrix*

1. Pubescence of elytra dense; easily visible 2
   Elytra very sparsely pubescent, nearly glabrous, only few semi-erect setae along lateral margins near apex ..... *E. nitens* (p. 157)
2. Pronotum and elytra black or mahogany brown 3
   Pronotum and elytra mostly red- or yellow-brown (Fig. 38) ..... *E. hirtipennis* (p. 158)
3. Pronotal transverse prebasal impression indistinct and feebly delimited; pronotal punctures close 4
   Pronotal transverse prebasal impression distinct and sharply delimited; pronotal punctures not so nearly contiguous ..... *E. cucumeris* (p. 157)
4. Larger (1.8-2.5 mm.); usually black or more rarely brown; pronotal punctures close, separated by distance of about ¼ a puncture's diameter ..... *E. fuscula* (p. 158)
   Smaller (1.4-1.6 mm.); mahogany brown; pronotal punctures separated by about ½ puncture's diameter ..... *E. brevis* (p. 157)

Epithrix cucumeris (Harris)

Haltica cucumeris Harris, 1851, Jour. of Agr. I., p. 103.

Oblong oval, shining black or dark or mahogany brown. Head shining, impunctate except for some setigerous punctures near eyes. Pronotum shining, punctate, punctures more distant from each other than their diameters; transverse subbasal impression deep, sinuate. Elytra striate-punctate, pubescent with short erect setae. Legs yellow-brown, femora with middle darker brown band, posterior femora nearly entirely darker brown.

Alabama records: 14 specimens from Marshall[1] County.

Seasonal distribution: July 27-28.

Remarks: Loding's *(75)* record of *E. cucumeris* for Alabama is perhaps attributable to another species. Only a single specimen of *E. cucumeris,* from Iowa, was seen in his collection. Economically these beetles are known as the potato flea beetle.

Epithrix brevis Schwarz*

Epithrix brevis Schwarz, 1878, Proc. Amer. Philos. Soc. 17: p. 367.

Oval, mahogany brown. Head shining, faintly alutaceous, punctate with setigerous punctures near eyes. Pronotum coarsely, closely punctate; prebasal transverse impression only feebly indicated. Elytra punctate-striate with erect setae in rows. Antennae and legs yellow-brown, hind femora darker brown. Length 1.4-1.6 mm. Width 0.9-1.0 mm.

Alabama records: 5 specimens from Lee[1], Marshall[1], and Mobile[2] counties.

Seasonal distribution: April 13-December.

Epithrix nitens (Horn)

Crepidodera nitens Horn, 1889, Trans. Amer. Entomol. Soc. 16: 240.

Broadly oval, shining, piceous, nearly glabrous. Head with pair of large

setigerous punctures near eyes, otherwise impunctate, shining. Prothorax closely punctate, prebasal impression well defined and delimited. Elytra nearly glabrous, with prominent basal callosities. Antennae yellow, legs brown. Length 2.3 mm. Width 1.4 mm.

Alabama records: 1 specimen from Lee County.

Seasonal distribution: May 7.

Remarks: *Epithrix nitens* is unique among the Alabama species of *Epithrix* in being nearly glabrous.

Epithrix fuscula Crotch

Epithrix fuscula Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 72.

Oblong oval, black or more rarely brown. Head distinctly alutaceous, antennae yellow. Pronotum coarsely, closely punctate, prebasal impression poorly defined. Elytra striate-punctate, rather densely pubescent, setae white in double rows. Tibiae brown, tarsi lighter, yellow-brown. Length 1.8-2.5 mm. Width 1.1-1.4 mm.

Alabama records: 176 specimens from Baldwin[1], Cleburne[1], DeKalb[1], Elmore[1], Houston[1], Lawrence[1], Lee[1], Macon[1], Mobile[2], Talladega[1], and Tallapoosa[1] counties.

Seasonal distribution: April 24-June 21.

Remarks: This is the eggplant flea beetle, which also attacks potatoes. We have collected it from a thistle and from *Trifolium* sp.

Epitrix hirtipennis (Melsheimer)

Fig. 38

Crepidodera hirtipennis Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 165.

Elongate oval, yellow-brown with or without darker brown mid-elytral fascia. Head shining, punctate near eyes. Pronotum closely, moderately punctate, prebasal impression faintly impressed. Elytra striate-punctate, pubescence of single rows. Antennae and legs light brown. Length 1.6-1.9 mm. Width 0.9-1.1 mm.

Alabama records: 36 species from Etowah[2], Lee[1], and Mobile[2] counties.

Seasonal distribution: March 28-July 22.

Remarks: Specific host plants have not been recorded. One specimen of *E. hirtipennis* of Loding's collection was labeled *"Epitrix parvula"* (sic).

Genus *Orthaltica* Crotch

Orthaltica Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 69.

Elongate subparallel. Head oval, 4th antennal segment subequal in length to 3rd. Prothorax wider than long, disc convex, with moderately deep pre basal transverse impression. Humeri of elytra prominent, elytra striate-punc tate with sparse pubescence. Prosternal coxal cavities closed behind. Proster

num broad between front coxae. Metafemora short, subequal to ½ length of abdomen, not reaching apex of elytra.

Key to the Alabama Species of *Orthaltica*

1. Lateral margins of prothorax serrate ..... *O. copalina* (p. 159)
   Lateral margins of prothorax entire ..... *O. melina* (p. 159)

Orthaltica copalina (Fabricius)

Cioceris cophalina Fabricius, 1801, Syst. Eleuth. I., p. 466.
Haltica forticornis Illiger, 1807, Mag. Insektenk. 6: 111.

Elongate, subparallel, dark brown, pronotum usually lighter brown. Head with clypeus and frontal tubercles yellow-brown; frons shining, punctate. Antennae in males ¾ or more of body length, segments stout, first segment thickly clavate; in females antennae about ½ of body length, segments not so thickened, gradually wider toward apex. Prothorax punctate, with transverse prebasal impression; broader, more convex in male; lateral margins serrate. Elytra striate-punctate, punctures confused in scutellar region; sparsely pubescent; humeri prominent. Length 2.1-3.0 mm. Width 0.9-1.4 mm.

Alabama records: 22 specimens from DeKalb[1], Houston[1], Lee[1], Macon[1], Marion[1], Mobile[2], Tallapoosa[1], and Winston[1] counties.

Seasonal distribution: April 11-June 16.

Remarks: This species feeds on poison ivy and sumac (*Rhus* spp.) *(94)*.

Orthaltica melina Horn*

Orthaltica melina Horn, 1889, Trans. Amer. Entomol. Soc. 16: 248.

Elongate, subparallel, light yellow-brown. Head unicolorous, frons with few coarse punctures. Antennae ⅔ length of body. Pronotum shining, punctate, with transverse prebasal impression widest at apical third and tapering to base, lateral margins not serrate. Elytra striate-punctate, punctures not confused near scutellum, sparsely pubescent. Length 1.9-2.3 mm. Width 0.9-1.0 mm.

Alabama records: 3 specimens from "Corner of Lee[1], Macon[1], and Tallapoosa[1]" and Winston[1] counties.

Seasonal distribution: May 14-June 3.

Genus *Luperaltica* Crotch

Luperaltica Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 70.

Elongate, slightly oval. Apex of mandible narrow, with single point. Pronotum broader than long, feebly or not at all impressed before base. Posterior femora thickened, but not greatly so. Posterior tibiae with short spur at apex.

Key to the Alabama Species of *Luperaltica*

1. Elytra indistinctly punctate, alutaceous; brown-yellow to dark brown ..... *L. nigripalpis* (p. 160)

   Elytra distinctly, closely punctate; shining, brown with metallic green ..... *L. senilis* (p. 160)

Luperaltica nigripalpis (LeConte)*

Longitarsus nigripalpis LeConte, 1859, Smithson. Cont. Knowl. 11: 26.
Malacosoma fuscula LeConte, 1865, Proc. Acad. Nat. Sci. Philadelphia 17: 206.
Luperaltica fuscula novellus Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 70 (var.).

Elongate, very slightly oval, usually brown-yellow, less frequently darker yellow-brown in more northern Alabama specimens. Elytra minutely alutaceous, irregularly punctate with fine sparse punctures. Length 2.8-3.7 mm. Width 1.4-1.9 mm.

Alabama records: 115 specimens from Cleburne[1], Coosa[1], Franklin[1], Henry[1], Lee[1], Marion[1], and Winston[1] counties.

Seasonal distribution: August 13-September 17.

Remarks: These beetles have been collected by sweeping *Ambrosia* sp. *Luperaltica nigripalpis* tends to vary geographically from darker to lighter brown from north to south. Specimens seen from Pennsylvania were dark brown with slight hints of blue.

Luperaltica senilis (Say)*

Altica senilis Say, 1824, Jour. Acad. Nat. Sci. Philadelphia 4: 87.
Malacosoma tincta LeConte, 1865, Proc. Acad. Nat. Sci. Philadelphia 17: 206.

Elongate, slightly oval. Head with clypeus and frontal tubercles yellow, frons brown. Pronotum yellow-brown, alutaceous, with indistinct prebasal transverse impression. Elytra shining metallic brown with green lustre; distinctly, irregularly punctate, suture lighter brown. Length 3.5-3.6 mm. Width 1.8-1.9 mm.

Alabama records: 2 specimens from Coosa[1] County.

Seasonal distribution: August 13.

Remarks: Our 2 specimens were collected by sweeping *Ambrosia* sp. and were among specimens of *Luperaltica nigripalpis*.

Genus *Mantura* Stephens

Mantura Stephens, 1831, Illus. Brit. Entomol. Mandib. 4: 285, 322. Type-species: *Chrysomela rustica* Linnaeus.
Cardiapus Curtis, 1833, Brit. Entomol. 10: 435.
Balanomorpha Chevrolat, 1837, *in* Dejean, Cat. Coleopt., ed. 3, 394.
Stenomantura Heikertinger, 1909, Zool. Bot. Ges. Wien, Verh. 59: 370. Subgenus.

Head with carina or tubercles. Antennae ½ body length. Pronotum without transverse prebasal impression but with short lateral longitudinal impressions. Procoxal cavities closed behind.

Only the following species occurs in Alabama.

Mantura floridana Crotch*

Mantura floridana Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 73.

Elongate oval, dark brown with very slight bronze lustre, apex of elytra yellow-brown. Head and pronotum coarsely punctate, latter with pair of short, deep, longitudinal, lateral, basal impressions. Elytra striate-punctate, punctures and striae obsolete apically. Length 2.1-2.5 mm. Width 1.1-1.3 mm.

Alabama records: 56 specimens from Baldwin[1], Elmore[1], Houston[1], Lee[1], Macon[1], and Mobile[2] counties.

Seasonal distribution: March 20-November.

Remarks: This species feeds on plantain *(Plantago* sp.) and dock *(Rumex* sp.) *(94).*

Genus *Chaetocnema* Stephens

Chaetocnema Stephens, 1831, Illus. Brit. Entomol. Mandib. 4: 325. Type-species: *Altica hortensis* Geoffroy.

Odontocnema Stephens, 1831, Illus. Brit. Entomol. Mandib. 4: 285 (in the key; error of *Chaetocnema).*

Plectroscelis Chevrolat, 1836, *in* Dejean Cat. Coleopt. 3rd. ed., p. 393.

Tlanoma Motschulsky, 1845, Soc. Nat. Mosc., Bull. 18(1): 108. Type-species: *Chrysomela concinna* Marsham. Subgenus.

Udorpes Motschulsky, 1845, Soc. Nat. Mosc., Bull. 15 (1): 107.

Ydorpes Motschulsky, *l. c.*, add.

Hydropus Motschulsky, 1860, *in* Schrenk, Reisen Amurl. 2: 235. Type-species: *Udorpes splendens* Motschulsky.

Exorhina Weise, 1886, Naturgesch. Ins. Deutschl. Col. 6: 750, 755. Type-species: *Chaetocnema chlorophana* Duft.

Carcharodis Weise, 1910, *in* Voeltzkow, Reise Ostafrika 2: 434.

Minute or small, oval flea beetles. Front not carinate. Antennae ½ body length, segment 2 is ⅔ length of first, these first 2 clavate and oval respectively; segments 3-6 slender and longer than 2, 7-11 broader and flattened. Prothorax broader than long, without prebasal impressions. Elytra punctate-striate. Posterior tibiae apically sinuate, denticulate proximad of sinus, and terminated by long spur. Tarsal claws appendiculate.

The North American species of this cosmopolitan genus need a thorough taxonomic revision. Thirty species are presently known from the Nearctic Region. Seven species have been collected in Alabama. Specimens of 6 of these were seen from the State. A seventh, *C. blatchleyi* Csiki, was studied (a paratype of *C. robusta* Blatchley, a synonym of *C. blatchleyi)* at the USNM. Since this paratype came from Florida and not Alabama, the description of *C. blatchleyi* presented here is condensed from Blatchley's *(30)* description of *C. robusta.*

Key to the Alabama Species of *Chaetocnema*

1. Sides of pronotum regularly arcuate from base to apex, anterior angles not obliquely truncate 2
   Sides of pronotum obliquely truncate at anterior angles and with lateral angulation in front of middle ..... *C. confinis* (p. 164)
2. Median area of frons punctate, sometimes indistinctly 3
   Median area of frons impunctate; large, often setigerous punctures may be present in or near supra-orbital groove, or vertex of occiput may be punctate 4
3. Punctures of frons distinct; color bronze ..... *C. denticulata* (p. 162)
   Punctures of frons indistinct; color bronze-black ..... *C. minuta* (p. 162)
4. Basal marginal line of pronotum not defined by punctures 5
   Basal marginal line of pronotum with punctures; sometimes punctures continuing to middle 6
5. Larger (2.7-3.0 mm.); antennae uniformly dark brown ..... *C. blatchleyi* (p. 164)
   Smaller (1.9-2.3 mm.); antennal segments 2 through 6 light brown ..... *C. alutacea* (p. 163)
6. Pronotum finely and sparsely, but very distinctly, punctate ..... *C. pulicaria* (p. 163)
   Pronotum with coarse, moderately deep punctures irregularly placed ..... *C. crenulata* (p. 164)

Chaetocnema denticulata (Illiger)

Fig. 39

Haltica denticulata Illiger, 1807, Mag. Insektenk. 6: 163.
Chaetocnema semichalcea Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 167.
Chaetocnema americana Motschulsky, 1860, *in* Schenck, Reisen Amurl. II., p. 235.
Chaetocnema texana Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 74.

Oval, bronzed. Head alutaceous; frons and vertex distinctly, moderately closely punctate; clypeus with larger, coarser, closer punctures; antennal basal segments red-brown. Pronotum alutaceous, strongly punctate. Elytra alutaceous, punctate-striate to apex. Legs brown, except femora of hind legs bronze. Length 2.0-3.3 mm. Width 1.1-1.8 mm.

Alabama records: 61 specimens from Baldwin[1,2], DeKalb[1], Houston[1], Jefferson[1], Lee[1], Limestone[1], Marshall,[1] Mobile[2], and Randolph[1] counties.

Seasonal distribution: March 20-September 25.

Remarks: This species is commonly known as the toothed flea beetle.

Chaetocnema minuta Melsheimer

Chaetocnema minuta Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 167.

Oval. Shining bronze-black. Frons alutaceous, sparsely, minutely punctate. Antennae with basal 4 joints red-yellow, segments 5-11 dark brown. Pronotum convex, lateral margins strongly arcuate, surface alutaceous, sparsely, finely punctate, basal margin with larger punctures. Elytra wider than thorax at base; apical declivity beginning at about ½ of elytral length; striae faintly impressed, punctures moderate. Femora dark brown, tibiae and tarsi lighter brown. Length 1.8-1.9 mm. Width 0.9-1.1 mm.

Alabama records: 7 specimens from Mobile[2] County.

Seasonal distribution: April 12-July 4.

Remarks: In Loding's collection and checklist this species was listed as *C. parcepunctata* Crotch. We prefer to refer these to *C. minuta* since the frons of these beetles has minute punctures, a feature supposedly lacking in *C. parcepunctata*. It is quite possible that future study will show that these 2 forms are conspecific. Horn *(63)* indicated this possibility. Further, several specimens in the USNM bore determination labels with both of these names. Seasonally, Alabama *C. minuta* have been collected from April 12 to July 4.

Chaetocnema alutacea Crotch

Chaetocnema alutacea Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 74.

Oval. Black with slight hint of olive-green or blue. Head impunctate except for very few setigerous punctules in frontogenal suture, frons and vertex more finely alutaceous than clypeus, lateral margins of clypeus with row of large punctures; antennae with basal and 5 apical segments dark brown, segments 2-6 lighter brown. Pronotum strongly alutaceous, coarsely punctate. Elytra very distinctly alutaceous but less so than pronotum, striate-punctate, punctures large. Legs entirely piceous. Length 1.9-2.3 mm. Width 1.1-1.2 mm.

Alabama records: 9 specimens from Mobile[2,3] County.

Seasonal distribution: May 9-July.

Remarks: Six of the 9 specimens examined were collected by H. Soltau and are deposited in the USNM; the other 3 are Loding's. Alabama examples of this species are smaller than specimens in the USNM from either Maryland or Florida.

Chaetocnema pulicaria Melsheimer

Chaetocnema pulicaria Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 167.

Chaetocnema aeneola LeConte, 1879, Bull. U. S. Geol. Surv. 5: 518.

Oval, black-bronze. Head alutaceous; indistinctly punctate in small depression on lateral portion of frons even with top of eyes, usually one puncture deeper, setigerous. Pronotum alutaceous, punctate, distinctly narrower than elytra at base. Elytra striate-punctate to apex, shining. Femora piceous, tibiae and tarsi lighter brown. Length 1.4-1.8 mm. Width 0.9-1.1 mm.

Alabama records: 84 specimens from Baldwin[1], Cleburne[1], Coosa[1],

Jackson[1], Jefferson[1], Lee[1], Limestone[1], Macon[1], Madison[1], Marion[1], Marshall[1], Talladega[1], and Tallapoosa[1] counties.

Seasonal distribution: March 3-December 2.

Remarks: The senior author has collected this little flea beetle by sweeping *Trifolium incarnatum, Medicago sativa, Vicia* sp., and *Convolvulus* sp. from March 3 to December 2. Although Loding *(75)* listed it from "over state", no specimens were seen in his collection.

Chaetocnema crenulata Crotch

Chaetocnema crenulata Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 74.

Broadly oval, robust. Shining black, faintly bronzed. Head alutaceous, frons impunctate but vertex sometimes with scattered large punctures. Antennae, tibiae, and tarsi red-brown. Pronotum not more narrow than elytra, alutaceous, coarsely, irregularly punctate, basal marginal line distinct. Elytra smooth, very shiny, punctate-striate, intervals rather convex; humeri smooth, not prominent. Venter black; femora bronzed. Length 1.9-2.0 mm. Width 1.2-1.3.

Alabama records: 3 specimens from Lee[1] County.

Seasonal distribution: May 13-September 13.

Chaetocnema confinis Crotch*

Chaetocnema confinis Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 75.

Chaetocnema flavicornis LeConte, 1878, Proc. Amer. Philos. Soc. 17: 418.

Broadly ovate, black with bronzed lustre. Head alutaceous, impunctate or with few punctures in small depression on lateral portions of frons even with top of eyes; antennae entirely red-brown. Prothorax with lateral margins angulate behind front angles. Elytra regularly striate-punctate to apex. Length 1.5-1.8 mm. Width 0.8-1.1 mm.

Alabama records: 50 specimens from Baldwin[1], Clay[1], Cleburne[1], DeKalb[1], Elmore[1], Etowah[2], Franklin[1], Jefferson[1], Lee[1], Macon[1], Marion[1], Mobile[2], and Tallapoosa[1] counties.

Seasonal distribution: April 13-October 29.

Remarks: This species is commonly known as the sweetpotato flea beetle. It feeds on sweetpotatoes and wild morning glories (*Convolvulus* sp.).

Chaetocnema blatchleyi Csiki

Chaetocnema robusta Blatchley, 1923, Canadian Entomol. 55: 33 (not Baly).

Chaetocnema blatchleyi Csiki, 1940, Coleopt. Cat. pars. 169, Halticinae II., p. 401.

"Oblong-oval, convex, very robust . . . Black, subopaque with a faint, brassy tinge; antennae piceous-brown throughout; femora black, tibiae and tarsi dark reddish brown . . . Length 2.7-3 mm." *(30)*.

Alabama records: Mobile[3] County.

Remarks: Blatchley *(30)* reported that, according to H. C. Fall, specimens of this species were deposited in the "Cambridge Museum" from Mobile. Blatchley *(30)* described this species as *C. robusta*. Csiki *(47)*, upon discovering that *C. robusta* Blatchley was a junior homonym of Baly's *C. robusta*, proposed the new name *blatchleyi*. No specimens from Alabama were seen, either in Loding's collection or that of the USNM; however, a paratype of *C. robusta* Blatchley, was studied at the latter institution.

Genus *Systena* Chevrolat

Systena Chevrolat, 1837, *in* Dejean, Cat. Coleopt. Ind. ed., p. 390.
Systena Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3(7): 164.

Elongate, small flea beetles. Antennae slender, ½ body length, 4th joint slightly longer than 3rd or 5th. Sides of pronotum feebly arcuate, slightly depressed basolaterally in some species. Elytra slightly wider at base than prothorax, usually closely confusedly punctate. Procoxal cavities approximate, closed behind. Posterior tibiae laterally sulcate and carinate. Tarsal claws appendiculate.

Seven of 19 North American species are found in Alabama.

Key to the Alabama Species of *Systena*

1. Elytra entirely black 2
   Elytra vittate or pale 3
2. Head entirely black ..... *S. hudsonias* (p. 166)
   Frons and vertex of head bright or dirty orange ..... *S. frontalis* (p. 165)
3. Elytra vittate 4
   Elytra without median vittae, suture or margin may be brown 5
4. Prothoracic and elytral ground color black ..... *S. elongata* (p. 166)
   Prothoracic and elytral ground color light brown or yellow ..... *S. blanda* (p. 166)
5. Elytra lacking lateral, submarginal, longitudinal plicae 6
   Elytra with strong, lateral, submarginal, longitudinal plicae ..... *S. plicata* (p. 168)
6. Larger (3.7-4.7 mm. long), dirty yellow, margins of pronotum and elytra brown ..... *S. marginalis* (p. 167)
   Smaller (3.0-3.9 mm. long), entirely yellow, the suture occasionally brownish ..... *S. corni* (p. 167)

Systena frontalis (Fabricius)

Galleruca frontalis Fabricius, 1801, Syst. Eleuth. I., p. 500.

Elongate oval. Frons and vertex bright or dirty orange. Antennae with basal 2 segments dark brown, remaining segments yellow basally, brown on their apical ends. Pronotum and elytra black, alutaceous, densely punctate. Length 3.5-5.3 mm. Width 1.4-3.7 mm.

Alabama records: 79 specimens from Baldwin[1], Jackson[1], Lee[1], Limestone[1], Macon[1], Marion[1], and Mobile[2] counties.

Seasonal distribution: June 11-November 4.

Remarks: Wilcox *(94)* reported the food plants of these beetles to be *Ambrosia trifida, Polygonum* sp. and *Chenopodium* sp. We have also collected a large series on *Diodia virginiana.*

Systena hudsonias (Forster)

Chrysomela hudsonias Forster, 1771, Nov. Spec. Ins., p. 26.

Elongate. Entirely black except antennal segments 3-6 brown. Head smooth, shining, occiput alutaceous. Pronotum alutaceous, finely punctate. Elytra alutaceous, closely, moderately coarsely punctate, punctures confluent. Length 3.7-4.6 mm. Width 1.4-1.9 mm.

Alabama records: 13 specimens from DeKalb[1], Mobile[1], and Winston[1] counties.

Seasonal distribution: April 10-June 27.

Remarks: We have collected this species by sweeping *Solidago* sp. It also occurs on "*Ambrosia trifida* and elder" *(94).* In Alabama it has been collected from April 10 until June 27.

Systena elongata (Fabricius)

Galleruca elongata Fabricius, 1798, Supp. Entomol. Syst., p. 99.

Elongate oval. Head red-brown, punctate. Antennae and legs yellow-brown but posterior femora dark brown. Pronotum shining black, closely punctate. Elytra punctate, black, each with median yellow vitta. Length 3.2-4.2 mm. Width 1.4-1.9 mm.

Alabama records: 106 specimens from Coffee[1], Covington[1], Elmore[1], Escambia[1], Houston[1], Lee[1], Limestone[1], Macon[1], Marshall[1], Marion[1], Mobile[1,2], St. Clair[1], and Shelby[1] counties.

Seasonal distribution: April 2-November 23.

Remarks: This species has been collected from *Ambrosia* sp., *Vicia* sp., and *Trifolium incarnatum.* It also comes to light.

Systena blanda Melsheimer*

Systena blanda Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 164.

?Systena taeniata Say, 1824, Long's Second Exped. p. 294.

Systena ligata LeConte, 1857, Rept. Expl. and Sarv. Miss. Pacif. 13: 68 (abberation).

Systena ochracea LeConte, 1858, Proc. Acad. Nat. Sci. Philadelphia 9: 87.

Elongate oval. Head red-brown. Pronotum shining, yellow, lateral margins brown. Elytra closely punctate; brown, more darkly so along suture, and each elytron with median yellow vitta. Prosternum and legs yellow-brown, meso and metathorax and abdomen black. Length 3.2-3.9 mm. Width 1.4-1.8 mm.

Alabama records: 70 specimens from Clay[1], Cleburne[1], Jackson[1], Lee[1], Limestone[1], Macon[1], Madison[1], Marion[1], Marshall[1], Tallapoosa[1], and Winston[1] counties.

Seasonal distribution: June 1-August 3.

Remarks: This species was taken by beating *Ambrosia* sp. It has been collected by beating at night.

Systena marginalis (Illiger)

Haltica marginalis Illiger, 1807, Mag. Insektenk. 6: 150.
Systena oblonga LeConte, 1851, Ann. Lyc. Nat. Hist. N. Y. 5: 173.

Elongate oval. Dirty pale yellow with lateral margins or pronotum and elytra dark brown, occasionally elytral maculation evanescent. Head shining, sparsely, finely punctate. Pronotum alutaceous, more coarsely, closely punctate. Elytra shining, densely, coarsely punctate. Length 3.7-4.7 mm. Width 1.8-1.9 mm.

Alabama records: 84 specimens from Baldwin[1], Barbour[1], Dallas[1], Lee[1], Lowndes[1], Macon[1], Madison[1], and Mobile[2] counties.

Seasonal distribution: June 1-August 1.

Remarks: *Systena marginalis* feeds on a variety of plants. Auburn material has been collected from *Alnus* sp., *Liquidambar styraciflua,* and *Carya illinoensis.*

Systena corni Schaeffer

Systena corni Schaeffer, 1932, Bull. Brooklyn Entomol. Soc. 27: 244. **New status.**

Elongate oval. Pale yellow. Head impunctate or very sparsely punctured, shining. Pronotum shining to alutaceous; shallowly to more coarsely, densely punctate. Elytra closely, coarsely punctate, shining. Pronotum and elytra unicolorous or more rarely with pronotal margins darker and elytral suture brown from scutellum to vicinity of apical declivity. Length 3.0-3.9 mm. Width 1.2-1.5 mm.

Alabama records: 32 specimens from Baldwin[1,2], Houston[1], Lee[1], and Mobile[2,3] counties.

Seasonal distribution: July 1-27.

Remarks: This species, as far as known, feeds only on *Cornus florida* in Alabama. Close comparison of these beetles with specimens of *S. marginalis* indicated that *corni,* described as a variety of *S. marginalis (86),* should be accorded specific status. *Systena marginalis* is a larger, darker species which differs from *S. corni* by distinct features of both the aedeagi and spermathecae. Differing food plant preferences, as indicated above, further substantiate their distinctness.

Mrs. Doris H. Blake (personal communication), USNM, who examined specimens of the suturally vittate variants of this species, asserts that these specifically differ from both *S. laevis* Blake and *S. semivittata* Jacoby by their coarse punctation. The latter 2 species, also with dark suture, are impunctate or finely punctate species from the Western United States and Mexico.

Systena plicata Blatchley*

Systena plicata Blatchley, 1921, Jour. N. Y. Entomol. Soc. 24: 26.

Elongate, elytra subparallel. Dull pale yellow. Head and pronotum alutaceous, coarsely closely punctate. Elytra shining, not alutaceous but coarsely, closely punctate; each elytron with strong submarginal plica. Length 3.5-4.2 mm. Width 1.4-1.9 mm.

Alabama records: 17 specimens from Houston[1] and Mobile[2] counties.

Seasonal distribution: June 1-August 10.

Remarks: This species greatly resembles S. *corni* but may be easily distinguished by the elytral submarginal plicae. The Houston County records were taken by the author by beating cypress (*Taxodium* sp.).

Genus *Longitarsus* Latreille

Longitarsus Berthold, 1827, Latreille's Nat. Fam. Thierreichs, 410. Type-species: *Chrysomela atricilla* Linnaeus.

Minute, oblong or elongate oval. Antennae longer than ½ of body. Prothorax broader than long, sides arcuate. Elytra usually convex, humeri prominent or not at all apparent. Winged or wingless. First segment of posterior tarsi ½ length of posterior tibiae, these tibiae grooved and with long apical spine.

Five species have thus far been found in the State. Further collecting will probably reveal more. There are presently 38 Nearctic species in this cosmopolitan genus.

Key to the Alabama Species of *Longitarsus*

1. Second, 3rd, and 4th antennal segments subequal in length; elytra unicolorous or suture occasionally darker (but not laterally darker) 2
   Second, 3rd, and 4th antennal segments successively longer; each elytron red-brown with mid-lateral brown-black cloud ..... *L. varicornis* (p. 168)
2. Elytral punctation absent or confused 3
   Elytral punctation substriate ..... *L. perforatus* (p. 170)
3. Color red-brown, shining 4
   Color yellow-brown, dull ..... *L. testaceus* (p. 169)
4. Elytra strongly convex, wingless, smaller (1.6-1.9 mm.) ..... *L. misellus* (p. 170)
   Elytra not so convex, disc flat; winged; large (2.1 mm.) ..... *L. alternatus* (p. 169)

Longitarsus varicornis Suffrian

Longitarsus varicornis Suffrian, 1868, Arch. f. Naturg. 34: 215.
Longitarsus subcinctus Harold, 1876, Col. Hefte 15: 30.
Longitarsus heliophyti Horn, 1889, Trans. Amer. Entomol. Soc. 16: 277.

Oblong oval, strongly convex. Shining red-brown, each elytron with mid-

lateral, brown-black cloud. Antennal segments 4-11 black, basal 3 segments and anterior and middle legs yellow. Antennal joints 2, 3, and 4 successively longer. Posterior legs and venter red-brown. Length 1.9-2.1 mm. Width 1.0-1.1 mm.

Alabama records: 16 specimens from Baldwin[1], Dallas[3], Macon[1], Mobile[2,3], and Monroe[2,3] counties.

Seasonal distribution: March 25-August 21.

Remarks: This species may be collected by sweeping *Heliotropium indicum.*

Longitarsus alternatus (Ziegler)*

Psylliodes alternata Ziegler, 1846, Proc. Acad. Nat. Sci. Philadelphia 2: 271.

Longitarsus rubicundus Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 166.

Longitasus rubidus LeConte, 1859, Col. of Kans., p. 26.

Oblong oval. Shining red-brown. Antennae ¾ length of body, basal 4 segments red-brown, 2, 3, and 4 of subequal length, 5-11 piceous. Prothorax ⅓ wider than long, shining, impunctate. Elytra wider at base than prothorax, humeri rounded, umbones faintly indicated, shining, faintly punctate on disc. Winged. Length 2.1 mm. Width 1.1 mm.

Alabama records: 1 specimen from Cleburne[1] County.

Seasonal distribution: August 15.

Remarks: This specimen was collected by L. G. Sanford. It is slightly smaller in length than material from Ohio, 2.4 mm. *(94),* Pennsylvania and Colorado, 2.5 mm. *(65).*

Longitarsus testaceus (Melsheimer)

Thyamis testacea Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 166.

Oblong oval. Yellow-brown. Head slightly darker. Antennae ¾ of body length, dark brown, basal 5 segments yellow-brown, segments 2, 3, and 4 subequal in length. Prothorax ⅓ wider than long, alutaceous, finely, sparsely to moderately punctate. Elytra distinctly alutaceous, punctation fine, density moderate to sparse. Wings of either sex present, reduced, or absent; humeri more prominent in alate forms. Length 1.7-2.1 mm. Width 0.7-0.9 mm.

Alabama records: 155 specimens from Baldwin[1], Escambia[1], Etowah[2], Houston[1], Lee[1], Lowndes[1], Macon[1], Marion[1], Marshall[1], and Mobile[2] counties.

Seasonal distribution: March 26-December 4.

Remarks: More investigations, both biological and taxonomic, including study of types of both this and related species, should be made before *L. testaceus* is accurately known.

As an example of current taxonomic difficulties, it is quite possible that Blatchley's *L. cotulus,* described from Florida, is conspecific with *L. testaceus.* Errors in describing the wing condition of *L. cotulus* were made by Blatchley. In his original description he stated, "wings absent" *(28).* In a lat-

er work, referring to the same species, he said that the wings of the type must have been sticking to the elytra when he lifted them. This observation caused him to place *L. cotulus* with the alate species group *(29)*. Perhaps Blatchley was confronted with a variable condition of the wings as noted above. Among Alabama specimens of *L. testaceus*, we have seen, in brachypterus examples, the rudimentary wing lay folded in a lateral dorsal pleat of the abdomen. Such specimens appear wingless when viewed through the semi-transparent elytra. Along with other features, the character of the wings tends to further relate *L. testaceus* and *L. cotulus*.

We have collected 9 large series of this beetle from *Cirsium* sp.

Longitarsus perforatus Horn*

Longitarsus perforatus Horn, 1889, Trans. Amer. Entomol. Soc. 16: 273, 286.

Elongate oval. Red-yellow-brown, shining. Antennae brown; basal 4 joints lighter brown; segments 2, 3, and 4 subequal. Prothorax ⅓ wider than long; coarsely, sparsely punctate, as wide as elytra at base. Elytra coarsely punctate, punctures tending to be in close striae; umbones not evident. Legs pale yellow. Length 1.8 mm. Width 0.8 mm.

Alabama records: 1 specimen from Baldwin[1] County.

Seasonal distribution: July 3.

Remarks: Horn *(63)* described *L. perforatus* from Tampa, Florida.

Longitarsus misellus Blatchley*

Longitarsus misellus Blatchley, 1921, Jour. N. Y. Entomol. Soc. 29: 21.

Elongate, oval, convex. Shining red-brown, antennae and legs red-yellow. Second, 3rd, and 4th antennal segments subequal in length. Head shining, impunctate. Pronotum minutely and sparsely punctate. Elytra not wider than thorax at base, confusedly punctate, semitransparent. Wings absent. Abdomen smooth, punctures fine and distant. Length 1.6-1.9 mm. Width 0.8-1.1 mm.

Alabama records: 4 specimens from Clay[1], Madison[1], and Tallapoosa[1] counties.

Seasonal distribution: May 3-July 27.

Remarks: Blatchley *(29)* differentiated *L. misellus* from *L. insolens* Horn by size and abdominal sculpture. His new species, he noted, was 1.0-1.2 mm. in length, whereas *L. insolens* was 2.0-2.2 mm. The abdomen of *L. misellus* was indistinctly punctate; that of *L. insolens* coarsely punctate.

Alabama specimens are intermediate in size and possibly intermediate in abdominal sculpture. Further study of these two species is needed.

Genus *Phyllotreta* Stephens

Phyllotreta Stephens, 1839, Man. Brit. Col. 291. Type-species: *Chrysomela nemorum* Linnaeus.

Small, elongate oval, subconvex, entirely dark or vittate species. Head small, rather deeply inserted in prothorax. Antennae ½ body length or

slightly longer. Procoxal cavities open behind. Posterior tibiae not laterally grooved, excavated slightly near apex, with medial apical spur. First posterior tarsal segment shorter than ½ length of hind tibia.

Gressitt and Kimoto *(54)* have been followed here in crediting Stephens as author of the genus. Formerly, in North America, either Foudras or Dejean was cited as the author *(1,48)*.

Five species are currently known from the State.

Key to the Alabama Species of *Phyllotreta*

1. Elytra with yellow markings 2
   Elytra entirely black or metallic ..... *P. aeneicollis* (p. 173)
2. Each elytron with two yellow spots 3
   Each elytron with yellow stripe 4
3. Apical spot large, oval, not apically curving mesad; 5th antennal segment of male same width as 4th and 6th ..... *P. bipustulata* (p. 172)
   Apical spot narrow, arcuate; 5th antennal segment of male wider than 4th or 6th ..... *P. striolata* (p. 171)
4. Yellow stripe not reaching elytral margin 5
   Yellow stripe reaching margin near apex ..... *P. liebecki* (p. 172)
5. Yellow stripe broad, curving mesad at base ..... *P. striolata* (p. 171)
   Yellow stripe narrow, basally straight on mesal side ..... *P. zimmermanni* (p. 171)

Phyllotreta zimmermanni (Crotch)

Orchestris zimmermanni Crotch, 1884, Proc. Acad. Nat. Sci. Philadelphia 25: 66.

Elongate oval. Shining black, elytra each with yellow vitta, laterally sinuate, but straight baso-medially. Antennae black, basal 4 segments brown; 5th segment of male longer than 3rd and 4th segments together, broadly oval (¾ as wide as long). Head, pronotum, and elytra closely punctate, elytral punctures substriate. Length 2.5-2.8 mm. Width 1.2-1.4 mm.

Alabama records: 110 specimens from Chambers[1], Lee[1], Limestone[1], Macon[1], Russell[1], Tallapoosa[1], and Winston[1] counties.

Seasonal distribution: March 16-June 3.

Remarks: This species, known as Zimmermann's flea beetle, was not recorded by Loding from Alabama. Its food plants, as listed by Chittenden *(43)*, include *Lepidium* sp., cultivated cress, *(Lepidium sativum)*, *Arabis* sp., radish *(Raphanus sativus)*, *turnip (Brassica* sp.), cabbage *(B. napobrassica)*, horseradish *(Armoracia lapathifolia)*, and mustard *(Brassica* sp.). We have collected large series from *Trifolium incarnatum*.

Phyllotreta striolata (Fabricius)

Crioceris striolata Fabricius, 1803, Index Syst. El., p. 38.
Crioceris vittata Fabricius, 1801, Syst. Eleuth. I., p. 469.
Haltica sinuata Redtenbacher, 1849, Fauna Austriaca, p. 532.

Phyllotreta maculipennis discedens Weise, 1881, Naturgesch. Ins. Deutschl. Col. 6: 93.

Phyllotreta tenuelimbata monticola Weise, 1881, Naturgesch. Ins. Deutschl. Col. 6: 93 (abber.).

Phyllotreta vittata lineolata Chittenden, 1927, Entomol. Amer. 8: 9, 25 (abber.)

Phyllotreta vittata vernicosa Chittenden, 1927 1. c. p. 25 (abber.).

Phyllotreta vittata artivittata Chittenden, 1927, 1. c. p. 26 (abber.).

Elongate oval. Shining black, elytra marked with yellow. Antennae black, basal 3 segments yellow-brown; 5th segment of males usually ⅓ longer than 4th, its width ¼ its length. Head, pronotum and elytra closely punctate, elytral punctures substriate. Each elytron with yellow vitta, sinuate mesad basally; or with basal and subapical yellow spot, apical one curving mesad caudally. Length 2.1-2.5 mm. Width 1.1-1.2 mm.

Alabama records: 21 specimens from Lee[1] and Mobile[1,2] counties.

Seasonal distribution: April 10-September 11.

Remarks: Loding recorded this species as *P. vittata* (Fabricius), a synonym of *P. striolata.* This, the cabbage flea beetle, has been taken by W.T. Seibels at Orchard, Mobile County, Alabama, on Chinese cabbage *(Brassica napobrassica).* Chittenden *(43),* in his study of the group, described 6 varieties of *P. striolata.* The spotted variety, mentioned in the above description, occurs frequently in the South. Geographical correlation of the various forms is difficult, since the species is supposedly introduced from Europe.

Phyllotreta liebecki Schaeffer*

Phyllotreta liebecki Schaeffer, 1919, Jour. N. Y. Entomol. Soc. 27: 339.

Elongate oval. Shining black with sinuate yellow vitta on each elytron, vittae broadly attaining margin at apex. Head, pronotum, and elytra closely punctate. First 4 antennal segments light brown, 5-11 dark brown; male with 5th antennal segment stouter than *striolata* but less stout than in *P. zimmermanni.* Length 2.5 mm. Width 1.2 mm.

Alabama records: 1 specimen from Mobile[2] County.

Seasonal distribution: March 20.

Remarks: A single specimen of this species was taken by Loding.

Phyllotreta bipustulata (Fabricius)

Crioceris bipustulata Fabricius, 1801, Syst. Eleuth. I., p. 464.

Phyllotreta bipustulata conjuncta Gentner, 1924, Entomol. News 35: 168 (var.).

Elongate oval. Black, elytra each with basal and subapical yellow spot. Antennae black, basal 5 segments brown; 5th antennal segment of male, not enlarged. Medial margin of elytral subapical spots straight, spot not apically curving mesad. Length 2.5 mm. Width 1.2 mm.

Alabama records: 1 specimen from Lee[1] County.

Seasonal distribution: July 18.

Remarks: Even though Loding *(75)* recorded this species from "over state," only a single Alabama specimen was seen.

The authors believe that *P. bipustulata* may be another variety of *P. striolata,* even though the 5th antennal segments of males of *P. bipustulata* are not inflated. This character is of an inconsistent nature in *P. striolata.* Further study may indicate the conspecificity of these 2 forms.

Phyllotreta aeneicollis (Crotch)

Orchestris aeneicollis Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 67.

Elongate oval. Shining brassy black or metallic black-green. Antennae similar in both sexes; dark red-brown, apex of 1st and all of 2nd, 3rd, and 4th segments light red-brown. Head faintly punctate. Pronotum closely, coarsely punctate. Elytral punctures close and of 2 different sizes, disc more coarsely punctate than lateral and apical declivities. Length 2.3-2.5 mm. Width 1.1-1.2 mm.

Alabama records: 4 specimens from Lee[1] County.

Remarks: Previously this species was known from Texas, Colorado, South Dakota, and Louisiana *(43).* It is here recorded new from Alabama. Three of the beetles were collected by H. G. Barwood, May 14, 1964, by sweeping roadside vegetation; the 4th the senior author collected by sweeping in a field of *Trifolium incarnatum* April 9, 1964. Chittenden recorded "turnip *(Brassica* sp.), radish *(Raphanus sativus),* cabbage *(Brassica napobrassica),* mustard *(Brassica* sp.), *Lepidium virginicum,* and *Coronopus didymus*" as host for both larvae and adults.

Genus *Palaeothona* Jacoby

Palaeothona Jacoby, 1880, Biol. Centr.-Amer. Col. 6(1): 377.
Trachymetopa Weise, 1899, Deutsche Entomol. Zeitschr., p. 139.

Small, oval, subconvex. Frontal tubercles swollen, separated from frons by impression. Antennae slightly longer than ½ body length. Procoxal cavities open behind. Posterior tibiae with mid apical spur, tibial apex laterally with fringe of small setae. First posterior tarsal segment subequal in length to 2nd and 3rd together.

One of 2 North American species is known from Alabama. It was classified by Loding *(75)* as a *Phyllotreta.*

Palaeothona picta (Say)

Altica picta Say, 1859, Jour. Acad. Nat. Sci. Philadelphia 4: 87.
Trachymetopha cretica Weise, 1899, Deutsche Entomol. Zeitschr., p. 140.

Oval, somewhat convex. Antennae yellow-orange, apical 4 or 5 segments dark brown. Head and prothorax yellow-orange. Elytra shining metallic green, blue-green or more rarely dark purple-brown; closely, finely, irregularly punctate. Except for orange prosternum, venter black. Legs light yellow-brown, posterior femora brown. Length 2.3-2.8 mm. Width 1.2-1.8 mm.

Alabama records: 64 specimens from Clay[1], Cleburne[1], Escambia[1], Etowah[2], Houston[1], Jackson[2], Lee[1], Macon[1], Madison[1], Marion[1], Mobile[2], and Winston[1,2] counties.

Seasonal distribution: April 1-August 18.
Remarks: The host plants for *P. picta* are *Quercus* spp.

Genus *Glyptina* LeConte

Glyptina LeConte, 1859, Col. of Kans., p. 26.
Balophila Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 65.

Minute or small, broadly oval to oblong oval species. Frontal tubercles distinct. Antennae ½ body length. Prothorax broader than long, without longitudinal or transverse basal impressions. Elytra punctate-striate. Posterior tibiae with medial apical spur, outer edge grooved near apex. First segment of hind tarsus ⅓ length of tibia, equaling combined remaining segments. Tarsal claws simple.

Six described species are known from the State. A 7th, possibly new, will be described if further study reveals its uniqueness. This form is presently represented in the Auburn University collection by only a single specimen (from Baldwin County).

Key to the Alabama Species of *Glyptina*

1. Elytra black-blue or deep metallic green-blue 2
   Elytra brown (dark brown, red-bronze, pale yellow-brown or tan) 3
2. Pronotum finely, closely punctulate, especially basomedially; larger (2.8-3.5 mm. long) ..... *G. bicolor* (p. 174)
   Pronotum smooth, shining, only sparsely, finely punctate; smaller (2.3 mm. long) ..... *G. cyanipennis* (p. 175)
3. Lateral and apical elytral punctures less distinctly impressed than discal; pronotum smooth, shining, punctures round 4
   Elytral punctures evenly impressed throughout; pronotal punctures close, slightly elongate ..... *G. maritima* (p. 176)
4. Robust, broadly oval or oval; dark brown or bright red-brown 5
   Moderately convex, oblong oval; dorsum red-tan, venter usually darker than dorsum ..... *G. spuria* (p. 175)
5. Larger (1.9-2.5 mm. long); shining red-brown; antennae and legs light red-yellow ..... *G. brunnea* (p. 175)
   Smaller (1.7-1.9 mm. long); dark brown; antennae and legs yellow-brown ..... *G. ferruginea* (p. 175)

Glyptina bicolor Horn

Glyptina bicolor Horn, 1889, Trans. Amer. Entomol. Soc. 16: 289.

Oblong oval, convex. Head, antennae, prothorax, and legs deep orange-red. Elytra deep green-blue, metallic. Meso and metasternum red-black; abdomen black. Pronotum very finely closely punctulate, punctures coarser striate, punctures apically evanescent and somewhat confused. Wingless. Length 2.8-3.5 mm. Width 1.4-1.7 mm.

Alabama records: 7 specimens from Cleburne[1], Etowah[2], Jackson[2], Madison[1,2], and Winston[1] counties.

Seasonal distribution: June 3-August 15.

Glyptina cyanipennis Crotch*

Glyptina cyanipennis Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 65.

Oblong oval, convex. Head, pronotum, and legs orange. Antennal segments 1-5 dark orange-brown, 6-11 brown. Pronotum smooth, shining; sparsely, finely punctate. Elytra shining black-blue, punctate-striate. Wingless. Metathorax and abdomen pitchy black. Length 2.3 mm. Width 1.1 mm.

Alabama records: 1 specimen from Madison[1] County.

Seasonal distribution: July 27.

Glyptina brunnea Horn

Glyptina brunnea Horn, 1889, Trans. Amer. Entomol. Soc. 16: 289.

Oval, robust, moderately convex. Shining red-brown. Antennae and legs light red-yellow. Head smooth, shining, impunctate. Pronotum smooth, shining, faintly punctate. Elytra punctate-striate, punctures evanescent apically. Length 1.9-2.5 mm. Width 1.1-1.3 mm.

Alabama records: 12 specimens from Barbour[1], Choctaw[1], Clarke[1], and Mobile[2] counties.

Seasonal distribution: April 10-August 28.

Glyptina spuria LeConte

Glyptina spuria LeConte, 1859, Col. of Kans., p. 26.
Glyptina lissotorques LeConte, 1859, Col. of Kans., p. 27.

Oblong oval, moderately convex. Head, antennae, prothorax, elytra, and legs red-tan. Meso and metathorax and abdomen red-yellow, red-brown, or even piceous. Pronotum shining, faintly, sparsely to more densely punctate. Elytra laterally feebly arched, transparent, fully alate wings visible through elytra; apical punctures of striae feebly impressed or obsolete. Length 1.6-1.9 mm. Width 0.9-1.1 mm.

Alabama records: 12 specimens from Coosa[1], Houston[1], Jefferson[1], Lee[1], Limestone[1], Mobile[2], and Talladega[1] counties.

Seasonal distribution: April 25-September 18.

Remarks: This species has been taken by beating roadside vegetation (specific hosts unknown).

Glyptina ferruginea Blatchley*

Glyptina ferruginea Blatchley, 1924, Jour. N. Y. Entomol. Soc. 32: 91.

Broadly oval, robust. Dark brown. Antennae and legs yellow-brown. Head shining impunctate. Elytra shining, punctate-striate. Width of elytra at base ½ wider than prothorax; humeri prominent. Fully winged. Length 1.7-1.9 mm. Width 0.9-1.1 mm.

Alabama records: 36 specimens from Lee[1] County.

Seasonal distribution: April 9-December 2.

Remarks: Several series have been collected from *Carya illinoensis*, apparently a preferred host.

Glyptina maritima Fall*

Glyptina maritima Fall, 1927, Canadian Entomol. 59: 140.

Elongate oval, subconvex. Pale dull yellow-brown; antennae, legs, and venter concolorous with dorsum. Posterior femora brown. Head smooth, impunctate. Pronotum shining, minutely alutaceous, closely punctate, punctures slightly elongate. Elytra punctate-striate, punctures evenly impressed throughout. Length 2.4 mm. Width 1.2 mm.

Alabama records: 1 specimen from Baldwin[2] County.

Remarks: This specimen greatly extends the range of this species. Previously it was known only from 6 Massachusetts specimens. Fall (55), in his description of the species, noted that "*maritima* is probably restricted to the vicinity of the shore line."

Genus *Aphthona* Chevrolat

Apthona Chevrolat, 1842, d'Orbigny's Dic. d'Hist. Nat. 2: 5. Type-species: *Altica cyparissiae;* first species mentioned.

Small species. Front carinate between antennae, with tubercles above carina. Antennae longer than ½ body length. Prothorax broader than long. Elytra wider at base than prothorax. Procoxal cavities open behind. Posterior tibiae apically emarginate with spur on outer lobe.

Only the following species is known from Alabama.

Aphthona insolita (Melsheimer)

Ceratraltica insolita Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 168.

Broadly oval. Shining red-brown. Head smooth, impunctate. Antennae longer than ½ body length; brown, 3rd, 4th, 5th, 10th, and 11th segments ventrally more yellow. Pronotum shining, very minutely punctulate; ⅓ wider than long, anterior margins obliquely truncate with post apical angulations, posterior corners tuberculate; lateral margins narrowly explanate. Elytra considerably wider than prothorax, humeri prominent; surface shining, disc with fine punctures in rows but striae not at all impressed; apex impunctate. Length 1.9-2.1 mm. Width 1.1-1.2 mm.

Alabama records: 3 specimens from Lee[1], Macon[1], and Mobile[2,3] counties.

Seasonal distribution: April 7-May 14.

Genus *Dibolia* Latreille

Dibolia Latreille, 1829, *in* Cuvier, Regne Anim., ed. 5: 155. Type-species: *Haltica occultana* Koch.

Small, convex, usually metallic. Head sunken into prothorax, clypeus extending as carina between antennae. Prothorax broader than long, narrowed anteriorly. Elytra oval, width at base equal to that of prothorax. Anterior coxal cavities open behind. Posterior femora strongly thickened. Posterior

tibiae laterally grooved and denticulate near apex, apex with medial broad spur, apically bifurcate. Claws appendiculate.

Only *Dibolia sinuata* Horn has been positively identified from Alabama. Several other specimens of *Dibolia* (near *borealis* Chevrolat) have also been collected in the State. However, W. J. Brown, Canada Department of Agriculture, who graciously examined these specimens, informed us (personal communication) that they are not *D. borealis*. (Loding *(75)* recorded *D. borealis* but his specimens were really *Psylliodes punctulata* Melsheimer.) The unidentified *Dibolia* are possibly new. Further material and knowledge of their biology are required before they can accurately be described. *Dibolia borealis* is known as a larval leaf miner of plantain *(94)*.

Dibolia sinuata Horn*

Dibolia sinuata Horn, 1889, Trans. Amer. Entomol. Soc. 16: 307.

Broadly oval, convex. Head, antennae, and legs, except posterior femora, red-brown, these femora black. Pronotum 2 times as wide as long, narrowed anteriorly, shining black, faintly, closely punctate basomedially. Elytra shining steel blue, punctate-striate, somewhat irregularly so; interstrial spaces with irregular fine punctures; apexes of elytra sinuate. First segment of anterior tarsal claws enlarged in males (as broad as long), slender in females (longer than broad). Length 3.1-3.2 mm. Width 2.0-2.1 mm.

Alabama records: 3 specimens from Lee[1] and Mobile[2] counties.

Seasonal distribution: June 3.

Remarks: This species is apparently rare. It was described by Horn *(63)* from a single specimen from Texas. The Lee County material was collected by sweeping roadside vegetation.

Genus *Psylliodes* Latreille

Psylliodes Latreille, 1825, Fam. Nat. Regne Anim. 405.

Macrocnema Stephens, 1816, Illustr. Brit. Entomol. Mandib. 4: 317 (not Hübner).

Macrocnema Weise, 1888, Naturg. Ins. Deutschl. Col. 6: 785, 793 (not Stephens).

Eupus Wallaston, 1854, Ins. Mader., 452, Fig. 5.

Psyllomima Bedel, 1898, Faune Col. Bassin Seine 5: 200. Subgenus, new name for *Macrocnema* Weise, not Stephens.

Phyllomima C. Waterhouse, 1902, Ind. Zool. 1: 287 (err.)

Elongate oval species. Head oval, deeply inserted into prothorax, clypeal carina and frontal tubercles absent. Antennae 11-segmented. Prothorax broader than long, narrowed anteriorly. Posterior femora grooved to receive tibiae. Posterior tibiae with preapical tarsal insertion, dentate, apex ending as spur. First segment of posterior tarsi more than ½ length of tibiae. Claws simple.

Only one species is thus far known from the State.

Psylliodes punctulata Melsheimer*

Psylliodes punctulata Melsheimer, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 166.
Psylliodes parvicollis LeConte, 1860 (1857), Rept. Explor. Surv. Miss. Pacif. 12: 69.
Psylliodes extricata Casey, 1884, Contrib. Descript. Col. N. Amer. I., p. 54.
Psylliodes aenescens Casey, 1884, Contrib. Descript. Col. N. Amer. I., p. 55.

Elongate oval. Shining pitchy black with a hint of bronze metallic lustre. Antennae and legs red-brown, femora varying from black to bronze, latter shade especially occurring in posterior femora. Head sparsely to moderately punctate, punctures not coarse. Pronotal punctation slightly coarser, only faintly alutaceous between punctures. Elytra punctate-striate, striae feebly impressed; innerstrial spaces punctulate. Males with first segment of anterior tarsi greatly enlarged; 5th ventral abdominal segment with semioval groove. Length 2.5-3.3 mm. Width 1.2-1.8 mm.

Alabama records: 74 specimens from Houston[1], Lee[1], Macon[1], Mobile[2], St. Clair[1], Tallapoosa[1], and Tuscaloosa[1] counties.

Seasonal distribution: March 9-November 19.

Remarks: Series of these beetles have been obtained by sweeping *Trifolium incarnatum.*

SUBFAMILY HISPINAE

Small to medium, wedge-shaped or elongate beetles. Head opisthognathous, prominent, not covered by pronotum. Antennae closely inserted, short, compact. Surface sculpture nearly smooth or varying to coarse. Elytra often costate and apically widened in some species. Larvae either leaf miners or external leaf feeders.

Of the 23 recognized tribes of this poorly classified subfamily, only 3 occur in the United States *(1).* Butte *(38,39,40)* revised the tribe Chalepini. Characterization of the 3 North American tribes in the present paper is only done in the key.

Key to the Alabama Tribes of *Hispinae*

1. Tarsal claws divergent; elytra coarsely punctate, at least some of the interstrial spaces convex 2
   Tarsal claws distinctly divaricate; elytral punctures moderate, in regular rows, interstrial spaces not convex ..... Tribe Cephaloliini (p. 178)
2. Antennae 11-segmented, clavate ..... Tribe Chalepini (p. 179)
   Antennae 8-segmented, capitate, clavate, or moniliform-filiform ..... Tribe Uroplatini (p. 186)

Tribe Cephaloliini

Only one species occurs in Alabama.

Genus *Stenispa* Baly

Stenispa Baly, 1858, Cat. Hisp. p. 13, tab. 1., Fig. 4.

Elongate, subcylindrical species. Antennae 11-segmented, basal 2 segments subglobose, segments 3-10 cylindrical, 11 subacute, 3rd segment longer than 4th. Front concave, with carina between antennae.

Stenispa metallica (Fabricius)

Hispa metallica Fabricius, 1801, Syst. Eleuth. II., p. 66.
Languria metallica Randall, 1838, Boston Jour. 2: 48.

Elongate, subparallel, black. Frons slightly concave, alutaceous, coarsely punctate. Pronotum coarsely alutaceous, sparsely punctate with punctures of various sizes. Elytra more shining than pronotum but still alutaceous, punctate-striate, intervals not costate or even strongly convex. Length 5.3-5.6 mm. Width 1.6-1.8 mm.

Alabama records: 4 specimens from Lee[1] and Mobile[2] counties.

Seasonal distribution: April 28-May 16.

Remarks: This species probably feeds on marsh grasses or sedges *(94).*

Tribe Chalepini

Key to the Alabama Genera of *Chalepini*

1. Each elytron at preapical wideness with 3 costae and 8 rows of punctures 2
   Each elytron at preapical wideness with at least 4 costae (3rd may be only faintly indicated or branching forward from 4th) and with 10 rows of punctures 3
2. Elongate slender, length greater than 3 times width; middle tibiae strongly curved ..... *Anisostena* (p. 183)
   Wedge-shaped, broad; length less than 3 times width; middle tibiae straight ..... *Sumitrosis* (p. 184)
3. Clypeus entirely black or black faintly margined with deep red, its sculpture coarse, either finely tuberculate or coarsely punctate 4
   Clypeus entirely yellow, its surface smooth or finely punctate ..... *Baliosus* (p. 186)
4. Form oval or cuneiform; each elytron with 11 striae at base ..... *Odontota* (p. 180)
   Form elongate, subparallel; each elytron with 10 striae at base ..... *Chalepus* (p. 179)

Genus *Chalepus* Thunberg

Chalepus Thunberg, 1805, Götting. gel. Anzeig. p. 282. Type-species: *Chalepus sanguinicollis* (Linnaeus).

Anoplitis Kirby, 1837, Insects. Col. *in* Richardson, Fauna Boreali-Americana, p. 227. Type-species: *Anoplitis bicolor* Olivier.

Elongate, subparallel species. Antennae 11-segmented. Usually coarsely punctate. Elytra costate, each with 3, usually quite distinct, and partial 4th costae; with 10 rows (5 double rows) of punctures at widest breadth before apex.

Only one species is known from Alabama.

Chalepus bicolor (Olivier)

Fig. 40

Hispa bicolor Olivier, 1792, Encyc. Metod. Hist. Nat. Ins. 7: 96.
Chalepus rufogaster Thunberg, 1805, *in* Göttingen gelehrte Anz., p. 282.
Odontota rufiventris Suffrian, 1868, Arch. Naturg. 34: 229.

Elongate, subparallel. Head black, vertex sulcate, clypeus faintly tuberculate. Antennae black. Prothorax and venter orange, former with large punctures. Elytra black, each elytron with 3 distinct costae and short preapical costa between complete 2nd and 3rd costae; punctures between costae in double rows except between 2nd and 3rd costae, there 2 rows at middle widening to 4 at preapex; lateral and apical margins serrulate. Legs entirely black, or with femoral bases orange. Length 6.0-7.7 mm. Width 1.9-2.5 mm.

Alabama records: 9 specimens from Baldwin[2], Escambia[1], Houston[1], Lee[1], Mobile[2], and Winston[2] counties.

Seasonal distribution: April 25-September 4.

Remarks: No Alabama specimens with pronotal discal markings were seen. This feature seems to occur in specimens from the North.

Genus *Odontota* Chevrolat

Odontota Chevrolat, 1837, *in* Dejean, Cat. Coleopt. livr. 5, 3rd ed., p. 388.

Type-species: *Hispa scapularis* Olivier.

Wedge-shaped or subparallel. Clypeus rugose, coarsely punctate, usually black. Antennae distinctly 11-segmented. Pronotal punctures large and coarse. Elytra punctate-striate, punctures large; suture usually costate, each elytron with 3 and part of 4th costa.

Five species are known from Alabama.

Key to the Alabama Species of *Odontota*

1. Elytra entirely black or black with humeri yellow-orange 2
   Elytra yellow or orange with suture narrowly, or disc more broadly black; lateral margins always pale 4
2. Elytra black with humeri yellow-orange, lateral and apical margins serrulate 3
   Elytra entirely black, lateral and apical margins not, or only slightly serrulate ..... *O. notata* (p. 181)
3. Legs entirely black ..... *O. mundulus* (p. 181)
   Bases of femora orange ..... *O. scapularis* (p. 181)

4. Sutural black vitta wider than first row of punctures, narrowest at base and widening apically 5
   Sutural black vitta narrow, not extending laterad beyond first row of punctures ..... *O. horni* (p. 182)
5. Pronotum with discal black spot; lateral and apical elytral margins not, or only slightly serrulate ..... *O. notata* (p. 181)
   Pronotum immaculate; lateral and apical elytral margins serrulate ..... *O. dorsalis* (p. 182)

Odontota scapularis (Olivier)

Hispa scapularis Olivier, 1808, Entomol., ou hist. nat. des ins . . . p. 766.
Hispa luteralis Say, 1823, Jour. Acad. Nat. Sci. Philadelphia 3: 431.

Wedge-shaped, robust. Head black with 2 orange pronotal depressions, one on either side of the median frontal carina. Antennae 11-segmented, 3rd segment long, nearly as long as 1 and 2 combined. Pronotum orange with discal spot and lateral margins in part black; punctures large, medial basal area depressed. Elytra black, humeri orange; each elytron with 10 rows of punctures and 4 distinct carinae, first being sutural; 4 rows of punctures between 3rd and 4th carinae, 2 rows between the other carinae; lateral and apical margins serrulate. Venter black, except for partly orange prothorax. Legs black, femoral bases orange. Length 6.5-7.7 mm. Width 2.8-3.5 mm.

Alabama records: 11 specimens from Lee[1], Mobile[2], and Tallapoosa[1] counties.

Seasonal distribution: March 29-July 27.

Odontota mundulus (Sanderson)*

Xenochalepus mundulus Sanderson, 1951, Proc. Entomol. Soc. Wash. 53: 162.

Wedge-shaped. Coloration and form similar to *O. scapularis*, but legs entirely black and orange or humeri not extending as far posteriorly. Aedeagus with sclerotized ejaculatory guides about ½ length of terminal portion. Length 5.6-6.5 mm. Width 2.4-2.5 mm.

Alabama records: 6 specimens from Clay[1] County.

Seasonal distribution: May 3.

Remarks: The elytral costae are more strongly developed in Alabama specimens of *O. scapularis* than those of *O. mundula*. This is the reverse of the situation as recorded by Wilcox *(94)*. A single specimen of *O. mundula* was found in Loding's collection. This had previously been identified as *O. scapularis* and bears the label "S. I." (possibly Sand Island?). It is noteworthy in having only the trochanters red, and not the femoral bases.

Odontota notata (Olivier)

Hispa notata Olivier, 1808, Entomol., ou hist. nat. des ins . . . p. 744.

Wedge-shaped, robust. Head black. Prothorax orange with discal spot black, punctate, punctures large. Elytra entirely black or red-orange with disc black as far laterally as half way between 3rd and 4th costae, costae not

especially prominent; lateral and apical margins not serrulate. Venter black, 5th abdominal segment red, laterally yellow. Length 6.3-7.4 mm. Width 2.5-3.2 mm.

Alabama records: 8 specimens from Mobile[2] County.

Seasonal distribution: March 15-July.

Remarks: Of the 8 specimens studied, 3 had the elytral margins broadly red-orange.

Odontota horni Smith

Odontota horni Smith, 1885, Entomol. Americana 1: 94.
Chalepus smithi Donckier, 1899, Ann. Soc. Entomol. France 68: 592.

Subparallel, robust. Head and appendages black. Pronotum entirely red-orange or with black discal spot, punctate with large punctures, lateral margins with medial prominence. Elytra red-orange, suture narrowly black, black wider near scutellum; each elytron with 10 rows of punctures and 4 broad intervals, intervals not at all or scarcely costate; lateral and apical margins not serrulate. Length 6.0-6.8 mm. Width 2.5-2.8 mm.

Alabama records: 10 specimens from Cleburne[1], Coosa[3], Jefferson[2], Lee[1], Madison[3], Mobile[2,3], Talladega[3], Tallapoosa[3], and Winston[1] counties.

Seasonal distribution: May 17-October 17.

Remarks: Only 2 Mobile County specimens had a black pronotal discal spot. The remainder were immaculate.

Odontota dorsalis (Thunberg)

Chalepus dorsalis Thunberg, 1805, *in* Göttinger gelehrte Anz., p. 282.
Hispa scutellaris Olivier, 1808, Entomol., ou hist. nat. des ins . . . p. 771.
Hispa suturalis Harris, 1835, Boston Jour. Nat. Hist. 1: 147.
Odontota harrisi Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 80.

Wedge-shaped, robust. Head, antennae, legs, and venter except prosternum black, prosternum orange. Pronotum entirely yellow-orange, closely punctate with large punctures. Elytra yellow-orange, suture broadly black, black more narrow at scutellum and widening apically; each elytron with 4 entire costae and partial costa between 3rd and 4th costae near apex; 10 rows of punctures; lateral and apical margins serrulate. Length 6.5-7.3 mm. Width 2.5-3.2 mm.

Alabama records: 26 specimens from Lee[1] and Walker[1] counties.

Seasonal distribution: April 20-June 7.

Remarks: This species is commonly known as the locust leaf miner. An interesting case of possible mimicry was noted between this species and the mirid bug, *Lopidea robiniae* (Uhler), which also occurs on black locust *(Robinia pseudoacacia)* and has similar markings.

Genus *Anisostena* Weise

Anisostena Weise, 1910, Verh. Nat. Ver. Brunn 49: 120, 123.

Elongate, coarsely punctate species. Antennae 11-segmented, basal seg-

ment subglobose, 2nd segment cylindrical, about as wide as first, segments 3-6 gradually widening, 7-11 forming club. Frons medially impressed and eyes with a medial marginal sulcus. Each elytron with 4 double rows of punctures, separated by 3 carinae. Mesotibiae strongly curved.

Two species are known from the State.

Key to the Alabama Species of *Anisostena*

1. Prothorax orange, anteriorly margined with black ... *A. ariadne* (p. 183)
   Prothorax entirely dark (black or blue-black) ..... *A. nigrita* (p. 183)

Anisostena ariadne Newman

Anisostena ariadne Newman, 1840, The Entomol. 1: 77.

Elongate. Head blue-black, strongly alutaceous, frons with deep, median, vertical depression, and thin carina between antennae. Eyes with deep vertical sulcus on mesal border. Antennae black, apical 5 segments with brown pubescense. Pronotum orange, anterior border rather broadly black; alutaceous and punctate with very large punctures. Elytra black with purple hues, each elytron with large punctures in 4 double rows, separated by 3 distinct costae. Legs and venter black except prosternum orange. Length 4.6-5.3 mm. Width 1.6-1.8 mm.

Alabama records: 21 specimens from Baldwin[3], Crenshaw[1], Lee[1], Mobile[2], and Tallapoosa[1] counties.

Seasonal distribution: April 1-September 13.

Anisostena nigrita (Olivier)

Hispa nigrita Olivier, 1808, Entomol. . . Coleopt. VI., 778.

Elongate. Head blue-black, coarsely alutaceous, frons with median, vertical impression and thin carina between antennal bases. Eyes with deep vertical sulcus as mesal border. Antennae black, 11-segmented. Pronotum black or blue-black, alutaceous, with large, deep punctures. Elytra black with or without purple hues, each elytron with large punctures (but smaller than pronotal punctures) in 4 double rows, double rows separated by 3 distinct costae. Venter black, or blue-black, 5th abdominal segment with lateral impression occasionally yellow. Legs black or brown-black, base of anterior femora often brown-black. Length 4.2-4.9 mm. Width 1.4-1.8 mm.

Alabama records: 8 specimens from Baldwin[3], Cleburne[1], Coosa[3], Jackson[3], Marion[1], and Mobile[2,3] counties.

Seasonal distribution: April 14-August 5.

Remarks: In addition to the above 8 specimens, 3 others worthy of note were studied. These were from Barbour and Mobile counties. They are shorter (3.9-4.2 mm. long), and although somewhat similarly formed and colored as the above, differ by several features. The most noticeable characteristic of 2 of these smaller beetles is their red-brown legs. A feature common to all 3 is the less pronounced first elytral interval. The color of the

dorsum has much brown showing through, especially on the elytra. The Lee County specimen has greenish reflections. In this respect it greatly resembles a specimen of *A. funesta* Baly in the Schaeffer collection of the USNM (Aslixo, Mexico, collected by Clavreau). It differs from this specimen of *A. funesta* by having the legs entirely red-brown, rather than brown with a faint reddishness at the knees.

Genus *Sumitrosis* Butte

Sumitrosis Butte, 1968, Coleopt. Bull. 22: 46. Type-species: *Hispa rosea* Weber.

Elongate, depressed species. Frons with median longitudinal sulcus. Antennae 11-segmented, basal 2 segments stout, segments 3-6 cylindrical, gradually enlarged distally, segments 7-11 clavate. Elytra each with 3 costae separating 4 double rows of punctures. Mesotibiae nearly straight.

Three species are known from the State.

Key to the Alabama Species of *Sumitrosis*

1. Apical angles of elytra evenly rounded, 3rd costa not elevated near apex 2

   Apical angle of elytra angulate, 3rd costae elevated near apex (Fig. 41) ..... *S. rosea* (p. 184)

2. Elytra yellow with black markings on costae forming chevrons, or entirely black; in yellow specimens suture always interrupted by black ..... *S. inaequalis* (p. 185)

   Elytra entirely yellow with postmedial and preapical paired brown spots or with suture of uninterrupted blue-black with laterad dilations and separate lateral spots ..... *S. ancoroides* (p. 185)

Sumitrosis rosea (Weber)

Fig. 41

Hispa rosea Weber, 1801, Obser. Entomol. . . . p. 66.

Hispa philemon Newman, 1838, Entomol. Mag. 5: 390.

Elongate, depressed. Head light brown, alutaceous, with median sulcus of about uniform depth. Antennae 11-segmented, brown. Pronotum yellow-brown, with lateral margin and pair of parenthesis-like marks on disc dark brown, deeply punctate, punctures broad. Elytra subquadrate, posterior lateral angles distinctly widened; 3rd costa arcuately raised at apex; color yellow-brown with black spots which sometimes appear as 2 discal chevrons. Length 3.5-3.9 mm. Width 1.4-1.6 mm.

Alabama records: 8 specimens from Choctaw[1], Houston[1], and Mobile[2] counties.

Seasonal distribution: April 21-August 1.

Remarks: Choctaw County specimens were taken by the authors by beating *Cyrilla racemiflora*. Hicks *(61)* reported "*Anoplitis philemon* (Newman)" [=*S. rosea*], to be infesting leaves of wood nettle, *Laportea canadensis* in the Niagara Peninsula of southern Ontario.

Sumitrosis inaequalis (Weber)

Hispa inaequalis Weber, 1801, Obser. Entomol. . . . p. 65.

Hispa suturalis Fabricius, 1801, Syst. Eleuth. I., p. 63.

Hispa obsoleta Say, 1823, Jour. Acad. Nat. Sci. Philadelphia 3: 432.

Hispa pallida Say, 1823, Jour. Acad. Nat. Sci. Philadelphia 3: 432.

Hispa flavipes Germar, 1824, Ins. Sp. Nov. . . . p. 529.

Hispa baucis Newman, 1838, Entomol. Mag. 5: 390.

Odontota nervosa Horn, 1883, Trans. Amer. Entomol. Soc. 10: 295 (not Panzer).

Elongate, depressed. Head light brown with median sulcus and vertex black varying to nearly completely black, alutaceous. Antennae 11-segmented, always black. Pronotum yellow-brown, or marked as in *S. rosea,* or nearly entirely black with only narrow yellow median line; punctures large, deep and close, median line impunctate in some specimens. Elytral lateral margins subparallel, somewhat narrower at middle, posterior corners not distinctly widened; each elytron with 3 costae, 3rd not apically elevated; color yellow-brown with black spots, as in *S. rosea,* or varying to entirely black. Length 3.5-4.4 mm. Width 1.4-1.9 mm.

Alabama records: 17 specimens from Baldwin[1], Houston[1], Lee[1], Madison[1,2], and Mobile[2] counties.

Seasonal distribution: April 25-August 29.

Remarks: The larvae of this species mine leaves of Leguminosae *(94).*

Sumitrosis ancoroides (Schaeffer)*

Anoplitis ancoroides Schaeffer, 1933, Pan-Pacific Entomol. 9: 105.

Elongate, subparallel, yellow-brown. Head with a median frontal sulcus. Antennae 11-segmented, black. Pronotum deeply punctate with large punctures, spaces between punctures alutaceous; entirely yellow-brown or with lateral margins and pair of discal parentheses black. Elytra nearly entirely yellow with postmedian and preapical paired spots brown, varying to suture blue-black with like-colored dilations from it at postscutellar, postmedial and preapical distances. A few more lateral spots also occasionally present. Length 3.2-4.0 mm. Width 1.4-1.8 mm.

Alabama records: 2 specimens from Barbour[1] and Mobile[1] counties.

Seasonal distribution: May 10-July 9.

Remarks: We are indebted to John A. Wilcox, New York State Museum, for identification of the pale, nearly immaculate specimen.

Genus *Baliosus* Weise

Baliosus Weise, 1905, Arch. f. Naturg., p. 64.
Parabaliosus Monros and Viana, 1947, An. Mus. Argent. Ci. Nat. "Bernardino Rivadavia" 42: 254.

Wedge-shaped, somewhat flattened. Clypeus usually yellow, surface not roughly sculptured, although maybe punctate. Antennae 11-segmented, basal 6 segments freely articulated, segments 7-11 more tightly fitted. Elytra each with 10 rows of punctures and 3 and partial 4th costae. Tibiae not curved.

Only the following species is known from Alabama.

Baliosus ruber (Weber)

Hispa ruber Weber, 1801, Obs. Entomol., p. 66.
Hispa marginatus Say, 1823, Long's Exped. II., p. 292.
Chalpus marmoratus Baly, 1885, Biol. Centr.-Amer. 6: 60.
Hispa pallipes Germar, 1824, Ins. Spec. Nov., p. 529.
Hispa quadratus Fabricius, 1801, Syst. Eleuth. II., p. 60.
Baliosus rubellus Schönherr, 1817, Synonymia Insect I, p. 3.

Elytral shape subquadrate. Yellow-red with darker red-spots. Head finely alutaceous with median frontal carrina. Antennae 11-segmented, dark red-brown. Pronotum coarsely punctate, margins darker red. Elytra with humeri very prominent, apical angles explanate; each elytron with 3 distinct carinae, 1st and 2nd furcate basally, 3rd with apical mesally recurved portion; punctures in 2 rows; lateral and apical margins serrulate. Legs yellow. Length 5.3-6.3 mm. Width 2.5-3.0 mm.

Alabama records: 12 specimens from DeKalb[1], Jefferson[1], Lee[1], Mobile[2], and Winston[2] counties.

Seasonal distribution: March 31-September 8.

Remarks: "Oak (*Quercus* sp.), soft maple *(Acer rubrum)*, linden *(Tilia* sp.), and locust *(Robina pseudoacacia)*" have been reported as host plants in Ohio *(94)*.

Tribe Uroplatini

Key to the Alabama Genera of Uroplatini

1. Apical margin of elytra evenly rounded 2
   Apical margin of elytra laterally explanate ..... *Octotoma* (p. 187)
2. Antennae clavate or moniliform-filiform, not abruptly clubbed, 8th segment not twice as wide as 3rd 3
   Antennae strongly capitate, 7th and 8th segments abruptly enlarged, 8th little less than 3 times as wide as 3rd ..... *Brachycoryna* (p. 187)
3. Smaller species (length 3.3 mm.); antennae clavate; elytral punctures close, small to moderate in size ..... *Glyphuroplata* (p. 188)
   Larger species (length 4.6-5.3 mm.); antennae moniliform; elytral

punctures large, often elongate, with broad interpunctual spaces ---------- *Microrhopala* (p. 188)

Genus *Octotoma* Dejean

Octotoma Dejean, 1837, Cat. Coleopt., 2nd ed., p. 366.

Small wedge-shaped beetles. Antennae 8-segmented, 7th and 8th segments equally broad, forming club. Elytra irregularly, coarsely sculptured. Tarsal claws divergent.

Only *O. plicatula* (Fabricius) is known from Alabama.

Octotoma plicatula (Fabricius)

Hispa plicatula Fabricius, 1801, Syst. Eleuth. II., p. 63.

Elongate, flattened. Head alutaceous, few scattered large punctures on upper frons; dark yellow-brown, vertex black. Antennae 8-segmented, 7th and 8th segments forming club. Pronotum yellow-brown, disc baso-medially black, honey-combed, inset with yellow-brown T. Scutellum yellow-brown. Elytra black, coarsely, irregularly sculptured; posterior corners greatly explanate; lateral and apical margins serrulate. Length 4.6-5.3 mm. Width 2.3-2.5 mm.

Alabama records: 6 specimens from Blount[3], Lee[1], Madison[3], Mobile[3], and Tallapoosa[1] counties.

Seasonal distribution: May 5-August.

Remarks: In Alabama this beetle has been collected by beating *Lespedeza* sp.

In an effort to control *Lantana camara* var. *aculeata* (L.) Moldenke, an introduced plant pest in Hawaii, *Octotoma* sp. probably *O. plicatula* (Fabricius) was introduced there for study *(70)*. Study material was obtained from *Lantana* from Honduras. Neither adults nor larval leaf mines could be found by checking cultivated *Lantana* in Alabama.

Genus *Brachycoryna* Dejean

Brachycoryna Dejean, 1835, Cat. Coleop. livr. 5, 2nd ed., p. 366.

Small, relatively robust, coarsely punctate species. Antennae 8-segmented, 7th and 8th segments enlarged, together forming a compact club. Elytral punctures in nearly regular rows.

Although 7 species are recorded in North America, only the following 1 has been taken in Alabama.

Brachycoryna melsheimeri (Crotch)*

Microrhopala melsheimeri Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 83.

Elongate oval. Head and venter black. Antennae black, 8-segmented, segments 7 and 8 forming club. Pronotum yellow-brown marked with somewhat irregular brown and dark brown spots, 3 such across base; coarsely

punctate, medial apical punctures somewhat strigose. Scutellum black. Elytra with humeri rounded, apex evenly arcuate; punctate with large punctures in double rows between costae, suture as costa; rows of punctures between 3rd and 4th costae; color yellow-brown with irregular black or dark brownish spots. Length 3.0 mm. Width 1.4 mm.

Alabama records: 1 specimen from Lee[1] County.

Seasonal distribution: July 21.

Remarks: For identification of this specimen we are indebted to John A. Wilcox, New York State Museum.

Genus *Glyphuroplata* Uhmann

Glyphuroplata Uhmann, 1937, Festsch. E. Strand 3: 453.

Small, coarsely punctate species. Antennae 8-segmented, gradually broadening distally. Elytral punctures more nearly regular.

One species, *G. porocata,* is known from Alabama.

Glyphuroplata porcata (Melsheimer)

Hispa porcata Melsheimer, 1846, Proc. Acad. Nat. Sci. Philadelphia 3: 83. ?*Hispa pluto* Newman, 1840, Entomol., p. 77.

Elongate oval. Entirely black or dark red-brown. Head alutaceous with median carina and pair of parallel ocular carinae on mesal margin of eyes; frons with 4 or 5 deep, larger punctures, few of which may fuse. Antennae 8-segmented, basal 2 segments moniliform, segments 3-7 cylindrical, about as broad as long, gradually increasing in size distally; segment 8 not abruptly enlarged in diameter but about 2 times as long as broad. Pronotum slightly wider than long, lateral margins feebly arched, being broadest at middle; surface alutaceous, coarsely marked with large punctures. Elytra punctate-striate, each with 4 double rows of punctures (8½ single rows), divided by evenly spaced carinae. Length 3.2-3.3 mm. Width 1.2-1.3 mm.

Alabama records: 2 specimens from Lee[1] and Mobile[2,3] counties.

Seasonal distribution: May 5-June 28.

Remarks: This species was formerly listed as belonging in *Uroplata* Baly *(75).*

Genus *Microrhopala* Chevrolat

Microrhopala Chevrolat, 1837, *in* Dejean, Cat. Coleopt. 2nd ed., p. 365.

Elongate oval species. Antennae 8- or 9-segmented; very gradually widening distally, apical segment not clubbed. Elytra oval, convex, not or feebly costate. Legs short, tibiae straight.

Only 1 of 7 recognized North American species has thus far been taken in Alabama.

Microrhopala excavata (Olivier)

Hispa excavata Olivier, 1808, Entomol. VI., p. 775.

Elongate oval. Entirely black or black with purple tinge. Antennae 8-seg-

mented, blue-black basally, segments 7-8 red. Frons with 3 sulci; occiput punctate, often strigosely. Pronotum coarsely punctate, with very large, irregularly spaced punctures. Elytra each with 8 rows of very large punctures, punctures often elongate; intervals not costate; apex evenly rounded. Length 4.6-5.3 mm. Width 1.9-2.3 mm.

Alabama records: 11 specimens from Baldwin[2], Etowah[2], and Mobile[2,3] counties.

Seasonal distribution: March 15-June 8.

SUBFAMILY CASSIDINAE

Small to moderate in size. Round or oval. Head opisthognathous, usually covered by pronotum. Lateral and apical margins of pronotum usually explanate; legs hidden from above.

The explanate elytral epipleura and pronotal margins impart a chelonian aspect, hence the appropriate common name "tortoise beetles" for the members of this subfamily. Of the 19 tribes, 4 occur in Alabama. A key to the tribes has been composed by Hincks *(62)*. The group is largely tropical, where many of its members attain remarkable size. Over 3,000 species are known in the world.

Key to the Alabama Tribes of Cassidinae

1. Anterior margin of pronotum explanate or truncate, head usually invisible from above or only antennae showing; prosternum not subquadrate with carinate margins 2

   Anterior margin of pronotum deeply emarginate, frons of head grossly visible from above; prosternal plate longitudinally subquadrate, deeply concave, lateral and anterior margins carinate ..... Tribe Hemisphaerotini (p. 189)

2. Head sloping, eyes higher than mouth parts; anterior margin of pronotum truncate or explanate 3

   Head horizontal, eyes on plane with mouth parts; anterior margin of pronotum always explanate ..... Tribe Cassidini (p. 192)

3. Claws appendiculate ..... Tribe Stolaini (p. 190)

   Claws simple ..... Tribe Physonotini (p. 191)

Tribe Hemisphaerotini

Anterior angles of pronotum with setigerous pore; prosternum longitudinally subquadrate, concave; mesosternum deeply emarginate; antennae short, clavate.

Two genera make up the tribe but only the following is Nearctic.

Genus *Hemisphaerota* Chevrolat

Hemisphaerota Chevrolat, 1837, *in* Dejean, Cat. Coleopt., 2nd ed., p. 367.
Porphyraspis Hope, 1840, Coleopt. Man. 3: 154.

Mouth parts visible, not hidden by prosternum; clypeus broader than long. Antennae short and thick, distal segments transverse. Anterior angles of pronotum with setigerous punctule. Prosternum broad between procoxae, with thickened margins, fitting into deeply emarginate mesosternum.

Only one species of this primarily neotropical genus lives in Alabama. Although the characters given above permit recognition of the genus in North America, they also apply to the genus *Spaethiella* Barber and Bridwell. *Spaethiella,* of neotropical distribution, is the other taxon in the tribe Hemisphaerotini. Valid generic characters for *Hemisphaerota* were not determined because no specimens of the neotropical species were available for study.

Hemisphaerota cyanea (Say)

Imatidium cyanea Say, 1823, Jour. Acad. Nat. Sci. Philadelphia 3: 435.
Cassida erythrocera Germar, 1824, Ins. Spec. Nov., p. 731.

Oval. Metallic deep blue, shining, head and pronotum nearly black. Antennae yellow, basal segment black. Pronotum emarginate anteriorly permitting head to be seen from above, lateral portions coarsely punctate, disc more finely, sparsely punctate. Elytral striae with large, deep punctures. Tarsal pads ventrally yellow, broad. Length 4.6-5.6 mm. Width 4.0-4.6 mm.

Alabama records: 55 specimens from Baldwin[1,3] and Mobile[2,3] counties.

Seasonal distribution: June 5-July 3.

Remarks: This attractive tortoise beetle occurs on palmetto (*Sabal* sp.).

Tribe Stolaini

Elytra confusedly punctate and lacking dorsal sulcus between epipleura and disc. Ventrally epipleura attain suture well before apex. Tarsal claws appendiculate.

Only 1 of 16 genera of the tribe is found in Alabama.

Genus *Chelymorpha* Chevrolat

Chelymorpha Chevrolat, 1837, *in* Dejean, Cat. Coleopt. livr. 5, 2nd ed., p. 369.
Cyphomorpha Hope, 1840, Coleopt. Man. 3: 160.

Head sloping. Antennae broadening from 5th segment distally. Pronotal and elytral margins not particularly explanate. Pronotum basally bisinuate and apically emarginate leaving head visible from above. Prosternum medially, longitudinally sulcate. Tarsal claws appendiculate.

One species of *Chelymorpha* is known from Alabama.

Chelymorpha cassidea (Fabricius)

Coccinella cassidea Fabricius, 1775, Mant. Ins. I., p. 82.
Cassida argus Lichtenstein, 1795, Cat. Mus. Hamburg, p. 66.
Cassida cribraria Olivier, 1790, Encyc. Meth. 5: 383.

Chelymorpha cassidea lewisi Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 77 (var.).
Chelymorpha cassidea phytophagica Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 77 (var.).
Imatidium cassidea septemdecimpunctata Say, 1823, Jour. Acad. Nat. Sci. Philadelphia 3: 435 (var.).
Chelymorpha cassidea geniculata Boheman, 1854, Mon. II., p. 39.

Oblong oval. Orange or yellow. Head partially visible from above. Pronotum with 4 black spots in transverse row. Scutellum brown or black. Elytra each with 5 or 6 black spots and post-scutellar common one. Venter and legs black. Length 8.8-11.2 mm. Width 6.5-7.7 mm.

Alabama records: 14 specimens from Baldwin[1], Colbert[2,3], DeKalb[1], Lee[1], Mobile[2,3], and Russell[1] counties.

Seasonal distribution: January 3, May 12-July 12, November 15.

Remarks: Loding *(75)* records *"Convolvolus* [sic] as host. Blatchley *(27)* stated that this species "Occurs on milkweed and on wild potato *(Ipomoea pandurata* L.)" One of our specimens was taken in a light trap. Loding collected a few during the winter (January 3, November 15) but May 13 until July 12 has been the period of most captures.

Tribe Physonotini

Living beetles irridescent; dull yellow in dried specimens. Antennae partially black. Elytral punctures substriate, lateral explanate portions broad, never thickened. Tarsal claws non-appendiculate.

The tribe has only one genus.

Genus *Physonota* Boheman

Physonota Boheman, 1854, Mono. Cassid. 2: 90.
Eurypepla Boheman, 1854, Mono. Cassid. 2: 236.

Head sloping. Antennae broadening from before 6th segment distally. Pronotal margins somewhat explanate; elytral margins explanate, deflexed. Inner margin of elytral epipleurae reaching suture before apex. Upper surface yellow, opalescent in life.

Two species are known from Alabama.

Key to the Alabama Species of *Physonota*

1. Pronotum with one medial black spot ..... *P. unipunctata* (p. 192)
   Pronotum with 3 or 5 black spots ..... *P. helianthi* (p. 191)

Physonota helianthi (Randall)

Cassida helianthi Randall, 1838, Boston Jour. Nat. Hist. Soc. 2: 30.
Physonota septentrionalis Boheman, 1862, Mon. Cassid. IV, p. 245.
Physonota quinquepunctata Walsh, 1869, Trans. Amer. Entomol. Soc. 2: 4.

Physonota arizonae Schaeffer, 1925, Jour. N. Y. Entomol. Soc. 33: 234 (var.).

Oval. Shining pale yellow. Pronotum with margin explanate, covering head from above; having 3 black spots, median more elongate. Elytra with explanate margins; finely to moderately coarsely, mostly irregularly punctate. Length 10.0-10.5 mm. Width 4.9-5.0 mm.

Alabama records: 2 specimens from Calhoun[2] county.

Seasonal distribution: June 21.

Remarks: This species, as its name infers, occurs on *Helianthus* sp.

Physonota unipunctata (Say)

Cassida unipunctata Say, 1823, Jour. Acad. Nat. Sci. Philadelphia 3: 434.

Oval. Shining pale yellow. Pronotal and elytral margins explanate. Pronotum with one median elongate black spot. Elytra mostly irregularly punctate; occasionally with short substriate series of punctures. Length 8.0-10.0 mm. Width 6.0-7.5 mm.

Alabama records: Cherokee[3] County.

Remarks: Although Loding *(75)* recorded this species from Hog Mountain, Cherokee County, the only specimen of it in his collection was from "E. Ont. Can." In addition to the different pronotal maculation *Physonota unipunctata* differs from *P. helianthi* by being smaller and having a narrower scutellum. *Physonota unipunctata* feeds on *Monarda* sp. *(94)*.

Tribe Cassidini

Head horizontal, completely covered by pronotum and invisible from above. Anterior pronotal margin positive-arcuate (neither truncate nor emarginate). Tarsal claws appendiculate or simple.

Of the subfamily, this is the largest tribe.

Key to the Alabama Genera of Cassidini

1. Tarsal claws simple 2
   Tarsal claws appendiculate 4
2. Elytra evenly convex, dorsum lacking gibbosities or tubercles 3
   Elytra multituberculate ..... *Parorectis* (p. 194)
3. Elytra without spots; explanate elytral margins rather strongly declivitous ..... *Coptocycla* (p. 198)
   Elytra with discal spots; explanate elytral margins more gently sloping ..... *Jonthonota* (p. 193)
4. Elytral punctures moderate to fine; convex species 5
   Elytral punctures coarse; pale green, feebly convex species ..... *Nuzonia* (p. 194)
5. Proepisternum not carinate, no antennal grooves present 6
   Proepisternum carinate along antennal grooves laterad of eyes ..... *Deloyala* (p. 195)

6. Elytra smooth, evenly convex 7
Elytra tuberculate and with single large medial discal gibbosity ..... *Plagiometriona* (p. 195)
7. Elytra vittate ..... *Agroiconota* (p. 193)
Elytra not vittate ..... *Metriona* (p. 196)

Genus *Jonthonota* Spaeth

Jonthonota Spaeth, 1913, Arch. Naturg. 79: Abt. A., Heft 6: 141.

Clypeus horizontal. Pronotal and elytral margins explanate. Elytra maculate. Tarsal claws simple.

There are 2 species in the genus *Jonthonota*. It is the type-species, *J. nigripes* (Olivier), which occurs in Alabama.

Jonthonota nigripes (Olivier)

Cassida nigripes Olivier 1790, Enc. Méth. V, p. 384.
Cassida novemmacultata Mannerheim 1843, Bull. Mosc. 16: 308.
Cassida atripes LeConte, 1859, Col. of Kans., p. 28.
Casida nigripes ellipsis LeConte, 1859, Col. of Kans., p. 28 (var.).

Broadly oval. Red-yellow. Clypeus horizontal. Antennal segments 1-7 yellow, segments 6-11 wider than preceding articles, 8-11 black. Pronotal margins explanate covering head from above. Scutellum margined with black. Elytral margins explanate. Elytra striate-punctate, interstrial spaces broad, each elytron with 3 black spots. Venter black, lateral margins of abdomen yellow. Anterior tibiae yellow, their femora, and entire middle and hind legs brown. Length 8.4-9.1 mm. Width 6.5-6.7 mm.

Alabama records: 11 specimens from Colbert[2], Mobile[2], and Morgan[1] counties.

Seasonal distribution: March 12-July 30.

Remarks: "It feeds on morning glory and sweet potato" *(94)*.

Genus *Agroiconota* Spaeth

Agroiconota Spaeth, 1913, Arch. Naturg. 79: Abt. A., Heft 6: 142.

Form rather strongly convex. Clypeus horizontal, head covered by explanate margins of pronotum. Elytra vittate. Tarsal claws appendiculate.

This is the only species of *Agroiconota* in North America. As with the genus *Hemisphaerota*, more definitive characters for the genus are not presented because of the inavailability of neotropical material.

Agroiconota bivittata (Say)

Fig. 1

Cassida bivittata Say, 1827, Jour. Acad. Nat. Sci. Philadelphia 5: 295.
Cassida striolata Boheman, 1854, Mon. Cassid. II., p. 444.
Cassida vittula Boheman, 1854, Mon. Cassid. III., p. 445.

Oval, convex, yellow. Head horizontal. Basal antennal segment enlarged;

segments 1-5 yellow; segments 6-11 black and broader than 3, 4, and 5. Pronotal and elytral margins explanate, those of elytra not especially deflexed. Elytra punctate-striate, with black vittae, 2 on each elytron and common sutural. Venter and legs brown. Length 4.6-5.6 mm. Width 3.3-3.5 mm.

Alabama records: 42 specimens from Butler[1], Cleburne[1], Coosa[1], Cullman[1], DeKalb[1], Henry[1], Houston[1], Lee[1], Macon[1], Mobile[2], and Talladega[1] counties.

Seasonal distribution: May 14-October 16.

Remarks: This species feeds on members of the Convolvulaceae.

Genus *Nuzonia* Spaeth

Nuzonia Spaeth, 1912, Stett. Entomol. Zeit. 73: 5.
Gratiana Spaeth, 1913, Arch. Naturg. 79: 142. Type-species: *Cassida spadicea* Klug.
Litocassis Weise, 1921, Ark. Zool. 14: 197.

Clypeus horizontal. Flattened, coarsely punctate species. Elytral margins explanate. Tarsal claws appendiculate.

Only the following species is known from North America.

Nuzonia pallidula (Boheman)

Cassida pallidula Boheman, 1854, Mon. II., p. 457.
Cassida texana Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 78.

Oval, subconvex, disc flat. Pale green-yellow. Clypeus horizontal. Antennal 1st segment as broad as 8th; segments 2-11 gradually enlarging distally; segments 1-7 yellow, 8-11 black. Pronotal and elytral discs explanate, deflexed. Pronotum smooth, shining. Elytra punctate-striate, punctures coarse, striae close together; lateral-most row of punctures larger than discal. Venter and legs entirely yellow. Length 5.4-6.1 mm. Width 3.9-4.5 mm.

Alabama records: 13 specimens from Lee[1], Mobile[2], and Randolph[1] counties.

Seasonal distribution: May 14-August 27.

Remarks: These have been taken from *Solanum carolinense (75)* and other solanaceous plants.

Genus *Parorectis* Spaeth

Parorectis Spaeth, 1901, Verh. Zool.-Bot. Ges. Wien 51: 346.
Orectis Spaeth, 1901, 1. c., p. 346 (not Lederer, 1857).

Clypeus horizontal. Elytra multituberculate. Tarsal claws simple.

One of 2 United States species is known from Alabama.

Parorectis callosa (Boheman)

Cassida callosa Boheman, 1854, Mon. Cassid. II., p. 471.

Broadly oval. Clypeus horizontal. Antennal segments 1-7 yellow-brown, 8-11 dark brown, 6-11 broader than 3-5. Pronotum brown with explanate

margins covering head, margins translucent. Elytra dark brown with yellow lateral and latero-apical margins; coarsely tuberculate, 3 pairs of tubercles on posterior declivity prominent. Length 6.0-6.7 mm. Width 4.9-5.6 mm.

Alabama records: 2 specimens from Mobile[2,3] County.

Seasonal distribution: February 5, May 28.

Remarks: No host plant associations are known to the authors.

Genus *Deloyala* Chevrolat

Deloyala Chevrolat, 1837, *in* Dejean, Cat. Coleopt. livr. 5, 2nd ed., p. 371.
Chirida Chapuis, 1875, Hist. Nat. Ins., Coleopt. 11: 405.

Clypeus horizontal. Antennae 11-segmented, clavate; 2nd segment short and comparatively broad, 3rd segment twice as long as 2nd. Pronotal and elytral margins explanate, former concealing head from above. Prosternum sulcate laterad of eyes, 2nd, 3rd, and 4th antennal segments fitting in these grooves when at rest. Proepisternum carinate along lateral edge of prosternal sulci. Elytra maculate but not vittate. Claws appendiculate.

Only one species of *Deloyala* is known from Alabama.

Deloyala guttata (Olivier)

Cassida guttata Olivier, 1790, Encyc. Meth. Ins. 5: 383.
Chirida signifera bohemani Spaeth, 1914, Col. Cat. pars. 62: 124 (subsp.).
Cassida cruciata Fabricius, 1775, Mant. Ins. I., p. 90.
Cassida signifera Herbst, 1799, Natursyst. Kaf. VIII., p. 313.
Cassida signifera fuliginosa Olivier, 1808, Entomol. VI., p. 971 (abber.).
Chirida signifera pennsilvanica Spaeth, 1914, Col. Cat. pars. 62., p. 124.
Coptocycla trabeata Boheman, 1855, Mon. Cassid. III., p. 319 (var.).
Coptocycla immunda Boheman, 1855, Mon. Cassid. III., p. 320.
Coptocycla signifera lucidula Boheman, 1855, Mon. Cassid. III., p. 321 (abber.).
Cyptocycla signifera lecontei Crotch, 1873, Proc. Acad. Nat. Sci. Philadelphia 25: 79 (subsp.).

Oval. Pronotal and elytral margins explanate, translucent, except always opaque at humeri. Discs of pronotum and elytra usually black with irregular brown-yellow spots, disc varying from entirely brown to entirely black. Length 5.3-6.8 mm. Width 4.4-4.9 mm.

Alabama records: 41 specimens from Autauga[1], Baldwin[1], Clay[1], Cleburne[1], Coosa[1], DeKalb[1], Henry[1], Houston[1], Jefferson[1], Lawrence[1], Lee[1], Macon[1], Mobile[2], and Monroe[1] counties.

Seasonal distribution: May 18-August 15.

Remarks: This species, commonly called the mottled tortoise beetle, lives on members of the Convolvulaceae.

Genus *Plagiometriona* Spaeth

Plagiometriona Spaeth, 1899, Verh. Zool.-Bot. Ges. Wien 49: 219.
Parametriona Spaeth, 1937, Timminckia 2: 144.

Broadly oval, explanate species. Antennal segment 3 shorter than 2 times

length of 2. Prosternum not grooved for reception of antennae. Elytra gibbose, tuberculate and coarsely reticulate.

Only the following species occurs in the State.

Plagiometriona clavata (Fabricius)

Cassida clavata Fabricius, 1798, Syst. Entomol. Supp., p. 83.
Deloyala diversicollis Schaeffer, 1925, Jour. N. Y. Entomol. Soc. 33: 235 (subsp.).

Broadly oval. Head, venter, and legs yellow. Antennae yellow, apical segment brown. Pronotal and elytral margins explanate, former hiding head from above, margins translucent except at humeri and posterior elytral corners. Disc of pronotum light brown. Elytra brown except apex and lateral margin at middle, disc tuberculate with single prominent medial gibbosity. Length 7.0-7.7 mm. Width 6.1-6.7 mm.

Alabama records: 7 specimens from Lee[1], Madison[1], and Mobile[2,3] counties.

Seasonal distribution: April 22-July 27.

Remarks: These beetles feed on "sycamore, oak, linden, and Japanese lantern" *(94)*. Loding and the present writers have taken specimens from *Solanum* sp.

This is recorded as "*Deloyala clavata* (Fab.)" by Loding *(75)*.

Genus *Metriona* Weise

Metriona Weise, 1896, Deutsche Entomol. Zeitschr. 1896: 13.
Charidotella Weise, 1896, 1. c., p. 13. Subgenus.
Erepsocassis Spaeth, 1936, Entomol. Runds. 53: 260. Type-species: *Coptocycla rubella* Boheman.
Strongylaspis Spaeth, 1936, Entomol. Runds. 53: 216. Type-species: *Coptocycla bisignata* Boheman.

Oval, convex species. Clypeus horizontal. Antennae with 3rd segment only slightly longer than 2nd. Pronotal and elytral margins explanate, former obscuring head from above. Prosternum lacking groove beside eyes. Elytra smooth, evenly convex. Anterior and middle tarsal claws appendiculate.

Four species are known from Alabama. More study is needed on the ecology and systematics of the southeastern species.

Key to the Alabama Species of *Metriona*

1. Elytral margins entirely opaque, or partially translucent, being opaque at humeri 2
   Elytral margins entirely translucent 3
2. Elytra with margins entirely opaque, surface dull, finely alutaceous ..... *M. marginepunctata* (p. 198)
   Elytra translucent midlaterally, humeri and apical margins opaque; elytral surface faintly shining ..... *M. purpurata* (p. 197)

3. Surface of pronotum and elytra dull, finely alutaceous 4
   Surface of pronotum and elytra smooth, shining ..... *M. bicolor* (p. 197)
4. Elytra with pair of brown-black small discal spots; all tarsal claws of both sexes appendiculate ..... *M. bisignata* (p. 198)
   Elytra immaculate; middle tarsal claws of males nonappendiculate ..... *M. marginepunctata* (p. 198)

Metriona purpurata (Boheman)

Coptocycla purpurata Boheman, 1855, Mon. Cassid. III., p. 300.

Broadly oval. Clypeus horizontal. Second antennal segment broad, only slightly shorter than 3rd. Pronotal and elytral margins explanate, former entirely translucent, latter only mid-laterally translucent; humeri and apical margins opaque brown, concolorous with both pronotal and elytral discs. Elytra punctate-striate, punctures small; evenly convex. Venter black, except legs, proepisterna, and apex of 5th abdominal segment yellow. Middle claws of male simple; front and hind claws appendiculate. All claws of female appendiculate. Length 5.4-6.5 mm. Width 4.9-5.3 mm.

Alabama records: 9 specimens from Baldwin[2], Clay[1], Madison[1], Marion[1], and Mobile[2] counties.

Seasonal distribution: April 20-September 20.

Remarks: This species feeds on Convolvulaceae.

Metriona bicolor (Fabricius)

Cassida bicolor Fabricius, 1798, Entomol. Syst. Supp., p. 83.
Cassida aurichalcea Fabricius, 1801, Syst. Eleuth. I., p. 397.
Cassida bistripunctata Herbst, 1799, Natursyst. Kaf. VIII., p. 275.
?Cassida marylandica Herbst, 1799, Natursyst. Kaf. VIII., p. 274.
Cassida pallida Herbst, 1799, Natursyst. Kaf. VIII., p. 262.
Cassida aurisplendens Mannerheim, 1843, Bull. Mox. 16: II: 307 (var.).
Metriona floridana Schaeffer, 1925, Jour. N. Y. Entomol. Soc. 33: 235 (var.).

Oval. Brown-yellow; shining, in living specimens brilliant golden changing to a dull red-yellow when disturbed. Pronotal and elytral margins explanate, translucent. Elytra punctate-striate, punctures small; each elytron with 3 small black spots, 1 discal and 2 at furrow before lateral explanation. Venter, bases of femora, and apical 4 antennal segments black. Antennae proximally, legs distally, and apex of 5th abdominal segment yellow. All tarsal claws appendiculate. Length 5.4-6.7 mm. Width 4.2-5.8 mm.

Alabama records: 56 specimens from Autauga[1], Bibb[2], Clay[1], Cleburne[1], Coffee[1], Coosa[1], Cullman[1], DeKalb[1], Jefferson[3], Lee[1], Macon[1], Marion[1], Mobile[2], Monroe[1], Morgan[1], Russell[1], Talladega[1], and Tallapoosa[1] counties.

Seasonal distribution: April 29-December.

Remarks: This is commonly called the golden tortoise beetle. It feeds on plants of the Convolvulaceae.

Metriona bisignata (Boheman)

Coptocycla bisignata Boheman, 1855, Mon. Cassid. III., p. 119.

?Metriona lodingi Schaeffer, 1925, Jour. N. Y. Entomol. Soc. 33: 236.

Oval. Dull brown-yellow. Pronotal and elytral margins explanate, former covering head; these margins entirely, but only vaguely translucent. Surface finely alutaceous. Elytra punctate-striate punctures small but occasionally appearing large due to translucent "water marked" spots behind them within integument. Occasionally elytra with pair of small dark brown discal spots. Venter dark brown to black. Apex and lateral margins of abdomen yellow. Legs brown. All tarsal claws appendiculate except outer middle claws of males. Length 5.6-6.8 mm. Width 4.2-5.3 mm.

Alabama records: 8 specimens from Mobile[2,3] County.

Seasonal distribution: April 7-November 18.

Remarks: Loding recorded this species as *M. lodingi* Schaeffer, a paratype of which was found in his collection.

Metriona marginepunctata Schaeffer

Metriona marginepunctata Schaeffer, 1925, Jour. N. Y. Entomol. Soc. 33: 236.

Oval. Yellow or red-brown. Clypeus horizontal, of color of dorsum. Apical 4 antennal segments black. Pronotum and elytra with explanate margins, anterior pronotal margin covering head. Margins translucent or opaque. Elytra finely alutaceous, immaculate; disc punctate-striate with moderate sized punctures, margins of elytra laterad of 10th striae irregularly punctate with moderately large punctures, especially near humeri. Venter black, lateral margins of abdomen yellow. Legs black or dark brown on proximal portions of femora; distally more red-brown. Middle tarsal claws of males simple; all claws of female appendiculate. Length 7.5-7.7 mm. Width 5.8-6.0 mm.

Alabama records: 2 specimens from Mobile[2,3] County.

Seasonal distribution: April 16-June 20.

Remarks: The above 2 specimens were 2 of the 3 before Schaeffer when he described the species (85).

Genus *Coptocycla* Chevrolat

Coptocycla Chevrolat, 1837, *in* Dejean, Cat. Coleopt. 3rd ed., p. 396.

Psalidonota Boheman, 1854, Monogs. Cassid. 2: 153.

Dyscineta Spaeth, 1936, Festschr. E. Strand 1: 252.

Podostraba Spaeth, 1936, 1. c., 1: 253.

Floridocassis Spaeth, 1952, Trans. Roy. Entomol. Soc. London 103: 348.

Type-species: *Coptocycla repudiata* Suffrian.

Oval. Margins of pronotum and elytra explanate, more or less deflexed. Tarsal claws simple, non-appendiculate.

The genus is primarily neotropical. One of our species, *C. repudiata,* ranges from Cuba and Florida.

Key to the Alabama Species of *Coptocycla*

1. Lateral margins of elytra nearly perpendicular, irregularly punctate ..... *C. repudiata* (p. 199)
   Lateral margins of elytra less deflexed, impunctate ..... *C. pinicola* (p. 199)

Coptocycla repudiata Suffrian

Coptocycla repudiata Suffrian, 1868, Arch. f. Naturg. 34: 294.

Oval. Clypeus yellow, horizontal. Antennae with apical 4 segments black, basal 7 yellow. Pronotal and elytral margins translucent, more perpendicular. Elytra finely alutaceous, immaculate, punctate-striate, lateral margins beyond 10th striae irregularly punctate. Venter and femoral bases black. Lateral margins and apex of abdomen yellow; legs from apex of femora distad, yellow-brown. Tarsal claws non-appendiculate. Length 5.8-7.4 mm. Width 4.2-5.6 mm.

Alabama records: 24 specimens from Baldwin[1], Chilton[1], Houston[1], and Mobile[2,3] counties.

Seasonal distribution: March 21-July 29.

Remarks: This species occurs on Convolvulaceae. Comparison of an aedeagus with that of *C. pinicola* Schaeffer indicated the distinctness of these forms.

Spaeth *(90)* used this species as the type species for his monotypic genus *Floridocassis.* We have followed Arnett *(1)* in classifying *C. repudiata* in *Coptocycla.*

Coptocycla pinicola Schaeffer

Coptocycla pinicola Schaeffer, 1925, Jour. N. Y. Entomol. Soc. 33: 235.

Oval. Antennae clavate, 5-11 broader, dark brown, sericeous. Pronotal and elytral margins translucent, explanate, not greatly deflexed but more so than *C. repudiata.* Elytra dull, alutaceous, punctate-striate, punctures medium to moderately large; lateral margins laterad of 10th striae impunctate. Venter red-brown, margins of abdomen lighter. Tarsal claws non-appendiculate. Length 5.4-6.7 mm. Width 4.4-5.1 mm.

Alabama records: 6 specimens from Henry[1], Macon[1], and Mobile[2,3] counties.

Seasonal distribution: March 15-July 19.

Remarks: Although Loding reported to Schaeffer *(85)* that these beetles are taken only on pine, our 2 examples came from *Convolvulus* (?) or *Ipomoea* (?).

One of Loding's specimens is a paratype.

SUMMARY

From the results of a survey of literature, a review of museum materials, and field collections throughout Alabama made between spring 1963 and summer 1965, a list of the known Chrysomelidae of Alabama has been compiled. Descriptions of and keys to these species and their supraspecific taxa are presented. Notes on the biology, ecology, seasonal and geographical distributions are included, as well as occasional remarks on taxonomy.

The following original taxonomic changes are made:

NEW SYNONYMY

Donacia subtilis Kunze	= *D. fulgens* LeConte, new synonymy
Pachybrachis pectoralis (Melsheimer)	= *P. sobrinus* (Haldeman), new synonymy
	= *P. oculatus* Suffrian, new synonymy
	= *P. sticticus* Blatchley, new synonymy
P. femoratus Olivier	= *P. characteristicus* Suffrian, new synonymy
P. cephalicus Olivier	= *P. dixianus* Fall (var.), new synonymy
	= *P. parvus* Fall (var.), new synonymy
P. spumarius Suffrian	= *P. roboris* Fall, new synonymy
Cryptocephalus venustus Fabricius	= *C. cinctipennis* Randall (subsp.), new synonymy
	= *C. hamatus* Melsheimer (subsp.), new synonymy
	= *C. simplex* Haldeman (subsp.), new synonymy
	= *C. ornatulus* Clavareau (subsp.), new synonymy

Blepharida rhois (Forester) = *B. dorothea* Mignot, new synonymy

NEW RANK

Systena corni Schaeffer—Elevated from subspecific rank under *S. marginalis* (Illiger) to specific rank.

NEW COMBINATION

Syphraea nigritula (Linell)—Transferred from *Altica*. *S. nana* (Crotch)—Transferred from *Altica*.

The family Chrysomelidae in Alabama consists of 13 subfamilies with 103 genera and 342 species and subspecies. This list shows an increase of 20 genera and 83 species and subspecies over Loding's *(75)* list. Specimens of several possibly new species have been collected or discovered but they are not included here. Genera containing probable new species are *Pachybrachis, Xanthonia, Ophraella, Glyptina,* and *Dibolia.*

The following lists the number of genera and species and subspecies of the Alabama subfamilies:

	Genera	*Species and subspecies*
Donaciinae	2	10
Orsodocninae	1	1
Criocerinae	2	14
Zeugophorinae	1	1
Clytrinae	4	5
Cryptocephalinae	7	61
Chlamisinae	2	10
Eumolpinae	14	50
Chrysomelinae	10	21
Galerucinae	12	30
Alticinae	27	106
Hispinae	10	17
Cassidinae	11	16
TOTAL	103	342

In addition to facilitating identification of the Alabama fauna, this work is suitable for keying to species a large percentage of the chrysomelid fauna of Southeastern United States. Based on records by Kirk *(67)*, 80.6 per cent of the South Carolina chrysomelid species are common to both Alabama and South Carolina. Based on Fattig's *(57)* checklist for Georgia, 93.3 per cent are common with that fauna.

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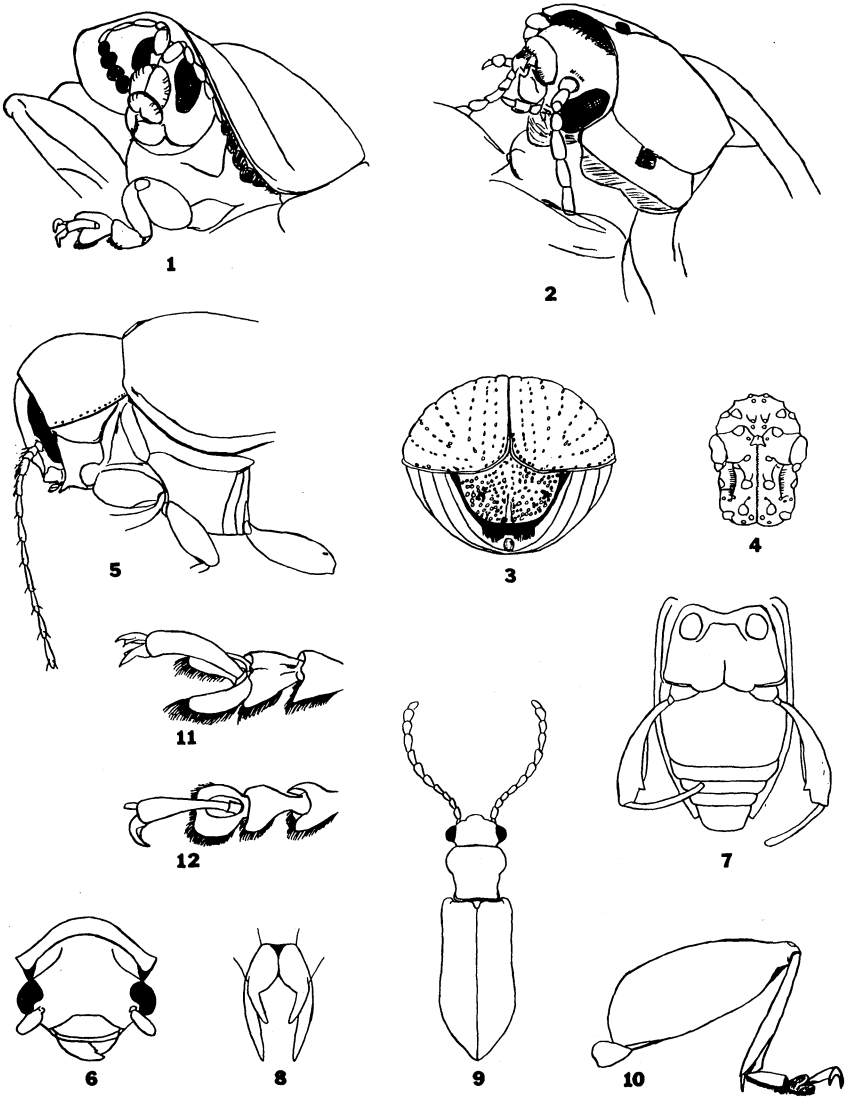
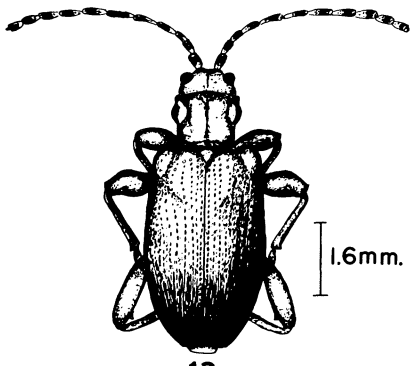


Fig. 1-12. 1. Anterio-cephalic view of *Agrioconote bivittata* (Say). 2. Anterio-ventral cephalic view of *Chrysomela scripta* Fab. 3. Caudal view of *Cryptocephalus notatus quadrimaculatus* Say showing exposed pygidium. 4. *Exema gibber* (Fab.). 5. Left lateral view of head and prothorax of *Cryptocephalus notatus quadrimaculatus* Say. 6. Cephalic aspect of *Zeugophora atra* Fall. 7. Metasternum and abdominal sclerites of *Donacia cincticornis* Newm. 8. Bifid tarsal claws of *Orsodacne atra* (Ahrens). 9. *Orsodacne atra* (Ahrens). 10. Hind leg of *Disonycha alternata* (Ill.). 11. Tarsus of *Typophorus nigritus virdidicyaneus* (Cr.). 12. Tarsus of *Leptinotarsa decimlineata* (Say).



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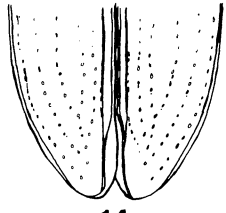

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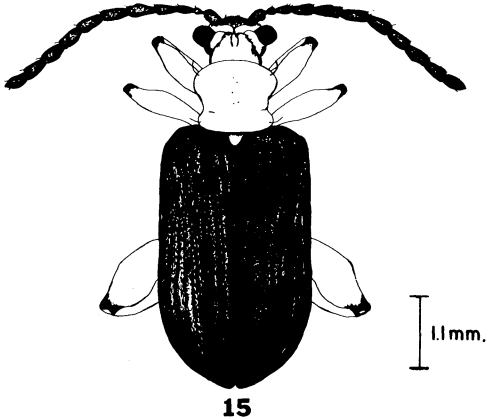

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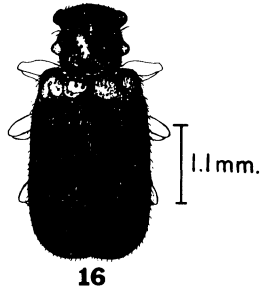

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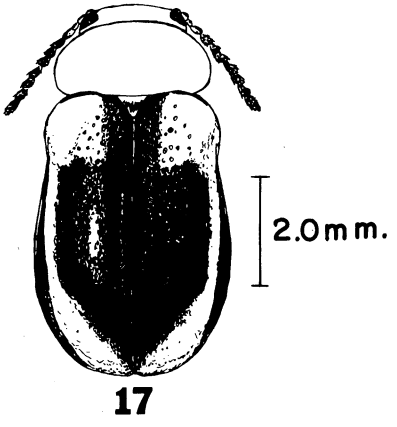
Fig. 13-16. 13. *Donacia aequalis* Say. 14. Elytral apexes of *Plateumaris* sp. 15. *Lema (Quasilema) cornuta* Fab. 16. *Zeugophora atra* Fall.



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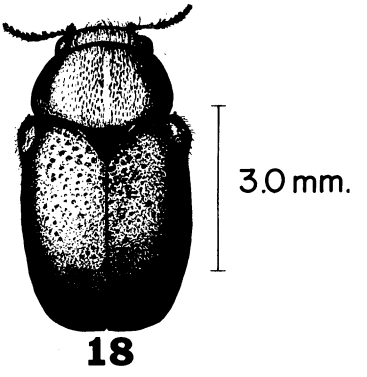

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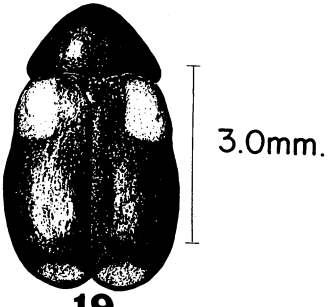

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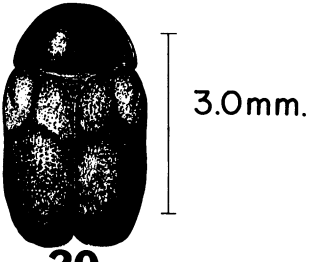

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Fig. 17-20. 17. *Anomoea laticlavia laticlavia* (Forst.). 18. *Coscinoptera dominicana dominicana* (Fab.). 19. *Babia quadriguttata* (Oliv.). 20. *Saxinis omogera* Lac.

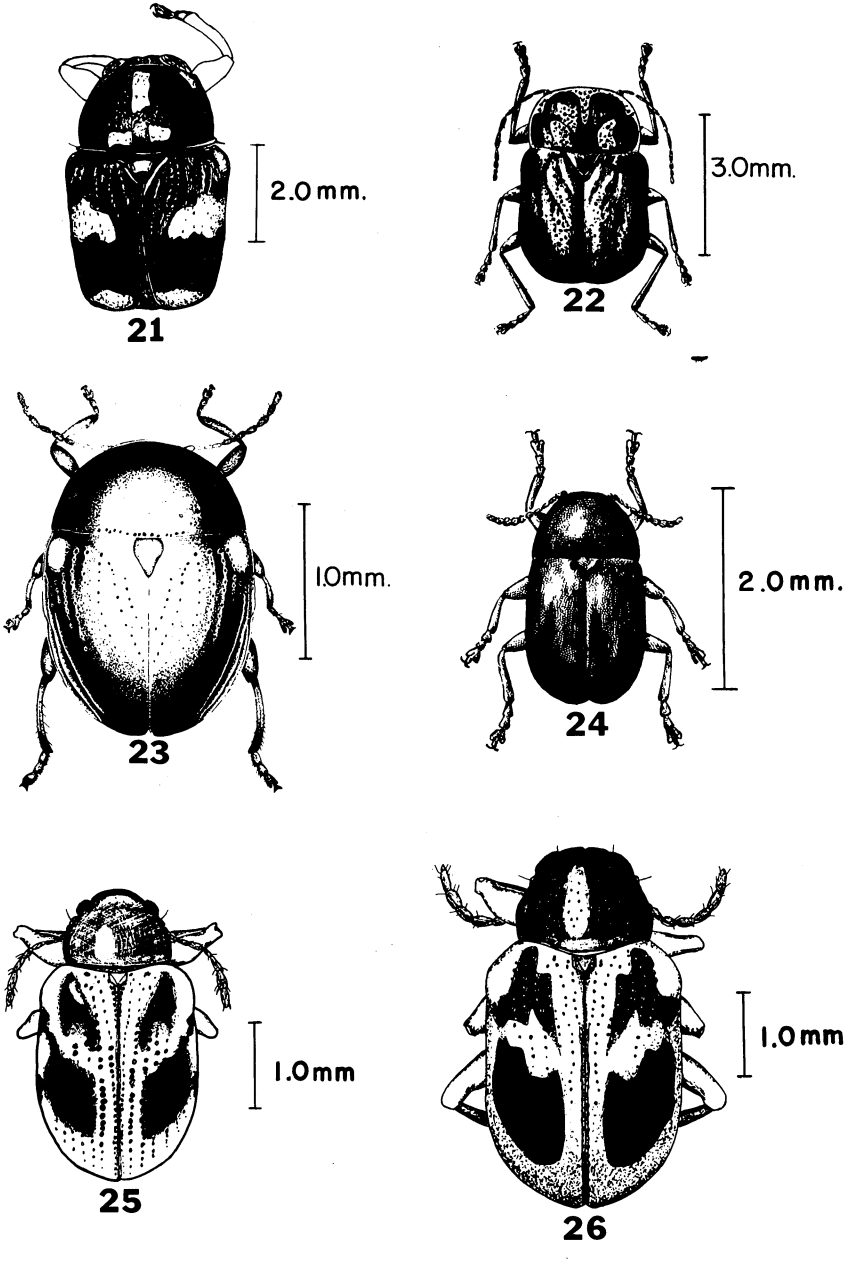

Fig. 21-26. 21. *Griburius scutellaris* (Fab.). 22. *Pachybrachis trinotatus* (Melsh.). 23. *Lexiphanes seminulum* (Suffr.). 24. *Diachus auratus* (Fab.). 25. *Paria fragariae kirki* Bals. 26. *Paria wilcoxi* Bals.

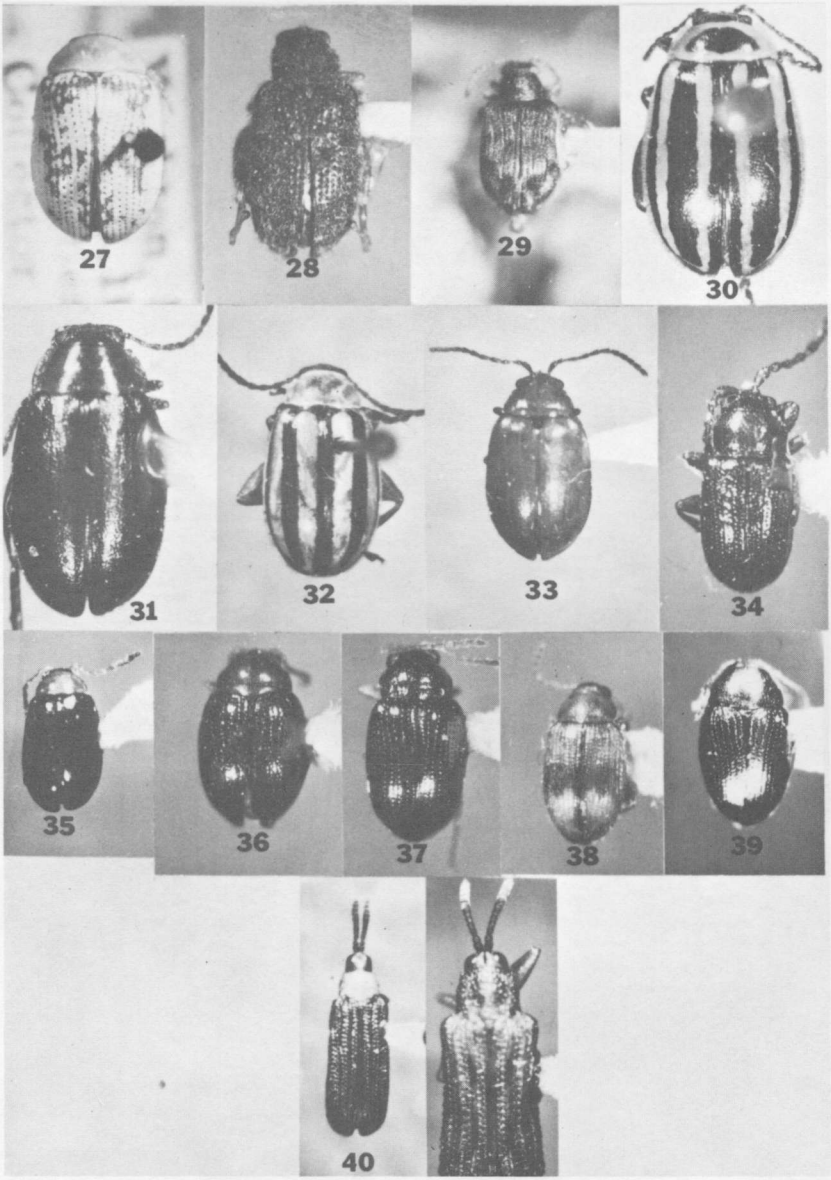

Fig. 27-41. 27. *Blepharida rhois* (Forst.). 28. *Distigmoptera pilosa* (Ill.). 29. *Pseudolampsis guttata* (Lec.). 30. *Kuschelina petaurista* (Feb.). 31. *Capraita indigoptera* (LeC.). 32. *Disonycha admirabilis* Blatch. 33. *Strabala rufa* (Ill.). 34. *Orthaltica copalina* (Fab.). 35. *Monomacra iris* (Oliv.). 36. *Hornaltica bicolorata* (Horn). 37. *Crepidodera nana* (Say). 38. *Epithrix hirtipennis* (Melsh.). 39. *Chaetocnema denticulata* (Ill.). 40. *Chalepus bicolor* (Oliv.). 41. *Sumitrosis rosea* (Web.).

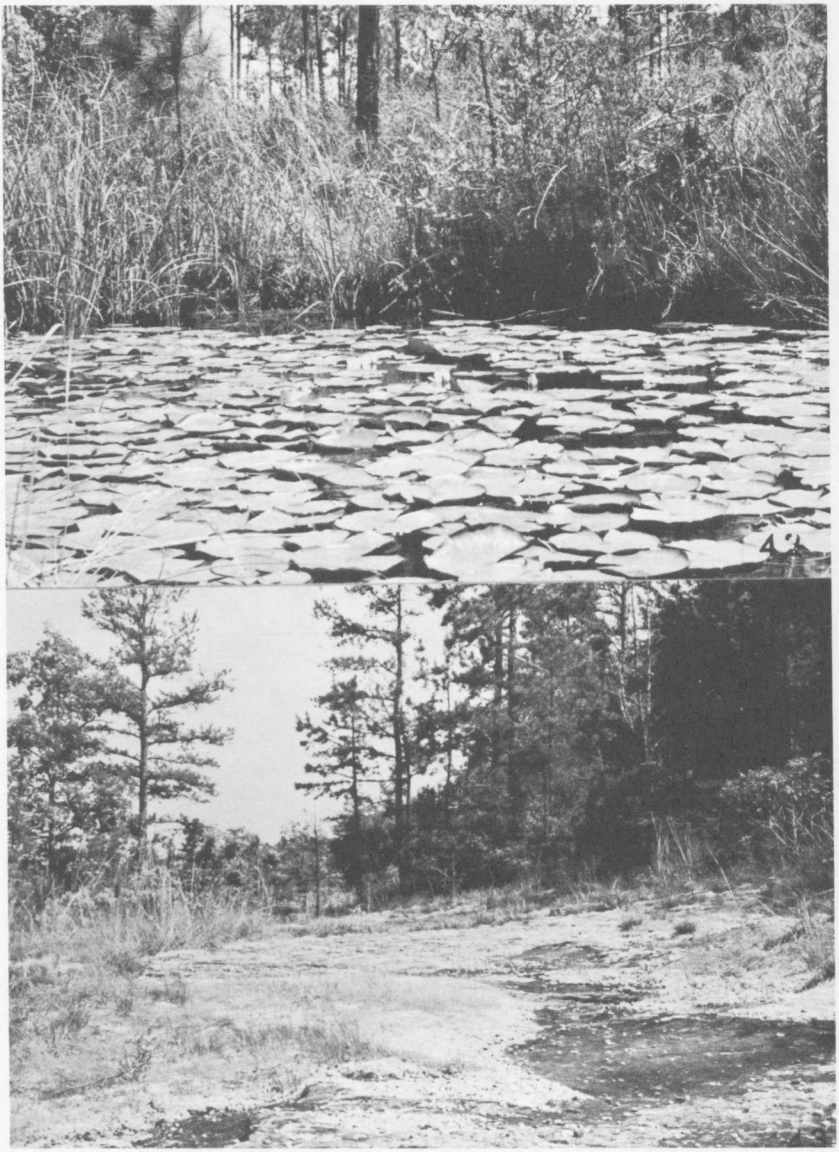

Fig. 42-43. 42. Habitat of *Donacia cincticornis* Newm. 43. Habitat of *Syphraea nana (Crotch).*

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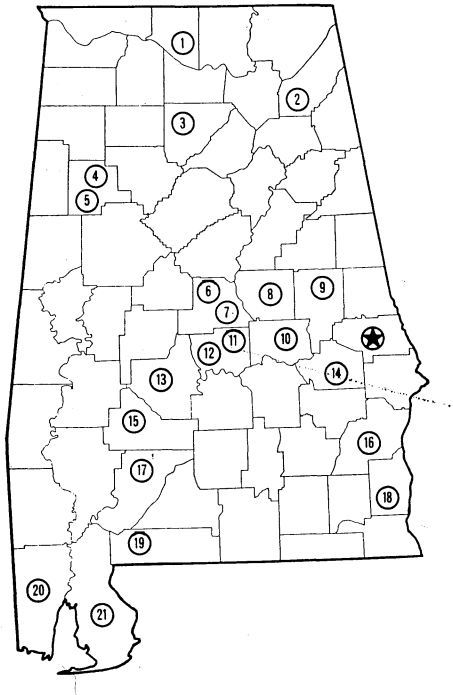
INDEX TO THE VARIOUS TAXA[1]

[1] Valid names in bold face.

AGRICULTURAL EXPERIMENT STATION SYSTEM OF ALABAMA'S LAND-GRANT UNIVERSITY

With an agricultural research unit in every major soil area, Auburn University serves the needs of field crop, livestock, forestry, and horticultural producers in each region in Alabama. Every citizen of the State has a stake in this research program, since any advantage from new and more economical ways of producing and handling farm products directly benefits the consuming public.



Research Unit Identification

★ Main Agricultural Experiment Station, Auburn

1. Tennessee Valley Substation, Belle Mina.
2. Sand Mountain Substation, Crossville.
3. North Alabama Horticulture Substation, Cullman.
4. Upper Coastal Plain Substation, Winfield.
5. Forestry Unit, Fayette County.
6. Thorsby Foundation Seed Stocks Farm, Thorsby.
7. Chilton Area Horticulture Substation, Clanton.
8. Forestry Unit, Coosa County.
9. Piedmont Substation, Camp Hill.
10. Plant Breeding Unit, Tallassee.
11. Forestry Unit, Autauga County.
12. Prattville Experiment Field, Prattville.
13. Black Belt Substation, Marion Junction.
14. Tuskegee Experiment Field, Tuskegee.
15. Lower Coastal Plain Substation, Camden.
16. Forestry Unit, Barbour County.
17. Monroeville Experiment Field, Monroeville.
18. Wiregrass Substation, Headland.
19. Brewton Experiment Field, Brewton.
20. Ornamental Horticulture Field Station, Spring Hill.
21. Gulf Coast Substation, Fairhope.