



SMITHSONIAN INSTITUTION  
U. S. NATIONAL MUSEUM

Vol. 104

Washington : 1955

No. 3338

REVISION OF THE VITTATE SPECIES OF THE  
CHRYSOMELID BEETLE GENUS *DISONYCHA* FROM THE  
AMERICAS SOUTH OF THE UNITED STATES

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Introduction

In an earlier revision of the chrysomelid beetles of the genus *Disonycha*<sup>1</sup> the species that occurred north of México were studied. In that publication the history as well as the characters of the genus were discussed in detail. Therefore it seems unnecessary to repeat this at such length here.

The generic name *Disonycha* first appeared in the Dejean Catalogue in 1837 with 31 species listed under it. In 1844 Chevrolat<sup>2</sup> defined the genus. The type of the genus was designated by the writer in 1933 as *D. collata* (Fabricius), a species with blue elytra, since it was the most definitely described species included by Chevrolat in the Catalogue. Many of the early species were described by Fabricius under the genera *Crioceris*, *Chrysomela*, and *Galleruca*, but he later referred them to *Galleruca*. Olivier placed them under *Altica*, which name Illiger with Germanic emendation called *Haltica*. Melsheimer was the first in America to use Chevrolat's name *Disonycha*. Most of the Mexican and Central American species were described by Jacoby in the *Biologia Centrali-Americana*, and he also described many South American species. Very little has been done with the genus

<sup>1</sup> Blake, Proc. U. S. Nat. Mus., vol. 82, art. 28, pp. 1-66, 1933.

<sup>2</sup> Chevrolat, in D'Orbigny, Dictionnaire universale d'histoire naturelle, vol. 5, p. 8, 1844.

in either Central or South America in the last 50 years, although Weise and Bryant, following von Harold's lead, have described a few species. At present Dr. A. da Costa Lima is publishing an article in which he is describing seven new species and a new subspecies of *Disonycha* from Brazil. He has sent me photographs of drawings of these but unfortunately I cannot recognize with certainty more than one species from these drawings, which do not show the sculpture or legs.

The vittate species of the genus *Disonycha* are, broadly speaking, pale yellow beetles with dark elytral stripes, usually sutural, median and marginal or submarginal. The head and prothorax are usually pale, with or without markings. A few species have entirely dark heads; none has an entirely dark prothorax. The antennae are almost uniformly dark with paler edged basal joints and occasionally paler terminal joints. In structure, the beetles have predominately a smooth head, inserted to the eyes, with few punctures except the large fovea or group of punctures near the eye. Only a few species, mostly with dark heads, are densely and coarsely punctate over the occiput. A rounded carina extends down the lower front of the head; its length is variable, as certain species have a short lower front. The antennae extend a little beyond the humeri, rarely nearing the middle of the elytra, with the third joint shorter than the fourth, the remainder being subequal. The shape of the prothorax is often diagnostic of the species. In general it is nearly as wide as the elytra and about twice as wide as long, with slightly curved sides, a narrow margin, and usually a broad apical angle and a deeply oblique basal angle. Its convexity varies; in some species there are swollen callosities on the sides, in most, a distinct depression over the scutellum, occasionally lengthening to a slight transverse basal depression. The shape, sculpture, and markings of the prothorax are most significant in specific differences. In fact it would seem as if the more or less uniform markings of the elytra were generic and the small but constant differences in the head and prothorax were specific in character. As a specific character, the shape of the aedeagus is also of prime importance.

In my earlier revision I stated that *D. stenosticha* Schaeffer resembled *D. militaris* Jacoby. Jacoby's specimen of *D. militaris* that I had in mind is probably not the same as the rest of his series and is either *D. stenosticha* or a closely related species, such as *Cacoscelis quinque-lineata* (Latreille). In the present study I have referred *C. quinque-lineata* (Latreille) to the genus *Disonycha*. *D. stenosticha* Schaeffer, as well as another very similar species, belong in this group and I see no reason for not including them in the genus. The same is true of a

group of beetles from the Amazon that Jacoby referred to Harold's genus *Nephrica*. These do not have eyes any more reniform than the other species of *Disonycha*. They are like *C. quinquelineata* in that they are unusually large, and in their case broader than most but not otherwise separable from other smaller species of *Disonycha*.

Many of the groups of species represented in the United States by only one species, such as *D. glabrata* (Fabricius), are found in greater numbers in tropical America. *D. glabrata* itself extends with little variation all the way from New York to Argentina. Drawings have been made of the aedeagus from different localities in its long range which show little difference throughout. The food plant, as is the case of many species of *Disonycha* with blue elytra, is *Amaranthus*, a widespread weed. Related to *D. glabrata* are several Central American species, such as *D. dorsata* Harold and *D. nigrita* Jacoby, and another described in this publication. In South America is an even more closely related species, *D. vittipennis* Boheman from Perú.

On the other hand, the group of species that feeds on *Salix* is better represented in the northern temperate regions. *D. pluriligata* (Le Conte) and *D. latiovittata* Hatch of this group extend into México and Guatemala, and *D. teapensis* Blake is found only in México, but the group is not at all represented in South America to date.

The group with costate elytra that feeds on *Polygonum* has a representative in México and Central America, *D. reticollis* Jacoby, and four in South America, one species from Perú, two from Brazil, and one from Argentina, *D. bicarinata* Boheman, whose food habits have been carefully studied by Frers, who found it living on *Mühlenbeckia*, one of the Polygonaceae. The food habits of the three other species described in this publication are not known, but I venture to guess that they also feed on plants of that family.

The *discoidea* group is represented in México and Central America by *D. militaris* Jacoby, *D. leptolineata texana* Schaeffer, and *D. antennata* Jacoby, and in South America by *D. peruana* Jacoby.

In Argentina and adjacent countries occur a number of species with very wide dark vittae, of which *D. copulata* (Germar) is representative.

As in the United States, there are also many isolated species not at all like any others. In time others may be collected that are related to them. In working with so little material from such wide tropical regions of Central and South America one has the constant thought that only scattered specimens of a great genus are at hand.

Common to the United States and México and Central America are 12 species, of which 4 occur only in States bordering on Mexico. Common to Central America and South America are 6 species, half of which occur only as far as Panamá. I have described 8 new species from Central America and México, and 21 from South America.

The author wishes to acknowledge her gratitude to various institutions and people for lending material for this study, in particular to J. Balfour-Browne and G. E. Bryant, British Museum (Natural History) (BM); Mont A. Cazier and J. C. Pallister, American Museum of Natural History (AMNH); P. J. Darlington Jr., Museum of Comparative Zoology (MCZ); K. Delkeskamp, Zoologisches Museum, Humboldt-Universität, Berlin (ZMB); Hugh Leech and E. C. Van Dyke, California Academy of Sciences (CAS); René Malaise, Naturhistoriska Riksmuseet, Stockholm; F. Monrós, Fundación Miguel Lillo, Tucumán; as well as the United States National Museum.

### Key to the vittate species of *Disonycha* from México and Central America<sup>3</sup>

1. Elytra with at most only faint traces of a median vitta, the vitta being either entirely absent or with traces at base or very pale . . . . . 2
  - Elytra with strong median vitta . . . . . 7
2. Median vitta entirely absent, sutural vitta wide, a narrow marginal vitta (México) . . . . . *trivittata* new species (p. 45)
  - Median vitta present to some extent . . . . . 3
3. Median vitta represented by spot at base (Panamá)
  - longipennis* new species (p. 42)
  - Median vitta very pale . . . . . 4
4. Prothorax entirely pale . . . . . 5
  - Prothorax spotted . . . . . 6
5. Elytra without definite sutural, submarginal, or marginal vittae, median vitta very pale, often short (typical specimens without any vittae) (Florida Keys, México) . . . . . *antennata* Jacoby (p. 28)
  - Elytra with pale sutural and submarginal vittae, the median vitta having a short one beside it at apex (México, Central America)
    - brevilineata* Jacoby (p. 34)
6. Prothorax with two dark spots anteriorly; sutural, median, and submarginal vittae very pale (Arizona, México, Guatemala, Honduras, Costa Rica)
  - figurata* Jacoby (p. 22)
  - Prothorax with median elongate diamond-shaped dark spot; elytra with a pale outline of median vitta, sutural edges dark (México)
    - högei* Jacoby (p. 36)
7. A short vitta near apex of median vitta (México, Central America)
  - brevilineata* Jacoby (p. 34)
  - No short vitta near apex of median vitta . . . . . 8
8. Elytra with traces of ridging, especially marked in the female either on the median vitta or more laterally near the apex . . . . . 9
  - Elytra with no trace of costation . . . . . 13
9. Prothorax immaculate (México, Central America) . *recticollis* Jacoby (p. 11)
  - Prothorax either spotted or banded . . . . . 10

<sup>3</sup> Three species of *Disonycha* are omitted from these keys, two of which are from the West Indies, consisting of *D. spilotrachela* Blake, from Cuba, Puerto Rico, and Haiti, and *D. gowdeyi* Bryant known only from Jamaica. The first, *D. spilotrachela*, (p. 39), has a 5-spotted pronotum, and the second, *D. gowdeyi*, (p. 40), has a 7-spotted pronotum. The third species, *D. megaspilota*, (p. 53), an unusually large one of 8.5 to 9 mm. in length, with three large dark pronotal spots, has no locality record.



10. Small (5–6 mm.); prothorax with wide dark fascia; head dark (United States, Honduras) . . . . . *pennsylvanica* (Illiger) (p. 9)  
Larger (5.6–8 mm.); prothorax spotted; head not entirely dark . . . . . 11
11. Elytra with median dark vitta wider than pale vitta (United States, México) . . . . . *proccera* Casey (p. 10)  
Elytra with median dark vitta not wider than pale vitta . . . . . 12
12. Aedeagus with broad tip not at all acute above (United States, México, Guatemala) . . . . . *pluriligata* (LeCoute) (p. 16)  
Aedeagus with acute tip above (México) . . . . . *teapensis* Blake (p. 18)
13. Elytra with only sutural and median vittae and no marginal or submarginal vitta . . . . . 14  
Elytra with sutural, median and marginal or submarginal vittae . . . . . 18
14. Median and sutural vittae very narrow and faint (typically colored specimens nonvittate) (Florida Keys, México) . . . . . *antennata* Jacoby (p. 28)  
Median and sutural vittae normally colored . . . . . 15
15. Prothorax with a submarginal vitta on each side and two spots anteriorly with a median line and two faint lateral spots (?Costa Rica, Panamá, Colombia, Perú) . . . . . *peruana* Jacoby (p. 29)  
Prothorax without submarginal vitta . . . . . 16
16. Prothorax with two small dark spots, sometimes a faint trace of submarginal vitta at apex of elytra (New Mexico, Arizona, Texas, México) . . . . . *tenuicornis* Horn (p. 25)  
Prothorax immaculate . . . . . 17
17. Elytral vittae unusually narrow (México, Central America) . . . . . *militaris* Jacoby (p. 27)  
Elytral vittae not unusually narrow (United States, México, Guatemala) . . . . . *leptolineata* var. *texana* Schaeffer (p. 27)
18. Elytra with dark marginal vitta . . . . . 19  
Elytra with dark submarginal vitta . . . . . 25
19. Prothorax unspotted . . . . . 20  
Prothorax spotted . . . . . 23
20. Eyes unusually large, interocular space less than half width of head . . . . . 21  
Eyes not unusually large, interocular space half or more width of head . . . . . 22
21. Elytra distinctly punctate, occipital spot extending down front in a point (near Brownsville, Texas; Sinaloa, México) . . . . . *barberi* Blake (p. 48)  
Elytra very faintly punctate, head dark about eyes and over occiput down to tubercles (Panamá) . . . . . *didyma* new species (p. 49)
22. Head and prothorax coarsely punctate (California, Nevada, México) . . . . . *maritima* Mannerheim (p. 71)  
Head and prothorax smooth and not coarsely punctate . . . . . *glabrata* (Fabricius) (p. 43)
23. Head entirely dark (Panamá, Colombia, Venezuela) . . . . . *venezuelae* Jacoby (p. 54)  
Head not entirely dark . . . . . 24
24. Prothorax with submarginal vitta on each side and 5 spots (?Costa Rica, Panamá, Colombia, Perú) . . . . . *peruana* Jacoby (p. 29)  
Prothorax without submarginal vitta and usually only one median elongate spot, sometimes a lateral spot on each side (New York to Argentina) . . . . . *glabrata* (Fabricius) (p. 43)
25. Prothorax unspotted . . . . . 26  
Prothorax spotted . . . . . 32

26. Large (7–10.5 mm. in length) . . . . . 27  
 Smaller (5–7 mm. in length) . . . . . 29
27. Tarsal joints deep brown (México) . . . . . *jalapensis*, new species (p. 32)  
 Tarsal joints pale . . . . . 28
28. Elytral vittae moderately wide (Costa Rica)  
*turrialbensis*, new species (p. 38)  
 Elytral vittae narrow (México, Central America, Colombia)  
*quinquelineata* (Latreille) (p. 31)
29. Distinctly oval, prothorax short and broad (El Salvador) . *ovata* Blake (p. 35)  
 Oblong oval, prothorax not unusually short and broad . . . . . 30
30. Head entirely pale (México, Guatemala, Honduras)  
*guatemalensis* Jacoby (p. 21)  
 Head with a dark spot on occiput . . . . . 31
31. Femora entirely dark, tibiae with pale band below base (México)  
*annulata*, new species (p. 51)  
 Femora with a dark streak only, tibiae entirely dark (México, Central America) . . . . . *fumata* var. *labiata* Jacoby (p. 23)
32. Antennae unusually long, extending well below humeri nearly to the middle of the elytra . . . . . 33  
 Antennae not unusually long, not extending much below humeri . . . . . 34
33. Explanate margin on prothorax and elytra wide, prothorax usually with a broad Y-shaped median marking and a spot on each side (Costa Rica, Panamá, Colombia) . . . . . *panamensis* Jacoby (p. 41)  
 Explanate margin not unusually wide, anterior pronotal spots rather closely set and not in a broad Y-shaped formation (México, Central America)  
*fumata* (LeConte) (p. 23)
34. Margin of elytral vittae a deeper brown in color than rest of vittae (México, British Honduras) . . . . . *brunneofasciata* Jacoby (p. 36)  
 Margin of elytral vittae uniform in color with rest of vittae . . . . . 35
35. Prothorax and elytra rather coarsely punctate, anterior pronotal spots small and not closely set (United States, México) . . . . . *arizonae* Casey (p. 19)  
 Prothorax and elytra not coarsely punctate, anterior pronotal spots not very small and not widely separate . . . . . 36
36. Head dark on occiput (Pacific coast of Canada and United States, Baja California) . . . . . *latiovittata* Hatch (p. 17)  
 Head without darkening on occiput . . . . . 37
37. Anterior pronotal spots large and dark (México) . *knabi* new species (p. 25)  
 Anterior pronotal spots pale and faint and not large (México)  
*gracilis*, new species (p. 37)

### Key to the vittate species of *Disonycha* from South America

1. Median elytral vitta with a pale inner line . . . . . 2  
 Median elytral vitta without a pale inner line . . . . . 3
2. Pale line in median elytral vitta usually only in apical half; prothorax usually with two dark spots close together anteriorly (Amazon River, Brazil)  
*scissovittata*, new species (p. 73)  
 Pale line in median elytral vitta extending most of the length of vitta; prothorax with two anterior dark spots widely separated (Argentina, southern Brazil) . . . . . *interlineata* Berg (p. 72)
3. Median elytral vitta represented only in part by spots or short lines either at base or near apex, sometimes also medially . . . . . 4  
 Median elytral vitta or vittae entire . . . . . 5

4. Head coarsely punctate and with occipital dark spot; prothorax with two dark spots anteriorly, sometimes a short median line (Bolivia, Paraguay, Argentina) . . . . . **caustica** Harold (p. 75)  
 Head not coarsely punctate and without occipital spot; prothorax immaculate (Argentina) . . . . . **suturalis** Bryant (p. 74)
5. Elytra with many pale vittae (Brazil) . . . . . **multivittata**, new species (p. 58)  
 Elytra with the usual sutural, median, and often submarginal or marginal vittae . . . . . 6
6. Head and prothorax coarsely and often rather densely punctate . . . . . 7  
 Head and prothorax not unusually densely or coarsely punctate . . . . . 11
7. Head pale with dark occipital spot (Bolivia, Paraguay, and Argentina)  
**caustica** Harold (p. 75)  
 Head entirely dark . . . . . 8
8. Small (5–6 mm.), prothorax without spots or band, entirely pale (Argentina, Uruguay, Bolivia, Chile, Brazil) . . . . . **argentiniensis** Jacoby (p. 70)  
 Large (7–10 mm.), prothorax spotted or banded . . . . . 9
9. Elytra with longitudinal depression from humerus down side (Venezuela, Colombia, Canal Zone) . . . . . **venezuelae** Jacoby (p. 54)  
 Elytra without longitudinal depression down side . . . . . 10
10. Fourth antennal joint twice as long as third, elytra very densely punctate (Bolivia) . . . . . **cratera**, new species (p. 56)  
 Fourth antennal joint not twice as long as third, elytra not so densely punctate (Paraguay) . . . . . **aplicata**, new species (p. 55)
11. Elytra with very narrow sutural and median vitta not reaching base (Brazil)  
**crassicornis**, new species (p. 56)  
 Elytra with the usual sutural, median, and submarginal or marginal vittae . . . . . 12
12. Elytra more or less costate in median vitta, especially in female . . . . . 13  
 Elytra not costate . . . . . 16
13. Prothorax with four or five spots . . . . . 14  
 Prothorax without spots . . . . . 15
14. Spots on prothorax well defined and dark (Argentina, Chile, Paraguay)  
**bicarinata** Boheman (p. 12)  
 Spots on prothorax pale and evanescent (Perú)  
**yurimaguensis**, new species (p. 15)
15. Elytra rather densely and coarsely punctate (Pará, Brazil)  
**varia**, new species (p. 14)  
 Elytra not coarsely punctate (southeastern Brazil)  
**immaculata**, new species (p. 13)
16. Prothorax entirely pale, without spots or bands . . . . . 17  
 Prothorax more or less spotted or banded . . . . . 26
17. Elytra with submarginal dark vitta . . . . . 18  
 Elytra with marginal dark vitta . . . . . 22
18. Femora entirely pale . . . . . 19  
 Femora pale with a dark streak or dark apex . . . . . 21
19. Median elytral vitta not unusually narrow (Venezuela)  
**elongata** Jacoby (p. 52)  
 Median elytral vitta very narrow . . . . . 20
20. Prothorax rectangular, approximately twice as wide as long with a small lateral callosity on each side (Colombia) . **colombiana**, new species (p. 33)  
 Prothorax not rectangular, not twice as wide as long, without lateral callosities (México, Central America, Colombia) . **quinquelineata** (Latreille) (p. 31)

21. Median vitta very short, not reaching apical curve, explanate margin wide (Brazil) . . . . . **explanata**, new species (p. 59)  
 Median vitta of usual length, aedeagus with broad arrow-shaped tip (Perú) . . . . . **imitans** (Jacoby) (p. 61)
22. Large (8-10 mm.) . . . . . 23  
 Smaller (5-7 mm.) . . . . . 24
23. Head entirely dark, outer joints of antennae pale (upper Amazon) . . . . . **nigrofasciata** (Jacoby) (p. 60)  
 Head entirely pale, antennae entirely dark, unusually long ("St. Paulo") . . . . . **paula**, new species (p. 62)
24. Head entirely pale (Bolivia) . . . . . **manni**, new species (p. 47)  
 Head with dark occipital spot . . . . . 25
25. Eyes large, interocular space less than half width of head (Colombia) . . . . . **tridyma**, new species (p. 49)  
 Eyes not unusually large, interocular space at least half width of head (New York to Argentina) . . . . . **glabrata** (Fabricius) (p. 43)
26. Elytra with submarginal dark vitta. . . . . 27  
 Elytra with marginal dark vitta. . . . . 33
27. Prothorax with a submarginal dark vitta (Panamá, Colombia, Perú) . . . . . **peruana** Jacoby (p. 29)  
 Prothorax without a submarginal dark vitta. . . . . 28
28. Prothorax with a broad dark median plaga extending from two anterior spots to base (Argentina, Paraguay, Brazil, Venezuela) . . . . . **plagifera**, new species (p. 58)  
 Prothorax without broad median plaga from two anterior spots to base . . . . . 29
29. Large (7-10 mm.) . . . . . 30  
 Smaller (5-6 mm.) . . . . . 32
30. Prothorax with Y-shaped median spot and wide explanate margin (Colombia, Canal Zone, Costa Rica) . . . . . **panamensis** Jacoby (p. 41)  
 Prothorax without Y-shaped median spot and not unusually wide explanate margin. . . . . 31
31. Elytral vittæ reddish brown (upper Amazon) . **juaruensis**, new species (p. 63)  
 Elytral vittæ dark piceous, elytra unusually broad (Amazon) . . . . . **amplipennis**, new species (p. 63)
32. Prothorax with two small spots anteriorly (Paraguay) . . . . . **sapueyensis**, new species (p. 20)  
 Prothorax with five spots (Venezuela) . . . . . **pittieri**, new species (p. 38)
33. Prothorax with seven small distinct dark spots (Bolivia, Brazil, Argentina) . . . . . **septemmaculata**, new species (p. 69)  
 Prothorax with less than seven spots or the spots confluent . . . . . 34
34. Prothorax with a broad band or confluent or nearly confluent spots . . . . . 35  
 Prothorax with three distinct, well separated spots. . . . . 37
35. Large (6.5-7.5 mm.), prothorax either broadly banded or with five large dark spots. Abdomen of male with round excavation near tip (Argentina, southern Brazil). . . . . **conjuncta** (Germar) (p. 64)  
 Smaller (5.5-6.5 mm.), prothorax usually with brownish or piceous clouding or indistinct spotting, no excavation on abdomen of male . . . . . 36
36. Prothorax with three very short but broad and nearly confluent spots, body beneath pale except the breast and legs (Bolivia) . . . . . **trimaculata**, new species (p. 57)  
 Prothorax with indefinite brownish area sometimes clouding most of pronotum, or subsiding to an indefinite median spot, body beneath mostly black (Perú) . . . . . **vittipennis** Boheman (p. 46)





TYPE: In ZMB, from Pennsylvania.

OTHER LOCALITIES: United States: From Massachusetts to Texas. Honduras: La Ceiba (one specimen).

REMARKS: Only one specimen is known from south of the border, but it is quite conceivable that the species, which is known to occur in Texas and which feeds on *Polygonum*, may extend all through Central America. It is one of the group with costate elytra, more apparent in the female, and is related to the Central American species *D. recticollis* Jacoby, but is smaller and darker with pronotal spotting.

*Disonycha procera* Casey

FIGURE 1

?*Haltica vicina* Kirby, Fauna Boreali Americana, vol. 4, p. 217, 1837 ("Lat. 65°," Canada; type lost).

?*Disonycha limbicollis* var. *pallipes* Crotch, Proc. Acad. Nat. Sci. Philadelphia, vol. 25, p. 64, 1873 (type locality not recorded, type lost).

*Disonycha procera* {Casey, Contributions . . . , }pt. 2, p. 182, 1884 (Milford, Delaware, type in USNM).

*Disonycha pennsylvanica* Horn, Trans. Amer. Ent. Soc., vol. 16, p. 202, 1889 (in part).

*Disonycha pallipes* Blake, Bull. Brooklyn Ent. Soc., vol. 25, p. 212, 1930 (not Crotch?).

*Disonycha nigriventris* Schaeffer, Journ. New York Ent. Soc., vol. 39, p. 282, 1931 (Blitz River, Oregon, type in USNM).

Between 6.5 and 7 mm. in length, elongate oblong oval, faintly shining, alutaceous; head black, with pale area about antennal sockets; prothorax pale with or without five dark spots; elytra pale with reddish brown to piceous sutural, median, and submarginal vittae not united at apex; body beneath dark, the tip of abdomen pale, legs sometimes entirely dark or sometimes the femora pale.

Head with interocular space more than half the width of head, short lower front, area between antennal sockets somewhat flat, moderately wide, a cluster of coarse punctures about fovea near eye; except for pale area over labrum and about antennal sockets, head dark. Antennae dark and rather long. Prothorax not quite twice as wide as long, with rounded sides, rather flat, a basal depression over the scutellum and a slight hump on either side with resulting depression below; surface finely alutaceous and finely punctate; pale yellow with five small dark spots, or entirely pale. Scutellum dark. Elytra faintly alutaceous, not very shiny, very finely punctate; a faint trace of median costa in the male, more developed in female, pale yellow with deep reddish brown to piceous vittae, the sutural and submarginal vittae not united at the apex, the median one wide. Epipleura pale. Body beneath mostly dark, the tip and sometimes

sides of abdomen pale, the femora either pale or piceous, tibiae and tarsi dark. Length 6.5 to 7 mm.; width 2.5 to 2.7 mm.

TYPE: USNM 49223, from Milford, Delaware.

OTHER LOCALITIES: United States: Maine to British Columbia and south to Texas. México: Tepic.

REMARKS: Although the vittae of the single specimen from México examined are not quite so dark as is usual in specimens from the United States, it is possible that this specimen is immature and not fully colored. Since *D. procera* occurs in Texas it undoubtedly ranges southward into México and it may occur even farther south. It is one of the group with costate elytra that feeds on *Polygonum*.

*Disonycha recticollis* Jacoby

FIGURE 5

*Disonycha recticollis* Jacoby, Biologia Centrali-Americana, Coleoptera, vol. 6, pt. 1, p. 313, 1884.

Between 6 and 8 mm. in length, narrowly oblong, somewhat shiny, the elytra faintly alutaceous; pale yellow brown; a dark occipital band behind the eyes; a somewhat rectangular unspotted prothorax; the elytra with a narrow sutural vitta connecting feebly at apex with a narrow submarginal vitta, median vitta not very wide, and in female especially having a costa down the middle; body beneath with breast and part of abdomen usually dark, femora pale, tibiae at apex, sometimes entirely, dark, tarsi dark.

Head with interocular space more than half its width, smoothly rounded over occiput except for the fovea near eye, impunctate, frontal tubercles not well marked, often a depression between and above them, interantennal area flat and rather wide, not carinate, pale yellow, with dark mouthparts and a dark occipital band running across to behind the eyes. Antennae long, usually with the three basal joints paler than rest. Prothorax not twice as wide as long, with slightly curved sides, somewhat rectangular in shape, not very convex, feebly depressed over scutellum and on sides near base, shining, impunctate, immaculate. Elytra elongate and not very wide, with a costa down the median vitta in the female, less marked in male, finely alutaceous and finely punctate; pale yellow with a narrow dark sutural vitta uniting feebly or sometimes not at all with a very narrow submarginal vitta; median vitta not very wide. Epipleura pale. Body beneath with the breast and usually basal segments of abdomen dark, sometimes all but last segment dark. Femora pale, tibiae varying from being entirely dark to being dark only at apex, tarsi dark. Length 5.7 to 8 mm., width 2.5 to 3.5 mm.

TYPE: Not designated; cotypes in BM, also in MCZ (8) and USNM (2) from Costa Rica, van Patten collector; another specimen, in USNM, from Purulhá, Baja Vera Paz, Guatemala, Champion, a locality not mentioned by Jacoby.

OTHER LOCALITIES: México: Cordova, Vera Cruz, F. Knab. Guatemala: Antigua, J. K. Aldrich; San José de Pinula, W. M. Mann; Livingston, Charles Deam; Tamahú, 3,500 ft., C. and P. Vaurie. Costa Rica: Paso Ancho, S. Sebastián, C. H. Ballou, on *Vernonia brachiata* Bentham; Waldeck, C. H. Ballou, on *Polygonum punctatum* Elliott; Hamburg Farm, Reventazón, Ebene Limón, F. Nevermann; San Pedro de Montes de Oca, C. H. Ballou, on *Lycopersicon esculentum* Miller; San Francisco de Ríos. Nicaragua: Chontales, T. Belt. Panamá: Porto Bello, A. Busck.

REMARKS: This is another *Disonycha* with costate elytra related to *D. procera* Casey and *D. conjugata* (Fabricius) of the United States. It feeds primarily on *Polygonum*. It is a slender insect without pronotal spotting.

*Disonycha bicarinata* Boheman

FIGURE 9

*Disonycha bicarinata* Boheman, in Kongliga Svenska Fregatten *Eugenies* resa omkring jorden . . . , åren 1851-53, vol. 2, Zoologi, pt. 1, Insecta, p. 190, 1859.

Between 6.5 and 8 mm. in length, elongate oblong oval, alutaceous, somewhat shiny; pale yellow; a broad piceous band over back of head; 5-spotted prothorax; elytra with narrow sutural, median, and submarginal vittae, not uniting at apex, a costa down the median vitta, most pronounced in the female; body beneath mostly dark with the femora mostly reddish brown.

Head shining, usually impunctate except for the large fovea or group of punctures near eye, interocular space approximately half the width of head; frontal tubercles distinct, a broad flat interantennal area not much produced, a deep piceous band across the entire back of head, sometimes the front darkened, the mouthparts dark. Antennae long, deep brown to piceous, with the basal joints pale-edged. Prothorax twice as wide as long, not very convex, somewhat depressed over the scutellum and at the sides, surface shining, impunctate, not distinctly alutaceous, with five spots, the largest on the side, the median one elongate. Elytra elongate, a costa along the narrow median vitta, this most pronounced in the female, the narrow sutural vitta not uniting at the apex with the very narrow submarginal one; surface finely punctate and alutaceous, not very shiny. Epipleura with a brownish edge. Body beneath covered with a dense fine pale pubescence, the prosternum dark in the middle and with a large dark spot on either side, breast entirely dark, abdomen dark along edges



and apex, sometimes along base of each segment, femora reddish brown with the tibiae and tarsi darker brown. Length 6.5 to 8 mm.; width 3.5 to 4 mm.

TYPE: In Naturhistoriska Riksmuseet, Stockholm, from Buenos Aires, Argentina.

OTHER LOCALITIES: Argentina: Añatuya, Santiago del Estero, Monrós; Isla Martín García, Buenos Aires, M. Viana; Concordia, Entre Ríos, M. A. Cazier; Corrientes, N. Kisliuk; Flores, Buenos Aires; Formosa, A. Martínez; Pampas; Quinta; Reconquista, H. L. Parker; Río Santiago, Buenos Aires, Monrós; San Isidro, Buenos Aires, Monrós; San Pedro de Calalao, Trancas, Tucumán, Monrós; Santiago del Estero, Monrós; Tucumán, G. F. Mozzette; Paysandú, P. A. Berry. Paraguay: Asunción, A. Martínez. Chile: Germain.

REMARKS: This species belongs to that group of *Disonycha* having elytral costae that feeds on Polygonaceae. There are three other closely related species from South America and one (*D. recticollis*) from Central America as well as several from the United States. In all, the head markings are very much the same, the elytra have a tendency to have a costa or costae more pronounced in the female, and the aedeagi resemble each other markedly. In an article by Frers (*Physis*, vol. 4, pp. 565-567, 1919) the biology of *D. bicarinata* is given and the food plant is reported as *Mühlenbeckia sagittifolia* Meisner (Polygonaceae).

#### *Disonycha immaculata*, new species

##### FIGURE 7

About 7 mm. in length, elongate oblong, somewhat shining, although finely alutaceous and finely and rather densely punctate; pale yellow brown; dark band across the occiput behind the eyes, dark outer joints of the antennae; dark scutellum and slightly darkened sutural edges; elytra with a trace of a submarginal vitta, median vitta narrow; the body beneath with the breast and abdomen except at apex dark, legs pale, with the tarsi dark.

Head with interocular space more than half width of head, smooth over occiput except for the circle of punctures about fovea near eye, frontal tubercles visibly marked, space between antennal sockets broad, not much produced, lower front rather short, with a small dark labrum; a dark band across occiput behind the eyes. Antennae long, dark except the three basal joints that are pale-edged. Prothorax scarcely twice as broad as long, with curved sides, not very convex, a slight depression on each side at base and over the scutellum; surface faintly shining, finely alutaceous and finely punctate. Scutellum dark. Elytra pale with the sutural edges slightly darkened and a similar slight trace of submarginal vitta not extending to the apex,

the median vitta narrow but clearly defined; other specimens darker with wider elytral vittae; surface finely alutaceous and finely punctate. Body beneath with the breast entirely dark and the abdomen having the first segments dark, becoming paler at apex; legs with the femora and tibiae pale, tarsi dark. Length 7.2 to 8.2 mm., width 3.4 to 4 mm.

TYPE: Male, MCZ 29043, from Rio Grande do Sul, Brazil.

OTHER LOCALITIES: Brazil: Santa Catarina Province, Corupá (Hansa Humbolt), Rio Vermelho, Rio Natal, Pinhal, all collected by A. Maller, in AMNH; Blumenau, "S. O. Brazil" (Reitter); Rio de Janeiro (2nd Jacoby collection); Santa Catarina, Lüderwaldt (1st Jacoby collection), Bahia (2nd Jacoby collection, Bowditch collection). In the British Museum (Fry collection) are specimens from Paraná and Rio de Janeiro and one from Rio de Janeiro, collected by C. Darwin.

REMARKS: These specimens all come from the southeastern part of Brazil. They are very similar to *D. bicarinata* Boheman from Argentina, but are in general a little stouter and always without pronotal spotting above or a darkening of the prosternum below. The abdomen tends to be darker than in *D. bicarinata*, and the tip of the aedeagus is wider although of the same general shape. The specimens from Santa Catarina province are darker and with wider elytral vittae than the single male from Rio Grande do Sul.

#### *Disonycha varia*, new species

##### FIGURE 8

Between 7 and 8 mm. in length, elongate oblong, alutaceous, moderately shiny; the elytra distinctly punctate and rather widely margined; head dark on occiput; prothorax entirely pale; elytra with dark sutural vitta joining at apex with narrow submarginal vitta, a moderately wide median vitta with a costa running down the middle; body beneath, except prosternum, more or less dark, femora pale, tibiae and tarsi deeper brown.

Head with interocular space about half its width, a darkening over occiput, the mouthparts darker, a cluster of punctures on either side of head near eye, tubercles not well defined, carina broad, little produced, lower front rather short. Antennae long, extending almost to the middle of the elytra, the three basal joints paler, the rest dark. Prothorax twice as wide as long, with curved, moderately wide explanate margin, depressed at sides of base and over the scutellum, entirely pale, shiny, only faintly alutaceous, very finely punctate. Elytra with a noticeably wide, pale, explanate margin, the dark sutural vitta joining with the submarginal vitta at apex, a moderately wide median vitta and in this a costa, more pronounced in the female;

surface alutaceous and moderately densely and coarsely punctate. Body beneath covered with short pale fine pubescence, in the one specimen examined the breast alone dark, the femora pale, the tibiae tending to be deeper brown and the tarsi brown. Length 7 mm., width 3.8 mm.

TYPE: Male, USNM 61808, from near Pará, Brazil, Miss H. B. Merrill.

REMARKS: This is another of the species having costate elytra especially marked in the female. It is closely related to *D. bicarinata* Boheman and *D. immaculata* but is more densely and coarsely punctate. In the one specimen examined the undersurface is not so dark as in these other species, with only the breast dark.

*Disonycha yurimaguensis*, new species

FIGURE 3

About 7 mm. in length, elongate oblong, alutaceous and feebly shining; yellow; a dark band across occiput; prothorax in one of the two specimens 5-spotted, the other immaculate, and in a series of five from Perú (in BM) all have immaculate prothorax; elytra with moderately wide sutural and median vittae, not joined with the submarginal vitta, body beneath with breast and basal part of abdomen dark, legs pale with a dark streak along sides of tibiae and dark tarsi.

Head with interocular space a little more than half width of head, smooth over occiput except for a circle of punctures about fovea near eye; frontal tubercles distinct, area between antennal sockets broad and rounded, not much produced, a dark band across occiput behind eyes, the labrum dark. Antennae long, dark, with the three basal joints pale edged. Prothorax about twice as wide as long with curved sides, slightly depressed at base, on sides, and over scutellum, not very convex, somewhat shiny, one specimen of the type series entirely pale, the other 5-spotted, the lateral spots being the largest, in a series from Perú (in BM) the prothorax entirely pale. Elytra elongate, finely alutaceous, not very shiny and very finely and densely punctate, a moderately wide, dark sutural vitta and a narrower submarginal one not reaching the apex, the median vitta with a trace of costa; epipleura in part dark. Body beneath with breast and base of abdomen dark, femora pale, tibiae darkened along sides, tarsi dark, the claw joint paler. Length 6.5–7.4 mm.; width 3.2–3.4 mm.

TYPE: Male, MCZ 29037, and paratype, male, USNM 61809, from Yurimaguas, Perú.

OTHER LOCALITIES: A series of five specimens from Perú in BM.

REMARKS: This is another species closely related to *D. bicarinata*

Boheman. Only males have been examined but there is a slight trace of costa in some of these. The coloring seems a little darker than in the Central American species *D. reticollis* Jacoby, and the aedeagus differs only slightly from the other South and Central American species of the group.

*Disonycha pluriligata* (LeConte)

FIGURE 15

?*Altica quinquevittata* Say, Journ. Acad. Nat. Sci. Philadelphia, vol. 4, p. 88, 1824 ("Missouri"; type lost).

*Haltica pluriligata* LeConte, Proc. Acad. Nat. Sci. Philadelphia, vol. 4, p. 27, 1858 (Kansas and Texas; type in LeConte collection, MCZ).

*Disonycha pluriligata* LeConte, Smithsonian Contr. Knowl., vol. 11, p. 25, 1859.—Blake, Proc. U. S. Nat. Mus., vol. 82, art. 28, pp. 25–28, 1933.

*Disonycha capitata* Jacoby, Biologia Centrali-Americana, Coleoptera, vol. 6, pt. 1, p. 316, 1884 (no type designated).

*Disonycha quinquevittata* Horn, Trans. Amer. Ent. Soc., vol. 16, p. 203, 1889 (in part).—Jacoby, Biologia Centrali-Americana, Coleoptera, vol. 6, suppl., p. 276, 1891.—Schaeffer, Journ. New York Ent. Soc., vol. 39, p. 279, 1931.

Between 6.5 and 7.5 mm. in length, elongate oblong oval, somewhat shining; pale; head with occiput, labrum, and often tubercles darker; pronotum usually 5-spotted, lateral spots sometimes evanescent; elytra with sutural, median, and submarginal vittae; metasternum, in part, and apex of tibiae and tarsi dark.

Head with interocular space slightly more than half its width; tubercles distinctly marked, carina not acute, broad and slightly produced; coarse punctures about fovea on each side of head near eye, but median space usually smooth; pale, with labrum, usually tubercles, and occiput darker. Antennae robust, dark, with paler basal joints, third joint shorter than fourth or fifth, which are subequal with the fourth longer. Prothorax not twice as wide as long, narrowed a little anteriorly, with only slightly arcuate sides, not very convex, a slight callosity on either side in basal half and a median basal depression; surface alutaceous and finely punctate; pale with five spots, sometimes lateral spots and median stripe evanescent. Scutellum dark. Elytra with parallel sides, somewhat convex, humeri well developed and an intrahumeral sulcus; on lateral apical half a trace of the ridges characteristic of the *pennsylvanica* group, and slightly more developed than in *alternata*: surface alutaceous and finely punctate; vittae usually wider than in *alternata* except in the southwestern specimens, and the sutural and submarginal often rather feebly joined at apex. Body beneath densely and somewhat coarsely pubescent, pale, with metasternum in part, usually the middle, dark; apex of tibiae and tarsi dark. Length 6.8 to 7.8 mm., width 3.5 to 4.4 mm.

TYPE: In MCZ (LeConte collection), from Kansas.



OTHER LOCALITIES: United States: Tennessee to Colorado and southwards, *D. pluriligata* var. *pura* (LeConte) in Arizona and California. México: Rosario, Sinaloa, J. A. Kusche; Los Mochis, Sinaloa, M. Marquis; Tamazunchale, San Luis Potosí, C. and P. Vauric; Tuxpan, W. M. Mann; 5 miles south of Acaponeta, Nayarit, H. B. Leech; Cataviña, Baja California, Michelbacher and Ross.

REMARKS: In my earlier treatment of *Disonycha* in the United States I synonymized *D. capitata* Jacoby with *D. pluriligata* var. *pura* (LeConte), basing this chiefly on the specimens from "North Sonora, Mexico" (really from Arizona) collected by Morrison that were in the Bowditch collection of Jacoby's material. Since then I have examined specimens from the other localities given above in México and believe that Jacoby must have had both the forms, as he gives also Tuxtla and Cosmaloapam, México, and El Zapote, Panzós, Guatemala. This species is allied to *D. latiovittata* Hatch, and is of the *alternata* group that occurs on willow.

#### *Disonycha latiovittata* Hatch

FIGURE 13

- Haltica puncticollis* LeConte, in Reports of explorations and surveys to ascertain the most practicable . . . route for a railroad from the Mississippi River to the Pacific Ocean, vol. 9, No. 1, Insects, p. 67, 1857 (= vol. 12, pt. 3, p. 67, 1860; type in LeConte collection, MCZ; not *Haltica puncticollis* Kirby, 1837).
- Disonycha puncticollis* Gemminger and Harold, Catalogus Coleopterorum, p. 3497, 1876.—Gentner, Canadian Ent., vol. 58, p. 149, 1926.
- Disonycha quinquevittata* Horn, Trans. Amer. Ent. Soc., vol. 16, p. 203, 1889 (in part).
- Disonycha quinquevittata* var. *puncticollis* Schaeffer, Journ. New York Ent. Soc., vol. 39, p. 280, 1931.
- Disonycha latiovittata* Hatch, Pan-Pacific Ent., vol. 8, No. 3, p. 108, 1932.—Blake, Proc. U. S. Nat. Mus., vol. 82, art. 28, pp. 23-24, 1933.

Between 6 and 7 mm. in length, broadly oblong oval, somewhat shiny, prothorax densely punctate; pale; head with labrum and often occiput dark; pronotum with 4 or 5 spots; elytra with sutural, median and submarginal vittae, usually metasternum in middle; apex of tibiae and tarsi dark.

Head with interocular space slightly more than half width of head; carina not acute, broad and produced, frontal tubercles somewhat swollen, well marked; coarsely and rugosely punctate; pale, with labrum, sometimes also tubercles and occiput, dark. Antennae stout, dark, with paler basal joints; third joint shorter than fourth or fifth which are subequal, the fourth slightly longer. Prothorax twice as broad as long, not very convex, with a callosity on each side on basal half and slight median depression near base; somewhat narrowed

anteriorly with arcuate sides; surface alutaceous and densely punctate, not shiny; pale, generally with four spots, the median stripe usually either obsolete or reduced to a dot. Scutellum dark. Elytra broadly oblong, sides parallel, somewhat convex; humeri well marked, with a distinct intrahumeral sulcus; surface alutaceous, somewhat shining, moderately coarsely and densely punctate; sutural and submarginal vittae usually united at apex, vittae broad in Washington and Oregon specimens, but often rather narrow in the California specimens, and in these the median vitta sometimes interrupted. Body beneath densely pubescent, pale, usually with the middle of metasternum, apex of tibiae, and tarsi dark. Length 6 to 7.2 mm.; width 3.2 to 3.8 mm.

TYPE: In collection of M. H. Hatch, from Nisqually, Washington.

OTHER LOCALITIES: Canada: British Columbia. United States: Washington, Oregon, California, Wyoming. México: Baja California, "N. Boundary, Godman-Salvin coll.," 1907.

REMARKS: The synonymy of this species has been dealt with in my earlier revision of North American species of *Disonycha*. This species is closely related to *D. pluriligata* (LeConte) but is distinguished by having a more densely and coarsely punctate thorax.

#### *Disonycha teapensis* Blake

##### FIGURE 12

*Disonycha teapensis* Blake, Proc. U. S. Nat. Mus., vol. 82, art. 28, pp. 38, 39, 1933.  
*Disonycha horni* Jacoby, Biologia Centrali-Americana, Coleoptera, vol. 6, suppl., p. 295, 1891 (in part).

About 7.5 mm. in length, elongate oblong, not shining; yellow; pronotum uneven and with two dark spots anteriorly; elytra with traces of costae in female, and with dark sutural, median, and submarginal vittae; undersurface with middle of metasternum and about coxae dark.

Head with interocular space about half width of head, smooth in the middle, with punctures on either side near eye; tubercles distinct, interantennal area somewhat produced, but not acutely so; pale, with narrow dark occipital band, somewhat darkened over tubercles and the labrum dark. Antennae extending about to the middle of the elytra, dark, with paler basal joints, fourth joint nearly twice as long as third. Prothorax not twice as wide as long, with arcuate sides; disk uneven, with lateral callosities; surface alutaceous, indistinctly punctate; pale, with two well-marked anterior dark spots. Scutellum dark. Elytra oblong, with parallel sides, humeri pronounced, with a short, deep intrahumeral sulcus; in female traces of costae in apical

half of elytra; surface alutaceous, indistinctly punctate; sutural, median, and submarginal dark vittae not twice so wide as pale intervening vittae; the submarginal and sutural vittae sometimes uniting at apex. Body beneath finely pubescent, pale, the middle of the metasternum, area about coxae, and most of the tibiae and tarsi dark. Length 7.5 to 7.8 mm.; width 4 mm.

TYPE: Male, and three paratypes, USNM 43651, from Teapa, Tabasco, México, collected in March by H. H. Smith. Other paratypes from same locality in BM and in MCZ (Bowditch collection).

OTHER LOCALITIES: México: Tamazunchale, San Luis Potosí, G. E. Bohart.

REMARKS: Under *Disonycha horni* Jacoby are confused two species, of which one is *D. fumata* (LeConte) and the other this species. In my earlier account of this I discussed the specimens in the collections at length and disposed of the name *horni* as a synonym of *D. fumata* (LeConte). *D. teapensis* belongs to the *alternata* group, having a similar uneven pronotum and traces of elytral costae in the female. It most closely resembles *D. pluriligata* var. *pura*, a Sonoran form. *D. teapensis*, on the other hand, comes from the lowlands of south-eastern México. It is more slender than *pluriligata*, the head is smoother, and the aedeagus has a broadly pointed tip, which is broader than in any of the other species in that group that possess an acute tip.

In the Bowditch collection are specimens from Jacoby's second collection with the locality Zacualtipán, Hidalgo, México, Höge collector, that are placed under *Disonycha horni* Jacoby but are Horn's *Disonycha tenuicornis*. No mention of this locality is given in the *Biologia Centrali-Americana*.

#### *Disonycha arizonae* Casey

##### FIGURE 33

*Disonycha arizonae* Casey, Contributions . . . , pt. 1, p. 52, 1884.

*Disonycha glabrata* Jacoby, *Biologia Centrali-Americana*, Coleoptera, vol. 6, pt. 1, p. 311, 1884 (in part).

*Disonycha davisi* Schaeffer, Journ. New York Ent. Soc., vol. 32, p. 141, 1924 (from New Jersey, type USNM 42426).—Blake, Proc. U. S. Nat. Mus., vol. 82, art. 28, pp. 29–30, 1933.

Between 4.5 and 6.5 mm. in length, oblong oval, feebly shining, with moderately densely punctate prothorax and elytra; pale; usually with a small dark spot on occiput and dark labrum, tubercles sometimes dark; two anterior spots on prothorax; sutural, median, and submarginal elytral vittae; apex of tibiae and tarsi dark.

Head with interocular space more than half the width of head; frontal carina not acute, broad and somewhat produced, tubercles well marked but flat; middle of occiput and front usually smooth,

with some coarse punctures about fovea near eye; pale, with usually a small spot in middle of occiput, the tubercles frequently brown and the labrum always dark. Antennae short, dark with paler basal joints. Prothorax a little more than twice as wide as long, somewhat convex, a little narrowed anteriorly, with sides arcuate; surface more or less distinctly and quite densely punctate, alutaceous; pale, with two anterior dark spots not close together and somewhat oblique. Scutellum dark. Elytra broadly oblong oval, convex, with humeri not prominent and without intrahumeral sulcus; surface alutaceous, somewhat shining, densely and often coarsely punctate; sutural, median and submarginal vittae only moderately wide, the submarginal one uniting with sutural at apex. Body beneath usually finely and densely pubescent, but in Arizona specimens only sparsely pubescent; entirely pale, the apex of tibiae and tarsi brown, and sometimes the middle of the anterior femora with a brown marking. Length 4.6 to 6.5 mm., width 2.6 to 3.2 mm.

TYPE: Female, USNM 49225 (Casey collection), from Arizona, collected by H. K. Morrison.

OTHER LOCALITIES: United States: From Maine to Arizona. It has been taken in shipments from México: one in purslane and another on vegetables, both taken at El Paso, Texas, and a third in a *Selaginella* plant from San Miguel de Guanajuata, taken at Laredo, Texas.

REMARKS: It may be that this species occurs commonly in México although only the three specimens recorded above are known from there. The Biologia material labeled "N. Sonora, Mexico," Morrison collector, is really from Arizona. As stated in my earlier revision, this last was identified as *D. glabrata* (Fabricius), presumably by Jacoby.

*Disouycha sapucayensis*, new species

FIGURE 35

About 5 mm. in length, oblong oval, shining although finely alutaceous; pale yellow; the head with a dark occipital spot and usually dark tubercles and labrum; pronotum with two small spots anteriorly and traces of a median and sometimes two faint lateral spots; elytra with narrow sutural, median, and submarginal vittae not joined at apex; body beneath pale, with the tibiae and tarsi tending to be deeper brown.

Head elongate, the interocular space more than half the width of head, a somewhat produced moderately wide carina, the area under the antennal sockets deeply excavated, upper vertex with coarse punctures on either side, sometimes nearly across front, a dark spot on occiput, tubercles and also labrum tending to be dark. Antennae short and



stout, with pale basal joints. Prothorax almost twice as broad as long, with curved sides and a slight depression over scutellum, moderately convex, faintly alutaceous, shiny, very faintly punctate, pale yellow with two dark spots anteriorly and traces of a median basal spot and sometimes one on each side laterally. Scutellum brown. Elytra faintly alutaceous and very finely punctate, shining, deep reddish brown or piceous sutural, median, and submarginal vittae, not uniting at apex, the sutural vitta scarcely reaching the apex. Epipleura pale. Body beneath and legs pale, the tibiae at apex and tarsi deeper brown. Length 5 to 5.5 mm., width 2.5 mm.

TYPE: Male, and one male and one female, paratype, USNM 61810, from Sapucaí, Paraguay, collected in February by W. T. Foster; paratype, male, in MCZ.

REMARKS: This appears to be similar to the North American species *D. arizonae* Casey. The markings and aedeagus are similar, but it is a smooth and not coarsely punctate beetle.

*Disonycha guatemalensis* Jacoby

FIGURE 31

*Disonycha guatemalensis* Jacoby, Biologia Centrali-Americana, Coleoptera, vol. 6, pt. 1, p. 312, 1884.

Between 6 and 7 mm. in length, oblong oval, pronotum shining, nearly impunctate, elytra faintly alutaceous and finely punctate; pale yellow; dark antennae; unspotted pronotum; elytra with moderately narrow dark sutural vitta connecting with narrow submarginal vitta at apex, median vitta not very wide; body beneath and legs except sometimes tip of tibiae and tarsal joints pale.

Head with interocular space about half width of head, a circle of coarse punctures on either side of vertex, frontal tubercles marked by a median groove, carina broad and somewhat produced, lower front long, labrum brown, head otherwise pale except sometimes a faint brownish spot on occiput. Antennae short, dark, except for paler basal joints. Prothorax approximately twice as broad as long, moderately convex, slightly depressed over scutellum, shining, impunctate, without distinct spotting, although in some specimens very faint traces of 5 spots, the middle one elongate. Elytra shining although faintly alutaceous, finely but distinctly punctate, a narrow dark sutural vitta joining at apex with submarginal vitta, and a median vitta not very wide. Epipleura mostly dark. Body beneath entirely pale, legs pale, with apex of tibiae sometimes darkened, tarsi dark. Length 6 to 6.9 mm., width 2.8 to 3.4 mm.

TYPE: Not designated by Jacoby; cotypes in BM, also one in the Jacoby material in MCZ (Bowditch collection), from Zapote, Guatemala.

OTHER LOCALITIES: México: Río Antonio, Oaxaca, F. E. Knab; Puente de Ixtla, Morelos, Wickham; Río Balsas, Guerrero, Wickham; two specimens taken at border in shipments of pineapple from México. Honduras: Minas de Oro, Comayagua, 4,000 ft., J. B. Edwards. British Honduras: Manatee District, Peck. Guatemala: Antigua, J. E. Melhus.

REMARKS: This is one of the oblong-oval species and resembles somewhat *D. admirabilis* Blatchley of North America, although larger and more polished. The aedeagus is much like that of *D. arizonae* Casey, but the beetle itself lacks the coarse punctation and the dark pronotal spots.

*Disonycha figurata* Jacoby

FIGURE 42

*Disonycha figurata* Jacoby, Biologia Centrali-Americana, Coleoptera, vol. 6, pt. 1, p. 314, 1884.

From 6 to 8 mm. in length, oblong oval, faintly shining, finely alutaceous, finely punctate; pale yellow; the antennae dark with paler basal joints, femora darkly streaked, apex of tibiae and tarsi dark; prothorax usually with two dark spots anteriorly; elytra usually with faint, washed-out, narrow sutural and submarginal vittae, joined at apex, and a median vitta, sometimes these vittae are normally piceous; sometimes the breast is dark in the middle.

Head with widely separated eyes, polished over occiput, a fovea near each eye with a circle of punctures about it, frontal tubercles distinct, carina broad and rounded, pale yellow with the mouthparts often and tubercles sometimes brown. Antennae dark, with paler basal joints. Prothorax not twice as broad as long, with arcuate sides, faintly depressed over scutellum and on sides, rather shiny and indistinctly punctate, usually with two dark spots anteriorly, occasionally with only very faint traces of these spots, sometimes traces of lateral spotting. Scutellum washed-out, grayish. Elytra distinctly alutaceous and finely punctate, pale with pale grayish, not very distinct vittae, the sutural one joining with the submarginal one at the apex, and a median vitta, sometimes these vittae fully colored and piceous. Body beneath densely covered with a yellowish pubescence, usually entirely pale but sometimes with a reddish brown area in the middle of the breast, femora with a deep brown or piceous streak, the hind ones more heavily darkened, tibiae dark at apex, tarsi dark. Length 6 to 8 mm., width 3.2 to 4.3 mm.

TYPE: Not designated; cotypes in BM, also in MCZ (Bowditch collection, 4), and in USNM (2), from Capetillo, Guatemala, Champion.

OTHER LOCALITIES: México: Cerro Azul, Estadode, Vera Cruz; Cerro de Plumas, Höge; Chapala, Jalisco, Lattimore; Volcán de Colima, Jalisco, L. Conrad; Chihuahua, Wickham; Chilpancingo, Guerrero, 4,400 ft., H. H. Smith; Guerrero, R. Miller; Xantipa, Guerrero, H. H. Smith; Xucumanatlán, Guerrero, 7,000 ft., H. H. Smith; Rio Balsas, Guerrero, Wickham; Cuernavaca, Morelos, Wickham, also collected there by N. L. H. Krauss on *Eupatorium adenophorum* Sprengel; Joyutla, Puente de Ixtla, Morelos, Wickham; Guadalupe, Buller; Jalapa, William Schaus; San Angel, D. F. Wickham; Teapa, Tabasco, H. H. Smith; Tepetlapa, Oaxaca, 3,000 ft., H. H. Smith; Tuxtepec, Oaxaca, J. Camelot; Oaxaca, Höge and L. O. Howard; Ventanas, 2,000 ft., Forrer; Monclova, Coahuila, E. Palmer. Guatemala: Antigua, E. G. Smith, Yepocapa, H. T. Dalmat. Honduras: Minas de Oro, Comayagua, 4,000 ft., J. R. Edwards; San Luis, Comayagua, 2,500 ft., J. R. Edwards. Costa Rica: Alajuelita, on *Crotalaria mucronata* Desvaux, C. H. Ballou. United States: Arizona: Mount Washington, near Nogales.

*Disonycha fumata* (LeConte)

FIGURES 10, 11

*Haltica fumata* LeConte, Proc. Acad. Nat. Sci. Philadelphia, vol. 4, p. 86, 1858.

*Disonycha alternata* var. *fumata*, Gemminger and Harold, Catalogus Coleopterorum, p. 3496, 1876.

*Disonycha crenicollis* Horn, Trans. Amer. Ent. Soc., vol. 16, p. 204, 1889.—Jacoby, Biologia Centrali-Americana, Coleoptera, vol. 6, pt. 1, p. 316, 1884 (in part; not *Altica crenicollis* Say).

*Disonycha alternata* Jacoby, Biologia Centrali-Americana, Coleoptera, vol. 6, pt. 1, p. 311, 1884 (in part).

*Disonycha horni* Jacoby, Biologia Centrali-Americana, Coleoptera, vol. 6, suppl., p. 275, 1891 (in part; type, in BM, from Puebla, México).

*Disonycha fumata* Schaeffer, Journ. New York Ent. Soc., vol. 27, p. 334, 1919. Blake, Proc. U. S. Nat. Mus., vol. 82, Art. 28, pp. 36-42, 1933.

*Disonycha labiata* Jacoby, Entomologist, vol. 34, p. 148, 1901. (type, in BM, from México).

Between 5.5 and 8 mm. in length, oblong oval, faintly shining, finely alutaceous; pale yellow; dark antennae, a narrow dark occipital band; thorax from 2- to 5-spotted, sometimes immaculate; elytra with a narrow sutural vitta uniting narrowly at apex with submarginal vitta, the median vitta not very wide; body beneath with breast and apex of femora and tibiae and tarsi usually dark; antennae long.

Head with interocular space about half width of head, smooth, shining, with a circle of punctures about fovea near eye, sometimes with light pubescence, the frontal tubercles marked by a median depression, area between antennal sockets rather wide, not produced,

somewhat flat, the head with a dark band at base, sometimes the tubercles darkened and mouthparts dark. Antennae longer than usual, dark, with the three basal joints pale edged. Prothorax scarcely twice as wide as long, moderately convex, with rounded sides, not much evidence of basal depression; finely alutaceous, pale, with from two to five more or less distinct dark spots, or in some specimens the spots very indistinct or lacking. Elytra moderately convex, less oblong and more rounded than in many species, finely alutaceous, a narrow dark sutural and submarginal vitta uniting at apex more or less distinctly, the median vitta not very wide; epipleura usually dark edged. Body beneath with breast usually dark and a dark streak on femora, or the apex dark, tibiae and tarsi dark. Length 5.5 to 8 mm., width 2.8 to 3.8 mm.

TYPE: In MCZ (LeConte collection), from Texas and New Mexico.

OTHER LOCALITIES: United States: Alabama, Missouri, Texas, Arizona. México: Cuernavaca, Morelos, Wickham; Chiapas, Wickham; Delicias, Chihuahua, C. and P. Vaurie; Mexico City, Höge; Paso de Telago, San Rafael, Jicaltepec; Vera Cruz; Tabasco; Tuxpan, Jalisco; Villa Lerdo, Durango, Höge; Las Parras, Baja California, W. M. Mann; 20 miles north of Comondú, Baja California, Mickelbacher and Ross. Guatemala: Acatenango, Antigua, I. E. Melhus; Chimaltenango, Nebaj, 6,000 ft., C. and P. Vaurie; Quiriguá, W. P. Cockerell; Salamo, C. and P. Vaurie; Senahú, Alta Verapaz, Paul Haase; Yepocapa. Honduras: La Ceiba, F. J. Dyer; Tegucigalpa, F. J. Dyer. Costa Rica: Cartago, Agua Caliente, F. Nevermann; Guayabillos, southwest slope of Volcán Irazú, 2,200 m., F. Nevermann; Navarro, W. R. Maxon; San José, F. Nevermann, Schild and Burgdof, M. Valerio; San Pedro de Montes de Oca, C. H. Ballou, on *Jacaranda*.

REMARKS: In my earlier revision of the species of *Disonycha* north of México, I wrote at length of the confusion concerning the name for this species, and of Jacoby's treatment of it. Jacoby appears never to have recognized LeConte's species and to have confused the various color forms as much as did Schaeffer. One of these color forms that I did not treat in my earlier revision because I did not have access to the type is the one that Jacoby described as *Disonycha labiata*. Mr. J. Balfour-Browne has sent me a specimen he has compared with the type, a male; it is a pale form of *D. fumata* LeConte without pronotal spots but otherwise corresponding. The determining characters of this slender oval species are the long antennae, the long narrow head with dark labrum, and the long narrow prothorax. The head is often sparsely pubescent above, a condition rather unusual in the genus.



*Disonycha knabi*, new species

FIGURE 14

From 4.8 to 5.5 mm. in length, oblong oval, moderately shining although finely alutaceous, very finely punctate; pale yellow; deep reddish brown antennae, occiput, frontal tubercles, and tarsal joints; two large dark reddish brown pronotal spots more or less combined anteriorly; dark brown narrow sutural and submarginal elytral vittae not united at the apex, and a moderately broad dark median vitta.

Head with interocular space a little more than half the width of the head, the lower front somewhat elongate, carina long, broad, slightly produced, frontal tubercles swollen and well marked, usually dark, occiput deep reddish brown, polished, a cluster of coarse punctures on either side near eye, labrum dark, one specimen with a fovea in the middle of the occiput. Antennae deep reddish brown, rather short, the distal joints broad. Prothorax not twice as broad as long, moderately convex, with rounded sides and little trace of basal depression over scutellum, shining, impunctate, pale yellow with two large piceous spots anteriorly, sometimes coalescing and usually with a deep brownish area between them and below them, sometimes faint traces of a smaller pale brown lateral spot on each side. Scutellum dark. Elytra somewhat shiny although finely alutaceous and very finely punctate, pale, with a narrow dark sutural vitta and a submarginal vitta not united at apex and a moderately broad median vitta. Epipleura pale. Body beneath and femora and tibiae pale, the tarsal joints deep reddish brown. Length 4.8 to 5.5 mm., width 2.5 to 2.8 mm.

TYPE: Male, and two paratypes, female, USNM 61811, and one paratype, MCZ, all taken by Frederick Knab at Acapulco, México, on July 27.

REMARKS: In its oval shape and markings on the pronotum this species somewhat resembles *D. fumata* LeConte, but *D. knabi* is a smaller and paler species with shorter antennae. The aedeagus is somewhat like that of *D. fumata*.

*Disonycha tenuicornis* Horn

FIGURE 17

*Disonycha tenuicornis* Horn, Trans. Amer. Ent. Soc., vol. 16, pp. 201, 208, 1889.—Blake, Proc. U. S. Nat. Mus., vol. 82, art. 28, p. 32, 1933.

Between 6 and 7 mm. in length, oblong oval, somewhat shiny, elytra finely alutaceous; pale yellow; a small dark spot on either side of base of head; two small dark spots anteriorly on the prothorax; very narrow

sutural and median elytral vittae, sometimes a trace of a submarginal vitta near apex; legs pale, a dark streak on femora and tibiae, broader at apex on hind femora; antennae unusually long.

Head with interocular space a little more than half width of head, the carina broad and rounded, lower front short, tubercles distinctly marked, a cluster of punctures on either side near eye, the color pale, with a dark mark at extreme base of occiput on either side, often fading into reddish brown behind the eyes, mouthparts deeper in color. Antennae unusually long and slender, extending to the middle of the elytra, dark with the basal joints pale edged. Prothorax about twice as wide as long, moderately convex, with a slight depression over scutellum, the sides rounded; pale yellow with two small dark spots anteriorly, surface shiny, almost impunctate. Scutellum pale or edged with dark. Elytra not as shiny as prothorax, faintly alutaceous, almost impunctate, pale yellow with very narrow sutural and median dark vittae, often only the sutural edges darkened, and this not to base, sometimes at apex a trace of a submarginal dark vitta. Epi-pleura pale. Body beneath usually pale but in certain Mexican specimens a deepening in color on some abdominal segments, femora and tibiae with a dark streak above, widening on the hind femora at apex, and sometimes a dark spot on the outside of hind femora; tibiae also with a dark streak and tarsi dark. Length 6 to 7.3 mm., width 3 to 3.5 mm.

TYPE: In Academy of Natural Sciences of Philadelphia (Horn collection), from southern Arizona, H. K. Morrison.

OTHER LOCALITIES: United States: New Mexico: Alamogordo, Organ Mountains; Arizona: Chiricahua Mountains, Cochise County; Texas: McKelligon Canyon, near El Paso, larvae feeding on *Salvia vinacea* Wootton and Standley, H. S. Barber. México: Zacualtipán, Hidalgo, Höge; Jacala, Hidalgo, 4,500 ft., Ralph Haag, 1939.

REMARKS: H. S. Barber collected this rare species in numbers on *Salvia vinacea* near El Paso, Texas. Previously it had been known only from Arizona and New Mexico. Under *D. horni* Jacoby in the Jacoby material in the Bowditch collection are three specimens collected by Höge at Zacualtipán, Hidalgo, México, that are a little darker than the more northern specimens but clearly *D. tenuicornis* Horn. The long slender antennae, the 2-spotted prothorax, and the narrow elytral vittae coupled with the shape of the aedeagus characterize this species. It is not closely related to any other. *D. figurata* Jacoby has somewhat the same markings in the darker specimens with dark vittae, but is a more slender beetle and the vittae are wider.

*Disonycha leptolineata* var. *texana* Schaeffer

## FIGURE 16

*Disonycha abbreviata* var. *leptolineata* Blatchley, Canadian Ent., vol. 49, p. 143, 1917 (Dunedin, Florida, cotype in USNM).

*Disonycha texana* Schaeffer, Journ. New York Ent. Soc., vol. 27, p. 339, 1919 (Brownsville, Texas, type in USNM).

*Disonycha leptolineata* var. *texana* Blake, Proc. U. S. Nat. Mus., vol. 82, art. 28, p. 45, 1933.

From 6.5 to 8 mm. in length, elongate oblong oval, smooth, shining, faintly alutaceous, impunctate; pale yellow; the head and pronotum without dark spotting; elytra with sutural and median vittae; body beneath pale with the breast often dark, femora pale, tibiae with dark streak, tarsi dark.

Head with interocular space more than half its width, smooth, impunctate except for the large fovea near eye, tubercles not prominent, space between antennal sockets wide and rounded, head usually entirely pale except for a deepening in the color of mouthparts. Antennae with the three basal joints pale, the rest dark. Prothorax about twice as wide as long, not very convex, slightly depressed over scutellum, faintly alutaceous, impunctate and without markings. Elytra also rather flat, faintly alutaceous, pale with sutural and median vittae. Epipleura pale. Body beneath usually pale with the breast sometimes dark, femora pale, tibiae with a dark streak, tarsi dark. Length 6.7 to 8 mm.; width 4 mm.

TYPE AND PARATYPE: USNM 42422, from Brownsville, Texas.

OTHER LOCALITIES: United States: From southern Virginia to Texas and west to Arizona. México: Volcán de Colima, Jalisco, L. Conrad; Izamal, Yucatán, Townsend; Tehuantepec, Oaxaca, F. Knab; Puente de Ixtla, Morelos, Wickham; Sierra de Durango; also on shasta daisy, lettuce, tomato, peppers, turnips, and other vegetables from México, intercepted at the border. Guatemala: Antigua, E. Melhus; El Quiché.

REMARKS: This is a more heavily marked species than *D. militaris* Jacoby, with wider vittae, and apparently more northern in range. It is very difficult to find any real structural differences between the members of this group which extend from Pennsylvania to Perú.

*Disonycha militaris* Jacoby

## FIGURE 4

*Disonycha militaris* Jacoby, Biologia Centrali-Americana, Coleoptera, vol. 6, pt. 1, p. 314, 1884.

From 6 to 8.5 mm. in length, elongate oblong oval, faintly shining, very finely alutaceous, pale yellow; dark antennae, a dark streak on

tibiae, and dark tarsi; elytra with a very narrow dark median and sutural vitta; body beneath pale.

Head usually entirely pale, smooth, shining, a fovea near eye, frontal tubercles rather faintly marked, carina narrowly produced, lower front not long, interocular space more than half the width of the head. Antennae with the basal joints pale, apical one sometimes paler than the dark ones preceding it. Prothorax about twice as wide as long, with arcuate sides, rather depressed over the scutellum, smooth and impunctate, faintly alutaceous, entirely pale. Scutellum pale. Elytra pale, with a very narrow dark sutural and median vitta, finely alutaceous and very indistinctly punctate. Body beneath entirely pale, femora pale, the tibiae with a dark outer streak, tarsi deep brown or piceous. Length 6 to 8.8 mm., width 3 to 4.2 mm.

COTYPES: In BM and MCZ (Bowditch collection).

OTHER LOCALITIES: México: San Pedro; specimens in banana debris from México. Guatemala: "Cacao Trece Aguas," Alta Verapaz, Schwarz and Barber; Panzós, 100 ft., C. and P. Vaurie; Panamá, Suchitepequez, 2,500 ft., C. and P. Vaurie; 14 miles up Los Patos River, Suchitepequez; Zapote, Champion; in banana debris from Guatemala. Honduras: La Ceiba, F. J. Dyer; also in banana debris from Honduras. El Salvador: San Andrés, E. J. Hambleton. Nicaragua: In banana debris. Canal Zone: Cristóbal, N. L. H. Krauss, A. H. Jennings. Colombia: one specimen in banana debris.

REMARKS: This is another of the group to which *D. abbreviata* Melsheimer and *D. leptolineata* Blatchley belong. Unlike the others, except the Florida form of *D. leptolineata*, this has very narrow elytral vittae. Unlike *D. leptolineata* var. *texana* Schaeffer, the breast is not dark. Jacoby gives México, Guatemala, and Panamá as localities for this species. Representing his material in the Bowditch collection is a specimen from David, Chiriquí, Panamá, collected by Champion, that is without a submarginal elytral vitta. There are also three others in the Bowditch collection from Guatemala, one a female with a submarginal vitta and a differently shaped scutellum and prothorax, and another a female from Comitán with a similar submarginal stripe. Both of them are slightly larger and paler and I believe they are *Disonycha* (*Cacoscelis*) *quinquelincata* (Latreille).

#### *Disonycha antennata* Jacoby

#### FIGURE 18

*Disonycha antennata* Jacoby, *Biologia Centrali-Americana*, Coleoptera, vol. 6, pt. 1, p. 35, 1884.

*Disonycha albida* Blatchley, *Canadian Ent.*, vol. 56, p. 169, 1924 (Big Pine Key, Florida).



Between 6 and 8 mm. in length, elongate oblong oval, somewhat shiny, very faintly alutaceous; pale yellow; dark antennae, a dark outer streak on tibiae, and dark tarsi; rarely with faint traces of a median elytral vitta.

Head with interocular space more than half the width of head, smooth over occiput, a fovea on each side near the eye, frontal tubercles distinct, carina rounded, head entirely pale. Antennae short, robust, with the three basal joints tending to be paler and sometimes the apical joint pale, the rest dark. Prothorax not twice as wide as long, with arcuate sides, a slight median depression at base over the scutellum, surface shiny, faintly alutaceous, impunctate, entirely pale. Scutellum pale. Elytra entirely pale except in two specimens of a series of 24 from Tuxtepec, México, in which is discernible a faint trace of a reddish brown median vitta on each elytron; surface impunctate, faintly alutaceous, somewhat shiny. Body beneath entirely pale, sparsely pubescent, femora pale, tibiae with a dark outer streak, tarsi dark. Length 6.3 to 8 mm.; width 3 to 4 mm.

COTYPES: In BM, also in MCZ (Bowditch collection, 2), one from Panistluahuaca, the other from Jalapa, México, Höge.

OTHER LOCALITIES: United States: Big Pine Key, Florida. México: Atoyac, Vera Cruz, H. H. Smith; Volcán de Colima, Jalisco, L. Conrad; Capulalpan, Cuernavaca, Morelos, H. H. Smith; Amula, Guerrero, 6,000 ft., H. H. Smith; La Venta, Guerrero, 300 ft., H. H. Smith; Río Balsas, Guerrero, Wickham; Tuxtla, Oaxaca; Tuxtepec, Oaxaca, J. Camelot and M. Fraire; many specimens intercepted at the border in banana trash.

REMARKS: Although this is normally an entirely pale species, there are two examples in a series of typically pale specimens with a trace of reddish brown median vittae. The aedeagus is very similar to others of the group to which it belongs (a group which includes *D. leptolineata* Schaeffer, *D. militaris* Jacoby, and *D. peruana* Jacoby, and the more northern species *D. abbreviata* Melsheimer).

*Disonycha peruana* Jacoby

FIGURES 21, 22

*Disonycha peruana* Jacoby, Proc. Zool. Soc. London, vol. 1, p. 402, 1904.

About 7.5 mm. in length, elongate oblong oval, moderately shiny, faintly alutaceous; pale yellow; head with a dark occipital spot extending down front and widening over frontal tubercles; pronotum with a dark margin and a lateral dark marking curving up behind the eye, also a dark lateral spot and two dark spots anteriorly sometimes joined with an elongate median one; elytra with a narrow dark sutural vitta, a median vitta, sometimes a marginal vitta joining at apex

with the sutural; body beneath and femora pale, tibiae and tarsi more or less dark.

Head pale except for the narrow dark mark extending from the occiput down to the frontal tubercles and widening over the tubercles, smooth, with only a large fovea near the eye, frontal tubercles distinctly marked, interocular space a little more than half the width of the head, carina (in cotype) with a dark streak, a little produced, lower front rather short. Antennae with the basal joints either partly pale or pale edged, the rest dark, apical joint light brown. Prothorax approximately twice as wide as long, not very convex, a little depressed over the scutellum, pale with a dark explanate margin, or a lateral darkening, curving up behind the eye, a lateral spot on each side and two anterior spots sometimes confluent with a median elongate mark; surface faintly alutaceous and impunctate. Elytra likewise faintly alutaceous and impunctate, somewhat shiny, pale with a narrow dark sutural vitta uniting at apex with a marginal vitta when the latter is present, median vitta narrow. Epipleura pale in specimens lacking marginal vitta, otherwise dark or with darkened edge. Body beneath entirely pale, shiny, lightly pubescent, femora pale, tibiae dark or with a dark streak, tarsi dark. Length 6.8 to 7.7 mm., width 3.5 to 4 mm.

COTYPES: In BM (2), from Perú.

OTHER LOCALITIES: Colombia: one specimen from the Jacoby material in MCZ (Bowditch collection); one from "R. Dagna," W. Rosenberg; one, in USNM, taken alive in orchids from Colombia. Venezuela: La Providencia, Maracay, L. F. Martorell. Canal Zone: Red Tank, Nathan Banks; Barro Colorado Island, J. Zetek. Costa Rica: Chiriquí.

REMARKS: Because of the small number of specimens examined, I hesitate to try to differentiate between those from North and South America. The cotype from Perú examined, a male, has a dark elytral margin and an aedeagus that has a longer tip than that of a single male from Costa Rica. The aedeagus of a specimen from the Canal Zone, although the specimen is paler and lacks the dark marginal vitta, is more like that of the Peruvian male. This species belongs to the group to which *D. militaris* Jacoby and *D. leptolineata* Schaeffer also belong. The aedeagi of all are very similar, and the markings of the beetles vary so that it is very difficult to draw a line between the pale specimens of *D. peruana* and the typically marked specimens of *D. militaris*. Jacoby in his description of *D. militaris* mentioned two varieties, one with and the other without submarginal vittae, and I presume he had specimens similar to the one from the Canal

Zone. Whether *D. peruana* and *D. militaris* are of varietal or specific status seems at present impossible to determine.

In regard to the label Chiriquí, Costa Rica, I have found a number of specimens so labeled that belong elsewhere, for example *Disonycha spilotrachelata* Blake, known only from the West Indies, and *Disonycha bicarinata* Boheman, from Argentina. Therefore I believe this specimen may also be wrongly labeled.

*Disonycha quinquelineata* (Latreille)

FIGURE 29

*Alica quinquelineata* Latreille, in Humboldt and Bonpland, Voyage aux régions équinoxiales du nouveau continent fait en 1799, 1800, 1801, 1802, 1803, et 1804, vol. 1, No. 9, Insectes, p. 232, 1811.

*Cacoscelis quinquelineata* Dejean, Catalogue de la collection de Coléoptères . . . , ed. 3, p. 414, 1837.

Between 7.5 and 10.5 mm. in length, elongate oblong, shining, finely and obsoletely punctate; antennae dark; pronotum unspotted; elytra with narrow dark sutural, submarginal, and median vittæ not uniting at apex; tarsal joints deeper brown or piceous.

Head with interocular space fully half the width of head, smooth, shining, impunctate except for a fovea or cluster of punctures near the eye, frontal tubercles faintly marked, carina narrow, a little produced, lower front moderately long. Antennae dark except for the three basal joints, rather long. Prothorax not twice as wide as long, often with anterior angles somewhat notched (although this is variable), sides rounded, disc not very convex and depressed over scutellum, surface shining, minutely punctate, entirely pale. Scutellum varying from pale to entirely dark. Elytra shining, very finely and obsoletely punctate, pale, the sutural edges darkened in paler specimens or a narrow sutural vitta in more heavily marked specimens, a narrow submarginal one and a narrow median vitta, none uniting at apex. Epipleura pale. Body beneath and legs pale, the tarsi frequently deeper in coloring. Length 7.5 to 10.7 mm.; width 4 to 5 mm.

TYPE: Whereabouts not known; described from "L'Amerique equinoxiale."

OTHER LOCALITIES: México: Almoloya, Oaxaca, F. Knab; Tampico, E. A. Schwarz; Tenosique, Tabasco; Guerra; Tabasco, Palmer. Guatemala: Mocá, Suchitepequez, 3,000 ft., C. and P. Vaurie. Costa Rica: Hamburg Farm, Reventazón, Ebene Limón, Nevermann; San Carlos, Zarcero, Schild and Bergdof. Nicaragua: Managua. Canal Zone: Barro Colorado Island, J. Zetek; Tobago Island, A. Busck; Toro Point, E. A. Schwarz; Gatún, A. H. Jennings; Red Tank, N. Banks. Colombia: Aracataca; Santa Marta; Sevilla, Magdalena

Province, P. J. Darlington. Many miscellaneous specimens intercepted at the border on bananas from México, Guatemala, Honduras, Costa Rica, and Panamá.

REMARKS: This species has long been classified under the genus *Cacoscelis*. There is, however, no generic character that I can find to separate it from the vittate *Disonycha*. There is no emargination of the middle or hind tibiae such as occurs in some species classified under the genus *Cacoscelis*. Latreille in his original description wrote that *quinquelineata* had a great affinity with *Disonycha caroliniana* (Fabricius). I believe that it is simply an unusually large species of *Disonycha* but not much larger than *D. militaris* or species of the *alternata* group. At least one specimen has been confused by Jacoby with *D. militaris* Jacoby (see note under *D. militaris*). This and the following species, as well as *D. stenosticha* Schaeffer from Brownsville, Texas, belong to a group of closely related species.

*Disonycha jalapensis*, new species

FIGURE 28

Between 8 and 9 mm. in length, elongate oblong, shining; pale yellow; antennae, tarsal joints, and tibiae (more or less) deep reddish brown; very narrow reddish brown sutural, median and submarginal elytral vittae.

Head with interocular space a little more than half width of head, entirely pale, polished over occiput to antennal sockets, a fovea or cluster of punctures on either side near eye, frontal tubercles not very clearly marked, carina somewhat produced and extending down front with the area beneath antennal sockets depressed, lower front moderately long. Antennae moderately long and slender, the three basal joints paler, the rest deep reddish brown. Prothorax not twice as broad as long, the sides rounded, smooth, without depressions, flat rather than depressed over the scutellum, front angles not unusually prominent or notched, entirely pale, shining. Scutellum pale reddish brown. Elytra smooth, polished, very obsoletely and faintly punctate, pale yellow with reddish brown sutural edges and thin median and submarginal vittae, the last two not reaching the apex, epipleura pale. Body beneath and femora entirely pale, tibiae in part, at least, and tarsal joints deep reddish brown. Length 8 to 9.4 mm.; width 3.8 to 4.3 mm.

TYPE: Male, and paratypes, 2 females and 1 male, in AMNH, and male, USNM 61812, from Jalapa, México, W. Schaus.

OTHER LOCALITIES: One specimen in [MCZ (Bowditch collection, 1st Jacoby collection), from Vera Cruz, México, Sallé.



REMARKS: This is very close to *Disonycha quinquelineata* (Latreille) and only the difference in the aedeagus makes me regard it as separable. There are three minor differences—the tibiae and tarsi are deep reddish brown instead of being pale yellow, and there is a difference in the shape of the anterior angles of the prothorax, these being smaller and less deeply notched than in *D. quinquelineata*. The third small difference is in the relative length of the third and fourth antennal joints. In the Jalapa specimens the fourth joint is not twice as long as the third, whereas in the case of *D. quinquelineata*, the third joint is shorter and about half as long as the fourth. In general the Jalapa specimens are not quite so large. Possibly this is the same as *D. stenosticha* Schaeffer described from Brownsville, Texas. The basal angles of the prothorax do not appear as oblique as in that species. But since *D. stenosticha* is known from only two specimens, both females, this specific question cannot be settled at this time.

*Disonycha colombiana*, new species

FIGURE 27

Between 7 and 8 mm. in length, elongate oblong oval, shining, elytra very faintly punctate; prothorax short, broad, and with nearly straight sides and wide anterior angles; pale yellow; head and prothorax without dark markings; elytra with very narrow sutural, median, and submarginal reddish brown vittae, not joined at apex; body beneath entirely pale, anterior tibiae with a dark streak.

Head entirely pale, polished over occiput, a coarse puncture or two on either side near eye, frontal tubercles outlined, carina rather narrow and short, although the lower front is long, with excavations under antennal sockets on each side; interocular space approximately half width of head. Antennae long, slender, the fourth joint not quite twice as long as third; basal joints paler, rest of joints reddish brown. Prothorax twice as wide as long, with nearly straight sides and wide anterior angles, a slight callosity on each side near base and a slight basal depression over the scutellum; surface shiny, nearly impunctate, pale yellow, one of the two specimens with a faint trace of pronotal spotting. Scutellum pale. Elytra broad and widely margined, shining, very faintly punctate, pale yellow with narrow reddish brown sutural, median and submarginal vittae not joined at apex. Epipleura pale. Body beneath entirely pale, the anterior tibiae with a dark outer streak, tarsal joints reddish brown. Length 7.3 to 8 mm., width 4 mm.

TYPE: Female, MCZ 29038, and paratype, female, USNM 61813, from Aracataca, Magdalena Province, Colombia, P. J. Darlington.

REMARKS: This is about the same size as *D. quinquelineata* (Latreille) and resembles it in being entirely pale except for the antennae and the narrow elytral vittae, but unlike *quinquelineata* it has a dark streak on the anterior tibiae. The prothorax is quite different in shape, being short and broad and with wide apical angles, and resembles that of the group of species represented by *D. nigrofasciata* (Jacoby). Unfortunately the only two specimens are females.

*Disonycha brevilineata* Jacoby

FIGURES 23, 25

*Disonycha brevilineata* Jacoby, Biologia Centrali-Americana, Coleoptera, vol. 6, pt. 1, p. 317, 1884.

*Disonycha brevicollis* Jacoby, Proc. Zool. Soc. London, vol. 1, no. 13, p. 188, 1902.

From 6 to 7 mm. in length, broadly oblong oval, moderately shiny, densely punctate; pale yellow; head sometimes with a small dark occipital spot; prothorax without dark spots; elytra with a very narrow sutural darkening and a narrow marginal one uniting usually at the apex, and a narrow median vitta with a short one beside it near the apex and towards the margin, sometimes coalescing in darker specimens; body beneath with the breast usually more or less dark, apex of hind femora often dark and tarsi dark.

Head with interocular space more than half its width, alutaceous and with coarse punctures across front and about eyes, frontal tubercles distinctly defined and the space between antennal sockets broad and a little produced, sometimes a dark occipital spot but frequently the head except for the dark mouthparts entirely pale. Antennae dark with paler edged basal joints, rather short. Prothorax about twice as broad as long, moderately convex, with a slight depression over the scutellum, faintly alutaceous and usually rather densely punctate; usually entirely pale, although in one specimen two faint spots anteriorly. Elytra broad, rather convex, shining, densely and moderately coarsely punctate with finer punctures intermixed, pale yellow, usually with a very narrow sutural vitta, often just the sutural edges darkened, a narrow marginal or submarginal vitta and a median vitta with a short one near the apex, occasionally in a darker specimen the vittae broader and the margin dark, in some specimens the short vitta entirely absorbed into the median vitta, giving it a club-shaped tip; epipleura pale except in specimens with a dark margin. Body beneath usually with the breast more or less dark, the hind femora with dark apex, and the tibiae often darker at apex, tarsi dark. Length 6 to 7 mm., width 3.5 to 3.8 mm.

TYPE: In BM, from Capulalpam, México, Sallé. The type of *D. brevicollis* Jacoby is not designated, but Jacoby stated that he had

two specimens from Ventanas, México. One of these may be the specimen in MCZ (Bowditch collection) that bears the name label and also "Ventanas, Durango, Höge, Jacoby 2nd collection." In some unnamed material lent me by the British Museum are three other specimens of this series from Ventanas; they bear the label (?Jacoby's) "*Disonycha* sp. nov."

OTHER LOCALITIES. México: Chapala, Jalisco, R. B. Lattimore; Cuernavaca, Morelos, Sallé. Guatemala: Yepocapa, H. T. Dalmat; Tucurú, 1,600 ft., C. and P. Vaurie; Chiquimula, 1,000 ft., C. and P. Vaurie. Honduras: Tegucigalpa, F. J. Dyer. El Salvador: Dr. Vera Wellborn.

REMARKS: Jacoby failed to recognize certain pale specimens of this species in which the short apical line is very faint and described them as *D. brevicollis* nearly twenty years after he had described *D. brevilineata*. All these specimens from Ventanas are very pale but on close examination one can discern the short apical vitta.

*Disonycha ovata* Blake

FIGURE 24

*Disonycha ovata* Blake, Bull. Brooklyn Ent. Soc., vol. 26, p. 79, 1931.

About 5 mm. in length, oval, shining, elytra distinctly punctate; pale yellow; deeper orange head, prothorax, and legs; narrow dark sutural, median, and submarginal elytral vittae not uniting at the apex; antennae and tarsi deeper brown.

Head with interocular space half width of head, the occiput and mouthparts deeper in coloring, smooth except for the circle of punctures near eye, frontal tubercles well marked, carina rounded and moderately wide. Antennae with basal three or four joints and sometimes apical joint pale, rest brownish. Prothorax a little more than twice as wide as long at base, with nearly straight sides narrowed anteriorly, somewhat convex, a slight transverse basal depression over scutellum and at sides, surface faintly alutaceous and very finely punctate. Elytra moderately convex, shining, distinctly and rather densely punctate, pale yellow, with narrow dark sutural vitta not uniting with narrow submarginal vitta, a narrow median vitta; epipleura pale. Body beneath pale, shining beneath the fine pubescence, legs pale except the dark brown tarsi and brownish apices of tibiae. Length 4.8 to 5.3 mm., width 2.7 to 2.9 mm.

TYPE AND PARATYPES: USNM 43363, from San Salvador, El Salvador, August 16, 1905, Frederick Knab. Another specimen from Santa Tecla, no other data.

REMARKS: The small oval shape and short prothorax of this species are its distinctive characters. It is smaller than *D. brevilineata* Jacoby but similar in the shape of the prothorax.

*Disonycha högei* Jacoby

## FIGURE 26

*Disonycha högei* Jacoby, *Biologia Centrali-Americana*, Coleoptera, vol. 6, pt. 1, p. 315, 1884.

Between 7 and 8 mm. in length, elongate oblong oval, shining; pale yellow; dark antennae, a small dark spot on occiput; median elongate diamond-shaped spot on pronotum; dark scutellum; elytra with faint paler lines as if marking the edge of a median vitta; body beneath and legs except tarsi pale.

Head with interocular space just half the width of head, a small dark dot on occiput, smoothly rounded, a fovea near eye, tubercles small, well marked, a bit swollen, carina produced, lower front moderately long, labrum reddish brown. Antennae long, slender, black except that the three basal joints are pale edged and the apical joint deep reddish brown. Pronotum just about twice as wide as long, with wide anterior angles, sides nearly straight, disc slightly depressed over scutellum, entirely pale except the dark diamond-shaped spot in the middle, impunctate, faintly alutaceous. Scutellum dark. Elytra pale, with only the sutural edges darkened, two faint lines that are paler on each elytron, as if outlining the edges of a median vitta, surface shining, impunctate. Body beneath pale except the darkened apices of the tibiae and dark tarsi. Length 7.7 mm., width 4 mm.

TYPE: Not designated; cotype, female, in MCZ (Bowditch collection), from Cerro de Plumas, México, Höge; others probably in British Museum.

REMARKS: Only one specimen has been examined. The pale yellow coloring with very faint paler lines outlining an elytral vitta is unusual and distinctive.

*Disonycha brunneofasciata* Jacoby

## FIGURE 36

*Disonycha brunneofasciata* Jacoby, *Biologia Centrali-Americana*, Coleoptera, vol. 6, pt. 1, p. 317, 1884.

About 7 mm. in length, oblong oval, shining; pale yellow; sometimes with a deep brown occipital spot; usually with five reddish brown pronotal spots more or less marked; elytral vittae usually reddish brown edged with deeper brown, the wide sutural vitta joining the narrower submarginal one at apex, the median one moderately wide; antennae with deeper brown outer joints; tarsi deeper brown.

Head with interocular space slightly wider than half the width of head, occiput polished and smoothly rounded down to the smooth, poorly marked frontal tubercles, these sometimes deeper brown, a



cluster of coarse punctures or fovea on either side near eye, space between antennal sockets wide and flat, not much produced, lower front rather short, mouthparts and, in darker specimens, a spot on occiput deeper brown. Antennae moderately long, with the four basal joints pale in paler specimens, rest reddish brown. Prothorax approximately twice as broad as long, shining, impunctate, moderately convex, yellow brown, with five more or less distinct reddish brown spots, the two anterior ones the most deeply marked. Elytra alutaceous and very finely punctate, somewhat shining, pale yellow, with wide sutural and median vittae, the sutural one at apex joining with a narrow submarginal one, all these vittae edged with deeper brown. Legs and undersurface pale, in darker specimens edge of abdomen and legs mostly dark, tarsi always darker brown. Length 6.6 to 7.5 mm.; width 3.5 to 4 mm.

TYPE: Not designated by Jacoby, who stated that he had 10 specimens and gave the habitat as Hondo River, British Honduras, Blancaneaux collector. In MCZ (Bowditch collection) are four specimens from the type locality, and one from Acapulco, México, Höge collector, a locality not mentioned by Jacoby. The rest of the type series is in the British Museum.

OTHER LOCALITIES: México: San Luis Potosí, two specimens taken by the inspector of vegetables at Nogales, Arizona.

REMARKS: The pale reddish brown elytral vittae are edged with deeper brown, a feature not present in related species. The two specimens from San Luis Potosí have nearly as dark vittae as usual, but upon careful examination the deeper colored edge can be discerned.

*Disonycha gracilis*, new species

FIGURE 37

About 6 mm. in length, elongate oblong oval, faintly shining, finely alutaceous and finely punctate; pale yellow; reddish brown to piceous antennae and tibiae and tarsi; faint brownish areas on prothorax; narrow dark sutural, submarginal, and median elytral vittae not united at apex.

Head with interocular space more than half the width of head, lower front not long, with short, broad carina, well developed tubercles, a double row of punctures from the large fovea near eye down to antennal sockets, head pale in one specimen, in the other with a small dark spot on the occiput. Antennae long, varying from pale to deep reddish brown. Prothorax considerably less than twice as broad as long, with rounded sides and faint basal depression over the scutellum, pale yellow, with two dark spots anteriorly and fainter reddish brown areas on either side; surface finely alutaceous. Scutellum dark. Elytra

elongate, pale yellow, with narrow sutural, median, and submarginal vittae not united at the apex; surface faintly shining, finely alutaceous and finely punctate. Epipleura with dark edge. Body beneath and femora entirely pale yellow, tibiae and tarsi reddish brown, the first tarsal joint in the anterior pairs of legs much enlarged in the male. Length 5.6 to 6.2 mm., width 2.3 to 2.5 mm.

TYPE: Male, USNM 61814 (from the Biologia Centrali-Americana material), Jalapa, México, Höge collector. A male in BM (Fry collection) is labeled Truqui, México.

REMARKS: The striking characteristics of this species, represented by only two specimens, are its slender, elongate shape and the unusual shape of the aedeagus, with its darkly chitinized areas. The type specimen, evidently from the Biologia material, has been dissociated from its original arrangement so that I cannot tell under which species Jacoby placed it. There was also a specimen among the unidentified material sent me from the British Museum.

*Disonycha turrialbensis*, new species

FIGURE 34

About 8 mm. in length, elongate oblong oval, shining, pronotum impunctate, elytra very finely and shallowly punctate; deep yellowish brown; elytra with deeper reddish brown sutural, submarginal, and median vittae not joined at apex.

Head with interocular space approximately half width of head, moderately elongate, with a somewhat produced but not very wide carina, frontal tubercles only feebly defined, head polished, impunctate except for a couple of deep foveae on either side near eye, yellowish brown, the labrum a bit darker. Antennae missing. Prothorax not twice as wide as long, moderately convex, with rounded sides and a slight depression over scutellum, shiny, mirror smooth, entirely yellowish brown. Scutellum deep reddish brown. Elytra very shiny and finely punctate, with a somewhat irregular reddish brown sutural vitta and deeper brown submarginal vitta not united at apex, the median vitta moderately wide. Body beneath and legs entirely yellowish brown. Length 7.8 mm., width 3.8 mm.

TYPE: Male, MCZ 29044, from Turrialba, Costa Rica.

REMARKS: This species, represented by only one specimen which lacks antennae and parts of the legs, is not closely related to any other.

*Disonycha pittieri*, new species

FIGURE 4

About 6 mm. in length, oblong oval, moderately shiny although faintly alutaceous; head without definite dark occipital spot; pronotum

with two round deep brown spots anteriorly, and in one specimen three other very faint spots, two lateral and one elongate median spot; elytra with narrow dark brown sutural vitta joining at apex with narrow submarginal one, also a narrow median vitta; the body beneath and legs entirely pale.

Head entirely pale except the deeper reddish brown mouthparts and faint occipital spot, interocular space more than half the width of the head, occiput smooth and shiny, a circle of punctures on either side of vertex, frontal tubercles deeply marked by a median groove, carina short and broad. Antennae deep brown with the three basal joints paler. Prothorax twice as wide as long, not very convex, with a faint depression over the scutellum, surface moderately shiny, very finely punctate, two deep brown roundish spots anteriorly and traces of two lateral round ones and a median elongate one. Elytra broad and not very convex, faintly alutaceous and very finely punctate, pale yellow, with a narrow, deep brown sutural vitta joining at the apex with a narrow lateral one, also a narrow median one, epipleura pale, sometimes with brownish edge. Body beneath entirely pale with moderately dense pale pubescence; legs pale, the tarsal joints deep brownish. Length 5.8–6 mm.; width 3 mm.

TYPE: Male, and one paratype, female, USNM 61815, collected on savannas at Acarigua, Portuguesa Province, Venezuela, by H. Pittier; one paratype, male, in MCZ.

REMARKS: There are only three specimens of this small pale species known. The aedeagus resembles somewhat that of *D. spilotrachel* Blake of the West Indies. A single specimen, a female, in BM (Fry collection), from Bahia, Brazil, may be this species.

#### *Disonycha spilotrachel* Blake

##### FIGURE 6

*Disonycha spilotrachel* Blake, Bull. Brooklyn Ent. Soc., vol. 23, p. 96, 1928.

Between 5 and 6 mm. in length, oblong oval, somewhat shiny although faintly alutaceous, elytra finely punctate; pale yellow; head with a pointed dark occipital spot; prothorax 5-spotted; elytra with a narrow sutural and submarginal vitta, united at apex, and a median vitta; the body beneath and femora pale, anterior femora dark streaked and the tibiae darker at tip, tarsi and antennae dark.

Head with interocular space fully half width of head, pale with a dark and usually pointed occipital spot and dark mouthparts, a circle of coarse punctures on either side of front near eye, tubercles well marked, a broad, rounded, but short carina. Antennae dark, with the three basal joints with a pale edge. Prothorax about twice as wide as long, somewhat convex with a slight depression over scutellum, smooth, impunctate, somewhat shiny, pale with four dark spots

arranged in a semicircle over pronotum, and a small median basal spot. Elytra faintly alutaceous, very finely punctate and somewhat shiny, pale yellow with a narrow sutural vitta uniting at apex with a narrow submarginal vitta, also a moderately wide median vitta; epipleura brownish with a pale edge. Body beneath entirely pale, covered with pale pubescence, femora pale, the anterior ones dark streaked, tibiae usually dark along edges and at apex and tarsi dark. Length 4.8 to 6.2 mm., width 2.5 to 2.8 mm.

TYPE AND PARATYPE: In USNM 40977, from San Juan, Puerto Rico, collected by W. A. Hoffman.

OTHER LOCALITIES: Puerto Rico: Mayagüez, Lago Tortuguera, Boquerón, Aguadilla, (last three collected by Stuart T. Danforth in March 1929); Algarroba, Santurce, C. G. Anderson. Cuba: Camagüey, July 29, 1923, J. Acuña. Haiti: Port de Paix, E. C. and G. M. Leonard; Mon Fléri, 1924, W. A. Hoffman; Cape Haïtien, W. M. Mann. Isle of Pines.

REMARKS: This small West Indian species is rather widely dispersed over the islands of Cuba, Puerto Rico, and Haiti. It is strongly suggestive of the Venezuelan species, *D. pittieri*, but is more slender and with dark head markings.

*Disonycha gowdeyi* Bryant

FIGURE 39

*Disonycha gowdeyi* Bryant, Ann. Mag. Nat. Hist., ser. 9, vol. 14, p. 250, 1924.

Between 7.5 and 8 mm. in length, oblong oval, very shiny, impunctate, not alutaceous; pale; the head with a dark oblong spot on occiput, darkened tubercles and dark mouthparts; pronotum 7-spotted; elytra with the dark vittae sometimes shining with a violet luster, a wide sutural vitta, not joined at apex with a narrow submarginal vitta, and a wide median vitta; body beneath pale, femora dark at apex, tibiae pale in the middle, tarsi dark.

Head smooth except for the fovea on each side near eye, shining, pale, the lower front rather elongate and narrow, deeply excavate under antennal sockets, carina moderately narrow, interocular space about half the width of the head, tubercles darkened and a dark spot on occiput and dark mouthparts. Antennae unusually long and slender, with the three basal joints paler than the dark outer joints. Prothorax twice as wide as long, with wide anterior angles and straight sides, not very convex and depressed along base over the scutellum, impunctate, shiny, pale yellow, with seven moderately large dark spots. Elytra very shiny, impunctate, with wide dark sutural and median vittae, often shining with a violet luster, and narrow pale vittae, the submarginal dark vitta not so wide and not joining with



the sutural vitta at apex. Epipleura dark, with a pale margin. Body beneath entirely pale, femora pale with the apex dark, tibiae bicolored, tarsi dark. Length 7.5 to 8 mm., width 3.2 to 3.4 mm.

TYPE AND PARATYPES: In BM, collected at Runaway Bay, Jamaica, April 10, 1905, by Lord Walsingham, and at Hill Gardens, Jamaica, July 6, 1923 by C. C. Gowdey.

OTHER LOCALITIES: Jamaica: Clydesdale, W. G. Lynn; Stony Hill, Chapin and Blackwelder.

REMARKS: The only other vittate *Disonycha* from the West Indies is *D. spilotrachelata* Blake, a much smaller species, found in Cuba, Puerto Rico, and Hispaniola but not yet found in Jamaica.

*Disonycha panamensis* Jacoby

FIGURE 40

*Disonycha panamensis* Jacoby, Biologia Centrali-Americana, Coleoptera, vol. 6, pt. 1, p. 313, 1884.

From 7 to 8 mm. in length, elongate oblong oval, faintly alutaceous and moderately shining, densely and distinctly punctate; pale yellow; the head with a broad dark occipital band sometimes extending to frontal tubercles; prothorax often with a Y-shaped median spot composed of three spots, varying in width, and a small lateral spot on each side; elytra with sutural vitta uniting at apex with submarginal vitta, a broad median vitta; body beneath dark, with prosternum, apex of abdomen, and femora pale; an unusually wide explanate margin on prothorax and elytra.

Head with interocular space more than half width of head, a circle of punctures about fovea near eye, frontal tubercles well defined, area between antennal sockets wide, rounded, and slightly produced, head pale with broad dark band on occiput usually coming down to tubercles, mouthparts dark. Antennae moderately long, dark, basal joint edged with pale. Prothorax about twice as wide as long, not very convex but flattish with a wide, curved explanate margin, somewhat depressed over scutellum, surface faintly alutaceous and moderately shiny, very finely punctate, pale with a dark median marking consisting of three more or less confluent spots forming a Y, and two small lateral spots, in one specimen all the spots more or less united into a confluent band. Elytra elongate, with wide explanate pale margin, surface faintly alutaceous and moderately shiny, more distinctly punctate than prothorax, pale, with broad dark sutural vitta uniting with moderately broad lateral vitta, also a broad median vitta; epipleura pale. Body beneath covered with pale pubescence, dark, with the prosternum and tip of abdomen pale, femora reddish, tibiae and tarsi dark. Length 7 to 8 mm., width 3.6 to 4 mm.

TYPE: Not designated; cotypes, in BM, MCZ (Bowditch collection, 7), and USNM (1), from Volcán de Chiriquí, Panamá, 2-3,000 ft., Champion.

OTHER LOCALITIES: Costa Rica: San Pedro de Montes de Oca, C. H. Ballou. Panamá: Porto Bello, on *Polygonum*, E. A. Schwarz and August Busck; La Chorrera; El Valle del Antón, G. C. Wood; Ciricito, Canal Zone. Colombia: Colegio, E. A. Chapin.

REMARKS: The wide explanate margin and usually Y-shaped pronotal marking distinguish this species. The type specimens have deep reddish brown marking, but other specimens both from the Canal Zone and Colombia have the usual piceous vittae.

*Disonycha longipennis*, new species

FIGURE 38

About 7 mm. in length, elongate oblong oval, shining, mirror smooth; pale yellow; a dark band across occiput, dark tubercles, and brownish mouthparts; prothorax 5-spotted; scutellum dark; elytra with sutural edges and margin narrowly dark, wider at apex, a spot at middle of base representing median vitta; body beneath with breast and legs dark.

Head with interocular space less than half the width of head, eyes large, not at all reniform, a dark band across occiput behind the eyes and a brownish spot over tubercles, a fovea on either side of front near eye and a few punctures on front, tubercles well defined, carina short and narrow, lower front not long, mouthparts brownish. Antennae not unusually long, dark except the paler edging of the three basal joints and the three apical joints lighter brownish. Prothorax twice as wide as long, with wide anterior angles and slightly curved sides, disc rather flat and depressed over scutellum, surface shining, very faintly punctate, pale yellow with five small brownish spots. Scutellum dark. Elytra elongate, not very convex, pale yellow with the sutural edges darkened and the margin narrowly dark, more broadly so at the apex, a spot in the middle of the basal margin representing a trace of the median vitta, epipleura dark. Body beneath pale, with the breast and legs dark. Length 7.2 mm., width 3 mm.

TYPE: Female, USNM 61816, from Summit, Canal Zone, Panamá, collected by N. L. H. Krauss in September 1946.

REMARKS: Although this may be a pale form of a species having an entire dark median elytral vitta, it does not agree with any known species with the usual vittation. The elytra are very elongate, without any costation. In the Bowditch collection are two specimens that bear a certain resemblance to this in their elongate shape, although

the markings are different. One of these bears a type label and the name *Nephrica terminata* Jacoby, from the upper Amazon. The eyes of this species are not at all reniform.

***Disonycha glabrata* (Fabricius)**

FIGURES 58, 59

*Crioceris tomentosa* Fabricius, *Systema entomologiae*, p. 122, 1775 (not *Chrysomela tomentosa* Linnaeus, 1758).

*Crioceris glabrata* Fabricius, *Species insectorum*, vol. 1, p. 156, 1781 (in Africa aequinoctiali).

*Chrysomela glabrata* Fabricius, *Mantissa insectorum*, vol. 1, p. 76, 1787.

*Altica vittata* Olivier, in *Encyclopédie méthodique*, vol. 4 (vol. 1, Insects), p. 105, 1789.

*Galleruca glabrata* Fabricius, *Entomologia systematica*, vol. 1, pt. 2, p. 25, 1792; *Systema Eleutheratorum*, vol. 1, p. 494, 1801.

*Altica glabrata* Olivier, *Entomologie*, vol. 6, p. 685, 1808.

*Altica alternata* Latreille, in Humboldt and Bonpland, *Voyage aux régions équinoxiales du nouveau continent, fait en 1799-1804*, vol. 2, No. 2, Insectes, p. 39, 1833 (not *Haltica alternata* Illiger).

*Disonycha glabrata* Chevrolat, in Dejean, *Catalogue de la collection de Coléoptères . . .*, ed. 3, p. 414, 1837.—Crotch, *Proc. Acad. Nat. Sci. Philadelphia*, vol. 25, p. 64, 1873.—Harold, *Coleopterologische Hefte*, vol. 15, p. 4, 1876.—Jacoby, *Biologia Centrali-America*, vol. 6, pt. 1, p. 311, 1884.—Horn, *Trans. Amer. Ent. Soc.*, vol. 16, p. 207, 1889.—Blake, *Proc. U. S. Nat. Mus.*, vol. 82, art. 28, pp. 49-51, 1933.

*Disonycha horticola* Chevrolat, in Dejean, *Catalogue de la collection de Coléoptères . . .*, ed. 3, p. 414, 1837 (México).

*Disonycha albicollis* Sturm, *Catalogue . . .*, p. 283, 1843 ("Amer. bor.").

Between 5 and 6.5 mm. in length, elongate oblong oval, polished; pale yellow; darkened occiput; dark median pronotal spot, this sometimes lacking, or occasionally three pronotal spots; broad black sutural, median, and marginal or submarginal elytral vittae; undersurface pale, sometimes darkened in middle of metasternum and abdomen.

Head with interocular space about half width of head, smooth, with a few punctures about fovea on each side near eye, frontal tubercles well marked, carina narrowly produced, pale, with occiput and sometimes tubercles and labrum dark. Antennae dark, with pale basal joints, third joint much shorter than fourth and fifth. Prothorax approximately twice as broad as long, convex, somewhat narrowed anteriorly, with arcuate sides, shining, very faintly punctate, pale, with a median dark diamond-shaped spot, sometimes two smaller lateral spots, or occasionally immaculate. Scutellum black. Elytra convex, with the humeri marked by a short intrahumeral sulcus, sides parallel, surface shining, shallowly punctate, in some specimens (from Arizona and Texas) punctation very indistinct, pale, with broad sutural, median, and usually marginal vittae, in some specimens from

Arizona and Texas the margin is not darkened and there is a narrow submarginal vitta. Sutural and marginal vittae united at apex. Body beneath finely pubescent, variably colored, sometimes the metasternum and middle of abdomen dark, in other specimens sometimes entirely pale beneath. Apex of femora and tibiae and tarsi dark, epipleura usually dark. Length 5.3 to 6.3 mm., width 3 to 3.5 mm.

TYPE: Whereabouts not known; a Fabricius specimen in BM (Banks collection) bears the locality data "h. in Africa acquin."

OTHER LOCALITIES: United States: New York to Florida, west to Arizona. México: Córdoba, Vera Cruz, F. Knab; Santa Lucrecia, Vera Cruz, F. Knab; Cuantla, W. L. Tower; Cuernavaca, Morelos, W. L. Tower; Joyutla, Morelos, W. L. Tower; Matamoras, W. L. Tower; Osorio, Tamaulipas, D. L. Crawford; Progreso, Yucatán, F. Knab; Río Balsas, Guerrero, Wickham; Venta de Peregrino, Guerrero; Sierra de Durango; Tapachula, Chiapas, Höge; Tuxtepec, Oaxaca, J. Camelot. Guatemala: Cacao Trece Aguas, Alta Verapaz, Barber and Schwarz; Escuintla, F. Knab; Mocá, Suchitepequez, 3,000 ft., C. and P. Vaurie; Quiriguá, S. F. Blake; Rabinal, C. and P. Vaurie; Yepocapa, H. T. Dalmat. Honduras: Zamorano, Francisco Morazán, 2,600 ft., on rice and beans, T. H. Hubbell; La Ceiba, F. J. Dyer; San Juan Pueblo, W. M. Mann. Costa Rica: Bataan, O. L. Cartwright; Muelle de San Carlos, on *Amaranthus spinosus* Linnaeus, C. H. Ballou; Puerto Limón, F. Knab; Santiago, C. H. Ballou; San Pedro de Montes de Oca, C. H. Ballou. Nicaragua: Chanandega, Baker. Panamá: Ancón; Cristóbal, N. L. H. Krauss; Gamboa, H. F. Dietz and J. Zetek; La Sabanas, Panamá [city], on *Amaranthus spinosus* Linnaeus; Limón Plantation, Chagres River, H. Dietz, J. Zetek; Summit; Volcán de Chiriquí, 2-3,000 ft., Champion; Tobago Island. Colombia: Armero to Lima, V. Velsco, injuring cotton; Atlántico, F. L. Gallego; Baranquilla, Brother Genes; Cali Valle, B. Losada; Palmira, R. Roncalle; Aracataca, Río Frío, Seville, Magdalena Province, P. J. Darlington; Puerto Colombia, Atlántico, M. Hebard. Venezuela: Caracas; Catache, Rene Lichy; El Valle, C. H. Ballou, on *Amaranthus dubius* Martius; Maracaibo, Merida. Trinidad: Port of Spain, Dr. Rendall, A. Busek. French Guiana: Cayenne. Brazil: Ceará, D. D. Rocher; Mato Grosso; Pará, Rio Madeira, Mann and Baker; Santa Anna, Rio de Janeiro, in rice field, E. C. Green; Viçosa, Minas Gerais, B. T. Snipes. Bolivia: Coroico, Riberalta, Rurrenabaque, W. M. Mann; Tiguipa, G. L. Harrington, Villa Montes, G. L. Harrington. Ecuador: Guayaquil, C. H. Fagan. Argentina: El Quemado, Jujuy, G. L. Harrington; Salta, G. L. Harrington. Perú: Peruvian Amazons, Bartlett; Satipo, Popryski.



REMARKS: Throughout its wide distribution from North America to Argentina this species shows little variation. The aedeagus varies somewhat in the shape of the tip, but it is doubtful whether this slight variation is of much importance. The food plant appears to be always *Amaranthus*.

Fabricius (1775) originally applied the Linnacan name *tomentosa* to a species that he described in contradiction to Linnaeus' "elytris subtomentosis" as having the "elytra in rostro glabra, nitida." He gave the locality in this first description as "America." In 1781, repeating his shorter diagnostic description of this species, he gave it the name *glabrata* and quoted the Linnacan description of *tomentosa* with a question. The locality this time he gave as "Africa aequinoctialis" (not, as Harold stated, "America aequinoctialis"). In 1787, Fabricius again published the same short description of *glabrata*, without mentioning Linnaeus' *tomentosa* and without locality. In 1792 the original long description under the name *glabrata* was repeated, with the locality this time given as Jamaica, and in his treatment of *glabrata* in 1801 Fabricius again gave the locality as Jamaica. From the original description (1775) it is plain that Fabricius had before him something quite different from Linnaeus' *Chrysomela tomentosa*, which is probably some species of *Galerucella*. The original description of *glabrata* applies in every way to the *Disonycha* to which the name *glabrata* is now given.

*Disonycha trivittata*, new species

FIGURE 60

About 6 mm. in length, oblong oval, shining, mirror smooth; pale yellow; head with a tiny dark occipital spot; pronotum with a faint reddish brown median streak; elytra with a wide sutural and narrow marginal vitta uniting narrowly at apex; body beneath pale, femora and tibiae at apex dark, tarsi dark.

Head with interocular space about half its width, rounded over occiput, a cluster of punctures near eye, tubercles swollen, carina narrow and sharp, lower front long, pale except for a small dark occipital spot and a dark labrum. Antennae moderately long and dark, with the three basal joints pale edged, apical joint tending to be reddish brown. Prothorax nearly twice as broad as long, with arcuate sides, moderately convex, without depressions, shiny, pale yellow, a faint reddish brown median stripe. Scutellum dark. Elytra shining, smooth, very faintly punctate, pale, with a wide dark sutural vitta tapering to a narrow dark sutural edge at apex, this joined with a narrow dark marginal vitta, epipleura dark. Body

beneath pale, with the femora and tibiae dark at the apex, tarsi dark. Length 6 mm., width 3 mm.

TYPE: Female, USNM 61817, taken on a plane from México at Houston, Texas, December 5, 1947. One male in BM without locality label.

REMARKS: This species so closely resembles *D. glabrata* (Fabricius) except for the missing median elytral vitta, that I believed it merely a color form until I dissected a male sent me from the British Museum. This showed an aedeagus quite distinct from that of *D. glabrata*. Besides lacking the median elytral vitta, the head is paler and the breast not darkened as in *glabrata*. It clearly belongs to the *glabrata* group, however.

*Disonycha vittipennis* Boheman

FIGURE 61

*Disonycha vittipennis* Boheman, in Kongliga Svenska Fregatten *Eugenies* resa omkring jorden . . . , åren 1851-53, pt. 1 Insecta, p. 190, 1859.

Between 5.5 and 6 mm. in length, oblong oval, mirror smooth; yellow; dark antennae, dark occiput; usually a deep reddish brown to piceous clouding over most of the pronotum, leaving only margins yellow, although in one specimen pronotum nearly pale and with only faint reddish brown spotting; elytra with a sutural vitta, uniting with a marginal vitta, and a moderately wide median vitta, these often with a bluish or purplish tinge; undersurface and legs mostly dark except along margin of abdomen and apex of femora.

Head with interocular space half its width, shining, occiput dark, a fovea or circle of punctures near eye, tubercles prominent, sometimes darkened, carina a little produced, lower front long, mouthparts dark. Antennae dark, with the three basal joints reddish brown. Prothorax about twice as wide as long with no distinct depression, shining, very faintly punctate, pale, with a deep reddish brown area usually covering most of disc, although in one specimen there is only a trace of it in the form of a median reddish brown spotting. Elytra shining, the dark sutural and marginal vittae uniting at apex, the median vitta wide, these dark vittae often with a metallic blue or violet lustre, epipleura dark. Body beneath mostly dark, the sides of the abdomen pale, legs mostly dark, with apex of hind femora pale. Length 5.5 to 6.2 mm., width 2.8 to 3.1 mm.

TYPE: Female, in Naturhistoriska Riksmuseet, Stockholm, from Insula Puna, Perú.

OTHER LOCALITIES: Five specimens in BM, four from Fry collection labeled Perú and one from "N. Perou, Prov. Tumbes, C. A. Baer."

REMARKS: Aside from the type specimen, which Dr. René Malaise kindly sent me for examination from Stockholm, I have seen only the five from the British Museum. This species is closely related to *D. glabrata* (Fabricius), which it resembles in elytral markings and in the structure of the head although in *D. vittipennis* there is often a bluish metallic lustre and the pronotum and the body beneath are usually darker. The aedeagus is shaped much as in *D. glabrata*, but differs in the position of the orificial opening on the dorsal side.

*Disonycha manni*, new species

FIGURE 63

From 5.5 to 6.5 mm. in length, oblong oval, shining, mirror smooth; pale yellow; deeper orange on occiput; immaculate prothorax; elytra with broad dark sutural vitta, not united at apex with narrow marginal vitta, and a broad median vitta; antennae unusually long and slender; body beneath with prosternum and abdomen pale, breast and legs tending to be mostly dark.

Head deep orange above down to tubercles, without dark occipital spot, pale, shining, mirror smooth except for large fovea or circle of punctures near eye, lower front long and narrow, paler frontal carina rounded, a little produced, tubercles well marked, interocular space scarcely half width of head, mouthparts brownish, not at all piceous. Antennae long and slender but not extending half way down elytra, brown with the basal joints pale edged and frequently the two distal joints paler. Prothorax about twice as wide as long, with wide anterior angles and nearly straight sides, not very convex and with a slight basal depression, mirror smooth and without definite spotting although in some specimens a faintly deeper coloring suggesting two lateral spots and an elongate median one. Elytra mirror smooth, a broad dark sutural vitta not uniting at apex with the narrow marginal vitta, a broad median vitta. Epipleura dark. Body beneath shining, finely pubescent, the prosternum pale, abdomen mostly pale, usually the breast and legs dark, sometimes the middle of the breast and coxae pale. Length 5.5 to 6.5 mm., width 2.8 to 3 mm.

TYPE: Male, USNM 61818, and one paratype, MCZ, from Tumupasa, Bolivia, Mulford Biological Expedition 1921-22, W. R. Lopez and W. M. Mann, collectors.

OTHER LOCALITIES: Bolivia: Isiamas, one specimen, W. M. Mann, December; Rurrenabaque, Río Beni, one specimen, W. M. Mann, October, Mulford Biological Expedition 1921-22.

REMARKS: This species is somewhat like *D. glabrata* (Fabricius) except that it has an entirely pale head and dark legs. The aedeagus is not at all like that of *D. glabrata* or, in fact, of any other species.

*Disonycha barberi* Blake

## FIGURE 66

*Disonycha barberi* Blake, Journ. Washington Acad. Sci., vol. 41, p. 327, 1951.

From 5.4 to 6.6 mm. in length, oblong oval, shining; eyes unusually large; pale yellow; head with a broad dark occipital band extending in a point down the front and sometimes about eyes and sides, antennae with the basal and two apical joints pale; pronotum entirely pale; elytra with a sutural and marginal dark vitta, uniting at apex, and a median vitta; legs dark at apex of femora, the tibiae and tarsi entirely dark, the breast and sometimes abdomen at tip and sides dark.

Head shining, the broad dark occipital band finely punctate on the occiput and front, the dark extending down front in a point, sometimes about eyes and sides, the mouthparts dark, eyes unusually large, interocular space less than half the width of the head, a fovea on each side composed of punctures, tubercles well marked, carina not wide and lower front short. Antennae dark with the 3 basal and 2 apical joints paler. Prothorax about twice as wide as long with slightly arcuate sides, wide anterior angles and a faint transverse depression across base, entirely pale yellow, shining, very finely and faintly punctate. Scutellum dark. Elytra shining, more distinctly punctate than pronotum, pale yellow, with a wide dark sutural vitta uniting with a marginal one at apex, median vitta moderately wide, epipleura dark. Body beneath shining, lightly pubescent, the breast dark and sometimes tip of abdomen and sides dark. Femora pale with dark apex, tibiae and tarsi dark. Length 5.4 to 6.6 mm., width 3 to 3.3 mm.

TYPE: USNM 61130, and twenty paratypes, one in MCZ and one in BM, originally collected at Brownsville, Texas, on *Condalia obovata* Hooker and later reared from *Phaulothamnus spinescens* A. Gray.

OTHER LOCALITIES: United States: Texas: San Bonita and Sebastian. México: on plane from México; Los Mochis, Sinaloa, C. T. Dodds; Mazatlán, Sinaloa, Van Dyke collection.

REMARKS: Although this was originally described from Brownsville, Texas, both Mr. Barber and I always felt that it was not native there. I recall Mr. Barber saying that he believed it was imported from tropical America. Therefore when I found in some material from the California Academy of Science two specimens from different localities in Sinaloa, México, collected in different years, I suspected that the real habitat of this species is on the Pacific coast in that region, and that it had been introduced into southern Texas in some shipments of fruit or vegetables, or possibly had come in by plane.



*Disonycha didyma*, new species

FIGURE 65

Between 5.5 and 6.5 mm. in length, broadly oblong oval, shining, mirror smooth; eyes large; head dark with lower front pale; prothorax entirely pale; elytra with sutural and marginal dark vittae united at apex, median vitta moderately wide; body beneath with breast, apices of femora, tibiae, and tarsi dark.

Head dark and polished over occiput down to antennal sockets, with a large fovea on either side near eye, tubercles slightly bulging and with a groove between, interocular space less than half width of head, eyes large, carina a bit produced, lower front long and narrow, labrum dark, the dark from the occiput extending about back of eye and below it. Antennae long, dark, the three basal joints having a pale edge. Prothorax fully twice as wide as long, with wide anterior angles and nearly straight sides, depressed along the base, in some specimens almost a groove, shining pale yellow, not distinctly punctate. Elytra wide, shining, very faintly and finely punctate, pale with dark sutural vitta uniting at apex with marginal vitta, a moderately wide median vitta. Epipleura dark. Body beneath shining, very finely pubescent, the breast dark; legs with apices of femora, tibiae and tarsi dark. Length 5.5 to 6.5 mm.; width 3. to 3.3 mm.

TYPE: Female, and one paratype, also female, USNM 61819, from Summit, Canal Zone, collected by N. L. H. Krauss in October 1944; paratype, female, in MCZ.

REMARKS: This species is not easily distinguished from *D. barberi* Blake, described from Brownsville, Texas. It has much the same coloring and structure, but the elytra are not quite so distinctly punctate and the head markings are not quite the same. Unfortunately no male has been examined.

*Disonycha tridyma*, new species

FIGURE 64

Between 6 and 7 mm. in length, elongate oblong oval, shining; pale yellow; dark markings on the occiput; entirely pale pronotum; elytra with a sutural and a marginal dark vitta, uniting at apex, and a moderately wide median vitta; body beneath pale, femora dark at apex, tibiae and tarsi more or less dark.

Head with interocular space less than half the width of the head, eyes large, area between antennal sockets narrowly produced, frontal tubercles well marked, head polished, impunctate except for the large fovea near eye, a dark band across the base of occiput extending

narrowly down front to tubercles and around the back of eyes to the mouthparts, which are dark. Antennae with the three basal joints pale edged, remainder dark. Prothorax about twice as wide as long, with wide anterior angles and nearly straight sides, mirror smooth, shiny, pale yellow without markings, depressed across base, almost a groove. Scutellum dark. Elytra with sutural and narrow marginal vitta united at apex, a moderately wide median dark vitta; surface shining, nearly impunctate, epipleura dark, sometimes pale down the middle. Body beneath entirely pale, femora dark at apex, tibiae sometimes entirely dark, more often dark at apex, tarsi dark. Length 6 to 7 mm., width 3 to 3.5 mm.

TYPE: Male, and three paratypes, MCZ 29039, and paratype, USNM 61820, all taken at Aracataca, Magdalena Province, Colombia, by P. J. Darlington.

OTHER LOCALITIES: Río Frío and Seville, Magdalena Province, Colombia, P. J. Darlington; three specimens in BM, one, a male, with the old label "*Carthagina*, *D. incognita* dej.," another labeled Santa Marta, Pascoe Coll., and a third with no locality label.

REMARKS: Aside from slight color differences in the head, this species is like *D. didyma*, from the Canal Zone. Both resemble *D. barberi* Blake, although the aedeagi of *D. tridyma* and *D. barberi* are very different.

#### *Disonycha cordigera*, new species

##### FIGURE 71

Between 6.5 and 7 mm. in length, elongate oblong oval, shining, nearly impunctate; pale yellowish brown; dark antennae; a large dark occipital spot; pronotum usually 3-spotted, the middle spot largest; elytra with dark sutural and marginal vittae, joined at apex, and moderately wide median vitta; body beneath usually pale although sometimes with the breast darkened on the sides, femora usually pale with a dark streak but occasionally entirely dark, tibiae usually dark in apical half, tarsi dark.

Head with interocular space about half the width of the head polished, impunctate except for the fovea near eye; frontal tubercles clearly marked, carina sharp, narrow and slightly produced, lower front long and narrow, eyes large; pale yellow, with a large round spot on occiput occasionally expanding to form a band across and extending down to the tubercles, labrum dark. Antennae with the three basal and also terminal joint slightly paler than the dark intermediary joints. Prothorax not twice as wide as long, with well developed anterior angles and nearly straight sides, mirror smooth and depressed over the scutellum and on sides near the base, pale yellow with three dark spots, the middle the largest. Scutellum dark. Elytra shiny,

very finely punctate, pale, with a sutural vitta joined at apex with a narrow lateral-marginal vitta and a moderately wide median vitta. Epipleura dark. Body beneath usually pale but often with the middle or sides of the breast and sometimes sides of prosternum darkened. Femora usually pale with a dark streak, in some specimens almost entirely dark except at base, tibiae usually dark in apical half, tarsi dark. Length 6.5 to 7 mm., width 3.2 to 3.9 mm.

TYPE: Male, and four paratypes, MCZ 29042, one paratype, USNM 61821, and one paratype, BM, all from Aracataca, Magdalena Province, Colombia, P. J. Darlington.

OTHER LOCALITIES: Canal Zone: Red Tank, N. Banks; Barro Colorado Island, J. Zetek. In MCZ (Bowditch collection) are four specimens, of which the first is labeled *Disonycha proliza*; two of these are in the Donchier collection and are from "Colombie," and two are without locality labels.

REMARKS: The markings of this species are somewhat similar to those of *D. proliza* Harold described from Argentina, but *D. cordigera* is slightly larger and is darker beneath, usually with paler legs. The aedeagus does not at all resemble that of *D. proliza*.

#### *Disonycha annulata*, new species

FIGURE 62

About 6 mm. in length, broadly oblong oval, shining, not at all alutaceous, finely punctate; pale yellow; head with a dark marking; pronotum entirely pale; elytra with sutural and narrow submarginal vittae, not quite joining at apex, and a wide median vitta; body beneath with breast and abdomen mostly dark, legs dark except middle of tibia.

Head with a dark occipital spot extending narrowly down to tubercles and covering tubercles, a dark spot behind the eyes extending on the outside about neck, carina more or less dark, labrum except the edge dark, tubercles and carina rather prominent, a fovea on each side near eye, head with interocular space half width of head. Antennae dark, with the basal joints pale edged, shining, moderately long. Prothorax approximately twice as wide as long, not very convex, a slight oblique depression on each side near base, entirely pale, shining, very faintly punctate. Elytra broad and somewhat convex, shining, finely punctate, a moderately broad dark sutural vitta not quite connecting with a narrow submarginal one, median vitta broad and widening a little at apex, epipleura entirely pale. Body beneath with breast and abdomen except about the extreme edges dark, coxae palish, femora dark and shiny, the posterior ones with coarse scattered punctures and sparse pubescence, tibiae with a

pale ring near the base, tarsi dark. Length 6 mm., width 2.8 mm.

TYPE: Male, USNM 61822, taken at Brownsville, Texas, March 9, 1949, in a shipment of tomatoes from México.

REMARKS: Only one specimen of this is at hand, and this without any definite locality label. It is more robust than *D. glabrata* (Fabricius) and with darker markings beneath, a submarginal instead of marginal vitta, and no thoracic spotting. The aedeagus bears a certain resemblance to that of *D. glabrata*, but is more acutely tipped and when viewed from the side not curved as in *D. glabrata*. It does not have the large, well developed anterior angles on the prothorax of *D. barberi* Blake, nor is there a basal depression on the prothorax typical of that group. I believe it falls into the *glabrata* group.

*Disonycha adumbrata* Clark

*Disonycha adumbrata* Clark, Journ. Ent., vol. 2, p. 401, 1865.

TYPE: In BM, from Pará, Brazil, collected by Bates.

There is apparently only one specimen of this, the type, which I have examined at the British Museum. In my notes on that specimen I questioned whether it was a species of *Disonycha*. The eyes are very large and rather deeply emarginate, the antennal joints not quite typical, in that the second and third joints are short and the fourth at least twice as long as the third. The anterior angles of the prothorax are obliquely cut. There is a faint sulcus at the base of the pronotum with limited ends. The single reddish brown elytral vitta from the humerus fades out at the apical curve. I could not find any spur on the hind tibia and the claws are not typical of *Disonycha*. At that time I did not attempt to place it in any other genus and feel that without further examination I should not do so now.

*Disonycha elongata* Jacoby

FIGURE 20

*Disonycha elongata* Jacoby, Proc. Zool. Soc. London, 1902, pt. 1, p. 187.

"Elongate and subdepressed, testaceous, the terminal joints of the antennae fuscous; thorax impunctate; elytra not perceptibly punctured; a very narrow sutural and a sublateral stripe and a broader longitudinal band at the disc, black.

"Length 9 mm.

"Head impunctate, the clypeus with an acutely raised central ridge; eyes reniform, rather deeply emarginate; antennae extending to the middle of the elytra, rather robust, fuscous, the lower four joints testaceous, the fourth joint nearly twice as long as the third; thorax about one-half broader than long, the sides nearly straight with a narrow margin, the posterior angles strongly oblique, anterior angles



obliquely truncate; scutellum black; elytra rather flattened, not perceptibly punctured, testaceous, very shining, the suture very narrowly and a slightly wider stripe close to the margins black, another much broader band extends from the middle of the base nearly to the apex; below and the legs testaceous, the apex of the posterior tibiae obscure fuscous.

“Habitat: Venezuela.”

REMARKS: I have examined the only specimen of this known, which is in the British Museum, but made no detailed description or drawing of it at the time. The drawing for this paper was made from a photograph sent me by J. Balfour-Browne of the British Museum (Natural History). *D. elongata* Jacoby is a lustrous yellow brown beetle with very narrow sutural and submarginal vittae and broader median one. Beneath, the body is entirely pale. It compares in size with *D. quinquelineata* (Latreille) but is narrower and with a wider median elytral dark vitta.

*Disonycha megaspilota*, new species

FIGURE 41

Between 8.5 and 9 mm. in length, elongate oblong, prothorax shiny, elytra finely alutaceous; pale yellow; dark antennae; dark labrum, a dark spot on occiput; three large pronotal spots; elytra with a narrow sutural and submarginal vitta, not united at the apex, and a wider median vitta; body beneath and legs except the dark tarsal joints mostly pale.

Head with interocular space about half its width, smooth over occiput except for a circle of fine punctures about the fovea near eye, frontal tubercles distinct, carina short and narrowly produced, lower front short, labrum dark, a broad median spot on occiput. Antennae, except the paler basal joints and a reddish brown terminal joint, dark, moderately long. Prothorax not twice as wide as long, with rounded sides, moderately convex and with a slight depression over scutellum and on sides near the base; surface polished, impunctate, with three large reddish brown spots, the median one rounded anteriorly and tapering towards base. Elytra finely alutaceous and finely punctate, with a faint trace of costa in the median vitta, sutural and submarginal vittae narrow and not joined at apex, median vitta moderately wide, epipleura dark. Body beneath mostly pale, in one of the two specimens a faint brownish tinge in middle of the breast, legs pale except for the dark tarsal joints in one specimen, in the other the tibiae darkened towards apex. Length 8.5 to 8.8 mm.; width 4 mm.

TYPE: Female, MCZ 29048; paratype, also female, USNM 61823.

REMARKS: These two specimens bear no locality labels, simply an old name label, "*Dis. 4 vittata.*" *Altica quadrivittata* Illiger from Brazil has been wrongly assigned to the genus *Disonycha* for over one hundred years, from the Dejean catalog to Heikertinger in the Junk catalog. Illiger described it as one of the Oedipodes (with swollen claw joint), shaped like a *Lema* with small head and prothorax and pubescent, striate punctate elytra. These two specimens with the large dark pronotal spots and shiny, glabrous surface, are comparable in size but not in structure with the specimens of the *alternata* group.

*Disonycha venezuelae* Jacoby

FIGURES 55, 56

*Disonycha venezuelae* Jacoby, Entomologist, vol. 34, p. 148, 1901.

Between 8.5 and 10 mm. in length, elongate oblong oval, somewhat shining although finely alutaceous, densely and moderately coarsely punctate; head, undersurface, and legs black; antennae, except the three or four basal joints that are pale with dark edging, piceous; prothorax pale with either a broad band or three to five small dark spots across the middle; elytra with a moderately wide dark sutural vitta uniting at apex with a narrow dark marginal vitta, median vitta very wide, a distinct depression from below humerus down the side of elytron.

Head with a short lower front and interocular space more than half the width of head, eyes small, head entirely dark, faintly shining and feebly alutaceous, moderately coarsely and irregularly punctate over occiput and front, frontal tubercles well marked, a short, blunt, little produced carina. Antennae piceous except the pale basal joints that have dark edges. Prothorax not twice as wide as long, not very convex, a little depressed over scutellum and at sides, with other small depressions, not shiny, distinctly alutaceous and densely and moderately coarsely punctate; pale reddish yellow with a broad dark band or with from three to five small dark spots across the middle. Elytra with a depression running from below humeri down the side and a resulting crease or costa above the margin, alutaceous and moderately coarsely and densely punctate, a wide dark sutural vitta uniting at apex with a dark marginal vitta, and a broad median vitta. Epipleura dark. Undersurface and legs entirely dark, with a fine pale pubescence. Length 8.4 to 10 mm., width 4 to 6.8 mm.

TYPE: ? In BM, described from Venezuela, from three specimens. One specimen in MCZ (Bowditch collection) is labeled simply Venezuela, second Jacoby collection; it may be a cotype. Two other specimens are in the Bowditch collection from Caracas, Venezuela.

OTHER LOCALITIES: Venezuela: Caracas, El Valle, D. F., C. H. Ballou, on *Cajanus bicolor*. Colombia: Río Frío, Magdalena Province, P. J. Darlington. Panamá: Alhajuelo, A. Busck; Bocas del Toro, W. Robinson; El Valle, N. L. H. Krauss; Tobago Island, H. F. Dietz; XX Plantation, H. F. Dietz and J. Zetek; Canal Zone, C. H. Richardson; Summit, N. L. H. Krauss; Juan Mina Plantation, H. F. Dietz and J. Zetek; Paraíso, E. A. Schwarz.

REMARKS: This species is of the same group as *D. applicata* and *D. cratera* from farther south in South America. All three species have in common a large size, dark coloring, and coarsely punctate surface. Specimens from Venezuela have a dark banded pronotum, those from Colombia and the Canal Zone appear to be simply spotted on the pronotum. The specimens from the Canal Zone, representing possibly a subspecies, are considerably smaller than those collected by Dr. Darlington in Magdalena Province, Colombia. All, however, unlike *D. applicata* or *cratera*, have the distinguishing longitudinal depression down the side of the elytra with a crease above the margin.

*Disonycha applicata*, new species

FIGURE 53

About 7 mm. in length, elongate oblong oval, not very shiny, alutaceous and rather densely and coarsely punctate; head, undersurface, and legs entirely dark; prothorax pale with a broad dark band; elytra with wide dark sutural and median vittae and narrow marginal vitta joining sutural vitta at apex.

Head with interocular space more than half the width of head, lower front short, entirely dark, moderately densely and coarsely punctate over occiput, frontal tubercles a little swollen and smooth, area between antennal sockets bluntly produced. Antennae dark except the three pale-edged basal joints. Prothorax not quite twice as broad as long, with curved sides, moderately convex, a slight depression on the sides near base, alutaceous and moderately densely and coarsely punctate; a broad piceous band extending across nearly to the margin. Elytra elongate, surface alutaceous, moderately coarsely and densely punctate, a wide dark sutural vitta and a median vitta, a narrow marginal one joining at apex rather widely with the sutural vitta. Body beneath and legs entirely dark and covered with fine, short, pale pubescence. Length 7.3 mm., width 3.7 mm.

TYPE: Male, MCZ 29045 (Bowditch collection, 2nd Jacoby collection), bearing the label Paraguay.

REMARKS: This is very similar in markings to *D. venezuelae* Jacoby but does not have the lateral depression on the elytra as in that species. The aedeagus is wholly unlike that of *D. venezuelae*.

*Disonycha cratera*, new species

## FIGURE 57

About 7.5 mm. in length, oblong oval, feebly shining, alutaceous, coarsely and densely punctate; head, legs, and undersurface except prosternum dark, prothorax with a dark irregular fascia; elytra with broad dark sutural vitta uniting at apex with narrow marginal vitta, a wide median vitta.

Head with interocular space more than half width of head, lower front short, entirely dark, without depressions over occiput and front, with punctures unevenly distributed, alutaceous except the shiny frontal tubercles, carina broad and rounded. Antennae dark except for the pale edging of the three basal joints, fourth joint twice as long as third. Prothorax not quite twice as wide as long, moderately convex, with a slight basal depression over scutellum and on sides, alutaceous and densely but not very coarsely punctate, pale, with a broad transverse fascia having lobed margin as if composed of confluent spots. Elytra feebly shining, alutaceous and strongly and densely punctate, a broad dark sutural vitta uniting at apex with a narrow marginal vitta, a broad median vitta. Epipleura dark. Body beneath and legs dark except for the pale prosternum, clothed with very short fine pale pubescence, the ridging on the tibiae not as sharply prominent as in many species. Length 7.5 mm., width 4 mm.

TYPE: Female, USNM 61824, collected at Tumupasa, Bolivia, in December, by M. R. Lopez, Mulford Biological Expedition 1921-22.

REMARKS: This is very much like *D. applicata* from Paraguay but is somewhat broader and has more densely and coarsely punctate elytra. Unfortunately there is no male. It does not have the lateral depression on the elytra found in *D. venezuelae* Jacoby, but is similarly marked. Unlike *D. applicata* the fourth antennal joint is twice as long as the third.

*Disonycha crassicornis*, new species

## FIGURE 44

About 7.5 mm. in length, oblong oval, finely alutaceous, the elytra finely and rather densely punctate; pale yellow brown; antennae, except four basal joints, dark; thin dark sutural and median vitta, neither reaching base nor apex.

Head entirely pale, the interocular space at least half the width of the head, space between antennal sockets broad and little produced, lower front rather short, tubercles well marked, occiput and front smooth except for a circle of punctures about fovea near eye. Antennae stout, first two joints pale with outer edges dark, third and



fourth joints pale at apex, remainder dark. Prothorax not twice as broad as long, rather convex, sides rounded, a slight depression over scutellum, feebly alutaceous, pale with indefinite pale brownish areas possible indicating spots in a more heavily marked specimen. Scutellum pale. Elytra with a narrow dark sutural vitta not extending about scutellum to base or reaching the apex and with a very narrow median vitta not reaching the base, surface alutaceous and feebly shining, finely and rather densely punctate. Body beneath entirely pale, the claws only darker in coloring. Length 7.5 mm., width 3.8 mm.

TYPE: Male, MCZ 29046, a single specimen with an old label bearing the locality Brazil and the name "*Caeporis?* nov. sp."

REMARKS: This pale beetle with extremely narrow elytral vittae that do not extend to the base resembles some specimens of the *militaris* group, but the stouter antennae and very different aedeagus sufficiently differentiate it.

*Disonycha trimaculata*, new species

FIGURE 54

About 6 mm. in length, oblong oval, antennae and legs unusually long; mirror smooth, pale yellow; the head deeper colored with a black occipital spot; thorax with a short dark transverse median spotting; elytra with a sutural vitta, uniting at apex with a narrow marginal vitta, and a broad median vitta; body beneath with breast and legs in part dark, prosternum and abdomen and underside of anterior femora pale.

Head deep orange above with an occipital dark spot, paler below, the mouthparts dark, interocular space a little less than half the width of head, coarsely and rugosely punctate about eyes and on vertex below the dark spot, tubercles well marked and a narrow frontal carina extending to labrum, not much produced but well rounded, lower front moderately long. Antennae reddish brown with a pale edge on the basal joints, unusually long, almost reaching the middle of the elytra. Prothorax not quite twice as wide as long, not very convex and with a basal depression below the dark median fascia, mirror smooth, pale yellow, with a narrow deep piceous fascia composed of a short wide lateral spot on either side of a small roundish spot. Elytra also mirror smooth, pale, with a broad dark sutural vitta uniting at apex with a very narrow marginal vitta, a broad median vitta, epipleura dark. Body beneath covered by thick fine pale pubescence, the prosternum, abdomen, coxae, and underside of anterior femora pale, breast and legs otherwise dark, tibiae and first tarsal joints unusually long. Length 5.7 mm., width 3 mm.

TYPE: Male, USNM 61825, from Cosincho region, Beni, Bolivia, G. L. Harrington.

REMARKS: There is only a single specimen of this unusual little species. The transverse elytral spotting and long legs are distinctive. It is not very closely related to any other species.

*Disonycha multivittata*, new species

FIGURE 32

About 8 mm. in length, oblong oval, rather flat, with wide explanate margins, faintly shining, finely alutaceous and punctate; pale yellow brown; antennae with the base of the first five or six joints pale, remainder entirely dark; elytra with many narrow pale vittae, including a sutural, the usual median one broken up into three, and the submarginal vitta broken up into two, none of these reaching the apex; head, legs, and body beneath entirely pale.

Head with interocular space about half width of head, entirely pale, smooth over occiput, the usual fovea or cluster of punctures on each side near the eye, tubercles marked by a median depressed spot over the narrow, slightly produced carina, lower front short. Antennae short and moderately stout, the first two joints pale, joints 3 to 7 pale in basal half, remainder entirely dark or with only extreme base pale. Prothorax not quite twice as broad as long, with arcuate sides and wide explanate margin, depressed over scutellum and on either side near base; very indistinctly punctate, finely alutaceous, not very shiny. Scutellum pale. Elytra finely alutaceous, not very shiny, pale yellowish brown with vittae a little deeper brown, a narrow sutural vitta, three very narrow median vittae, the submarginal-lateral vitta broken up into two narrow ones, none of these reaching the apex. Body beneath and legs entirely pale yellow brown. Length 7.5 to 8.3 mm., width 3.9 to 4.5 mm.

TYPE: Male, and six paratypes, MCZ 29041, and one paratype, USNM 61826, from Santa Catarina (3) and Rio de Janeiro (5), Brazil.

REMARKS: The general appearance of the elytral vittae is of many pale vittae but possibly there are specimens that show only a very narrow sutural and median vitta, and these other vittae are merely a subcutaneous darkening such as often is to be seen in the case of punctures.

*Disonycha plagifera*, new species

FIGURE 43

From 5 to 6.5 mm. in length, elongate oblong, finely alutaceous and feebly shining, elytra finely punctate; head with a short dark oblong spot on occiput; prothorax barely twice as wide as long and with a

pair of dark spots anteriorly and a washed-out brown area from these down to the base, on each side usually two confluent spots; elytra with a dark sutural and a narrow submarginal vitta not joined at apex, and a moderately wide median vitta; body beneath pale with the femora pale with a dark line, tibiae dark at apex, tarsi dark.

Head pale, with an oblong dark occipital spot and dark mouthparts, a cluster of punctures on either side of front near eye, tubercles distinctly marked, carina broad and rounded, lower front moderately long. Antennae rather stout and short, with the three basal joints edged with pale, rest dark. Prothorax barely twice as broad as long, moderately convex and little depressed over the scutellum, finely alutaceous and moderately shiny, impunctate, two spots anteriorly with a brownish area from them to the base, in pale specimens this resolves into two spots and a median line, usually two confluent spots on each side. Elytra elongate, the sutural vitta not joined with the narrow submarginal vitta, median vitta not very wide, surface alutaceous and finely punctate; epipleura pale with a washed-out brown edge. Body beneath pale, covered with fine pubescence, femora pale, sometimes with a brownish streak, tibiae dark at apex, tarsi dark. Length 5 to 6.7 mm., width 2.5 to 3.4 mm.

TYPE: Male, USNM 61827, and one paratype, female, from Sapucaí, Paraguay, W. T. Foster.

OTHER LOCALITIES: Argentina: Salta, G. L. Harrington, USNM. Paraguay: no locality, Dr. Bohls, MCZ (5 specimens). Brazil: Rio de Janeiro, J. T. Maury, BM; Corumbá, Mato Grosso, MCZ; Caviuna, Paraná, A. Maller, AMNH; Rio Autaz, Roman, Stockholm Naturhistoriska Riksmuseet. Venezuela: Plason, MCZ, Jacoby (2nd collection).

REMARKS: This species is distinctive because of the broad median dark area on the pronotum extending from the two anterior spots to the basal margin. Most of the specimens are from southern Brazil, Argentina, and Paraguay, but the female from the Rio Autaz, a tributary of the Amazon River, in the Stockholm Museum, and the one from Venezuela seem to indicate that it may occur east of the Andes, at least, the length of South America. The specimen from Rio Autaz was identified by Weise as *D. caustica* Harold, but this latter species is quite different, having a coarsely punctate head and prothorax, although with similar anterior spots on the prothorax.

*Disonycha explanata*, new species

FIGURE 30

About 6.5 mm. in length, oblong oval, elytra finely and rather closely punctate, margin of prothorax and elytra widely explanate;

shining; pale yellow; deep brown antennae, brown apices to femora, brown anterior tibiae, the posterior tibiae brown only at apex; elytra with a narrow brown sutural vitta not reaching the apex, a short, slightly sinuate, median vitta that is wider at the tip, a submarginal vitta not nearly reaching the apex.

Head with interocular space about half the width of the head, smoothly rounded over occiput with a circle of punctures on each side near the eye, frontal tubercles finely marked and carina between antennal sockets narrowly produced, lower front narrow and rather long, mouthparts deeper brown. Antennae long, with the three basal and apical joint paler than the other joints, which are deep brown. Prothorax a little more than twice as wide as long, not very convex, somewhat depressed over scutellum, a wide explanate margin, entirely pale yellow, shining, very indistinctly punctate. Elytra also flattish, with a wide explanate margin, shining pale yellow, with a narrow reddish brown sutural vitta not reaching the apex, a short sinuate median vitta knobbed at its apex and extending only to apical curve, a narrow submarginal vitta not nearly reaching the apex, epipleura pale with a dark inner half below the humeri to the middle. Body beneath pale, the femora pale with dark brown apices, anterior tibiae brown, posterior tibiae with apices brown, tarsi dark. Length 6.6 mm., width 3.4 mm.

TYPE: Female, MCZ 29040 (Bowditch collection), Rio de Janeiro, Brazil; paratype, female, USNM 61828, "St. Catharina, Brazil."

REMARKS: This species is distinctive because of its wide explanate margin and unusually short elytral vittae, none of which reach the apex. Unfortunately there is no male specimen.

*Disonycha nigrofasciata* (Jacoby)

FIGURE 51

*Nephrica nigrofasciata* Jacoby, Proc. Zool. Soc. London, p. 197, 1902.

About 8 mm. in length, broadly oblong oval, elytra rather coarsely punctate, shiny; head entirely dark, antennae dark with the four distal joints pale; prothorax pale; elytra with wide sutural, median, and not so wide marginal vittae, the last joined at the apex with the sutural vitta; body beneath with breast and abdomen dark, femora and tibiae dark at apex, tarsi dark.

Head with interocular space half width of head, eyes no larger or more deeply emarginate than in any other species of *Disonycha*, head shining black with a deep reddish brown spot below antennal sockets, a cluster of coarse punctures on each side near eye extending down towards frontal tubercles, tubercles well marked, carina narrowly produced, lower front moderately long. Antennae long, the three basal joints pale edged, the distal four joints entirely pale,



rest dark. Prothorax nearly twice as wide as long, with rounded sides, moderately convex, only slightly depressed over scutellum, entirely pale, very finely alutaceous and very finely punctate, a few coarse punctures anteriorly on side below eye. Elytra broad and moderately convex, shining, rather coarsely punctate, the dark sutural and median vittae wide, the narrow marginal one broadly joined at apex with sutural vitta. Epipleura dark. Breast and abdomen dark, femora and tibiae dark at apex, the anterior tibiae with dark streak entire length beneath, tarsi dark. Length 8.4 mm., width 4.4 mm.

TYPE: In BM, from Espírito Santo, Brazil.

REMARKS: A single specimen in MCZ (Bowditch collection) labeled *Nephrica nigrofasciata* Jacoby may be a cotype, as it is from the type locality and answers to the description. The eyes in this beetle are no more emarginate than in other species of *Disonycha* nor is there any more thickening of the middle antennal joints, so I can see no reason for not including it in *Disonycha*. This is one of a group of closely related vittate species from the Amazon basin that resemble a group of smaller species, of which *D. barberi* Blake, described from Brownsville, Texas, is representative, in their broad oblong-oval shape, short prothorax with wide apical angles, and in general coloration, especially of the legs. The beetles of this smaller group are so much alike that without seeing the differences in the aedeagi it is difficult to tell them apart.

*Disonycha imitans* (Jacoby)

FIGURE 46

*Nephrica imitans* Jacoby, Proc. Zool. Soc. London, p. 196, 1902.

From 7 to 8.5 mm. in length, broadly oblong oval, shining; head (usually), prothorax, and body beneath pale; antennae long and except for paler basal joints dark; elytra with wide sutural and median vittae, the submarginal one narrow and not reaching the apex.

Head with interocular space less than half the width of head, occiput smooth, a large fovea on each side near eye, frontal tubercles not well marked, carina short and narrowly produced, lower front rather short, eyes not any larger or more emarginate than usual in species of *Disonycha*, head entirely pale in all but one specimen, and that one with an occipital dark spot. Antennae long and slender, three basal joints with pale edging, rest dark. Prothorax about twice as wide as long, rather flat, with well developed apical angles, nearly straight sides, a slight depression over scutellum, entirely pale, impunctate. Elytra broad, moderately convex, shining, very faintly punctate, a wide deep reddish brown sutural and median vitta and a narrow

submarginal one not reaching the apex. Epipleura partly dark. Body beneath pale, femora pale with narrow dark stripe, hind femora dark at apex, tibiae and tarsi dark. Length 7 to 8.6 mm., width 3.8 to 4.5 mm.

TYPE: In BM, from Perú.

OTHER LOCALITIES: Perú: Cumbare, four specimens, Reyes, one specimen, all in MCZ (Bowditch collection); Río Huallaga, Río Morona, Río Santiago, and Iquitos, five specimens, all collected by H. Bassler, in AMNH.

REMARKS: As in the case of *D. nigrofasciata* (Jacoby) this species clearly belongs in the genus *Disonycha* by reason of having eyes only slightly emarginate and not truly reniform, in this respect not being any different from others of the genus. It differs from *D. nigrofasciata* in having a paler head and not bicolored antennae.

*Disonycha paula*, new species

FIGURE 48

Between 8 and 8.5 mm. in length, broadly oblong oval, shining although faintly alutaceous; pale yellowish brown; head and pronotum unspotted; the elytra with wide dark sutural, marginal, and median vittae not united at apex; body beneath pale, femora pale with a dark streak, tibiae and tarsi dark.

Head with interocular space about half width of head, occiput smooth, impunctate except for a single large fovea near eye, frontal tubercles faintly marked, carina narrow and a little produced, lower front short, mouthparts a deeper brown. Antennae dark except for the three paler basal joints, unusually long and slender, extending to the middle of the elytra and even beyond. Prothorax fully twice as broad as long, with moderately wide margin, not very convex, a slight hump on either side, depressed along the base, pale and unspotted, shiny, faintly alutaceous. Scutellum pale at base. Elytra broad, not very convex, shining, very finely and indistinctly punctate and faintly alutaceous, pale yellow brown with sutural, median, and lateral-marginal dark vittae not united at apex. Epipleura dark. Body beneath pale, shining under the pale pubescence, femora pale with a dark streak, hind femora dark at apex, tibiae and tarsi dark. Length 8 to 8.5 mm., width 4.5 mm.

TYPE: Female, in BM, from "St. Paulo"; paratype, female, USNM 61829, without locality label.

REMARKS: Only two specimens, both females, are at hand, but these seem quite distinct from the rest of the *nigrofasciata* group. They have in common with the others the large size, short, wide prothorax, broad elytra, and the coloration of the legs, but differ from

them in the unusually long antennae. Except for this and the pale head, the beetles resemble *Disonycha nigrofasciata* (Jacoby).

*Disonycha juruensis*, new species

FIGURE 45

About 7 mm. long, broadly oblong oval, not very convex, with moderately wide explanate margins, shining, yellowish brown with reddish brown spot on the occiput, an irregular reddish brown fascia across pronotum, and wide reddish brown sutural, submarginal, and median elytral vittae not joined at the apex; body beneath pale, femora with a brown streak, tibiae and tarsi reddish brown.

Head with interocular space a little less than half width of head, occiput smooth with a reddish brown oblong spot, a fovea or cluster of punctures on each side near eye, tubercles distinct, carina narrow and a little produced, labrum dark, eyes not any larger or more emarginate than in rest of species of *Disonycha*. Antennae dark, with the three basal joints pale edged, long. Prothorax fully twice as broad as long with wide anterior angles, rather flat and depressed along base, with a slight callosity on the side, shining, a broad and irregular reddish brown fascia nearly reaching the margin, faintly 5-spotted. Scutellum dark. Elytra broad, rather flat with a wide explanate margin, shining, the pale yellow vittae not so wide as the reddish brown, the latter not quite joining or reaching apex or base, sutural edges pale, sutural and median vittae wide, the submarginal narrower. Epipleura pale. Body beneath pale, the femora with a dark streak and hind femora with dark apex, tibiae and tarsi dark. Length 7 mm., width 3.9 mm.

TYPE: Male, in BM, from Rio Jurua, Amazon region, Brazil, November 13, 14, 1874; paratype, female, USNM 61830, from Rio Purus, Amazon region, Brazil, October 1874.

REMARKS: This is another of the large species with broad elytra, closely related to *D. imitans* (Jacoby) from Perú. It is unusual in having reddish brown markings. The aedeagus resembles somewhat that of *D. imitans*, but in this species the eyes are smaller.

*Disonycha amplipennis*, new species

FIGURE 50

About 8 mm. in length, broadly oblong oval, shining; pale yellow; head with a dark occipital spot; prothorax short and broad, with faint reddish brown spotting; elytra broad and moderately convex, with wide dark sutural and median vittae, the submarginal one narrow and not reaching the apex; a dark streak on anterior femora and

darkened apex to posterior femora, otherwise tibiae and tarsi dark, body beneath pale.

Head with interocular space less than half the width of head, eyes no more emarginate than in other species, occiput smooth, a cluster of coarse punctures on each side near eye, frontal tubercles indistinctly marked, carina narrow and a little produced, area below antennal sockets excavated, pale with a dark occipital spot and dark mandibles. Antennae long and slender, dark with the basal joints paler. Prothorax more than twice as broad as long, with wide anterior angles and straight sides, a slight hump on each side and a short basal depression over scutellum, faintly alutaceous and very finely punctate, pale with indistinct brownish spots. Elytra more convex than prothorax, broad and long, with wide dark sutural and median vittae and a narrow submarginal vitta not reaching the apex, surface shining, impunctate. Epipleura partly dark. Body beneath pale, the femora of anterior legs with a dark streak, the apex of posterior dark. Length 7.9 mm., width 4 mm.

TYPE: Female, MCZ 29047 (F. A. Eddy collection), bearing label "Amazon—Mar. 2, 1891."

REMARKS: Only one specimen, and that a female, is known. Another of the *nigrofasciata* group, it appears to be confined to the Amazon River basin, and is distinctive in its large size, broad elytra, and short prothorax. The markings are somewhat similar to *D. juruensis* but darker.

### *Disonycha conjuncta* (Germar)

#### FIGURE 52

*Haltica conjuncta* Germar, Insectorum species novae aut minus cognitae, p. 610 1824.

*Disonycha conjuncta* Dejean, Catalogue de la collection de Coléoptères . . . , ed. 3, p. 414, 1837.

*Disonycha tristis* Jacoby, Proc. Zool. Soc. London, p. 440, 1879.

Between 6.5 and 7.5 mm. in length, broadly oblong oval, alutaceous, faintly shining; head entirely dark and coarsely punctate, prothorax with 5 dark spots, often confluent and forming an irregular fascia across pronotum; elytra with broad dark sutural vitta uniting with a narrow marginal one at apex, a broad median vitta; body beneath and legs dark except the border of the prosternum and a narrow area between front coxae, the abdomen of the male with a deep rounded depression near the apex.

Head entirely dark and coarsely punctate, a shallow depression above tubercles, tubercles only smooth and well marked, space between antennal sockets narrowly carinate and extending to above labrum. Antennae moderately long and stout, dark except for the pale edging



of the three basal joints. Prothorax twice as wide as long, moderately convex and at base a little depressed above the scutellum and on the sides, surface alutaceous and finely punctate, pale with five dark spots often confluent in part at least and often forming an irregular fascia across pronotum. Elytra alutaceous and with very fine punctures, faintly shining, a broad dark sutural vitta uniting at apex with a narrow marginal vitta, and a broad median vitta, sometimes the median vitta coalescing with the sutural in places, leaving only an interrupted pale line joined at the apex with a similarly thin pale submarginal line (these dark specimens appearing nearly black on the elytra), epipleura dark. Body beneath and legs entirely dark except for the border of the prosternum and a narrow area between the front coxae, alutaceous, only faintly shining under the short fine pubescence, abdomen of the male unusual in having a broad rounded excavation near the apex with a tiny knob in the middle of the apical side. Length 6.5 to 7.4 mm., width 3.4 to 3.8 mm.

TYPE AND PARATYPES: In Zoologisches Museum, Humboldt-Universität, Berlin; type locality given by Germar as Buenos Aires, Argentina.

OTHER LOCALITIES: Argentina: Veronica, Buenos Aires; La Plata, Spegazzina; Tucumán. Brazil: Corupá (Hansa Humboldt), Santa Catarina, A. Maller; Pôrto Alegre, Pareci Novo, Serro Azul, Itapirango, Padre Pio Buck; Rio Grande do Sul. Uruguay: Montevideo. Paraguay: no other locality for Jacoby (2nd collection) specimen in MCZ (Bowditch collection); Puerto Pinasco, "Podtiaguin."

REMARKS: Dr. K. Delkeskamp of the Zoologisches Museum, Humboldt-Universität sent me what he considered the type of Germar's *Haltica conjuncta* together with two paratypes. The specimen with the type label bears on the label "*conjuncta* Germ." and the locality "Bras." It is a female with a spotted, not banded pronotum. The two paratypes have no locality labels. One of them, also a female, has a wide dark fascia across the pronotum. The other, a male, with the usual round excavation near the tip of the abdomen, has a spotted pronotum. Otherwise the three specimens are similarly colored. Whether these are really Germar's specimens is not certain to me. His original description gave the habitat as Buenos Aires. In the U. S. National Museum are  $\frac{2}{3}$  specimens from Buenos Aires similar to these, and also examples from Paraguay of another species, with more coarsely and densely punctate elytra, that correspond fairly well to Germar's description.

Jacoby described *D. tristis* from Brazil, and I have examined two cotypes in the Bowditch collection at the Museum of Comparative Zoology. These are the same species as Germar's. Presumably other specimens of the type series are in the British Museum (Jacoby

did not designate type specimens). The coarsely punctate dark head and the excavation on the abdomen of the male are the distinguishing characters of the species. A number of specimens of this species are in the Bowditch collection identified by Jacoby as *D. conjuncta* (Germar). The ones that he described as *D. tristis* have darker elytra, the pale vittae being a little narrower. I cannot find any essential difference otherwise. The aedeagi are the same.

Padre Pio Buck writes, "Many of the *Disonycha conjuncta* (Germar) I collected on *Pennisetum purpureum* Schumacher (here commonly named 'Elephant grass'), but it is also found on other Graminaeae."

#### *Disonycha prolixa* Harold

FIGURE 75

*Disonycha prolixa* Harold, Coleopterologische Hefte, vol. 14, p. 105, 1875.

From 5.5 to 6.5 mm. in length, oblong oval, shining, mirror smooth; pale yellow; broad black spot on occiput, dark mouthparts; wide median and two large lateral spots on prothorax; on elytra a wide sutural vitta uniting at apex with a narrower marginal one, median vitta wide; body beneath pale, the legs, except coxae, black.

Head smooth except for a circle of punctures about fovea near eye, extending to the rear of eye, interocular space about half width of head, frontal tubercles not marked, a narrow carina between antennal sockets extending to labrum, head pale with a darkening about eyes and a broad occipital spot, the mouthparts dark. Antennae dark with the three basal joints pale edged. Prothorax a little more than twice as broad as long, surface somewhat convex, without distinct depression along base, surface mirror smooth, pale with a broad dark irregularly shaped median spot and two large lateral spots. Elytra mirror smooth, pale, with a broad dark sutural and marginal vitta united at apex and a wide median vitta. Epipleura dark. Body beneath pale, shining, lightly pubescent, coxae pale, rest of legs dark and shining. Length 5.5 to 6.5 mm., width 2.8 to 3.3 mm.

TYPE: Collected at Córdoba, Argentina, possibly at the Natural History Museum, Stettin, Germany.

OTHER LOCALITIES: Argentina: La Viña, Salta, Monrós; Campo Gallo, Santiago del Estero, Monrós; San Pablo, Famaila, Tucumán, Monrós; Frias, Santiago del Estero, H. L. Parker; La Rioja Patquia, K. J. Hayward; Salta, H. L. Parker. Paraguay: Asunción, E. G. Kent; Sapucaí, W. T. Foster; San Salvador, Dr. Bohls. Bolivia: Cochabamba, Germain; Rurrenabaque and Río Beni, W. M. Mann; Trinidad, Kusche. Brazil: São Paulo, A. A. Barbiellini; Campinas, H. L. Parker; Serro Azul, Padre Pio Buck.

REMARKS: In the Museum of Comparative Zoology is a box of specimens collected by Davis in Argentina and sent to C. A. Dohrn, who in turn sent them to von Harold, who described many of them in volume 14 of the Coleopterologische Heft. In this Davis collection are three specimens not labeled types but labeled by Hagen as *D. proluxa* Harold. They correspond very well with Harold's description. The markings of the prothorax might also be construed as a "corona reversa" but the pale undersurface does not agree with Germar's old description of *D. copulata*. Moreover, this is a shiny and not alutaceous beetle.

Dr. K. Delkeskamp of the Zoological Museum of Humboldt University, Berlin, writes that the Harold material received from C. A. Dohrn is probably in the Natural History Museum at Stettin if it is in existence. At the present time material at that museum is not accessible.

*Disonycha copulata* (Germar)?

FIGURE 74

*Haltica copulata* Germar, Insectorum species novae aut minus cognitae, pp. 610-11, 1824.

*Disonycha copulata* Harold, Coleopterologische Hefte, vol. 14, p. 106, 1875.

Between 5.5 and 6.5 mm. in length, broadly oblong oval, alutaceous, moderately shiny, finely punctate; pale yellow; head with a dark occipital spot, darkened tubercles and mouthparts; prothorax with two wide lateral and an elongate median spot; elytra with broad sutural vitta uniting with marginal vitta, the marginal vitta narrow and often not extending about humerus, median vitta wide; body beneath pale, usually with darkened sides to breast and abdomen, legs except coxae usually entirely dark, tibiae sometimes with pale streak.

Head pale with large dark occipital spot often running down front to darkened tubercles, labrum dark, a row of punctures from the large puncture near eye down to tubercles, carina broad and little produced, interocular space about half the width of the head. Antennae dark with the three basal joints pale edged. Prothorax about twice as broad as long, not very convex and somewhat depressed along the base, somewhat shiny although alutaceous, finely punctate, pale with a broad irregular lateral spot on each side curving forwards towards the center into a point, an elongate diamond-shaped spot in middle. Elytra broad and not very convex, moderately shiny although alutaceous, finely and more distinctly punctate than prothorax, a dark sutural vitta uniting with a narrow submarginal vitta, the latter sometimes not covering margin towards base and fading away about humerus; median vitta broad. Epipleura dark. Body beneath pale

with dark sides, sometimes middle of breast dark, legs entirely dark except the pale coxae and sometimes tibiae with a light streak; lightly pubescent; hind femora with fine pubescence. Length 5.5 to 6.5 mm., width 2.9 to 3.4 mm.

TYPE: Not located (not in Berlin). The species was described from a specimen from Buenos Aires.

OTHER LOCALITIES: Argentina: Felipe Solá, Buenos Aires, Monrós; Güemes, Salta, Martínez; Zelaya, Buenos Aires, Hepper; Buenos Aires, J. Bosq; Ceres, C. J. Drake; Pampas, Germain; Pico, H. L. Parker; Urundel, Salta, Monrós; Tucumán, P. Girard, C. Bruch; Tabillas, Salta, G. L. Harrington. Paraguay: Asunción, E. G. Kent; without locality, Dr. Bohls; Sapucaí, W. T. Foster. Uruguay: Montevideo. Chile: Germain. Brazil: Cauna, Santa Catarina, Rio Natal; the last two collected by A. Maller, in AMNH; Serro Azul, Padre Pio Buck; one old specimen in MCZ (Bowditch collection) from Brazil with a Chevrolat name.

REMARKS: I have been unable to find the whereabouts of the type of this species and it may be lost, although the type of *D. conjuncta* (Germar), described at the same time, is in Berlin. Harold, writing in 1875, stated that *D. copulata* was unknown to him. Thus, I am uncertain whether the insect described above is really *D. copulata*, but of several closely related species from Argentina this best corresponds with Germar's description. He described the thoracic markings as a spot on the disk composed of three confluent ones making a crown in reverse ("corona reversa"). The thoracic markings of this and *D. prolixa* Harold might be interpreted as a "corona reversa," but the undersurface of the latter is not dark as described by Germar.

### *Disonycha plaumanni* Costa Lima

#### FIGURE 73

*Disonycha plaumanni* Costa Lima, Rev. Brasil Ent., vol. 1, p. 9, January 1954.

Between 6 and 7 mm. in length, broadly oblong oval, somewhat shiny although faintly alutaceous, finely punctate; pale yellow; a dark occipital spot, dark tubercles and mouthparts; prothorax with three dark spots, the median one elongate; elytra with wide dark sutural vitta uniting with narrow lateral-marginal vitta and a broad median vitta, the pale vittae very narrow; body beneath dark except for pale prosternum, space between middle coxae, and a few pale spots on sides of abdomen.

Head with interocular space about half width of head, pale with a large dark occipital spot running down the front, darkened tubercles and dark mouthparts, a series of punctures from the fovea near eye to tubercles, area between antennal sockets broad and rounded and



not much produced. Antennae with three basal joints pale edged, rest dark. Prothorax barely twice as wide as long, smoothly rounded, without any depression, somewhat shining although faintly alutaceous, finely punctate, pale with three dark spots, the lateral ones wider than long, the median one elongate. Elytra broad, faintly shining, alutaceous and a little more distinctly punctate than prothorax, a common dark sutural vitta rather broad and uniting at apex with a narrow marginal vitta, a very broad median vitta. Body beneath not very shiny but densely covered with fine pubescence, dark except for prosternum and space between middle coxae and spots about edge of abdomen, legs entirely dark. Length 6 to 6.8 mm., width 3.4 to 3.8 mm.

TYPE: In Institute of Ecology and Agricultural Research, Rio de Janeiro, collected at Nova Teutonia, Santa Catarina, Brazil, by Fritz Plaumann, September 1934.

OTHER LOCALITIES: Paraguay: Sapucaí, San Bernardino, K. Fiebrig. Brazil: Cauna and Rio Natal, Santa Catarina, A. Maller, AMNH. One specimen, in MCZ (Bowditch collection) labeled "C. Amer.," which is probably not correct.

REMARKS: This is closely related to *D. copulata* Germar, having much the same markings, except that the spots on the prothorax are not so large, the dark elytral vittae are as a rule wider, and the body beneath is darker; also the prothorax is less depressed, with wider anterior angles, the punctation is denser and more distinct on the elytra, and the shape of the aedeagus is slightly different.

This species had already been described and assigned a name in my manuscript; the identity of my material with Costa Lima's species is based on a photograph of a drawing that he has sent me.

*Disonycha septemmaculata*, new species

FIGURE 69

From 5.5 to 6 mm. in length, oblong oval, mirror smooth; pale yellow; head orange with a dark occipital spot and dark labrum; prothorax short and broad with seven small dark spots; elytra with broad sutural, median and narrow marginal black vittae, the sutural and marginal uniting at apex; body beneath pale, femora and tibiae mostly dark with pale streaks, tarsi dark; antennae dark with paler basal and apical joints.

Head with interocular space half width of head, smooth, with a fovea or circle of punctures on each side near eye, tubercles not distinctly marked, antennal sockets closely placed, with a narrow carina not much produced but extending down lower front, occiput orange, with a median brown spot, lower front narrow and pale, labrum dark.

Antennae with the three basal joints pale edged, remainder except brownish apical joint deep piceous. Prothorax more than twice as broad as long, with wide anterior angles and nearly straight sides, disc rather flat and depressed at base, surface mirror smooth, pale yellow with seven small deep brown spots. Elytra with a broad dark common sutural vitta uniting at apex with a lateral marginal vitta, a very wide median vitta; surface mirror smooth, epipleura dark. Body beneath entirely pale, lightly pubescent, coxae pale, femora shiny and dark above with pale under surface, tibiae dark, the hind ones with a pale streak, tarsi dark. Length 5.3 to 6.4 mm., width 2.6 to 3 mm.

TYPE: Male, and four paratypes, USNM 61831, taken at Huache and Rurrenabaque, Río Beni, Bolivia, W. M. Mann, September, Mulford Biological Expedition 1921-22; one paratype in MCZ.

OTHER LOCALITIES: Paraguay: Sapucaí, W. T. Foster, 6 specimens. Brazil: near Campinas, São Paulo, P. A. Berry, 1939, 1 specimen; Caviuna, Paraná, A. Maller, January 1946, AMNH (1). Argentina: Tablillas, Salta, G. L. Harrington, CAS (2); Urundel, Salta, Monrós, 1 specimen; Tablillas, Salta, Dr. Oran, 2 specimens; Alto Paraná, Misiones.

REMARKS: The short broad prothorax with its seven small dark spots is sufficient to identify this species. Some of the Brazilian specimens have femora that are dark only towards the apex and in all, the tibiae have paler streaks, but the aedeagus is like those from Bolivia.

*Disonycha argentinensis* Jacoby

FIGURE 72

*Disonycha argentinensis* Jacoby, Entomologist, vol. 34, p. 147, 1901.

Between 5 and 6 mm. in length, elongate oblong, moderately shining, head and pronotum densely and coarsely punctate, elytra usually more finely punctate; head entirely dark; prothorax pale; elytra with a broad dark sutural vitta joining with the lateral-marginal one at apex (in the Brazil specimens the median dark vitta completely united with the lateral-marginal, but in the Argentine specimens these not joined or only partly joined); breast dark, legs bicolored.

Head entirely dark and shiny, coarsely and rugosely punctate, with tubercles smooth, carina somewhat produced, interocular space more than half width of head. Antennae of moderate length, dark with the three basal joints pale edged and the apical joint often paler brown. Prothorax barely twice as wide as long with rounded sides, not very convex, depressed over the scutellum, entirely pale, coarsely and densely punctate and also alutaceous. Elytra usually more finely punctate, the punctation denser and coarser below the scutellum but in the Bolivian specimen the elytra coarsely punctate throughout, the

width of the dark vittae varying, in Brazilian and Bolivian specimens the median vitta joining with the lateral marginal vitta, leaving only a very narrow pale vitta curving towards to margin at apex, in the Argentinian specimens the median vitta only partially joining with the lateral or entirely free, but usually wider at the apex and slightly club-shaped. Epipleura dark. Body beneath with prosternum and abdomen pale but the breast usually dark (in one specimen pale on the side); femora pale with dark apices, tibiae pale in the middle, tarsi dark. Length 5 to 6.2 mm., width 2.3 to 2.8 mm.

TYPE: Not designated, probably in BM, described from four specimens from "Argentine R." One specimen in MCZ (Bowditch collection, 2nd Jacoby collection), from the province of Buenos Aires, C. Bruch, bears Jacoby's label "*argentinensis*" and a type label but was collected in 1903.

OTHER LOCALITIES: Argentina: La Plata, P. G. Russell, M. Kisluik; Famaila, San Pablo, Tucumán, F. Monrós; Tucumán, G. L. Harrington; Buenos Aires, G. L. Harrington, C. Bruch; San Fernando, Don Torcuato, Buenos Aires, Monrós. Chile: Germain. Uruguay: Montevideo. Brazil: Campinas, A. Hempel; S. Leopoldo, Padre Pio Buck. Bolivia: Reyes, W. M. Mann, Mulford Biological Expedition, 1921-22. One specimen taken at Boston in a shipment of peppers from Argentina, another at New York in sunflower seed.

REMARKS: This is an unusually distinctive little species because of the rugose head and prothorax and the tendency of the median elytral vitta to unite with the marginal, leaving only a very narrow pale vitta. The shape of the aedeagus is unusual, too. The appearance of the beetle is much like that of the North American *Disonycha maritima* Mannerheim because of the coloration and a similar coarse punctation. The female beetle from Reyes, Bolivia, has the same elytral color pattern as the male from Campinas, Brazil.

#### *Disonycha maritima* Mannerheim

##### FIGURE 70

*Disonycha maritima* Mannerheim, Bull. Soc. Imp. Moscou, vol. 16, p. 311, 1843.—Crotch, Proc. Acad. Nat. Sci. Philadelphia, vol. 25, p. 64, 1873.—Horn, Trans. Amer. Ent. Soc., vol. 16, p. 206, 1889.—Blake, Proc. U. S. Nat. Mus., vol. 82, art. 28, p. 51, 52, 1933.

From 4 to 5 mm. in length, broadly oblong oval, somewhat shining, densely punctate; pale with dark labrum and occipital spot extending down front; dark sutural, median, and marginal vittae covering most of the elytra; undersurface dark except prosternum and last ventral segments.

Head with interocular space a little more than half width of head, frontal carina narrow and slightly produced, occiput and front as far

as tubercles usually densely and coarsely punctate, sometimes with a smooth median area, pale with black occipital spot extending down front, a darkened labrum. Antennae dark with paler basal joint, third, fourth and fifth joints subequal, the fourth slightly the longest. Prothorax approximately twice as wide as long, somewhat convex, narrowed anteriorly with arcuate sides, alutaceous, densely and moderately coarsely punctate, except sometimes a smooth median linear area; entirely pale. Scutellum dark. Elytra broadly oblong oval, convex, humeri not marked and with little trace of intrahumeral sulcus, moderately coarsely and densely punctate and somewhat shining, pale with wide sutural, median, and marginal vittae, the sutural and marginal vittae uniting at apex. Body beneath sparsely and indistinctly pubescent, shining black except prosternum and last ventral segment, legs black with a light streak on outside of tibiae. Length 4 to 5 mm., width 2.3 to 3.3 mm.

TYPE: Whereabouts unknown; described from a specimen collected by Eschscholtz and Blaschke in California, near the shore.

OTHER LOCALITIES: United States: California and Nevada. One specimen "ex Duvivier," labeled "S. America," probably incorrectly labeled.

REMARKS: The South America locality is probably incorrect, but it is quite possible that the species may turn up in México, as it has been collected in southern California. *D. argentinensis* Jacoby, although a more slender beetle, is very similar in coloration and sculpture.

#### *Disonycha interlineata* Berg

##### FIGURE 49

*Disonycha interlineata* Berg, Ent. Zeitung, Stettin, vol. 42, p. 65, 1881.

Between 6 and 7 mm. in length, oblong oval, moderately shining, somewhat alutaceous, pale yellow, usually with a broad dark spot at back of occiput and two tiny spots anteriorly on the pronotum, the elytra with a narrow sutural vitta, a median vitta having within it a pale inner line, and a washed out submarginal vitta; body beneath with the middle of the breast and abdomen and sides of the prosternum usually darker.

Head with interocular space more than half width of head, pale, usually with a broad dark spot over back of occiput, the mouthparts a little deeper in coloring, a circle of coarse punctures on either side near eye, the frontal tubercles separated by a deep groove usually and below a broadly rounded carina. Antennae varying from pale yellowish to deep reddish brown with the 4 or 5 basal joints paler. Prothorax twice as broad as long, narrowed anteriorly, moderately convex with little trace of basal depression, faintly alutaceous, pale yellow with two widely separated small dark spots anteriorly. Elytra



faintly alutaceous and finely punctate, pale yellow with a narrow dark sutural vitta and a median vitta having within it a pale line not reaching base or apex, along the side a pale, washed out vitta, this being somewhat costate; epipleura pale. Body beneath covered with fine, pale pubescence, pale with the middle of the breast and abdomen darkened usually, also a spot on either side of the prosternum, legs often entirely pale. Length 6 to 6.7 mm.; width 2.8 to 3.2 mm.

TYPE: Not designated; described from several specimens from Salinas Chicas, Fuerte, and Río Colorado, Argentina, collected by Adolf Döring and P. Lorentz.

OTHER LOCALITIES: Argentina: Buenos Aires, G. L. Harrington, Chaco santo-fesino, W. H. Schladitz, August, September, October, 1911. Uruguay: Montevideo. Brazil: Santa Catarina.

REMARKS: One specimen from Chaco, and one from Santa Catarina are a little larger and paler than the others, with the ventral surface entirely pale. The splitting of the median elytral vitta is peculiar to this species although one other species is known to have this characteristic to a lesser degree.

*Disonycha scissovittata*, new species

FIGURE 47

About 5 mm. in length, oblong oval, feebly shining, alutaceous and finely punctate; pale yellow; antennae except the basal joints dark; a faint reddish brown spotting in the middle of the pronotum; elytra with a narrow dark sutural vitta and a submarginal vitta, neither reaching the apex, and a wider median vitta with a pale center line (in one specimen the entire length, in the others the pale interline only towards the apex); body beneath and legs pale.

Head with interocular space approximately half the width of the head, entirely pale except for reddish brown mouthparts, smooth except for fovea near eye, the tubercles distinctly marked, carina moderately broad, lower front long and narrow. Antennae short and stout, the three basal joints pale. Prothorax twice as wide as long, with curved sides, moderately convex, with little trace of basal depression, alutaceous and very finely punctate, pale yellow with a deeper reddish brown spotting in middle, consisting of two spots anteriorly and a long median mark, these all confluent. Scutellum pale. Elytra smoothly ovate, faintly shining, alutaceous and finely and moderately densely punctate, the sutural vitta narrow, not reaching the apex, the sutural edges pale, the median dark vitta in two specimens divided in apical part, the third specimen having a nearly entire pale vitta within the dark one, the submarginal vitta deep reddish brown, not reaching the apex. Epipleura pale. Body beneath and legs entirely pale. Length 5.3 to 5.4 mm.; width 2.9 mm.

TYPE: Male, in BM, from Santarém, on the Amazon, Brazil; two paratypes, both females, one, in BM, taken on the Amazon by Bates, the other, USNM 61832, without any locality label.

REMARKS: Only three specimens of this species are known, but these are quite distinct in their markings and in the shape of the aedeagus. The pale streak in the median elytral vitta usually does not extend as far as in *D. interlineata* Berg and the pronotal spots are not widely separate as in that species. It is also a somewhat smaller, more slender beetle. The aedeagus resembles somewhat that of *D. pittieri* from Venezuela, but the Brazilian species has a quite differently shaped, longer and narrower head, with only a single fovea instead of a cluster of punctures on each side.

*Disonycha suturalis* Bryant

FIGURE 67

*Disonycha suturalis* Bryant, Ann. Mag. Nat. Hist., ser. 11, vol. 11, pp. 652-3, 1944.

About 6 mm. in length, oblong oval, somewhat shiny although very faintly alutaceous, prothorax finely and elytra more distinctly and densely punctate; pale yellow; head with mouthparts and tubercles dark; elytra with narrow sutural vitta, humeri darkened and a spot in middle near the apex; breast, tibiae and tarsi, and apex of hind femora dark, explanate margins wider than usual.

Head pale except for tubercles and mouthparts, alutaceous and with coarse punctures scattered across vertex, a cluster of punctures on each side near eye, tubercles distinct, frontal carina broad, lower front rather short, interocular space half width of head. Antennae dark piceous with the three basal joints pale edged and the terminal joint paler reddish brown, joints not very long. Prothorax fully twice as wide as long, with curved sides and wide explanate margin, depressed over the scutellum, alutaceous, finely punctate, entirely pale. Scutellum dark. Elytra also with wide explanate margin, pale yellow with narrow sutural vitta and a dark streak down humeri and an irregular spot at middle of the apical angle, sometimes also a spot halfway down on the side of the elytra, surface alutaceous and densely and more coarsely punctate than the pronotum. Epipleura pale. Body beneath with breast dark, tibiae and tarsi, apex of femora, and apical half of hind femora dark. Length 6.1 mm., width 3 mm.

TYPE AND PARATYPES: In BM (10 specimens), collected by G. E. Bryant at Estancia la Noria, Río San Javier, Santa Fé, Argentina, December 20, 1911.

REMARKS: This species has a less coarsely punctate pronotum and more densely punctate elytra than *D. caustica* Harold (*D. nigrosuturalis* Bryant). None of Bryant's ten specimens shows any fully de-

veloped lateral vitta, and I have not found any other specimens in any collection. It is quite possible, however, that, as in the form of *D. caustica* described as *D. nigrosuturalis*, there are fully vittate specimens. The wide explanate margin on both prothorax and elytra is striking.

*Disonycha caustica* Harold

FIGURE 68

*Disonycha caustica* Harold, Coleopterologische Hefte, vol. 14, p. 106, 1875.

*Disonycha nigrosuturalis* Bryant, Ann. Mag. Nat. Hist., ser. 11, vol. 11, p. 701, 1944.

From 5.5 to 6.5 mm. in length, oblong oval, faintly shining, alutaceous; yellow; a dark occipital spot; pronotum with two round spots on each side of an elongate median one; elytra with a sutural vitta joining at apex with a narrow submarginal vitta, latter sometimes vanishing before the middle, and a wide median vitta, often interrupted with only traces on the humerus and below it and at apex; the legs with apices of femora and tibiae dark, the body beneath pale with the breast sometimes dark.

Head coarsely but not densely punctate, pale with a broad dark occipital spot running down into a point, tubercles well marked, often brownish, interantennal space broad, rounded into a flattish carina, excavate below antennal sockets, mouthparts brownish. Antennae dark, with the three or four basal joints paler, sometimes the distal joints brownish. Prothorax about twice as broad as long, narrowed towards apical angles, moderately convex and with a faint depression along base over the scutellum, surface alutaceous and rather densely and coarsely punctate, pale yellow with two spots in anterior part sometimes joined with a tiny elongate median spot. Elytra less alutaceous and faintly shining and a little more finely but densely punctate, pale yellow, with a dark sutural vitta joining at apex with a narrow submarginal one that frequently vanishes or becomes washed out along the side above the middle, a broad median vitta also often interrupted or with traces on the humerus, below it, and at apex, epipleura pale, sometimes with brownish edge. Body beneath pale, sometimes with the breast and sides of abdomen brownish, legs pale with apices of femora and tibiae darker and tarsi deep brown or piceous. Length 5.5 to 6.5 mm., width 2.6 to 3.4 mm.

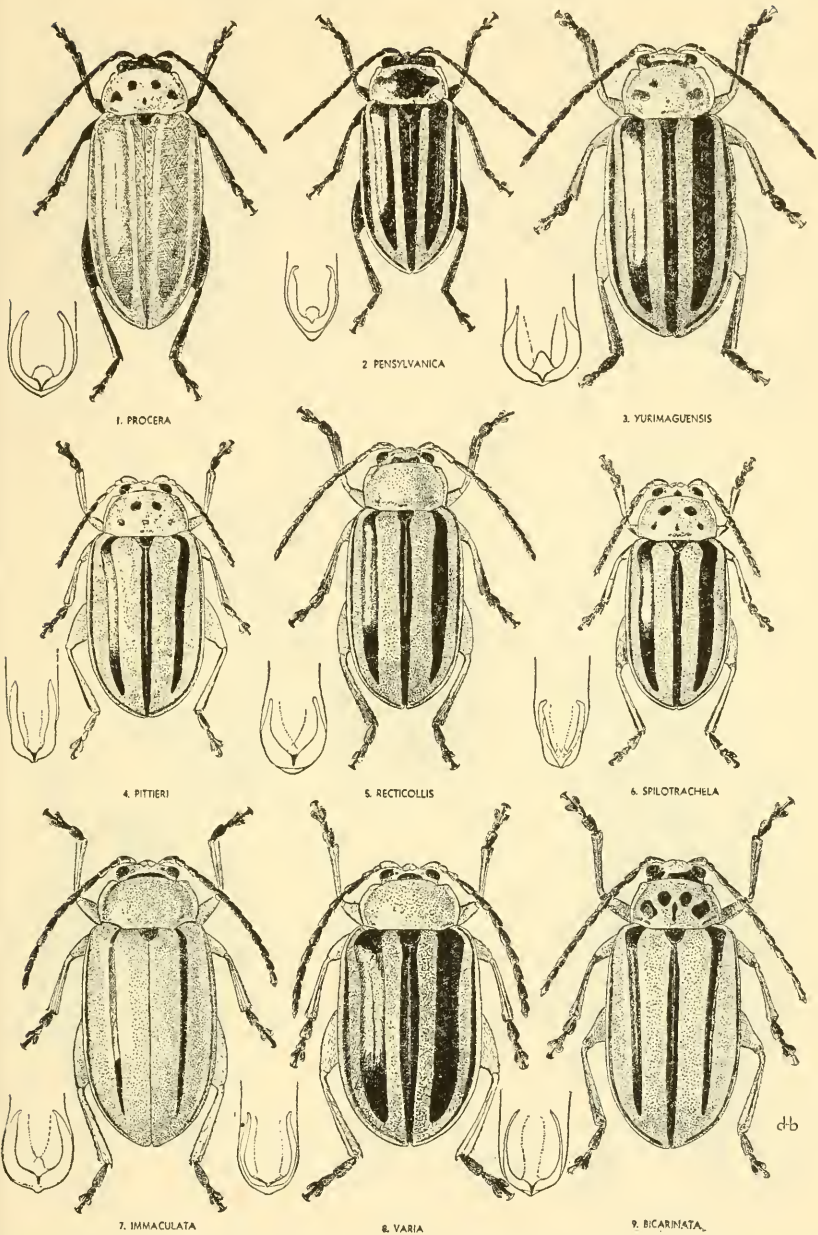
TYPE: Female, in MCZ (Bowditch collection), also a paratype and eight other paratypes in the general collection there, all from Córdoba, Argentina, collected by Davis.

OTHER LOCALITIES: Bolivia: Machareti, G. L. Harrington. Paraguay: Sapucaí, W. T. Foster. Argentina: Desaguadero, Mendoza, F. Monrós; Rosario de la Frontera, El Naranjo, Monrós; Pico, La Pampa,

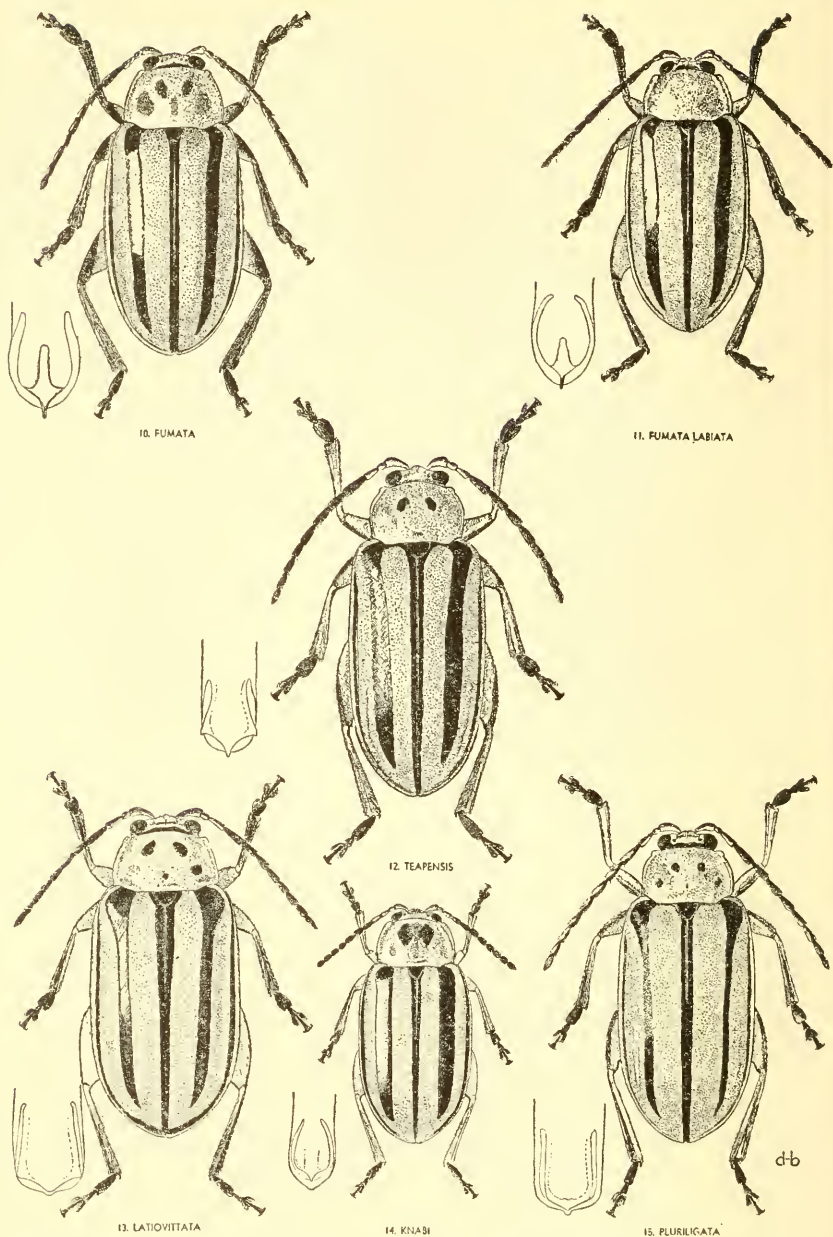
H. L. Parker; Güemes, Salta, Martínez; Río San Javier, Santa Fé, Bryant (type locality of *D. nigrosuturalis* Bryant); Maza, "F. C. S.," Aravena, Buenos Aires.

REMARKS: In the Museum of Comparative Zoology is a drawer of specimens with the note "16 types of Harold material collected by Davis, sent by Hagen to Dohrn, sent by Dohrn to von Harold who published in the Coleopterologische Hefte, 1875, pp. 95-106." In this are 8 specimens labeled *D. caustica* Harold. In the Bowditch collection are two others, evidently of the same series, the first labeled type, from Córdoba, Davis (2nd Jacoby collection), the second with the same label; also one from Bolivia (2nd Jacoby collection), and another from Paraguay, Dr. Bohls. Two of those in the Davis drawer have interrupted elytral vittae such as Bryant described in *D. nigrosuturalis*, in which the median elytral vittae are interrupted with only traces. I have dissected both forms and found the aedeagi alike.

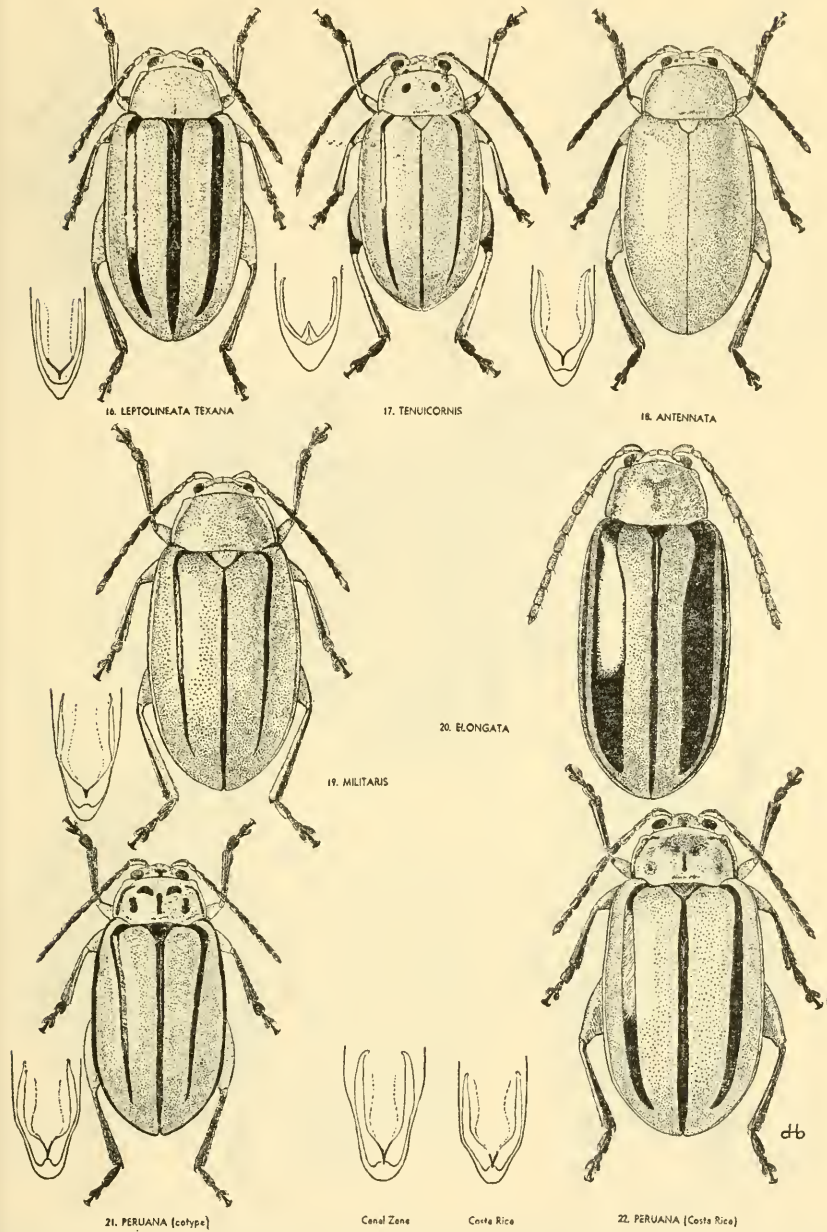




FIGURES 1-9.—1, *Disonycha procera* Casey; 2, *D. pennsylvanica* (Illiger); 3, *D. yurimaguensis*, new species; 4, *D. pittieri*, new species; 5, *D. recticollis* Jacoby; 6, *D. spilotrachelata* Blake; 7, *D. immaculata*, new species; 8, *D. varia*, new species; 9, *D. bicarinata* Boheman.

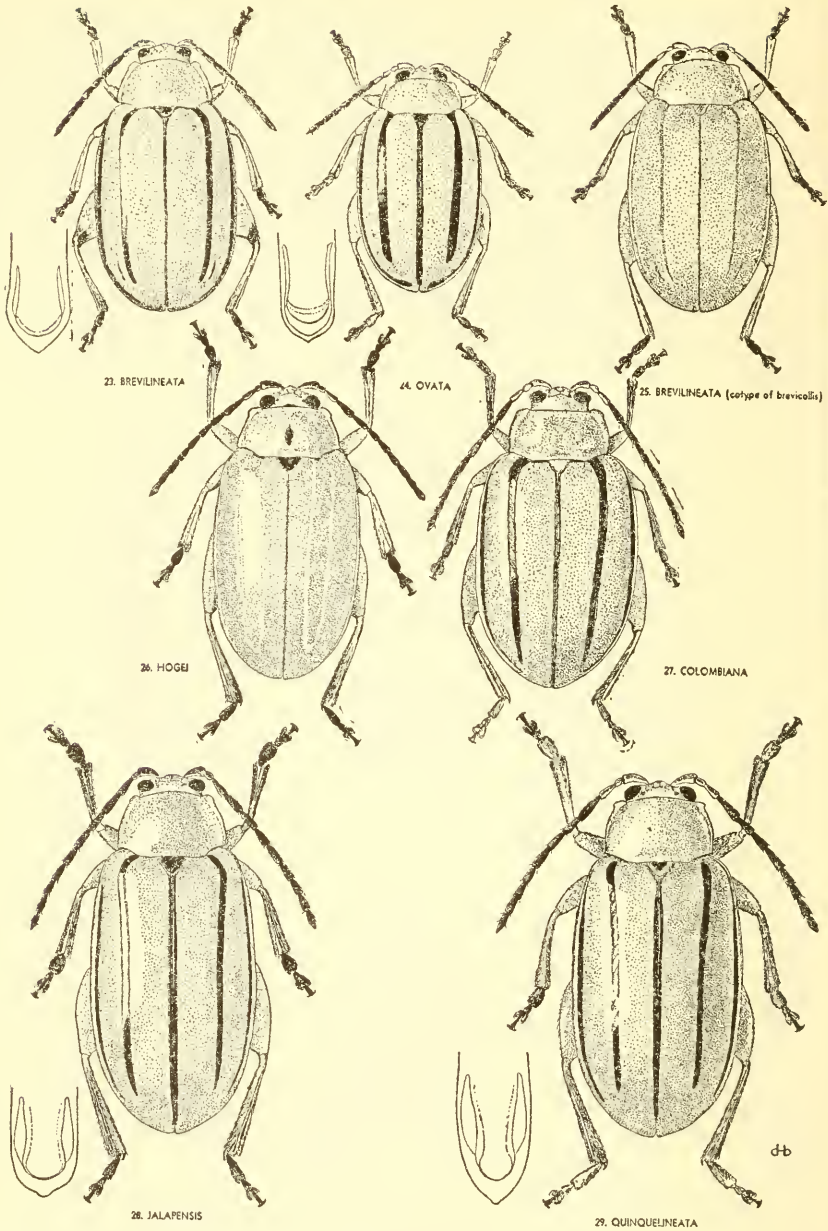


FIGURES 10-15.—10, *Disonycha fumata* (LeConte); 11, *D. f. labiata* Jacoby; 12, *D. teapensis* Blake; 13, *D. latiovittata* Hatch; 14, *D. knabi*, new species; 15, *D. pluriligata* (LeConte).



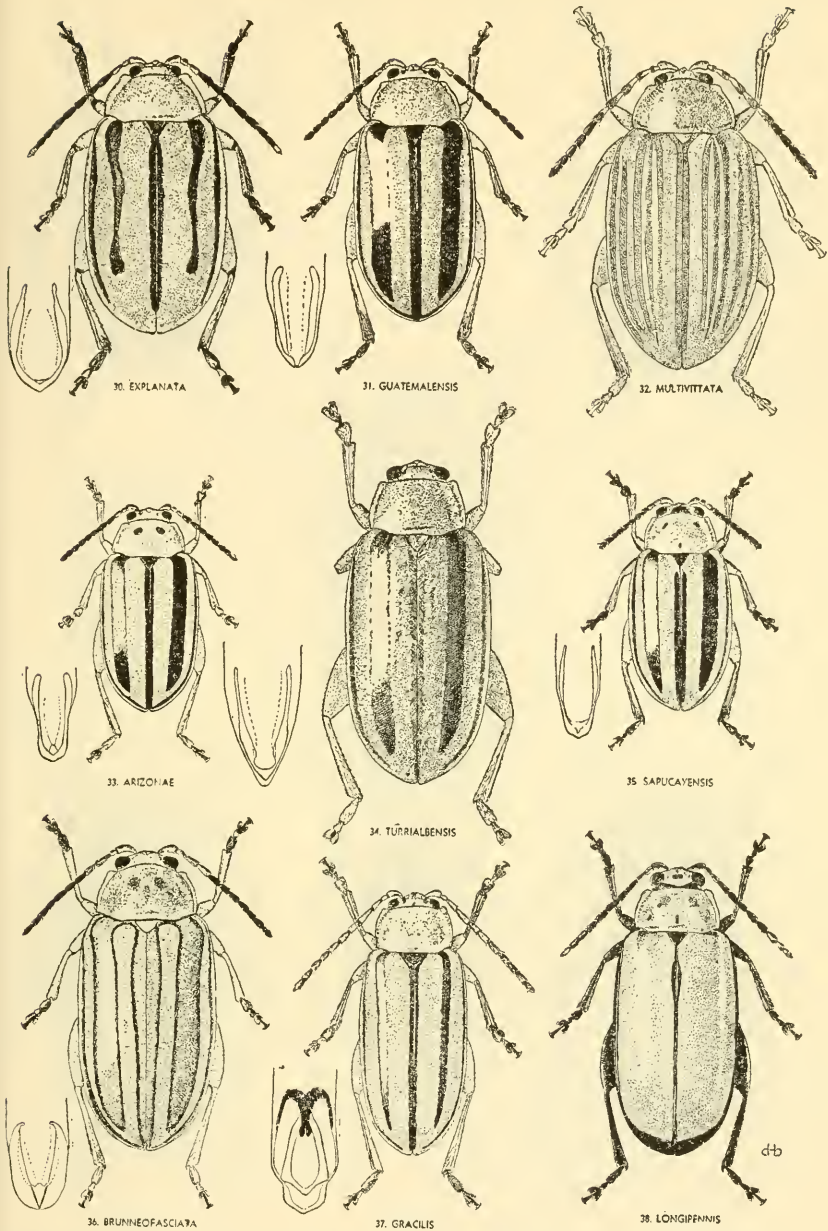
FIGURES 16-22.—16, *D. leptolineata texana* Schaeffer; 17, *D. tenuicornis* Horn; 18, *D. antennata* Jacoby; 19, *D. militaris* Jacoby; 20, *D. elongata* Jacoby; 21 and 22, *D. peruana* Jacoby.



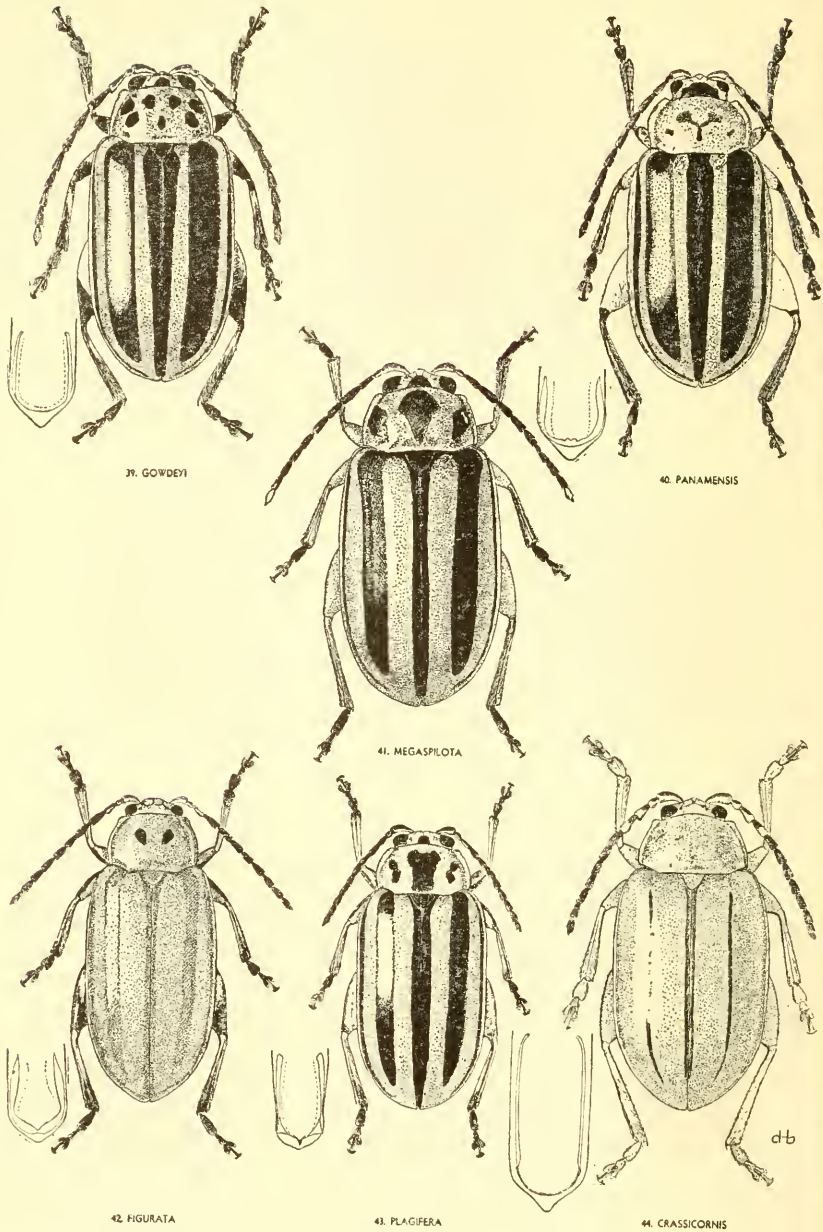


FIGURES 23-29.—23, *Disonycha brevilineata* Jacoby; 24, *D. ovata* Blake; 25, *D. brevilineata* Jacoby (cotype of *brevicollis*); 26, *D. hōgei* Jacoby; 27, *D. colombiana*, new species; 28, *D. jalapensis*, new species; 29, *D. quinquelineata* (Latreille).

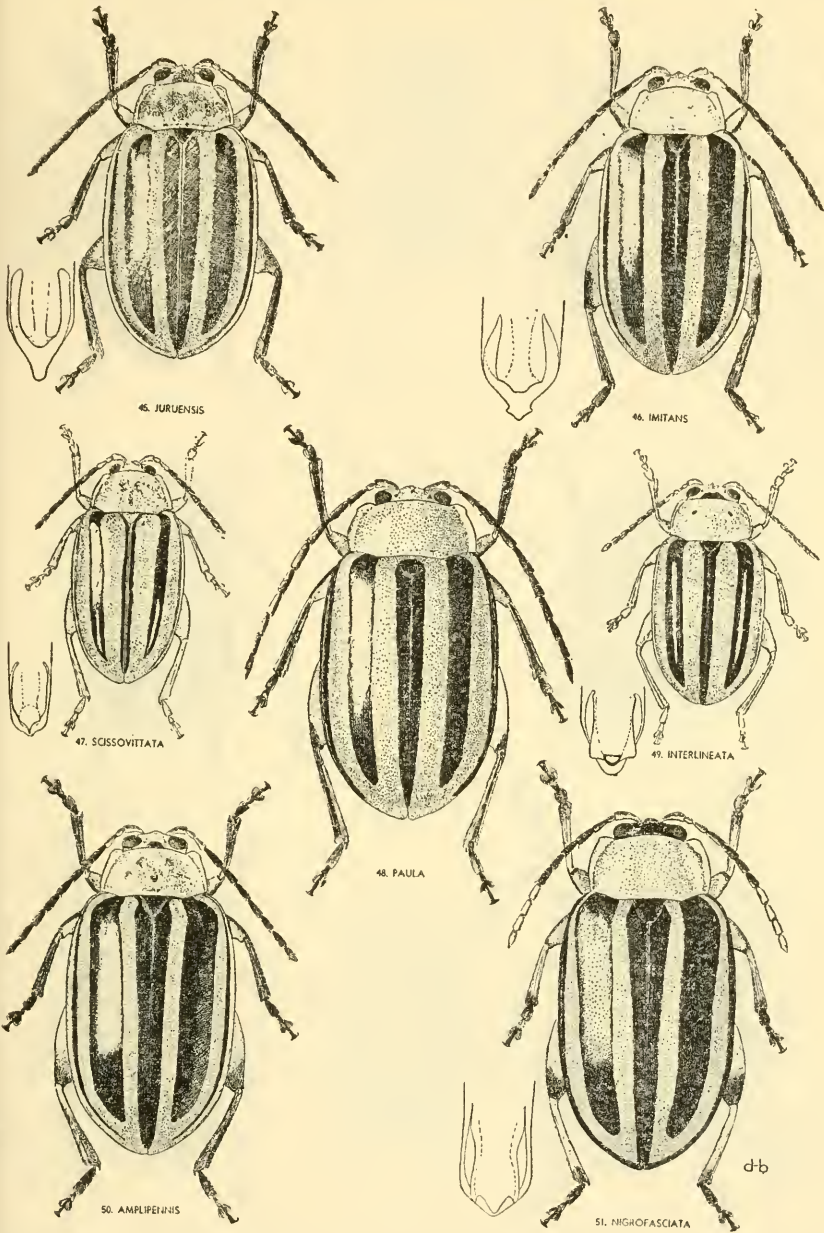




FIGURES 30-38.—30, *D. explanata*, new species; 31, *D. guatemalensis* Jacoby; 32, *D. multivittata*, new species; 33, *D. arizonae* Casey; 34, *D. turrialbensis*, new species; 35, *D. sapucayensis*, new species; 36, *D. brunneofasciata* Jacoby; 37, *D. gracilis*, new species; 38, *D. longipennis*, new species.

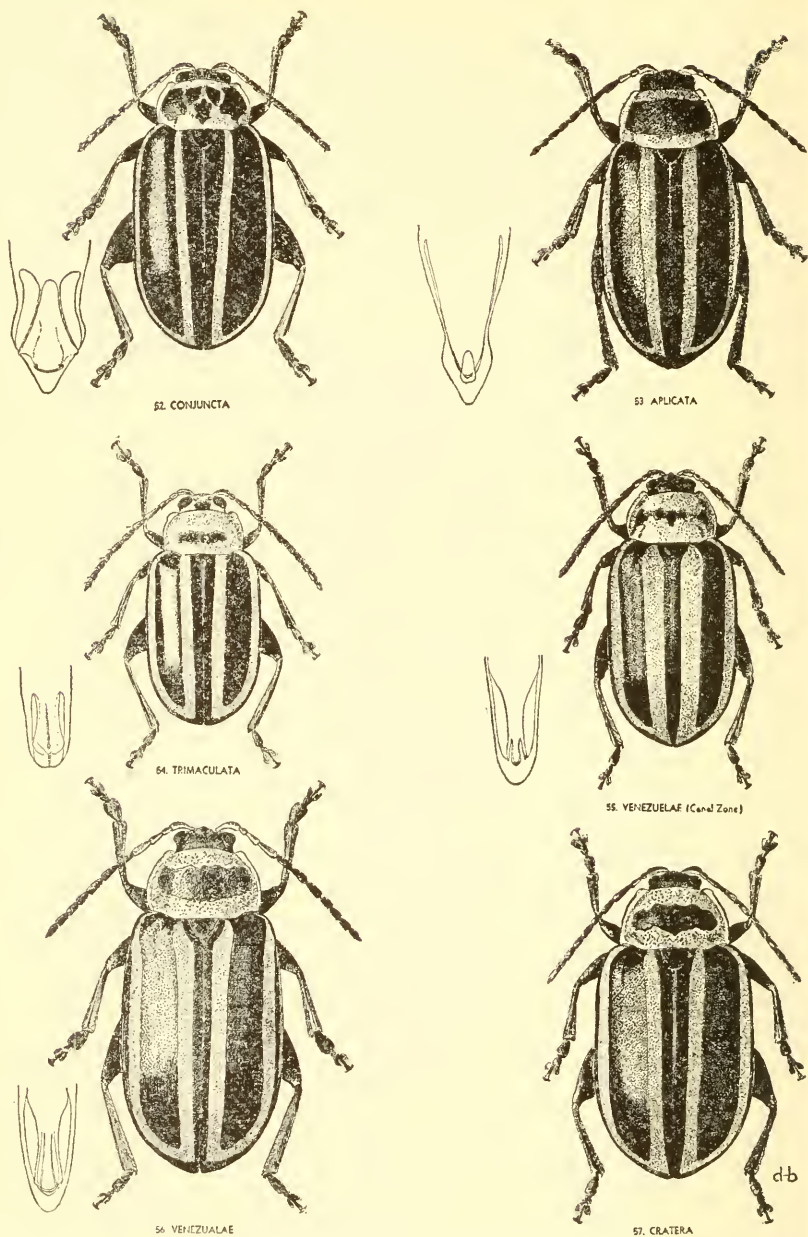


FIGURES 39-44.—39, *D. gowdeyi* Bryant; 40, *D. panamensis* Jacoby; 41, *D. megaspilota*, new species; 42, *D. figurata* Jacoby; 43, *D. plagifera*, new species; 44, *D. crassicornis*, new species.



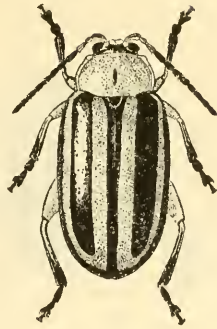
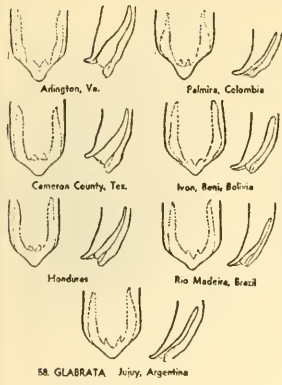
FIGURES 45-51.—45, *Disonycha juruensis*, new species; 46, *D. imitans* (Jacoby); 47, *D. scissovittata*, new species; 48, *D. paula*, new species; 49, *D. interlineata* Berg; 50, *D. ampliPELLIS*, new species; 51, *D. nigrofasciata* (Jacoby).



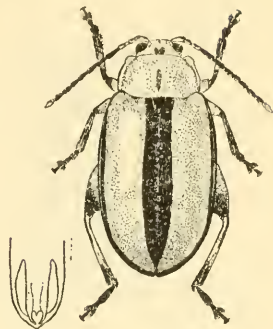


FIGURES 52-57.—52, *Disonycha conjuncta* (Germar); 53, *D. applicata*, new species; 54, *D. trimaculata*, new species; 55 and 56, *D. venezuelae* Jacoby; 57, *D. cratera*, new species.

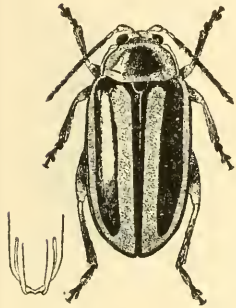




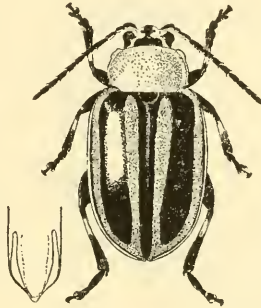
59. GLABRATA



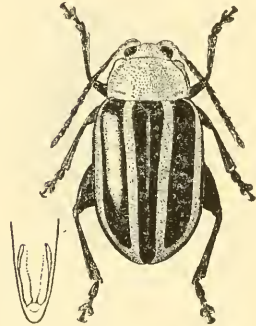
60. TRIVITTATA



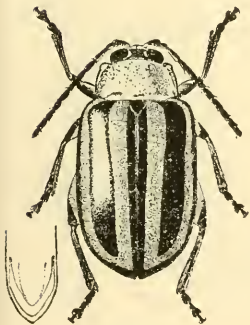
61. VITTIPENNIS



62. ANNULATA



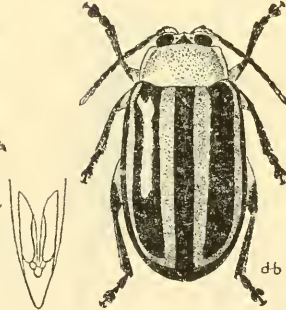
63. MANNI



64. TRIDYMA

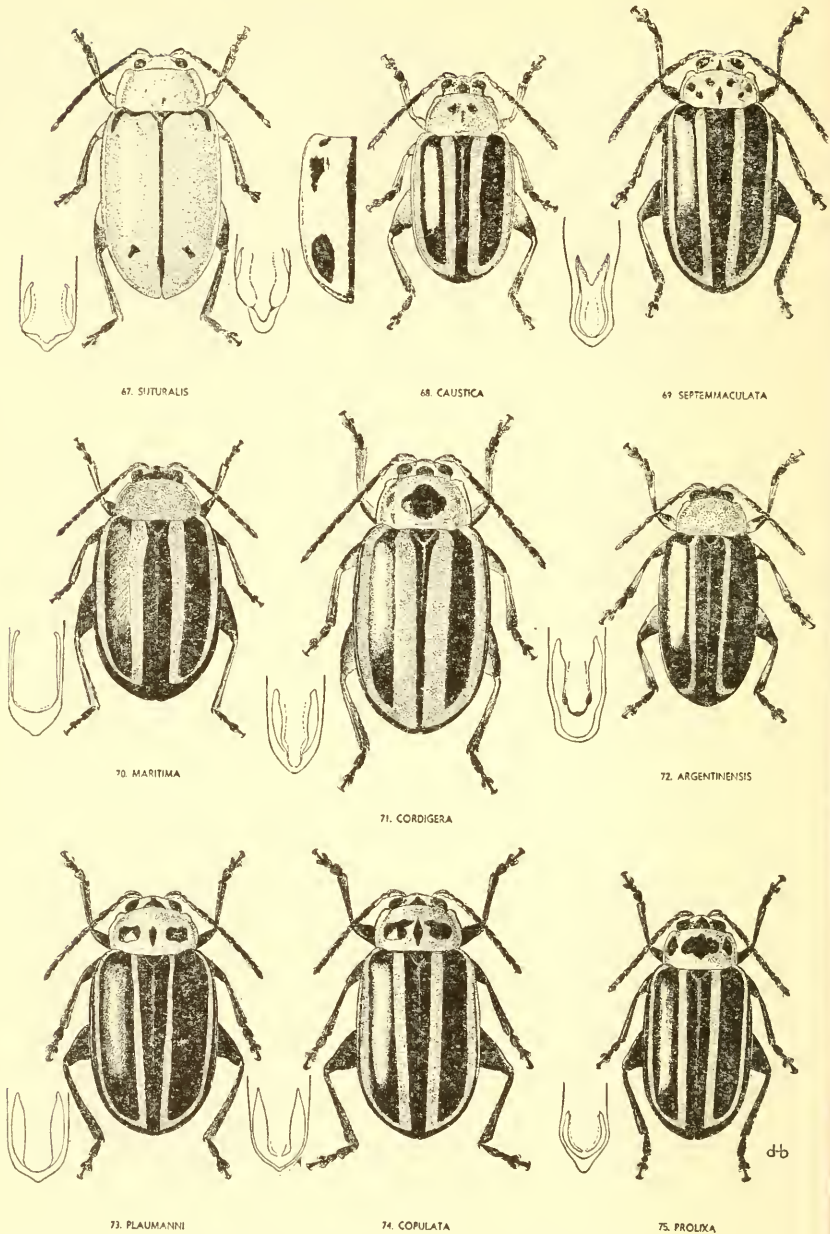


65. DIDYMA



66. BARBERI

FIGURES 58-66.—58 and 59, *Disonycha glabrata* (Fabricius); 60, *D. trivittata*, new species; 61, *D. vittipennis* Boheman; 62, *D. annulata*, new species; 63, *D. manni*, new species; 64, *D. tridyma*, new species; 65, *D. didyma*, new species; 66, *D. barberi* Blake.



FIGURES 67-75.—67, *Disonycha suturalis* Bryant; 68, *D. caustica* Harold; 69, *D. septemmaculata*, new species; 70, *D. maritima* Mannerheim; 71, *D. cordigera*, new species; 72, *D. argentinensis* Jacoby; 73, *D. plaumanni* Costa Lima; 74, *D. copulata* (Germar); 75, *D. proluxa* Harold.