# A synopsis of Central American and Caribbean *Oxybelus* (Hymenoptera, Sphecidae)

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## Abstract

The 37 recognized *Oxybelus* of Central America and the Caribbean are listed, a key given, and the critical thoracic projections figured for many of the species. New species are *coloratus* (Mexico), *irwini* (El Salvador), *jamaicae* (Jamaica), *melanitus* (Mexico), *morrisoni* (Puerto Rico), *propodealis* (Honduras), *rhodopyga* (Mexico), and *romingeri* (Hispaniola). New synonyms of *mexicanus* Robertson 1889 are *frontalis* Robertson 1889, *bugabensis* Cameron 1891, and *longispina* Cameron 1891.

## Introduction

The genus *Oxybelus* Latreille is almost worldwide, occurring on every continent except Australia. More than 250 species are known, which makes it the largest genus in the subfamily Crabroninae, and one of the largest in the Sphecidae. A general discussion of *Oxybelus* and a list of the world species was given by Bohart and Menke (1976).

I have recognized 37 species in Central America and the Caribbean islands. Of these 24 are found also in America north of Mexico, and most of these were reviewed by Bohart and Schlinger (1956a, b, c, 1957). In addition 3 are primarily South American, and these were treated by Bohart (1993b). This leaves 10 known only from Central America and the Caribbean. These are presumably endemic.

No doubt other species will be distinguished, particularly among the smaller-sized ones. The metanotal and propodeal projections (squamae and mucro) are characteristic and relatively constant. Illustrations are given for the new species and the already described endemic ones. When available, the figures are of females. In general males have the squama a little narrower, and the mucro somewhat longer and more slender.

A list of the recognized species, new synonymy, and a key to species follows.

Material used in this study consisted of about 2,000 specimens from the following institutions and curators. Location of type material is indicated in the list of species and descriptions by the relevant museum city in capital letters.

BUENOS AIRES, Jorge Genise, National Museum of Argentina;
DAVIS, Lynn Kimsey, Steve Heydon, University of California Bohart Museum;
GAINESVILLE, Lionel Stange, Florida State Collection of Arthropods;
ITHACA, George Eickwort, E. Hoebecke, Cornell University, New York;
LAWRENCE, Robert Brooks, University of Kansas Snow Museum;
LOGAN, George Bohart, Utah State University;
LONDON, Colin Vardy, The Natural History Museum;
NEW YORK, Jerome Rozen, American Museum of Natural History;
PHILADELPHIA, Daniel Otte, Academy of Natural Sciences;
SACRAMENTO, Marius Wasbauer, California State Department of Agriculture;
SAN FRANCISCO, W. J. Pulawski, California Academy of Sciences;
WASHINGTON, Arnold Menke, U. S. National Museum.

Terms in the keys and descriptions which may need explanation are: LID, least interocular distance; eye breadth, single eye from directly in front of face; MOD, median ocellus diameter; PD, puncture diameter; T-I, T-II, etc., terga after propodeum, F, antennal flagellomere.

## Central American and Caribbean *Oxybelus*

Original reference, type data, depository (in capitals), and distribution. Synonyms listed in Bohart and Menke (1976) are not included.

*abdominalis* Baker 1896:158. Holotype male, Colorado (WASHINGTON). U. S. west of 100*th* Meridian; Mexico: Chihuahua (Villa Ahumada), Coahuila (Guadalupe). Fig. 3.

*analis* Cresson 1865a:149. Lectotype male, Cuba (PHILADELPHIA). Cuba, Bahamas, Grenada. Subspecies *bimini* Krombein 1953:18. Holotype male (NEW YORK) from the Bahamas is a slight color form.

*andinus* Brèthes 1913:143. Holotype female, Salta Province, Argentina (BUENOS AIRES). Widespread in South America, Central America: Costa Rica, Mexico (Sinaloa).

*argenteopilosus* Cameron 1891:157. Holotype male, Veracruz (LONDON). Western U. S., Costa Rica; Mexico: Oaxaca, Mexico D. F., Baja California Sur, Sonora.

*aztecus* Cameron 1891:157. Holotype male, Veracruz (LONDON). Southwestern U. S., Panama, Costa Rica, El Salvador; Mexico: Chiapas to Veracruz and Sonora.

*argypheus* Bohart and Schlinger 1956a:38. Holotype female, Borrego, San Diego Co., California (SAN FRANCISCO). Southwestern U. S.: Colorado, Arizona, California; Mexico: Sonora (near Sonoyta).

*californicus* Bohart and Schlinger 1956b:147. Holotype male, California: Davis (SAN FRANCISCO). Western U. S.; Mexico: Baja California.

*canalis* Bohart and Schlinger 1956b:149. Holotype male, California: Riverside (SAN FRANCISCO). Southwestern U. S. north to Utah; Mexico: Morelos, Sinaloa, Sonora.

*cochise* Pate 1943a:93. Holotype male, New Mexico: Stains (ITHACA). Mexico: Baja California (San José Vicente, San Ignacio, Concepcion Bay), Sonora (Alamos). Fig. 18.

*coloratus* Bohart n.sp. Holotype female, Veracruz (DAVIS). Texas: Padre Island; Mexico: Veracruz, Tamaulipas (Matamoros). Fig. 1.

*confusus* Alayo 1968:20. I have not seen any material of this species.

*cornutus* Robertson 1889:80. Lectotype male, Montana (PHILADELPHIA). U. S. west of 100*th* Meridian to Nevada and Arizona. Mexico: Durango, Zacatecas, Nayarit, Jalisco, Sonora, Chihuahua. Fig. 19.

*crandalli* Bohart and Schlinger 1956b:154. Holotype female, Arizona: Tucson (SAN FRANCISCO). Arizona, Arkansas (Lewisville); Mexico: Chihuahua (9 mi s. Hidalgo del Parral).

*emarginatus* Say 1837:375. Holotype male, Indiana (lost). North America south to Mexico and nearly to Mexico City.

*exclamans* Viereck 1906:215. Holotype female, Texas: Galveston (LAWRENCE). Southern U. S.; Mexico: Chihuahua, Hidalgo, Sonora, Baja California, Baja California Sur.

*fossor* Rohwer and Cockerell 1908:179. Holotype female, New Mexico. (WASHINGTON). U. S. west of 100*th* Meridian; Mexico: Sinaloa, Sonora, Baja California, Baja California Sur. Fig. 2.

*hurdi* Bohart and Schlinger 1956b:155. Holotype male, Nayarit: Ahuacatlan (SAN FRANCISCO). Mexico: Sonora (Alamos), Nayarit. Fig. 5.

*irwini* Bohart n.sp. Holotype female, El Salvador: Mt. San Salvador (DAVIS). El Salvador, Costa Rica. Fig. 16.

*jamaicae* Bohart n.sp. Holotype female, Jamaica: Catherine Parish, Hellshire Hills (LAWRENCE). Jamaica. Fig. 4.

*marginatus* F. Smith 1856:389. Lectotype female, Brazil: Villa Nova (LONDON). Widespread in South America except Chile; Central America: Costa Rica, Puerto Rico, Hispaniola.

*melanitus* Bohart n.sp. Holotype female, Mexico: Puebla: Tehuacan (DAVIS). Texas: Brewster Co.: Big Bend; Mexico: Guerrero, Michoacan, Pueblo. Fig. 15.

*mexicanus* Robertson 1889:83. Holotype female, Mexico (PHILADELPHIA). Panama to Veracruz and Jalisco.

- *frontalis* Robertson 1889:83. Lectotype male, Illinois (PHILADELPHIA). New synonymy. Figs. 6, 7.
- *bugabensis* Cameron 1891:156. Holotype female, Panama (LONDON). New synonymy.
- *longispina* Cameron 1891:157. Holotype male, Yucatan: Temax (LONDON). New synonymy.

**Discussion**. Types associated with the four names above have been examined and found to be the same structurally. In the case of *frontalis* from U. S. east of the Rocky Mts. and El Salvador the tergal markings are more or less interrupted medially, but this is rather variable.

*morrisoni* Bohart n.sp. Holotype male, Puerto Rico: Anasco District (WASHINGTON). Puerto Rico. Fig. 11.

*packardii* Robertson 1889:81. Lectotype female: Illinois (PHILADELPHIA). So. half of U.S.; Mexico: Chihuahua (Temoris), Sonora (Cocorit).

*paracochise* Bohart and Schlinger 1956a:37. Holotype male, Arizona: Sonoita (SAN FRANCISCO). Arizona to Texas; Mexico: Chihuahua, Durango, Sonora.

*parvus* Cresson 1865b:476. Holotype female, Colorado (PHILADELPHIA). U. S. west of 100*th* Meridian; Mexico: Sonora, Sinaloa, Puebla.

*peruvicus* Bohart 1993b. Holotype male, Peru: Tingo Maria (SAN FRANCISCO). Widespread in South America except Chile, also in Costa Rica.

*pitanta* Pate 1943b:123. Holotype male, California: San Bernardino Co.: Cronise (ITHACA). Southwestern U. S.; Mexico: Sonora (Cocorit).

*propodealis* Bohart n.sp. Holotype male, Honduras: Zamora (WASHINGTON). Honduras. Fig. 13.

*pyrura* (Rohwer) 1914:520. Lectotype female (here designated), Guatemala: Quirigua (WASHINGTON). El Salvador; Guatemala; Mexico: Sinaloa, Jalisco, Zacatecas, Sonora, Morelos, Veracruz, Michoacan, Guerrero, Quintana Roo. The species name is a noun meaning literally "fire tail".

*rhodopyga* Bohart n.sp. Holotype female, Mexico: Jalisco: La Primavera (DAVIS). Mexico: Chiapas, Oaxaca, Guerrero, Jalisco, Puebla; Guatemala: Antigua. Fig. 12. The species name is a noun.

*romingeri* Bohart n.sp. Holotype female, Dominican Republic: Monti Cristi (DAVIS). Hispaniola. Fig. 10.

*sericeus* Robertson 1889:81. Lectotype female, Illinois (PHILADELPHIA). U. S.: transcontinental; Mexico: Tamaulipas, Hidalgo, Nayarit, Sinaloa, Morelos, Veracruz, Baja California, Baja California Sur; Costa Rica. Fig. 14.

*sparideus* Cockerell 1895:292. Lectotype male, New Mexico: Las Cruces (PHILADELPHIA). Southwestern U. S., Costa Rica, El Salvador; Mexico: Oaxaca, Morelos, Guerrero, Jalisco, Chihuahua, Veracruz. Fig. 8.

*subcornutus* Cockerell 1895:293. Lectotype female, New Mexico: Las Cruces (PHILADELPHIA). U. S., Arizona and Michigan to east coast; Mexico: Michoacan, Chihuahua, Durango.

*taenigaster* (Viereck) 1906:215. Holotype female, Kansas: Morton Co. (LAWRENCE). U. S.: Kansas, Nebraska, Texas; Mexico: Mexico D. F., Zacatecas, Hidalgo, Guerrero. Fig. 9.

*uniglumis* (Linnaeus) 1758:573. Holotype female, Europe (LONDON). Southern Canada, U. S. extensively; Mexico: Michoacan, Zacatecas, Guanajuato, Puebla, Jalisco, Chihuahua, San Luis Potosi, Hidalgo, Coahuila. Fig. 20.

*ventralis* W. Fox 1894:107. Holotype female, Baja California Sur: San Jose del Cabo (SAN FRANCISCO). U. S.: Pacific Coast States; Mexico: Baja California, Baja California Sur. Fig. 17.

## Key to the *Oxybelus* of Central America and the Caribbean

1. Squamal point extending posteriorly about as far as inner lobe (dorsal view, figs. 1, 4) ..... 2
   Squamal point extending posteriorly well beyond inner lobe (which may not be developed) (figs. 5, 13) ..... 14

2. Mucro unusually large, flattened, expanded medially (fig. 8), often reddish, mesopleural punctures often 3 PD apart, male clypeus with a medial beard ..... *sparideus* Cockerell
   Mucro not unusually large or reddish, other characters various ..... 3

3. Frons with transverse zone of setae that are shorter than those above and below (fig. 6), genal carina well developed, mesopleural pubescence sparse and short, female hindtibia dark, tergal yellow bands complete or incomplete, mucro rather long, male clypeus not bearded ..... *mexicanus* Robertson
   Frons pubescence more even and evenly distributed, other characters various ..... 4

4. T-I red or partly red ..... 5
   T-I not red ..... 6

5. T-II punctation fine, slightly separated, often weakly impressed; female pygidial plate covered with long silvery setae; scape pale yellow in front (fig. 1) ..... *coloratus* Bohart
   T-II punctation close and moderately coarse; female pygidial plate with short, pale setae; scape usually partly black in front (fig. 3) ..... *abdominalis* Baker

6. Tergal bands on I-IV mostly complete, F-XI of male contrastingly dark, abdomen black posteriorly ..... *marginatus* F. Smith
   Tergal bands broken medially, F-XI of male and pygidial plate of female various ..... 7

7. Hindmetatarsus and T-V-VII of male all dark; mucro moderately long and almost parallel-sided in both sexes; female: LID more than eye breadth (as in fig. 6), mesopleuron extensively polished, gena somewhat concave below, facial pubescence golden, hindtibia black ..... *andinus* Brèthes

Hindmetatarsus of male yellow at least partly, T-V-VI various; female: facial pubescence silvery or off-silvery; mesopleuron not extensively polished, gena not concave, other characters various .... 8

8. T-V in female and VI-VII in male with at least some red, other terga sometimes red also; mucro not expanded apically *or* scutum not at all depressed ..... 9
T-V black (or a trace of red on apex), other characters different ..... 10

9. Mucro not expanded towards apex, sides slightly converging (fig. 4); scutum very slightly depressed, post-tegula black ..... *jamaicae* Bohart
Mucro expanded towards apex; scutum not depressed, post-tegula red, partly dark or black .. ..... *analis* Cresson

10. Mucro parallel-sided or almost so, median cell of forewing rather evenly and densely setose, scutum with median depression especially in male ..... ..... *californicus* Bohart & Schlinger
Mucro distinctly expanded, sides diverging; forewing median cell rather weakly setose posteriorly, scutum various ..... 11

11. Post-tegula practically all black in both sexes, tergal lateral spines of male weakly developed ..... ..... *pyrura* (Rohwer)
Post-tegula red, sometimes with a brownish center in males, tergal spines of male various ..... 12

12. Forewing median cell practically asetose on posterior half, male lateral tergal spines weakly developed, scutal median depression slight ..... ..... *argenteopilosus* Cameron
Forewing median cell with scattered setae on posterior half, male tergal spines and scutal depression various ..... 13

13. Scutum with well developed median furrow, especially in male; T-IV-V in male with lateral spines weakly developed ..... *aztecus* Cameron
Scutum with little if any median depression, T-IV-V spines in male well developed ..... ..... *emarginatus* Say

14. Vertex with median tubercle ..... 15
Vertex without median tubercle ..... 20

15. Post-tegula red or red and yellow, mucro parallel-sided or tapering toward apex which is not notched (figs. 18, 19) ..... 16
Post-tegula black, mucro various ..... 18

16. Scutum marked with red adjacent to tegula and inside lateral rim (fig. 19) ... *cornutus* Robertson
Scutum dark, not marked with red except sometimes lateral rim ..... 17

17. Male hindmetatarsus yellow, male F-XI contrastingly dark, female pygidial plate with silvery setae (fig. 18) ..... *cochise* Pate
Male hindmetatarsus dark, male flagellum nearly all dark, female pygidial plate with golden setae ..... *paracochise* Bohart & Schlinger

18. Mucro all brown, slightly lighter toward apex (fig. 5); T-II punctation unusually coarse and close; tergal markings deep yellow ..... ..... *hurdi* Bohart & Schlinger
Mucro whitish or transparent toward apex (fig. 15), T-II punctation not unusually coarse or rough, tergal markings various ..... 19

19. Mucro relatively slender, at least twice as long as broad, not or hardly notched at apex; tergal markings whitish yellow; female mesopleuron with punctures scattered but not mostly polished; female hindleg extensively whitish ..... ..... *subcornutus* Cockerell
Mucro rather short and stout, less than twice as long as broad, obtusely notched at apex (fig. 15); tergal markings deep yellow; female mesopleuron mostly polished; female hindleg all black ..... ..... *melanitus* Bohart

20. Mucro relatively slender, usually parallel-sided or tapering towards apex which is entire or nearly so (figs. 11, 12, 14, 17, 20) ..... 21
Mucro relatively stout or slender but obtusely notched at apex, often expanded toward apex ... ..... 28

21. Propodeum covered dorsally with thick decumbent silvery pubescence. T-III and following with at least some reddish markings ..... 22
Propodeum not silvery pubescent dorsally, T-IV and following various ..... 23

22. Squama with inner lobe undeveloped (as in fig. 11), female mesopleuron partly polished, female T-V with considerable black pubescence ..... ..... *exclamans* Viereck
Squama with inner lobe well developed (as in fig. 3) although surpassed in dorsal view by stout lateral point, female mesopleuron not polished, female T-V not black pubescent ..... ..... *argypheus* Bohart & Schlinger

23. Mucro partly pale (fig. 14) terga with unusual amounts of apical silvery pubescence; female clypeus densely silvery pubescent, obscuring punctation; male clypeus not bearded nor tridentate ..... *sericeus* Robertson

Mucro dark throughout, terga without unusual silvery fringes, female clypeus (as far as known) with some visible punctation, male clypeus various ..... 24

24. Pronotal collar laterally flattened or rounded, carina indistinct ..... 25
Pronotal collar not flattened or rounded laterally, carina distinct ..... 26

25. Propodeum posteriorly with many small to medium enclosures, tergal markings whitish, mandible in female bearing some long white hair basoventrally, female sterna often white maculate, male T-IV to VI with distinct lateral spines or teeth (fig. 17) ..... *ventralis* W. Fox
Propodeum posteriorly with many large enclosures, tergal markings yellow, T-IV to VI without distinct lateral projections, male only known (fig. 13) ..... *propodealis* Bohart

26. Species small, about 5 mm long, T-V red, male only known (fig. 11) ..... *morrisoni* Bohart
Species moderately large, about 6 mm long (male), 7-8 mm long (female) ..... 27

27. Pygidium red, at least in female; clypeus reddish apically and in male with 3 weak teeth; male T-IV to VI with lateral spines or teeth; female mesopleuron with small polished areas ..... *packardii* Robertson
Pygidium black, clypeus black, in male with 3 strong teeth; male T-IV to VI without evident spines or teeth; female mesopleuron rough (fig. 20) ..... *uniglumis* (Linnaeus)

28. T-I red or red and yellow, hindfemur extensively red ..... *pitanta* Pate
T-I not red marked, or if so, hindfemur all or nearly all black ..... 29

29. Scutum with a deep median depression, median forewing cell clear, female post-tegula red or red and yellow ..... *canalis* Bohart & Schlinger
Scutum with at most a shallow median depression, post-tegula and median cell various ..... 30

30. Propodeum laterally with many silvery setae ..... *crandalli* Bohart & Schlinger
Propodeum laterally essentially bare ..... 31

31. Median forewing cell clear, without noticeable dark setation ..... 32
Median forewing cell with some dark setation .. 33

32. T-II with close and moderately coarse punctures separated by less than a PD, S-II without conspicuous patches of silvery hair, terga with black ground color ..... *parvus* Cresson
T-II with moderately fine punctures separated by at least 1 PD of polished integument, S-II with a lateral patch of rather long silvery hair, terga often with considerable red, especially in male (fig. 2) ..... *fossor* Rohwer & Cockerell

33. Small species, about 4-5 mm long ..... 34
Moderately large species, about 6-7 mm long ... 35

34. T-V of female nearly always red, mucro parallel-sided or a little converging (fig. 10) ..... *romingeri* Bohart
T-V and post-tegula black, mucro diverging toward apex (fig. 16) ..... *irwini* Bohart

35. Flagellum of male black toward apex, female mesopleuron extensively polished, T-V without red, post-tegula black, facial pubescence partly golden in male, entirely so in female ..... *peruvicus* Bohart
Flagellum of male light red toward apex, female mesopleuron not extensively polished, T-V usually partly or all red, post-tegula various, facial pubescence silvery ..... 36

36. Post-tegula red, tergal markings light yellow, scutal pubescence in female silvery (fig. 9) ..... *taenigaster* (Viereck)
Post-tegula black, tergal markings deep yellow, scutal pubescence in female bronzy (fig. 12) ..... *rhodopyga* Bohart

## *Oxybelus coloratus* R. Bohart, new species

**Holotype female**. Length 4.5 mm. Black marked with whitish yellow: mandible, scape in front, pronotal collar and lobe, scutellar spots, squama and mucro (plus translucency), legs extensively, T-I-V with apical bands, narrowed medially, enlarged laterally on I; red are: clypeus apically, flagellum mostly, post-tegula, T-I-II basally, T-VI; wings lightly stained. Pubescence silvery, prominent on lower two-fifths of face, postocular spot, mesopleuron, tergal apices laterally, pygidial plate; median cell of forewing with numerous scattered setae. Punctation mostly fine and a little separated on head, scutum and terga. LID about equal to eye breadth, clypeal carina obscured by pubescence, genal carina part of a low ridge, squama and mucro (fig. 1); pygidial plate angled at 60°, almost pointed posteriorly.

**Male**. Length 4.0-4.5 mm. T-II with little red, T-VII red, T-VI sometimes. Clypeus with a reddish bevel at apex, flagellum yellowish red beneath, mostly red above.

Female holotype (DAVIS), Veracruz, Veracruz, Mexico, VII-28-56 to VIII-11-56 (R. and K. Dreisbach). Paratypes, 7 males, 4 females (DAVIS, LAWRENCE, SAN FRANCISCO, WASHINGTON), same data as holotype. Also, female (DAVIS) Matamoros, Tamaulipas, Mexico, VII-4-78 (J. Gillaspy); female (DAVIS), Veracruz, Veracruz, Mexico, VI-20-61 (P. Hurd); male (LAWRENCE), 5 k s. Boca del Rio, Veracruz, I-2-82 (A. Lizardo); 4 males (DAVIS, LAWRENCE) 3 k e. Junction highways 150 and 180, Veracruz, I-2-82 (B. May); female (LAWRENCE), Padre I., Kleberg Co., Texas (A. Ortiz).

The extensive light yellow and red markings, along with the small size and well developed inner squamal lobe (fig. 1) separate *coloratus* from all other Central American *Oxybelus* except *abdominalis*. The latter is somewhat larger and punctation, particularly on the terga, is more coarse.

## *Oxybelus irwini* R. Bohart, new species

**Holotype female**. Length 4.5 mm. Black marked with light yellow: mandible mostly, separated spots on pronotal collar, lobe weakly, scutellar dots, foretibia outwardly, apical forefemoral and midfemoral dot; lateral spots on T-I-IV, that on IV weak; red are: flagellum beneath, pygidial plate; wings lightly stained. Pubescence silvery on lower half of face, becoming off-silvery above, brownish on vertex and scutum, silvery but sparse on mesopleuron, coppery on T-IV; forewing medial cell with abundant but scattered and tiny setae. Punctation moderate and close on vertex, scutum and T-II; mesopleural punctures moderate but spaced by about 1.2 PD. LID about equal to eye breadth, clypeus with a small basomedian tubercle and a broad apical bevel, scutum with a distinct but shallow median depression, genal carina present, squama and mucro (fig. 16), pygidial plate angled at about 45°.

**Male**. Length 4 mm. Scape mostly yellow in front, legs more extensively yellow including all tibiae outwardly and basitarsal segments, T-V-VII black, lateral tergal spines small, LID a little less than eye breadth, clypeus with a medially deflected edge bearing a bilobed depression.

Female holotype (DAVIS), Mt. San Salvador, El Salvador, VII-8-63 (D. Cavagnaro and M. Irwin). Paratypes (all from El Salvador), 3 males, female (DAVIS) same data as holotype; 8 males, 2 females (DAVIS, WASHINGTON, SAN FRANCISCO), Quezaltepeque, VI-18-63 to VIII-6-63 (D. Cavagnaro and M. Irwin).

Characteristic features taken together are the strong squamal points (fig. 16), black post-tegula, partly depressed scutum, close moderate punctation of T-II, apical clypeal bevel in female and bilobed edge in male, and apically expanded mucro. It is similar to *morrisoni* which has the post-tegula and T-V red, as well as a parallel-sided mucro. One female paratype has yellow lateral spots on T-IV. The species is named for my friend, Michael Irwin, who collected many of the type series.

## *Oxybelus jamaicae* R. Bohart, new species

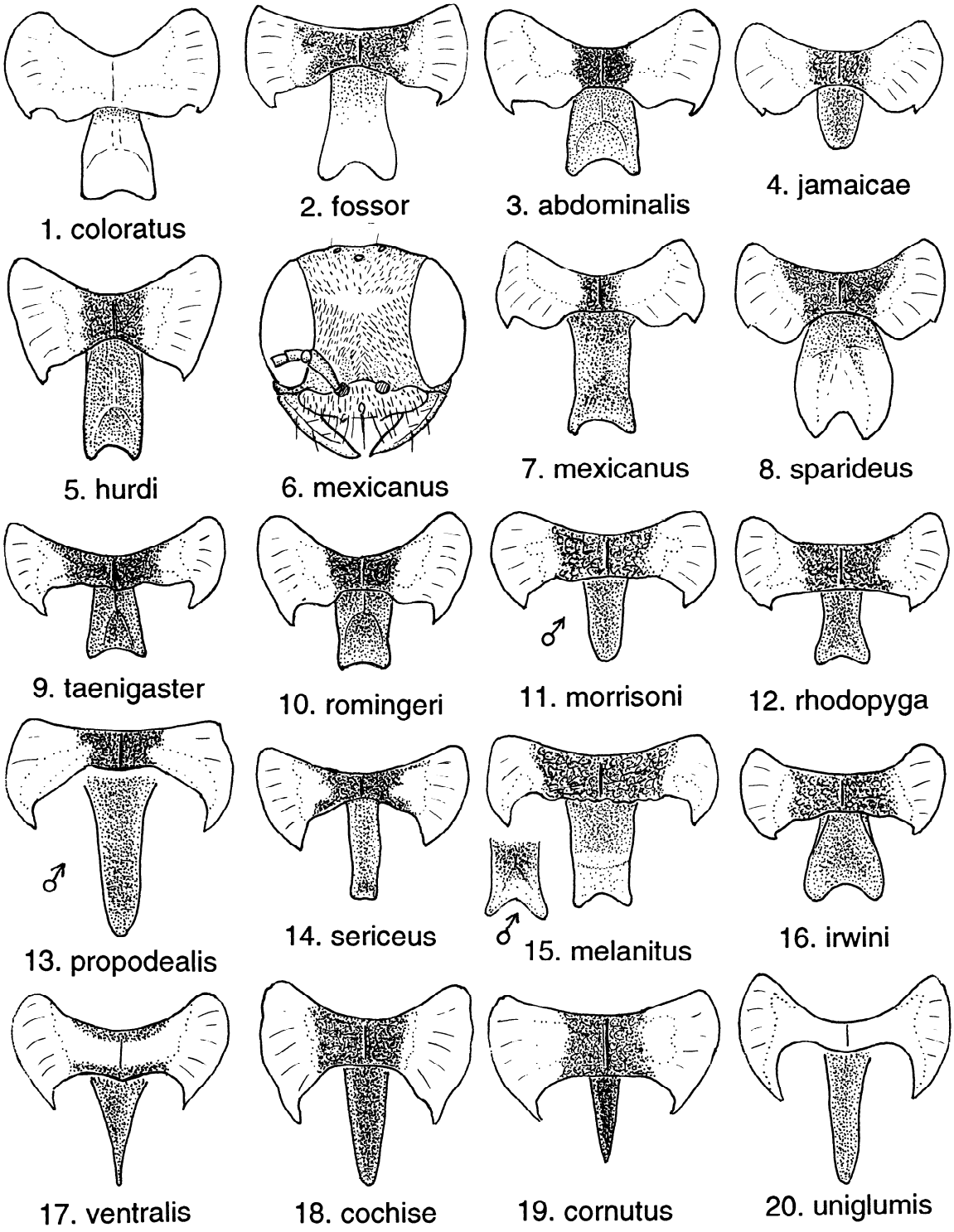
**Holotype female**. Length 5 mm. Black marked with pale yellow: mandible partly, pronotal collar except medially, lobe, scutellar spots, squama partly, apical spot on forefemur and midfemur, foretibial streak, narrow lateral spots on T-I to IV; red are: flagellum toward apex, T-V and VI; wings lightly stained. Pubescence silvery on lower half of face, off-silvery and thin on mesopleuron, weak apicolaterally on T-II to IV, light golden on pygidial plate; forewing median cell with abundant setae, a little fewer posteriorly. Punctation fine and a little separated on vertex, scutum and mesopleuron; medium fine and separated by about 1 PD on T-II medially. LID about equal to eye breadth, clypeal median ridge partly obscured by pubescence, genal carina replaced by a ridge, squama and mucro (fig. 4), pygidial plate angled at 45°.

**Male**. Length 4.5 mm. Scape mostly yellow in front, legs more extensively yellow including base of hindtibia and all basitarsal segments, T-V to VII red, lateral tergal spines inconspicuous, LID a little less than eye breadth.

Female holotype (LAWRENCE), Hellshire Hills, Catherine Parish, Jamaica, VI-8-85 (C. Michener). Paratypes (from Jamaica), male, female (LAWRENCE, DAVIS), same data as holotype; female (LONDON), Portland (O. Richards); female (LONDON), topotype, XI-30-75 (A. Raw); male, 2 females (SAN FRANCISCO, DAVIS), near Fort Henderson, St. Katherine Parish, XI-16-86 (W. J. Pulawski).

The small size, red T-V-VI (female) or V-VII (male), black post-tegula, short squamal point (fig. 4),

**Figures 1-20.** All illustrations except fig. 6 are of metanotal squamae and propodeal mucro of females unless otherwise indicated. Dotted lines enclose non-translucent areas. Figures are comparative, not drawn to scale. Fig. 6, facial view to emphasize distribution of short setae.


1. coloratus
2. fossor
3. abdominalis
4. jamaicae
5. hurdi
6. mexicanus
7. mexicanus
8. sparideus
9. taenigaster
10. romingeri
11. morrisoni
12. rhodopyga
13. propodealis
14. sericeus
15. melanitus
16. irwini
17. ventralis
18. cochise
19. cornutus
20. uniglumis

the fine and separated mesopleural punctation, and the converging mucro sides (fig. 4) distinguish *jamaicae* from other Caribbean species as well as all others.

## *Oxybelus melanitus* R. Bohart, new species

**Holotype female**. Length 7.5 mm. Black marked with yellow: tiny spot near base of foretibia, squamae and mucro partly, lateral spots on T-I, nearly connected on T-II-III, connected and thick on T-IV-V: wings nearly clear. Pubescence silvery on lower half of face, scanty elsewhere except on pygidial plate where setae are golden, forewing medial cell with a few scattered setae anteriorly. Punctation moderate and close on upper frons, more coarse and transverse on vertex, mostly coarse on scutum, somewhat separated on scutellum, widely scattered on mostly polished mesopleuron, weak on propodeum, moderate and a little separated on T-I-II. LID 1.5 x eye breadth, a small medial tubercle on vertex, clypeal carina toothlike, genal carina undeveloped, squama and mucro (fig. 15), pygidial plate angled at 45°.

**Male**. Length 6-7 mm. Clypeus with median grey beard above three apical teeth, all tibiae with outer yellow stripe, tarsi mostly yellow, pronotal lobe rarely yellow, T-VI with a little yellow. Mesopleuron closely and quite coarsely punctate, mucro somewhat expanded (fig. 15). Lateral spine on T-VI toothlike, others weak.

Female holotype (DAVIS), Tehuacan, Puebla, Mexico, VI-23-51 (H. E. Evans). Paratypes, all from Mexico: 3 males (DAVIS), same as holotype; female (SAN FRANCISCO), Puebla, Puebla, VII-3-52 (E. Gilbert, C. MacNeill); male (DAVIS), 7 mi ne. Atlixco, Puebla, VIII-19-62 (U. Kans. Exped.); female (LAWRENCE), Chilpancingo, Guerrero, VIII-5-60 (U. Kans. Exped.); 2 males (DAVIS), Cotija, Michoacan, IX-14-75 (B. Villegas); female (LAWRENCE), Chamela, Jalisco, VII-10-89 (A. Roig); male (LAWRENCE), Big Bend, Brewster Co., Texas, IV-10-63 (R. Roberts, M. Naumann).

This medium-large species has the head and thorax of the female practically all black. There is a slight resemblance to species like *cornutus* but many differences exist, as indicated in the key.

## *Oxybelus morrisoni* R. Bohart, new species

*Holotype male*. Length 5 mm. Black marked with light yellow: mandible mostly, spots on pronotal collar and lobe, scutellar spots, squama partly, weak apical spots on forefemur and midfemur, foretibial streak, basal spots on midtibia and hindtibia, narrow lateral spots on T-I to II; red are: flagellum apically, T-V to VII; wings lightly stained. Pubescence silvery on lower half of face, postocular area, scutum, mesopleuron (thinly), and tergal apices laterally; short and dark on top of head; setae scattered over median cell of forewing. Punctation moderately fine and close on frons and vertex, a little more coarse and separated by 1 PD on scutum and T-II, more separated on mesopleuron, with prepectal punctures about 3 PD apart, LID a little less than eye breadth, clypeus ending in a wide and deflected bevel, genal carina part of a low ridge, scutum with a weak median depression, squama and mucro (fig. 11), T-V-VI with small toothlike lateral spines.

**Female**. Unknown.

Male holotype (WASHINGTON), Anasco District, Puerto Rico, VI-3-17 (H. Morrison). Paratypes, 2 males (WASHINGTON, DAVIS), same data as holotype.

*Oxybelus morrisoni* has prominent squamal points, a fairly stout but tapering mucro (fig. 11), black post-tegula, rather simple clypeus and flagellum, dark hindmetatarsus, separated moderate punctation on mesopleuron and T-II, and red T-V to VII. Taken together these characters separate it from other species. It is a little like *jamaicae* which, however, has a short squamal point and well developed inner squamal lobe. Compare also *romingeri* as discussed under that species. The name is based on the collector of the type series.

## *Oxybelus propodealis* R. Bohart, new species

*Holotype male*. Length 7 mm. Black marked with deep yellow: pronotal collar laterally and lobe, scutellar spots, squama posteriorly, foretibia and midtibia outwardly, hindtibia basally, T-I-IV with medially interrupted bands, T-V-VI with complete bands; wings moderately stained; flagellum all dark; T-VII red; post-tegula yellow and brownish. Pubescence silvery, clypeus with an ill-defined median beard above three blunt teeth, pubescence inconspicuous on thorax and abdomen; forewing medial cell with abundant setae, especially toward foreward margin. Punctation moderate and close on frons, vertex, and scutum, close and coarse with some longitudinal ridging on mesopleuron; moderately coarse and slightly separated on T-I-II. LID a little greater than eye breadth, clypeal median ridge strong, genal carina absent, pronotal collar rounded laterally, squama and mucro (fig. 13), posterior face of propodeum with about 20 well defined

basins, lateral spines of T-IV-VI stout and inconspicuous.

Male holotype (WASHINGTON), Zamora, Honduras (T. Cockerell exped.)

Although running in the key near *uniglumis*, the relationship is doubtful because of the following differences in *propodealis*: rounded pronotal collar laterally, red pygidium, coarsely punctate terga, weak clypeal teeth, and extensive propodeal compartmenting.

## *Oxybelus rhodopyga* R. Bohart, new species

**Holotype female**. Length 7.5 mm. Black marked with deep yellow: pronotal collar laterally and lobe, scutellar spots, metanotum except medially, foretibia outwardly, midfemoral spot, tergal bands on I-V, those on I-II broken medially; red are: foretibia partly, T-V apically, T-VI; wings lightly stained. Pubescence silvery on lower two-thirds of face, behind eye, mesopleuron; bronzy on scutum and tergal apices; golden on pygidial plate. Punctation moderately coarse, close on head, a little separated on scutum, mesopleuron, and T-I-II medially. LID a little greater than eye breadth, clypeal carina toothlike, genal carina undeveloped, squama and mucro (fig. 12), pygidial plate angled at 40°.

**Male**. Length 5.5-7.0 mm. Clypeus with a weakly differentiated silvery beard above three moderate apical teeth, all tibiae yellow marked, forefemur sometimes spotted, hindfemur with dull red streak, T-V partly and T-VI-VII entirely red, last 4 or 5 flagellomeres red beneath, S-III-VI with well developed and dentiform lateral spines.

Female holotype (DAVIS), La Primavera, Jalisco, Mexico, VII-8-56 (R. and K. Dreisbach). Paratypes (all from Jalisco, Mexico): female (DAVIS), same data as holotype; male, 3 females (DAVIS, SAN FRANCISCO), 22 mi nw. La Piedad, VII-23-54 (J. MacSwain); male (DAVIS), Zapotla, VII-8-56 (R. and K. Dreisbach); 2 males, female (DAVIS), Guadalajara, VII-24-51 (P. Hurd); 2 males, females (DAVIS, WASHINGTON), "Guadalajara" (J. Crawford).

Other Mexican paratypes: female (LAWRENCE), 13 mi n. Iguala, Guerrero, VIII-8-51 (U. Kans. Exped.); female (LAWRENCE), 8.5 mi s. La Trinitaria, Chiapas, VIII-7-66 (U. Kans. Exped.); male (LAWRENCE), 7 mi ne. Atlixco, Puebla (U. Kans. Exped.).

Also paratype: female (NEW YORK), Antigua, Guatemala, VII-1980 (N. L. Krauss).

This moderately large species has a strongly pointed squama (fig. 12), black post-tegula, deep yellow markings, slightly flared mucro, and reddish flagellar tip in the male. As indicated in the key, there is some resemblance to *taenigaster* which, however, has a red post-tegula and paler yellow markings. The name is a noun referring to the red terminal abdominal segments.

## *Oxybelus romingeri* R. Bohart, new species

**Holotype female**. Length 5 mm. Black marked with light yellow: mandible mostly, scape in front, 2 spots on pronotal collar, lobe, scutellar and squamal spots, apical spots on forefemur and midfemur, foretibia outwardly, midtibia and hindtibia basally, lateral spots on T-I to IV and that on T-I the largest; red are: flagellum beneath, post-tegula partly, T-V-VI; wings nearly clear. Pubescence silvery on lower three-fifths of face and weak on postocular area, scutum, mesopleuron, and apicolaterally on T-I to IV; setae fine and scattered on median cell of forewing; golden on pygidial plate. Punctation close and moderately fine on frons, vertex, scutum, and T-I-II; moderate and spaced about 1 PD on mesopleuron. LID a little less than eye breadth, clypeus ending in a broad bevel, median clypeal carina mostly obscured by pubescence, genal carina part of a ridge, scutum quite weakly depressed medially, squama and mucro (fig. 10), pygidial plate angled at about 45°.

**Male**. Length 4 mm. Darker than in female, scape usually yellow at apex only, scutellum usually dark, midtibia all yellow outwardly, lateral spots on T-I to II or I to III; T-VI to VII dark mahogany; post-tegula black. Clypeus ending in a depressed lobe between a pair of short teeth, genal carina sharp, mucro narrow to moderately narrow and with a small distal notch.

Female holotype (DAVIS), Monti Cristi, Dominican Republic, VII-23-78 (R. Rominger and R. O. Schuster). Paratypes, male, female (DAVIS), same data as holotype; other paratypes, all from Dominican Republic, 7 males, 2 females (DAVIS, GAINESVILLE, WASHINGTON, NEW YORK, CORNELL, SAN FRANCISCO), 21 k n. Cabo Rojo, Pedernales, VI-20-76 (E. E. Grissell); 3 females (DAVIS, GAINESVILLE), Haina, District Nacional, V-30-85 (H. L. Dominguez, etc.); male (DAVIS), Playa Tortuguero, Azua, V-23-86 (R. Miller, L. Stange). Also paratypes, one female each (GAINESVILLE) from: Paroli, Monte Cristi, VI-2-86 (R. Miller and L. Stange); Punto Rusa, Puerto Plata, VI-4-86 (R. Miller, L. Stange); Galeón, Peravia, VI-19-76 (E. Grissell and E. Marcano); Boca del Soca, La Romana, VI-13-76 (E. E. Grissell); 2 males, female (SAN FRANCISCO, DAVIS), Distrito Nacional, Jardin Botanico, XI-1976 (W. J. Pulawski; 2 males, 4 females

(SAN FRANCISCO, DAVIS), Province Pedernales, Oviedo and Cabo Rojo, XI-1986 (W. J. Pulawski). Other paratypes, 6 males, 2 females (BUENOS AIRES, DAVIS), Damien and Portau Prince, Haiti, VIII-77 (A. Pauly).

The male of *romingeri* is similar to that of *morrisoni* but differs by the dark T-V to VII and the weakly notched mucro (fig. 10). From *irwini* the characters in the key are differentiating. The species appears to be widespread on the island of Hispaniola. The species is named for one of the collectors of the holotype, Richard Rominger.

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