

REVISION OF *RHODOBAENUS*. PART 2.
SPECIES IN NORTH AMERICA
(CANADA TO PANAMA)
(COLEOPTERA, CURCULIONIDAE,
RHYNCHOPHORINAE)

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ABSTRACT

The 69 species of *Rhodobaenus* in North America are revised and lectotypes are designated for many of Champion's species. Three species (*aterimus*, *mundus*, and *octocostatus* of Champion) are transferred from *Sphenophorus* to *Rhodobaenus*. Eight new synonyms are recorded: *unidentatus* Champion of *guttatus* (Fahraeus); *dentifer* Champion of *incertus* (Champion); *maculipes* Champion of *cinctus* (Gyllenhal); *niger* Champion of *pulchellus* (Gyllenhal); *triangularis* Champion of *quinquepunctatus* (Say); *elegans*, *cornic-*

ulatus of Chevrolat, and *graphicus* Champion, all of *auctus* Chevrolat. Five taxa listed in the catalogues as varieties of *tredecimpunctatus* (Illiger) are considered valid species: *auctus* Chevrolat, *nigripennis* Champion, *lebasii* (Gyllenhal), *quinquepunctatus* (Say), and *thoracicus* (Gyllenhal). Seven new species are described: *bellus* and *melas*, Costa Rica; *buchanani*, *inopinatus*, *latens*, *mas*, and *quintus*, Mexico. Additional locality records for previously described species are given.

INTRODUCTION

The present paper is the second and final part of a revision of the New World Neotropical genus *Rhodobaenus* (two species are boreal). In the first part (1980) 29 species of South America were reviewed; in the present part the 69 species of North America. (I use North America in the broad sense as including Canada, the United States, Mexico, and Central America.)

Champion ("1909–1910" [1910]) was the first author to examine extensively the species of Mexico and Central America. His admirable treatment, which incorporated colored illustrations, a key to small groups, and line drawings has been of great help in the identification and classification of the species. I have, however, departed from his concept of *Rhodobaenus tredecimpunctatus*. This well-known and abundant United States species (the type of the genus) is not composed of 15 color varieties as stated by Champion, but of varieties (and synonyms) of other species, and of valid species. One of the five valid species, *quinquepunctatus* (Say), has long been confused in the literature and in collections with *tredecimpunctatus*, but is distinct from it, as shown later (see under the species in the text).

The species of North America appear to be most numerous in central and southern Mexico, fewer species occurring in the other countries to the south and (three species only) in the United States and Canada to the

north. More biological information is known for the species of North America, although most of this information is for *tredecimpunctatus* and *quinquepunctatus* only.

Over 5000 specimens have been examined, including the types of the majority of the species, with the exception of the older types of Illiger, Fabricius, Panzer, and Say, and several of Gyllenhal. Lectotypes are designated for Champion's species, generally those specimens with his annotation, "sp. fig." I have not designated allotypes for the new species. For description and history of the genus, the first part of the revision should be consulted.

ACKNOWLEDGMENTS

In addition to the acknowledgments made in the first part of the revision (1980), I thank Dr. Charles W. O'Brien, Tallahassee, Florida, Dr. Robert H. Turnbow, Jr., University of Georgia, Athens, and Robert S. Anderson, Carleton University, Ottawa, for the loan of specimens in their collections; also the University of Georgia through Dr. Cecil Smith. I am indebted to Dr. Guillermo Kuschel of Auckland, New Zealand, for his personal communications on the difficult *tredecimpunctatus-quinquepunctatus* complex, and for his discovery of a difference in the aedeagus between these two species, as well as between *auctus* and *lebasii*.

As before, I thank the Photographic and the Graphic Arts departments of the American Museum of Natural History for their cooperation, and Mrs. Marjorie Favreau for technical help with some of the illustrations.

BIOLOGY

The species of *Rhodobaenus*, as far as their biology is known, are not economically important. Although stem borers, they do not generally attack stems of plants useful to man. Three species, however (*guttatus*, *quinquepunctatus*, and *sanguineus*) have been found in the stems or tubers of *Dahlia*, and two (*quinquepunctatus*, *tredecimpunctatus*) in sunflowers (*Helianthus*). In Minnesota and North Dakota and perhaps other states, large fields of domestic sunflowers are now grown; in Georgia they are used for a non-cholesterol oil (Carl Mohr, personal commun.). Such fields are potentially attractive to species of *Rhodobaenus*.

The life history of the United States species, *R. tredecimpunctatus*, as given by Weiss and Lott (1923) could as well apply to *quinquepunctatus* as both species are found together in the eastern and central states, and until the present paper were considered to be one species, with *quinquepunctatus* a variety in the southern states (actually it is not confined to the south). As both species breed in plants of the family Compositae (including Carduaceae or thistles), probably the life histories are similar. In any case, Weiss and Lott (*loc. cit.*) found that in New Jersey the adults of *tredecimpunctatus* overwinter in ironweed (*Vernonia*) and that "eggs are plentiful in the field during the first two weeks of June The adults do considerable feeding at this time, puncturing the stems and bases of the leaf petiole which injured places later turn black and become distorted." The authors describe the egg cavity and the larvae; only one larva was found to a stem. At the end of August the adults emerge. The authors mentioned also *Oenothera* of the Evening Primrose family as a host plant.

Blatchley and Leng (1916) found *tredecim-*

punctatus common in Indiana from April to October "especially in the axils of the leaves of ironweed (*Vernonia*), in the stems of which it is said to breed." Although Say (1824) wrote that *tredecimpunctatus* in Missouri, Arkansas, Northwest Territory, and Pennsylvania was not injurious to any useful plant, but to milkweed (*Asclepias syriaca*) on banks near water, I have not found any mention elsewhere of milkweed as a host plant. Carl Mohr (personal commun.) has cut larvae from holes in Giant Ragweed at the two- or three- and one-half foot level where the stalks showed signs of lumpiness. He says that he often found ants in the larval burrows, and that stems of infested plants showed faulty growth and scars. In the literature, the Compositae which are said to harbor *tredecimpunctatus* (or *quinquepunctatus*) are joe-pye weed, ragweed, cockle bur, burdock, thoroughwort, ironweed, crown-beard, sunflower, wormwood, ox-eye, marsh-elder, leafcup, and rosinweed (see the species for details).

Notations on the labels of 15 species state merely that the species was collected on "vegetation" or "weeds" or certain plants, as *Verbesina* for *R. pantherinus*, some by sweeping, some at lights at night. Actual breeding data for species other than the two species from the United States are rare; recorded are *guttatus* and *sanguineus* in *Dahlia*, *cinctus* in *Vernonia*, *sanguineus* in *Eupatorium*, and *pustulosus* in *Zexmenia*. Except for *guttatus* (Mexico only), the other two species are widespread throughout Mexico and Central America.

DISTRIBUTION AND SYMPATRY

The greatest concentration of species (50) occurs in Mexico where 17 species are endemic. Guatemala, with 31 species, and Costa Rica, with 36, account for most of the remaining species. The Central American countries of British Honduras, Honduras, and El Salvador have not produced many records in the past, but recent material collected by L. and C. O'Brien, A. and H. Howden, and H. Hespenehede has extended the

ranges of a number of species to these areas. Sixteen species are known from Central America but not from Mexico. The 11 species that extend to South America come chiefly from Costa Rica and Panama, which is understandable. Farther north in the United States and Canada, two abundant species (*quinquepunctatus* and *tredecimpunctatus*) descend sparingly to extreme northern Mexico, and one (*pustulosus*) extends from extreme southwestern United States to Costa Rica. Two species (*auctus*, *lebasii*) are common in Mexico as well as in the countries of Central America. Other wide-ranging species are *deltoides*, *sanguineus*, *thoracicus*, and *ypsilon*. More than 300 specimens each have been seen of *auctus*, *cinctus*, *quinquepunctatus*, *sanguineus*, and *tredecimpunctatus*.

It is evident from the list of specimens examined in the Appendix that the number of individuals of a species taken at specific localities is few, one, or two per locality; rarely are there large series. On the other hand, the number of species taken together can be as many as 16, probably because they breed in all kinds of weeds. Champion ("1909-1910" [1910]) wrote of numerous sympatric species. To give an idea of this sympatry, I mention the number of species collected in the localities that follow:

Mexico: Veracruz: Cerro de Plumas (three species), Cordoba (10), Fortin de las Flores (six), Jalapa (10), Lake Catemaco (six), Misantla (eight), Orizaba (eight), Playa Vicente (four), Toxpam (12). Oaxaca: Juchatengo (five), Juquila (11), Oaxaca (eight). Chiapas: Sumidero (five), Tapachula (nine). Guerrero: Omilteme (four). Jalisco: Guadalajara (four). Morelos: Cuernavaca (16). Nayarit: Tepic (seven). Colima: Volcan (16). Farther south in Guatemala: Cerro Zunil (five), Dueñas (five), El Zapote (10), Panzos (five), Purula (five), San Jeronimo (seven), Yepocapa (eight); in Costa Rica: Monteverde (eight), Turrialba (13); in Panama: Cerro Campana (seven), Madden Forest (four); in the state of Chontales, Nicaragua (six). There are many additional localities with two or three sympatric species.

COLOR DIMORPHISM

Although in most species the black marks on the red surface of the elytra are uneven in outline (not so concise or symmetrical as shown in figs. 45-65), they can become very large in some species and they spread and merge to cover or almost cover the elytra. The excess of black occurs chiefly on the elytra, rarely on the pronotum. The species in which this black phase or black form is most evident are *auctus* Chevrolat, *bicinctus* Chevrolat, *bisignatus* Champion, *cinctus*, *lebasii*, and *pulchellus* (Gyllenhal), *quinquepunctatus* (Say), and, to a lesser extent, *mundus* (Champion) and *rubrovittatus* Champion. In these species the black phase can be found either in the company of red and black forms or in different localities. Generally, the black forms appear to be less numerous than the others. Possibly the darkening of the elytra is due to a difference in the host plant (Mohr, 1931) or possibly to excessive humidity at some stage of life. A colleague sent me a specimen described as having distinct black spots, but when it arrived in a jar that had contained a moist substance (mentholatum?) it was quite black; upon exposure to the air the black between the spots retracted a little revealing the red.

In the Yucatan peninsula, Mexico, entirely black phases of *pulchellus* and *lebasii* co-exist with their respective red and black phases in the number of 16 black (variety *niger*) to one red for *pulchellus*, and six black (variety *immaculatus*) to four red for *lebasii*; two black *pulchellus* have been seen from Guatemala (Coban and Canalitos) as opposed to many red and black specimens from the rest of the country; one of each phase from Costa Rica, and three black to 23 red and black from Colima, Mexico. Five of eight individuals of *lebasii* from Bugaba, Panama, are black. Black specimens (but with humerus and pronotum partially red) of *bicinctus* have been found on the island of Trinidad (eight from four localities), and eight of each phase from Honduras. In Oaxaca, Mexico, specimens of *bisignatus* from Juquila are red and black; four from Temascal are almost

entirely black, as are three from Turrialba, Costa Rica. Two entirely black *cinctus* (without the usual white streaks of the species) were taken in Tapachula, Chiapas, and two in Lake Catemaco, Veracruz, Mexico, the majority of *cinctus* being red or red and black. In Colima, Mexico, seven of 32 *auctus* were mostly black, but in Cuernavaca, Mexico, all 26 specimens were the black and red form. In *quinquepunctatus* of the United States, the black phase (with some red on the pronotum) has been found

only in Iowa and in six southeastern states, whereas the black and red phase occurs in all the central and eastern states (see map, fig. 43).

The specimens mentioned thus far are not spotted with separate white dots; several species that do have white dots can also be black or red in ground color, but localities have not been noted for them; they are *albopunctatus* Champion, *confusus* Chevrolat, *maculifer* (Fahraeus), and *varieguttatus* Chevrolat.

CHECKLIST OF SPECIES OF *RHODOBAENUS* OF NORTH AMERICA

(In the order in which they appear in the text.)

1. *tenuiscapus* Champion
2. *varieguttatus* Chevrolat
3. *pustulosus* (Gyllenhal)
 punctatus (Gyllenhal)
 puncticollis Chevrolat
 alboscuteallatus Chevrolat
4. *valens* Champion
5. *guttatus* (Fahraeus)
 unidentatus Champion, new synonymy
6. *albopunctatus* Champion
7. *buchanani*, new species
8. *quintus*, new species
9. *mas*, new species
10. *latens*, new species
11. *nigrolineatus* Chevrolat
 suturellus Chevrolat
12. *confusus* Chevrolat
13. *cinereiventris* Champion
14. *incertus* (Champion)
 dentifer Champion, new synonymy
15. *subcylindricus* (Champion)
16. *suturalis* (Gyllenhal)
 saucius (Gyllenhal)
 implicatus Chevrolat
 crucicollis Chevrolat
 miniatus Chevrolat
 nigricornis Chevrolat
 bipunctatus Chevrolat
 quinquemaculatus Chevrolat
17. *nigropictus* Champion
18. *rhinopilus* Vaurie
19. *lineiger* Chevrolat
20. *inopinatus*, new species
21. *cylindricollis* Champion
22. *nigrosignatus* Champion
23. *brevirostris* Champion
 veraepacis Champion
24. *adpersus* (Gyllenhal)
 impressus Chevrolat
25. *maculifer* (Fahraeus)
 centromaculatus Chevrolat
26. *nebulosus* Champion
27. *biundulatus* Champion
28. *andreae* Chevrolat
29. *arcuatus* Champion
30. *leucographus* (Fahraeus)
31. *bellus*, new species
32. *sanguineus* (Gyllenhal)
 lineatocollis (Gyllenhal)
 haematidus Chevrolat
33. *melas*, new species
34. *bisignatus* Champion
35. *ypsilon* Chevrolat
36. *deltoides* Chevrolat
37. *pantherinus* Champion
38. *cariniventris* Champion
39. *bicinctus* Chevrolat
40. *olivaceus* Champion
41. *subcristatus* Champion
42. *nigrofasciatus* (Champion)
43. *cinctus* (Gyllenhal)
 rubellus (Gyllenhal)
 funerarius Chevrolat
 obliquus Chevrolat
 maculipes Champion, new synonymy
44. *pulchellus* (Gyllenhal)
 duodecimmaculatus Chevrolat
 metropolitanus Chevrolat
 niger Champion, new synonymy
45. *tredecimpunctatus* (Illiger)

- cribrarius* (Fabricius)
quatuordecimpunctatus (Panzer)
leptocerus (Panzer)
 46. *quinquepunctatus* (Say)
 triangularis Champion, new synonymy
 47. *auctus* Chevrolat
 elegans Chevrolat, new synonymy
 corniculatus Chevrolat, new synonymy
 graphicus Champion, new synonymy
 48. *lebasii* (Gyllenhal)
 variabilis (Gyllenhal)
 implicatus (Gyllenhal)
 femoralis Chevrolat
 vittatipennis Champion
 immaculatus Champion
 49. *thoracicus* (Gyllenhal)
 50. *nigripennis* Champion
 51. *rubrovittatus* Champion
 52. *aterrimus* (Champion)
53. *mundus* (Champion)
 54. *octocostatus* (Champion)
 55. *dentirostris* (Champion)
 56. *rubicundus* Champion
 57. *auriculatus* (Chevrolat)
 58. *nawradii* (Kirsch)
 59. *cuneatus* Champion
 60. *plicatus* Champion
 61. *stigmaticus* (Fahraeus)
 62. *sexguttatus* Champion
 63. *v-nigrum* Champion
 64. *interruptus* Champion
 tessellatus Champion
 65. *fortirostris* Champion
 66. *melanocardius* (Linnaeus)
 crassipes Champion
 67. *quadripunctatus* (Chevrolat)
 68. *pinguis* Champion
 69. *saginitus* Champion

SYSTEMATICS

Rhodobaenus LeConte, 1876, p. 332 (type, by subsequent designation, *Curculio tredecimpunctatus* Illiger).

Homalostylus Chevrolat, 1885, p. 287 (type, by monotypy, *Sphenophorus latiscapus* Kirsch).

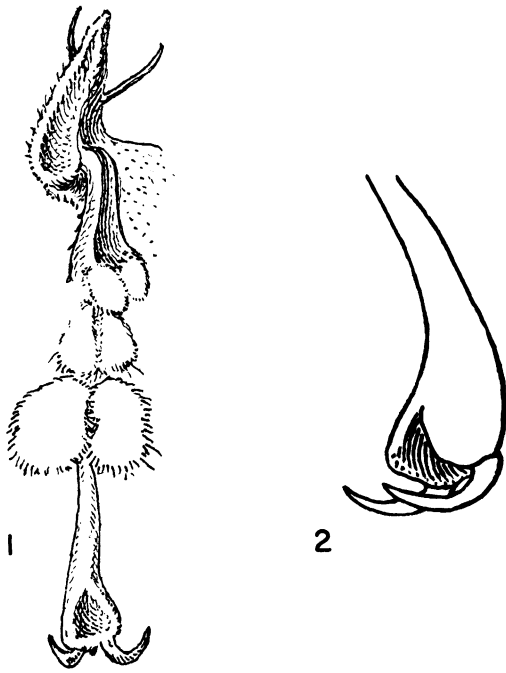
For the diagnosis and description of the genus, part 1 on the species of South America should be consulted (Vaurie, 1980). Following is a discussion of some characters pertaining to species found in North America.

The majority of species are about 10 mm. or less in length; 20 species are longer than 10 mm., with a few reaching 17 and 20 mm. Some species are entirely black, others are grayish; typical ones are red with black marks (see Color Dimorphism above). Characteristic of about half the species are white spots or dots surrounding the punctures; these dots are composed of dense, depressed, tiny setae; in some species they coalesce and form a symmetrical pattern of streaks. Another character present in about half the species (but not necessarily correlated with the white dots) is the presence or absence at the base of the pronotum of a transverse or roundish depression. I have used these two characters (but with consid-

erable leeway) for determining the sequence of species and their relationships. Thus, species 1 through 31 in the Checklist have white spotting; species 32 through 56 lack the spots; and in about half the species in each category the pronotal depression is present. The remaining 13 species (the former "*nawradii*" group), with or without spots or depression, differ in lacking the excavated claw segment (see below).

The rostrum is short and wide in several species, but is generally narrow, long (as long as or longer than the pronotum), and subcylindrical. In a number of species rostral setae are present. In most species the rostrum is longer in females than in males, thus the antennal scape, when measured against the length of the rostrum, appears shorter in females. Measured from its emergence from the antennal groove, the scape can be from one-half to three-fourths the length of the rostrum, in some cases nearly as long. It is normally narrow, but is wide and dilated in six species. (In South America the scape is wide in more species, 11 of 29.)

The gular peduncle at the ventral apex of the rostrum, viewed laterally, is flat and horizontal in most males and angulate or ex-



FIGS. 1, 2. Tarsus of majority of *Rhodobaenus*, with excavated claw segment. 1. Ventral view. 2. Lateral view of claw, enlarged.

tended forward in most females, but exceptions occur.

The antennal club is more or less dilated and compressed; in a few species it is elongate-oval. The spongy apex of the club differs in length on each side (away from or toward the body). The length of the second segment of the antennal funicle and the width of the scutellum do not appear in the descriptions but are mentioned where significant.

The pygidium, which generally extends well beyond the apex of the abdomen, is either evenly convex, or, more often, distinctly tumid medially and apically; in all species there are two transverse rows of setae, one row at the extreme apex and one behind it.

In some species the difference in the shape of the hind femora (linear or widened to apex) is readily grasped, but in other species it is ambiguous and variable. The front femora show the same differences.

The tarsi of the last seven species of the Checklist are dorsally tomentose (with dense, appressed setae) instead of glabrous; ventrally they are from one-half to three-fourths spongy-hairy instead of entirely so. These seven species as well as the preceding six ("nawradii" group), and also *incertus* and *dentirostris*, lack the excavation of the claw segment (figs. 1, 2) present in the remaining species of the genus.

The ventral tubercle of males, which is situated at the middle or front of the first segment of the abdomen, has been found in seven species (*arcuatus*, *bicinctus*, *cariniventris*, *maculifer*, *melas*, *nebulosus*, *sanguineus*), but it is not invariably present in all males of a species, and in some individuals it is minute; it is elongate and carinate or round. (In South America 11 of the 29 species possess it.)

The aedeagus does not differ radically among the species; its apex, viewed dorsally, is truncate or feebly or distinctly emarginate and, in one species (*valens*), slightly produced. In profile view, the aedeagus is either the same width throughout or wider or narrower at the apex. The apex, in profile view, is acuminate or rounded or blunt.

The characters outlined above are used in the key that follows. Because of individual variation and color phases, a number of species appear twice, even three times, in the key.

KEY TO THE SPECIES OF *RHODOBAENUS* IN NORTH AMERICA

1. Rostrum short, wide, from apex to front of antennal groove only three to four times longer than wide (fig. 28) 2
- Rostrum long, many times longer than wide 6
2. Pronotum, excluding apical or basal constriction, with sides subparallel (fig. 9); elytra with velvety black angular and oblique patches 3
- Pronotum with sides narrowing to apex, or arcuate; elytra with black markings not angular or oblique 4
3. Pygidium, viewed laterally, with apex abruptly, bulbously tumid, extending well beyond apex of abdomen; viewed

- dorsally, subacuminate; hind tibiae at apex feebly arcuate; pronotum with base feebly depressed
 *nigrosignatus* Champion
 Pygidium, viewed laterally, with apex feebly tumid; hind tibiae straight; pronotum convex or flat
 *cylindricollis* Champion
4. Yellowish; elytra without white dots around punctures; femora distinctly wider at apex than at base
 *lineiger* Chevrolat
 Reddish or grayish elytra with white dots of minute setae around punctures; femora about same width throughout ... 5
5. Pronotum depressed in front of base; length 8 to 11 mm.
 *brevirostris* Champion
 Pronotum convex, not depressed; length 7 to 8 mm. ... *inopinatus*, new species
- 6(1). Antennal scape normal and narrow ... 7
 Antennal scape as wide as or wider than one-half width of apex of rostrum ... 64
7. Elytra with eight elevated black costae or ribs alternating with depressed interspaces .. *octocostatus* (Champion)
 Elytra smooth, without elevated costae 8
8. Small (4.5 to 6 mm.); pronotum narrow, elongate, red with white dots, three black stripes, and, from base extending forward, two short, yellowish streaks, also yellow dots at middle; basal impression, if present, feeble; head between eyes transversely deeply incised; hind femora with upper (or posterior) margin feebly sinuate, not quite straight
 *ypsilon* Chevrolat
 Not agreeing with all statements above 9
9. Hind femora arcuate, long, extending beyond apex of pygidium; eyes short, narrow, not wider than width of antennal club; dorsum reddish with scattered whitish dots; elytra subtriangular, much wider than pronotum, narrowing strongly to apex where subapical calluses abrupt, prominent (fig. 17)
 *rubicundus* Champion
 Not agreeing with all statements above 10
10. Tarsi with claw segment between claws ventrally excavated or bilamellate (figs. 1, 2); 4 to 15 mm. 11
 Tarsi with claw segment between claws ventrally smooth; 10 to 20 mm. ... 67
11. Antennal club with spongy apex only one-fourth or one-fifth length of club and pronotum red with single black medial stripe *suturalis* (Gyllenhal)
 Antennal club with spongy apex longer than stated above, but if doubtful, then pronotum not as described 12
12. Pronotum convex or flattened 13
 Pronotum transversely depressed near base 47
13. Pronotum with disc red; rostrum strongly arcuate, ventrally with long, curling setae (abraded in some specimens); elytra dark red or red with black areas medially and laterally ... *rhinopilus* Vaurie
 Pronotum, rostrum, and elytra not all as stated above 14
14. Dorsum without definite white dots around punctures 15
 Dorsum with punctures encircled by whitish dots, or dorsum with white streaks 30
15. Larger (9 to 15 mm.) and elytra entirely black or entirely red 16
 Smaller (5 to 9.5 mm.) and elytra not entirely red 17
16. Black, black suffused with red, or red with black pronotal stripe; pronotum convex at middle, feebly flattened toward base; elytra with intervals impunctate but striae densely punctate; antennal club elongate, with spongy apex three-fourths length of club
 *mundus* (Champion)
 Entirely black; pronotum flattish; elytra with intervals finely punctate in single or double rows but striae impunctate; antennal club roundish, spongy apex not more than one-half length of club
 *aterrimus* (Champion)
17. Elytra entirely black (or very dark red) 18
 Elytra with at least some red 22
18. Prosternum laterally with black spot; antennal scape not longer than funicle; antennal club with spongy apex about one-third length of club
 *thoracicus* (Gyllenhal)
 Prosternum without lateral black spot; antennal scape longer than funicle; antennal club with spongy apex one-half or more length of club 19
19. Pronotum red with median black stripe and two or more black spots
 *nigripennis* Champion (part)
 Pronotum black or dark red 20

20. Hind tarsus with third segment widely dilated (at apex three times wider than second segment); second segment shorter than third black phase of *cinctus* (Gyllenhal) (part)
Hind tarsus with third segment at apex only slightly wider than second; second segment as long as third 21
21. Pronotum convex; sides arcuate; rostrum at base widened and humped; basal dilation punctate, not sulcate; male with aedeagus carinate ventrally black phase of *lebasii* (Gyllenhal) (part)
Pronotum flattish, especially at base; sides subparallel to near apex; rostrum at base not widened or humped; basal dilation sulcate; male with aedeagus smooth ventrally black phase of *pulchellus* (Gyllenhal) (part)
- 22(17). Small (6 to 7.5 mm.), elongate, parallel-sided; elytra, including long, conical pygidium, twice length of pronotum and not wider; pronotum black with sides or apex narrowly red; elytra black with sixth interval red, or with more intervals red .. *rubrovittatus* Champion
Small or large, not agreeing with all statements given above 23
23. Elytra with short tenth interval and part or all of ninth red 24
Elytra with more red than stated above 25
24. Third tarsal segment feebly dilated, shorter than second segment; femora black; front and hind femora distinctly linear; Mexico to Panama black phase of *auctus* Chevrolat (part)
Third tarsal segment widely dilated, as long as or longer than second segment; femora generally broadly red or with red spot at middle; front and hind femora wider at apex (clavate); Canada, United States, northern Mexico black phase of *quinquepunctatus* (Say) (part)
25. Elytra with apical third black from side to side (figs. 59–61); pronotum generally with narrow median black stripe and four small black spots *lebasii* (Gyllenhal) (part)
Elytra with apical third not entirely black; pronotum various 26
26. Femora red with black spot; if spot not evident, then elytra with eight round or elongate black markings in addition to lateral or apical black spots (fig. 14) ..
..... *cinctus* (Gyllenhal) (part)
Femora black; elytra various 27
27. Front and hind femora linear, same width at base and apex (Mexico and Central America) 28
Front and hind femora clavate, wider at apex than at base (extreme northern Mexico, United States, and Canada) ..
..... 29
28. Pronotum uniformly convex, scarcely longer than wide; sides arcuate from base to near apex; rostrum humped and wider at base; basal dilation generally not sulcate; elytra with sides tapering feebly to apex
..... *auctus* Chevrolat (part)
Pronotum (viewed laterally) flattened feebly toward base, longer than wide; sides subparallel; rostrum evenly convex, not humped at base, same width throughout; basal dilation sulcate; elytra with sides subparallel
..... *pulchellus* (Gyllenhal) (part)
29. Elytra with apex and suture in all or in part black; rostrum with basal dilation not or rarely sulcate; pronotum with median black mark generally elongate and distinctly larger than other spots; aedeagus ventrally with short or long median keel
..... *quinquepunctatus* (Say) (part)
Elytra with apex and suture red; rostrum with basal dilation deeply sulcate; pronotum with median black mark generally round, not larger than other spots; aedeagus ventrally smooth ...
..... *tredecimpunctatus* (Illiger)
- 30(14). Dorsum with white dots merged into solid streaks 31
Dorsum with white dots separate, not merged 32
31. Hind tarsus with second segment as wide as long and much shorter than third; elytra basally with from one to three short white streaks that are joined to white streaks surrounding median black marks (fig. 14), but streaks can be interrupted with wear
..... *cinctus* (Gyllenhal) (part)
Hind tarsus with second segment longer than wide, as long as third; elytra with short white streaks on all intervals in basal and apical areas, leaving dark center with sparse white dots
..... *confusus* Chevrolat

32. Pronotum gray or blackish, subconical (fig. 30), distinctly narrower than elytra; sides oblique to apex without curvature; base bisinuate; elytra with median dark band evident to naked eye *tenuiscapus* Champion
Pronotum gray, blackish, red or brownish; sides arcuate to apex or subparallel; base straight or feebly arcuate; elytra without median black band 33
33. Antennal scape shorter than funicle, its apex scarcely reaching to middle of rostrum; antennal club with spongy apex one-third or less length of club; small (6 to 6.5 mm.) .. *nigropictus* Champion
Antennal scape as long as or longer than funicle, its apex reaching beyond middle of rostrum; antennal club with spongy apex longer than one-third of club; larger than 6.5 mm. 34
34. Gular peduncle under apex of rostrum, viewed laterally, emarginate between two tiny sharp angles (females) 35
Gular peduncle, viewed laterally, flat or rounded, or angulate in front only (males and females) 36
35. Pronotum scarcely longer than wide; basal margin at middle feebly depressed (not evident in all specimens); gular peduncle with angles less sharp; pygidium with setose, cristate, median white line; rostrum finely punctate, not setose .. *pustulosus* (Gyllenhal) (part)
Pronotum distinctly longer than wide; basal margin not depressed; gular peduncle with angles very sharp; pygidium with setae, if present, not concentrated medially; rostrum coarsely punctate and setose
..... *varieguttatus* Chevrolat (part)
36. Rostrum ventrally behind apex with each side feebly, obtusely sinuate;¹ gular peduncle of female in front of sinuation with pendant tooth curving backward (fig. 32); dorsum of fresh examples covered with uniform enamel-like glaze through which show whitish dots *guttatus* (Fahraeus)
Rostrum ventroapically not sinuate; gular peduncle with tooth, if present, projected forward; dorsum not glazed 37
37. Rostrum feebly arcuate or almost straight (fig. 37) 38
- Rostrum strongly arcuate and/or humped at base (figs. 34, 36) 43
38. Pygidium medially with line of white setae, or pronotum at middle of basal margin feebly, narrowly impressed (creased), or scutellum white, setose; venter with yellowish enamel-like glaze *pustulosus* (Gyllenhal) (part)
Not agreeing with all characters given above 39
39. Pronotum in great part black (in basal half or three-fourths); sides in front arcuate to apex; rostrum straight, distinctly shorter, from basal fovea to apex, than pronotum; elytra red with eight to 12 black marks; white dots small or faint; aedeagus at middle of apex triangular (figs. 22, 23); large (11.5 to 14.5 mm.) *valens* Champion
Not agreeing with all statements above 40
40. Antennal funicle with second segment longer than wide; elytra black, or red with black spots (rarely entirely red) 41
Antennal funicle with second segment as wide as long; elytra red (suture can be black) 42
41. White dots of pronotum and elytra of approximately same size; front and hind femora virtually linear, gradually widened to apex; pygidium strongly tumid and bulbous at apex
..... *varieguttatus* Chevrolat (part)
White dots of pronotum generally smaller than those of elytra (one-half); front and hind femora twice as wide before apex as at base; pygidium feebly convex *nigrolineatus* Chevrolat (part)
42. Aedeagus with apex strongly sclerotized, hollowed out, in profile view widening from base to apex (figs. 24, 26); pronotum feebly narrower than elytra and with three black stripes; sides arcuate from base to apex ... *mas*, new species
Aedeagus with apex membranous medially, in profile view of same width throughout; pronotum distinctly narrower than elytra and with median black spot or short stripe; sides parallel to beyond middle, thence arcuate to apex *quintus*, new species
- 43(37). Mostly gray or black; larger (7.5 to 10.5 mm.); pronotum with one stripe, if any 44

¹ The sinuation is present on the sides; it is not part of the gular peduncle.

- Mostly red; smaller (6 to 9 mm.); pronotum with three black stripes 45
44. Pronotum distinctly narrower than base of elytra, with narrow, feebly elevated median stripe; pygidium squarish, feebly convex, with apex truncate; elytra with discal punctures widely separated; hind tarsi with claw segment equal in length to first segment
 *nigrolineatus* Chevrolat (part)
 Pronotum scarcely if at all narrower than elytra; median stripe, if present, flat; pygidium elongate, medially tumid, with apex subacuminate; elytra with punctures generally dense (fig. 6); hind tarsi with claw segment distinctly longer than first segment
 *cinereiventris* Champion
45. Hind femora of equal width at base and apex; middle coxal interspace about one-fifth or one-fourth diameter of coxae; rostrum strongly humped at base, bent backward, narrower at apex (fig. 34) *latens*, new species
 Hind femora wider at apex than at base; middle coxal interspace only one-third diameter of coxae; rostrum evenly arcuate, same width throughout (fig. 36) 46
46. Hind femora gradually widened to apex; pronotum convex throughout, longer (two-thirds length of elytra), sides subparallel .. *albopunctatus* Champion
 Hind femora clavate, twice as wide at apex as at base; pronotum mediobasally feebly flattened, shorter (one-half length of elytra), subconical, sides oblique from base to apex (fig. 5) *buchanani*, new species
- 47(12). Black or gray; pronotum deeply impressed near base, distinctly narrower than base of elytra; prosternum behind front coxae bituberculate, prominent, visible when viewed in profile (fig. 31); mesosternal process at apex nearly as wide as one-half diameter of coxae; punctures indicated by whitish dots; scutellum broadly triangular
 *adspersus* (Gyllenhal)
 Not agreeing with all statements given above 48
48. Dorsum without definite white dots around punctures 49
 Dorsum with punctures encircled by whitish setose dots, or with dots merged into streaks 57
49. Gray or black, no red 50
 Red, or red with black 52
50. Rostrum dorsally in front of basal dilation either covered with bristly bronze setae (females), or this area tomentose with minute setae visible at high magnification (males) .. *subcristatus* Champion
 Rostrum dorsally not setose 51
51. Larger (8 to 13 mm.); femora twice as wide at apex as at base; gray (black if denuded or greased) with six indistinct dark spots *olivaceus* (Olivier)
 Smaller (6.5 to 8.5 mm.); femora about same width throughout; jet black *melas*, new species
- 52(49). Elytra entirely black; pronotum red with narrow median stripe and two laterobasal marks black; base at middle feebly flattened
 *nigripennis* Champion (part)
 Elytra and pronotum not both as described above 53
53. Elytra, except for scutellum, red *sanguineus* (Gyllenhal)
 Elytra red with black or black with at least some red 54
54. Pronotum with at least some black spots (fig. 13) *pantherinus* Champion
 Pronotum striped with black or entirely black, not spotted 55
55. Aedeagus, viewed laterally, narrowing to subacuminate apex (fig. 25); male with ventral tubercle, and rostrum ventrally smooth; elytra either red with six spots and subapical band black (four central spots can be merged into band or subapical band can be divided into spots), or elytra black with humeri red; not found in Mexico .. *bicinctus* Chevrolat²
 Aedeagus, viewed laterally, widening feebly to blunt, rounded apex (fig. 24); male without ventral tubercle, but with rostrum ventrally sparsely setose; elytra as described in couplet that follows; Mexico and Central America 56
56. Rostrum long, narrower than apex of front femur, generally bright red, that of female distinctly longer than pronotum, almost straight (fig. 35); elytra with outer intervals lined or spotted

² In *bicinctus*, *bisignatus*, and *deltoides* the pattern of the elytra can be nearly identical, but each species has a typical pattern.

- with black, apex black; pronotum with three black stripes
 *deltoides* Chevrolat
 Rostrum shorter, wider, black, arcuate (fig. 36); elytra either, typically, red with two black spots across middle, or black with irregular red suffusions; pronotum with one black stripe
 *bisignatus* Champion
- 57(48). Dorsum with white or yellowish dots merged into solid, generally symmetrical streaks 58
 Dorsum with white dots separate 60
58. Larger (10 to 11 mm.); pronotum basally with deep elliptical hole; elytra brownish, with streaks forming oblique basal and subapical bands, leaving dark, diamond shaped center with scattered dots (fig. 10) *biundulatus* Champion
 Smaller (6.5 to 7.5 mm.); pronotum basally with shallow, transverse depression; elytra reddish or purplish with black stripes or white dots as well as white streaks 59
59. Rostrum ventrally glabrous; elytra dark red with large black spots (fig. 12); mesosternal process narrower than apex of rostrum *bellus*, new species
 Rostrum ventrally setose; elytra purplish with longitudinal black stripes (fig. 11); mesosternal process wider than apex of rostrum *leucographus* (Fahraeus)
- 60(57). Antennal club with spongy apex about one-third length of club; front and hind femora scarcely wider at apex than at base; mesosternal process between middle coxae as wide as funicular segment *arcuatus* Champion
 Antennal club with spongy apex one-half or three-fourths length of club; front and hind femora twice wider before apex than at base; mesosternal process distinctly wider than funicular segment 61
61. Antennal club with dividing line between spongy apex and horny base angular (fig. 19) *andreae* Chevrolat
 Antennal club with dividing line between spongy apex and horny base arcuate or straight (figs. 20, 21) 62
62. Elytra red with two or three black spots extending obliquely from humerus to middle of suture (spots merged in some specimens); also lateral black spots (fig. 56) *cariniventris* Champion
 Elytra gray, purplish, or faintly reddish, with black spots, if present, not set obliquely as described above 63
63. White dots small, inconspicuous; each elytron with three large, clearly defined, velvety dark spots (in some specimens another smaller spot); mouse gray or purplish ... *maculifer* (Fahraeus)
 White dots larger, nearly filling elytral intervals; each elytron with three or four ill-defined, faint dark spots under filmy covering; reddish or grayish
 *nebulosus* Champion
- 64(6). Pronotum convex or flattened 65
 Pronotum transversely impressed near base 66
65. Antennal scape widening from base to apex; apex nearly as wide as apex of rostrum; pygidium feebly convex; 12 to 18 mm. *incertus* (Champion)
 Antennal scape of same width throughout, as wide as only one-half apex of rostrum; pygidium strongly, abruptly tumid; 8 to 9.5 mm
 *subcylindricus* (Champion)
66. Antennal scape wider than rostrum; elytra distinctly longer than pronotum, gray with oblique median black band (also apical band in some specimens)
 *nigrofasciatus* (Champion)
 Antennal scape not quite as wide as rostrum; elytra scarcely, if at all, longer than pronotum, dark red with faint black areas basally and apically (fig. 16) *dentirostris* (Champion)
- 67(10). Rostrum at base, viewed dorsally, not dilated over antennal groove as is normal (can be circularly dilated in front of groove); male with pronotum behind front angles with cuplike depression; female with rostrum longer than pronotum by one-third
 *auriculatus* (Chevrolat)
 Rostrum at base, viewed dorsally, angularly or obtusely dilated over antennal groove; if doubtful, other characters not as stated above 68
68. Tarsi dorsally glabrous; pronotum depressed near base; antennal club with spongy apex one-half or more length of club; tarsi ventrally virtually entirely spongy-pubescent 69
 Tarsi dorsally tomentose (with depressed setae); pronotum flat or convex; antennal club with spongy apex one-third or less length of club; tarsi ventrally

- spongy-pubescent on only apical three-fourths or one-half 73
69. Pronotum with sides abruptly constricted at apex (creased), especially noticeable in lateral vein; elytra generally transversely depressed or plicate in front of and behind middle *plicatus* Champion
Pronotum with sides feebly narrowed at apex but smooth, not creased; elytra generally smooth 70
70. Antennal groove with posterior border distant from eye by only width of scape; white dots present; aedeagus with apical border very narrow *sexguttatus* Champion
Antennal groove with posterior border generally distant from eye by width of club; no white dots; aedeagus with apical border wide 71
71. Elytra with eight clearly defined black spots (two medio-lateral spots can be missing); pygidium with apical setae sparse, yellow *stigmaticus* (Fahraeus)
Elytra either without black spots, or with two small or large median spots (humerus and apex vaguely black in some specimens); pygidium with apical setae forming dense tufts 72
72. Elytra typically with two bold black spots covering most of center, and subapical black band; pygidium convex, with apical setae long, threadlike *nawradii* (Kirsch)
Elytra typically immaculate, but faint median and subapical black can be present; pygidium tumid, acuminate, with apical setae generally short, thick *cuneatus* Champion
- 73(68). Third tarsal segment ventrally with spongy-pubescent covering three-fourths of surface 74
Third tarsal segment ventrally with spongy-pubescent covering only one-half of surface 78
74. Rostrum strongly arcuate, and in profile at least twice as wide at base as at apex *fortirostris* Champion
Rostrum feebly arcuate, and in profile only slightly, if at all, wider at base than apex 75
75. Elytra with common velvety black, heart-shaped median patch outlined by whitish streaks or dots; small (8 to 9 mm.) (fig. 18) *v-nigrum* Champion
Elytra not as described above 76
76. Large (15 to 22 mm.); pronotum convex; viewed dorsally, wider in front of middle where sides arcuate to apex; base bisinuate; elytra with yellowish dots condensed into two transverse, depressed bands before and behind middle, leaving darker space between *interruptus* Champion
Smaller (10 to 16 mm.); pronotum flat; viewed dorsally, sides subparallel from base to near apex; elytra with filmy covering of white dots with black spots or bands showing through 77
77. Elytra with two distinct round black spots in front of middle and black subapical band *quadripunctatus* Chevrolat
Elytra with indistinct, oblique, V-shaped black mark at middle and black subapical band *melanocardius* (Linnaeus)
- 78(73). Elytra with two black indistinct spots at middle narrowing outward to edge of elytra, and subapical dark band; pronotum generally red with three black stripes *pinguis* Chevrolat
Elytra and pronotum without pattern; surface uneven, rough, tessellated *saginitus* Champion

DESCRIPTIONS OF THE SPECIES

Rhodobaenus tenuiscapus Champion

Figures 3, 30, 33

Rhodobaenus tenuiscapus Champion, "1909-1910" [1910], p. 128, pl. 6, figs. 15, 15a (lectotype, male, Azahar de Cartago, Costa Rica, here designated from four original specimens in British Museum, examined).

DIAGNOSIS: Large gray-black species with small white dots; differs from most species in having flat, conical pronotum with sinuate base, and long elytra, wider than pronotum, with faint dark bands.

RANGE: Costa Rica. (For 20 specimens examined, see Appendix.)

DESCRIPTION: Entirely gray or blackish, with white dots. Length 9 to 14 mm. Rostrum about as long as pronotum, humped at base, feebly arcuate, not wider than apex of front femur; that of male punctate; of female impunctate and, viewed laterally, wider at base than at apex; basal dilation dorsally deeply sulcate. Gular peduncle of male flat, tilted upward in front, feebly obtuse behind; of female angulate in front and behind (fig. 33).

Antennal scape sinuous, very narrow, nearly as long as rostrum and as funicle and club combined. Antennal club elongate, as wide as rostrum at apex; spongy apex more than one-half length of club. Antennal groove with border almost touching eye.

Pronotum longer than wide, conical, flat or feebly convex, sides oblique from base to apex without sinuation (fig. 30), opaque black with small white dots; base bisinuate. Elytra distinctly wider than, and almost twice length of, pronotum; intervals with white punctures widely separated; striae with them dense; vague darker bands at base, middle, and apex not invariably visible. Prosternum tumid in front of coxae, middle coxal interspace about one-half diameter of coxae. Femora, especially front femora, clavate. Pygidium feebly convex; apex broadly rounded.

Male: No ventral tubercle. Aedeagus with apex feebly emarginate; borders narrow; in profile apex obliquely rounded and feebly rolled backward.

REMARKS: Another species with a conical pronotum is *brevirostris* which differs in having a very short, wide rostrum and deeply impressed, not flat, pronotum. The lectotype is the specimen figured by Champion. One of each sex was dissected.

Rhodobaenus varieguttatus Chevrolat
Figures 37, 38

Rhodobaenus varieguttatus Chevrolat, 1885, p. 284 (Mexico; type, female, in Naturhistoriska Riksmuseum, examined).

DIAGNOSIS: Abundant white spotting on red or gray background and convex pronotum agree with *pustulosus* which is generally larger and stouter, and with *nigrolineatus* and *confusus* which are generally smaller. Female differs from other females except of *pustulosus* in having gular peduncle emarginate-angulate.

RANGE: Mexico, Guatemala, Costa Rica. (For 122 specimens examined, see Appendix.)

DESCRIPTION: Red or black with whitish dots. Length 8.5 to 11.5 mm. Rostrum, gular peduncle, antennal scape, club, and groove

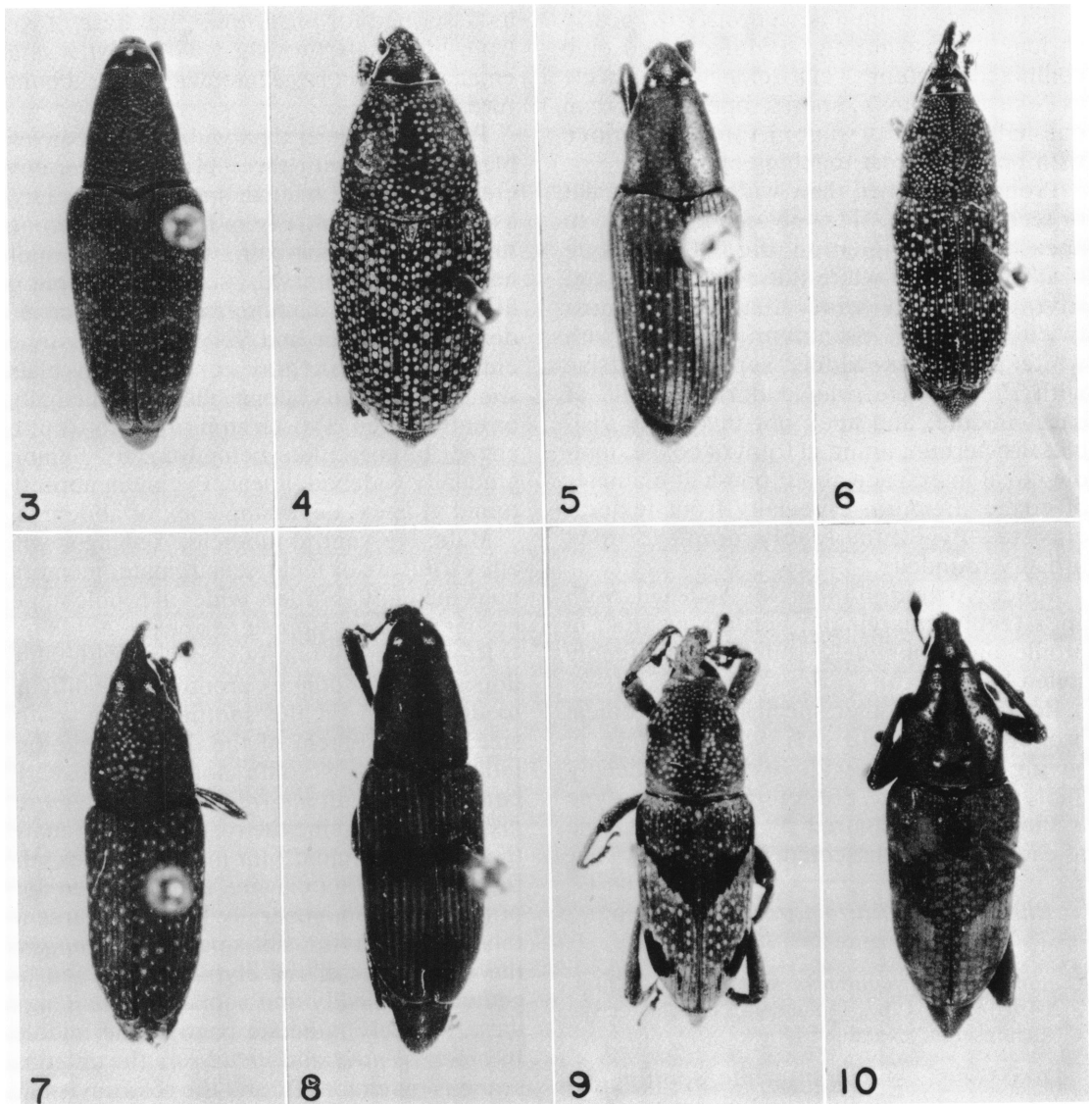
as described for *pustulosus*, but base of rostrum of female furnished with bristly setae emanating from large lateral and dorsal punctures.

Pronotum longer than wide, flat or convex, black, or red with three black stripes, covered with dense whitish spots about as large as spots of elytra. Elytra longer than pronotum by about one-half, with whitish spots narrower than intervals, separated by four or five times their diameter; spots smaller and denser on suture and very small on striae; entirely blackish gray, or red with black spots on humerus, along sides, and medially, or entirely red. Prosternum tumid in front of coxae, bituberculate behind coxae. Femora gradually widened, linear. Pygidium abruptly tumid at apex, surpassing apex of abdomen.

Male: No ventral tubercle. Aedeagus with apex truncate or feebly emarginate, membranous medially; borders wide; in profile upper border scarcely sloping to apex.

REMARKS: The various species with white dots and flat or convex pronotum are difficult to distinguish on the spotting alone as the size and placement of the dots vary among individuals, and some dots disappear. In comparison with *nigrolineatus*, *varieguttatus* differs in having the rostrum less arcuate, the pygidium tumid, not merely convex, the femora linear, not clavate, and the white dots of the pronotum generally larger, as large as those of the elytra, not smaller. In *confusus* the white dots of the elytra are merged together subapically and subbasally, leaving a dark, scarcely punctate band in the middle. In *cinereiventris* and *nebulosus* the antennal scape is much longer, and the rostrum is narrower, more arcuate, and longer. The rostrum of *varieguttatus* is feebly arcuate as in *quintus* and *mas*, not strongly as in *albopunctatus*, *buchanani*, and *latens*. (For comparison with *pustulosus*, see that species.)

The type specimen is grayish, without red, and the gular peduncle is less sharply angled than that of other females; no setae or punctures are visible at the base of the rostrum which is caked with mud or debris. In a series of 32 specimens from 10 miles south of Tonila, Colima, Mexico, only three speci-



FIGS. 3-10. *Rhodobaenus*, not to scale. 3. *R. tenuiscapus*. 4. *R. pustulosus*. 5. *R. buchanani*. 6. *R. cinereiventris*. 7. *R. subcylindricus*. 8. *R. inopinatus*. 9. *R. nigrosignatus*. 10. *R. biundulatus*.

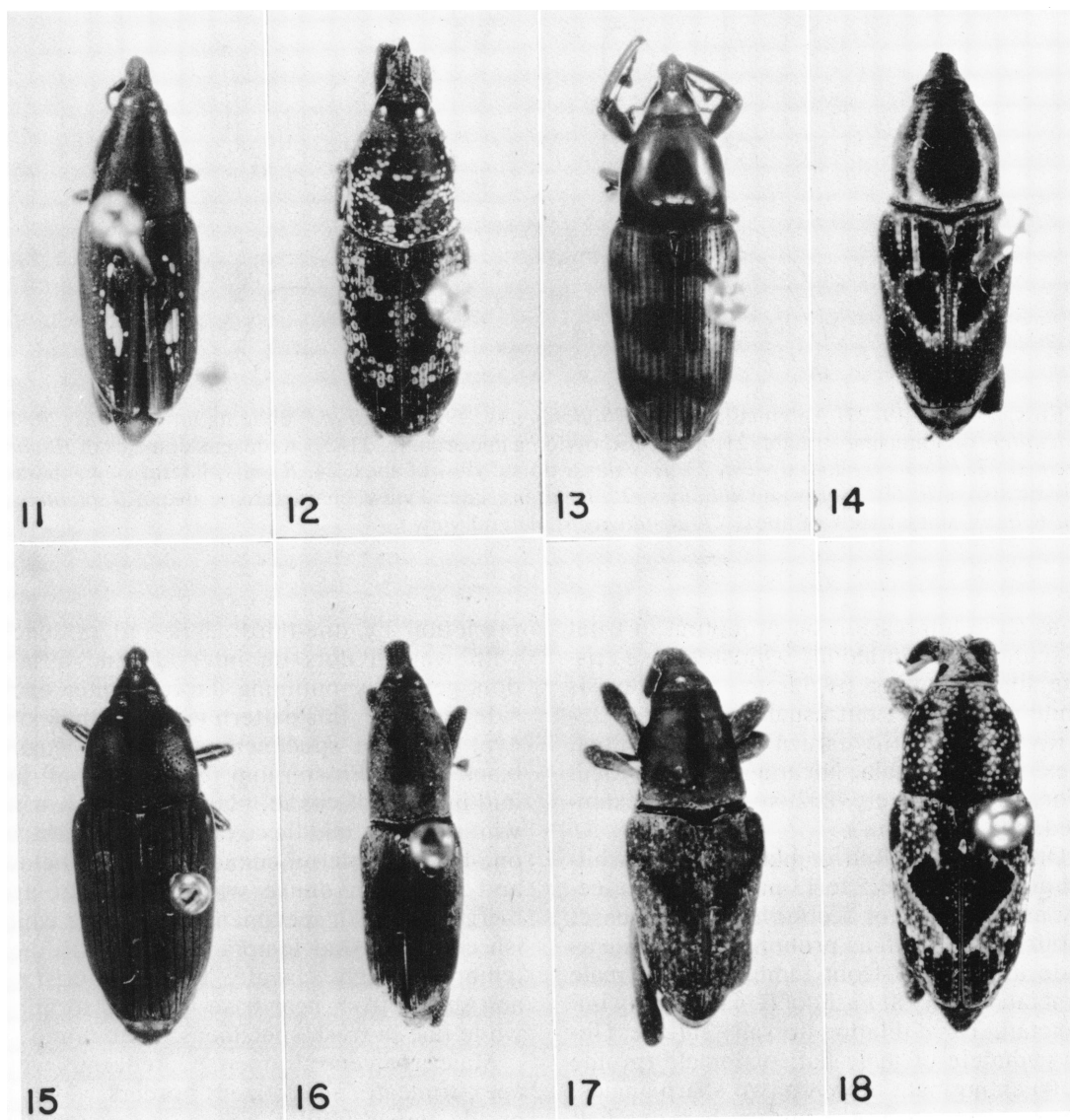
mens are blackish, the others being red with black marks. Six males were dissected.

BIOLOGY: A male with a label reading, "Uruapan, Michoacan, Mexico, Avocado Pest Survey LX 1973"; a second label reads, "Jarred from tree. Burgess. Brownsville, Tx."

Rhodobaenus pustulosus (Gyllenhal)
Figures 4, 39

Sphenophorus pustulosus Gyllenhal, 1838, p. 923
(Mexico; type, male, in Naturhistoriska Riksmuseum, examined).

Sphenophorus punctatus Gyllenhal, 1838, p. 923



FIGS. 11–18. *Rhodobaenus*, not to scale. 11. *R. leucographus*. 12. *R. bellus*. 13. *R. pantherinus*. 14. *R. cinctus*. 15. *R. mundus*. 16. *R. dentirostris*. 17. *R. rubicundus*. 18. *R. v-nigrum*.

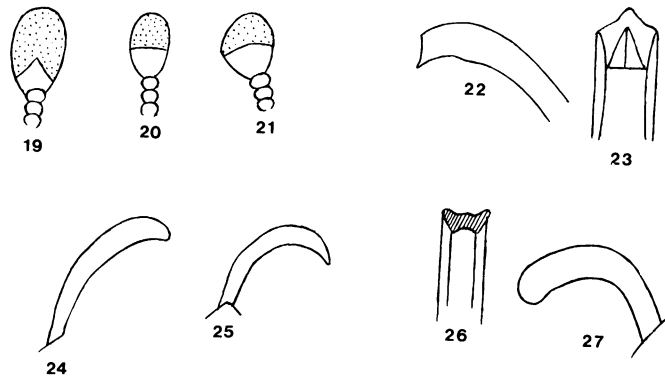
(Mexico; type in Naturhistoriska Riksmuseum; synonymized by Champion).

Rhodobaenus pustulosus var. *puncticollis* Chevrolat, 1885, p. 283 (Mexico; type in Naturhistoriska Riksmuseum, examined; synonymized by Champion).

Rhodobaenus alboscuteatus Chevrolat, 1885, p. 284 (Mexico; type, male, in Naturhistoriska

Riksmuseum, examined; synonymized by Champion).

DIAGNOSIS: Similar in black or red coloring and whitish dots to *variegatus*, but larger, more robust, with more convex, wider pronotum. Distinguished from *variegatus* and allied species either in having faint



FIGS. 19–27. 19–21. Antennal clubs of *Rhodobaenus*. 19. *R. andreae*, dividing line angular. 20. *R. maculifer*, dividing line straight. 21. *R. valens*, dividing line arcuate. 22–27. Aedeagus of males of *Rhodobaenus*. 22. *R. valens*, lateral view. 23. *R. valens*, dorsal view of apex. 24. *R. mas*, lateral view; characteristic also of *R. bisignatus* and *deltoides*. 25. *R. latens*, lateral view; characteristic also of *R. bicinctus*. 26. *R. mas*, dorsal view of apex. 27. *R. olivaceus*, lateral view.

transverse impression on pronotum in front of scutellum or in having whitish setose cristate line bisecting pygidium. Scutellum is white and setose, but usually abraded.

RANGE: Southwestern United States, Mexico, Guatemala, Nicaragua, Costa Rica. (For approximately 262 specimens examined, see Appendix.)

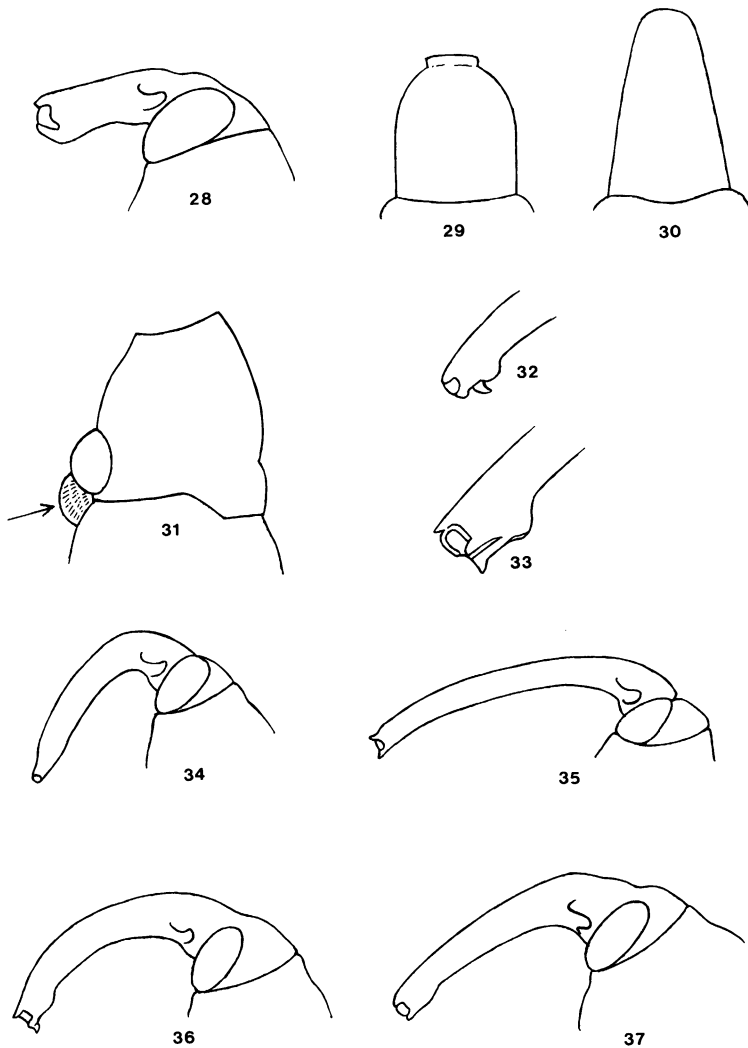
DESCRIPTION: Red or blackish with whitish dots. Length 8.5 to 13 mm. Rostrum feebly arcuate, not or feebly humped at base, about same length as pronotum, not quite as wide as apex of front femur; that of male punctate chiefly at base; of female mostly impunctate; basal dilation dorsally sulcate. Gular peduncle of male flat; of female (profile view) emarginate between two sharp angles. Antennal scape black, longer than one-half length of rostrum, slightly longer than funicle. Antennal club roundish, narrower than apex of rostrum; spongy apex about or less than one-half length of club. Antennal groove separated from eye by about width of apex of scape.

Pronotum convex, as wide at base as long, either dark red with three black stripes or entirely black, with irregularly spaced whitish punctures except for impunctate median space; at middle in front of basal margin feebly depressed, creased. Elytra longer than

pronotum by one-third, dark red or black with whitish dots on intervals and striae; dots generally outlining darker center each side of suture, this pattern visible with naked eye; in some specimens additional vague black areas. Prosternum feebly, if at all tumid in front of coxae, black or reddish with whitish spots; middle coxal interspace nearly one-half diameter of coxae; remainder below and legs with dense white dots that are merged, in fresh specimens, into dense whitish coating. Hind femora feebly, and other femora strongly clavate. Pygidium cristate and setose from near base to apex, forming white line in fresh specimens; apex tumid.

Male: No ventral tubercle. Aedeagus with apex truncate, sclerotized; borders wide; in profile upper border oblique to acuminate apex.

REMARKS: This large species is readily recognizable if the basal crease is present on the pronotum or the white line on the pygidium or the white scutellum. Many individuals, however, do not have the crease or it is hidden by the base of the elytra, and the white line is often abraded. There remains the rather mottled elytra with the large central dark spot outlined by white; this pattern should be viewed with the naked eye as it becomes unclear and diffused under the microscope.



FIGS. 28–37. Body parts of *Rhodobaenus*. 28. Short, wide rostrum, *R. inopinatus*; characteristic also of *R. brevisrostris*, *cylicollis*, *nigrosignatus*. 29. Broad pronotum, *R. quintus*. 30. Subconical pronotum, *R. tenuiscapus*. 31. Prominent base of prosternum, *R. adpersus*. 32. Sinuate sides of ventral apex of rostrum, and pendant tooth of female, *R. guttatus*. 33. Gular peduncle of female, *R. tenuiscapus*. 34–37. Rostrum. 34. *R. latens*, female. 35. *R. ypsilon*, female; characteristic also of female of *R. deltoides*. 36. *R. buehanani*, female; characteristic also of *R. albopunctatus*, *bisignatus*, and female of *nigrolineatus*. 37. *R. mas*, male; characteristic also of males of *R. nigrolineatus*, *quintus*, and *varieguttatus*.

Of the synonyms given above, *puncticollis* is a specimen in which the whitish dots are lacking, *punctatus* is also worn, and *albo-scutellatus* has the scutellum white and setose, a character that is normally worn or discolored.

Although *pustulosus* has been collected in Texas and Arizona, its occurrence in the United States is minimal. Blatchley and Leng (1916) wrote that Schwarz had recorded it from St. Augustine, Florida.

One male was dissected.

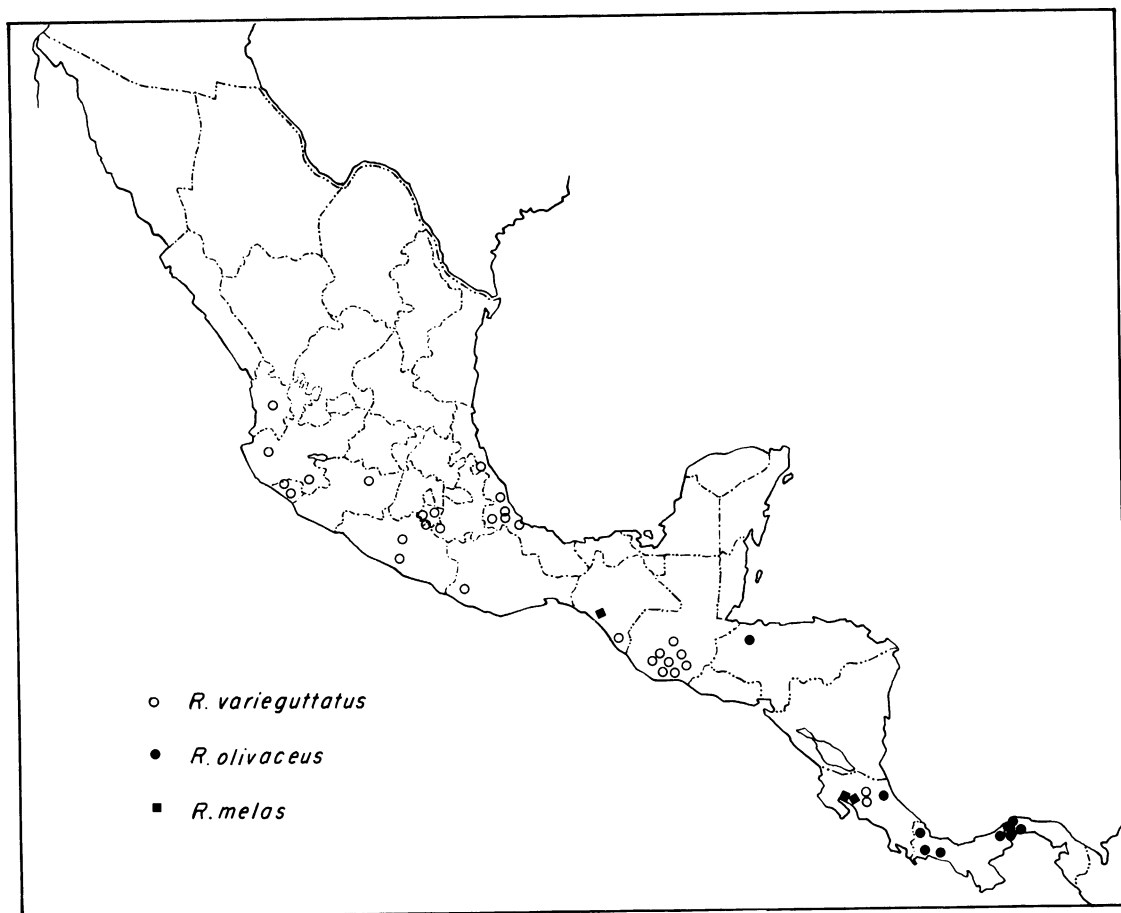


FIG. 38. Distribution of *Rhodobaenus varieguttatus*, *olivaceus*, and *melas*.

BIOLOGY: A specimen from Presidio, Texas, is labeled "in *Zexmenia brevifolia*."

Rhodobaenus valens Champion
 Figures 21–23

Rhodobaenus valens Champion, "1909–1910" [1910], p. 136, pl. 6, figs. 30, 30a, 31 (lectotype, male, Cuernavaca, Mexico, here designated from five specimens in British Museum, examined).

DIAGNOSIS: Similar to some *pustulosus* in large size, coloration, whitish dots, and short clavate femora, but differs in having rostrum shorter, wider, and straight, gular peduncle of female sinuate, but not emarginate be-

tween two angles, pygidium lacking median line of white setae.

RANGE: Known only from region of Cuernavaca, Mexico. (For 16 specimens examined, see Appendix.)

DESCRIPTION: Red and black with whitish dots. Length 11.5 to 14.5 mm. Rostrum black, shorter than pronotum, almost straight, not humped at base, almost as wide as apex of front femur; basal dilation dorsally sulcate. Gular peduncle of male flat; of female slightly sinuate and with tiny prominence in front. Antennal scape black, about three-fourths length of rostrum, slightly longer than funicle. Antennal club elongate, as wide as apex of rostrum; spongy apex about one-

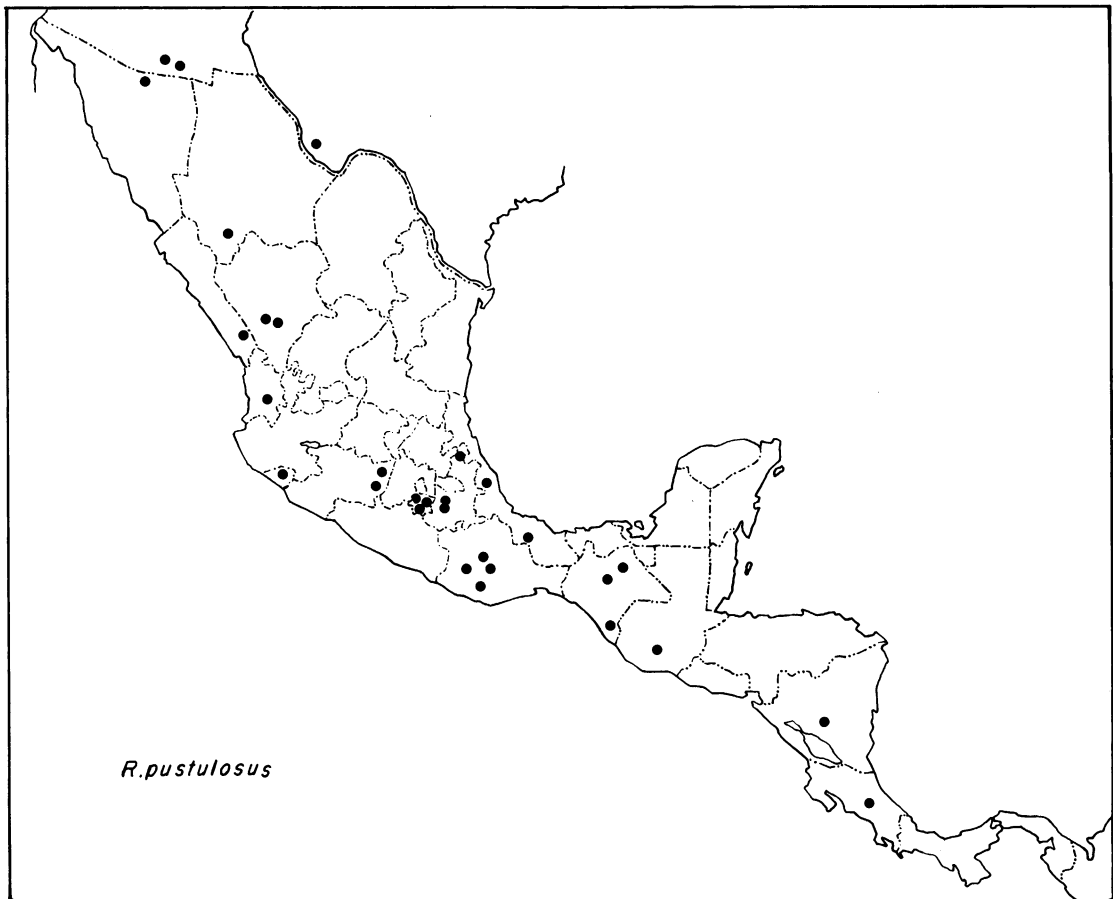


FIG. 39. Distribution of *Rhodobaenus pustulosus*.

half length of club. Antennal groove opening onto eye.

Pronotum strongly convex, scarcely, if at all, longer than wide, black with two dark red stripes not reaching base, and basal black band, sparsely punctate with faint whitish dots, or entirely black. Elytra longer than pronotum by one-third, dark red with humerus, scutellar area, three lateral spots, large median spot, and apex blackish; intervals sparsely punctate with whitish dots; striae vaguely whitish. Prosternum flat in front of coxae, tumid behind, short (from coxae to apex about one and one-half times diameter of coxae); middle coxal interspace nearly one-half diameter of coxae; remainder

below and legs black, but metasternum reddish. Femora wider at apex than at base. Pygidium feebly tumid; apex narrowly rounded.

Male: No ventral tubercle. Aedeagus with apex projecting and sinuate medially, partly membranous; borders narrow; in profile apex blunt with turned down point.

REMARKS: This species is one of the largest in the genus. The white spots in *valens* are very small and faint in contrast to those of *pustulosus* and *varieguttatus*. The elytral pattern is quite similar to that of *varieguttatus* which differs chiefly in its longer, narrow pronotum and linear, not clavate, femora. The apex of the aedeagus of *valens*

differs from that of the other two species in having a feeble sinuation projecting medially.

The lectotype is the specimen figured by Champion (*loc. cit.*). Three males were dissected.

Rhodobaenus guttatus (Fahraeus)

Figures 32, 41

Sphenophorus guttatus Fahraeus, 1845, p. 247 (Mexico; type, male, in Naturhistoriska Riksmuseum, examined).

Rhodobaenus unidentatus Champion, "1909-1910" [1910], p. 139, pl. 7, figs. 1, 1a (lectotype, female, Amula, Guerrero, Mexico, here designated from four original specimens in British Museum, examined). New synonymy.

DIAGNOSIS: In fresh condition differs from other species in having entire body covered with uniform buffy or tan encrustation through which show tiny whitish punctures; when abraded, can be recognized by having each side of ventral apex of rostrum sinuate.

RANGE: Mexico. (For 21 specimens examined, see Appendix.)

DESCRIPTION: Black with white dots and clayey coating. Length 9.5 to 10 mm. Rostrum arcuate, about same length as pronotum, humped at base, sinuate at sides ventrally behind apex, narrower than apex of front femur; that of male punctate at base; of female very strongly arcuate, impunctate; basal dilation dorsally sulcate. Gular peduncle of male obtusely angulate in front, of female with sharp backward curved tooth in front of sinuation. Antennal scape straight, as long as three-fourths of rostrum, as long as funicle and club combined. Antennal club roundish, wider than rostrum; spongy apex slightly more than one-half length of club. Antennal groove separated from eye by about width of scape.

Pronotum longer than wide, convex, median space from base to apex impunctate; remainder with sparse, tiny punctures surrounded with whitish ring; base feebly sinuate. Elytra longer than pronotum by about one-third; color of clayey coating slightly darker than that of pronotum; whitish punctures larger, widely separated longitudinally

by six or more times their diameter; striae punctures scarcely visible. Prosternum feebly tumid in front of coxae, feebly tumid behind; middle coxal interspace one-third or more diameter of coxae. Femora gradually widened, feebly clavate. Pygidium feebly tumid at center, encrusted.

Male: No ventral tubercle. Aedeagus with apex slightly emarginate, hollowed out; borders wide; in profile apex rounded-truncate.

REMARKS: In the lectotype and other females of *unidentatus* in the British Museum the toothed gular peduncle and the sinuate sides of the rostrum behind it are exactly as in the female type of *guttatus*, and I therefore consider them conspecific. In several specimens the encrustation in abraded and the surface appears shiny black or dark red with, on the elytra, widely separated white spots; in specimens that lack the encrustation dorsally, it is generally present ventrally or on the pygidium or legs. In many individuals of *pustulosus* the venter is similarly encrusted, but the rostrum of both sexes and the aedeagus of *pustulosus* differ from those of *guttatus*. The lectotype of *unidentatus* is the specimen figured by Champion (*loc. cit.*). One male was dissected.

A pendant tooth occurs also in the female of *incertus* which differs chiefly in having the antennal scape widened.

BIOLOGY: Two females from Distrito Federal, Mexico, intercepted at Laredo, Texas, bear the notation "In *Dahlia* tubers."

Rhodobaenus albopunctatus Champion

Figures 36, 37, 40

Rhodobaenus albopunctatus Champion, "1909-1910" [1910], p. 138, pl. 6, figs. 36, 36a (lectotype, male, Panistlahuaca, Oaxaca, Mexico, here designated from six original specimens in British Museum, examined).

DIAGNOSIS: Bright red elytra, large, very sparse white dots, no black spots; differs from *mas* and *quintus* in having rostrum arcuate; from *latens* in having pronotum more elongate; from *buchanani* in having hind femora linear, not clavate. (See table 1.)

RANGE: Mexico. (For six specimens examined, see Appendix.)

TABLE 1
Comparative Characters in Five Species of *Rhodobaenus*

	<i>albopunctatus</i>	<i>buchanani</i>	<i>quintus</i>	<i>mas</i>	<i>latens</i>
Rostrum (figs. 34, 36, 37)	Strongly arcuate	Strongly arcuate	Feebly arcuate	Feebly arcuate	Strongly arcuate, bent backward; narrowed at apex where dorsally flattened
Front and hind femora	Gradually widened to apex	Clavate, twice as wide before apex as at base	Gradually widened to apex	Gradually widened to apex	Linear, not widened at apex
Apex of pygidium	Tumid, narrowly rounded	Evenly convex, broadly rounded	Tumid, narrowly rounded	Tumid, narrowly rounded	Tumid, narrowly rounded
Middle coxal interspace	One-third diameter of coxae	One-third diameter of coxae	One-third diameter of coxae	One-third diameter of coxae	One-fourth or one-fifth diameter of coxae
Aedeagus, dorsal apex	Feebly emarginate, sclerotized	Feebly emarginate, medially membranous	Emarginate, medially membranous, flared outward	Strongly emarginate sclerotized, hollowed out (fig. 26)	Subtruncate, sclerotized
Aedeagus, lateral apex	Narrowing to rounded apex	Narrowing to rounded apex	Narrowing to rounded apex	Widening to rounded apex (fig. 24)	Narrowing to subacuminate apex (fig. 25)

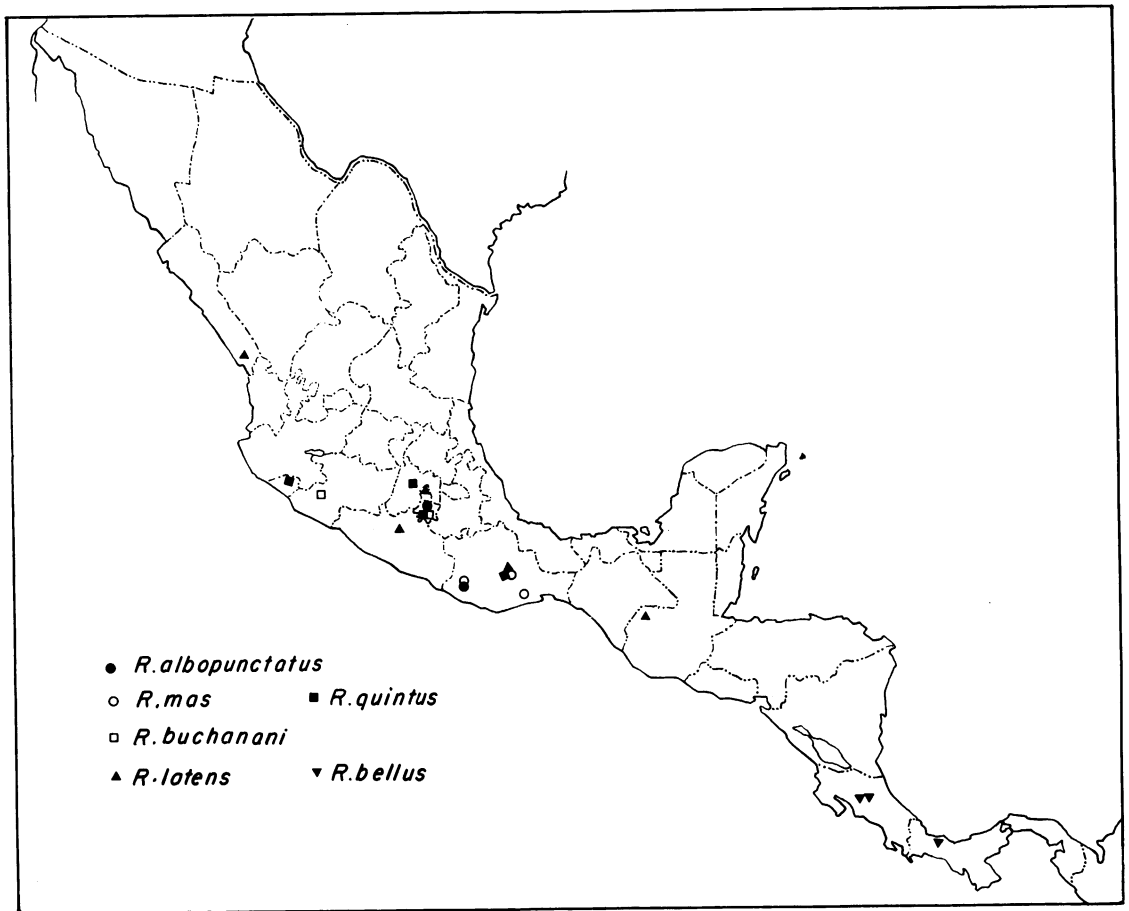


FIG. 40. Distribution of *Rhodobaenus albopunctatus*, *mas*, *quintus*, *buehanani*, *latens*, and *bellus*. (The locality, Ixcuintla, Guerrero, Mexico, for *albopunctatus* was not found.)

DESCRIPTION: Red with white dots. Length 5 to 6.5 mm. Rostrum as described for *buehanani*, but basal dilation dorsally sulcate or not. Gular peduncle of male flat, of female with tiny prominence extending forward. Antennal scape and groove as described for *buehanani*. Antennal club roundish, not wider than apex of rostrum; spongy apex one-half length of club.

Pronotum convex, longer than wide, red with three black stripes (lateral stripes very short), sparse white dots smaller than those of elytra. Elytra longer than pronotum by about one-third, scarcely wider, red with large, widely scattered white dots as wide as

intervals; striae with punctures not or faintly visible; suture with dots smaller, denser. Prosternum not tumid, red with large black spot laterally; middle coxal interspace one-third diameter of coxae; venter and legs mostly black. Femora gradually widened from base to apex. Pygidium with apex tumid, narrowly rounded, bypassing apex of abdomen.

Male: No ventral tubercle. Aedeagus as described for *buehanani*.

REMARKS: The lectotype is the specimen illustrated by Champion. The locality "Sierra de Durango" of one of the paralectotypes is probably not in the northern state of Du-

rango, but in Oaxaca or Veracruz in the south, according to a note by Champion (p. 210) on another species.

Two of the three paralectotypes before me (the three others and the lectotype are not now available) are actually species distinct from *albopunctatus* and from each other. *Rhodobaenus albopunctatus* differs from one of these, which I am naming *latens*, in having the rostrum evenly arcuate (fig. 36), not bent backward (fig. 34), and the femora feebly wider at the apex than at the base, not strictly linear. It differs from the other new species (*mas*) in the strongly, not feebly arcuate rostrum, shorter elytra, and more elongate pronotum. The aedeagus of the three species differs also.

One of each sex was dissected.

***Rhodobaenus buchanani*, new species**

Figures 5, 36, 40

TYPE MATERIAL: Holotype, male, and paratype, female, Cerro Tancitaro, Michoacan, Mexico, 7800 feet, July 8, 1941, H. Hoogstraal, collector, "on thistle," and paratype, female, Tepoztlan, Morelos, Mexico, September 4, 1944, N. L. H. Krauss, collector, all in the National Museum of Natural History, Smithsonian Institute, Washington, D.C.

DIAGNOSIS: Differs from *albopunctatus* and allied red species with white dots in having femora distinctly clavate (twice as wide at apex as at base), elytra twice length of pronotum, and pronotum subconical. Pronotum black at center, laterally, and basally; elytra without black markings.

RANGE: Mexico.

DESCRIPTION OF HOLOTYPE: Red with white dots. Length 7 mm. Rostrum black, strongly arcuate, scarcely humped at base, shorter than pronotum, not quite as wide as apex of front femur; basal dilation dorsally sulcate. Gular peduncle rounded. Antennal scape longer than three-fourths length of rostrum, as long as funicle and club combined. Antennal club wider than apex of rostrum; spongy apex about one-half length of club. Antennal groove with posterior border distant from eye by width of scape.

Pronotum flat, subconical, longer than wide; sides obliquely narrowing from base to apex, red with sparse white dots and three long black stripes merging with black basal band, some red showing on sides beyond lateral black stripes. Elytra nearly twice length of pronotum and at base wider; white dots narrower than intervals; striae with punctures not evident. Prosternum feebly tumid, black except for red apical band and long red spot laterally; middle coxal interspace about one-third diameter of coxae. Femora twice as wide before apex as at base. Pygidium convex, broadly rounded.

Male: No ventral tubercle. Aedeagus with apex feebly emarginate, membranous medially; borders narrow; in profile upper border oblique to rounded apex.

VARIATION FROM HOLOTYPE: In the two female paratypes (6.5 to 7.5 mm.) the rostrum is more strongly arcuate and slightly longer than that of the holotype; in the paratype from Tepoztlan the white dots of the dorsum are much larger and there are small white dots present on the striae of the elytra.

ETYMOLOGY: The species is named in honor of the weevil specialist, L. L. Buchanan, for many years at the National Museum in Washington, D.C. He had placed his handwritten label under the specimen I chose for holotype: "? n. sp. L. B. '48 (too narrow for *albopunctatus*)."

REMARKS: The paratype from Tepoztlan resembles *mas* in spotting and coloration but the rostrum and femora differ. Dorsally, the holotype of *buchanani* is most like *nigropictus*, but in that species the spongy apex of the club is very small and the antennal scape is short and wide. Some small specimens of *varieguttatus* that lack the black marks of the elytra could be confused with *buchanani*, but in *buchanani* the elytra are proportionally longer, the rostrum strongly arcuate, not nearly straight, the femora clavate, not linear, and the female has no bidentate gular peduncle.

All three specimens were dissected.

BIOLOGY: The holotype and paratype from Cerro Tancitaro are labeled as being found "on thistle."

***Rhodobaenus quintus*, new species**

Figures 29, 37, 40

TYPE MATERIAL: Holotype, male, Real de Arriba, Temascaltepec, [Mexico] Mexico, July 13, 1933, H. E. Hinton, R. L. Usinger, collectors, in the National Museum of Natural History, Smithsonian Institute, Washington, D.C. Three female paratypes, Mexico, as follows: Tepoztlan, Morelos, August 20, 1956, R. and K. Dreisbach, collectors; Volcan, Colima, 1918, J. Lane, collector, both in the same institution, and 5 km. north of Oaxaca, Oaxaca, 1700 m., June 14, 1979, H. and A. Howden, collectors, in Howden collection.

DIAGNOSIS: Distinguished from allied red, white-spotted species in having elytra at base distinctly wider than pronotum; and sides of pronotum parallel from base to beyond middle whence arcuate to apex (fig. 29). Elytra without black marks.

RANGE: Mexico.

DESCRIPTION OF HOLOTYPE: Dark red with faint white dots. Length 8 mm. Rostrum black, scarcely arcuate, feebly humped at base, shorter than pronotum, same width from antennal groove to apex, distinctly narrower than apex of front femur, feebly punctate; basal dilation dorsally finely sulcate. Gular peduncle flat, with tiny right angle in front. Antennal scape nearly as long as rostrum, as long as funicle and club combined. Antennal club roundish, wider than apex of rostrum; spongy apex about one-half length of club. Antennal groove with posterior border distant from eye by width of scape.

Pronotum feebly convex, slightly longer than wide, red, with short black median stripe and basolateral black spot; punctures sparse, faintly white, smaller than those of elytra. Elytra dark red, distinctly wider than pronotum, longer than pronotum by more than one-half; white dots narrower than intervals, sparse, separated by from four to six times their diameter; striae punctures not evident. Prosternum not tumid, black with some red apically; middle coxal interspace one-third diameter of coxae. Femora gradually widening to apex, but not clavate. Pygidium convex with apex tumid, narrowly rounded.

Male: No ventral tubercle. Aedeagus widening to emarginate, medially membranous apex; borders very narrow; in profile upper border oblique to rounded apex.

VARIATION FROM HOLOTYPE: The three females measure from 8 to 9 mm. The holotype and two of the paratypes are dorsally similar, being dark, glossy red with faint white dots, but the paratype from Oaxaca is bright, velvety red with larger dots, as wide as the intervals, and longer lateral black stripes on the pronotum. In the three females the pronotum appears wider, more squarish than that of the holotype.

ETYMOLOGY: The species name is from the Latin *quintus*, fifth, meaning that this was the fifth of the white-dotted, red-elytra forms to be studied.

REMARKS: Dorsally, at first glance, this species resembles a small *pustulosus*, but differs in having no black spots on the elytra, the scutellum not setose, and the pronotum with less black. It is not unlike *albopunctatus* and *buchanani*, but differs from them, as well as from *mas* and *latens* as shown in table 1. The sexes are very similar and all four specimens were dissected, in all or in part.

***Rhodobaenus mas*, new species**

Figures 24, 26, 37, 40

TYPE MATERIAL: Holotype, male, Oaxaca, Oaxaca, Mexico, June 24 to July 31, 1968, G. Pollard, collector, in Howden collection, Ottawa, and paratype, male, same data except July 12. Four male paratypes from state of Oaxaca: Juquila Mixes, 4700 feet, April and July 1969, W. S. Miller, collector, three in Howden collection; Panistlahuaca, one [paralectotype of *albopunctatus* Champion] in British Museum.

DIAGNOSIS: Pronotum red with three black stripes; elytra red, both with white dots. In scarcely arcuate rostrum and other characters in Description below resembles *quintus*, but differs from it in having base of elytra only feebly wider than pronotum and aedeagus with apex strongly emarginate, hollowed out, and sclerotized, not membranous medially.

RANGE: State of Oaxaca, Mexico.

DESCRIPTION OF HOLOTYPE: Red with white dots. Length 8 mm. Rostrum black with apex reddish, feebly arcuate, humped and wider at base, about same length as pronotum, distinctly narrower than apex of front femur, punctate densely at base, sparsely toward apex; basal dilation dorsally finely sulcate. Gular peduncle feebly sinuate behind, with small right angle in front. Antennal scape, club and groove as described for *quintus*.

Pronotum convex, slightly longer than wide, red with three black stripes, white dots smaller than those of elytra, some sparse, some dense. Elytra red with suture faintly black, slightly wider than pronotum, nearly twice length of pronotum; white dots as wide as intervals, separated by about twice their diameters; striae with dense, smaller white dots. Prosternum, femora, coxae, and pygidium as described for *quintus*.

Male: No ventral tubercle. Aedeagus with apex strongly emarginate, hollowed out, sclerotized; borders narrow; in profile widening from base to apex, and upper border oblique to rounded apex.

VARIATION FROM HOLOTYPE: All the specimens are muddy; when brushed with water, in two the elytra are entirely red, in one the six central intervals and part of the outer intervals are striped with black, and in the remaining three the suture is black. In one male the apex of the aedeagus is feebly, not strongly emarginate. In several paratypes there is no red at the apex of the rostrum. The size range is from 8 to 8.5 mm.

ETYMOLOGY: The Latin species name, *mas*, meaning male, refers to the lack of females in the type series.

REMARKS: At first I thought this species was *albopunctatus*, but the rostrum is only feebly arcuate in *mas* and the pronotum is not so elongate. The rostrum is similar to that of the male of *varieguttatus* from which *mas* differs in having the pronotum shorter and stouter, the white dots generally larger, filling the intervals of the elytra, and the second segment of the antennal funicle short, as wide as long. In the type series of this species and of *latens* are two of the paralectotypes of *albopunctatus*.

Three males, including the holotype, were dissected.

***Rhodobaenus latens*, new species**

Figures 25, 34, 40

TYPE MATERIAL: Holotype, male, Iguala, Guerrero, Mexico, August 20, 1956, A. W. Vazques, collector, in the National Museum of Natural History, Smithsonian Institute, Washington, D.C. Five female paratypes from Mexico: 9.5 miles northwest of Mexico City, Mexico, August 15, 1957, J. Lockman (?), collector, one; 39 miles east of Villa Union, Sinaloa, August 27, 1960, one; 10 miles northeast of Oaxaca, Oaxaca, June 20, 1966, J. B. Karren, collector, one; Santa Rosa [state?], July 1973, Lenczy, collector, one; all in O'Brien collection; Mexico, Sharp collection, one [paralectotype of *albopunctatus* Champion], in the British Museum. Guatemala: 40 miles northwest of Huehuetenango, August 17, 1972, G. F. and S. Hevel, collectors, one female in the National Museum of Natural History.

DIAGNOSIS: Dorsally resembles other small species that have red elytra with white dots and no black spots; distinguished from them in having rostrum flattened at dorsal apex, thus narrower at apex when viewed in profile; mesosternal process narrower and hind femora strictly linear, not wider at apex than at base.

RANGE: Mexico, Guatemala.

DESCRIPTION OF HOLOTYPE: Red with white dots. Length 6 mm. Rostrum black, arcuate, strongly humped at base, as long as pronotum, slightly narrower than apex of front femora, narrowed at dorsally flat apex, impunctate except for base; basal dilation dorsally not sulcate. Gular peduncle flat with minute extension forward. Antennal scape, club, and groove as described for *quintus* and *mas*.

Pronotum convex, about as wide as long, red with sparse white dots; median stripe, basal band and lateral spot black. Elytra not wider than pronotum, longer than pronotum by one-half; white dots narrower than intervals, sparse, separated by from four to six times their diameter; striae with fine, dense white dots. Prosternum red with black me-

dially and black spot on border; middle coxal interspace one-fourth or one-fifth diameter of coxae. Femora as wide at base as at apex, black and red. Pygidium tumid; apex narrowly rounded.

Male: No ventral tubercle. Aedeagus with apex subtruncate; borders narrow; in profile upper border oblique to acuminate apex.

VARIATION FROM HOLOTYPE: The paratypes measure 6.5 mm. In some the basal dilation of the rostrum is finely sulcate. One paratype is very dark, having broad lateral black stripes on the pronotum as well as a median stripe and basal band, and the elytra black except for red at the base and faintly on the sides; on one elytron the white dots are mostly effaced. In the paratype from Mexico City the white dots did not show until washed with a brush. In some paratypes the legs are entirely black.

ETYMOLOGY: The species name is from the Latin participle *latens*, to lurk, lie hidden, referring to the paratype that was "hidden" in the type series of *albopunctatus*.

REMARKS: The rostrum is not strongly, evenly arcuate and of the same width throughout as it is in *albopunctatus* and *buchanani*, rather it is strongly arcuate and humped at the base, thence bent backward or downward without further arcuation (fig. 34). (See table 1 for additional differences.)

The geographic distribution of the species is quite wide-spaced, from Sinaloa, Mexico, south to Guatemala (see map, fig. 40).

All seven specimens were dissected, in all or only partially to ascertain the sex.

Rhodoaenus nigrolineatus Chevrolat
Figures 36, 37

Rhodoaenus nigrolineatus Chevrolat, 1885, p. 285 (Oaxaca, Mexico; type, male, in Naturhistoriska Riksmuseum, examined).

Rhodoaenus suturellus Chevrolat, 1885, p. 285 (Mexico; type, female, in Naturhistoriska Riksmuseum, examined; synonymized by Champion).

DIAGNOSIS: Similar to grayish black individuals of *varieguttatus*, but differs in having rostrum more arcuate, less punctate; white spots of pronotum much smaller than those

of elytra, not same size; femora clavate, not linear, and pronotum in many cases with slightly elevated median line.

RANGE: Mexico, Guatemala, El Salvador. (For approximately 100 specimens examined, see Appendix.)

DESCRIPTION: Grayish black with whitish spots. Length 7.5 to 9 mm. Rostrum strongly, evenly arcuate, not or feebly humped at base, about as long as pronotum, not wider than apex of front femur; that of male distinctly punctate; that of female less punctate, longer than that of male; basal dilation dorsally sulcate. Gular peduncle of male extending slightly forward; of female sharply angulate in front. Antennal scape longer than one-half length of rostrum, longer than funicle; spongy apex about one-half length of club. Antennal club as wide as or wider than rostrum. Antennal groove separated from eye by width of apex of scape.

Pronotum longer than wide, flat, with dense whitish spots except for impunctate, feebly elevated median line; spots much smaller than those of elytra. Elytra longer than pronotum by one-half, wider, with whitish spots as wide as intervals, some spots dense, but those on disc separated longitudinally by four or five times their diameter, smaller and denser on suture and minute on striae. Prosternum not or scarcely tumid, with dense whitish spots, behind coxae rather tumid; middle coxal interspace from one-third to one-half diameter of coxae; remainder below with white spots. Femora clavate. Pygidium convex, not tumid; apex truncate.

Male: No ventral tubercle. Aedeagus with apex truncate; borders narrow; in profile upper border oblique to rounded apex.

REMARKS: The female of *nigrolineatus* differs from that of *varieguttatus* in having a single sharp angle at the apex of the rostrum, not two angles, one behind the other. In *varieguttatus* many specimens are red, but I have seen only one *nigrolineatus* with the pronotum reddish and with three black stripes. Worn males of either species with the white spots effaced can be separated by the smaller punctures of the pronotum of *nigrolineatus* and its convex, not tumid pygidium. In *confusus*, in which the rostrum is

also arcuate, the white spots of the elytra are merged into white streaks at base and apex.

Three males were dissected.

Rhodobaenus confusus Chevrolat

Rhodobaenus confusus Chevrolat, 1885, p. 285 (Mexico; type in Naturhistoriska Riksmuseum).

DIAGNOSIS: Differs from other species with white spots and flat pronotum in having clear cut elytral pattern of white streaks as described below, not simply white spots as in *nigrolineatus* and *varieguttatus*.

RANGE: Mexico, mostly in the south. (For 26 specimens examined, see Appendix.)

DESCRIPTION: Red and black, or black, with white spots and streaks. Length 7 to 9 mm. Rostrum red apically, black basally, strongly arcuate, not humped at base, robust (as wide as apex of front femur), not quite as long as pronotum; that of male punctate, of female impunctate in apical portion; basal dilation dorsally sulcate. Gular peduncle of male slightly tilted upward or flat; of female with sharp tooth in front. Antennal scape reddish, longer than one-half length of rostrum and than funicle. Antennal club roundish, as wide as apex of rostrum; spongy apex about one-half length of club. Antennal groove separated from eye by slightly more than width of scape at apex.

Pronotum longer than wide, feebly convex at middle, flat or faintly impressed behind, black or red with three black stripes and covered with white spots except on median stripe (median can be feebly elevated). Elytra longer than pronotum by one-third or more, and wider; red or blackish with dense white setose streaks on each interval in apical and subbasal areas, forming wide bands that surround center of disc where are visible only several widely separated white dots on each interval. Prosternum feebly tumid, mostly black, but reddish in front; middle coxal interspace about one-third diameter of coxae; below spotted with white. Femora gradually widened to apex. Pygidium apex tumid, subacuminate.

Male: No ventral tubercle. Aedeagus with apex truncate; borders narrow; ventrally

with feeble basal keel or distinct long keel; in profile upper border oblique to apex.

REMARKS: The rostrum is wider and more strongly arcuate than that of *nigrolineatus*. The elytra at the base are distinctly wider than the pronotum which is not true of *cinereiventris*, a larger species than *confusus*, which differs further in having a very narrow, long rostrum. Of other species with white streaks, *cinctus* has black velvety patches on the elytra, and in *nebulosus*, *bellus*, *biundulatus*, and *leucographus* the pronotum is depressed basally. Two of each sex were dissected.

This is the only species I have found, in addition to *lebasii* and *quinquepunctatus* that has a keel on the underside of the aedeagus.

Rhodobaenus cinereiventris Champion

Figure 6

Rhodobaenus cinereiventris Champion, "1909-1910" [1910], p. 138, pl. 6, figs. 34, 34a, 35 (lectotype, male, Misantla, Veracruz, Mexico, here designated from four original specimens in British Museum, examined).

DIAGNOSIS: Dorsally resembles grayish white-spotted or reddish specimens of *confusus* which differ in having white spots merged into streaks on elytra, and rostrum wider, more robust.

RANGE: Southern Mexico, Guatemala, El Salvador. (For 14 specimens examined, see Appendix.)

DESCRIPTION: Grayish black or red and black with white spots. Length 9 to 10.5 mm. Rostrum strongly evenly arcuate, not humped at base, same width throughout, narrower than apex of front femur, mostly impunctate; that of male same length as pronotum; of female slightly longer than pronotum, more arcuate and narrower than that of male; basal dilation dorsally deeply sulcate to beyond angulation over antennal groove. Gular peduncle of male flat, of female with tiny sharp tooth in front. Antennal scape longer than one-half length of rostrum, almost as long as club and funicle combined. Antennal club roundish, wider than apex of rostrum; spongy apex not quite one-half length of

club. Antennal groove either opening onto eye or separated from eye by less than width of scape at base; lower border angulate under rostrum.

Pronotum longer than wide, convex in front, somewhat flattened behind, black or (rarely) red with three black stripes. Elytra longer than pronotum by one-half, scarcely wider; intervals with sparse or dense whitish spots such as on pronotum; white spots more marked in front of and behind middle where can enclose dark median patch; striae whitish but punctures not visible; red specimens with black marks laterally, medially and apically. Prosternum feebly, if at all, tumid; middle coxal interspace about one-third diameter of coxae. Femora feebly clavate. Pygidium tumid medially and apically, subacuminate.

Male: No ventral tubercle. Aedeagus with apex scarcely emarginate; borders narrow; in profile upper border oblique to rounded apex.

REMARKS: The lectotype is the specimen figured by Champion. The claw excavation is very prominent. When viewed with the naked eye, there are visible median and humeral dark areas on the elytra caused by the sparser white dots near them; in *confusus* such dark areas stand out in more contrast as they are bounded by white streaks. Some *cinereiventris* in which the dark areas are not evident resemble *nigrolineatus*, but they differ from that species in having the femora less clavate, the pygidium tumid, not merely convex, and more pointed, and the elytra scarcely wider than the pronotum.

Rhodobaenus incertus (Champion)

Homalostylus incertus Champion, "1909-1910" [1910], p. 118, pl. 5, figs. 33, 33a (Toxpam, Veracruz, Mexico; type, male, in British Museum, examined).

Rhodobaenus dentifer Champion, "1909-1910" [1910], p. 126, pl. 6, figs. 10, 10a (La Palma, Costa Rica; type, female, in British Museum, examined). New synonymy.

DIAGNOSIS: Differs from other white-dotted grayish or reddish species except for

subcylindricus in having antennal scape dilated (at apex more than one-half width of apex of rostrum); differs from *subcylindricus* in having scape much wider at apex, not of equal width throughout, and pygidium merely convex, not bulbously tumid.

RANGE: Mexico, Guatemala, Costa Rica. (For three specimens examined, see Appendix.)

DESCRIPTION: Grayish or black with white dots. Length 12 to 18 mm. Rostrum slightly shorter than pronotum, feebly arcuate, not humped, but thicker at base, narrower than apex of front femur, ventrally setose in basal half, densely punctate; angulation of basal dilation scarcely evident, dorsally sulcate. Gular peduncle of male rounded, of female with sharp, backward pointing curved tooth in front. Antennal scape dilated, compressed, as wide as one-half or more width of rostrum, twice as wide at apex as at base; longer than one-half length of rostrum. Antennal club roundish; apical spongy part about one-half length of club. Antennal groove opening onto eye.

Pronotum convex, longer than wide, grayish, with whitish spots around dense punctures. Elytra one-half longer than pronotum, scarcely wider, grayish brown or suffused with red; vague darker transverse band indicated; intervals and striae with white dots, some as wide as intervals, around punctures. Prosternum not tumid, middle intercoxal space about one-third diameter of coxae. Femora linear, gradually feebly widened. Pygidium evenly convex, narrowing to truncate apex.

Male: No ventral tubercle. Aedeagus not examined.

REMARKS: Other attributes of *incertus* are small, narrow eyes, slightly widened and sinuate hind tibiae, a very short second tarsal segment, and the claw segment not excavated. The smooth claw segment would relate it to the *nawradii*-like species, none of which has a widened scape. The toothed gular peduncle of the female is similar to that of *guttatus* (Fahraeus). The dorsal aspect is much as in *cinereiventris* Champion.

If Champion had had the female of *incer-*

tus with its rostral tooth, he probably would have noticed its similarity to the female of his *R. dentifer* which differs from the male type of *incertus* only in the tooth and in being much larger (18 mm.) and in having a rough and eroded surface.

Rhodoaenus subcylindricus (Champion)

Figure 7

Homalostylus subcylindricus Champion, "1909-1910" [1910], p. 119, pl. 5, figs. 34, 34a (Dueñas, Guatemala; lectotype, male, here designated from original pair, male in the British Museum, female in the National Museum of Natural History, Smithsonian Institute, examined).

DIAGNOSIS: Reddish or grayish, covered with large white dots; elongate, parallel-sided, with exceedingly long pygidium, and wider than normal, straight antennal scape. Superficially like *varieguttatus* and allies.

RANGE: Guatemala, El Salvador. (For four specimens examined, see Appendix.)

DESCRIPTION: Red or gray with white dots. Length 8 to 9.5 mm. Rostrum shorter than pronotum, slightly narrower than apex of front femur, not humped at base, straight, densely punctate; basal dilation scarcely evident, dorsally not sulcate. Gular peduncle of male flat, of female obtuse. Antennal scape straight, of same width throughout, longer than one-half length of rostrum, less than one-half width of apex of rostrum, about same length as funicle. Antennal club elongate, wider than apex of rostrum; spongy apex about one-half length of club. Antennal groove opening onto eye.

Pronotum convex, longer than wide, dark red with three faint black stripes or blackish with two red stripes; white dots around dense punctures; base sinuate. Elytra oblong, longer than pronotum by one-half, but scarcely wider, reddish with faint black marks on humerus, laterally at middle and apex, also medially as large common spot; intervals with large whitish dots. Prosternum not tumid, red with faint black stripe; middle intercoxal space about one-third diameter of coxae. Femora linear, scarcely wider at apex

than at base. Pygidium bulbously tumid, long, its apex extending beyond apex of abdomen by length of fourth abdominal segment.

Male: No ventral tubercle. Aedeagus with apex truncate (feebly emarginate when viewed from below); borders thick; in profile upper border rounded to apex where feebly recurved.

REMARKS: The lectotype is red with black markings. In the female paralectotype and in the male from El Salvador the black markings scarcely show on the grayish surface, but these specimens when wetted turn reddish and show the markings. The first tarsal segment is shorter than the claw segment, whereas in most species they are of equal length. The eighth tergum of the male within the long pygidium is also longer than that of most species.

Rhodoaenus suturalis (Gyllenhal)

Sphenophorus suturalis Gyllenhal, 1838, p. 904 (Brazil; type, male, in Naturhistoriska Riksmuseum, examined). For synonymy, see Vaurie (1980), or Checklist above.

DIAGNOSIS: Extremely variable. Agrees with *nigropictus* and *rhinopilus* in having antennal scape short (not longer than funicle) and spongy apex of club only one-third or less length of club but scape and club apex even shorter, and pronotum in majority basally impressed.

RANGE: Mexico, Guatemala, Costa Rica; Venezuela, Paraguay, Brazil, Argentina. (For 188 specimens examined, see Vaurie, 1980; for 14 additional ones, see Appendix.)

DESCRIPTION: (See Vaurie, 1980.)

REMARKS: The spongy apex of the club is scarcely visible in some specimens. The many synonyms of *suturalis* attest to its variability; the red elytra can have two round black spots or two oblique spots at the middle, with or without black marks laterally or apically; in some specimens there are dense yellowish dots or streaks; the strongly arcuate rostrum is black or red; on the pronotum is a black median stripe, and in some individuals short lateral stripes.

This species is essentially from South America, only four or five specimens having been seen from North America (including the types of two of the synonyms).

Rhodobaenus nigropictus Champion

Rhodobaenus nigropictus Champion, "1909-1910" [1910], p. 146, pl. 7, figs. 17, 17a (lectotype, male, Volcan de Chiriqui, Panama, here designated from four original specimens in British Museum, examined).

DIAGNOSIS: Small, red, with whitish dots, and black marks on elytra; rostrum strongly arcuate, widened at base; pronotum flat; differs from all preceding species except for *suturalis* in having both antennal scape and spongy apex of club shorter.

RANGE: Panama. (For four specimens examined, see Appendix.)

DESCRIPTION: Red and black with white spots. Length 6 to 6.5 mm. Rostrum black, very strongly arcuate, humped, tomentose, and thickened at base where almost twice width of apex, feebly punctate, same length as pronotum; basal dilation dorsally deeply sulcate. Gular peduncle flat. Antennal scape scarcely longer than one-half rostrum, shorter than funicle. Antennal club distinctly wider than apex of rostrum; spongy apex about one-third length of club. Antennal groove separated from eye by width of scape at base.

Pronotum flat, longer than wide, red with black median stripe and two basolateral triangles; covered with whitish dots; in two specimens black from prosternum is visible dorsally. Elytra longer than pronotum by about one-half, red with humeral and scutellar areas black, and four black spots across middle, black also at center and sides near apex; intervals with small whitish spots such as on pronotum; striae with smaller spots. Prosternum not tumid, red with black stripe laterally and whitish spots; middle intercoxal space from one-third to one-fourth diameter of coxae. Femora gradually widened or feebly clavate. Pygidium bulbously tumid apically; apex surpassing abdomen, acuminate.

Male: No ventral tubercle. Aedeagus not examined.

REMARKS: This species is one of the smallest. It is about the same size and coloration as *bisignatus*, but differs from it in having more black marks on the elytra, the punctures indicated by whitish spots, the pronotum flat, not impressed basally, and the antennal scape and club apex shorter. A short scape and club apex are present also in *rhinopilus*, but in that species the pronotum lacks a median black stripe and the rostrum is ventrally setose.

The third tarsal segment on the middle and hind legs is only feebly dilated, being less than twice wider than the second segment; the second segment is longer than normal. In the few specimens examined, the head between the eyes is transversely impressed, and the scutellum is oblong and scarcely wider than an adjacent elytral interval. The lectotype is the specimen figured by Champion.

Rhodobaenus rhinopilus Vaurie

Rhodobaenus rhinopilus Vaurie, 1980, p. 36, fig. 21 (Sapucay, Paraguay; type, male, in British Museum, examined).

DIAGNOSIS: Pronotum flat, red on disc. Differs from other species in having combination of strongly arcuate rostrum with long, yellow infrarostral setae; wide pronotum without median black stripe; antennal scape thick, short (not longer than funicle), and antennal club with spongy apex generally only about one-fourth length of club.

RANGE: Costa Rica; Ecuador, Paraguay. (For five specimens examined, see Vaurie, 1980, and for additional records, see Appendix.)

DESCRIPTION: (See Vaurie, 1980.)

REMARKS: A short scape and short apex of the club are present also in the very small *nigropictus* from which *rhinopilus* differs in the dorsal pattern and infrarostral setae. In four specimens of *rhinopilus* from Costa Rica the spongy apex of the club is nearly one-half the length of the club, not one-fourth, and in two (San Vito and Monteverde) the dorsum is dark red, without noticeable black, and their rostral setae are abraded and very short. In a second specimen from San Vito, however, the rostral se-

tae are as abundant as in the type from Paraguay, and it shows some basal black marks on the pronotum. The aedeagus appears apically more deeply emarginate in the male from San Vito than in the male from Monteverde. All specimens have long elytra and the mesosternal process emarginate with two lateral knobs tilted upward.

Rhodobaenus lineiger Chevrolat

Rhodobaenus lineiger Chevrolat, 1885, p. 282 (Colombia; type, male, in Naturhistoriska Riksmuseum, examined).

DIAGNOSIS: Differs from four species that follow with short, wide rostrum and infra-rostral setae in having no definite white spots around punctures; eyes very narrow; elytra on disc with short or long black stripes, not spotted with white. Hind tibiae arcuate, femora clavate, pronotum basally feebly impressed, sexes externally indistinguishable.

RANGE: Panama; Colombia, Ecuador, Peru, Bolivia. (For 28 specimens examined, see Vaurie, 1980; for six additional records, see Appendix.)

DESCRIPTION: (See Vaurie, 1980.)

REMARKS: Among the species in South America *lineiger* is quite distinct because of its short, very wide rostrum, but in Mexico and Central America there are four additional species with a short, robust rostrum (*brevirostris*, *cylindricollis*, *inopinatus*, and *nigrosignatus*) from which *lineiger* differs in having no white dots on the elytra, although very small and faint dots are present on the pronotum.

As I mentioned for the previous species (*suturalis*), this species seems to be only occasional in Central America.

***Rhodobaenus inopinatus*, new species**

Figures 8, 28

TYPE MATERIAL: Holotype, male, and male and female paratypes, Mexico, in Zoological Museum, Berlin (one paratype to be deposited in the American Museum of Natural History).

DIAGNOSIS: Dorsum red with black marks and white dots. Resembles at first glance *ni-*

gropictus, but differs in having rostrum very short, wide, and ventrally setose as in *brevirostris*, from which it differs in having pronotum flat, not impressed basally.

RANGE: Mexico, without further locality.

DESCRIPTION OF HOLOTYPE: Red and black with white dots. Length 7.5 mm. Rostrum straight, distinctly shorter than pronotum, wider by almost one-half than apex of front femur, not humped at base, punctate sparsely, ventrally sulcate and setose on each side of median carina; dorsally basal dilation deeply sulcate, with few short white setae. Gular peduncle tipped up in front, obtuse behind. Antennal scape reddish, straight, as long as rostrum, but not longer than funicle. Antennal club roundish, narrower than apex of rostrum; spongy apex one-half length of club. Antennal groove opening onto eye.

Pronotum convex, distinctly longer than wide; sides scarcely narrowing from base to apex, red with three black stripes and sparse white dots. Elytra almost twice length of pronotum, red with four faint black spots across middle, black also at middle of apex; intervals and suture with white dots separated by from three to six times their diameter; striae with denser punctures; base bisinuate. Prosternum not tumid, black at middle, red laterally; behind coxae bituberculate; middle coxal interspace almost one-half diameter of coxae. Femora linear, same width at apex as at base. Pygidium red, convex; apex rounded.

Male: No ventral tubercle. Aedeagus with apex rounded-truncate, medially membranous; borders wide except for narrow apical border; in profile apex oblique.

VARIATION FROM HOLOTYPE: The paratypes measure 7 and 8 mm. The scape of the female appears a fraction shorter than that of the male. The median black spots of the elytra are merged in the male paratype and in the female the spots are so faint as to be scarcely visible.

ETYMOLOGY: The species name is from the Latin *inopinatus* for an "unexpected" fifth species with very short rostrum.

REMARKS: The eighth tergum of the partly dissected female has long, dense apical setae

as in females of *brevirostris*. In both species, and also in *lineiger*, infrarostral setae and a median sulcus and carina are present. The two remaining species with a short, wide rostrum (*cylindricollis* and *nigrosignatus*) differ from *inopinatus* in having the spongy apex of the antennal club minute, short.

The two males were dissected and the female was dissected in part.

Rhodoaenus cylindricollis Champion

Figure 28

Rhodoaenus cylindricollis Champion, "1909-1910" [1910], p. 132, pl. 6, figs. 23, 23a (Cuernavaca, Morelos, Mexico; type in National Museum of Natural History, Smithsonian Institution, examined).

DIAGNOSIS: Tiny, brownish gray, white-spotted, with short wide rostrum; similar to *nigrosignatus* in having long, parallel-sided pronotum and black velvety patches on elytra, but elytra much shorter, more uneven, pygidium less tumid, and extreme base of pronotum narrowed.

RANGE: Known only from Cuernavaca, Mexico. (For two specimens examined, see Appendix.)

DESCRIPTION: Grayish with black marks and white dots. Length 4 to 6 mm. Rostrum brownish, shorter than pronotum, feebly arcuate, feebly humped at base; in lateral view same width throughout, as wide as apex of front femur, densely, coarsely punctate; ventrally with small curling setae, dorsally carinate or not; basal dilation feeble. Gular peduncle flat, rounded in front. Antennal scape reddish, scarcely longer than funicle, only slightly longer than one-half length of rostrum. Antennal club oval, scarcely dilated; spongy apex small, one-fifth or one-sixth length of club. Antennal groove opening onto eye.

Pronotum grayish, flat, distinctly longer than wide, with large, dense, white, pitlike punctures except on short, black median line; sides subparallel in dorsal view except where apically constricted, medially feebly sinuous, and basally feebly constricted. Elytra longer than pronotum by only one-third, scarcely wider, brownish gray with black

velvety marks outlined by white; oblique or sickle-shaped on humerus, round laterally near apex, and medially two oblique marks meeting at suture and forming V- or heart-shaped pattern; intervals with whitish punctures. Prosternum tumid, grayish, punctate as on pronotum; middle coxal interspace from one-third to one-half diameter of coxae (one-third in type). Femora wider at apex than at base, on front and middle pairs more clavate. Hind tibiae straight. Pygidium (paratype) evenly convex, (type) with tiny sharp apical tumidity; punctures sparse; dorsally about as wide as long; apex rounded-truncate.

Male: Not identified.

REMARKS: Champion (*loc. cit.*) chose as his type a specimen from the National Museum of Natural History, Smithsonian Institution, Washington, D.C.; his paratype, a partially dissected female, is in the British Museum and is the specimen he illustrated. The type (only 4 mm.) was not dissected. Both specimens are similar in coloration and both show the constriction of the pronotum at the base and apex as described by Champion. (See Remarks under *nigrosignatus*.)

Rhodoaenus nigrosignatus Champion

Figures 9, 28

Rhodoaenus nigrosignatus Champion, "1909-1910" [1910], p. 132, pl. 6, figs. 22, 22a (lectotype, male, Volcan de Chiriqui, Panama, here designated from 10 original specimens from Guatemala and Panama in British Museum, examined).

DIAGNOSIS: Resembles strongly *cylindricollis* in small size; subparallel, long pronotum; velvety black oblique or heart-shaped marks on elytra; and short, wide rostrum. (For differences, see Remarks.)

RANGE: Guatemala, Costa Rica, Panama. (For 13 specimens examined, see Appendix.)

DESCRIPTION: Reddish, purplish, or grayish with black marks and white dots. Length 5 to 8 mm. Rostrum as described for *cylindricollis* but some specimens showing median carina ventrally, some having apex wider than remainder of rostrum. Gular peduncle either rounded in front or subangulate. An-

tennal scape, club, and groove as described for *cylindricollis*, but scape can be a little longer, and spongy apex of club in some specimens longer, one-third or one-fourth length of club.

Pronotum feebly transversely depressed behind middle, distinctly longer than wide, red with three black stripes, or blackish, either with large, dense, pit-like punctures or with finer, smaller white dots; sides subparallel from base to apically constricted apex. Elytra as described for *cylindricollis*, but generally red or purplish instead of gray, and longer than pronotum by one-half. Prosternum tumid; middle coxal interspace one-half diameter of coxae. Femora as described for *cylindricollis*. Hind tibiae feebly arcuate. Pygidium abruptly, broadly tumid, with sparse punctures, dorsally longer than wide, and appearing subacuminate because of tumidity extending beyond abdomen.

Male: No ventral tubercle. Aedeagus with apex rounded-truncate; borders narrower toward apex than at middle; in profile apex oblique.

REMARKS: Champion (*loc. cit.*) called *nigrosignatus* "a remarkably distinct form . . ." which it is, but in some of its aspects it is scarcely distinguishable from *cylindricollis*. Unfortunately *cylindricollis* is represented by only two examples, therefore the degree of variation cannot be compared with *nigrosignatus* which varies greatly. Some *nigrosignatus* are reddish and rather smooth of surface, a number are rough and eroded, with a brownish gray covering as in *cylindricollis*; in some the white punctures of the pronotum form little craters, in some the white dots are partly effaced. Both species possess unusual characters, such as the mesepimeron having only two large punctures filling the space, the metepimeron having a single row of six large punctures, the pronotum with a deep apical constriction. I would have considered them conspecific, but several characters seem to separate them, bearing in mind that we have only two examples of *cylindricollis*. Thus, in *nigrosignatus* the elytra are longer, the apex of the pygidium is bulbously tumid, jutting out markedly beyond the abdomen, whereas that of *cylindri-*

collis is only moderately tumid and is apically truncate, not acuminate; the hind tibiae of *nigrosignatus* are feebly arcuate, not straight; the pronotum of *nigrosignatus* is sinuous in profile because of the feeble basal impression, not flat; the mesosternal process is wider than that of *cylindricollis*.

Another species with a heart-shaped black velvety mark medially on the elytra is *v-nigrum* Champion which is larger, heavier, and differs further in having the claw segment smooth, not excavated, the pronotum shorter and flat, the tarsi dorsally tomentose, not shining, and the femora strongly clavate.

Two of each sex were dissected.

Rhodobaenus brevirostris Champion Figure 28

Rhodobaenus brevirostris Champion, "1909-1910" [1910], p. 133, pl. 6, figs. 24, 24a (lectotype, male, Volcan de Atitlan, Guatemala, here designated from three original specimens from Mexico and Guatemala, in British Museum, examined).

Rhodobaenus veraepacis Champion, "1909-1910" [1910], p. 133, pl. 6, figs. 25, 25a (San Juan, Verapaz, Guatemala: type, male, in British Museum, examined; synonymized by Kuschel, 1955).

DIAGNOSIS: Agrees with *nigrosignatus*, *cylindricollis*, and *inopinatus* in having short, wide straight rostrum (fig. 28), but differs from them in having deep, distinct depression at base of pronotum. Pronotum similar to that of *adspersus*, *maculifer*, and allies but rostrum differs.

RANGE: Mexico, Guatemala, Honduras, Nicaragua. (For 10 specimens examined, see Appendix.)

DESCRIPTION: Red or grayish with some black marks and large or small white spots. Length 8 to 11 mm. Rostrum straight, not humped at base, distinctly shorter than pronotum, wider than apex of front femur, punctate in basal half, ventrally sulcate and setose on each side of median carina; basal dilation dorsally sulcate, generally with only very feeble angulation over antennal insertion. Gular peduncle flat; rounded in front. Antennal scape dark red to black, straight, almost as long as rostrum, but not longer

than funicle. Antennal club elongate, not wider than rostrum; spongy apex about, or almost, one-half length of club. Antennal groove separated from eye by at least width of scape.

Pronotum subconical, distinctly longer than wide, red or grayish with three black stripes and sparse white dots; basal depression distinct; base feebly sinuate. Elytra longer than pronotum by one-half, red or grayish with white dots generally filling intervals, but widely separated longitudinally, and black markings on humerus, along suture to middle where expanded, and at apex; striae with tiny white spots. Prosternum tumid in front of coxae; middle intercoxal space almost as wide as diameter of coxa. Femora linear or very gradually widened. Pygidium almost flat, subacuminate.

Male: No ventral tubercle. Aedeagus with apex truncate; borders very narrow; in profile apex strongly deflexed and narrowly curved.

REMARKS: The lectotype of *brevirostris*, which is the specimen figured by Champion, is blackish with whitish yellow dots. The unique type of *veraepacis* differs only in being larger (11 mm.) and grayish brown, and having smaller whitish spots. Some specimens are bright red and the gray ones show reddish on the venter or when wet with a brush. The prosternal and mesosternal processes are wider than normal for *Rhodobaenus*; the eighth tergum of the female is furnished with dense, long apical setae and a long apical sulcus dorsally. The antennal scape is long in comparison with the short rostrum, but short in comparison with the antennal funicle.

A male and three females were dissected; no external differences between the sexes were found.

Rhodobaenus adpersus (Gyllenhal)

Figure 31

Sphenophorus adpersus Gyllenhal, 1838, p. 924 (Mexico; type in Naturhistoriska Riksmuseum).

Rhodobaenus adpersus var. *impressus* Chevrolat, 1885, p. 283 (Mexico; type not located).

DIAGNOSIS: Grayish black species identifiable by combination of white dots, prominent bituberculate base of prosternum behind the coxae, and deep, wide transverse impression near base of pronotum; elytra subtriangular, stout.

RANGE: Mexico, Guatemala, Honduras, Nicaragua, Panama. (For 76 specimens examined, see Appendix.)

DESCRIPTION: Black with whitish dots. Length 9 to 10.5 mm. Rostrum arcuate, humped at base, about same length as pronotum; that of male punctate throughout; of female longer, narrower, scarcely punctate; basal dilation dorsally sulcate. Gular peduncle of male rounded; of female with sharp angle in front. Antennal scape longer than one-half length of rostrum, almost as long as funicle and club combined. Antennal club wider than apex of rostrum; spongy apex more than one-half length of club. Antennal groove separated from eye by about width of scape.

Pronotum with whitish dots, slightly longer than wide or as wide as long; base somewhat sinuate at middle; basal impression wide and deep. Elytra with whitish dots, longer than pronotum by more than one-third (by almost twice in some specimens) and distinctly wider at base; white spots as wide as intervals, widely separated longitudinally; striae with smaller white dots. Prosternum slightly tumid in front of coxae; prosternal process bituberculate, visible in profile view (fig. 31); middle coxal interspace from one-third to one-half diameter of coxae. Femora linear, scarcely widening to apex. Pygidium convex, only feebly tumid at apex.

Male: No ventral tubercle. Aedeagus with apex truncate, membranous at middle; borders wide basally, narrow at apex.

REMARKS: Where the whitish spots are very large, this species bears some resemblance to grayish examples of *pustulosus*, but in that species the pronotum is convex, not basally depressed. The spongy apex of the club is almost as long as that of *andreae*. Two males and two females were dissected.

BIOLOGY: A specimen from Chicacao, Guatemala, is labeled "vegetation."

Rhodobaenus maculifer (Fahraeus)

Figure 20

Sphenophorus maculifer Fahraeus, 1845, p. 243 (Mexico; type in Naturhistoriska Riksmuseum).

Rhodobaenus centromaculatus Chevrolat, 1885, p. 280 (Cayenne [probably error] type in Naturhistoriska Riksmuseum, examined; synonymized by Champion.)

DIAGNOSIS: Differs from very similar *nebulosus* in having (generally) only six not eight large black spots on elytra, spots sharply defined, not vague, and rostrum either red or black, but not black with red apex, and basal impression of pronotum shallow.

RANGE: Mexico, Guatemala, British Honduras, Honduras. (For 56 specimens examined, see Appendix.)

DESCRIPTION: Red, gray, or purplish with black spots and white spotting. Length 7 to 9.5 mm. Rostrum black or red, humped at base, scarcely arcuate or punctate; that of male shorter than pronotum, ventrally somewhat sulcate; of female longer than that of male and narrower than apex of front femur; basal dilation dorsally sulcate. Gular peduncle of male flat; of female with tiny tooth or prominence extending forward. Antennal scape red or black, as long as three-fourths of rostrum, equal to club and funicle combined. Antennal club elongate or squarish, as wide as or wider than apex of rostrum; spongy apex one-half or more of length of club. Antennal groove separated from eye by about width or more of apex of scape.

Pronotum longer than wide, red when wet, with three black stripes not invariably present or not very marked; whitish dots present or not; basal impression distinct. Elytra longer than pronotum by about one-half, red or gray or purplish, with six large black spots (on humerus, center of disc, at subapical callus), rarely two additional small lateral spots. Prosternum tumid; red and black; middle intercoxal space one-third or one-fourth diameter of coxae; remainder below red and black with whitish dots. Femora feebly clavate, wider at apex than at base. Pygidium strongly tumid at apex.

Male: Ventral tubercle at middle of first segment of abdomen. Aedeagus with apex truncate or feebly emarginate, hollowed out; borders narrow; in profile apex rounded, rather blunt.

REMARKS: Typically *maculifer* is opaque gray or faintly purplish with large black or purple, well-defined spots on the elytra, and small scattered white dots. Some individuals that have more than the usual number of white dots could be confused with *nebulosus* but in that species the white dots are much larger, filling the intervals of the elytra. The typical pattern of *maculifer* resembles that of *stigmaticus* and *sexguttatus*, two species that differ in having the apex of the claw segment smooth, not excavated. Specimens with the white spots effaced and the median black stripe of the pronotum lacking can resemble the generally larger *olivaceus*, which has, however, a much heavier rostrum and the elytral black areas, if present, not distinct. In some *maculifer* the antennal groove is farther from the eye and is sharply angulate on its hind border.

Champion (*loc. cit.*) questioned the locality of Cayenne for Chevrolat's type of *centromaculatus* which he said was probably mislabeled.

Four males and a female were dissected.

Rhodobaenus nebulosus Champion

Rhodobaenus nebulosus Champion "1909-1910" [1910], p. 135, pl. 6, figs. 28, 28a (lectotype, female, Toxpam, Veracruz, Mexico, here designated from three original specimens in British Museum, examined).

DIAGNOSIS: Similar to *biundulatus*, but differing in having both rostrum and antennal scape longer and narrower; eight black spots of elytra of *nebulosus* indistinct because of filmy covering of white spots which generally form a rather angular outline around median black area.

RANGE: Mexico, Costa Rica, Panama. (For 17 specimens examined, see Appendix.)

DESCRIPTION: Grayish or red with black areas and white spots. Length 7 to 9 mm. Rostrum black, but red toward apex, feebly

arcuate, humped at base; that of male as long as pronotum, punctate to near apex, about as wide as apex of front femur; that of female distinctly longer than pronotum, much narrower than that of male, impunctate except for extreme base; basal dilation dorsally sulcate. Gular peduncle of male rounded, of female obtusely angled behind small tooth. Antennal scape red, about as long as funicle and club combined, as long as three-fourths length of rostrum. Antennal club abruptly dilated, about as wide as apex of rostrum; spongy apex about one-half length of club. Antennal groove separated from eye by width of scape or more.

Pronotum longer than wide, reddish with three black stripes, or gray-brown with impunctate median line; punctures encircled by large whitish spots; basal impression broad, deep. Elytra longer than pronotum by about one-half, generally covered with gray powdery film through which are visible large whitish dots as wide as elytral interval and sparsely or densely spaced, forming angular outline around median black area; each elytron with three lateral black spots and large, common median black mark; striae with punctures visible. Prosternum feebly tumid in front of coxae; grayish brown or reddish; middle coxal interspace about one-third diameter of coxae. Femora clavate, long, distinctly wider at apex than at base. Pygidium strongly, abruptly tumid at apex, long, acuminate, surpassing apex of abdomen; apex with long ventral setae joining dorsal setae, forming tuft.

Male: First segment of abdomen with distinct ventral tubercle near front of segment. Aedeagus with apex subtruncate, hollowed out; borders narrow; in profile apex rounded, blunt.

REMARKS: Individuals of *nebulosus* that have lost their filmy covering can resemble dorsally some pale, reddish examples of *maculifer*, but in *nebulosus* the black spots of the elytra are vague, indistinct, and the white spots are large, nearly filling the intervals, not minute as in *maculifer*. The long narrow rostrum of the female and the long, apically setose, tumid pygidium are about similar in both species, as well as the aedeagus. The

ventral tubercle of the male of *nebulosus* is close to the front border of the segment, not at the middle as that of *maculifer*. The lectotype is the specimen figured by Champion.

Rhodobaenus biundulatus Champion
Figure 10

Rhodobaenus biundulatus Champion, "1909-1910" [1910], p. 128, pl. 6, figs. 14, 14a (lectotype, male, Misantla, Veracruz, Mexico, here designated from four males in British Museum, examined).

DIAGNOSIS: Distinguished from majority of species in having very deep, elliptical depression at base of pronotum, but pattern of elytra similar to that of *confusus* and *nebulosus* in having two broad angulate bands of whitish dots or streaks outlining darker median space.

RANGE: Mexico. (For four specimens examined, see Appendix.)

DESCRIPTION: (Male only.) Blackish with white dots. Length 10 to 10.5 mm. Rostrum black or dark red, arcuate, feebly humped at base, shorter than pronotum, stout, almost as wide in profile as clavate part of front femur, punctate to near apex; basal dilation dorsally sulcate. Gular peduncle flat, angulate in front. Antennal scape black, virtually straight, distinctly longer than and almost twice width of funicle, almost as long as rostrum. Antennal club and groove as described for *nebulosus*.

Pronotum longer than wide, black with large brownish dots, some coalescing medially; basal impression transversely elongate, very deep. Elytra longer than pronotum by one-third, covered with large pale dots as wide as intervals; dots before and behind middle black space merging to form two angulate whitish bands; striae not visibly punctate. Prosternum, middle coxae, femora, and pygidium as described for *nebulosus*.

Male: No ventral tubercle. Aedeagus with apex truncate, medially membranous; borders wide; in profile apex oblique.

REMARKS: Viewed with the naked eye the elytra appear somewhat undulating and uneven, an effect present also in one individual of *nebulosus*. In *biundulatus* the rostrum is

shorter and wider than that of *nebulosus*, the scape is wider and is straight, not sinuous, the male has no ventral tubercle, and the aedeagus is somewhat different. In *confusus* the pronotum is not impressed basally.

The lectotype is the specimen figured by Champion; it is not a female, as labeled, but a male. The lectotype and another male were dissected.

Rhodobaenus andreae Chevrolat

Figure 19

Rhodobaenus andreae Chevrolat, 1885, p. 279 (Mexico; type, female, in Naturhistoriska Riksmuseum, examined).

DIAGNOSIS: Bright red, with some black marks; covered densely with white dots; spongy apex of club and rostrum of female very long; differs from *biundulatus* in having white dots of elytra not merged into streaks and pronotal depression less strong.

RANGE: Mexico. (For six specimens examined, see Appendix.)

DESCRIPTION: Red and black, whitish dots. Length 8.5 to 12 mm. Rostrum red or black, not humped at base, in profile narrowing feebly before apex, scarcely, if at all, arcuate or punctate, almost as wide as apex of front femur; that of male of same length as pronotum, of female narrower and at least one-fourth longer than pronotum; basal dilation dorsally sulcate. Gular peduncle of male rounded in front or slightly angulate, of female with tiny projecting angle. Antennal scape red, longer than one-half rostrum and longer than funicle. Antennal club elongate-oval, distinctly wider than apex of rostrum; spongy apex three-fourths length of club. Antennal groove separated from eye by less than width of scape (in type, opening onto eye).

Pronotum longer than wide, red with three black stripes scarcely visible under mass of dense whitish spots; basal impression wide, deep. Elytra longer than pronotum by about one-third, distinctly wider, red with black oblique band at middle and apex, all densely punctate with whitish spots; spots in red area as wide as elytral interval, in blackish area smaller; spots of striae small and very dense;

or elytra without black bands and with white dots sparser. Prosternum feebly tumid, black with red stripe at middle of sides; middle coxal interspace about one-half diameter of coxae. Femora feebly clavate, distinctly wider at apex than at base. Pygidium abruptly tumid and feebly cristate at apex, subacuminate.

Male: No ventral tubercle. Aedeagus with apex feebly emarginate; borders basally very wide, virtually touching each other, but narrow at apex; in profile apex oblique.

REMARKS: Possibly this species varies more than is shown by the six specimens examined. One variation occurs in two examples of Champion's "variety" from Omilteme, Guerrero, Mexico, in which the white spots are sparser and the elytra have no dark bands. In *andreae* the mesosternal process is wider than normal, the rostrum of the female is exceedingly long, and in one specimen the spongy part of the antennal club comprises almost the entire club, the basal sclerotized part being quite minute and angulate at the middle. Two males were dissected.

Rhodobaenus arcuatus Champion

Rhodobaenus arcuatus Champion, "1909-1910" [1910], p. 134, pl. 6, figs. 26, 26a (lectotype, male, Toxpam, Veracruz, Mexico, here designated from three original specimens from Mexico and Nicaragua, in British Museum, examined).

DIAGNOSIS: Narrow, dark red species rather similar to *nebulosus*, but differs in having longer pronotum, and white spots minute and very sparse, not large and dense. Characterized further in having very long pygidium, femora, antennal scape, and rostrum; femora linear, middle coxae very narrowly separated.

RANGE: Mexico, Nicaragua. (For five specimens examined, see Appendix.)

DESCRIPTION: Dark red with minute white spots. Length 7 to 9.5 mm. Rostrum red, feebly humped at base, strongly arcuate, scarcely punctate, slightly narrower at apex; that of male about as long as pronotum; of female somewhat longer and narrower; basal

dilation not sulcate. Gular peduncle of male flat, rounded in front, of female minutely angulate. Antennal scape almost as long as rostrum, as long as funicle and club combined. Antennal club roundish, wider than apex of rostrum; spongy apex nearly one-half length of club. Antennal groove separated from eye by width of apex of scape.

Pronotum distinctly longer than wide, dark red with three faint blackish stripes and whitish dots around punctures; basal impression deep. Elytra dark red, longer than pronotum by one-half, laterally with three faint black spots and some black medially and apically; intervals and striae with very small whitish dots like those of pronotum. Prosternum feebly tumid in front of coxae, dark red; middle coxal interspace scarcely wider than front interspace, about one-fifth diameter of coxae. Femora long, linear. Pygidium very long, narrow, strongly tumid apically, projecting beyond abdomen, almost as long as hind tibiae.

Male: First segment of abdomen at front border with cariniform tubercle. Aedeagus with apex feebly emarginate, medially membranous; borders narrow.

REMARKS: As mentioned by Champion (*loc. cit.*), this species "has much the facies of *Homalostylus* [*Rhodobaenus*] *dentirostris*." In fact, a female of *arcuatus* from Santecomapan, Mexico, was considered provisionally by Champion as the female of *dentirostris*, although he noted that it did not have the scape dilated as in *dentirostris*. The lectotype is the specimen figured by Champion.

Rhodobaenus leucographus (Fahraeus)

Figures 11, 41

Sphenophorus leucographus Fahraeus, 1845, p. 240 (Mexico; type in Naturhistoriska Riksmuseum).

DIAGNOSIS: Characterized by dense, setose, short, white longitudinal streaks on several intervals of elytra and on sides of pronotum, rather purplish ground color, and infrarostral setae.

RANGE: Mexico. (For 13 specimens examined, see Appendix.)

DESCRIPTION: Reddish or purple with

white streaks and dots. Length 7 to 7.5 mm. Rostrum red, arcuate, humped and wider at base, at base as wide as apex of front femur, ventrally densely setose; that of male about same length as pronotum; of female longer and narrower than that of male; basal dilation dorsally feebly sulcate. Gular peduncle of male obtuse, of female with tiny angle extending forward. Antennal scape red, as long as three-fourths of rostrum and as funicle and club combined. Antennal club roundish, about as wide as apex of rostrum; spongy apex about one-half length of club. Antennal groove separated from eye by width of apex of scape.

Pronotum longer than wide, red or purplish, with three black stripes; laterally with whitish dots and streaks; basal impression shallow. Elytra longer than pronotum by one-half, red or purplish, third to fifth intervals on each elytron, often also ninth interval, black and superimposed by short streaks of dense white setae and white dots. Prosternum tumid in front of coxae, red and black; middle coxal interspace about one-half diameter of coxae; below and legs black and red, with white dots. Femora gradually widened, linear. Pygidium with apex tumid, rather acuminate.

Male: No ventral tubercle. Aedeagus with apex feebly emarginate; borders wide, but narrowing to apex; in profile apex rounded and feebly recurved.

REMARKS: This species in perfect condition is unmistakable. Otherwise it can resemble *bellus*, but it differs from *bellus* in having on the elytra very white, almost convex streaks, not many white dots that merge on some intervals, and in having black stripes, not black spots; the rostrum differs also, and the femora of *leucographus* are linear, not clavate. It might be mistaken for *cinctus*, but *cinctus* differs in having the black parts as spots, not stripes, and the white streaks forming different patterns.

Three males were dissected.

BIOLOGY: A male from Tancitaro, Michoacan, Mexico, was collected at 6000 feet "sweeping shrubs," and a specimen from Valle de Bravo, Mexico, Mexico, "sweeping roadside vegetation."

***Rhodobaenus bellus*, new species**

Figures 12, 40

TYPE MATERIAL: Holotype, male, and three male and four female paratypes, 40 km. northeast of Turrialba, Cartago-Limon border, Costa Rica, 500 m., May 18, 1979, H. and A. Howden, collectors, in Howden collection (several paratypes to be deposited in the American Museum of Natural History). Four additional paratypes, as follows: Turrialba, one female, Schild-Burgdorf collection, in Zoologisches Museum, Berlin; San Jose, Costa Rica, 1160 m., Valerio, collector, one male, one female in National Museum of Natural History, Smithsonian Institution, Washington, D.C.; Lino, Chiriqui province, Panama, one female, in Muséum National d'Histoire Naturelle, Paris.

DIAGNOSIS: Pattern of black spots and white dots on elytra similar to those of *cinctus*, but differs from it and from other species in combination of characters as follows: wide, flattened, not cylindrical rostrum that is acutely, triangularly toothed on each side of base; large triangular gular peduncle; rather widened antennal scape; long prosternum.

RANGE: Costa Rica, Panama.

DESCRIPTION OF HOLOTYPE: Dark red with large black marks and large white spots. Length 6.5 mm. Rostrum red, strongly evenly arcuate, feebly compressed, humped at base, impunctate except for basal area, as wide as apex of front femur, longer than pronotum; basal dilation dorsally sulcate. Gular peduncle forming large right angle. Antennal scape red, virtually straight, as long as one-fourth rostrum, longer than funicle and club combined, as wide at apex as one-third width of rostrum. Antennal club not wider than rostrum at apex; spongy apex about one-half length of club. Antennal groove distant from eye by more than width of scape; posterior border acutely toothed, teeth scarcely visible from above.

Pronotum longer than wide, dark velvety red with three black stripes and series of large white spots at base and at sides; basal impression distinct. Elytra longer than pronotum by only one-fourth, dark red with black marks on humerus and in scutellar region, also obliquely from humerus to elon-

gate median spots; black spots laterally and apically; intervals filled with large white spots. Prosternum tumid in front of coxae, dark red and black with dense white spots; middle coxal interspace about one-third diameter of coxae; remainder below red and black with white spots. Femora distinctly clavate, long (extending almost to apex of pygidium). Pygidium convex, narrowly rounded at tumid apex.

Male: No ventral tubercle. Aedeagus strongly deflexed, its truncate apex not visible when viewed dorsally; in profile apex blunt, sawed-off.

VARIATION FROM HOLOTYPE: The females are almost exactly like the holotype except for the gular peduncle which is furnished with a minute projection extending forward. In some paratypes the white dots are partially effaced, in others there are more than in the holotype; in some paratypes the gular peduncle or the angles under the base of the rostrum are abraded. The length ranges from 6 to 7.5 mm.

ETYMOLOGY: The species name is from the Latin *bellus*, meaning beautiful.

REMARKS: The wide rostrum and its acute basal angles at the large antennal opening seem incongruous for this dainty little species. There are no true streaks as in *cinctus* and *leucographus*, but many dense, wide white spots that are merged into partial streaks in some areas. The elytra are relatively short; the front border of the mesepimeron, as in *cinctus*, is arcuate-angulate. The long, narrow pronotum and the oblique black marks of the elytra are reminiscent of those of the tiny *ypsilon* from which *bellus* differs, in addition to the wider scape and rostrum, in having the middle coxae more widely separated, the femora more clavate, and the pronotum more strongly impressed basally.

Four males, including the holotype, and one female were dissected.

***Rhodobaenus sanguineus* (Gyllenhal)**

Sphenophorus sanguineus Gyllenhal, 1838, p. 903 (Mexico; type in Naturhistoriska Riksmuseum).

Sphenophorus sanguineus var. *lineatocollis* Gyl-

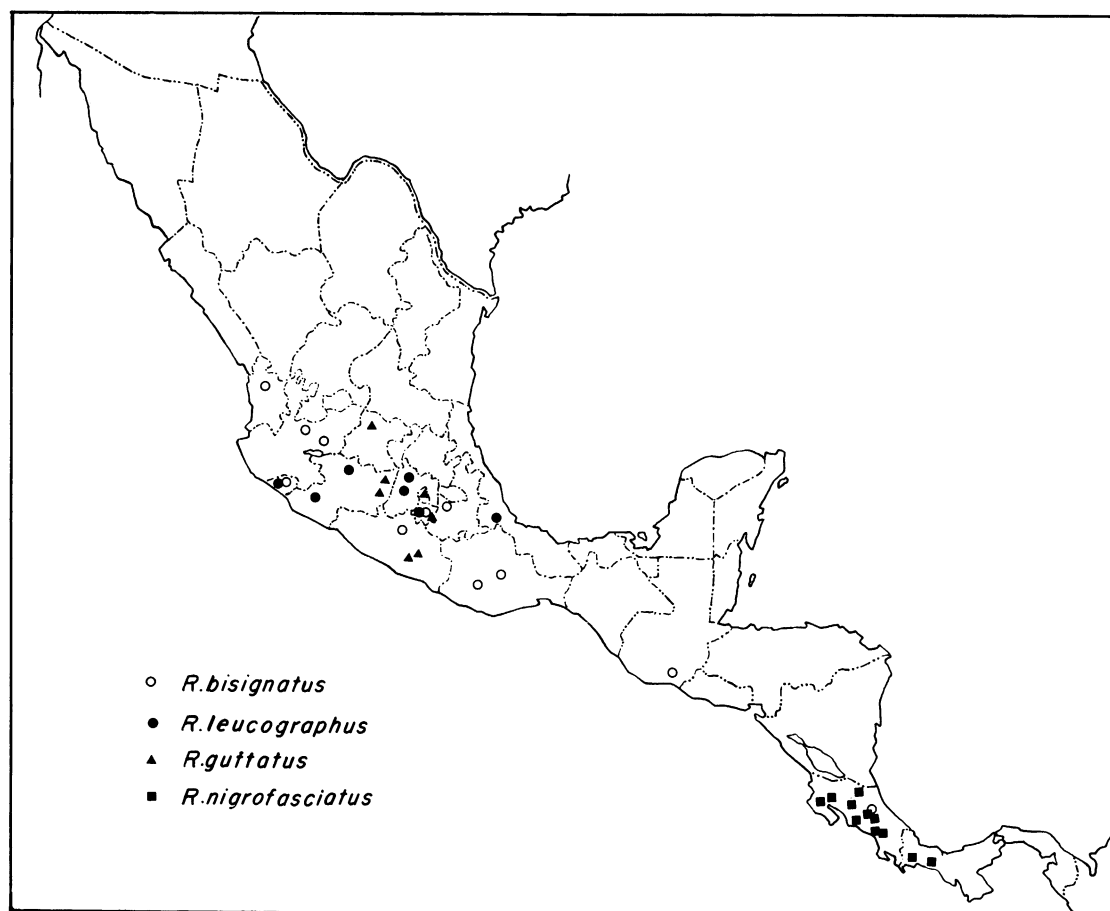


FIG. 41. Distribution of *Rhodobaenus bisignatus*, *leucographus*, *guttatus*, and *nigrofasciatus*. (*R. nigrofasciatus* occurs also in Colombia, South America.)

lenhal, 1838, p. 903 (Mexico, type in Naturhistoriska Riksmuseum; synonymized by Champion).

Rhodobaenus haematidus Chevrolat, 1885, p. 278 (Mexico; type in Naturhistoriska Riksmuseum; synonymized by Champion).

DIAGNOSIS: Readily recognizable for its bright red immaculate elytra with black scutellum and, generally, single black stripe on pronotum.

RANGE: Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, Panama. (For approximately 440 specimens examined, see Appendix.)

DESCRIPTION: Red and black, no white spots. Length 6.5 to 10.5 mm. Rostrum black, rarely red, arcuate, humped at base, scarcely punctate except for base, longer than pronotum, narrower than apex of front femur; that of female proportionally longer and narrower than that of male; basal dilation dorsally sulcate. Gular peduncle of male flat, of female slightly angulate in front. Antennal scape, club, and groove as described for *melas*, but scape can be red.

Pronotum longer than wide, red with median black stripe entire or interrupted, or with vague blackish lateral stripes also; im-

punctate; basal impression deep, distinct. Elytra longer than pronotum by about one-third, red; intervals impunctate; striae with punctures, if visible, dense. Prosternum tumid in front of coxae, black or black medially and red laterally (red can have black spot); remainder below black; middle coxal interspace one-fourth diameter of coxae. Femora black or red, distinctly linear, about same width from base to apex. Pygidium as described for *melas*.

Male: Ventral tubercle or carina at front of first abdominal segment. Aedeagus as described for *melas*.

REMARKS: Examination of many specimens shows a quite constant dorsal pattern. However, in one specimen the median black stripe of the pronotum is absent and in one there are faint black spots on the sides of the normally red elytra. In Chevrolat's *haematidus* the extreme sides of the prosternum are furnished with a vague black stripe which is visible dorsally in some individuals; the rostrum, femora, and tibiae are red instead of black, and the surface bears tiny setae in the punctures. According to Champion ("1909-1910" [1910]), these are probably freshly emerged specimens, and I have seen similar setae here and there in other species. The species is similar to *melas*, which follows, but is red, not all black. In a few other species, such as *pulchellus*, *auctus*, and *cinctus*, some specimens have no black spots on the elytra or were never pigmented; they differ from *sanguineus* chiefly in having the pronotum flat, not impressed basally.

BIOLOGY: Champion (*loc. cit.*) reported specimens taken on *Dahlia* and on corn and beans, and a specimen from Guadalajara, Mexico, is labeled "*Dahlia* beetle." A male from Cuernavaca, Mexico, has a notation by N. L. H. Krauss that the larva was collected "boring in stem *Eupatorium adenophorium*" in August (Carduaceae, thistle family, or Compositae). Other specimens have been taken "on weeds," "sweeping herbs," "sweeping," on vegetation, and in "human dung bait trap." A female from Chipinque Mesa, near Monterrey, Nuevo Leon, Mexico, was taken "beating dry oak branches w/ lichens."

***Rhodobaenus melas*, new species**

Figure 38

TYPE MATERIAL: Holotype, male, Monteverde Forest Res[erve], Puntarenas-Alajuela provinces, Costa Rica, lat. 10°18'N, long. 84°47'W, 1600 to 1700 m., August 17, 1976, R. Gorton, collector, to be deposited in the American Museum of Natural History. Fifty-five paratypes as follows: same data as holotype, but one collected August 13, 1976, by H. Hespenheide, two males; Pension Monteverde, Puntarenas, lat. 10°19'N, long. 84°49'W, 1350 m., August 17, 1976, H. Hespenheide, collector, one male, two females in Hespenheide collection; Monteverde Reserve, May 24, 27, June 1, 1979, 1500 m., H. and A. Howden, collectors, 21 males, four females; Monteverde, May 23 to June 3, 1979, 1400 m., same collectors, 10 males, five females; all in Howden collection; Monteverde Area, Puntarenas, June 14, 1973, 1400 to 1700 m., Erwin and Hevel, collectors, one male, and Chomogo Area, Alajuela province, lat. 10°18'N, long. 84°47'W, same collectors, one male, both in National Museum of Natural History, Smithsonian Institute, Washington, D.C.; Monteverde, Guanacaste, May 24 to 26, 1976, A. E. and D. S. Lewis, collectors, two males, two females, in O'Brien collection; Monteverde Reserve, Puntarenas, January 21-23, 1980, 1400 and 1500 m., one male, one female, R. S. Anderson, collector, in his collection; Pacific slope cordilleras, Chiapas, Mexico, 1919, 800 to 1000 m., L. Hotzen, collector, one male, one female, in National Museum of Natural History, Smithsonian Institute.

DIAGNOSIS: Differs from red *sanguineus* in being black, but otherwise very similar; differs from other black species as noted below.

RANGE: Southern Mexico, Costa Rica.

DESCRIPTION OF HOLOTYPE: Black. Length 8 mm. Rostrum black with extreme apex red, feebly arcuate, humped at base, slightly longer than pronotum, impunctate except for base, rostrum not quite as wide as apex of front femur; ventrally near base with two rows of minute, depressed setae; basal dilation dorsally faintly sulcate. Gular peduncle flat. An-

tennal scape almost as long as rostrum, longer than funicle and club combined. Antennal club distinctly wider than apex of rostrum; spongy apex three-fourths length of club. Antennal groove distant from eye by width of scape.

Pronotum longer than wide, subconical, impunctate on disc, transversely deeply impressed near base. Elytra longer than pronotum by more than one-half, scarcely wider; intervals impunctate; striae with minute punctures separated by twice their diameters. Prosternum tumid in front of coxae; middle coxal interspace about one-fourth diameter of coxae. Femora linear, scarcely wider at apex than at base. Pygidium abruptly tumid in apical half, apex narrowly rounded, surpassing apex of abdomen.

No ventral tubercle (see Variation below). Aedeagus with apex truncate, medially membranous; borders wide to near apex where narrowed; in profile, upper edge oblique to subacuminate apex where feebly recurved.

VARIATION FROM HOLOTYPE: The paratypes are very similar except for the length which varies from 6.5 to 8.5 mm. In several the basal dilation of the rostrum is not sulcate. In a number of males there is a ventral tubercle either at the front of the first segment of the abdomen or between the middle and the front; it is generally not more than a mere speck. In females the rostrum is slightly longer and narrower than that of males, resulting in the scape appearing shorter; ventrally the rostrum of the female is glabrous; and the gular peduncle has a small angle in front. In some paratypes, the elytra are less long and more robust.

ETYMOLOGY: The name of the species is from the Greek *melas*, meaning black.

REMARKS: Although *melas* is black and *sanguineus*, at least on the dorsum, is red, they are remarkably alike in other characters, and possibly *melas* is a black phase of *sanguineus*. I have seen two examples of each species taken together on the slopes of the cordilleras in Chiapas, Mexico, and both occur in Costa Rica (five only of *sanguineus*). Otherwise *sanguineus* is widespread and abundant from Mexico south to Panama, and *melas* only in Costa Rica where the prov-

inces of Alajuela, Puntarenas, and Guanacaste come together. (A male and female from Gua[temala], collected by Scudder, seem to be this species.)

In seven red species that have black phases there is generally some red or a suggestion of red that can be brought out by dabbing with a wet brush. The 56 specimens of *melas*, however, are jet black, except for the bit of red at the extreme apex of the rostrum, which does not appear to be significant (it is present in *sanguineus* and a number of species with black rostrum). Of the more than 400 specimens examined of *sanguineus*, a few (Chevrolat's *haematidus*) have vague black stripes on the sides of the prosternum-pronotum.

Other black species with the pronotum impressed basally (*olivaceus*, *subcristatus*) differ from *melas* in having the femora clavate, not linear, the aedeagus emarginate, not truncate, the antennae inserted closer to the eye, and they are larger and gray, black only when greased or worn. In *nigrofasciatus* the antennal scape is widely dilated, not narrow.

Seven males, including the holotype, and one female were dissected.

Rhodobaenus bisignatus Champion

Figures 26, 36, 41

Rhodobaenus bisignatus Champion, "1909-1910" [1910], p. 143, pl. 7, figs. 12, 12a (lectotype, male, Mexico, here designated from four original specimens from Mexico in British Museum, examined).

DIAGNOSIS: Small red species with, generally, only one black stripe on pronotum, and two or four black spots across middle of elytra, but blackish phase occurs (see Remarks). Differs from *bicinctus*, *deltoides*, *ypsilon*, and *sanguineus* in having wide and short, not long and narrow rostrum.

RANGE: Mexico, Guatemala, Costa Rica. (For 26 specimens examined, see Appendix.)

DESCRIPTION: Red and black, or black. Length 6.5 to 8 mm. Rostrum black, strongly humped at base, arcuate, impunctate or feebly punctate, about as wide as apex of front femur; that of male shorter than pronotum; of female slightly longer than that of male;

basal dilation dorsally sulcate. Gular peduncle of male flat, of female with slight prominence extending forward. Antennal scape red, almost as long as rostrum, and as long as funicle and club combined. Antennal club roundish, or distinctly elongate, at least as wide as apex of rostrum; spongy apex long, one-half or three-fourths length of club. Antennal groove separated from eye by width of scape (but by somewhat more in several blackish individuals).

Pronotum longer than wide, red with median black stripe, or saturated with black, impunctate; basal impression short, faintly marked. Elytra longer than pronotum by more than one-half, generally red with one or two black spots on each elytron in front of middle (in two examples, additional faint spot near apex, in some elytra mostly black); intervals impunctate; striae densely punctate. Prosternum flat, black, or black medially and red laterally except for black spot or short stripe; middle coxal interspace barely one-fourth diameter of coxa, scarcely wider than front coxal interspace. Femora long, linear. Pygidium strongly tumid, acuminate.

Male: No ventral tubercle. Aedeagus with apex truncate to emarginate, medially membranous, feebly hollowed out; in profile apex blunt, rounded.

REMARKS: Champion placed *bisignatus* between *sanguineus* and *ypsilon* which it resembles in its long antennal scape and long spongy apex of the club, but it differs from them in the rostrum and in the elytral pattern. In *sanguineus* and *ypsilon*, as well as in *bicinctus* and *deltoides*, the rostrum of the female is much longer than that of the male, but in *bisignatus* there is only a slight difference between the sexes; dissection is necessary as a rule for determination of the sex of *bisignatus*.

A black or blackish form from Temascal, Oaxaca, Mexico, and Turrialba, Costa Rica, represented by seven specimens, has the elytra and pronotum almost entirely black, with scattered reddish spots or red suffusions. In other characters these individuals agree with predominantly red specimens. A dissected male from Capetillo, Guatemala, differs from other specimens in having three

black stripes on the pronotum and eight black spots on the elytra—a pattern common in *deltoides*, but the short, arcuate rostrum is that of *bisignatus*. It is interesting that three *deltoides* were collected at Temascal along with the black form mentioned above. The pronotal depression is so feeble in many *bisignatus* that it is barely visible.

Eight males were dissected, some only partially in order to establish the sex.

Rhodobaenus ypsilon Chevrolat
Figures 35, 50

Rhodobaenus ypsilon Chevrolat, 1885, p. 280
(Mexico; type, male, in Naturhistoriska Riksmuseum, examined).

DIAGNOSIS: Smallest species, marked on elytra as in *cariniventris* and some *deltoides* with oblique black stripes (fig. 50), but differs from them in having whitish streaks on dorsum, pronotum proportionally longer and narrower, scarcely depressed at base, and basal dilation of rostrum punctate, not sulcate.

RANGE: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama. (For 113 specimens examined, see Appendix.)

DESCRIPTION: Red and black, generally with whitish streaks. Length 4.5 to 6 mm. Rostrum red, humped at base, thence virtually straight; narrower than apex of front femur; that of male as long as pronotum and punctate; that of female slightly longer than pronotum, impunctate; basal dilation densely punctate; head between eyes deeply impressed. Gular peduncle apparently flat and rounded in both sexes. Antennal scape red, as long as three-fourths length of rostrum, and as funicle and club combined. Antennal club dilated, roundish, at least as wide as apex of rostrum; spongy apex one-half length of club. Antennal groove with posterior border separated from eye by width of scape; lower border subangulate or tumid.

Pronotum distinctly longer than wide, red with three black stripes and, in most specimens, whitish dots (or whitish streaks basally or laterally); basal impression feeble as a rule. Elytra longer than pronotum by one-

half, red with black extending from behind humerus obliquely to central black marks and black laterally (fig. 50), also apically at middle (oblique marks are broken in some specimens and lateral black line can become wider, covering much of the red); intervals generally with whitish dots. Prosternum scarcely tumid in front of coxae, but quite tumid behind them, black with red lateral stripe; middle coxal interspace only one-fifth diameter of coxa; remainder below and legs black and red. Femora scarcely wider at apex than at base, very long. Pygidium tumid apically, with large punctures, and row of apical setae.

Male: No ventral tubercle. Aedeagus with apex subtruncate, hollowed out.

REMARKS: Because of its individual variation, this species would have to appear four times in the key to the species unless it were placed ahead of the other couplets (at couplet 8). In some specimens the white marks are present, in some absent, in some the elytra are more red, in some more black, in some the basal impression is present, in some absent. The pronotum, however, is consistently longer and narrower than that of the allied species, *deltoides*, *bisignatus*, and *bicinctus*. Two males were dissected.

BIOLOGY: A specimen from Autlan, Colima, Mexico, was collected on weeds.

Rhodoabaenus deltoides Chevrolat

Figures 35, 51

Rhodoabaenus deltoides Chevrolat, 1885, p. 279 (Mexico; type, female in Naturhistoriska Riksmuseum, examined).

DIAGNOSIS: Similar to *ypsilon* in having long, red, virtually straight rostrum and to *bicinctus* in some similar patterns of elytra; differs from *ypsilon* in being larger, more robust, without white streaks or dots, and in having distinct pronotal impression, and from *bicinctus* in lacking ventral tubercle in male and in having typical elytral pattern different.

RANGE: Mexico, British Honduras, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica. (For 114 specimens examined, see Appendix.)

DESCRIPTION: Red and black. Length 7 to 9 mm. Rostrum red (rarely black), humped at base, thence virtually straight, impunctate; that of male slightly longer than pronotum, almost as wide as apex of front femur; of female distinctly longer and slightly narrower; basal dilation dorsally sulcate; head between eyes transversely impressed. Gular peduncle of male flat; of female sinuate behind small apical angle. Antennal scape red, longer than one-half rostrum; at least as long as funicle and club combined. Antennal club elongate, as wide as, if not wider than, apex of rostrum; spongy apex about one-half length of club. Antennal groove separated from eye by more than width of scape.

Pronotum longer than wide, red with three black stripes, impunctate; basal impression shallow or deep. Elytra longer than pronotum by one-third or one-half, wider than pronotum, either red with black sutural stripe widening near middle and lateral and apical margins conjointly black (fig. 51), or red with lateral black broken into spots and humeral spot extending obliquely to middle; intervals impunctate; striae punctures generally not visible. Prosternum strongly tumid in front of coxae, black medially, red laterally; middle coxal interspace less than one-fourth diameter of coxa; remainder below red and black, legs red. Femora linear, scarcely wider at apex than at base. Pygidium bulbously tumid toward apex, with large punctures; apex rounded.

Male: No ventral tubercle. Aedeagus with apex hollowed out, emarginate, membranous medially, but in several specimens feebly sinuate medially; borders narrow; in profile apex blunt, rounded, wider than base.

REMARKS: In the type specimen of *deltoides* and in many other individuals the black oblique mark from the humerus of the elytra to the median spot is absent; this and other variations in the color pattern occur also in *ypsilon* and *bicinctus* which agree further with *deltoides* in having the middle coxae very narrowly separated and the rostrum of the female very long.

The paratype of *deltoides* in Stockholm is not this species, but is a red form of *auctus* with black along the suture, a species differ-

ing in having the pronotum convex or flat, not impressed basally. Two specimens from Cayenne and one from Brazil are probably mislabeled. Five males and one female were dissected.

BIOLOGY: Ten specimens were collected by the O'Briens and Marshall "on yellow composite" in Taulabe, Comayagua, Honduras.

Rhodobaenus pantherinus Champion

Figure 13

Rhodobaenus pantherinus Champion, "1909-1910" [1910], p. 147, pl. 7, figs. 18, 18a (lectotype, male, Guatemala, here designated from 22 specimens from Mexico, Guatemala, and Costa Rica in British Museum, examined).

DIAGNOSIS: Robust species with wide, strongly arcuate rostrum; elytral pattern resembling that of some *deltoides* and *ypsilon*, but pronotum differs in having black spots, not three black stripes.

RANGE: Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Panama. (For 157 specimens examined, see Appendix.)

DESCRIPTION: Red and black. Length 8 to 10.5 mm. Rostrum red, smoothly, strongly arcuate, humped at base, virtually impunctate, about same length as pronotum, that of male as wide as apex of front femur, that of female proportionally narrower; basal dilation dorsally sulcate. Gular peduncle flat, with very slight prominence extending forward. Antennal scape red, longer than three-fourths length of rostrum, about as long as funicle and club combined. Antennal club elongate, wider than apex of rostrum; spongy apex about as long as horny base, in some specimens slightly longer. Antennal groove separated from eye by width of apex of scape.

Pronotum scarcely, if at all, longer than wide, impunctate, red with six large black spots (or five if two median ones merged into stripe); basolateral spots generally in form of triangle, in some examples base entirely black; in some median merged spots forming kind of diamond; basal impression strong, deep, wide. Elytra longer than pronotum by one-third, red with 10 black spots of various

shapes, two oblique in sutural area extending to middle where two round spots (merged in some examples), two oblique spots behind humerus, two mediolateral spots and two apically, often united as irregular subapical band across callus. Prosternum very strongly tumid in front of coxae, red but with short black stripe or oval patch at side of coxa; middle coxal interspace about one-fourth diameter of coxa; remainder below and legs red and black. Femora wider at apex than at base. Pygidium red, tumid toward apex.

Male: No ventral tubercle. Aedeagus with apex truncate to feebly emarginate, at middle membranous; borders very wide; in profile, upper border oblique at apex.

REMARKS: This robust species is reminiscent in its spotted pronotal and elytral pattern of *tredecimpunctatus* and *pulchellus*, but differs from them in having the pronotum impressed basally and the rostrum red and much wider. It is fairly constant in pattern and once recognized is readily identifiable. The specimen chosen as lectotype is that illustrated by Champion.

Two specimens with a printed label "Venez.," are probably labeled in error. Three males, including the lectotype, and two females were dissected.

BIOLOGY: Two specimens were collected by T. Farr in July, "on vegetation," at Chichacao, Guatemala, and three by J. B. Karren on "*Verbicina* [*Verbesina*] *fraseri*," Carduaceae, or Compositae in Zarcero, Alajuela, Costa Rica.

Rhodobaenus cariniventris Champion

Figure 56

Rhodobaenus cariniventris Champion, "1909-1910" [1910], p. 144, pl. 7, figs. 14, 14a, 14b (lectotype, male, Zapote, Guatemala, here designated from eight of original specimens in British Museum, examined).

DIAGNOSIS: Resembles some *deltoides* and *ypsilon* in having oblique black stripes or spots on elytra, and rostrum scarcely arcuate, but differs in having wider middle intercoxal space and (male) long, cariniform ventral tubercle, (female) rostrum shorter, not longer than pronotum.

RANGE: Mexico, Guatemala. (For 13 specimens examined, see Appendix.)

DESCRIPTION: Red and black, some with whitish dots around punctures. Length 7.5 to 10 mm. Rostrum red, humped at base, thence virtually straight, about as long as pronotum, that of male as wide as apex of front femur, feebly punctate, of female somewhat narrower, impunctate; basal dilation dorsally feebly sulcate. Gular peduncle with slight prominence extending forward in both sexes. Antennal scape red, nearly as long as rostrum, as long as funicle and club combined. Antennal club elongate, as wide as apex of rostrum; spongy apex slightly longer than one-half length of club. Antennal groove distant from eye by almost twice width of apex of scape; lower border angulate.

Pronotum longer than wide, red with three black stripes and few white spots; base distinctly transversely depressed. Elytra longer than pronotum by one-third or one-half, slightly wider, red with two oblique black stripes extending from humerus (stripes can be broken into three spots) to middle of disc, black also at base of suture, at middle of sides, and across subapical callus; intervals with punctures surrounded by whitish dots. Prosternum tumid in front of coxae, black or red medially, with red stripe laterally; middle coxal interspace about one-third diameter of coxae; venter and legs red with some black. Femora wider at apex than at base, feebly clavate. Pygidium tumid apically, subacuminate.

Male: First abdominal segment at middle with conspicuous cariniform tubercle. Aedeagus with apex feebly emarginate, hollowed out; in profile apex blunt, rounded.

REMARKS: Champion considered this species "without definite [white] spots," but he noted that it was "faintly cinereous in fresh examples." The white spots are generally minute and, as in *cinctus*, can be lacking altogether. The lectotype is the specimen figured by Champion.

One male was dissected.

BIOLOGY: According to a label on the specimen, a female near San Andres Tuxtla,

Mexico, was taken "in hanging dead leaves *Agave*."

Rhodobaenus bicinctus Chevrolat

Figures 25, 45–49

Rhodobaenus bicinctus Chevrolat, 1885, p. 282 (Colombia, on banks of Rio Magdalena; type, female, in Naturhistoriska Riksmuseum, examined).

DIAGNOSIS: Differs from five preceding red and black species in having elytral pattern generally comprised of two basal and four median black spots and black apical or subapical band. Closely allied to *deltoides*, which sometimes has same pattern, but differs in having different aedeagus and ventral tubercle in male.

RANGE: Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Trinidad; Venezuela, Colombia, Brazil. (For approximately 200 specimens examined, see Vaurie (1980); for 53 additional specimens, see Appendix.)

DESCRIPTION: (See Vaurie, 1980.)

REMARKS: The *bicinctus* of Central America are generally smaller than those of South America and are more likely to have small black separated spots across the elytra than a median black band with the spots merged. The rostrum and legs can be red or black in both areas.

I have not seen any *bicinctus* with the slanting black marks from the humerus toward the center of the elytra and forming a black "V," as is characteristic of *ypsilon*, *deltoides*, and *cariniventris*, but these marks are not invariably oblique in those species, in which case the elytral pattern resembles that of *bicinctus*. (I have not seen any *bicinctus* from Mexico.)

A phase of *bicinctus* with the elytra, but not the pronotum, black (a little red at the base of the humerus) occurs on the island of Trinidad, and examples with a great amount of black occur also in Central America and Venezuela. In a series of eight specimens from Cofradia, Honduras, collected by the O'Briens and Marshall, the black areas on both pronotum and elytra are greatly expanded and two of these specimens are al-

most entirely black. In *deltoides* and *ypsilon* many specimens are very dark and in *bisignatus* some are entirely black except for a few red dashes.

BIOLOGY: A teneral male of the black-elytra phase from Aripo Valley, Trinidad, was reared from the green stem of *Eupatorium* (Compositae or Carduaceae).

Rhodobaenus olivaceus Champion

Figures 27, 38

Rhodobaenus olivaceus Champion, "1909-1910" [1910], p. 122, pl. 6, figs. 3, 3a (lectotype, male, Volcan de Chiriqui, Panama, here designated from 14 original specimens in British Museum, examined).

DIAGNOSIS: Extremely similar to gray *subcristatus*, but differs in having no dorsal rostral setae. Differs from black *nigrofasciatus* in having antennal scape normal, not dilated, and from black *melas* in being much larger and in having rostrum wider, robust, with antennal groove farther removed from eye.

RANGE: Honduras, Costa Rica, Panama. (For 72 specimens examined, see Appendix.)

DESCRIPTION: Dark gray or black. Length 8.5 to 13.5. Rostrum arcuate, humped at base dorsally, carinate from base to middle; that of male as long as pronotum, punctate; at apex nearly as wide as apex of front femur, ventrally crenulate due to large punctures, feebly setose; of female slightly longer, impunctate, ventrally glabrous; basal dilation dorsally sulcate as a rule. Gular peduncle of male slightly angulate in front, of female acutely angulate or with small tooth. Antennal scape almost as long as rostrum, as long as funicle and club combined. Antennal club elongate, not or only feebly wider than apex of rostrum; spongy apex about one-half length of club. Antennal groove separated from eye by about twice width of base of scape.

Pronotum longer than wide, with faint white dots, either with fine punctures or impunctate; basal impression rather feeble. Elytra longer than pronotum by about one-third, gray and velvety or, if worn, black and shining, with or without ill-defined, vague

black patches at middle, apex, and humerus; intervals impunctate; striae with tiny whitish dots; base feebly sinuate. Prosternum scarcely tumid in front of coxae; middle coxal interspace about one-fourth diameter of coxae. Femora feebly clavate. Pygidium feebly tumid toward apex where narrowly rounded or subacuminate.

Male: No ventral tubercle. Aedeagus with apex deeply emarginate, hollowed out; borders wide; in profile apex rounded, blunt.

REMARKS: In the male lectotype, setae are visible under the rostrum, but in other males examined they are apparently abraded, although the ventral crenulations are present. Aside from the dorsal setae of the rostrum (present in *subcristatus*, absent from *olivaceus*), there are many similarities between the two species, such as the aedeagus of males and the eighth tergum of females; the depression at the apex of the abdomen of males; the slight advance of part of the base of the elytra onto the pronotum; the arcuate front border of the mesepimeron; the rather feebly excavated, but very long claw segment.

Six males and five females were dissected.

Rhodobaenus subcristatus Champion

Rhodobaenus subcristatus Champion, "1909-1910" [1910], p. 124, pl. 6, figs. 6, 6a (lectotype, female, San Carlos, Costa Rica, here designated from original specimens in the British Museum and the National Museum of Natural History, Smithsonian Institute, Washington, D.C., examined).

DIAGNOSIS: Similar to gray *olivaceus*, and males of both species scarcely separable, but females of *subcristatus* differ in having crown of bristly bronzy setae on basal half of rostrum.

RANGE: Nicaragua, Costa Rica. (For 22 specimens examined, see Appendix.)

DESCRIPTION: Dark gray or black with black spots on elytra. Length 10.5 to 13 mm. Rostrum as described for *olivaceus* except for female which has two rows of bristly setae on about basal half, and for male which is dorsally at base tomentose and sparsely

setose. Remaining characters as described for *olivaceus*, but black spots or patches of elytra generally well-defined.

REMARKS: Similarities between this species and *olivaceus*, in addition to those evident in the description above, are given under *olivaceus*. The chief difference lies in the dorsal setae at the base of the rostrum which are long and obvious in females of *subcristatus*, minute, scarcely visible, in males, but not present in *olivaceus*. In greased or abraded males the presence of setae is problematical. Champion (*loc. cit.*) did not mention any setae on his three abraded males which cannot be distinguished from males of *olivaceus*. I dissected seven females to be sure there were no males in the individuals with the long rostral setae. However, a series of seven males and six females from Turrialba, Costa Rica, collected by Cartwright in 1951, aided in the separation of the two species; in this series the black elytral spots are quite distinct, contrasting with the faint or absent spots of *olivaceus*. Two males were also dissected.

Rhodobaenus nigrofasciatus (Champion)

Figure 41

Homalostylus nigrofasciatus Champion, "1909–1910" [1910], p. 117, pl. 5, figs. 29, 29a, 30 (Volcan de Chiriqui, Panama; lectotype, female, in British Museum, examined).

DIAGNOSIS: Gray or black, white spotted species resembling *olivaceus* and *subcristatus*, but differing from them in having widely dilated, flattened antennal scape (wider than rostrum); pronotal basal depression generally deeper; elytra, in fresh specimens, with black oblique median and subapical bands, not black spots; many white dots; hind tibiae feebly expanded at middle.

RANGE: Costa Rica, Panama; Colombia. (For 16 specimens examined, see Vaurie, 1980; for 23 additional specimens, see Appendix.)

DESCRIPTION: (See Vaurie, 1980.)

REMARKS: At the base of the rostrum above the antennal insertion and even behind it are very short, bristly, bronzy setae somewhat as in males of *subcristatus*. The aede-

agus of *nigrofasciatus* and the eighth tergum of the female are very similar to those of *olivaceus* and *subcristatus*, but *nigrofasciatus* is a smaller, narrower species, and shows, though faintly in some specimens, fairly large white dots around the punctures.

Rhodobaenus cinctus (Gyllenhal)

Figure 14

Sphenophorus cinctus Gyllenhal, 1838, p. 921 (Mexico; type in Naturhistoriska Riksmuseum).

Sphenophorus cinctus var. *rubellus* Gyllenhal, 1838, p. 921 (Mexico; type in Naturhistoriska Riksmuseum).

Rhodobaenus funerarius Chevrolat, 1885, p. 287 (Brazil [error?]; type not located; synonymized by Champion).

Rhodobaenus obliquus Chevrolat, 1885, p. 287 (Mexico; type in Naturhistoriska Riksmuseum; synonymized by Champion).

Rhodobaenus maculipes Champion, "1909–1910" [1910], p. 147, pl. 7, figs. 19, 19a (lectotype, female, Guatemala, here designated from original pair in British Museum, examined). New synonymy.

DIAGNOSIS: In fresh condition immediately recognizable by dense white streaks of setae outlining black marks, especially heart-shaped mark on disc of elytra. Differs from *leucographus* in having different pattern of streaks, and pronotum flat, not transversely impressed basally.

RANGE: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica. (For approximately 360 specimens examined, see Appendix.)

DESCRIPTION: Red and black, or black, with or without white streaks and spots. Length 7.5 to 10 mm. Rostrum red or black, feebly arcuate to virtually straight, not humped at base, narrower than apex of front femur; that of male punctate, shorter than or equal to length of pronotum, ventrally carinate between two rows of depressed setae; of female as long as or longer than pronotum, impunctate, ventrally smooth or with feebly impressed line; basal dilation dorsally sulcate. Gular peduncle angulate in front, more noticeably in female, but generally appearing flat. Antennal scape red or black, longer than

funicle and than one-half length of rostrum. Antennal club roundish or squarish, wider than apex of rostrum; spongy apex one-half or more length of club. Antennal groove distant from eye by width of scape at base.

Pronotum slightly longer than wide, with feeble flattening of basal half, scarcely punctate, red with three wide or narrow black stripes with dense white streaks following inner curve of lateral stripes; white streaks or spots on sides of pronotum evanescent in many examples; pronotum rarely entirely red or entirely black. Elytra longer than pronotum by about one-third, red with eight or 10 large black spots outlined by white streaks, some spots merged or lacking; median spots oblique, forming vague heart; entirely red or black individuals generally show at least some white streaks or dots. Prosternum red and black, or black; middle coxal interspace from one-third to one-half diameter of middle coxae; remainder below and legs red and black. Femora varying from linear to clavate. Pygidium with apex bulbously tumid; setae in fresh specimens forming median whitish line.

Male: No ventral tubercle. Aedeagus with apex subtruncate or feebly emarginate; borders narrow; in profile upper edge oblique to rounded apex.

REMARKS: This widespread species varies among individuals in many characters; the color and pattern; the shape of the femora; the length of the rostrum of the female; the shape of the pronotum; the degree of emargination of the aedeagus. Stable characters include the faint flattening at the base of the pronotum, the very long first and very short second tarsal segment, and the widely dilated third segment, the wide separation of the middle coxae, and the rather large mesepimeron with arcuate front border. When the pattern of white streaks is present the species is identifiable at sight (fig. 14). Unfortunately, the white is lacking from many specimens which thus can be confused with other red and black species without white setae, although in most of those the pronotum is either more convex than that of *cinctus* or impressed basally. In *pulchellus* the

pronotum is flattened basally as in *cinctus*, it differs (in its red or its black phase) from *cinctus* in having the sides of the pronotum subparallel, not arcuate or subconical, the third segments of the tarsi only feebly dilated, and the second segment elongate.

The names in synonymy reflect the variability of *cinctus*. Gyllenhal described, but did not name, three additional varieties, and Chevrolat described three forms, giving names to two. The only type I have seen is the lectotype of Champion's *maculipes* which agrees quite well with specimens without white spots identified by Champion as *rubellus* (Gyllenhal), but it has fewer and smaller black spots, and the pronotum is more subconical. The large black spots on the red femora which give "*maculipes*" its name occur in other *cinctus* also, in those with or without white streaks.

Two black specimens without white dots from Tapachula, Chiapas, Mexico (in the British Museum) which were identified by Champion as his variety *immaculatus* of *tredecimpunctatus*³ revealed, after being brushed with water, various tiny white spots in areas where *cinctus* has white spots, and one of the specimens turned from black to dark red. I have re-identified these as *cinctus*. Two additional entirely black *cinctus* have been seen from Lake Catemaco, Veracruz, Mexico, in the Howden collection.

A female from Cayenne and a male from Brazil are probably mislabeled. Thirteen males, including the lectotype of *maculipes*, and seven females were dissected.

BIOLOGY: Some specimens collected by Biolley in Costa Rica were on a species of *Vernonia* (ironweed), a composite in which *R. tredecimpunctatus* of the United States breeds. A note on a male and female taken on *Vernonia brachiata* at San Pedro de Montes de Oca, Costa Rica, by Ballou states "shreds bark of tips and makes holes in stems." A female from Hamburg Farm, Reventazon, Costa Rica, was collected by Neve-ermann "am faulen Früchten am Erdboden -

³ The variety *immaculatus* is a synonym of *lebasii*, not of *tredecimpunctatus* (Vaurie, 1980).

Banane." Several other specimens from Costa Rica are labeled "Gebüsch." In Catamacas, Honduras, a specimen was found "on down tree [balsa] 'guanacaste.'" In Huehuetenango, Guatemala, one was taken at night.

Rhodoaenus pulchellus (Gyllenhal)

Figure 58

Sphenophorus pulchellus Gyllenhal, 1838, p. 898 (Mexico; type, female in Naturhistoriska Riksmuseum, examined).

Rhodoaenus tredecimpunctatus var. *duodecimmaculatus* Chevrolat, 1885, p. 276 (Guatemala; type in Naturhistoriska Riksmuseum; synonymized by Champion).

Rhodoaenus tredecimpunctatus var. *metropolitani* Chevrolat, 1885, p. 277 (Guatemala; type in Naturhistoriska Riksmuseum; synonymized by Champion).

Rhodoaenus pulchellus var. *niger* Champion, "1909-1910" [1910], p. 148 (Tmax, Yucatan, Mexico; lectotype, female, designated from ten specimens in British Museum, examined). New synonymy.

DIAGNOSIS: Differs from *lebasii* and *auctus* in having pronotum flatter, less convex, and longer, with sides subparallel, not roundish; antennae inserted closer to eye; and rostrum at base dorsally sulcate.

RANGE: Mexico, Guatemala, Costa Rica, Panama. (For approximately 166 specimens examined, see Appendix).

DESCRIPTION: Red and black, rarely all red or all black. Length 7.5 to 9.5 mm. Rostrum black or red, arcuate, not humped at base, about same length as pronotum; narrower than apex of front femur; that of male more punctate, wider, less arcuate; of female impunctate except for base, narrower than that of male; basal dilation dorsally sulcate. Gular peduncle of male flat, of female with tiny tooth in front. Antennal scape black or red, longer than one-half length of rostrum and longer than funicle. Antennal club roundish, wider than apex of rostrum; spongy apex one-third length of club. Antennal groove distant from eye by only one-half width of scape.

Pronotum longer than wide, feebly convex in front, flat behind; generally red with five

black spots, occasionally with sixth spot at center of base or with basal band; in a few specimens entirely red or entirely black. Elytra about one-half longer than pronotum, red with sutural black area, if present, spreading out at middle, black subhumeral spot, mediolateral spot (can be lacking), and apex black or with black band and apex red; few individuals entirely red or entirely black; intervals impunctate; striae with small punctures visible in some specimens. Prosternum, underside, and legs black with whitish dots or with yellowish powdery coating; middle coxal interspace about one-third diameter of coxae. Femora linear, scarcely widening to apex. Pygidium with apex feebly tumid, but not extending much beyond abdomen; subacuminate.

Male: No ventral tubercle. Aedeagus with apex truncate; in profile sides oblique to rounded apex.

REMARKS: This species, which apparently does not occur north of Mexico, has been confused in the literature and in collections with *tredecimpunctatus* (Illiger) of the United States. Blatchley and Leng (1916) considered it and *quinquepunctatus* (Say) as varieties of *tredecimpunctatus* but what they called *pulchellus* appears to be the red phase of *quinquepunctatus*. Although the three species can have a rather similar pattern, *pulchellus* differs in having linear, not at all clavate femora, the base of the rostrum smooth, not humped, the sides of the pronotum and elytra subparallel, and it is in all a more elongate, flatter species. Csiki (1936) gave a new name (*formosus*) to what he considered as *pulchellus* Riley (1871), but Riley did not describe a new species; he merely mistook specimens of *quinquepunctatus* for the *pulchellus* of Gyllenhal (he called it *Sphenophorus pulchellus* Schoenherr).

In Champion's variety, *niger*, the entire body is black, but with red suffusions in some specimens. I have seen black specimens from Yucatan, Mexico, Canalitos and Coban, Guatemala, and "Costa Rica."

Although *pulchellus* differs in shape from *cinctus*, the black spotting of the elytra can be similar in some specimens, also the feeble

flattening at the base of the pronotum; *cinctus* also has a black form.

Two males were dissected.

BIOLOGY: A specimen in the National Museum was collected by Hambleton "on Citrus" in Guatemala City, Guatemala, in July. In Cuernavaca, Mexico, Krauss collected specimens "on Composite shrub."

Rhodobaenus tredecimpunctatus (Illiger)

Figures 42, 57

Curculio tredecimpunctatus Illiger, "1791-1794" [1794], p. 613 (North America).

Curculio cribrarius Fabricius, 1798, p. 165 (America boreali; type not in Fabricius's collection in Copenhagen (Zimsen, 1964); synonymized by Gyllenhal, 1838).

Curculio quatuordecimpunctatus Panzer, 1798, p. 54, pl. 37, fig. 18 (locality not given, type not found; synonymized by Gyllenhal, 1838).

Curculio leptocerus Panzer, 1798, p. 57, pl. 37, figs. 23 (locality not given, type not found; synonymized by Gyllenhal, 1838).

DIAGNOSIS: Hind femora more clavate than those of other species. Differs from sympatric *quinquepunctatus* in being generally larger; in having no ventral keel on aedeagus; no black patch at apex of elytra; suture and epipleurae of elytra red, not black; basal dilation of rostrum deeply sulcate, and median black spot of pronotum generally not much larger than other spots.

RANGE: Eastern Canada, United States, and northern Mexico (Chihuahua). (For approximately 365 specimens examined, see Appendix.)

DESCRIPTION: Red and black. Length 6 to 10 mm. Rostrum as described for *quinquepunctatus* except for basal dilation which is dorsally generally squarish, not elongate, and distinctly deeply sulcate. Gular peduncle, antennal scape, club, and groove as described for *quinquepunctatus*. Pronotum convex, scarcely longer than wide, impunctate or feebly punctate, red with round black median spot and four round lateral spots, median mark rarely larger than other marks, rarely elongate. Elytra red with eight black spots, subapical spots generally larger than others, spots about equidistant; epipleurae red, rarely blackish. Prosternum and pygid-

ium as described for *quinquepunctatus* but femora entirely black. Femora noticeably clavate.

Male: No ventral tubercle. Aedeagus with apex truncate, medially sclerotized or membranous; ventrally smooth, not keeled; in profile upper border oblique to rounded apex.

REMARKS: This species is one of the three occurring in the United States, the others being *quinquepunctatus* and *pustulosus*. It was considered by Champion to include 15 varieties, mostly from Mexico or Central America, but Guillermo Kuschel, who had done some preliminary work on the genus, established (personal commun.) that some of these synonyms were in fact valid species. Following his lead, I find that of the 15 varieties, five are valid species (*auctus*, *lebasii*, *nigripennis*, *quinquepunctatus*, *thoracicus*), one is an unnecessary new name, and the remainder are synonyms of *auctus*, *lebasii*, or *quinquepunctatus*. In addition, *tredecimpunctatus* does not occur farther south than extreme northern Mexico. Throughout most of the eastern and central United States it is sympatric with *quinquepunctatus*, but occurs alone in the western states (see map, fig. 42) except for a few specimens of *pustulosus* in southern Arizona and Texas. In the literature in the United States (Riley, 1871; Webster, 1903; Blatchley and Leng, 1916; Weiss and Lott, 1923) it has been confused with *pulchellus* (Gyllenhal), which is not found north of Mexico, or with *quinquepunctatus*. The dorsal pattern of *tredecimpunctatus* is remarkably constant throughout the United States; the only variations are in the size of the black spots, but their number and placement remain the same. It is *quinquepunctatus* that has a changeable pattern.

I have omitted from the synonymy two older names, one of Voet (1806) which has no description but uses the same illustration as *leptocerus* (Panzer); and one of Sturm (1826), which concerns a weevil from Java, without description or illustration.

Nineteen males were dissected.

BIOLOGY: Notations on the labels of specimens examined read as follows: "on ragweed," Summit, New Jersey; "coll. from

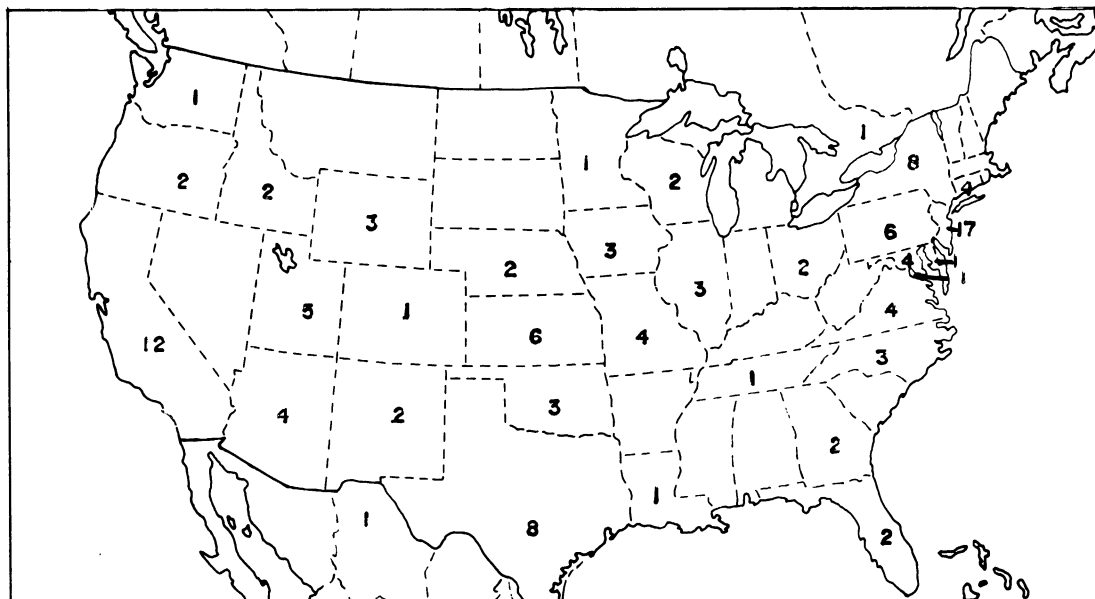


FIG. 42. Distribution of *Rhodobaenus tredecimpunctatus*, showing number of localities by state.

Vernonia interior SM.," Manhattan, Kansas; "in stems of *Helianthus*," Galveston, Texas; "on *Helianthus*," Connecticut, Oklahoma, Texas, and Utah; "taken on *Helianthus tuberosus*," Douglas County, Kansas; "on *Verbesina occidentalis*," Radford, New Jersey; "feeding stems of *Heliopsis*," Root Garden, New York. Some of the records of biology in the literature probably pertain to *quinquepunctatus* (see that species). Champion remarked that *tredecimpunctatus* and its varieties occurred "gregariously on the flowers of various trees and shrubs."

Rhodobaenus quinquepunctatus (Say)

Figures 43, 52–55

Calandra quinque-punctata Say, 1824, pl. 9, fig. 2 [no pp.] (East Florida and Georgia; type lost). *Rhodobaenus tredecimpunctatus* var. *triangularis* Champion, "1909–1910" [1910], p. 151, pl. 7, fig. 26 (lectotype, male, Mexico, here designated from four specimens in British Museum, examined). New synonymy.

DIAGNOSIS: Differs from allopatric *auctus* and *lebasii* in having femora feebly dilated, not strictly linear, and from sympatric *tre-*

decimpunctatus in having them less dilated, also more black on elytra (on epipleurae, or sutural area, on sides or at apex) or elytra almost entirely black.

RANGE: Eastern Canada, eastern United States west to Dakotas and south to Texas; Coahuila, northeastern Mexico. (For approximately 419 specimens examined, see Appendix.)

DESCRIPTION: Red and black or in great part black. Length 5 to 7.5 mm. Rostrum black, arcuate, humped at base, not or only feebly punctate, narrower than apex of front femora; of male slightly shorter than pronotum, of female longer and narrower than that of male; basal dilation dorsally not or only finely sulcate. Gular peduncle of male flat, of female with small angle in front. Antennal scape black, longer than one-half length of rostrum (or three-fourths), as long as funicle and club combined. Antennal club generally elongate, as wide as or wider than apex of rostrum; spongy apex about one-half length of club. Antennal groove distant from eye by about width of scape.

Pronotum convex, scarcely longer than

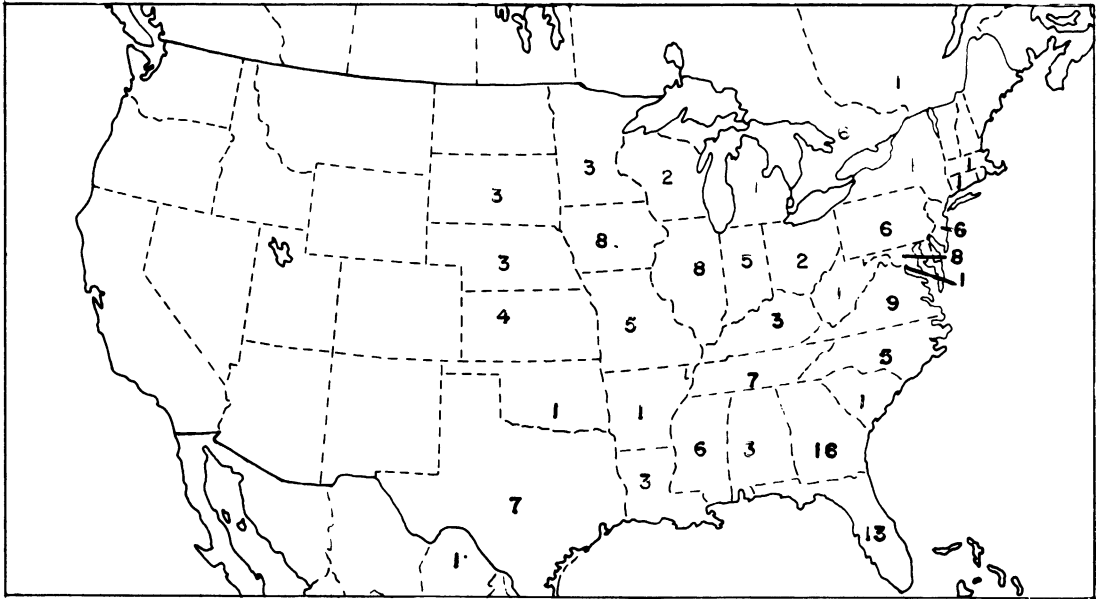


FIG. 43. Distribution of *Rhodobaenus quinquepunctatus*, showing number of localities by state.

wide, impunctate or feebly punctate, red with black diamond-shaped median stripe, often joined to black basal band, or black basal spots forming triangles; median stripe wider or longer than lateral black spots. Elytra (figs. 52–55) in red phase: eight spots and apex at middle black, or with four black spots (two median spots merged into one) and black apical band not quite reaching sides; sutural area black in all or in part; black phase: humerus, ninth and short tenth intervals red; epipleurae black or dark red. Prosternum black; middle coxal interspace about one-third diameter of coxae; venter and legs black except for large red spots on some femora. Femora wider at apex than at base, feebly clavate. Pygidium tumid in apical half.

Male: No ventral tubercle. Aedeagus with apex truncate, medially sclerotized or somewhat membranous; ventrally with short basal keel; in profile upper border oblique to rounded apex.

REMARKS: This species was formerly considered limited in range to the southeastern United States, but in fact it occurs through-

out the eastern and central states and in extreme northern Mexico, along with *tredecimpunctatus* with which it has been confused. Say described it as having black elytra with red on the outer intervals and red spots on the femora. However, the discovery by Guillermo Kuschel (personal commun.) of a short keel or carina on the underside of the aedeagus has shown that *quinquepunctatus* is not invariably black, but that red and black specimens as described above under "Elytra" are also *quinquepunctatus*. In further support of this, I have examined a black-elytra male and a red and black female, taken "in copula" by Charles W. O'Brien in Tallahassee, Leon County, Florida, in June. In *tredecimpunctatus* there are eight black spots on the elytra, no black area apically, no keel on the aedeagus, and the femora strongly clavate. In series, it is evident that *quinquepunctatus* is a smaller species.

Although the four specimens of Champion's variety *triangularis* are from Mexico, there is no exact locality mentioned. The elytral pattern with the suture and most of the apex black is common in the United

States. Champion's conception of *quinquepunctatus* includes that species and *auctus*, both as black varieties of *tredecimpunctatus*.

The black phase of *quinquepunctatus* has no counterpart in *tredecimpunctatus*. I have seen it from Virginia, Tennessee, South Carolina, Georgia, Alabama, Florida, and Iowa, but the red and black phase occurs in these states also. In the Museum in Paris are seven examples from Savannah, Georgia, of which two have the black elytra and red femoral spots as described by Say, and the others are red with varying amounts of black; in all the femora are feebly dilated and the three males have a ventral keel on the aedeagus. The ventral keel was found in 26 additional specimens from 11 states (Washington, D.C., Kentucky, Alabama, Maryland, Pennsylvania, New Jersey, Florida, Missouri, Illinois, Iowa, and South Dakota). Other species with a ventral keel are *lebasii* and *confusus*.

The black phase can be confused with the black phases of *auctus*, *lebasii*, and *pulchellus*, but *quinquepunctatus* differs from them in having the femora feebly clavate, not linear; it is also allopatric.

I have seen two specimens from "Brazil" and one specimen from Cayenne, French Guiana, but believe that they were mislabeled.

BIOLOGY: Notations on the majority of labels concern Compositae. Records of actual breeding are as follows: "bred from larvae. Feeding on ragweed [*Ambrosia*]" in Muscotine, Iowa; "reared ex rootstalks sunflower [*Helianthus*]," Lincoln, Nebraska; "bred in *Iva ciliata* stem [a ragweed]," Baton Rouge, Louisiana; "in Burdock stem," Bryn Athyn, Pennsylvania; "in stems of *Dahlia*," Tennessee, Georgia, and Wisconsin; "pupa in stem *Ambrosia trifida*," Nashville, Tennessee; "bred in *Ambrosia trifida* stem," Victoria, Texas; "ex stem *Ambrosia*," Atlanta, Georgia; "bred *Xanthium* stem," Victoria and Dallas, Texas; "copulating on *Arctium*," Virginville, Pennsylvania.

Additional labels read as follows: "on *Helianthus annuus*," Charleston, South Carolina; "on *Helianthus*," Dallas and Robstown, Texas; "Cocklebur," Hastings,

Florida; "on bur plant," Belle Fourche, South Dakota; "*Sesbania* [Leguminosae]," Deland, Florida; "on *Eupatorium purpureum*," Britannia, Ontario, Canada; "on Bloodwood foliage," Westwego, Louisiana; "on *Artemisia*," in five localities (one specimen is the black phase); "on Johnston Grass tops," New Orleans, Louisiana. Also "feeding on *Ambrosia trifida*," Lafayette, Indiana; "*Ambrosia* sp.," "taken on *A. trifida*," and "on ragweed," Sanford, Florida, Douglas County, Kansas, and Tallahassee, Florida; "at flowering Umbellifer," Fredericksburg, Texas.

Specimens which I have not seen are recorded from the literature by Riley (1871, p. 60, fig. 23) as "bred four specimens cocklebur" and "breeds in *Xanthium strumarium*." Riley's notes referred to *Sphenophorus pulchellus* (Gyllenhal), but his illustration is that of *quinquepunctatus* (*pulchellus* does not occur in the United States). The illustration in Blatchley and Leng (1916, p. 550, fig. 119) is the same as that used by Riley and, although it is called the variety *pulchellus* of *R. tredecimpunctatus*, it is also *quinquepunctatus*. The authors say it is common in Indiana "especially in the axils of the leaves of ironweed (*Vernonia*), in the stems of which it is said to breed," and that it "breeds in the stems of *Xanthium commune* and other Compositae: joe-pye weed, thistle, leaf cup, sunflower, greater ragweed, rosinweed." Say (1824) remarked that "*tredecimpunctatus* [*quinquepunctatus* ?]" in Missouri, Arkansas, North West Territory, and Pennsylvania was not injurious to any useful plant, but to milkweed (*Asclepias syriaca*) on banks near water. Blatchley and Leng (*op. cit.*) say it is "not rare on a species of thistle," in Florida. Specimens of *tredecimpunctatus* have also been taken on *Vernonia*, *Ambrosia*, and *Helianthus*. In Sarpy County, Nebraska, both species (as noted on the labels) were collected together from sunflower. Chemsak (1963) in his study of the cerambycid genus *Tetraopes*, said that "Utilization of the same host plant by two sympatric species is . . . quite common," but that one of the species was generally less numerous.

Rhodobaenus auctus Chevrolat

Figures 44, 62–64

Rhodobaenus auctus Chevrolat, 1885, p. 278 (Mexico; type, female, in Naturhistoriska Riksmuseum, examined).

Rhodobaenus elegans Chevrolat, 1885, p. 278 (Mexico; type in Naturhistoriska Riksmuseum, examined). New synonymy.

Rhodobaenus corniculatus Chevrolat, 1885, p. 280 (Mexico; type in Naturhistoriska Riksmuseum, examined). New synonymy.

Rhodobaenus tredecimpunctatus var. *graphicus* Champion, "1909–1910" [1910], p. 150, pl. 7, fig. 24 (lectotype, male, Escazu, Costa Rica, here designated from original specimens in British Museum, examined). New synonymy.

DIAGNOSIS: Elytra either black with short red tenth interval, or elytra mostly red with black markings medially or laterally or both or with two black medial spots. Similar to *lebasii*, but differing in elytral pattern and in absence of ventral keel on aedeagus. Some specimens resemble *pulchellus* but see Diagnosis of that species.

RANGE: Mexico, British Honduras, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama; Colombia. (For approximately 428 specimens examined, see Appendix.)

DESCRIPTION: Red and black. Length 6.5 to 9 mm. Rostrum black, humped at base, arcuate, impunctate or feebly punctate; that of male about length of pronotum, only one-half width of apex of front femur; of female longer, narrower, more arcuate than that of male; basal dilation dorsally generally not sulcate. Gular peduncle of male flat, of female with small angle in front. Antennal scape black, longer than one-half length of rostrum, about as long as funicle and club combined. Antennal club as wide as or slightly wider than apex of rostrum; spongy apex from one-third to one-half length of club. Antennal groove distant from eye by almost width of apex of scape.

Pronotum convex, scarcely longer than wide, impunctate or finely punctate, red, either with short median black stripe and four lateral spots (basal spots can be in form of triangles), or median stripe expanded and coalescent with basal black band which cov-

ers basal spots. Elytra longer than pronotum by about one-third, red with two black spots medially, or red with black of suture spreading sideways at middle, at apex, or both, with or without two or three lateral black spots; or elytra black with short tenth interval red and ninth interval red at base; epipleurae black. Prosternum tumid, mostly black; middle coxal interspace one-third or one-fourth diameter of coxae; venter and legs black; femora linear, as wide at base as at apex; pygidium with apex tumid; sides narrowing to rounded apex.

Male: No ventral tubercle. Aedeagus with apex truncate; borders narrow, ventrally smooth; in profile upper edge oblique to apex.

REMARKS: This species and its three synonyms were considered by Champion (*loc. cit.*) as varieties of *R. tredecimpunctatus* from which they differ principally in having the femora strictly linear, not clavate (the femora are as wide at base as at apex). Chevrolat's type series of *auctus* includes two specimens of *lebasii* from Colombia as well as the type of *auctus* and two other females from Mexico. The type of *auctus* is chiefly black; in the type of "*elegans*" there are four black spots across the red elytra; in the type of "*corniculatus*" the suture and adjacent intervals of the elytra, with an expanded area on the disc, are black; in "*graphicus*" there are in addition several lateral black spots and some black subapically. All these forms are illustrated by Champion (*loc. cit.*); the lectotype of *graphicus* is the specimen figured by Champion.

There are many variations in these color patterns which are found in many of the same localities. Where they are found together, the form with the elytra black is generally less frequent; thus in Colima, Mexico (the Volcan), seven of 32 specimens are the black phase and at 10 miles south of Tonila, Colima, three of seven. In a series of 26 from Cuernavaca, Mexico, there are none with black elytra, and in 19 from Rio Frio, Colombia, the elytra are black in all. (Specimens from Colombia were examined subsequent to my paper on species in South America, but should have been included.)

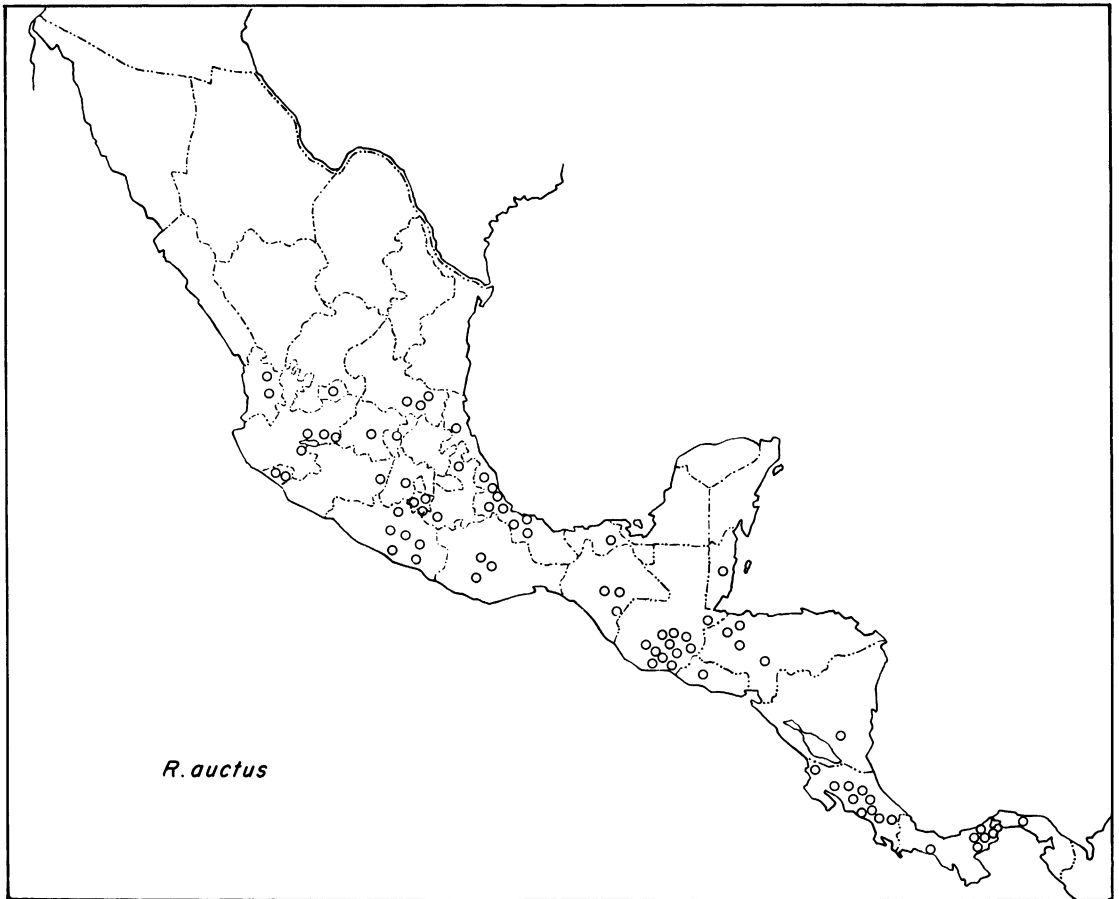


FIG. 44. Distribution of *Rhodobaenus auctus*. (*R. auctus* occurs also in northern South America.)

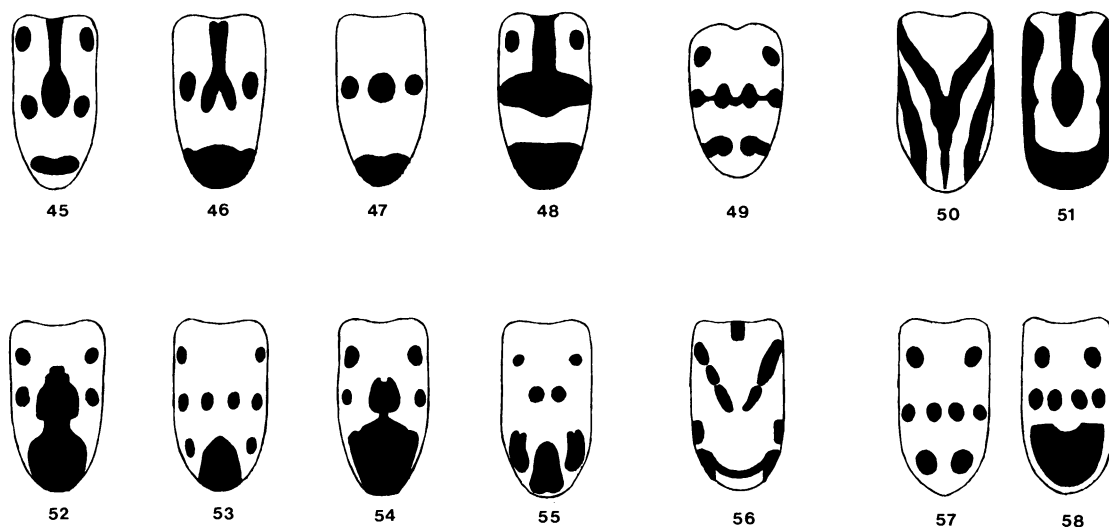
The black elytra form of *auctus* is similar to the black form of *quinquepunctatus*, but *auctus* differs in having the red generally limited to the humerus, seldom extending to the apex of the elytra, and the aedeagus lacking a ventral keel. Twenty-six males from various localities and of various patterns were dissected.

BIOLOGY: Several specimens from Cuernavaca, Mexico, were taken "on composite shrub" by Krauss; some are labeled on "maize."

Rhodobaenus lebasii (Gyllenhal)
Figures 59–61

Sphenophorus lebasii Gyllenhal, 1838, p. 902 (Cartagena, Colombia; type, female, in Naturhistoriska Riksmuseum, examined). For synonymy, see Vaurie (1980), or Checklist above.

DIAGNOSIS: Similar to *pulchellus* and *auctus* in having pronotum convex, not impressed, surface without white spots, third tarsal segments scarcely dilated, elytra red and black or virtually black, but differing in



FIGS. 45–58. Diagrammatic elytral patterns of *Rhodobaenus*. (White areas are red, black are black.) 45–49. *R. bicinctus*. 50. *R. ypsilon*. 51. *R. deltoides*. 52–55. *R. quinquepunctatus*. (54 is lectotype of *triangularis*.) 56. *R. cariniventris*. 57. *R. tredecimpunctatus*. 58. *R. pulchellus*.

having apical black of elytra extending to sides, and aedeagus on underside keeled, not smooth. Femora generally red with some black; pronotum with median black stripe long, narrow (sometimes reduced to spot), and four lateral spots.

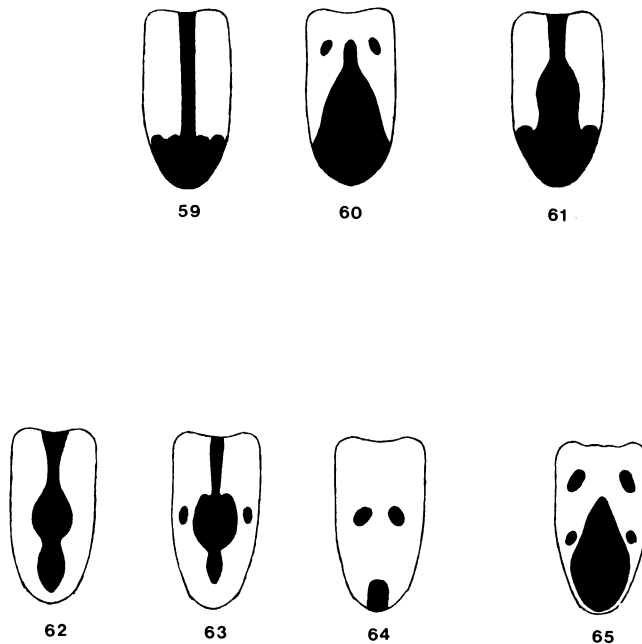
RANGE: Mexico, Guatemala, British Honduras, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama; also Trinidad and northern South America. (For approximately 275 specimens examined, see Vaurie, 1980; and for 102 additional ones, see Appendix.)

DESCRIPTION: (See Vaurie, 1980.)

REMARKS: At first I considered *lebasii* and *auctus* as one polymorphic species, but the discovery by Guillermo Kuschel (personal commun.) of a constant difference in the aedeagus of *lebasii* (a ventral carina) led me to differentiate *lebasii* from *auctus*, and also from *tredecimpunctatus* with which it had been synonymized. In red and black examples of *lebasii* there is a black inverted “V” on the elytra (fig. 60) which is sometimes expanded somewhat at the middle, and the apex of the elytra is black from side to side;

in red and black *auctus* the apical black part does not normally extend to the sides. In *lebasii* the narrow median black line on the pronotum is only seldom replaced by a black spot; in *auctus* the median black mark is wide and is generally joined to a basal black band, or it is diamond-shaped. In *auctus* the legs are black, but in *lebasii* the femora are red with the base and apex black (or, in a few specimens, the legs are entirely black).

In *lebasii* (variety *immaculatus*), as also in *pulchellus* (variety *niger*), some individuals are entirely black. Curiously enough, both black phases have been collected in the same locality, Temax, Yucatan, Mexico, and by the same collector, Gaumer. However, these black forms occur also elsewhere and along with the red forms. *Rhodobaenus lebasii* differs from *pulchellus* in having the basal dilation of the rostrum dorsally smooth, not sulcate, the rostrum swollen at the base, the pronotum convex, not flat, the epipleurae of the elytra (in red forms) black, and the aedeagus keeled ventrally, not smooth. A very different species with a keel



FIGS. 59–65. Diagrammatic elytral patterns of *Rhodobaenus*. 59–61. *R. lebasii*. 62–64. *R. auctus*. 65. *R. quinquepunctatus*. (See also figs. 52–55.)

is *confusus*, and there is a keel, generally at the base of the aedeagus only, in *quinquepunctatus*. Twelve males of *lebasii* were dissected.

BIOLOGY: Two specimens of *lebasii* were taken in the bark of rotten wood at El Limon, Aragua, Venezuela, in June, and one specimen by sweeping roadside vegetation in Veracruz, Mexico.

Rhodobaenus thoracicus (Gyllenhal)

Sphenophorus variabilis var. *thoracicus* Gyllenhal, 1838, p. 900 (no exact locality; type probably in Naturhistoriska Riksmuseum).

DIAGNOSIS: Elytra black, without red such as present in black phases of *auctus* and *quinquepunctatus*; differs from them further in having antennal scape scarcely, if at all, longer than funicle; pronotum as wide as long, and prosternum red with black spot on sides, not entirely black.

RANGE: Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama.

(For 128 specimens examined, see Appendix.)

DESCRIPTION: Black and red. Length 5 to 6.5 mm. Rostrum black, humped at base, narrower than apex of front femur; that of male scarcely arcuate, same length as pronotum; of female arcuate, slightly longer than pronotum, much narrower than that of male; basal dilation dorsally not sulcate. Gular peduncle of male flat; of female with slight prominence in front. Antennal scape black, relatively short, scarcely more than one-half length of rostrum, about length of funicle, tomentose, thick apically. Antennal club roundish, as wide as, or wider than apex of rostrum; spongy apex from one-third to one-half length of club. Antennal groove separated from eye by width of scape at base.

Pronotum convex, as wide as long; sides parallel to constricted apex; red with very small median spot and two large basal spots black; apical band black. Elytra black, longer than pronotum by one-half or one-third; intervals and striae finely or coarsely punc-

tate. Prosternum scarcely tumid, red with black spot on sides, and black around coxae; middle coxal interspace one-third or one-fourth diameter of coxae; remainder below and legs black. Femora distinctly linear, scarcely wider at apex than at base. Pygidium bulbously tumid at apex, densely punctate.

Male: No ventral tubercle. Aedeagus with apex truncate; in profile upper edge oblique to apex.

REMARKS: Champion ("1909-1910" [1910]) considered this species as one of the many varieties of *tredecimpunctatus* from which it differs, not only in the characters mentioned in the Diagnosis, but also in having the femora linear, not clavate. The scape of the antennae is relatively thicker than that of related species. In a specimen from Colima, Mexico, the elytra are dark red, and in several specimens from Panama a bit of red shows through. The punctures are white in a few examples from El Salvador. Four males were dissected.

A varietal name proposed by Champion (*loc. cit.*) has been omitted as it refers to a specimen; there is no description.

BIOLOGY: A specimen was collected near the Chagres River, Panama, by "sweepings around cornfield," and one at light in San Salvador and in Las Cumbres, Canal Zone, Panama.

Rhodobaenus nigripennis Champion

Rhodobaenus tredecimpunctatus var. *nigripennis* Champion, "1909-1910" [1910], p. 151, pl. 7, fig. 30 (lectotype, male, Yolos, Oaxaca, Mexico, here designated from 11 specimens from Mexico and Guatemala, in British Museum, examined).

DIAGNOSIS: Differs from *auctus* in rarely having trace of red on elytra, and from *auctus* and *thoracicus* in having rostrum thicker, wider, and shorter; also in having red on femora and sides of metasternum in many specimens.

RANGE: Mexico, Guatemala. (For 42 specimens examined, see Appendix.)

DESCRIPTION: Red and black. Length 7 to 8.5 mm. Rostrum black or dark red, arcuate,

humped at base; that of male slightly shorter than pronotum, as wide as apex of front femur, punctate basally; that of female as long as pronotum and narrower than that of male; basal dilation sulcate. Gular peduncle of male flat; of female with sharp angle in front. Antennal scape black, longer than one-half length of rostrum; slightly longer than funicle. Antennal club elongate, as wide as apex of rostrum; spongy apex more than one-half length of club. Antennal groove separated from eye by width of scape at base.

Pronotum feebly convex in front, feebly concave or flattened in front of scutellum, as wide as long, red with median stripe, apical band, mediolateral small spots (if present), and basal triangles black. Elytra black, some specimens with trace of red on humerus and at base of seventh interval, longer than pronotum by one-third; punctures not visible. Prosternum feebly tumid in front of coxae, black, short (one and one-half diameter of coxae); middle coxal interspace one-third or one-fourth diameter of coxae; remainder below black or with some red showing through. Femora black or red with apex black, linear. Pygidium convex; apex narrowly rounded.

Male: No ventral tubercle. Aedeagus with apex truncate, medially membranous; side borders narrow; in profile upper border oblique to rounded apex.

REMARKS: This is one of the species previously considered as a variety of *tredecimpunctatus* from which it differs in having the elytra virtually black, the rostrum wider, as wide as the apex of the front femur, not narrower, the femora linear, not clavate, and the pronotum scarcely convex. In several specimens a red suffusion shows through the black and in two there is a broad red stripe on the elytra. The pronotum is flatter than that of related species; the usual pattern is a narrow, entire, median black stripe and two small basal angles; the apical band joins the black of the prosternum. The third tarsal segment is only feebly dilated. Three males were dissected.

BIOLOGY: At Yepocapa, Chimaltenango, Guatemala, this species was collected "sweeping vegetation."

Rhodobaenus rubrovittatus

Rhodobaenus rubrovittatus Champion, "1909-1910" [1910], p. 142, pl. 7, figs. 8, 8a, 9, 9a (lectotype, male, Tupaturo, Guanajuato, Mexico, here designated from 14 examples from Mexico and Guatemala, in British Museum, examined).

DIAGNOSIS: Small, elongate, parallel-sided species with pronotum and elytra in great part black, each elytron with broad or narrow red lateral stripe. Metasternum and pygidium longer than normal, but femora short, and excavation of claw segment large.

RANGE: Mexico, Guatemala. (For 28 specimens examined, see Appendix.)

DESCRIPTION: Black with red. Length 6 to 7.5 mm. Rostrum black, feebly to strongly arcuate, not humped at base where some minute setae; that of male shorter than pronotum, feebly arcuate, as wide as apex of front femur, densely punctate; of female strongly arcuate, narrower than that of male, feebly punctate; basal dilation sulcate. Gular peduncle of male flat; of female with sharp little angle in front. Antennal scape black, longer than one-half length of rostrum; about same length as funicle. Antennal club wider than apex of rostrum; spongy apex as long as or longer than one-half length of club. Antennal groove opening onto eye.

Pronotum convex or flat, longer than wide, impunctate, black with apex and part of sides red, or entirely black, or red with median black stripe. Elytra more than one-half longer than pronotum, but not wider, black with red lateral stripe covering from two to six discal intervals or only one interval; intervals impunctate; striae in red areas densely punctate. Prosternum not tumid; middle intercoxal space one-fourth diameter of coxae; venter and legs black. Femora linear; hind femora short, reaching to fourth abdominal segment only. Pygidium abruptly, strongly tumid at apex, very long, extending beyond abdomen; acuminate, densely punctate.

Male: No ventral tubercle. Aedeagus with V-shaped emargination apically, hollowed out; borders thick.

REMARKS: This narrow little species is unique; it differs from the majority of the ge-

nus in having short middle and hind femora, and long metasternum, elytra, and pygidium. The length of the metasternum is four or five times the diameter of the middle coxae; the middle femora are only one-half the length of the metasternum. The third tarsal segment is only feebly dilated.

The species is readily recognizable in spite of various color variations: in a specimen from Guatemala and in three specimens from Chiapas, Mexico, the red stripes of the elytra are reduced in length and are present on the sixth interval only; in the paralectotype the elytra are red, but have a black line near the outer edge, black on the suture that expands toward the apex, and two short black lines on the third interval near the middle. One male was dissected.

Rhodobaenus aterrimus (Champion)

Sphenophorus aterrimus Champion, "1909-1910" [1910], p. 156 (lectotype, male, Mexico, here designated from original pair in British Museum, examined).

DIAGNOSIS: Entirely black, robust; similar to *mundus* in having broad, flat elytral intervals and wide, triangular scutellum, but differs in having elytral intervals finely punctate, not impunctate, and striae impunctate, not densely punctate; pygidium feebly convex, not medially cristate; and spongy apex of antennal club shorter.

RANGE: Mexico. (For five specimens examined, see Appendix.)

DESCRIPTION: Entirely black. Length 13 to 15 mm. Rostrum arcuate, punctate, not humped at base, narrower than apex of front femur, distinctly shorter than pronotum, especially that of male; basal dilation dorsally deeply sulcate, markedly constricted behind angles over antennal insertion. Gular peduncle of male rounded in front; of female with small acute angle in front and feebly sinuate behind. Antennal scape longer than one-half length of rostrum and about as long as funicle and club combined. Antennal club round, not quite as wide as rostrum; spongy apex from one-third to almost one-half length of club. Antennal groove separated from eye by

width of scape at apex; lower border angulate under rostrum.

Pronotum convex or flattish, appearing longer than wide, but in fact almost as wide as long, sparsely, finely punctate. Elytra longer than pronotum by about one-half, at base scarcely wider; intervals flat, shining, finely punctate; striae impunctate. Prosternum tumid in front of coxae, prominent behind coxae; middle coxal interspace about one-third diameter of coxae. Femora clavate, short, hind femora not reaching to apex of abdomen. Pygidium densely punctate, shining, scarcely convex; apex rounded.

Male: No ventral tubercle. Aedeagus with apex feebly emarginate; dorsally slightly flared out toward apex, strongly sclerotized; in profile oblique to apex.

REMARKS: In one of the two specimens from San Jeronimo and in a specimen from Colima there are two small oval depressions one on each side of the center of the pronotum; in one specimen the elytra are more dark red than black. In the lectotype there is a feebly elevated median line on the pronotum which is absent from other specimens. The claw excavation is small for the size of the insect.

In addition to the characters given in the Diagnosis, *aterrimus* differs from *mundus* in having the prosternum behind the coxae prominent and the pronotum without trace of a basal impression. In both species the eyes seem narrower than normal. One male was dissected.

Rhodobaenus mundus (Champion)

Figure 15

Sphenophorus mundus Champion, "1909-1910" [1910], p. 156 ("Sierra de Durango," Mexico; type, female, in British Museum, examined).

DIAGNOSIS: Robust black species suffused, in some examples, with red; differs from equally large *valens* in having no pattern or white dots on elytra, and rostrum long and narrow, not short and wide; differs from *aterrimus* as stated in diagnosis for that species.

RANGE: Mexico. (For 33 specimens examined, see Appendix.)

DESCRIPTION: Black, reddish, or black and red. Length 9 to 13 mm. Rostrum black, arcuate, humped at base, feebly punctate or impunctate, narrower than apex of front femur; that of male shorter than pronotum; of female as long as pronotum; basal dilation deeply sulcate. Gular peduncle of male rounded; of female angulate in front. Antennal scape as long as or longer than three-fourths length of rostrum and as long as funicle and club combined. Antennal club elongate, distinctly wider than apex of rostrum; spongy apex more than one-half length of club. Antennal groove separated from eye by width of scape at base.

Pronotum convex at middle, feebly impressed behind, as wide as long or feebly longer than wide, with or without feebly elevated median line; generally black, but can be red, or red with base or basal half black, or median stripe black on red; finely punctate or impunctate. Elytra almost twice length of pronotum, black or dark red; intervals impunctate; striae densely punctate. Prosternum tumid in front of coxae, black, or red in part; middle coxal interspace one-third or one-fourth diameter of coxae; remainder below and legs black. Femora feebly clavate. Pygidium finely, densely punctate, subcristate and setose to apex; apex subacuminate.

Male: No ventral tubercle. Aedeagus with apex truncate, medially membranous; borders wide; in profile apex oblique.

REMARKS: Champion described *mundus* and *aterrimus* in *Sphenophorus*, remarking that *mundus* could go as well in *Rhodobaenus*. The claw segment is excavated in both species. The pronotum is more convex at the middle in *mundus*, the elytra at the base are wider than the pronotum and the striae of the elytra are densely punctate, not impunctate as in *aterrimus*. In fresh condition the pygidium, as in *pustulosus*, is medially cristate with white setae.

Five of 17 specimens from Huehotitan, Jalisco, may represent a new species or merely variations of *mundus*. They differ from other specimens in having the elytral striae seemingly impunctate (the specimens are greased), the pronotum narrower, and the antennal club more round than elongate.

The type locality, Sierra de Durango, is one that Champion (*loc. cit.*, p. 210) questioned for several other species of southern distribution; it is probably not in the northern state of Durango, but in Oaxaca or Veracruz.

Six males and one female were dissected.

Rhodobaenus octocostatus (Champion)

Sphenophorus octocostatus Champion "1909-1910" [1910], p. 157, pl. 7, figs. 33, 33a (lectotype, female, Omilteme, Guerrero, Mexico, here designated from three original specimens in British Museum, examined).

DIAGNOSIS: Differing from other *Rhodobaenus* in having elytra costate with eight convex, not flat, black stripes, and pronotum with black median stripe elevated, not flat.

RANGE: Mexico. (For three specimens examined, see Appendix.)

DESCRIPTION: Black with brown and black stripes on elytra. Length 11 to 12 mm. Rostrum black, shorter than pronotum, feebly humped at base, finely, densely punctate, narrower than apex of front femur; basal dilation dorsally sulcate, strongly constricted behind angles over antennal insertion. Gular peduncle of male right angled; of female with obtuse angle in front. Antennal scape longer than one-half length of rostrum, about equal in length to funicle and club combined. Antennal club roundish, almost as wide as apex of rostrum; spongy apex about one-half length of club. Antennal groove separated from eye by twice width of scape at base.

Pronotum longer than wide, black, convex, with elevated; impunctate median line; remainder with deep, dense, coarse punctures among reddish brown encrustations. Elytra longer than pronotum by one-half, with eight broad, black, convex, glabrous costae and eight reddish brown, depressed interspaces set with small black tubercles. Prosternum black, scarcely tumid, punctate coarsely as on pronotum; area behind front coxae bituberculate and tumid; middle coxal interspace one-fourth diameter of coxae. Femora strongly bulbous, clavate, hind femora not reaching apex of elytra. Pygidium evenly convex, densely punctate.

Male: No ventral tubercle. Aedeagus with apex emarginate, membranous medially.

REMARKS: This species, as well as *aterri-mus* and *mundus*, which precede, was described in *Sphenophorus*, and it resembles dorsally some of the large species of that genus in the United States. It belongs in *Rhodobaenus*, however, because of the excavated claw segment of the tarsus and the fact that the pygidium is similar in both sexes.

One male was dissected.

Rhodobaenus denti-rostris (Champion)

Figure 16

Homalostylus denti-rostris Champion, "1909-1910" [1910], p. 118, pl. 5, figs. 31, 31a, 32 (Santecomapan, Veracruz, Mexico; type, male, in British Museum, examined).

DIAGNOSIS: Dark red with some black, differing from other species in having combination of characters as follows: dilated antennal scape (as wide as rostrum at middle); long, narrow, basally impressed pronotum almost as long as elytra; acutely angulate lower (or posterior) border of antennal groove; flat, very long prosternum (from front of coxae to apex of prosternum three or more times longer than diameter of coxae); and claw segment not excavated.

RANGE: Mexico, Costa Rica; Ecuador. (For six specimens examined, see Vaurie, 1980; for three additional specimens, see Appendix.)

DESCRIPTION: (see Vaurie, 1980).

REMARKS: Not only is the prosternum longer than normal between the coxae and the front border, but it is longer from the base of the front coxae to the base of the prosternum (twice as long as in other species).

Rhodobaenus rubicundus Champion

Figure 17

Rhodobaenus rubicundus Champion, "1909-1910" [1910], p. 151, pl. 7, figs. 31, 31a (lectotype, male, Volcan de Chiriqui, Panama, in British Museum, examined).

DIAGNOSIS: Opaque, reddish, with faint black marks and whitish spots; unique in

combination of: conical pronotum; subtriangular elytra with strong subapical callus; long, arcuate, clavate hind femora extending well beyond apex of pygidium; small narrow eyes; antennal groove small and horizontal, widely separated from eye.

RANGE: Costa Rica, Panama. (For 12 specimens examined, see Appendix.)

DESCRIPTION: Red and black, white dots. Length 8 to 9 mm. Rostrum red, strongly arcuate, longer than pronotum, not humped at base, almost as wide as apex of front femur, punctate rather coarsely in male, less so in female; basal dilation dorsally much longer than wide, not sulcate. Gular peduncle of male flat, of female extending feebly forward. Antennal scape red, longer than one-half length of rostrum, almost as long as funicle and club combined. Antennal club elongate, feebly dilated, narrower than rostrum at middle; spongy apex acuminate, about one-half length of club. Antennal groove separated from eye by slightly more than width of antennal club.

Pronotum subconical, red with faint, short, median black stripe and punctures surrounded by whitish; base slightly sinuate, with feebly transverse impression. Elytra distinctly wider than pronotum and about one-half longer, subtriangular (sides narrowing strongly to apex), bisinuate at base; red with faint oblique median black marks; intervals with large whitish dots; subapical callus strongly tumid. Prosternum red with faint black stripe laterally, tumid in front of coxae where cut back to long apical constriction; remainder below and legs reddish; middle intercoxal space from one-third to one-half diameter of coxae. Femora distinctly clavate, about twice as wide at apex as at base; hind femora feebly arcuate, extending beyond apex of pygidium. Pygidium evenly convex, somewhat wider than long; apex rounded.

Male: No ventral tubercle. Aedeagus with apex truncate; all borders, including apical border, narrow; in profile upper edge obliquely rounded to apex.

REMARKS: Champion (*loc. cit.*) defined this species as "an isolated form . . . with a conical, nigro-lineate prothorax, triangular, obliquely unifasciate elytra, and unusually

long hind legs." The eyes, as remarked also by Champion, are small and very narrow, being not wider than the antennal club and not longer than the width of the rostrum at base; in the paralectotype the rostrum is tipped backward and one can see that the eyes are also widely separated below.

In my review of the species with the claw segment smooth, not excavated (Vaurie, 1967), I considered *rubicundus* in that category, but I find that there is an excavation although very small and difficult to see. The female lectotype I designated at that time has proved, upon partial dissection, to be a male. The sexes are not externally well differentiated. The rostrum is the same shape and is densely punctate in both sexes; the male has no ventral tubercle and no ventral depression. Six males, including the lectotype, and two females were dissected, in all or in part.

The 13 species that follow were reviewed as part of the "*nawradii* group." In the present paper they appear in the key to the species and in the Checklist above, but for the synonymies, diagnoses, and descriptions, previous papers should be consulted (Vaurie, 1967, 1980). Additional specimens examined after these dates are listed in the Appendix.

Rhodobaenus auriculatus (Chevrolat)

Cactophagus auriculatus Chevrolat, 1882, p. 580 (type locality, Chiapas, Mexico).

RANGE: Mexico, Guatemala, Nicaragua, Costa Rica.

Rhodobaenus nawradii (Kirsch)

Sphenophorus Nawradii Kirsch, 1869, p. 223 (type locality, Bogota, Colombia).

RANGE: Costa Rica, Panama; Colombia, Ecuador.

Rhodobaenus cuneatus Champion

Rhodobaenus stigmaticus var. *cuneatus* Champion, "1909-1910" [1910], p. 124 (lectotype locality, Chontales, Nicaragua).

RANGE: Nicaragua, Costa Rica, Panama; Colombia.

Rhodobaenus plicatus Champion

Rhodobaenus plicatus Champion, "1909-1910" [1910], p. 122 (lectotype locality, La Palma, Costa Rica).

RANGE: Costa Rica, Panama.

Rhodobaenus stigmaticus (Fahraeus)

Sphenophorus stigmaticus Fahraeus, 1845, p. 244 (type locality, Cordoba, Mexico).

RANGE: Mexico, Guatemala, British Honduras, Nicaragua, Costa Rica.

Rhodobaenus sexguttatus Champion

Rhodobaenus sexguttatus Champion, "1909-1910" [1910], p. 130 (lectotype locality, Tuxtla, Mexico).

RANGE: Mexico.

Rhodobaenus v-nigrum Champion

Figure 18

Rhodobaenus v-nigrum Champion, "1909-1910" [1910], p. 131 (lectotype locality, Chontales, Nicaragua).

RANGE: Nicaragua, Costa Rica.

Rhodobaenus interruptus Champion

Rhodobaenus interruptus Champion, "1909-1910" [1910], p. 125 (lectotype locality, Irazu, Costa Rica).

RANGE: Mexico, Guatemala, Costa Rica, Panama.

Rhodobaenus fortirostris Champion

Rhodobaenus fortirostris Champion, "1909-1910" [1910], p. 127 (type locality, Cosamaloapam, Veracruz, Mexico).

RANGE: Mexico, Guatemala, Panama.

Rhodobaenus melanocardius (Linnaeus)

Curculio melanocardius Linnaeus, 1764, p. 45 (type locality, India, error for Central or South America).

RANGE: Costa Rica, Panama; French Guiana, Surinam, Colombia, Ecuador, Peru.

Rhodobaenus quadripunctatus (Chevrolat)

Cactophagus quadripunctatus Chevrolat, 1882, p. 581 (type locality, Colombia).

RANGE: Panama; Colombia, Ecuador.

Rhodobaenus pinguis Chevrolat

Rhodobaenus pinguis Chevrolat, 1885, p. 283 (type locality, Mexico).

RANGE: Mexico.

Rhodobaenus saginatus Champion

Rhodobaenus saginatus Champion, "1909-1910" [1910], p. 125 (lectotype locality, Cerro Zunil, Guatemala).

RANGE: Guatemala, British Honduras, El Salvador, Honduras, Costa Rica.

APPENDIX

SPECIMENS EXAMINED

For convenience, the species and the countries under each species are listed alphabetically. The institutions or individuals to which the specimens belong are indicated by letter symbols in parentheses as follows:

AMNH, the American Museum of Natural History, New York

BM, British Museum (Natural History), London

CB, Carlos Bordon, Maracay

CDA, Canada Department of Agriculture, Ottawa

DM, Staatliches Museum für Tierkunde, Dresden

HH, Henry Hespenheide collection, Los Angeles

HO, Henry and Anne Howden collection, Ottawa

KU, Guillermo Kuschel collection, Division of Entomology, Auckland

MN, Muséum National d'Histoire Naturelle, Paris

NR, Naturhistoriska Riksmuseum, Stockholm

OB, Charles O'Brien collection, Tallahassee

RA, Robert Anderson collection, Ottawa

SP, Museu de Zoologia, São Paulo

UG, University of Georgia, Athens

USNM, National Museum of Natural History, Smithsonian Institute, Washington, D.C.

UV, Universidad Central de Venezuela, Facultad de Agronomía, Maracay

ZM, Zoologisches Museum der Humboldt Universität, Berlin

For several abundant species I have omitted data on their disposition.

Additional specimens examined are recorded below for 19 species that appeared either in the first (South American) part of the revision (Vaurie, 1980), or in the review of the "*nawradii* group" (Vaurie, 1967). Some of these records represent extensions of range and are so noted.

Rhodobaenus adspersus (Gyllenhal)

GUATEMALA: 13 (DM, MN, USNM, ZM); Antigua, 1 (OB); Canalitos, 2 (MN, ZM); Chica-cao, 3 (USNM); Coban, 2 (AMNH, USNM); Cumbre Rabinal, El Chol, 4 (AMNH); Yepocapa, 4 (USNM); Senahu, Verapaz, 1 (USNM).

HONDURAS: San Marcos de Colon, 2 (OB).

MEXICO: 8 (BM, MN, USNM, ZM). *Chiapas*: 1 (BM). *Guerrero*: Omilteme, 13 (BM, USNM). *Nayarit*: El Pichon, 2 (OB). *Oaxaca*: Juquila, 3 (BM). *Veracruz*: Cordoba, 1 (OB); Fortin de las Flores, 1 (OB); Orizaba, 2 (BM, USNM).

NICARAGUA: 3 (DM, MN).

PANAMA: *Chiriqui*: Cerro Punta, 3 (AMNH); El Volcan, 4 (AMNH, OB).

Rhodobaenus albopunctatus Champion

MEXICO: 2 (BM, MN); "Sierra de Durango," 1 (MN). *Guerrero*: Ixcuinatoyac, 1 (USNM). *Morelos*: Xochitepec, 1 (OB). *Oaxaca*: Panistlahuaca, 3 (including lectotype, BM).

Rhodobaenus andreae Chevrolat

MEXICO: 4 (including type, NR; BM, ZM). *Guerrero*: Omilteme, 2 (BM).

Rhodobaenus arcuatus Champion

MEXICO: 1 (MN). *Veracruz*: Santecomapan, 1 (BM); Toxpan, 2 (including lectotype, BM).

NICARAGUA: *Chontales*: 1 (BM).

Rhodobaenus aterrimus (Champion)

MEXICO: 2 (including lectotype, BM). *Colima*: Volcan, 1 (USNM). *Distrito Federal*: San Jeronimo, 2 (AMNH).

Rhodobaenus auctus Chevrolat

BRITISH HONDURAS: Roaring Creek, 1.

COLOMBIA: Bogota, 1; Rio Frio, Magdalena, 19.

COSTA RICA: 12; Escazu, 2 (including lectotype *graphicus*); Azahar de Cartago, 1; Atenas, 1; Rio Grande, 1; 40 km NE Turrialba, 1. *Puntarenas*: Santa Elena, 1; Guacimal, 3. *Alajuela*: 3, Grecia, 4. *San Jose*: 1; San Pedro, 1; La Caja, 1.

EL SALVADOR: *La Libertad*: La Libertad, 1.

GUATEMALA: 18; Amatitlan, 3; Antigua, 1; Testuaco, Santa Rosa, 1; Canalitos, 1; Panzos, 3; San Marcos, 2; Dueñas, 5; San Geronimo, 6; San Isidro, 1. *Chimaltenango*: Yepocapa, 1. *Escuintla*: Palin, 1; El Zapote, 3. *Retalhuleu*: San Sebastian, 5. *Sacatepequez*: Capetillo, 3. *Suchitepequez*: Moca, 1; Variedades, 3. *Veracruz*: Pancina, 1.

HONDURAS: *Comayagua*: 14 mi NW Siguatopeque, 1. *Cortes*: El Jaral, Finca Fe, 1. *El Paraíso*: El Zamorano, 4. *Santa Barbara*: 13 mi SE El Mochito, 3.

MEXICO: 36 (including types *auctus*, *elegans*, *corniculatus*, NR); 53 (from 12 localities, BM). *Aguascalientes*: 1. *Chiapas*: 1; 17 mi SE Teopisca, 1; Sumidero, 1; Ocozocautla, 1. *Colima*: Volcan, 2; Volcan, Esperanza, 1; Colima, 1; 10 mi S Tonila, 10. *Guanaajuato*: 1. *Guerrero*: 2; Ixcuinato, 1; Tierra Colorado, 1; Chilapa, 1; 22 mi N Chilpancingo, 1; Tepetlapa, 2; Iguala, 2. *Jalisco*: 1; Guadalajara, 13; Ocotlan, 1; Huejotitan, 2; Lake Chapala, Tizapan, 1; Ajijic, 1. *Mexico*: Real de Arriba, Temascaltepec, 1. *Michoacan*: San Jose Purua, 1. *Morelos*: Tequesquitengo, 1; Hacienda Vista Hermosa, Tequi-quitengo, 2; Yautepec, Coaguayote, 1; Cuautla, 3; Joyutla, 6; Matamoros, 5; Cuernavaca, 31; Hujintlan, 15; Tepoztlan, 1. *Nayarit*: Sierra de Nayarit, 2; Tepic, 2. *Oaxaca*: Valle National, 1; Juchatengo, 4; Oaxaca, 1. *Puebla*: Puebla, 1; Acatlan, 1. *Queretaro*: Queretaro, 1. *San Luis Potosi*: El Salto de Agua, 4; Tamazunchale, 5; Xilitla, 2; Huichihuyan, 5. *Tabasco*: Teapa, 1. *Veracruz*: 2; Barranca, Rio Metlac, 4; San Andres Tuxtla, 3; Misantla, 10; Toxpam, 5; Jalapa, 5; Playa Vicente, 1; Cerro de Plumas, 1; Cordoba, 3; Veracruz, 1; Fortin, 1; Orizaba, 1; Lake Catemaco, 4; Rio Atojal, source, 1; Puente Nacional, 1. *Veracruz* or *Oaxaca*: "Sierra de Durango," 1. ?*State*: Rio Blanco, 6; St. Rosa, 2.

NICARAGUA: Managua, 1. *Chontales*: 5.

PANAMA: *Canal Zone*: Cerro Campana, 2; Cabima, 1; Ciricito, 1; Madden Lake, 1; Pipe Line Road, 1. *Chiriqui*: Bugaba, 2. *Cocle*: El Valle, 3. *Panama*: Chepo, 1.

NO LOCALITY: 1.

Rhodobaenus auriculatus (Chevrolat)

Additional record: (for range, see under the species in the text).

COSTA RICA: Monteverde, 1 (HO).

Rhodobaenus bellus, new species

COSTA RICA, PANAMA: (see under the species in the text).

Rhodobaenus bicinctus Chevrolat

Additional records: (for range, see under the species in the text).

COSTA RICA: Ochomogo, 7; Tres Rios and Capellades, 3; San Jose, 13 (all USNM).

GUATEMALA: Antigua, 3 (OB); Cerro Zunil, 1 (USNM). *Quezaltenango*: San Pedro Sacatepequez at Rio Nahuala, 2 (USNM).

*HONDURAS: *Cortes*: 19 km N Cofradia, 8. *Distrito Federal*: Tamara, 1. *Ocotepique*: 14 km E Nueva Ocotepique, 2. *Santa Barbara*: 13 km SE El Mochito, 6 (all OB).

*NICARAGUA: Matagalpa, 30 (OB); Santa Maria de Ostuma, 7 (USNM); 9 mi SE Jinotega, 2 (OB).

*PANAMA: Cerro Campana, 1 (OB).

TRINIDAD: Aripo Valley, 1 (USNM); Morne Bleu, 1 (HO).

Rhodobaenus bisignatus Champion

COSTA RICA: Turrialba, 3 (USNM).

GUATEMALA: Capetillo, Sacatepequez, 1 (AMNH).

MEXICO: 3 (including lectotype, BM; MN). *Colima*: Volcan, 6 (USNM). *Guerrero*: Taxco, 2 (ZM). *Jalisco*: Guadalajara, 2 (AMNH, MN); near Rincon, 35 mi NW Los Volcanes, 1 (OB). *Morelos*: Cuernavaca, 1 (OB). *Nayarit*: 9 mi N Compostela, 1 (OB). *Oaxaca*: Juquila, 1 (BM); Temascal, 4 (OB, USNM). *Puebla*: 1 (BM).

Rhodobaenus biundulatus Champion

MEXICO: 1; "Sierra de Durango," 1; Misantla, Veracruz, 2 (including lectotype) (all BM).

* New country record.

Rhodobaenus brevirostris Champion

GUATEMALA: Panzos, 1 (MN); San Juan, Verapaz, 1 (type *veraepacis*, BM); Volcan de Atitlan, 1 (lectotype *brevirostris*, BM).

HONDURAS: San Pedro Sula, Cortes, 1 (BM).

MEXICO: San Isidro, 1 (BM). *Chiapas*: Pacific Slope, Cordilleras, 1 (USNM). *Guerrero*: Xautipa, 1 (BM). *Oaxaca*: 20 mi S Juchatengo, 2 (HO).

NICARAGUA: 8 mi N Matagalpa, 1 (OB).

Rhodobaenus buehnanani, new species

MEXICO: (see under the species in the text).

Rhodobaenus cariniventris Champion

GUATEMALA: 1 (BM); San Jeronimo, 1 (BM); Zapote, 5 (lectotype, BM; USNM).

MEXICO: *Chiapas*: Pacific Slope, Cordilleras, 2 (USNM). *Oaxaca*: Juquila, 2 (BM, DM). *Veracruz*: San Andres Tuxtla, 1 (BM); Road to Volcan San Martin, NE San Andres Tuxtla, 1 (OB).

Rhodobaenus cinctus (Gyllenhal)

COSTA RICA: 30; Turrialba, 3; San Jose, 9; Hamburg Farm, Reventazon, Limon, 1; Piedras Negras, 1; La Palma, 3; San Pedro de Montes de Oca, 2.

EL SALVADOR: San Salvador, 2; Los Chorros, 4 km S Santa Tecla, 1.

GUATEMALA: 4; Cacao, Trece Aguas, Verapaz, 2; Escuintla, 1; Huehuetenango, 1; Panzos, 1; Finca Santa Adelaida, 8 mi N Santa Barbara, 3; Variedades, Suchitepequez, 1; Yepocapa, Chimaltenango, 1; Zapote, 3.

HONDURAS: *Olancho*: 11 mi NE Catacamas, 7. *El Paraiso*: 13 km NW El Zamorano, 1. *Santa Barbara*: El Mochito, 1.

MEXICO: 34; *Chiapas*: Tapachula, 9 (including lectotype *maculipes*); [El] Sumidero, 2; Huixtla, 1; Pacific Slope, Cordilleras, 4; 17 mi SE Teopisca, 2; San Jeronimo Tacana, 1; San Jose, 2; Junction Highways 190, 195, 1. *Colima*: Volcan, 10. *Durango*: Canelas,

4; Pilar, 1; Ventanas, 1; Sierra de Durango, 2. *Guerrero*: Taxco, 3. *Jalisco*: Autlan, 1. *Mexico*: Temascaltepec, 1. *Morelos*: Cuernavaca, 4. *Oaxaca*: Oaxaca, 1; Palomares, 1; Presidio, 1; Valle Nacional, 1. *Sinaloa*: 50 mi NE Mazatlan, 1. *Veracruz*: Cerro de Plumas, 1; Atoyac, 1; Jalapa, 1; Cordoba, 3; Lake Catemaco, 2; Misantla, 1; Vega del Sol, 1; Fortin de las Flores, 1; La Buena Ventura, 3.

NICARAGUA: *Chontales*: 9.

NO LOCALITY: 2.

GUATEMALA, MEXICO: 144 from various localities examined in British Museum.

Rhodobaenus cinereiventris Champion

EL SALVADOR: Cerro Verde, Sonsonate, 2 (CDA).

GUATEMALA: 3 (MN); Panajachel, Solola, 2 (OB).

MEXICO: *Chiapas*: El Sumidero, 3 (AMNH); Tapachula, 1 (BM). *Oaxaca*: Juquila, 2 (BM). *Veracruz*: Misantla, 1 (lectotype, BM).

Rhodobaenus confusus Chevrolat

MEXICO: 15 (BM, MN, ZM). *Veracruz*: Jalapa, 3 (AMNH, BM); Cerro de Plumas, 3 (BM, USNM); Source of Rio Atojal, 1 (USNM).

Rhodobaenus cuneatus Champion

Additional records: (for range, see under the species in the text).

COLOMBIA: Anchicaya Dam, Valle, 1 (HO).

COSTA RICA: Monteverde, 3; Monteverde Reserve, 6 (HO, USNM); Santa Clara, 1 (USNM). *Heredia*: La Selva, near Puerto Viejo, 1 (RA).

PANAMA: *Canal Zone*: Cerro Campana, 2 (HH).

Rhodobaenus cylindricollis Champion

MEXICO: *Morelos*: Cuernavaca, 2 (type, USNM; BM).

Rhodobaenus deltoides Chevrolat

BRITISH HONDURAS: El Cayo, 2 (USNM); Blancaneau, 1 (BM); Belize, Cayo, Xunantunich, 2 (OB); Belize, Cayo, 10 mi S Georgeville, 1 (OB).

COSTA RICA: 13 (MN); San Jose, 1 (USNM). *Puntarenas*: Santa Elena, 1 (HO); Guacimal, 1 (HO).

EL SALVADOR: San Salvador, 2 (USNM); La Union, 1 (USNM).

GUATEMALA: San Sebastian, Retalhuleu, 1 (USNM); Panzos, 1 (MN); Acatenango, 1 (USNM); Purula, 1 (BM); Yepocapa, Chimaltenango, 1 (USNM); Cacao, Trece Aguas, Alta Verapaz, 4 (BM, USNM); Zapote, 2 (BM).

HONDURAS: *Comayagua*: SW Comayagua, 1; S end Lago Yojoa, 4; Taulabe, Rio Jaitique, 9. *Siguatepequez*: 1 (all OB).

MEXICO: 3 (type, NR; MN). *Campeche*: Escarega, 1 (OB). *Chiapas*: Junction Highways 190, 195, 2 (HO); Tapachula, 16 (BM, USNM). *Colima*: Volcan, 2 (USNM). *Mexico*: Tejupilco, Temascaltepec, 1 (USNM). *Morelos*: Cuernavaca, 2 (BM, USNM). *Nayarit*: Tepic, 1 (USNM). *Nuevo Leon*: Valle, 1 (OB). *Oaxaca*: Almolonga, 1 (USNM); Juquila, 2 (BM); Temascal, 3 (OB). *Puebla*: Teziutlan, 1 (CDA). *San Luis Potosi*: 14 mi S Tamazunchale, 1 (USNM). *Sinaloa*: 33 mi E Villa Union, 1 (CDA). *Tlaxcala*: La Choutalpa, 3 (OB); Cardenas, 1 (USNM). *Veracruz*: 1 (BM); Jalapa, 3 (BM, ZM); Playa Vicente, 2 (BM, DM); Cordoba, 4 (AMNH, USNM); Toxpam, 5 (BM, DM); St. Lucrecia, 1 (USNM); Sayula, 1 (USNM); Lake Catemaco, 1 (CDA); Conejos, 1 (OB).

NICARAGUA: *Chontales*: 1 (BM).

Rhodobaenus dentirostris (Champion)

Additional records: (for range, see in the text).

COSTA RICA: *Cartago*: Turrialba, 2 (HO).

MEXICO: *Veracruz*: Lake Catemaco, 1 (HO).

Rhodobaenus fortirostris Champion

Additional record: (for range, see in the text).

GUATEMALA: 32 mi SE Coban, 1 (OB).

Rhodobaenus guttatus (Fahraeus)

MEXICO: 7 (type, NR; BM, DM, ZM). *Distrito Federal*: 2 (USNM). *Guanajuato*: 1 (DM). *Guerrero*: Amula, 2 (BM, lectotype *unidentatus*); Omilteme, 2 (BM). *Michoacan*: San Jose Purua, 1 (OB); Tuxpan, 4 (OB).

Rhodobaenus incertus (Champion)

COSTA RICA: La Palma, 1 (type, *dentifer*, BM).

GUATEMALA: San Marcos, 1 (MN).

MEXICO: *Veracruz*: Toxpam, 1 (type, *incertus*, BM).

Rhodobaenus inopinatus, new species

MEXICO: (see under the species in the text).

Rhodobaenus interruptus Champion

Additional records: (for range, see under the species in the text).

COSTA RICA: *Puntarenas*: 6 mi S San Vito, 1 (HH). *San Jose*: 13 mi N San Isidro del General, 1 (OB).

PANAMA: *Chiriqui*: Fortuna, 3 (OB).

Rhodobaenus latens, new species

GUATEMALA, MEXICO: (see under the species in the text).

Rhodobaenus lebasii (Gyllenhal)

Additional records: (for range, see under the species in the text).

COLOMBIA: *Magdalena*: Sierra Nevada de Santa Marta, Puente de los Claves, 1 (OB).

COSTA RICA: Turrialba, 1 (OB). *Puntarenas*: Guacimal, 1 (HO).

EL SALVADOR: Santa Tecla (CDA). *San Vicente*: San Vicente, 2 (OB). *La Libertad*: La Libertad, 2 (OB).

GUATEMALA: Lanquin, Alta Verapaz, 2 (OB).

HONDURAS: *Comayagua*: Comayagua, 1. *Cortes*: near El Jaral, 1. *Olancho*: Catacames, 2 (all OB).

MEXICO: *Chiapas*: Pichucalco, 1 (OB). *Colima*: Ameria Bridge, 2 (OB). *Jalisco*: Tecalitlan, 1 (USNM); Guadalajara, 1 (OB);

Chapala, 1 (OB). *Morelos*: Hacienda Vista Hermosa, 1 (OB); Yauatepec, 1 (OB); Cuernavaca, 2 (CDA). *Nayarit*: Tepic, 7 (OB); Acaponeta, 10 (CDA); San Blas, 2 (OB). *Oaxaca*: La Ventosa, 72 mi E Oaxaca, 3 (OB). *Puebla*: Tehuacan, 1 (OB). *San Luis Potosi*: Tamazunchale, 1 (OB). *Sinaloa*: Manzanillo, 1 (USNM); Mazatlan, 2 (OB); Highway 40, E Concordia, 2 (OB). *Veracruz*: La Tinaga, 1 (USNM); Lake Catemaco, 16 (CDA, HO, OB); Dos Amates, 2 (CDA, OB); Tlapacoyan, 1 (CDA); Tejeria, 2 (OB); Fortin de las Flores, 3; Santiago Tuxtla, 12; Paso del Toro, 3, Santecomapan, 1; El Naranjo, 1 (all OB). *Yucatan*: Chichen Itza, 2; E Valladolid, 1 (OB).

NICARAGUA: *Granada*: Nandaime, 1 (OB).

PANAMA: *Canal Zone*: Madden Dam, 2; Gamboa, 1 (OB).

Rhodobaenus leucographus (Fahraeus)

MEXICO: 3 (BM). *Colima*: Esperanza, Volcan, 1 (USNM). *Mexico*: Tejupilco, Temascaltepec, 1 (USNM); Ixtapan de la Sal, 1 (OB); Valle de Bravo, 1 (OB). *Michoacan*: Pedregal near Tancitaro, 1 (USNM); Uruapan, 1 (HH). *Morelos*: Cuernavaca, 2 (BM). *Veracruz*: Orizaba, 2 (ZM).

Rhodobaenus lineiger Chevrolat

Additional records: (for range, see under the species in the text).

ECUADOR: Baeza, Napo, 1 (HO).

PANAMA: 7 mi SW El Valle, 1. *Canal Zone*: Coco Solo Hospital, 3; Madden Forest, 1; Achiote Road, Gatun, 1 (all OB).

Rhodobaenus maculifer (Fahraeus)

BRITISH HONDURAS: Belize, 1 (DM).

GUATEMALA: Cubilguitz, 1 (BM); 32 mi SE Coban, 1 (OB); Panima, 1 (BM); Panzos, 6 (MN). *Verapaz*: 1 (MN); Purula, 9 (BM, USNM); Sabo, 2 (BM); Trece Aguas, 1 (USNM); San Jeronimo, 2 (BM).

HONDURAS: *Comayagua*: Siguatepeque, 1 (OB). *Cortes*: Cofradia, 1 (OB). *Santa Barbara*: 13 km SE El Mochito, 1 (OB).

MEXICO: 4 (DM, MN). *Chiapas*: Ixtacomitan, 1 (USNM). *Oaxaca*: Juquila, 2

(BM, DM); Presidio, 1 (USNM); Puerto Angel, 1 (USNM); Temascal, 1 (OB). *Veracruz*: Atoyac, 1 (BM); Cordoba, 2 (OB, USNM); Jalapa, 3 (DM, MN); Metlac, 1 (OB); Playa Vicente, 1 (BM); Santecomapan, 1 (BM); Toxpam, 3 (BM). *Tabasco*: Teapa, 3 (BM, HH).

Rhodobaenus mas, new species

MEXICO: (see under the species in the text).

Rhodobaenus melanocardius (Linnaeus)

Additional records: (see under the species in the text for range).

COSTA RICA: *Cartago*: Turrialba Volcan, 5 (OB).

ECUADOR: 44 km N Tena, 1 (OB).

PANAMA: *Chiriqui*: Fortuna, 2 (OB). *Canal Zone*: Fort Sherman, 1 (OB).

SURINAM: Km 8, Pbo.-Albina Road, 1 (OB).

Rhodobaenus melas, new species

COSTA RICA, MEXICO: (see under the species in the text).

Rhodobaenus mundus (Champion)

MEXICO: 2 (BM, MN). *Aguascalientes*: W of southern Aguascalientes state line, 2 (OB). *Guanajuato*: 1 (USNM). *Jalisco*: Huejotitan, 17 (MN). *Michoacan*: Bosenchehe, 6 (HO); Morelia, 1 (USNM). *Oaxaca*: 1 (ZM). *Oaxaca* or *Veracruz*: "Sierra de Durango," 1 (type, BM).

NO LOCALITY: 2 (USNM, ZM).

Rhodobaenus nawradii (Kirsch)

Additional records: (for range, see under the species).

COLOMBIA: Choco, 50 km W Bolivar, 1 (HO).

COSTA RICA: *Heredia*: La Selva, 3 km S Puerto Viejo, 1 (HH).

*PANAMA: *Canal Zone*: Cerro Campana, 7 (CB, HH, HO).

Rhodobaenus nebulosus Champion

COSTA RICA: Turrialba, 2 (USNM).

MEXICO: 1 (MN). *Chiapas*: San Antonio, 3 (ZM). *Durango*: Canelas, 1 (BM). *Veracruz*: Jalapa, 6 (AMNH, MN); Toxpam, 3 (including lectotype, BM).

PANAMA: *Chiriqui*: Fortuna, 1 (OB).

Rhodobaenus nigripennis Champion

GUATEMALA: *Chimaltenango*: Yepocapa, Finca Panajabal, 1 (OB). *Escuintla*: Zapote, 1 (BM).

MEXICO: 5 (BM, MN, ZM). *Colima*: 4 (USNM); Volcan, 11 (USNM); Volcan, Esperanza, 2 (USNM). *Durango*: Canelas, 4 (ZM). *Morelos*: Cuernavaca, 3 (BM, USNM); San Anton Falls, 4 (USNM). *Nayarit*: El Pichon, 1 (OB). *Oaxaca*: Juquila, 3 (BM); Yolos, 1 (lectotype, BM). *Sinaloa*: Palmito, 2 (CDA). *Veracruz*: Misantla, 1 (BM); Toxpam, 1 (BM).

Rhodobaenus nigrofasciatus (Champion)

Additional records: (for range, see under the species).

COSTA RICA: *Puntarenas*: Monteverde Forest Reserve, 23 (HO, RA).

PANAMA: *Chiriqui*: El Valle de Nubes, 10 mi NW Rovira, 1 (OB).

Rhodobaenus nigrolineatus Chevrolat

EL SALVADOR: Monte Cristo, 4 (USNM).

GUATEMALA: *Verapaz*: Purula, 4 (MN, USNM); Sabo, 2 (MN, USNM); Trece Aguas, 2 (USNM).

MEXICO: 5 (DM, MN, ZM). *Chiapas*: San Cristobal, 1 (HO). *Colima*: Volcan, 1 (USNM). *Durango*: Canelas, 1 (ZM). *Hidalgo*: 29 mi E Jacala, 1 (OB). *Jalisco*: Cerro Tequila, S Tequila, 1 (OB). *Morelos*: Cuernavaca, 1 (MN). *Oaxaca*: 2 (types, *nigrolineatus*, *suturrellus*, NR); Panistlahuaca, 1 (DM). *Veracruz*: Jalapa, 2 (AMNH, MN); Toxpam, 1 (USNM).

MEXICO, GUATEMALA: 60–70 (various localities, BM).

Rhodobaenus nigropictus Champion

PANAMA: Volcan de Chiriqui, 4 (including lectotype, BM).

Rhodobaenus nigrosignatus Champion

COSTA RICA: *San Jose*: Cerro Nara [?], NE [Punta] Quepos, 1 (OB).

GUATEMALA: Cerro de Zunil, 1; Las Mercedes, 1; San Juan, Verapaz, 1; Zapote, 1 (all BM).

PANAMA: *Chiriqui*: Bugaba, 3 (BM); Volcan, 4 (including lectotype, BM; USNM); El Valle de Nubes, 12 mi NW Rovira, 1 (OB).

Rhodobaenus octocostatus Champion

MEXICO: *Guerrero*: Omilteme, 2 (including lectotype, BM); Xucumanatlan, 1 (BM).

Rhodobaenus olivaceus Champion

COSTA RICA: 2 (MN); Turrialba, 5 (BM, HO, MN, ZM); Piedras Negras, 1 (ZM).

HONDURAS: *Santa Barbara*: 13 km E El Mochito, 1 (OB).

PANAMA: *Canal Zone*: Barro Colorado, 1 (USNM); Cerro Campana, 21 (CB, AMNH, HH, HO, OB, USNM); Cabima, 1 (USNM); Fort Kobbe, 1 (OB); Gamboa, 2 (USNM); Madden Forest, 5 (HH, HO). *Chiriqui*: Volcan, 17 (including lectotype, BM; DM, USNM); Hartman's Finca, Santa Clara, 4 (HO); Las Lagunas, 4 mi W Hato del Volcan, 2 (HO); Caldera, 1 (BM); Bugaba, 4 (BM); Santa Clara, 1 (OB); El Valle de Nubes, 12 mi NW Rovira, 4 (OB).

Rhodobaenus pantherinus Champion

COSTA RICA: 12 (BM, MN). Ochomogo, 23 (USNM, UV); Tarbaca, 1 (BM). *Alajuela*: Zarcero, 3 (OB). *Puntarenas*: Monteverde, 1 (HO); S Santa Elena, 2 (HO). *San Jose*: 10 (BM, USNM).

GUATEMALA: 2 (including lectotype, BM; MN). Cerro Zunil, 2 (BM); Chicacao, 2 (USNM). El Reposo, 1 (BM); San Juan, 1 (BM). *Escuintla*: 1 (USNM); Zapote or Finca El Zapote, 2 (BM, OB). *Suchitepequez*: Finca Santa Adelaida, S Santa Barbara, 1 (AMNH). *Verapaz*: Purula, 2 (BM); San Jeronimo, 1 (BM); Sabo, 1 (BM).

HONDURAS: Gracias, 1 (DM). *Comayagua*: Siguatepeque, 1 (OB).

MEXICO: 5 (DM, MN). *Chiapas*: 12 mi NW Berriozabal, El Suspiro, 1 (OB); 27 km

SE Santa Rosa, 1 (OB); Pacific Slope, Cordilleras, 7 (USNM); San Antonio, 3 (ZM); Tapachula, 1 (BM). *Oaxaca*: 20 mi S Juchatengo, route 131, 1 (HO); 6 mi S Valle Nacional, 1 (HO). *Veracruz*: Cordoba, 2 (BM, USNM); San Andres Tuxtla, 6 (BM, DM).

NICARAGUA: Matagalpa, 7 (OB).

PANAMA: *Canal Zone*: Cerro Campana, 49 (BM, CB, HH, HO, OB, USNM); Empire, 1 (OB).

Rhodobaenus pinguis Chevrolat

No additional records: (for range, see in the text).

Rhodobaenus plicatus Champion

Additional record: (for range, see in the text).

*PANAMA: *Chiriqui*: Fortuna, 7 (OB); El Valle de Nubes, 12 mi NW Rovira, 1 (OB).

Rhodobaenus pulchellus (Gyllenhal)

COSTA RICA: 2 (BM, USNM).

GUATEMALA: 5 (HH, MN, USNM). Canalitos, 2 (MN, ZM); Coban, 1 (BM); Amatitlan, 2 (AMNH); Purula, 11 (BM); Guatemala City, 1 (USNM); Rabinal, 2 (AMNH); Sacapulas, 2 (AMNH); San Jeronimo, 20 (BM, USNM).

MEXICO: 40–50 (BM, various localities); 17 (including type, NR; DM, MN, ZM). *Campeche*: 1 (OB). *Chiapas*: Montebello, 1 (OB). *Colima*: 4 (USNM); Volcan, 19 (USNM). *Durango*: Canelas, 1 (ZM); Ventanas, 1 (ZM). *Guerrero*: Chilpancingo, 3 (CDA, OB); Tepetlapa, 1 (ZM); Taxco, 1 (OB). *Jalisco*: Tizapan, Lake Chapala, 11 (AMNH); Sahuayo, 2 (AMNH); 40 mi E, 50 mi W Guadalajara, 2 (HH). *Mexico*: Real de Arriba, Temascaltepec, 1 (USNM). *Morelos*: Cuernavaca, 12 (HO, MN, USNM); Tequesquitengo, 1 (OB); Joyutla, 3 (AMNH). *Nayarit*: Santiago Izcuintla, 1 (ZM); Sierra de Nayarit, 1 (MN); Tepic, Cerro San Juan, 1 (MN). *Oaxaca*: Oaxaca, 2 (AMNH, USNM); Tehuantepec, 1 (OB); Monte Alban, 2 (AMNH); Mitla, 2 (AMNH). *Veracruz*: Orizaba, 1 (USNM); Jalapa, 4 (AMNH);

Tolome, near Rinconada, 1 (AMNH); Misanthla, 2 (USNM). *Yucatan*: Temax, 16 (including lectotype *niger*, BM; USNM); Chichen Itza, Tres Linteles, 1 (AMNH). ?*State*: St. [Santa] Rosa, 2 (OB).

PANAMA: *Cocle*: 10 mi SW Penonome, 1 (OB).

Rhodobaenus pustulosus (Gyllenhal)

COSTA RICA: San Jose, 13 (USNM).

GUATEMALA: *Solola*: Lake Atitlan, 1 (OB); Panajachel, 6 (OB).

MEXICO: 80–100 (BM, various localities); 61 (including type, NR; DM, MN, ZM). *Chiapas*: [El] Sumidero, 8 (AMNH, USNM); Junction Highways 190, 195, 1 (USNM); 19 mi SE Tuxtla Gutierrez, 2 (OB); Pueblo Nuevo, 1 (OB); Tapachula, 1 (ZM). *Chihuahua*: Catarinas, 2 (AMNH). *Colima*: 1 (USNM). *Durango*: Sierra de Durango, 12 (MN, USNM, ZM); Pilar, 1 (ZM); Palos Colorados, 3 (AMNH). *Jalisco*: Huejotitan, 1 (MN). *Michoacan*: Tuxpan, 1 (OB); San Jose Purua, 3 (USNM). *Morelos*: Cuernavaca, 23 (HO, MN, USNM); Jalastoc, 3 (USNM); Cuautla, 1 (AMNH); Joyutla, 4 (AMNH). *Nayarit*: Tepic, Cerro San Juan, 1 (MN). *Oaxaca*: Juquila, 1 (USNM); Juchatengo, 1 (USNM); Oaxaca, 1 (HO); Calpulalpam, 1 (HO). *Puebla*: Izucar de Matamoros, 2 (AMNH, OB); Huanchinango, 1 (USNM); Atlixco, 1 (OB). *Sinaloa*: 20 mi W El Palmito, 2 (OB). *Sonora*: 1 (USNM). *Veracruz*: Orizaba, 1 (AMNH); Misanthla, 1 (USNM).

NICARAGUA: *Matagalpa*: Matagalpa, 3 (OB).

UNITED STATES: *Arizona*: Huachuca Mountains, 1 (AMNH); Chiricahua Mountains, Pinery Canyon, 1 (AMNH). *Texas*: Presidio, 1 (USNM).

Rhodobaenus quadripunctatus (Chevrolat)

Additional record: (for range, see under the species in the text).

PANAMA: *Canal Zone*: Summit, 2 (USNM).

Rhodobaenus quinquepunctatus (Say)

CANADA: *Ontario*: Ottawa, 1; Britannia, 5; Lanark, Keer Lake, 2; Bell's Corners, 1; Merivale, 1; Ottawa sandpits, 1. *Quebec*: Berthierville, 1.

MEXICO: 7 (including lectotype *triangularis*, BM; MN). *Coahuila*: Monclova, 2 (BM, MN).

UNITED STATES: *Alabama*: 1; Madison, 1; Sam Wingourd, 1; Birmingham, 4. *Arkansas*: 1. *Connecticut*: New Canaan, 1. *Florida*: Hastings, 3; Deland, 1; Titusville, 2; Indian River, 1; Jacksonville, 1; Green Cove Springs, 1; Madison, 1; Ocala County, 2; Monticello, 1; Sanford, 3;

* New country record.

Winter Park, 1; Alachua, 1; Tallahassee, 12. *Georgia*: 2; Atlanta, 6; Jekyll Island, Brunswick, 1; St. Simons Island, 11; Thomasville, 1; Tybee Island, 2; Athens, 5; Catherine Island, 1; Savannah, 6; Lumpkin County, 2; Clarke County, 2; Hall County, 1; Macon, 1; Spalding County, 1; Lizella, 1; Laurens County, 1. *Illinois*: 2; Quincy, 1; East St. Louis, 1; Galena, 1; Albion, 1; Bath, 1; Madison County, 4; Clinton County, 1; Chicago, 1. *Indiana*: Hessville, 1; Vinita, 1; Lafayette, 27; Peru, 1; Tippecanoe, 2. *Iowa*: North Liberty, 1; Ames, 2; Iowa City, 7; Jefferson, 1; Sioux City, 1; La Grange County, 2; Muscotine, 1; Monroe County, 1. *Kansas*: 2; Douglas County, 5; Manhattan, 1; Pottawatomie, 1; Lincoln County, 2. *Kentucky*: 1; Bell County, 1; Wycliffe, 2; Oldham County, 1. *Louisiana*: 1; New Orleans, 5; Baton Rouge, 2; Westwego, 5. *Maryland*: Beltsville, 1; Davidsonville, 1; Prince George County, 1; Rehobeth Beach, 1; Marshall Hall, 1; Montgomery County, 1; Lakeland, 1; Plummer's Island, 1. *Massachusetts*: 1. *Michigan*: Detroit, 1. *Minnesota*: Preston, Fillmore County, 1; Traverse County, 2; Swift County, 1. *Mississippi*: Perkinston, 2; Utica, 1; Gulfport, 1; Hattiesburg, 5; Yazoo County, 1; Jackson County, 1. *Missouri*: 9; St. Louis, 1; Boone County, 4; Osage County, 1; Stoddard County, 1; Lafayette County, 1. *Nebraska*: 3; Sarpy County, 4; Lancaster, 1; Lincoln, 1. *New Jersey*: 1; Camden, 1; Montclair, 3; Ramsey, 1; Norwood, 1; Cold Spring, 1. *New York*: 2. *North Carolina*: 3; Lakeland, 1; Tryon, 1; Beaufort, 1; Black Mountains, 12; Macon County, 2. *Ohio*: 1; Sugar Grove, 1; Cedar Point, 1. *Oklahoma*: Wagoner, 1. *Pennsylvania*: 4; Hummelstown, 1; Delaware County, 1; Bryn Athyn, 1; Virginville, 2; Lansdowne, 2; Lenhartsville, 3. *South Carolina*: 8; Charleston, 5. *South Dakota*: Hot Springs, 1; Belle Fourche, 3; Angostura Dam, 3. *Tennessee*: 1; Jackson, 2; Nashville, 4; Fenyess, 3; Knoxville, 1; Great Smoky Mountains National Park, 2; Vonore, 1; Elkmont, 2. *Texas*: 8; Robstown, 1; Bexar County, 7; Patricio County, 18; Falls County, 1; New Braunfels, 1; Dallas, 3; Victoria, 2. *Virginia*: 2; Falls Church, 2; Roslyn, 1; Barcroft, 1; Arlington, 1; Dyke, 1; Nelson County, 1; Dismal Swamp, 4; Giles County, 1; Radford, 2. *Washington, D.C.*: 2; Rock Creek, 6. *West Virginia*: 3. *Wisconsin*: Madison, 1; Sauk County, 1. *No Locality*: 7.

***Rhodobaenus quintus*, new species**

MEXICO: (see under the species in the text).

***Rhodobaenus rhinopilus* Vaurie**

Additional record: (for range, see under the species in the text).

COSTA RICA: *Puntarenas*: Monteverde Reserve, 2 (HO, RA).

***Rhodobaenus rubicundus* Champion**

COSTA RICA: *San Jose*: Carillo, 1 (BM). *Puntarenas*: Monteverde Reserve, 2 (HO). *Cartago-Limon border*: 40 km NE Turrialba, 5 (HO).

PANAMA: *Chiriqui*: Volcan, 1 (lectotype, BM); Santa Clara, Hartmann's Finca, 2 (HO).

NO LOCALITY: 1 (ZM).

***Rhodobaenus rubrovittatus* Champion**

GUATEMALA: 1 (ZM); Coban, 1 (BM); Dueñas, 1 (BM). *Zacapa*: Santa Clara Valley, Sierra de las Minas, N Cabañas, 3 (OB).

MEXICO: 7 (BM, MN). *Chiapas*: [El] Sumidero, 3 (AMNH). *Guanajuato*: 2 (MN); Tupataro, 3 (including lectotype, BM; USNM). *Oaxaca*: Juquila, 2 (BM); Oaxaca, 1 (HO); [La] Parada, 3 (BM); Capulalpam, 1 (BM).

***Rhodobaenus saginatus* Champion**

Additional records: (for range, see under the species in the text).

*BRITISH HONDURAS: Belize, Cayo, 11 mi S Georgeville, 1 (OB).

*EL SALVADOR: *La Libertad*: La Libertad, 1 (OB).

*HONDURAS: *Comayagua*: 1 (OB). *Valle*: Pespire, 1 (OB).

***Rhodobaenus sanguineus* (Gyllenhal)**

COSTA RICA: 4. *San Jose*: 13 mi N San Isidro del General, 1.

EL SALVADOR: Santa Anna Valiano, 1; Cerro Verde, 1.

GUATEMALA: 26; Panajachel, 1; Dueñas, 2; Antigua, 2; Chimaltenango, 1; Acate-nango, 2; Chicacao, 3; Capetillo, 7; Coban, 3; Panzos, 1; Yepocapa, 11; Chiquimula, 1; Cerro Zunil, 3; Quiche, 1; Senahu, 2.

MEXICO: 88. *Chiapas*: 1; Tapachula, 1; Tumbala, 1; Pacific Slope, Cordilleras, 1; 17 mi SE Teopisca, 1; Junction Highways 190, 195, 2; S San Cristobal, 2; Laguna Montebello, 2; Berriozabal, El Suspiro, 4. *Chihuahua*: Maguarichic, 1. *Coli-*

* New country record.

ma: Armeria Bridge 1; Volcan, 5. *Distrito Federal*: 1; Tlalpam, 1. *Durango*: 3; Canelas, 40; 24 mi W La Ciudad, 4; Coapa, 1. *Guerrero*: Chilpancingo, 1; Taxco, 1; Cuapongo, 1; El Gavilan, 1. *Hidalgo*: El Ocote, 1; 24 mi NE Jalcala, 11. *Jalisco*: 1; Guadalajara, 2; Huejotitan, 10; San Juan de los Lagos, 3; Sayula, 4; Ciudad Guzman, 1; Lagos de Moreno, 1. *Mexico*: 1; Toluca, 1; Atlacomulco, 5; Ixtapan de la Sal, 6. *Michoacan*: Tancitaro, Pedregal, 3; Palo Alto, 1; Tuxpan, 1. *Morelos*: Cuernavaca, 18. *Nayarit*: Tepic, 1. *Nuevo Leon*: Chipinque Mesa near Monterrey, 2. *Oaxaca*: Juquila Mixes, 4; Juquila, 1; 37 mi S Valle Nacional, 1; 20 mi S Juchatengo, 6; Rio Molina, S Suchixtepec, 2. *Puebla*: Villa Juarez, 1; Teziutlan, 6; Puebla, 4; Necaxa, 4. *San Luis Potosi*: Ciudad del Maiz, 1; Tamazunchale, 4; Chapulhuacan, 2; Xilitlan, 1. *Sinaloa*: Santa Lucia, 2. *Veracruz*: 15 mi W Tlapacoyan, 1; Orizaba, 1; Presidio, 2; Jalapa, 10; Toxpam, 3; source Rio Atojal, 3; Fortin, Canyon Rio Metlac, 1; Fortin, 2; San Andres Tuxtla, 1; 9 mi N Huatusco, 1; Coatepec, 4; Misantla, 2; Cordoba, 2. *Veracruz* or *Oaxaca*: "Sierra de Durango," 2. ?*State*: Santa Tecla, 1; La Palma, 5.

MEXICO, GUATEMALA: 80 (various localities, BM).

NICARAGUA: *Chontales*: 5.

PANAMA: 2. *Chiriqui*: Cerro Punta, 8; Santa Clara, Finca Hartman's, 4; Bambito, 1; Las Lagunas, 1; Volcan, 1.

Rhodobaenus sexguttatus Champion

No additional records: (for range, see in the text).

Rhodobaenus stigmaticus (Fahraeus)

Additional records: (for range, see in the text).

MEXICO: *Chiapas*: Palenque, 1 (OB). *Veracruz*: 18 mi N San Andres, 9 (USNM).

Rhodobaenus subcristatus Champion

COSTA RICA: 1 (MN); San Carlos, 4 (including lectotype, BM; MN, USNM); Pacayas, 1 (AMNH); Pozo Azul, 1 (BM); Turrialba, 14 (USNM).

NICARAGUA: *Chontales*: 1 (BM).

Rhodobaenus subcylindricus (Champion)

EL SALVADOR: El Rosario, Cuscatlan, 1 (USNM).

GUATEMALA: Dueñas (lectotype, BM); Trece Aguas, Alta Verapaz, 1 (USNM).

Rhodobaenus suturalis (Gyllenhal)

Additional records: (for range, see under the species in the text).

ARGENTINA: *Misiones*: Iguazu, 2 (USNM).

BRAZIL: *Rio Grande do Sul*: Santo Augusto, 5 (OB). *Santa Catarina*: Nova Teutonia, 1 (OB).

Rhodobaenus tenuiscapus Champion

COSTA RICA: Monteverde, 16 (HH, HO, RA, USNM); Irazu, 3 (BM); Azahar de Cartago, 1 (lectotype, BM).

Rhodobaenus thoracicus (Gyllenhal)

COSTA RICA: Atenas, 1 (ZM); Turrialba, 5 (MN, ZM); Bebedero, Guanacaste, 1 (USNM).

EL SALVADOR: San Salvador, 5 (CDA, USNM); Planos de los Renderos, 1 (USNM); La Libertad, 1 (OB).

GUATEMALA: Las Mercedes, 1 (BM); Moca, Suchitepequez, 1 (AMNH); San Juan, 4; San Jeronimo, 2; San Isidro, 1; Yepocapa, Chimaltenango, 1 (USNM); Zapote, 2 (BM, USNM).

HONDURAS: *Distrito Central*: 26 mi NW Tegucigalpa, 1 (OB). *Olancho*: NE Catcamas, 1 (OB).

MEXICO: 13 (BM, MN, ZM). *Chiapas*: Tapachula, 6 (BM, OB, USNM); Tuxtla Gutierrez, 1 (AMNH); Finca Cuauhtemoc, 1 (USNM). *Colima*: Volcan, 4 (USNM); Volcan, Esperanza, 5 (USNM). *Durango*: Ventanas, 1 (USNM); Canelas, 2 (ZM). *Guerrero*: Chilpancingo, 1 (BM). *Hidalgo*: Chapulhuacan, 1 (AMNH). *Morelos*: Cuernavaca, 6 (BM, OB, USNM). *Oaxaca*: Juchatengo, 1 (USNM); 21 mi S Matias Romero, 1 (OB). *San Luis Potosi*: El Salto, 1 (AMNH); El Platanito, 1 (USNM); Huichihuyan, near Tamazunchale, 2 (AMNH); Tamazunchale, 1 (CDA). *Tabasco*: Teapa, 3 (BM). *Veracruz*: San Andres Tuxtla, 1 (BM); Toxpam, 3 (BM); Playa Vicente, 1 (BM); Cordoba, 3 (BM, USNM); Atoyac, 1 (BM); Lake Catemaco, 8 (AMNH, OB, USNM); Vega del Sol, 1 (USNM); Tejeria, 1 (OB); Minatitlan, 1 (OB); Santiago Tuxtla, 1 (OB); Alvarado, 1 (OB).

NICARAGUA: *Managua*: Los Brasiles, 1 (OB); *Chontales*: 1 (BM).

PANAMA: *Canal Zone*: Paraiso, 3 (HH, USNM); Limon Plantation, Chagres River, 1 (USNM); Gatun, 3 (HH, OB); Madden Forest, 3 (HH, OB); Gamboa, 3 (OB); Empire, 1 (OB); Fort

Kobbe, 3 (OB); Las Cumbres, 1 (OB); Tank Hill, near Albroom Field, 5 (OB). *Panama*: 1 (USNM).

Rhodobaenus tredecimpunctatus (Illiger)

CANADA: *Ontario*: Ojibway, 4.

MEXICO: *Chihuahua*: Delicias, 1.

UNITED STATES: 46 (various localities, MN); 60 (various localities, USNM).⁴ *Arizona*: 11; Prescott, 1; Tucson, 11; Williams; Douglas (USNM). *California*: Anaheim, 1; Santa Clara County, 16; Stanislaus County, 11; ?Forsence, 2; Fresno County, 3; Inyo County, 2; Riverside; Los Angeles; Coquillet; Stanton; Garden Grove; Pasadena (all USNM). *Colorado*: Lamar (USNM); La Junta, 1; Regnier, 3. *Connecticut*: Stanford, 1; New Canaan, 5; Norwalk, 1; Bridgeport (USNM). *Delaware*: Wilmington (USNM). *Florida*: 2; Enterprise (USNM); Sanford, 1. *Georgia*: Hall County, 1; Lumpkin County, 1. *Idaho*: Boise; Pocatello (USNM). *Illinois*: Galena, 8; Glenview, 1; Galena; Pulaski (USNM). *Iowa*: Council Bluffs; Iowa City; Sioux City (USNM). *Kansas*: Phillips County, 1; Meade County, 1; Manhattan, 2; Douglas, 2; Popenoe; Wellington (USNM). *Louisiana*: 1. *Maryland*: 1; Montgomery County; Plummers Island; Plum Point; Blandesborg (USNM). *Minnesota*: Frontenac, Goodhue County, 1. *Missouri*: St. Louis (USNM); Boone County, 3; Lawrence County, 1; Taney County, 1. *Nebraska*: Lincoln (USNM); Bellevue, Sarpy County, 2. *New Jersey*: 2; Alpine, 16; Bergen County, 3; Berkeley Heights, 1; Camden, 2; Hackettstown, 1; Mt. Holly, 1; Patterson, 1; Ramsey, 3; Rutherford, 1; Summit, 3; Snake Hill, 12; Trenton, 1; Hillsdale; Boonton; Chester; Clifton; Glassboro (USNM). *New Mexico*: 6; Albuquerque; Maxwell (USNM). *New York*: 4; Cedarhurst, 1; Chappaqua, 4; New Rochelle, 1; Valley Stream, 3; Yonkers, 2; Inwood Park, 19; Pelham Bay Park, 42; Root Garden (USNM). *North Carolina*: Highland; Raleigh; Myrtle Beach (USNM). *Ohio*: Pickerington, 1; Springfield, 1. *Oklahoma*: Orienta, 1; Anadarko; Lawton (USNM). *Oregon*: Echo; Ontario (USNM). *Pennsylvania*: Mt. Moriah; Roxborough; Wyoming (USNM); Allegheny County, 5; Lansdowne, 2; Delaware Water Gap, 3. *Tennessee*: R. Perry County, 1. *Texas*: 11; Nursery; Robstown (USNM); Austin, 1; Bexar County, 1; Briscoe County, 6; Hall County, 2; Oklahoma, 1; Richmond, 1. *Utah*: Bountiful; Garland; Moab; Nephi; Salt Lake City (USNM). *Virginia*:

Alexander County; Glancarlyn (USNM); Radford, 6; Warren County, 1. *Washington, D.C.*: Rock Creek (USNM). *Washington*: Wawawa (USNM). *Wisconsin*: Beaver Dam, 4; Kenosha County, 1. *Wyoming*: Green River (USNM).

Rhodobaenus valens Champion

MEXICO: 5 (MN). *Morelos*: Cuernavaca, 10 (including lectotype, BM; MN, USNM); Cuernavaca, Anton Falls, 1 (USNM).

Rhodobaenus varieguttatus Chevrolat

COSTA RICA: *San Jose*: 1 (MN); La Caja, near San Jose, 1 (USNM).

GUATEMALA: 7 (MN, ZM); Las Mercedes, 1 (BM); San Isidro, 2 (BM); Dueñas, 2 (BM); Antigua, 2 (AMNH); Zapote, 2 (BM, USNM); Coban, 1 (AMNH); Capetillo, 1 (AMNH); Yepocapa, 3 (USNM); Coatepeque, 2 (HH).

MEXICO: 14 (including type, NR; BM, MN, ZM). *Chiapas*: Tapachula, 1 (BM). *Colima*: Volcan, 15 (USNM); Tecuizitlan, 6 (USNM); 10 mi S Tonila, 32 (AMNH). *Guerrero*: Chilapa, 1 (HO); Taxco, 1 (ZM). *Jalisco*: Talpa de Allende, 2 (OB); Colmilla, Barranca de Oblates, 1 (AMNH). *Mexico*: Ixtapan de la Sal, 1 (OB). *Michoacan*: Uruapan, 1 (USNM). *Morelos*: Cuernavaca, 4 (CDA, OB, USNM); Hujintlan, 1 (USNM). *Nayarit*: Tepic, 4 (AMNH, USNM); El Pichon, 1 (USNM). *Oaxaca*: Panistlahuaca, 1 (DM). *Veracruz*: 1 (MN); San Andres Tuxtla, 1 (BM); Almolonga, 1 (ZM); Cordoba, 1 (OB); Jalapa, 1 (ZM); Toxpam, 1 (BM); Orizaba, 2 (USNM).

Rhodobaenus v-nigrum Champion

Additional records: (for range, see under the species in the text).

*COSTA RICA: Las Mercedes, Santa Clara, 2 (USNM). *Cartago-Limon* border: north of Turrialba, 1 (HO). *Limon*: Hamburg Farm, Reventazon, 1 (USNM); Guapiles, 1 (USNM).

Rhodobaenus ypsilon Chevrolat

COSTA RICA: 8 (BM, MN); 40 km NE Turrialba, 1 (HO); San Pedro, San Jose, 1 (HH); Turrialba, 10 (OB, MN, USNM, ZM); Tucurrique, 1 (USNM); Pacayas, 1 (AMNH); San Jose, 3 (USNM); Surubres, 1 (DM).

EL SALVADOR: San Salvador, 3 (CDA, USNM); El Rosario, Cuscatlan, 2 (USNM).

⁴ The localities from USNM are noted, but without the number of specimens.

* New country record.

GUATEMALA: Cerro Zunil, 3 (BM); Coban, 2 (AMNH); San Jeronimo, 6 (BM, USNM); San Juan, Verapaz, 2 (BM); Zapote, 2 (BM); Yepocapa, Chimaltenango, 2 (USNM).

HONDURAS: *Comayagua*: 14 mi NW Siguatepeque, 4 (OB); S end Lago Yojoa, 2 (OB). *Cortes*: 19 km N Cofradia, 1 (OB); El Jaral, Finca Fe, 1 (OB). *Santa Barbara*: 13 km SE El Mochito, 1 (OB).

MEXICO: 13 (including type, NR; BM, MN, ZM). *Chiapas*: Pueblo Nuevo, Rio Bajada, 1 (OB); Tapachula, 1 (BM). *Colima*: W Autlan, 1 (OB). *Morelos*: Cuernavaca, 1 (USNM). *Oaxaca*: Temascal, 1 (USNM); Oaxaca, 1 (BM); Juquila,

2 (BM). *San Luis Potosi*: El Platanito, 1 (USNM). *Veracruz*: Fortin de las Flores, 4 (OB, USNM); Presidio, 1 (USNM); Jalapa, 2 (USNM, ZM); Orizaba, 1 (USNM); Toxpan, 2 (BM); San Andres Tuxtla, 5 (BM, USNM); Cordoba, 4 (AMNH, USNM). *Tabasco*: Teapa, 1 (AMNH).

NICARAGUA: *Chontales*: 1 (BM). *Carazo*: Diriamba, 1 (OB).

PANAMA: *Canal Zone*: Cerro Campana, 1 (OB). *Chiriqui*: Rovira, 1 (OB); Tole, 1 (BM); Volcan, 7 (BM, USNM); Santa Clara, Hartmann's Finca, 1 (HO). *Cocle*: El Valle, 1 (USNM).

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