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The Oedemerid Beetles of the Bimini Island Group, Bahama Islands, British West Indies

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The following notes and descriptions pertain to the species of Oedemeridae (Coleoptera) known to occur on the Bimini Islands, British West Indies. These notes were made from material collected during the years 1950 and 1951 by Drs. Mont A. Cazier, Frederick H. Rindge, Willis J. Gertsch, and Charles Vaurie and Mrs. Patricia Vaurie, all of the American Museum of Natural History. These collections were made while the above members of the Department of Insects and Spiders were guests at the Lerner Marine Laboratory of the American Museum of Natural History, through the courtesy of Dr. C. M. Breder, Jr. Grateful acknowledgment is made to Dr. Cazier for the loan of this material for study, to Mr. Arthur D. Cushman, who made the drawing of *Oxaxis mcdonaldi*, and to Mrs. Sally Lee who made the drawings of the male genitalia.

Of the 46 species, belonging to six genera, of Oedemeridae known from the West Indies and southern Florida at present, only seven species belonging to two genera have been collected on the Bimini Islands. Six of the seven species are also known from Florida, and two from islands other than Bimini. Blackwelder (1945) reports two species, *Nacerdes melanura* (Linnaeus) and *Alloxaxis dorsalis* Melsheimer, from the Bahamas, but neither was collected on the Bimini Islands. It is obvious from this distribution that little can be stated regarding the origin of the oedemerid fauna of these islands. Although it is apparent that there is a close relationship with the Florida fauna, so little is known about the West Indian oedemerids that it is impossible to say if species common to

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Florida and Bimini are not also common to other islands, particularly Cuba. There appear to be no endemic species on the Bimini Islands.

The very long series available for this study (a total of 1198 specimens) has made studies in the intraspecific variation of these species possible. In general, it may be stated that the variation in the island populations of the species which occur in Florida also is very slight. Considerably more variation, in color at least, is to be found in Florida. This, of course, suggests that the Bimini Island populations are recently introduced, the present members of the population having had their origin from a few beetles, thus greatly limiting the genetic potential and the possible variation.

BIOLOGY

Very little is known of the biology of the species of this family. The adults are usually taken on flowers and foliage of various kinds, or they are attracted to lights at night. It appears that the larvae are wood borers, and several species apparently breed in driftwood. The specimens herein reported were collected at lights for the most part, or by means of Berlese funnels. The blistering of human skin caused by some of these species on contact has been noted by Vaurie (1951).

For a key to, and descriptions of, the following genera and species, reference should be made to Arnett (1951), except as otherwise noted.

Oxacis (Oxacis) taeniata (LeConte)

Figure 1

Ascera taeniata LECONTE, 1854, Proc. Acad. Nat. Sci. Philadelphia, vol. 7, p. 21.

TYPE LOCALITY: "Southern States."

VARIATION: The median pale vitta of the elytra shows considerable variation. In some specimens it is as narrow as the scutellum for its entire length to the apex of the elytra; in others it broadens from behind the scutellum to about one-third of the distance from the base of the elytra, and narrows again to the apex; in some specimens a short, angular vitta begins a short distance behind the scutellum, running into the main median vitta. In the most extreme specimens seen, the broadened area is as broad as the pronotum at the base, narrowing gradually so that at the apex of the elytra the vitta is only as wide as the scutellum. Every stage of intergradation is exhibited in this series. The sculpturing of the pronotum and elytra remains fairly constant in *taeniata*. The depth of the pronotal punctures varies slightly, the punctures being a little more evident on some specimens than on others but in all cases confluent. The shape

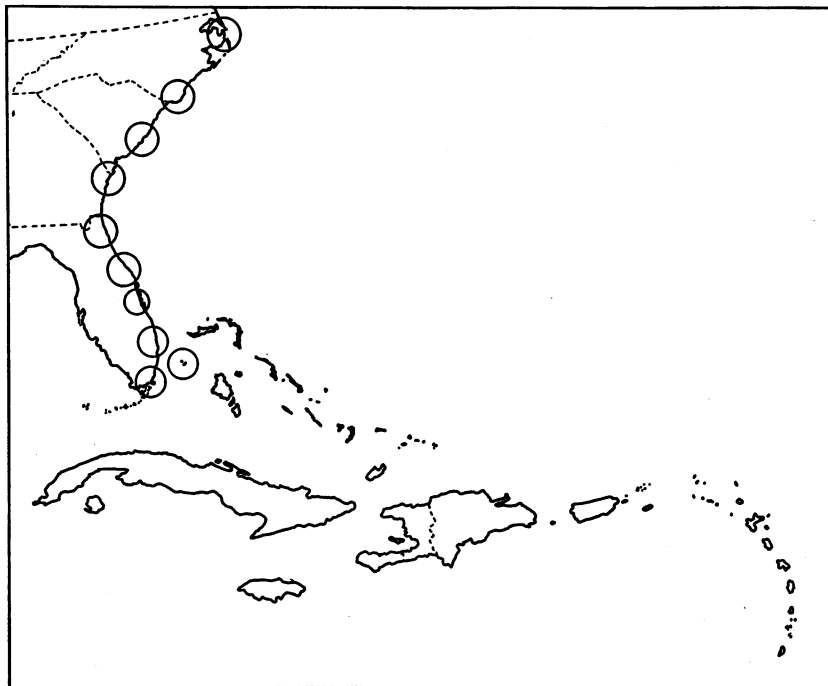


FIG. 1. Distribution of *Oxacis (Oxacis) taeniata* (LeConte).

of the apical segment of the maxillary palpus remains constant; it is broadest at the base.

No sexual dimorphism was observed.

LENGTH: 7-10 mm.

DISTRIBUTION: North Carolina, South Carolina, Georgia, Florida, and Bimini Islands.

SPECIMENS EXAMINED: Sixty-seven, North and South Bimini, May-August.

Oxacis (Oxacis) falli Blatchley

Figure 2

Oxacis falli BLATCHLEY, 1928, Canadian Ent., vol. 60, p. 63.

TYPE LOCALITY: Cape Sable, Florida.

VARIATION: The specimens of this series are slightly longer on the average than the original specimens from Florida which I studied. In spite of the greater number of specimens, this series shows less variation



FIG. 2. Distribution of *Oxacis (Oxacis) falli* Blatchley.

than the small Florida series. The only variation observed other than size is that the elytral coloration varies from bluish brown to a distinct dark metallic blue, but always all specimens have the narrow sutural and marginal vittae pale; the grooving of the mandibles varies from distinct to barely discernible.

No sexual dimorphism is evident.

LENGTH: 6–10 mm.

DISTRIBUTION: Florida, Bimini Islands.

SPECIMENS EXAMINED: Two hundred and sixty-nine, North and South Bimini, May–August.

Oxacis (Oxycopsis) vittata (Fabricius), new combination

Figures 3, 8–14

Lagria vittata FABRICIUS, 1775, *Systema entomologiae*, p. 125. Type locality: "America."

Copidita lateralis WATERHOUSE, 1878, *Trans. Ent. Soc. London*, p. 307. Type locality: Santo Domingo (first placed in synonymy: Staig, 1940, *Fabrician types of insects*, vol. 2, p. 113).

This species can be readily separated from *O. suturalis* (Horn), which it closely resembles, by the shape of the apical segment of the maxillary palpus, each palpus having the apical segment widest near the base in *O. suturalis* and widest apically (i.e., beyond the middle) in *O. vittata*, and by the punctuation of the pronotum, the punctures being large and

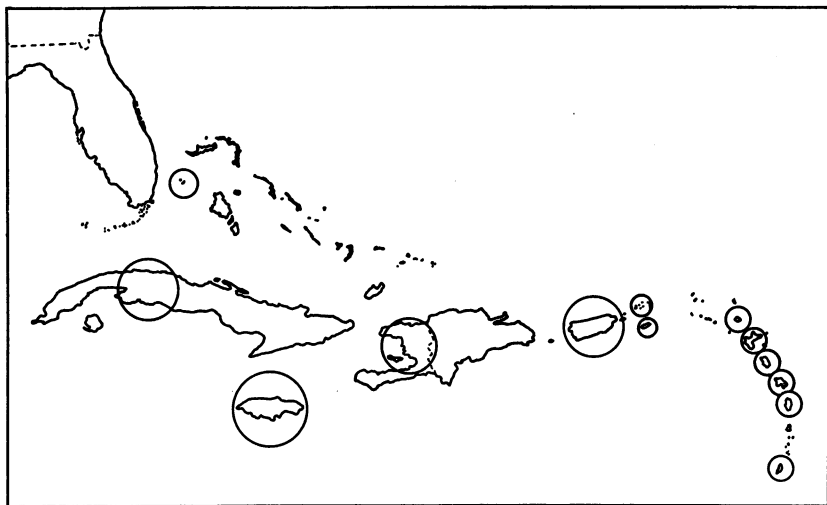


FIG. 3. Distribution of *Oxacis (Oxycopsis) vittata* (Fabricius).

closely placed in *O. suturalis*, and sparse and widely separated in *O. vittata*. It will key to *O. mariae* Arnett in the key to *Oxycopsis* (Arnett, 1951, p. 318) but can be separated from that species by the color of the thorax, which is yellow-testaceous in *O. vittata* and piceous in *O. mariae*, as well as by the absence of a well-defined tegminite in *O. vittata* and the presence of one in *O. mariae*.

MALE: South Bimini Island, Bahamas, June, 1951 (M. Cazier, C. and P. Vaurie), in the American Museum of Natural History.

Head: Short, punctures moderate, separated by at least twice their width, intervals very finely rugose; gula smooth. Antennae with each segment slightly expanded apically, about five times as long as wide. Eyes large, oval, very slightly emarginate near bases of antennae, projecting. Each mandible bifid at the tip. Each maxillary palpus with the apical segment widest beyond the middle.

Thorax: Notum as long as broad, widest subapically, sides sinuate, surface coarsely punctate, punctures shallow, separated by a distance of at least twice their width, areas between punctures finely rugose. Sternum finely rugose. Legs moderately slender, claws simple. Elytral surface rugose, costae moderately prominent.

Abdomen: Apical sternite slightly emarginate: surface rugose.

Pubescence: Entire insect except gular region rather densely clothed with long, moderately coarse, yellowish pubescence, that of the notum and head longer and coarser.

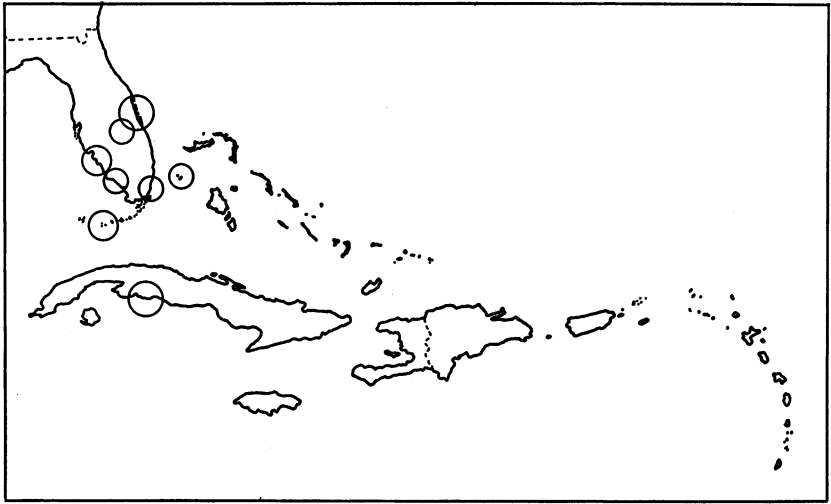


FIG. 4. Distribution of *Oxacis (Oxycopsis) mcdonaldi* Arnett.

Color: Yellow testaceous with fuscipiceous markings. Head, thorax, legs, and abdomen yellow testaceous. Elytra fuscipiceous, with a broad, basal, yellow testaceous sutural stripe which narrows rapidly, becoming extremely narrow at apex. Lateral margins of elytra with a very narrow yellow-testaceous stripe.

Genitalia (figs. 8–14): Median lobe short, apex with a narrow terminal lobe which is over four times as long as wide when viewed laterally, dorsally deflected; base with a narrow, dorsally curved basal process which is one-third of the length of the median lobe. Paramere with the base stout, broad, basal plates broad, dorsally projecting; apical lobes long, about one-half of the entire length of the paramere, thin, acute at apex and convergent. Tegminite obscure, membranous. Ninth abdominal sternite a plate with basilateral margins basally convergent into a long median process; apex of plate expanded, bluntly arcuate, deeply emarginate. Ninth tergite two weak rods broadly united by membrane; base broad. Eighth abdominal sternite two blunt lobes, apex slightly convergent, base broad. Eighth tergite a plate with lateral margins chitinized, central area membranous, apex acutely arcuate. Setae present on the apex of the ninth sternite and tergite.

The male genitalia of this species will key to *O. dietrichi* in the key to *Oxycopsis* (Arnett, 1951, p. 318), but this species can be separated from *O. dietrichi* by the median lobe, which has the apical portion much longer and stouter than that of *O. dietrichi*.

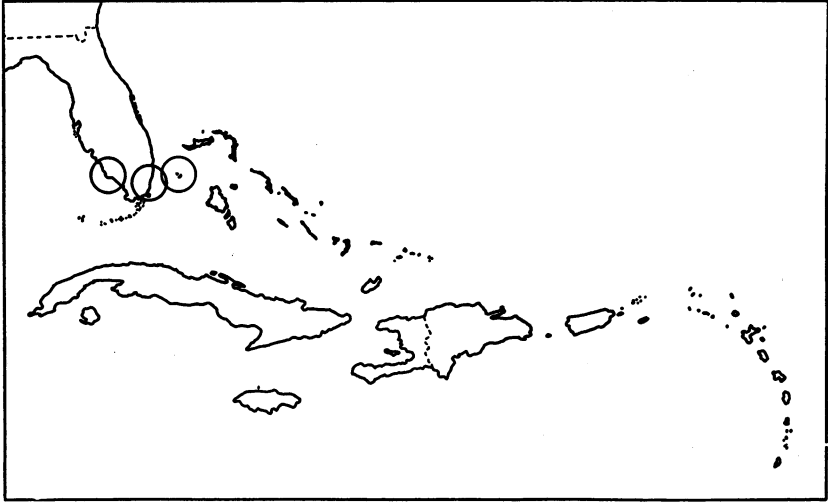


FIG. 5. Distribution of *Oxacis (Oxycopsis) luteostriata* Arnett.

LENGTH: 12 mm.

FEMALE: Same data as male.

The female agrees with the male in all essential respects, except that the fifth visible abdominal sternite is evenly rounded apically.

INDIVIDUAL VARIATION: The pale median elytral vitta varies in width from slightly less than one-third of the width of each elytron to slightly over one-third at the base, in all cases narrowing to the apex where it may be barely indicated; some specimens with under sides usually darkened to nearly piceous, but sometimes darkened at the tip of the abdomen only.

LENGTH: 8-12 mm.

DISTRIBUTION: Bahamas, Cuba, Jamaica, Hispaniola, Puerto Rico, Virgin Islands, Antigua, Guadeloupe, Dominica, Martinique, St. Lucia, and Grenada.

SPECIMENS EXAMINED: Thirty-six, North and South Bimini, May-August.

Oxacis (Oxycopsis) mcdonaldi Arnett

Figures 4, 15

Oxacis (Oxycopsis) mcdonaldi ARNETT, 1951, Amer. Midland Nat., vol. 45, . 328.

TYPE LOCALITY: Cutler, Florida.

VARIATION: Considerable variation in the median black spot on the

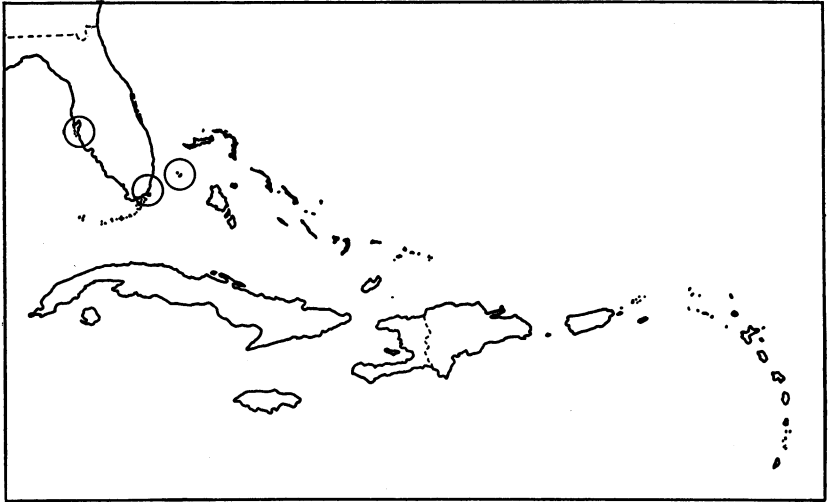


FIG. 6. Distribution of *Alloxaxis floridana* Horn.

pronotum was observed in the series examined. The spot is absent in about 30 per cent of the specimens studied, and in the remainder it varies from a small basal spot to a median stripe extending the entire length of the pronotum. The shape of the thorax is somewhat variable; the base is narrower in some specimens than in others. The apical segment of the maxillary palpus shows the same variation as in the type series, i.e., sometimes widest near the middle, but always basally from the middle. The apical abdominal sternite is as variable as in the type series, i.e., sometimes shallowly emarginate or evenly arcuate in both sexes. The color of the elytra also varies as in the type series, i.e., usually metallic blue-green, rarely with a purple tinge and rarely with a narrow pale median stripe.

There is no evident sexual dimorphism.

LENGTH : 5-9 mm.

DISTRIBUTION : Florida, Bimini Islands, Cuba.

SPECIMENS EXAMINED : One hundred and twenty-five, South Bimini, May-August.

Oxaxis (Oxycopsis) luteostriata Arnett

Figures 5, 16-23

Oxaxis (Oxycopsis) luteostriata ARNETT, 1951, Amer. Midland Nat., vol. 45, p. 327.

TYPE LOCALITY : Palmetto Key, Florida.

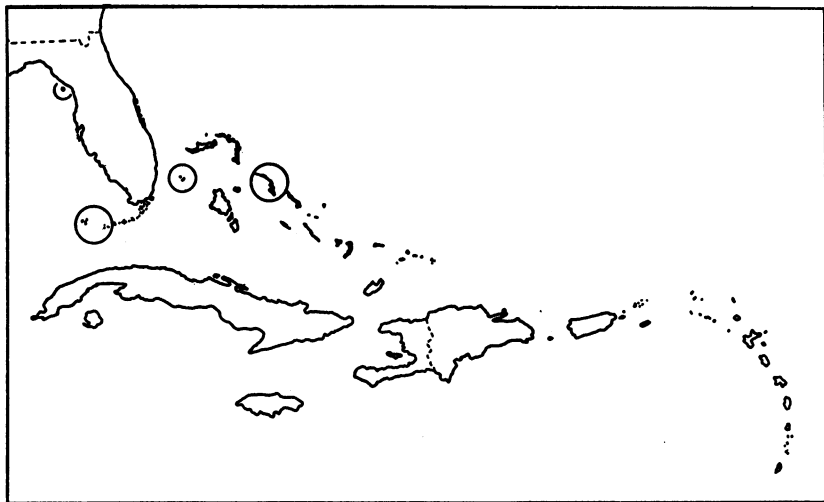


FIG. 7. Distribution of *Alloxaxis nesiotes* Arnett.

The original description of this species was based on female specimens only. This lengthy series from Bimini permits a description of the male which has also been collected recently at Coral Gables, Florida, by H. F. Strochecker.

MALE: North Bimini Island, Bahamas, June 1, 1950 (Cazier and Rindge), deposited in United States National Museum collection.

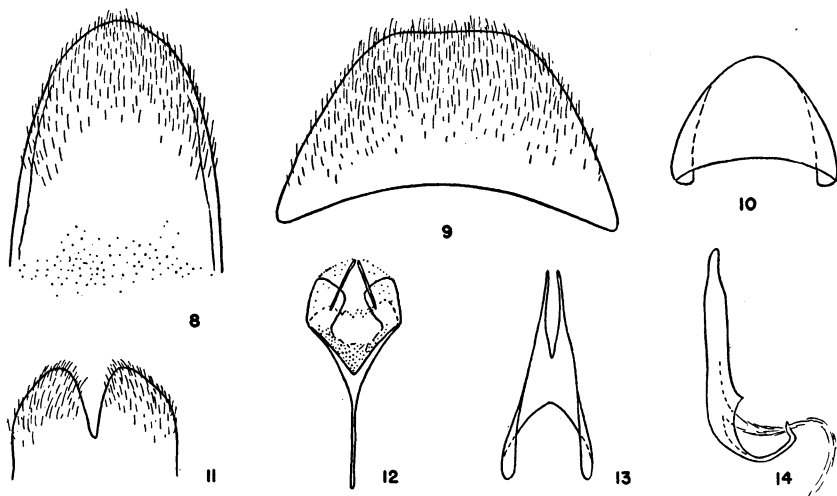
External characters agree with those of the female in all essential respects.

Genitalia (figs. 16-23): This species can be separated from *O. fuliginosa* LeConte, to which it will key in Arnett (1951, p. 318), by the long, narrow, nearly straight median lobe and by the lobes of the parameres which are more than one-third of the entire length of the paramere in *O. luteostriata*.

Median lobe long, narrow, base with a moderately long, broad, dorsally recurved process, apex narrow, blunt, nearly straight but slightly angular (not arcuate) at the apical quarter. Paramere with basal plate stout, dorsally projecting, base deeply emarginate; apical lobes long, about three-fourths of the entire length of the paramere, apex acute, angulate at the apical one-fourth. Tegminite long and narrow, apex expanded, arcuate. Ninth abdominal sternite a plate with lateral margins converging apically, apex very deeply emarginate, base broadly V-shaped, with a long median process. Ninth tergite consisting of two slightly chitinized parallel rods broadly separated, united by membrane; apex arcuate. Eighth abdominal sternite two stout lobes united at base. Eighth tergite a

plate laterally chitinized, the middle membranous, the apex arcuate. Setae present on apex of ninth and eighth sternites and tergites and at apex of the tegminite.

INDIVIDUAL VARIATION: The 12 specimens from Florida on which the original description of this species was based tend to be much



FIGS. 8-14. Male genitalia of *Oxacis (Oxycopsis) vittata* (Fabricius). 8. Seventh abdominal tergite. 9. Seventh sternite. 10. Eighth tergite. 11. Eighth sternite. 12. Ninth abdominal segment. 13. Paramere. 14. Median lobe.

brighter in color. The pronotum is bright orange in most of the Florida specimens in contrast to the very dark orange or fuscous pronotum of the Bimini specimens. In addition, the elytra are more metallic and the white pubescence on the costae is more obvious in the Florida specimens. However, the Bimini series contains a dozen or more specimens which are as bright as the bulk of the Florida specimens, and the Florida series has several very dark specimens. These two extremes intergrade into one another in both series, ruling out, on the basis of this number of specimens at least, the possibility of a Bimini subspecies. Perhaps a longer series from Florida would show that there is subspeciation, but at present I feel there is little evidence of this.

No sexual dimorphism is evident.

LENGTH: 9-13 mm.

DISTRIBUTION: Southern Florida, Bimini Islands.

SPECIMENS EXAMINED: Seventy-seven (17 males; 60 females), North and South Bimini, June-August.

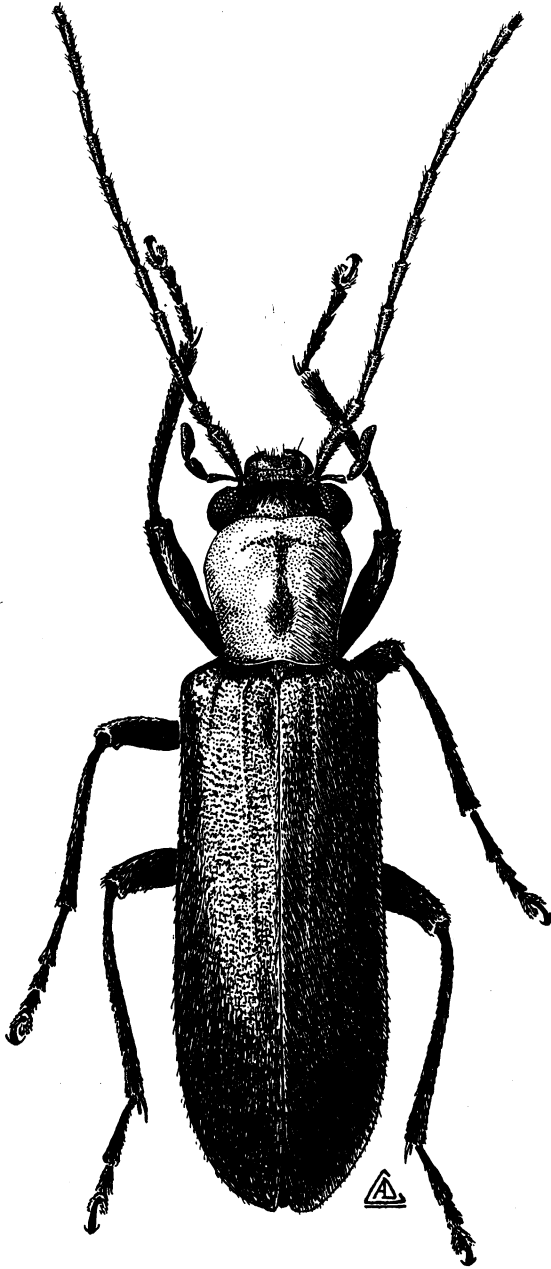


FIG. 15. *Oxacis mcdonaldii* Arnett.

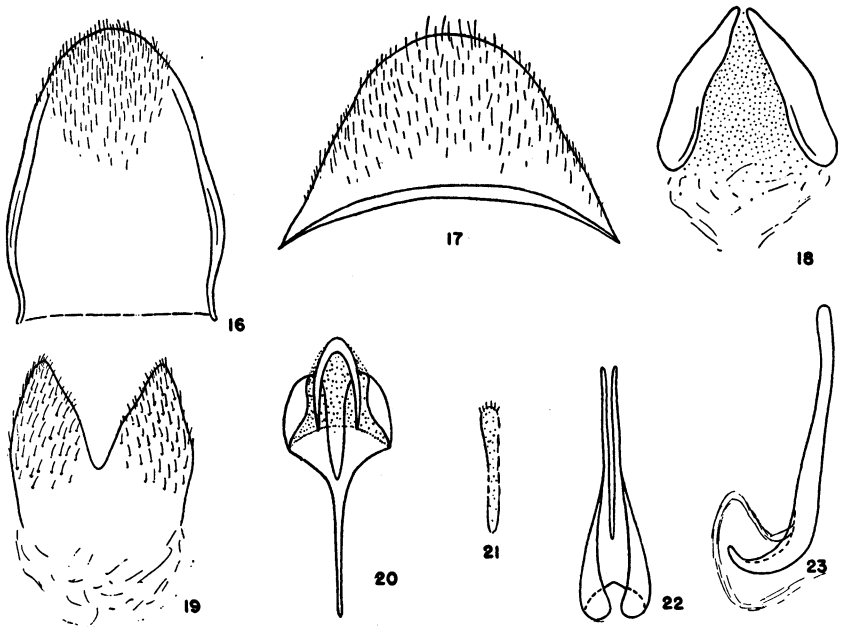
Alloxaxis floridana Horn

Figure 6

Alloxaxis floridana HORN, 1896, Proc. California Acad. Sci., ser. 2, vol. 6, p. 397.

TYPE LOCALITY: Biscayne, Florida.

VARIATION: The only variation observed is in the shape of the apical segment of the maxillary palpus. In some, the widest part is at the base,



FIGS. 16-23. Male genitalia of *Oxaxis (Oxycopsis) luteostriata* Arnett. 16. Seventh abdominal tergite. 17. Seventh sternite. 18. Eighth tergite. 19. Eighth sternite. 20. Ninth abdominal segment. 21. Tegminite. 22. Paramere. 23. Median lobe.

and in others it is near the middle, but in all cases the widest part is basal to the center. There are all intergradations of this and no correlation between the sexes.

No sexual dimorphism is evident.

LENGTH: 6-9 mm.

DISTRIBUTION: Alabama, Florida, Bimini Islands.

SPECIMENS EXAMINED: Forty-seven, North and South Bimini, May-August.

Alloxaxis nesiotus Arnett

Figure 7

Alloxaxis nesiotus ARNETT, 1951, Amer. Midland Nat., vol. 45, p. 349.

TYPE LOCALITY: Key West, Florida.

This species appears to be by far the most common oedemerid on the Bimini Islands and, of the seven species herein reported, the most likely to be indigenous. Although it is described from Florida, it has been captured, in so far as I am aware, never on the mainland of Florida but always on the small islands or keys. It is known also from Eleuthera Island in the Bahama group.

VARIATION: No more variation in this extensive series was observed than in the type series. The coloration of the pronotum of a few specimens is darker than usual, and a sutural pale area is evident in some.

No sexual dimorphism is evident.

LENGTH: 6-9 mm.

DISTRIBUTION: Florida Keys, Eleuthera Island, Bimini Islands.

SPECIMENS EXAMINED: Six hundred and fifty-five, North and South Bimini, 1947, 1950, and 1951, May-October.

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