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Classification, natural history, and evolution of the subfamily Peloniinae Opitz (Coleoptera: Cleroidea: Cleridae). Part VIII. Systematics of the checkered beetle genus *Chariessa* Perty

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Classification, natural history, and evolution of the subfamily Peloniinae Opitz (Coleoptera: Cleroidea: Cleridae). Part VIII. Systematics of the checkered beetle genus *Chariessa* Perty

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Abstract. The New World genus *Chariessa* Forster (Coleoptera: Cleroidea: Cleridae) is revised and includes *C. catalina* Opitz, **new species**, *C. elegans* Horn, C. *dichroa* (LeConte), *C. floridana* Schaeffer, *C. pilosa* (Forster), *C. texana* Wolcott, *C. ramicornis* Perty, *C. vestita* (Chevrolat), and *C. duponti* (Spinola). *Enoplium pilosa* var. *marginata* Say is synonymized with *Chariessa pilosa* Forster. Lectotypes are designated for *C. pilosa* (Forster), *C. ramicornis* Perty, and *C. vestita* (Chevrolat). Available information indicates that *Chariessa* adult and immature individuals are predatory on lignicolous insects with a particular affinity for cerambycids and buprestids that infest species of oak. It is postulated that Pleistocene speciation generated the North American components of *Chariessa* with more ancient southern species generated during the Middle Tertiary; after closures of the Middle American portals and orogeny of the South American Andes. Included in this treatise is a discussion of natural history, key to species, narratives of zoogeography and phylogeny, one diagram of a phylogenetic tree, 35 line drawings, eight SEM micrographs, twelve habitus photographs, nine photographs of male genitalia, and five distributional maps.

Key Words. Taxonomy, North American zoogeography, phylogeny, new species, key to species.

Resumen. El género del Nuevo Mundo *Chariessa* Forster es revisado e incluye *C. catalina* Opitz, especie nueva, *C. elegans* Horn, *C. dichroa* (LeConte), *C. floridana* Schaeffer, *C. pilosa* (Forster), *C. texana* Wolcott, *C. ramicornis* Perty, *C. vestita* (Chevrolat) y *C. duponti* (Spinola). *Enoplium pilosa* var. *marginata* Say es puesto en sinonimia con *Chariessa pilosa* Forster. Se designan Lectotipos para *C. pilosa* (Forster), *C. ramicornis* Perty y *C. vestita* (Chevrolat). La información disponible indica que los adultos e inmaduros de *Chariessa* son depredadores de insectos lignícolas con una preferencia para cerambicidos y bupréstidos que atacan varias especies de robles (*Quercus*). Se presenta la hipótesis de que los componentes norteamericanos de *Chariessa* fueron generados a partir de especies más antiguas de Suramérica durante el Terciario Medio, después del cierre del portal Mesoamericano y la orogénesis de los Andes suramericanos. En esta publicación incluimos información sobre historia natural del género, clave de las especies, discusión sobre zoogeografía y filogenia, un diagrama de árbol filogenético, 35 dibujos, ocho fotografías de microscopia electrónica, doce fotografías de especímenes, nueve fotografías de genitalia macho y cinco mapas de distribución de especies.

Palabras Clave. Taxonomía, historia natural, zoogeografia de Norte América, filogenia, especies nueva, clave a las especies.

Introduction

This taxonomic treatise generated some interesting ancillary outcomes: the American Checkered Beetle, *Chariessa pilosa*, is arguably the most widely distributed clerid species in North America; historical material from the MCZC provided the opportunity to study specimens collected when much of our country was in its infancy; and the autochthonous *Chariessa floridana*, from Key Largo, inspired nostalgic thoughts about Bogie and Bacall in their 1948 iconic film "Key Largo". These somber thoughts tempered the countless hours of noting distribution records that this work required. The purpose of this study is to elucidate the taxonomic richness within Peloniinae.

Materials and Methods

This study involves the morphology of 2,422 adult specimens. Males of each species were dissected to investigate aedeagal structure, and, to a lesser extent, to determine species assignment. Although

morphological criteria are used to determine specific level discontinuities, I adhere to the biological species concepts as discussed by Standfuss (1896), Dobzhansky (1937), and Mayr (1963). Morphological divergence is a useful criterion with which to hypothesize reproductive isolation. In this study, consideration for species status involves body form, color of the pubescence on the pronotal disc, shape of the antennal capitulum, and differences in the aedeagus. The methodology of Hennig (1966) was followed for estimations of supraspecific relationships, although I am in agreement with Tuomikoski (1967) who advocates the use of "apotypic" and "plesiotypic" instead of "apomorphic" and "plesiomorphic" because phylogenetic work may not be restricted to morphological criteria.

Methods involving dissections, measurements, morphological terminology follow those described in Opitz (2010: 35). Brown (1956) was used to coin scientific names for new species. Abbreviations used in this treatise are defined as follows: EW/FW= eye width /frons width; PW/PL= pronotal width /pronotal length; EL/EW= elytral length along epipleural margin/ greatest width across elytral disc. All measurements were made at 250x. Line drawings were made with an M5 Wild stereoscopic microscope with camera lucida attachment (Leica, Wetzlar, Germany). Habitus photographs were taken with a Leica Z 16 APO microscope equipped with JVC KY-F75U-CCD camera and controlled by Syncroscopy Auto Montage software (Cambridge, United Kingdom). The SEM micrographs were produced with a Scanning Electron Microscope-S-3500N (Hitachi Science Systems, Ltd., Tokyo, Japan). To facilitate the identity of type specimens, I transcribed their locality information in the exact manner as found on labels. In the description of species, I noted the locality records nearly verbatim. I examined historical types, except those of *Lampyris pilosa* Forster and *Chariessa ramicornis* Perty.

Corporaal's catalogue (Corporaal 1950a) is an essential reference publication for every serious cleridologist. It contains an almost flawless number of world citations about Cleridae, "up to the beginning of 1950, …". In this revision, I have included only citations not included in Corporaal's work, except for those relevant to the original description of *Chariessa* and its species.

Assessments of evolutionary states of characters

Twelve characters were organized into a matrix (Table 1), which was then analyzed with NONA (Goloboff 2003) in combination with WINCLADA version 100.80 (Nixon 2002); to find to most parsimonious phylogenetic tree. These programs produced one tree via heuristic analysis [Maximum trees (hold) = 100, number of replications 1 (mult) = 100, and multiple TBR = TBR (mult max) were used]. Character states given the value of "0" are assessed plesiotypic whereas those judged a value of "1" are assessed apotypic. The genus *Pelonium* Spinola was used as an outgroup, and my general knowledge of other Peloniinae genera was used to assist in character state assessments and to predict the evolutionary states of characteristics. I relied on the methods of character-state analysis employed by Ekis (now Opitz) (1977), Watrous and Wheeler (1981), and Nixon and Carpenter (1993).

Character 0 - Elytral asetiferous punctures: (0) small; (1) large
Character 1 - Pronotal arch: (0) not scabrous; (1) scabrous
Character 2 - Phallus: (0) without subapical sclerotization; (1) with subapical sclerotization
Character 3 - Pronotal sides (0) not red; (1) red
Character 4 - Elytral form: (0) not flared; (1) flared
Character 5 - Pronotal tubercle: (0) present; (1) absent
Character 6 - Pronotal disc: (0) not unicolorous; (1) unicolorous
Character 7 - Fifth visible sternite: (0) not incised; (1) incised
Character 8 - Elytral ground color: (0) not blue; (1) blue
Character 9 - Pronotal stripes: (0) not present; (1) present
Character 10 - Pronotal collar: (0) not infuscated; (1) infuscated
Character 11 - Leg color: (0) unicolorous; (1) bicolorous

Table 1. Character matrix of 12 adult morphological characters of *Pelonium* (outgroup) and species of *Chariessa*.

Taxa	Characters											
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Pelonium	1	1	0	0	0	0	0	0	0	0	0	0
C. dichroa	1	0	1	1	0	0	1	0	0	0	0	0
C. elegans	1	0	1	1	0	0	1	0	0	0	1	1
C. catalina	1	0	1	1	0	0	1	0	0	0	0	0
C. pilosa	1	0	1	1	0	0	0	1	0	1	0	0
C. floridana	1	0	1	1	0	0	0	1	0	1	0	0
C. texana	1	0	1	1	0	0	0	1	0	0	0	0
C. duponti	1	0	1	0	1	1	0	0	0	0	0	0
C. vestita	1	0	1	0	1	1	0	0	1	0	0	0
C. ramicornis	1	0	1	0	1	1	0	0	1	1	0	0

Repositories of specimens

To maintain consistency with my previous works I rely on collection codons as listed in Arnett, Jr. et al. (1993) with modifications to accommodate changes in institutional names.

ACTM — American Coleoptera Museum, San Antonio, Texas 78255, United States of America (James E. Wappes).

AMNH — American Museum of Natural History, Department of Entomology, Central Park West at 79th Street, New York, New York 10024-5192, United States of America (Lee Herman).

ANSP — The Academy of Natural Sciences, Department of Entomology, 1900 Benjamin Franklin Parkway, Philadelphia, Pennsylvania 19103-1101, United States of America (Jason D. Weintraub).

BYUC — Brigham Young University Arthropod Collection, Monte L. Bean Life Science Museum, Provo, Utah 84602, United States of America (Shawn Clark).

CASC — California Academy of Sciences, Department of Entomology, Golden Gate Park, San Francisco, California 94118, United States of America, United States of America (Norman D. Penny).

CMNC — Canadian Museum of Nature, Insect Collection, Post Office Box 3443, Station D, Ottawa, Ontario, Canada K1P 6P4 (Robert S. Anderson; Francois Genier).

CMNH — Carnegie Museum of Natural History, Invertebrate Zoology, 4400 Forbes Avenue, Pittsburgh, Pennsylvania 15213, United States of America (Robert L. Davidson; R. Androw).

CNCI — Agriculture-Food Canada, K.W. Neatby Building, 960 Carling Avenue, Ottawa, K1A OC6, Canada (Serge Laplante).

SCUC — C. P. Gillette Museum of Arthropod Diversity, Colorado State University, Department of Bioagricultural Sciences and pest management, 1177 Campus Delivery, Fort Collins, Colorado 80523-1177, United States of America (Boris C. Kondratieff).

FMNH — Field Museum of Natural History, Department of Entomology, Roosevelt Road at Lake Shore Drive, Chicago, Illinois 60605, United States of America (Crystal Maier).

FSCA — Florida State Collection of Arthropods, Division of Plant Industry/Entomology, Florida Department of Agriculture and Consumer Services, 1911 SW 34th Street, Gainesville, FL 32614-7100, United States of America (Paul E. Skelley).

MCZC — Museum of Comparative Zoology, Harvard University, Entomology, 26 Oxford Street, Cambridge, Massachusetts 02138-2902, United States of America (Rachel L. Hawkins).

MRSN — Museo Regionale di Scienze Naturali, Via Giolitti 36, 10123, Torino, Italy (Luca Piccian)

NCSU — North Carolina State University, Department of Entomology, 100 Derieux Place, 2301 Gardner Hall, Raleigh, North Carolina 27695-7613, United States of America (Robert L. Blinn)

PMNH — Peabody Museum of Natural History, Yale University, 170 Whitney Avenue, P. O. Box 208118, New Haven, Connecticut 06520-8118, United States of America (Lawrence F. Gall)

RHTC — Robert H. Turnbow, Jr. Collection, 59 Brokenview Court, Enterprise, Alabama 36330, United States of America.

SEMC — The University of Kansas, Snow Entomological Division, The Natural History Museum of the University of Kansas, Lawrence, Kansas 66045-2454, United States of America (Zachary Falin).

TAMU — Texas A & M University, College of Agriculture and Life Sciences, Department of Entomology, Minnie Belle Heep Building, College Station, Texas 77843-7029, United States of America (Edward G. Riley).

UGCA — University of Georgia Collection of Arthropods, Museum of Natural History, University of Georgia, Athens, Georgia 30602-2603, United States of America (E. Richard Hoebeke)

USNM — United States National Museum of Natural History, Smithsonian Institution, Department of Entomology Laboratory, National Museum of Natural History MRC 165, PO Box 37012, Washington, D.C. 20013-7012, United States of America (Floyd W. Shockley).

WFBM — William F. Barr Museum, University of Idaho, Department of Plant, Soil, and Entomological Sciences, 606 Rayburn Street, Moscow, Idaho 83844-2339, United States of America (Luc Leblanc).

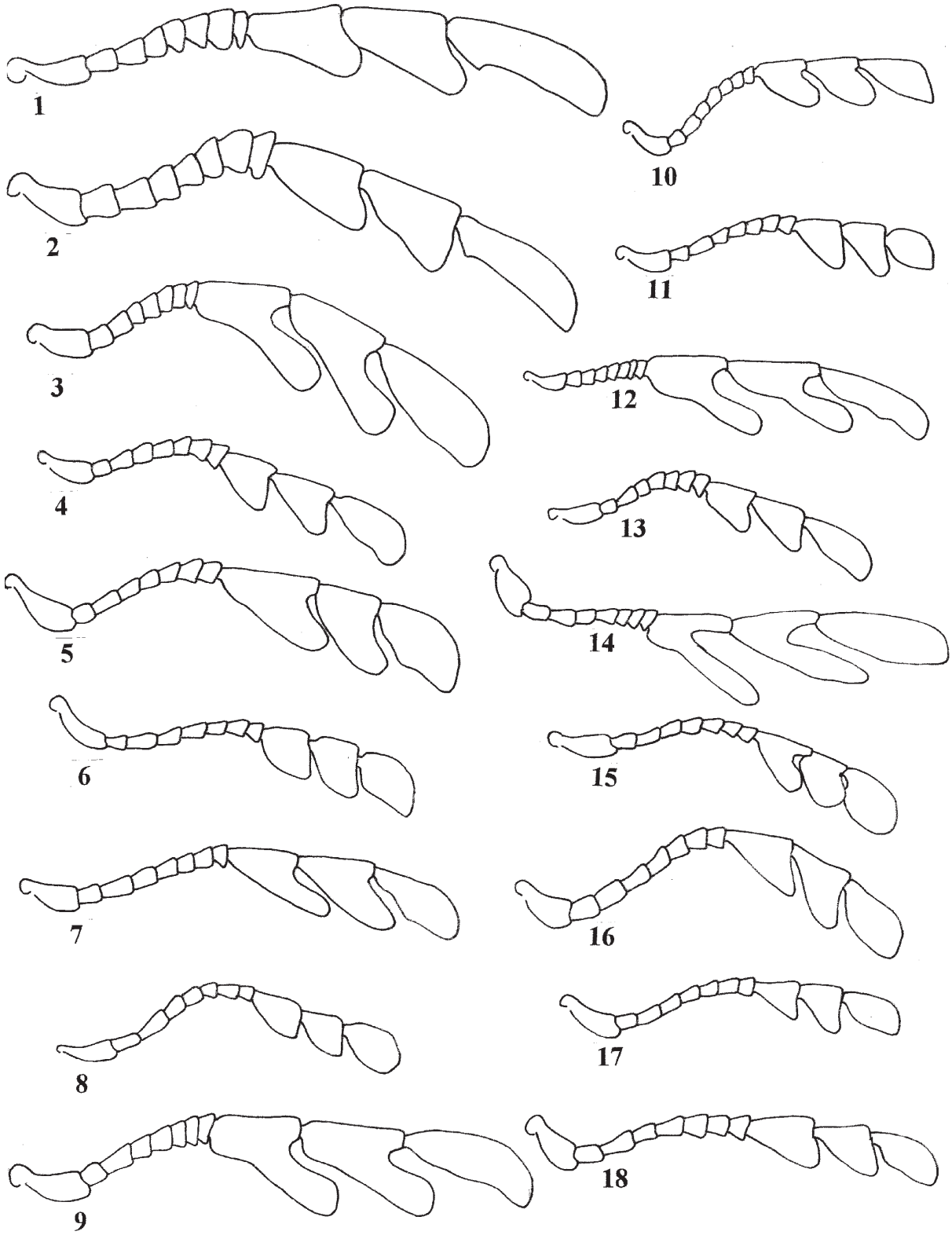
WOPC — Weston Opitz Collection, Florida State Collection of Arthropods, Division of Plant Industry/ Entomology, Florida Department of Agriculture Consumer Services, Gainesville, FL 32614-7100, United States of America.

ZSMC — Zoologische Staatssammlung, Münchhausenstrasse 21, D-81247 München, Germany (Michael Balke).

Natural history

Mouthpart morphology, contents of the digestive tract, and label information suggest that *Chariessa* beetles are carnivorous insects in the larval and adult stages, with particular predation on lignicolous beetles such as cerambycids and buprestids. Moreover, the available information, concerned with adult emergence from hardwoods, suggests that, as a group, the *Chariess*a species have a particular affinity for lignicolous beetles that infest tree species of *Quercus* Linnaeus (Fabaceae). Records of adult emergence of *Chariessa* individuals from wood involve 14 species of oak, they are: the California live oak (*Quercus agrifolia* Née), Arizona white oak (*Q. arizonica* Sarg.), scarlet oak (*Q. coccinea* Muenchh.), blue oak (*Q. duoglasii* Hook. & Arn.), southern red oak (*Q. falcata* Michx.), Oregon white oak (*Q. garryana* Douglas ex Hook.), silverleaf oak (*Quercus hypoleucoides* A. Camus), California black oak (*Q. kellogaii* Newb.), bur oak (*Q. macrocarpa* Michx.), chinkapin oak [*Q. muehlenbergii* (Enelm)], Mexican blue oak (*Q. oblongifolia* Torr.), post oak (*Q. stellata* Wangenh.), eastern black oak (*Q. velutina* Lam.), and the interior live oak (*Q. wislizeni* A. DC.).

Other tree species or vine plants from whose wood chariessans have emerged, or from which they were collected include: the southern prickly ash (*Zanthozylum clava-herculis* Linnaeus) (Rutaceae)], balsam poplar (*Populus balsamifera* Linnaeus), shagbark hickory (*Carya ovata* (Mill.) K. Koch), sugar maple (*Acer saccharum* Marchall), water birch (*Betula occidentalis* Hook.), black walnut (*Juglans nigra* Linnaeus), bur oak (*Quercus macrocarpa* Michx.), Texas cedar elm (*Ulmus crassifolia* Nutt.), American elm (*Ulmus americana* Linnaeus), the honey locus (*Gleditsia triacanthus* Linnaeus), a species of strawberry tree (*Arbutus* Linnaeus), a species of conifer (*Libocedrus* Endl.), Florida poisontree [*Metopium toxiferum* (Linnaeus) Krug & Urb.], bitternut hickory [*Carya cordiformis* (Wangenh.) K. Koch], Eastern black walnut (*Juglans nigra* Linnaeus), mockernut hickory (*Carya tomentosa* Sarg.), North American fir [*Abies balsamea* (Linnaeus) Mill.], Eastern redbud (*Cercis Canadensis* Linnaeus), American persimmon (*Diospyrus virginiana* Linnaeus), wingleaf soapberry (*Sapindus saponaria* Linnaeus), on the wood of aspen (*Populus tremuloides* Michx.), boxelder (*Acer negundo* Linnaeus), downy serviceberry



Figures 1-18. Antennae of *Chariessa* spp. **1)** *Chariessa duponti* (male). **2)** *C. duponti* (female). **3)** *C. floridana* (male). **4)** *C. floridana* (female). **5)** *C. catalina* (male). **6)** *C. catalina* (female). **7)** *C. elegans* (male). **8)** *C. elegans* (female). **9)** *C. texana* (male). **10)** *C. dichroa* (male). **11)** *C. dichroa* (female). **12)** *C. pilosa* (male). **13)** *C. pilosa* (female). **14)** *C. ramicornis* (male). **15)** *C. ramicornis* (female). **16)** *C. vestita* (male). **17)** *C. vestita* (female). **18)** *C. texana* (female).

[*Amelanchier arborea* (F. Michx.)] Fernald (Rosaceae)], ironwood (*Olneya tesota* A. Gray), red bud (*Cercis reniformis* Engls.), Texas cedar elm (*Ulmus crassifolia* Nutt.), a species of willow (*Salix* Linnaeus), persimmon (*Diospyrus texana* Scheele), peach (*Prunus persica* (Linnaeus) Batsh), and on logs of pecan [*Carya illinoiensis* (Wangenh.) K. Koch].

Standard collecting techniques and equipment have been used to collect these beetles. They have been captured in Malaise traps, beating tree branches laden with foliage, black light traps, flight intercept traps, and hand collected on tree boles. Altitudinally, they were captured at elevations that range from 305 to 1646 m. There is some indication that they are most prominent in mid-altitude (± 1000 m) montane forests.

Taxonomy

Key to adults of *Chariessa* species

1. Elytra strongly flared rendering hind body oblong/ovate (Fig. 32) **2**
— Elytra not strongly flared, hind body oblong/subrectangulate (Fig. 33) **4**

2(1). Elytra vested profusely with short white setae, with circular patch of black setae (USA, Mexico, Guatemala, Costa Rica) ..... ***Chariessa vestita* (Chevrolat)**
— Elytral not vested profusely with short white setae **3**

3(2). Elytra bifasciate, one yellow fascia along anterior margin, the other behind middle (Brazil) .... ***Chariessa ramicornis* Perty**
— Elytra not fasciate, disc black, base of epipleural margin broadly reddish/yellow (Mexico) .... ***Chariessa duponti* (Spinola)**

4(1). Pronotum unicolorous, reddish **5**
— Pronotum bicolorous, disc with black marking **7**

5(4). Legs black (USA) ..... ***Chariessa dichroa* LeConte**
— Legs mostly reddish, tarsi black **6**

6(5). Forebody, venter, forebody and venter pubescence, pale sanguineous; elytra more black than blue (USA) ..... ***Chariessa elegans* Horn**
— Forebody, venter, forebody and venter pubescence, crimson; elytra more blue than black (USA, Mexico) ..... ***Chariessa catalina* Opitz, new species**

7(4). Pronotum without two discal black lines, pronotal disc mostly red, with transverse black spot at anterior margin (USA) ..... ***Chariessa texana* Wolcott**
— Pronotum with two black discal lines **8**

8(7). Pronotal discal black lines broad and proximal to each other, without setal tuft between black lines (Fig. 31); widespread in USA (Fig. 66) ..... ***Chariessa pilosa* Forster**
— Pronotal discal black lines narrow and distal to each other (Fig. 30), tuft of gold setae between black lines; known only from Key Largo (Fig. 67) ..... ***Chariessa floridana* Schaeffer**

Chariessa Perty, 1832: 109

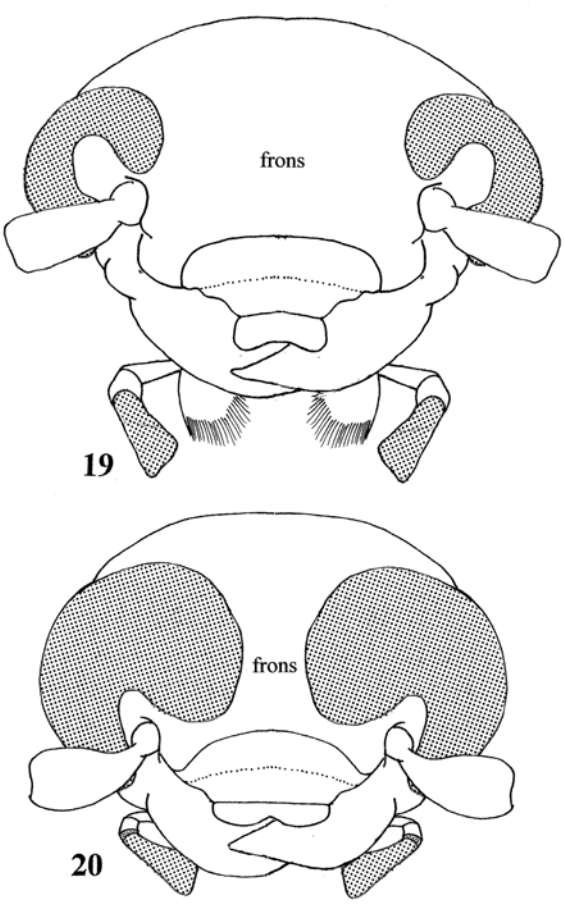
Winkler 1961: 62. Ekis (now Opitz) and Gupta 1971: 62. Ekis (now Opitz) 1975: 52. Mawdsley 1994: 121. Opitz 2010: 100; 2014: 25. See Corporaal (1950: 275) for more historical citations.

Type species. *Chariessa ramicornis* Perty 1832: 109. By original designation.

Junior synonym. *Brachymorphus* Chevrolat 1835: fascicle 7, nr. 150.

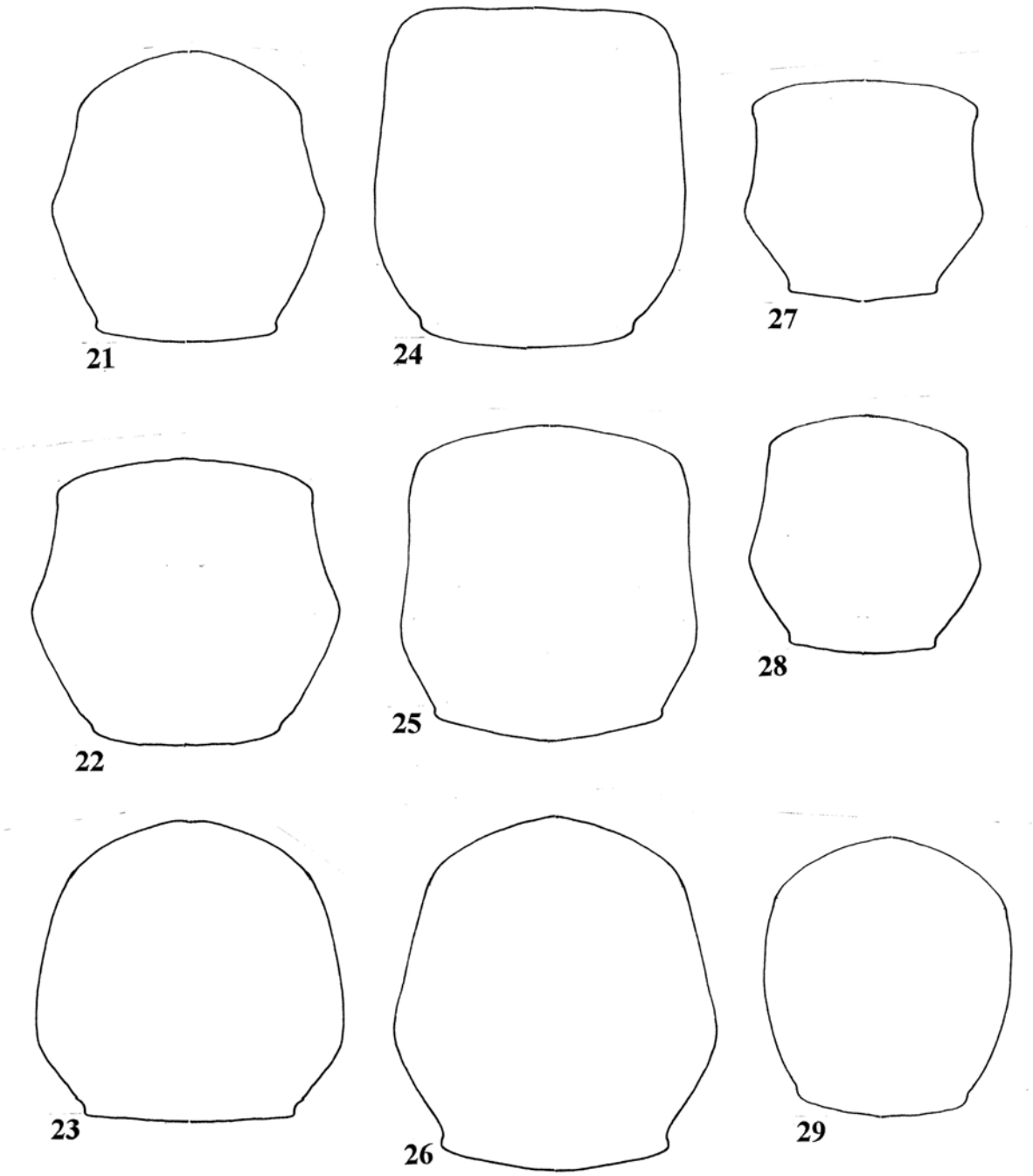
Synapotypic characteristic. Asetiferous punctations minute; phallus with subapical sclerotization.

Diagnosis. Within Peloniinae, members of *Chariessa* superficially resemble those of *Pelonium*, from which they easily distinguished by having smaller eyes, smaller ommatidia, and a much wider frons (compare Fig. 19, 20). Also, in *Chariessa* specimens, the posterior angle of the elytra is more gradually rounded than it is in those of *Pelonium* (compare Fig. 34, 35).



Figures 19-20. Heads. **19)** *Chariessa ramicornis*. **20)** *Pelonium lampyroides*.

Redescription. Size: Length 10.0-14.0 mm; width 3.2-5.3 mm. Form: Oblong oval to suboval, body not deep, about 2.5 times longer than broad. Vestiture: Dorsum profusely vested with very short pubescence; antennal funicle moderately setose; elytra abundantly vested with short dark and pale setae, all setae emerge from small punctures. *Head*: Cranium quadrate (Fig. 38), frons wide, profusely indented with large setiferous punctations; gula large (Fig. 41), triangular, sutures converge, gula with two well-developed setose gular processes (Fig. 41); labrum very shallow, broadly incised distally, tormal processes not discernible, epipharyngeal plate not discernible; mandible, body stout, anterior dens blunt, medial and posterior dens well developed, penicillus well developed; maxilla, laterolacinia present, terminal palpomere securiform; labium (Fig. 40), ligula deeply incised, ligular lobes not narrowed, terminal palpomere securiform; eyes (Fig. 39) shallow, ommatidia slightly discernible, ocular notch deep; antenna (Fig. 1-18) comprised of 11 antennomeres, capitate, capitulum sex dimorphic, capitular antennomeres 9 and 10 with collateral lobes, lobes longer and more narrow in males (Fig. 3), antennomere 11 oblong. *Thorax*: Pronotum transverse (Fig. 42), subquadrate (Fig. 24) to subspheroid (Fig. 23), anterior limit of dorsolateral carina extends to pronotal anterior 3/4th or less, posterior angle of pronotum not discernible, disc convex and finely punctate, side margins convex, lateral tubercle faintly developed or absent, prointercoxal process narrow, not expanded distally; pronotal projections short, acuminate, they do not approximate prointercoxal process; elytron profusely sculptured with small densely scattered setiferous punctuations (Fig. 43), asetiferous punctuations obscure, usually more clearly visible in elytral anterior half, epipleural fold not abruptly narrowed at elytral middle, slightly deflexed and narrowly extended to elytral apex, elytral anterior margin not carinate; metathoracic wing, wedge cell closed; metendosternite with furcal lamina, furcal anterior plate small, subrectangulate; legs, profemora not swollen, spinous along anterior margin (Fig. 37), tibial spur formula 0-1-1, tarsal pulvillar formula 3-3-3, unguis without basal denticle (Fig. 36). *Abdomen*: Aedeagus shorter than length of abdomen, distal region of phallobase bilobed, phallobasic lobes fimbriate, tegmen reduced ventrally, submembranous, phallobasic struts confluent with phallobasic apodeme, phallobasic rod present; phallus acuminate distally, phallic plates very narrow; spicular plates flared, spicular apodemes fused completely; ovipositor not as long as abdomen, laminae multilobed, laminal rod present, oblique and ventral bacculi well developed. *Alimentary Canal:* Proventriculus well developed, ventricular crypts poorly defined; 4 cryptonephridial Malpighian tubules; stomodeal valve comprised of 4 primary folds. Mesodermal Male



Figures 21-29. Pronota of *Chariessa* spp. **21)** *Chariessa catalina*. **22)** *C. elegans*. **23)** *C. ramicornis*. **24)** *C. duponti*. **25)** *C. floridana*. **26)** *C. texana*. **27)** *C. dichroa*. **28)** *C. pilosa*. **29)** *C. vestita*.

Internal Reproductive Organs: Two pairs of accessory glands. Mesodermal Female Internal Reproductive Organs: Spermathecal capsule well defined; spermathecal gland attached to base of spermathecal capsule, bursa copulatrix saccular, with bursal sclerite.

Distribution. The distribution of this New World genus extends from Canada to Brazil.

***Chariessa catalina* Opitz, new species**
Figures 5, 6, 21, 53, 57, 67.

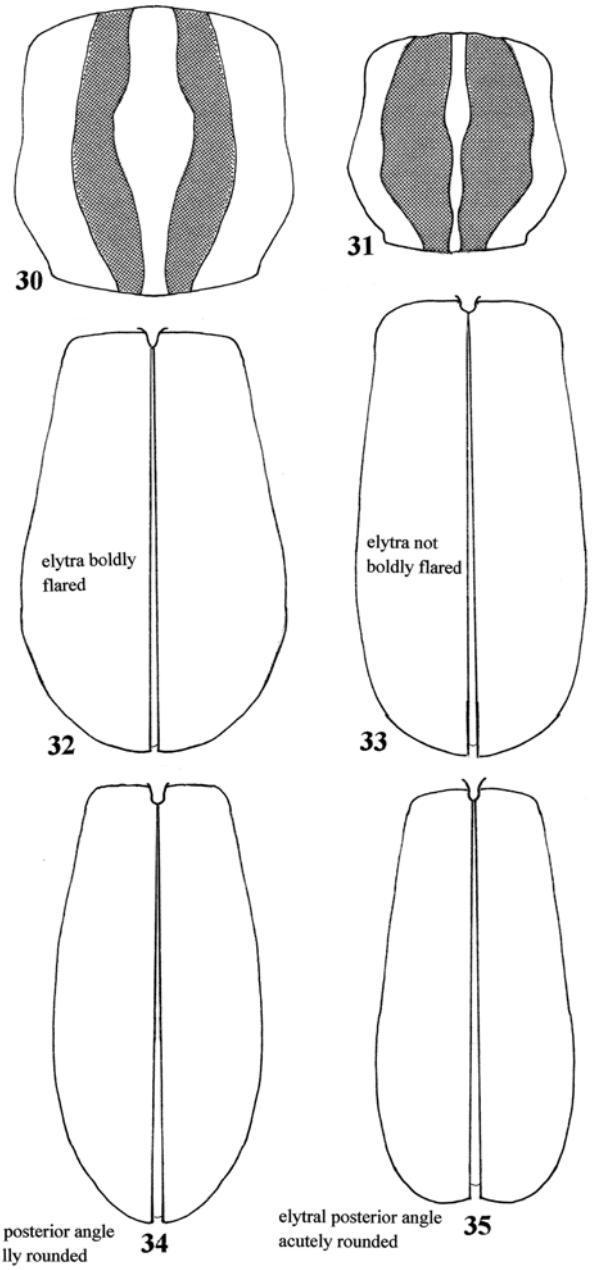
Type material. Holotype: Type locality: UNITED STATES OF AMERICA, Arizona St., Catalina Mts., Redington Pass, Dec. 7, 1969 (collector not noted) (FSCA). **Paratypes:** 121 specimens. **UNITED STATES OF AMERICA: Arizona;** Gila County, Pinal Mountains, 19-3-1931, Parker Lot (AMNH, 1); Gila County, Globe, ?-III-?, D. K. Duncan (FMNH, 1); St. Catalina Mts., Redington Pass, 7-XII-1969, hackberry tree, collector not noted (FSCA, 3; WOPC, 3); *idem*, Redington pass, 7-XII-1969, collector not noted (AMNH, 1); Chiricahua Mountains, S Fork Cave Creek, emerged from the wood of a species of *Quercus* on 18-VIII-1975 (AMNH, 1; WOPC, 1); Chiricahua Mountains, Sunny Flat Campground, emerged from *Quercus* wood 23-III-1985, G. H. Nelson (FSCA, 1); Chiricahua Mountains, South Fork Cave Creek, emerged from wood of *Quercus hypoleucoides* Camus on 15-XI-1974, G. H. Nelson (WFBM, 1); *idem*, emerged from wood of *Quercus arizonica* on 26-XII-1973, G. H. Nelson (WOPC, 1); *idem*, emerged from wood of *Quercus arizonica* on 22-VI-1974, G. H. Nelson (WOPC, 1); *idem*, emerged from wood of *Quercus arizonica* on 28-XII-1974, G. H. Nelson (WOPC, 1); *idem*, emerged from wood of *Quercus arizonica* on 2-V-1974, G. H. Nelson (WOPC, 1); *idem*, emerged from wood of *Quercus arizonica* on 5-VII-1976, G. H. Nelson (WOPC, 1); *idem*, emerged from wood of *Quercus arizonica* on 18-VIII-1973, G. H. Nelson (WFBM, 1); Pima County, Brush Corral, 17-XII-1914 (FMNH, 1; WFBM, 3); Pima County, Tucson, 25-V-1917, W. Edmonston (FMNH, 1); Pima County, Baboquivari Mountains, Kitt Peak Road, 5.6 mi S hwy 86, 10-III-1980, Cicero (FSCA, 2); Cochise County, Galiuro Mountains, Bass Canyon, 14-IV-1979, collector ? (FSCA, 1); Cochise County, Huachuca Mountains, between Montezuma Pass & Sunnyside Canyon, 8-III-1986, R. K. & J. Gemmill (WFBM, 2; CSUC, 1); Cochise County, South West Research Station, ?-II-1971, E. Giesbert (FSCA, 1); 5 miles W Portal, 14-IV-1970 (MCZC, 1); Cave Creek Canyon, emerged from *Quercus oblongifolia* Torr. On 1-7-III-1981, R. Turnbow (WOPC, 2); Chiricahua Mountains, S Fork Cave Creek, emerged *Quercus arizonicus* 1-II-1975, G. H. Nelson (FSCA, 1); Ft. Grant, Praleno Mts, 15-19 VII-1917 (USNM, 1); Globe, 15-XI-1934, Parker (USNM, 1); *idem*, 20-III-1962, D. K. Duncan (WOPC, 1); *idem*, ?-III-1940, Parker (WFBM, 1); *idem*, 23-II-1932, F. H. Parke (WFBM , 1); Patagonia, 10-III-1938, no collector noted (FMNH, 1); Patagonia, no date or collector noted (WOPC, 3); *idem*, 10-III-1938 (WOPC, 1); Redington Pass, 7-XII-1969, K. Stephan (WOPC, 2); Cochise Stronghold, Dragoons Mountains, 20-24-VI-1970, R. J. Shaw (WOPC, 1); Huachuca Mountains, date and collector not noted (CASC, 19; WFBM, 1; WOPC, 3); Sierra Ancha Mountains, date not noted, D. K. Duncan (CASC, 1; WOPC, 2); Graham County, Safford, 4-IV-1989, collected on Maple, R. Smith (WFBC, 1); Yavapai County, Oak Creek Canyon, reared, date of emergence and collector not noted (FMNH, 1; WOPC, 3); Coconino County, 13-VII-2010, ex. walnut wood, W. Cranshaw & N. Sedona (CSUC, 1); Santa Rita Mountains (USNM, 1): **New Mexico;** Bernalillo County, Albuquerque, 6-III-1986, in honey locust wood, Ellen Reed (WFBM, 1); Grant County, 20 mi SW Silver City, emerged from wood of *Quercus* on 24-III-1971, R. Turnbow (RHTC, 1); Las Cruces, 23-II-1983, David Byrd (WOPC, 2); *idem*, 1-III-1982, in woodpile, G. Nelson (USNM, 2); New Mexico (no other data) (WOPC, 1): **California;** Santa Clara County, Mount Hamilton, 11-III-1965, collector not noted (WFBM, 1); Santa Cruz County, Big Basin, 29-IV-1970, on *Arbutus* log, W. F. Barr (WFBM, 1); Brookdale, 19-IV-1965, J. S. Cope (TAMU, 1); Tolume County, 10 mi W Sonora, 2-III-1965, no collector noted, (WFBM, 1; WOPC, 1); *idem*, 13-III-1965, collector not noted (WFBM, 1); Los Angeles County, Pasadena, ?-IV-1927, collector not noted (USNM, 6); Los Angeles National Forest, Highway N-4, 3 miles NW Jackson L, 27-VI-1982 (PMNH, 1); Los Angeles County, Pasadena, 15-II-13, collector not noted (FMNH, 1); *idem*, 27-V-?, collector not noted (FMNH, 2); Los Angeles County, Los Angeles National Forest, Opid's Camp, ?-XII-1916, 450 m, V. Duran (CASC, 1); Los Angeles County, 1-IV-1975, ex *Quercus agrifolia,* J. M. Cicero (WOPC, 1); Fresno County, Fresno, 19-III-1981 (WOPC, 1); San Gabriel Mountains, 1 mi above Mt. Baldy Village, Glendora Ridge Road, 27-VI-1993, on *Quercus wisilizeni*, G. H. Nelson (FSCA, 2); Orange County, Silverado Canyon, 13-V-1973, Joseph Cicero (FSCA, 1): **Texas;** Brewster County**,** 18 mi S Alpine, emerged from wood, ?-III-1969, J. W. Tilden (WFBM, 1); Brewster County**,** emerged from *Quercus* on 4-III-1969, J. W. Tilden (CASC, 1); Davis County, Davis Mountains, ?-III-1974, F. Hovore (WFBM, 1); Young County, Graham, 8-III-1965, L. M.McCarrol (TAMU, 1). "Texas", collection date not noted, Belfrage (MCZC, 1); 'Texas", collection date and collector not noted (USNM, 1): **Utah;** Washington County, St. George, ?-III-1953, collector not noted (WOPC, 1); *idem*, 30-III-1960, G. F. Knowlton (WFBM, 1); *idem*, 7-I-1981, from firewood, Carl Allen (WOPC, 1). **MEXICO: Sonora;**

Yécora, emerged from wood of a species of *Quercus* on ?-III-2004, F. T. Hovore (WFBM, 1); 6 mi W Greaterville, 16-III-1972, F. M. & V. S. Beer (WFBC, 1)

Diagnosis. Specimens of this species are distinguished from those of the superficially similar *Chariessa elegans* by the crimson pubescence on the forebody and body venter. The forebody and body venter is more pale sanquineous, than crimson, in specimens of *Chariessa elegans*. Also, in specimens of *Chariessa catalina* the elytral disc is more bluish.

Description. *Size:* Length 12.0 mm; width 6.0 mm. *Form:* As in Fig. 53. *Color*: Mouthparts bicolorous, maxillary and labial palpomeres dark brown, remainder red, mandibles and labrum brown; antennae bicolorous, scape red, remainder dark brown; cranium, prothorax, pterothorax, femora, and tibiae crimson red, tarsi black; pronotal collar infuscated; abdomen flavotestaceous; mesoscutellum black; elytra dark blue. *Head*: Funicular antennomeres progressively shorter and wider towards capitulum, in males capitulum longer than combined length of funicular antennomeres, capitular antennomeres 9 and 10 with collateral branch (Fig. 5, 6), antennomere 11 oblong, anterior margin sinuous; eyes small, frons wider than width of eye (EW/FW 42/20). *Thorax*: Pronotum (Fig. 21) transverse (PW/PL 105/95), side margins with slight tubercle, disc slightly depressed at center and at sides, finely punctate; elytral asetiferous punctation very small, profusely distributed throughout disc (EL/EW 250/75); protibial anterior margin spinous. *Abdomen*: Pygidium transverse/scutiform; aedeagus (Fig. 57) poorly sclerotized ventrally; phallobasic lobes fimbriate, phallobasic rod not bifid, phallobasic apodeme explanate at extremity; phallus with subapical sclerotization, phallic apex papilliform.

Variation. Size: Length 7.5-14.0 mm; width 3.2-5.0 mm. Other than body size the specimens examined are quite homogeneous



Figures 30-35. Pronota and elytra. **30-31.** Pronota. **30)** *Chariessa floridana.* **31)** *C. pilosa.* **32-35.** Elytra. **32)** *C. ramicornis.* **33)** *C. texana.* **34)** *C. pilosa.* **35)** *Pelonium lampyroides.*

Natural history. Specimens were collected during the year-ending months and during summer months, but mostly during March. These beetles emerged from the wood of the Mexican blue oak [*Quercus oblongifolia* Torr.(Fagaceae)], and were collected from the wood of the coast live oak [*Quercus agrifolia* Née (Fagaceae)], from the wood of a hackberry tree species [*Celtis* Linnaeus (Cannabaceae)], from foliage of a species of maple [*Acer* Linnaeus (Sapindaceae)], from the wood of honey locust [*Gleditsia triacanthos* Linnaeus (Fabaceae)], and from the wood of a species of the strawberry tree [*Arbutus* Linnaeus (Ericaceae)]. One specimen was taken at 450 m.

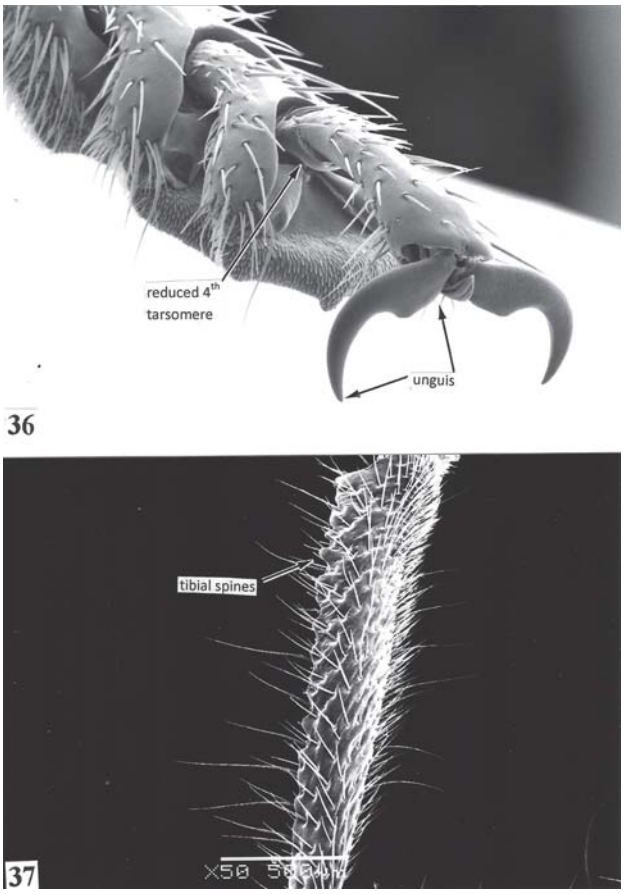
Distribution (Fig. 67). This United States species is known from Arizona, California, New Mexico, and Utah.

Etymology. The trivial name, *catalina*, constitutes a noun in apposition and refers to the type locality.

***Chariessa dichroa* (LeConte), 1860.**
Figures 10, 11, 27, 54, 58, 67.

Enoplium dichroum LeConte, 1860: 48. Holotype. Gender . Type locality: United States of America, California, Sacramento (MCZC). Corporaal, 1950: 276. Opitz, 2014: 25.

Diagnosis. Specimens of this species are distinguished from those of the superficially similar *Chariessa elegans* by body shape, shape of the antennal capitulum, and coloration of the legs. In *C. dichroa* specimens the body is oblong-slender, the antennal capitulum is less-developed (compare Fig. 7, 10), and the legs are black. In *C. elegans* the body shape is oblong-suboval, the antennal capitulum is well-developed, and the femora and tibiae are red.



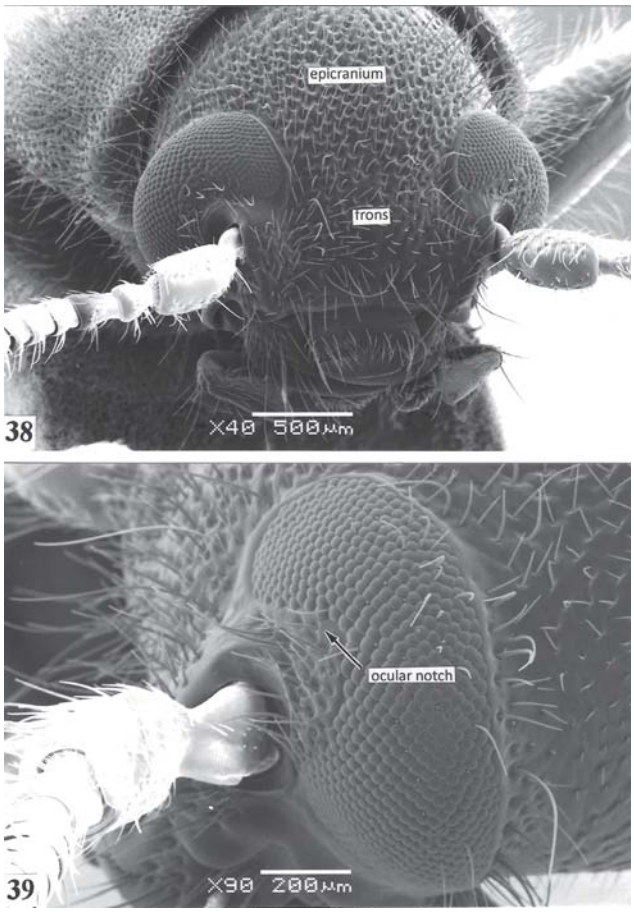
Figures 36-37. Morphological structures of *Chariessa pilosa*. **36)** Protarsus. **37)** Protibia.

Redescription. *Size:* Length 11.0 mm; width 4.0 mm. *Form:* As in Fig. 54. *Color*: Mouthparts bicolorous, maxillary and labial palpomeres dark brown, remainder red/yellow, mandibles and labrum brown; antennae and legs black; cranium, prothorax, pterothorax, and abdomen red/yellow; mesoscutellum red/yellow; elytra black, with a bluish luster. *Head*: Funicular antennomeres progressively shorter and wider towards capitulum, in males capitulum longer than combined length of funicular antennomeres, capitular antennomeres 9 and 10 with short collateral branch (Fig. 10, 11), antennomere 11 oblong, subacuminate; cranium vested with long black setae, frons wider than width of eye (EW/FW 13/25); eyes small. *Thorax*: Pronotum (Fig. 27) transverse (PW/PL 70/65), arch prominent, side margins with slight tubercle, disc vested with long black setae; elytral asetiferous punctation very small, profusely distributed throughout disc, latter densely vested with black setae (EL/EW 195/55); protibial anterior margin spinous. *Abdomen*: Pygidium transverse/scutiform; aedeagus (Fig. 58) poorly sclerotized ventrally; phallobasic lobes poorly developed, slightly fimbriate, phallobasic rod bifid distally, phallobasic apodeme explanate at extremity; phallus with subapical sclerotization, phallic apex acuminate.

Variation. Size: Length 6.5-12.0 mm; width 2.8-4.5 mm.

Natural history. Specimens emerged from the wood of black oak [*Quercus kelloggii* Newb. (Fagaceae)], from the wood of blue oak [*Quercus douglasii* Hook & Arn. (Fagaceae)], and of the wood of the Oregon white oak [*Quercus garryana* Douglas ex Hook. (Fagaseae)]. A specimen was collected on a tree species of *Libocedrus* Endl. (Cupressaceae). Some specimens were captured in a Malaise trap set in a small open meadow in oak woodland. These beetles were taken at altitudes ranging from 263 to 762 m.

Distribution (Fig. 67). I examined 100 specimens from: **UNITED STATES OF AMERICA: California;** Monterey County, Arroyo Seco, 16-V-1958, on *Quercus douglasii*, E. G. Linsley; Contra Costa



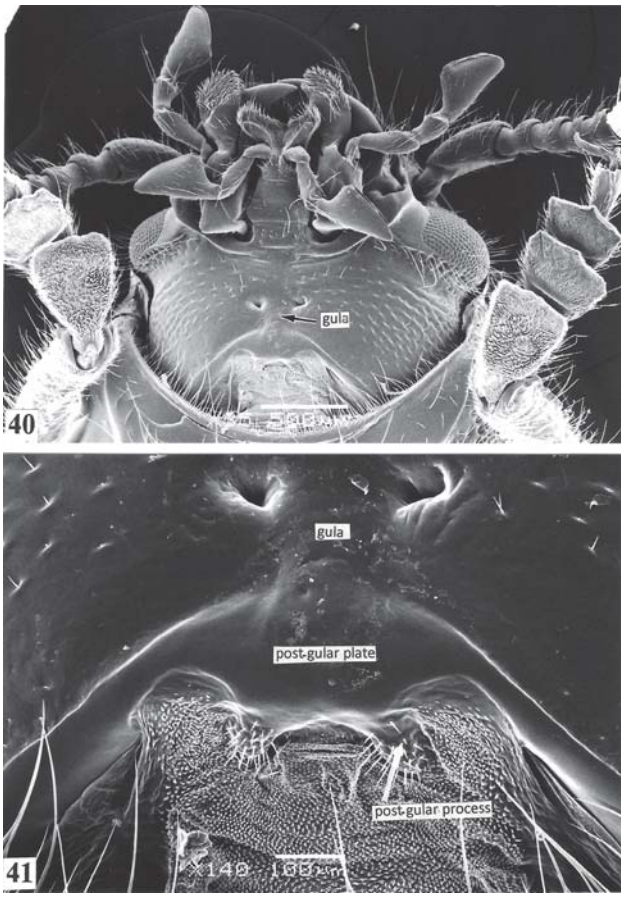
Figures 38-39. Morphological structures of *Chariessa pilosa*. **38)** Head. **39)** Eye.

County, Brentwood, 31-V-1940, collector not noted; Solano County, Gates Canyon, 23-VI-1979, R. B. Johnson; Long Valley, Clear Lake, 19-V-1963, R. L. Penrose; Nevada County, 10 mi S Grass Valley, 2-V-1970, W. F. Barr; Kern County, 6 mi W of San Emedio Ranch, 12-VII-1971, collector not noted; Kern County, Frazier Park, 2-V-1972, collector not noted; Santa Cruz County, Felton, 10-VI-1965, Jim Cope; *idem*, 1-VI-1965, Jim Cope; Fresno County, Fresno, 26-VI-1971, collector not noted; Fresno County, Squaw Valley, 2000', 16-IV-1984, W. F. Peregrin; Santa Clara County, Mount Hamilton, 1-VII-1965, W. H. Tyson; *idem*, 7-21-1965, W. H. Tyson; *idem*, 22-VII-1965, W. H. Tyson; Santa Clara County, Guadalupe Creek, ?-IV-1973, collector not noted; Santa Clara County, San Jose, emerged from wood of oak on 2-V-1973, collector not noted; Shasta County, 10 mi N. Redding, 1000', 25-30-V-1985, Malaise trap in small open meadow in oak woodland, edge of shaded gulley, R. Miller; Lake County, 16-VI-1915, L. R. Reynold; Santa Clara County, Mount Hamilton, 10-VI-1951, M. Marquis; San Luis Obispo County, 15-VII- 1923, collector not noted; San Luis Obispo County, San Miguel, ?-VIII-1918, E. J. Oslar; San Luis Obispo County, Paso Robles, 9-VI-1923, collector not noted; San Luis Obispo County, Paso Robles, 20-VI-1923, collector not noted; Tuolumne County, 26-VI-1935, M. Marquis; Napa County, North side Howell Mountain, 2 mi NNE Angwin, 1300 ft, emerged from log of *Quercus kelloggii*, 24-IV-1981, H. B. Leach; Napa County, Pope Canyon Road, 4.7 mi W of Berryessa on Knoxville Road, emerged from dead branch of *Quercus douglasii*, 6-VI-1978, H. B. Leach; Mendocino County, Covelo, 22-VI-1969, coffee berry, D. E. Foster; Mendocino County, Dos Rios, 29-V-1939, W. F. Barr; *idem*, 28-V-1939, W. F. Barr; Mendocino County, 20-VI-1920, collector not noted; Mendocino County, 28-V-1922, E. R. Leach; Alameda County, Sunol, 1-8-VI-1974, W. H. Tyson; 28-V-1939, M. Marquis; Mendocino County, 20-VI-1920, E. R. Leach; Mendocino County, Eel River Agricultural Station, 12-VI-1972, on downed *Quercus garryana*, collector not noted; Mendocino County, 20-VI-1920, E. R. Leach; Mendocino County, 20-VI-1920, J. K. Knull; Trinity County, 18-VII-1917, E. B. Leach; Trinity County, 20 mi S Zenis, 23-VI-1969, W. F. Barr; Trinity County, 18-VI-1918, E. R. Leach; Trinity County, Carryille, 9-VI-1934, 2400-2500 ft, collector not noted; *in dem*, 2-VI-1934, collector not noted; *in dem*, 180V-1934, collector not noted; Trinity County Coffee Creek, Trinity County, 19-VI-1934, G. E. Bohart; Contra Costa County, El Cerito, 1-VIII-1981, W. Middlekauff; Sonoma County, Sobre Vista, ?-VII-1911, A. Kusche; Sonoma County, Sobre Vista, 30-IV-1911, Van Dyke; Tulare County, Kaveah, collection date not noted, Hopping; Tulare County, collection date not noted, R. Hopping; Tulare County, Potwisha, Sequoia National Park, 1-VII-1941, collector not noted; *idem*, 19-V-30, E. G. Linsley; Lake County, collection date and collector not noted; Lake County, Hullville, 13-VI-1917, collector not noted; Humboldt County; Willow Creek, 12-VI-1916, collector not noted; Tehama County, 5-V-1953, H. P. Chandler; Los Angeles County. Pasadina, collection date not noted, A. Fenyes; Tehama County, 12 mi W Mineral, 24-VI-1968, J. N. Knull; *idem*, 25-VI-1951, J. N. Knull; *idem*, 9-VII-1963, J. N. Knull; *idem*, 17-VI-1963, J. N. Knull; Yosemite, 24-V-1931, 3880-400 feet, collector not noted. **Oregon;** Coos County, Rough & Ready State Park, 10-VII-1979, on *Libocedrus*, Joe Schuh. Specimens are deposited in AMNH, CASC, CNCC, FMNH, MCZC, WFBM, and WOPC.

***Chariessa duponti* (Spinola)**
Figures 1, 2, 24, 55, 59, 69.

Platynoptera duponti Spinola, 1844: 64. Holotype. Type locality: Mexico (MRSN). *New taxonomic placement.*

Diagnosis. In members of this species the elytra are black, except for a broadened flavotestaceous streak at the base of the epipleural margin. These characteristics will distinguish the members of this species from congeners.



Figures 40-41. Morphological structures of *Chariessa pilosa*. **40)** Head (ventral view). **41)** Gular structure.

Redescription. *Size:* Length 15.5 mm; width 6.6 mm. *Form:* As in Fig. 55. *Color*: Mouthparts testaceous, except mandibles and labrum dark brown; antennae, legs, pterothorax, and abdomen dark brown black; mesoscutellum black; elytra black, except base of epipleural margin broadly flavotestaceous. *Head*: Funicular antennomeres progressively shorter and wider towards capitulum, capitulum longer than combined length of funicular antennomeres, funicular antennomeres highly setose, capitular antennomeres 9 and 10 with short collateral branch (Fig. 1, 2), antennomere 11 oblong, anterior margin partially shallowly concave; cranium densely vested with dark setae, frons wider than width of eye (EW/FW 18/35); eyes small. *Thorax*: Pronotum (Fig. 24) quadrate (PW/PL 105/105), arch not prominent, side margins arcuate, disc profusely vested with orange colored setae; elytra oblong/oval, flattened, epipleural margin deflexed, asetiferous punctation minute, profusely distributed throughout disc, disc densely vested with short black setae (EL/EW 380/90); protibial anterior margin spinous. *Abdomen*: Pygidium oblong/scutiform; aedeagus (Fig. 59) poorly sclerotized dorsally and ventrally; phallobasic lobes slightly developed, fimbriate, phallobasic rod long and slender, phallobasic apodeme explanate at extremity; phallus with subapical sclerotization, phallic apex narrow/triangular.
+
Variation. Size: Length 13.5-19.0 mm; width 2.8-8.0 mm. The middle of the pronotal disc may or may not show a dark line.

Natural history. Specimens were collected during March, May, and July. The beetle taken in July was captured on a species of oak [*Quercus* Linnaeus (Fagaceae)], at 1646 m.

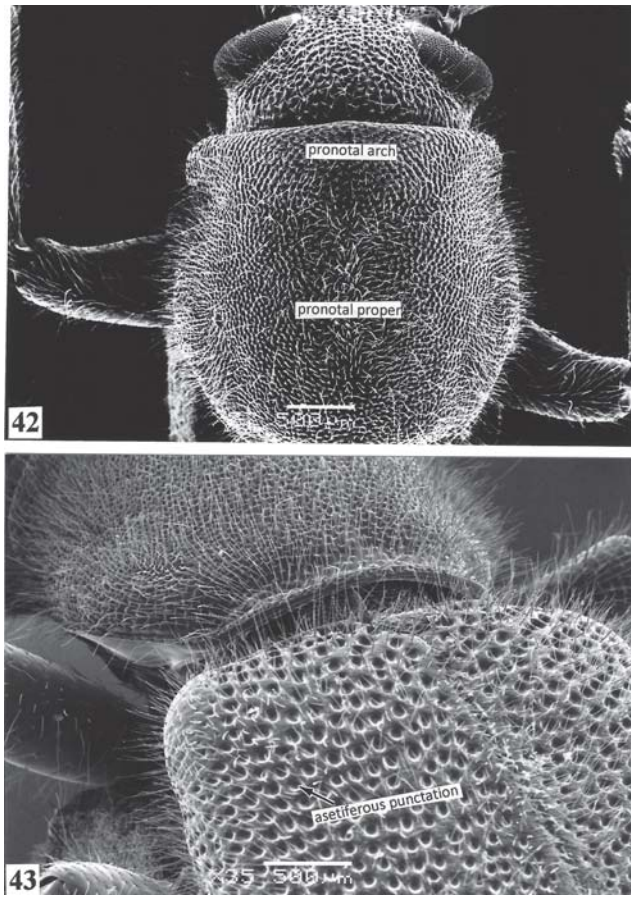
Distribution. I examined 5 specimens from: **MEXICO: Tamaulipas;** Rio Corona, 18 mi N. ciudad Victoria, 13-III-1982, J. E. Gillespie: **Nuevo León;** Chipinque Mesa, near Monterrey22-VII-1963, 5400', on *Quercus*, H. & A. Howden; 17 mi W Linares, 11-V-1994, J. E. Wappes. Specimens are deposited in ACMT, CMNC, and WFBM.

***Chariessa elegans* Horn, 1870**
Figures 7, 8, 22, 56, 60, 68.

Chariessa elegans Horn 1870: 87. Holotype. Gender not discernible. Type locality: United States of America, California, San Joaquin County (MCZC).

lemberti Rivers, 1894: 396.

Diagnosis. Specimens of this species are distinguished from those of the superficially similar *Chariessa catalina* by the pale sanguineous coloration of the forebody and body venter. The forebody and body venter are crimson in specimens of *Chariessa catalina*. Also, in specimens of *Chariessa elegans* the elytral disc is black not blue as it is in specimens of *Chariessa catalina*.



Figures 42-43. Morphological structures of *Chariessa pilosa*. **42)** Forebody. **43)** Pronotum and elytra.

Redescription. *Size:* Length 11.5 mm; width 5.0 mm. *Form:* As in Fig. 56. Mouthparts bicolorous, maxillary and labial palpomeres dark brown, remainder red, mandibles and labrum brown; antennae bicolorous, scape red, remainder dark brown; cranium, prothorax, pterothorax, femora, and tibiae pale sanguineous, tarsi black; abdomen flavotestaceous; mesoscutellum black; elytra dark blue. *Head*: Funicular antennomeres progressively shorter and wider towards capitulum, in males capitulum longer than combined length of funicular antennomeres, capitular antennomeres 9 and 10 with collateral branch (Fig. 7, 8), antennomere 11 oblong, anterior margin sinuous; eyes small, frons wider than width of eye (EW/FW 18/37). *Thorax*: Pronotum (Fig. 22) transverse (PW/PL 105/95), side margins with small tubercle, disc slightly depressed at center and at sides, finely punctate; elytral asetiferous punctation very small, profusely distributed throughout disc (EL/EW 270/90); protibial anterior margin spinous. *Abdomen*: Pygidium transverse/scutiform, slightly truncate; aedeagus (Fig. 60) poorly sclerotized dorsally and ventrally; phallobasic lobes slightly developed, fimbriate, phallobasic rod not bifid distally, phallobasic apodeme explanate at extremity; phallus with subapical sclerotization, phallic apex broad/triangular.

Variation. Size: Length 7.0-13.0 mm; width 2.4-5.0 mm. Other than body size, the available specimens were quite homogeneous.

Natural history. Specimens were captured on the wood of a species of oak [*Quercus* Linnaeus (Fagaceae)], from the wood of a species of the strawberry tree [*Arbutus* Linnaeus (Ericaceae)], from the wood of a species of madrone [*Arbutus* Linnaeus (Ericaceae)], and from the wood of a species of walnut [*Juglans* Linnaeus (Juglandaceae)]. One specimen emerged from the log of a black oak [*Quercus kelloggii* Newb. (Fagaceae)], and one was taken at 1225 m.

Distribution (Fig. 68). I examined 382 specimens from: **CANADA: British Colombia;** Victoria, 5-V-1924, W. Downes; Mount Douglas, Victoria, 29-IV-1931, Thompson; S Vancouver Island, 28-V-1952, Richard Guppy; **Ontario;** Wellington, 6-VI-1950, collector not noted. **UNITED STATES OF AMERICA: California;** Tuolumne County, 10 mi W Sonora, 2-III-1965, collector not noted; Marin County, Camp Mecker, 5-V-1968, W. H. Tyson; Marin County, Fairfax, 27-III-1932, collector not noted; Nevada County, 10 mi S Grass Valley, 2-V-70, on oak, D. E. Foster; Monterey County, Santa Lucia Mountains, 18-IV-1954, collector not noted; Madera County, Northfork, 19-III-1920, H. Dietrich; Madera County, Ockhurst, 27-IV-1986; Santa Cruz County, Ben Lamond, 5-IV-1931, L. W. Saylor; Santa Cruz County, Felton, 6-II-

1949, J. W. Green; Santa Cruz County, Big Basin 29-IV-1970, Arbutus log, W. F. Barr; 3 mi S. Felton, 27-IV-2003, Cope; Santa Cruz County, Brookdale, 19-IV-1965, collector not noted; Santa Cruz County, Felton, 6-II-1949, Paul H. Arnaud; Santa Cruz County, Glenwood Road, 2 mi N Scotts Valley, 14-V-1964, T. L. Erwin; Santa Cruz County, 7-V-1939, M. Marquis; *idem*, 30-I-1949, W. E. Hazeltine; *idem*, ?-V-1931; *idem*, ?-IV-1932; Santa Cruz County, Ben Lomond, ?-IV-1931, collector not noted; Santa Cruz County, 7-V-1939, M. Marquis; Santa Cruz County, Big Basin, 29-IV-1970, *Arbutus* log, W. F. Barr; Santa Cruz County, Ben Lomond, ?-V-1931, collector not noted; Fresno County, 12-III-1975, Oldham; Tulare County, Kaweah, date not noted, Hopping; Trinity County, 17-IV-1918, E. B. Leach; *idem*, Trinity County, 18-IV-1918, E. B. Leach; Trinity County, 10-IV-1918, E. B. Leach; San Joaquin, date not noted, R. Ecker; Trinity County, Carrville, 7-IV-1934, collector not noted; *idem*, 22-V-1934, 2400-2500 ft., collector not noted; Napa County, St. Helena, 3-VII-1904, Fuchs; Napa County, 15-V-1904, Fuchs; Napa County, 9-V-1930; Napa County, St. Helena, Fuchs; *idem*, 3-VII-1904, collector not noted; Napa County, ?-VI-1904, Fuchs; Trinity County, 17-IV-1918, E. R. Leach; *idem*, 18-IV-1918, E. R. Leach; Trinity County, 6 mi NE Hayfork, 520-V-1973, J. Powell; Trinity County, ?-III-1940, R. Kong; Trinity County, Carriville, 7-IV-1934, collector not noted; Trinity County, 13-IV-1918; Trinity County, 18-IV-1918, E. H. Leach; Napa County, N side of Howell Mountain, 2 mi NNE Angwin, emerged from log of *Quercus kelloggii* on 12-XI-1981, 1300 ft. H. B. Leech; *idem*, 13-III-1982, H. B. Leech; Napa County, St. Helena, ?-VI-1914, Fuchs; Tulare County, Kaveah, collection date and collector not noted; Tulare County, 1-XII-1914, Ralph Hopping; El Mirador, date not noted, 380 ft., Hopping; Kern County, Bakersville, 1-II-1904, collector not noted; Tulare County, Sheep Creek, ?-V-1909, 1000 ft., collector not noted; Nevada County, ?-IV-1947, J. Marquis; Colusa County, Lodoga, 30-V-1950, M. Marquis; Mendocino County, 20-X-?, E. R. Leach; Mendocino County, 10-VI-21, E. R. Leach; Mendocino County, S fork eel road, 8-IV-1941; Alameda County, Cedar Ridge, 22-III-1931, collector not noted; Alameda County, 2-IV-1927, collector not noted; Alameda County, Berkeley, 16-III-1937, M. Cazier; Alameda County, Piedmont, ?-IV-1933, E. B. Leach; *idem*, 10-IV-1933, E. R. Leach; Marin County, Mill Valley, 10-III-1927, E. G. Linsley; Fresno County, Coalinga, 25-II-1975; Fresno County, Squaw Valley, 16-IV-1954, W. F. Peregrin; Fresno County, Fowler30-III-1978, collector not noted; Los Angeles County, San Gabriel Mountains, 1 mi Above Mt. Baldy Village, Glendora Ridge Road, 27-VI-1993, ex *Quercus wislizenii*, G. H. Nelson; San Bernadino County, 25-II-1970, E. Giesbert; Kern County, Keen, date and collector not noted; Mariposa County, Yosemite Valley, 29-V-1921, collector not noted; Mariposa County, Yosemite, collection date and collector not noted; Mariposa County, Camp Greeley, 20-II-1909, collector not noted; Santa Clara County, Stevens Creek Area, 2-IV-1960, on oak logs, Phyllis Stecker; Santa Clara County, 20-I-1972, A. D. Pearlman: **New Mexico;** Grant County, Silver City, 16-III-1934, R.T. Kellogg; Roosevelt County, Portales, 173 Yucca Drive, 12-III-2004, 4019 ft., on walnut log, D. A. Pollock: **Oregon;** Union County, Kane Creek, 6-V-1939, collector not noted; Jackson County, Wimer, 18-V-1941, F. M. Beer; Jackson County, Rush, 7-V-1939, collector not noted; Jackson County, 16-IX-1913, D. J. & J. N. Knull; Benton County, Corvallis, 26-29-IV-?, collector not noted; *idem*, ?-IX-1937, collector not noted; Douglas County, 7 miles NW Roseburg, 1-V-1966, J. D. Vertrees: **Arizona;** Santa Rita Mountains, collection dates and collector not noted; Brown Canyon, Baboquivari Mountains, 20-III-1938, J. W. Tilden; *idem*, ?-IV-1938, J. W. Tilden; Cochise County, Huachuca Mountains, ?-VIII-1905, collector not noted; Cochise County, collection date and collector not noted; Gila County, Pinal Mountains, ?-I-1931, D. K. Duncan; Pima County, Tucson, 4-IV-1966, collector not noted; Maricopa County, Brush Corral, collection date and collector not noted; Santa Cruz County, Patagonia, 10-III-1938, collector not noted: **Texas;** Bexar County, Salade Creek, 13-III-1952, M. Wasbauer. Specimens are deposited in: AMNH, BYUC, CASC, FSCA, MCZC, USNM, WOPC.

***Chariessa floridana* Schaeffer, 1917**
Figures 3, 4, 25, 30, 45, 61, 67.

Chariessa floridana Schaeffer, 1917: 133. Holotype . Type locality: United States of America, Florida, Key Largo (USNM).

Diagnosis. Specimens of this species are distinguished from those of the superficially similar *Chariessa pilosa* by the coloration of the pronotum. In *C. floridana* specimens, the pronotum is mostly

flavotestaceous and the black discal streaks are narrow and surround a tuft of gold-colored setae. In *C. pilosa*, the pronotum is reddish at the sides and the black discal streaks are wide (compare Fig. 30, 31).

Redescription. *Size:* Length 12.5 mm; width 3.8 mm. *Form:* As in Fig. 45. Mouthparts, cranium, antennae, pterothorax, legs, and abdomen dark brown; pronotum mostly flavotestaceous, disc with two narrow arcuate lines at middle, between which is a tuft of gold-yellow setae; elytra dark brown, epipleural and sutural margins testaceous. *Head*: Funicular antennomeres progressively shorter and wider towards capitulum, in males capitulum longer than combined length of funicular antennomeres, capitular antennomeres 9 and 10 with collateral branch (Fig. 3, 4), antennomere 11 oblong, anterior margin sinuous; eyes small, frons wider than width of eye (EW/FW 15/30). *Thorax*: Pronotum (Fig. 25) quadrate (PW/PL 85/85), side margins with small tubercle, disc finely punctate; elytral asetiferous punctation small, profusely distributed throughout disc (EL/EW 220/50); protibial anterior margin spinous. *Abdomen*: Pygidium oblong/scutiform, deeply incised apically; 5th visible sternite emarginated; aedeagus (Fig. 61) poorly sclerotized ventrally; phallobasic lobes slightly developed, fimbriate, phallobasic rod long and narrow, phallobasic apodeme explanate at extremity; phallus with subapical sclerotization, phallic apex triangular/subacuminate.

Variation. Size: Length 11.0-15.0 mm; width 4.0-6.0 mm. There is some variation in the width of the dark pronotal lines. The epipleural and sutural margins may or may not be testaceous.

Natural history. Specimens were collected from poisonwood [*Metopium toxiferum* (Linnaeus) Krug & Urban (Anacardiaceae)] and on a rotten log of an undisclosed species of tree.

Distribution (Fig. 76). I examined 9 specimens from: **UNITED STATES OF AMERICA: Florida;** Monroe County, Upper Key Largo, 30-V-1976, on rotten log, M. C. Thomas & J. H, Frank; *idem*, 17-VII-1959, W. W. Warner; *idem*, 3-5-V- 1978, F. Hovore; *idem*, 24-VI- 1978, R. Turnbow; *idem*, 3-V- 1978, R. Turnbow; 1-10-IV-1979, ex *Metopium toxiferum* (Linnaeus) Krug & Urban. Specimens are deposited in FSCA, WFBM, RHTC, and USNM.

***Chariessa pilosa* (Forster), 1771**
Figures 12, 13, 28, 31, 34, 36-43, 46, 47, 62.

Chariessa pilosa Forster, 1771: 49. Lectotype. Gender not known. Type locality: North America. Corporaal, 1950: 276. Opitz, 2014: 25. Forster did not specify as to the number of specimens that were involved in his description. Therefore, I invoke Recommendation 73F of the ICZN (1999) and designate a lectotype for this nominal species
Enoplium marginata, variety of *pilosa* proposed by Say, 1823: 187. ***New Synonymy***.
Pelonium cincta Spinola, 1844: 356.
Enoplium onusta Say, 1828: Table 1, Figure 1.

Diagnosis. The members of this species resemble superficially those of *Chariessa floridana* and those of *C. texana.* In *C. floridana* specimens the dark pronotal lines are much wider apart (compare Fig. 30, 31) and in *C. texana* members the dark coloration of the pronotal disc is reduced to an anteromedial spot. Also, *C. pilosa* is widely distributed in the USA and Canada (Fig. 66), whereas *C. floridana* is known only from the Floridian Key Largo, and *C. texana* has only been taken from Texas and the panhandle of Oklahoma.

Redescription. *Size:* Length 10.0 mm; width 4.0 mm. *Form:* As in Fig. 46. Mouthparts, cranium, antennae, pterothorax, legs, and abdomen dark brown; pronotum red-yellow at sides, disc middle with two broad black lines between which is a narrow reddish line; elytra dark brown, epipleural margin testaceous beneath. *Head*: Funicular antennomeres progressively shorter and wider towards capitulum, in males capitulum longer than combined length of funicular antennomeres, capitular antennomeres 9 and 10 with collateral branch (Fig. 12, 13), antennomere 11 oblong, anterior margin

sinuous; eyes small, frons wider than width of eye (EW/FW 15/25). *Thorax*: Pronotum (Fig. 28) slightly transverse (PW/PL 73/70), side margins with small tubercle, disc finely punctate; elytral asetiferous punctation small, profusely distributed throughout disc (EL/EW 230/60); protibial anterior margin spinous. *Abdomen*: Pygidium oblong/scutiform, faintly incised apically; 5th visible sternite emarginated; aedeagus (Fig. 62) poorly sclerotized ventrally; phallobasic lobes slightly developed, fimbriate, phallobasic rod poorly developed, phallobasic apodeme explanate at extremity; phallus with subapical sclerotization, phallic apex triangular/subacuminate.

Variation. Size: Length 7.0-15.0 mm; width 2.5-5.7 mm. The sutural and epipleural margins may be flavotestaceous, and the red color of the lateral aspects of the pronotum varies in intensity.

Natural history. Many specimens were reared from woody plants. Among these hardwoods we may include the southern prickly ash [*Zanthozylum clava-herculis* Linnaeus (Rutaceae)], the balsam poplar [*Populus balsamifera* Linnaeus (Salicaceae)], the shagbark hickory [*Carya ovata* (Mill.) K Koch (Juglandaceae)], the sugar maple [*Acer saccharum* Marchall (Sapindaceae)], the water birch [*Betula occidentalis* Hook. (Betulaceae)], the chinkapin oak [*Quercus muehlenbergii* Engelm. (Fagaceae)], black walnut [*Juglans nigra* Linnaeus (Juglandaceae)], the bur oak [*Quercua macrocarpa* Michx. (Fagaceae)], the Texas cedar elm [*Ulmus crassifolia* Nutt. (Ulmaceae)], the American elm [*Ulmus Americana* Linnaeus (Ulmaceae)], and the honey locus [*Gleditsia triacanthus* Linnaeus (Fabaceae)] while feeding on *Agrilus difficilis* Gory (Buprestidaea).

These beetles were also found on the dead trunk of the post oak [*Quercus stellata* Wangenh. (Fagaceae)], the bitternut hickory [*Carya cordiformis* (Wangenh.) K. Koch (Juglandaceae)], on the wood of the Eastern black walnut [*Juglans nigra* Linnaeus (Juglandaceae)], on the wood of the mockernut hickory [*Carya tomentosa* Sarg. (Juglandaceae)], on the wood of the scarlet oak [*Quercus coccinea* Muenchh. (Fagaceae)], on the wood of the North American fir [*Abies balsamea* (Linnaeus) Mill. (Pinaceae)], on the wood of the Eastern redbud [*Cercis Canadensis* Linnaeus (Fabaceae)], on the wood of the southern red oak [*Quercus falcata* Michx. (Fagaceae)], on the wood of the American persimmon [*Diospyrus virginiana* Linnaeus (Ebenaceae)], on the wood of the wingleaf soapberry [*Sapindus saponaria* Linnaeus (Sapindaceae], on the wood of aspen [*Populus tremuloides* Michx. (Selicaceae)] eating *Agrilus* Curtis (Buprestidae), on the wood of the boxelder [*Acer negundo* Linnaeus (Apindaceae)], on the wood of the downy serviceberry [*Amelanchier arborea* (F. Michx.) Fernald (Rosaceae)], on the wood of the eastern black oak [*Quercus velutina* Lam. (Fagaceae)]. These beetles were also captured on ironwood [*Olneya tesota* A. Gray (Fabaceae)], on peach [*Prunus persica* (Linnaeus) Batsh (Rosaceae)], and on logs of pecan [*Carya illinoiensis* (Wangenh.) K. Koch. (Juglandaceae)]. Some specimens were taken in a Malaise trap and others on vegetation at altitudes ranging from 650 to 680 m.

Distribution (Fig. 66). I examined 1559 specimens from: **CANAD**A: **Alberta;** Fort MacLeod; 7 mi S Empress, 5-I-1978, reared from birch log, G. Hilchie: **Manitoba;** Criddle, ?-XII-?, collector not noted; Makinak; Onah, 8-VII-1918, J. B. Wallis; Husavik, 6-VII-1910, J. B. Wallis; Aweme, 20-VII-1912, 21-VI-1992: **Ontario;** Barry's Bay, 3-VIII-1968, on poplar eating buprestids, collector not noted; Kent County, Tilbury, ?-VI-1980, K. Stephan; Essex County, Wheatly, ?-V-1967, K. Stephan Larson's Camp, One Sided Lake, 19-VII-1962, UV light, J. C. E. Riotta; Ottawa, 10-VII-1912; Cape Chin, 6-VII-46, on maple; Constance Bay, 14-VII-1954; *idem*, 22-Vi-1960, cut poplar, A. T. Howden; Rondeau Park, South Point Trail, 31-VI-1985, L. Lesage; Hamilton, 28-VI-14-VII-1982, M. Sanborne; *idem*, collection date and collector not noted; *idem*, 1-VI-1968, on log of red oak, collector not noted; Rainy River District, 7-VII-1926, J. F. Brimley; Prince Edward County, 10-VII-1940, J. F. Brimley; Sudbury, 1988; Laemington, 24-VI-1940, W. J. Brown: **Quebec;** Dosquet, Lotbiniere, 3-VIII-1985, P. Bélanger; Old Chelseae, summit King Mountain, 12-VII-1071, 1150 feet, A. T. Howden; Rignaud, Vaudreuil, 17-VI-1982, P. Bélanger; Ste-Agathe, Lotbiniére, 3-VIII-1986, Pierre Bélanger; Duparquet, 27-VI-1937, G. Stace Smith; *idem*, 2-VII-1942, G. Stace Smith; *idem*, 5-VII-1941, G. Stace Smith; *idem,* 2-VII-1941, G. Stace Smith; *idem,* 23-VII-1940, on *Abies balsamea*, G. Stace Smith; *idem*, 28-VI-1942, G. Stace Smith; Queen's Park, Aylmer, 26-VII-1923, C. B. Huchinga; Terrasse-, Vaudreuil, 20-VI-2012, on trunk of dead *Carya cordiformis*, P. de Tonnancour; Summit of Mont Rigaud, Clé Vaudreuil, 26-VI-1998, D. M. Wood; Laniel, July 29, 1935, H.

S. Fleming: **Saskatchewan;** Atto's Lake, Cut Knife, 18-VI-1940, A. R. Brooks: **British Colombia;** Salmon Arm, emerged from *Betula occidentalis*, 17-V-1934, O. R. Leech. **UNITED STATES OF AMERICA: Alabama;** Mobile County, Mobile, ?-V-?, collector not noted; Washington County, Calvert, ?-VII-1914, collector not noted,; Blount County, Blountsville, 3-VII-1969, T. King; Jefferson County, Birmingham, 26-VI-1964, at light, H. R. Steeves, Jr.; *idem*, 30-V-1953, on foliage, H. R. Steeves, Jr.; *idem*, 27-IV-1954, on foliage, H. R. Steeves, Jr.; Jefferson County, Birmingham, 3-VII-1959, T. King; Jefferson County, Mount Brook, 6-VI-1972, T. King; Walker County, nr. Jasper, Devil's Ladder, 20-VII-1973, T. King' Walker County, Jasper, 9-XI-1978, Tim King; Baldwin County, Daphne, 6-VI-1960, B. K. Dozier; Lee County, Auburn, 15-V-1980, persimmon, D. J. Waters; Hale County, vic Shiloh Cpgd, Talledega National Forest, 22-VI-1999, T. C. MacRae; Madison County, Huntsville, 1-VI-1982, beating, L. L. Lampert: **Arkansas;** Lonoke County, Carlisle, collection date and collected not noted; Hempstead County, Hope, 12-VI-1960, W. F. Barr; *idem*, collection date and collector not noted; Washington County, Mount Sequoyah, 20-VII-1938, at light, M. W. Sanderson; Marion County, ?-VI-1897, collector not noted; Washington County, Lake Wedington, 8-V-1973, L. L. Borown, Jr.; Hempstead County, 11-VI-1954, J. W. Green; Sebastian County, 27-VI-1983, light, P. Skelley; Fulton County, Mammoth Spring, 28-VI-1988, deciduous forest; Fayetteville, 12-20-VI-1973, E. V. Cage; Crawford County, Lake Fort Smith State Park, 1-VI-1990, D. J. Heffern: **California;** Tuolumae County, Sonora, 14-VI-1985, Jim Cope: **Colorado;** Boulder County, 15-VIII-2015, Lindgreen Funnel Trap, USDA APHIS; *idem*, 15-VII-2016; *idem*, 3-VI-1016; Douglas County, 22-VII-2008, Lindgrin Funnel, Ethanol lure, Colorado Department of Agriculture; Larimer County, Fort Colins, Alison Hall, 13-VI-2014, ex. black walnut; Larimer County, Owl Canyon, 2-VII-1940, collector not noted; Weld County, Fort Lupton, 21-VII-2016, Lindgreen Funnel, Pityogenes lure, T. C. Woods: **Connecticut;** New Haven County, 10-VI-1911, Champlain; Litchfield County, Cornwall, 22-VI-1922, Chamberlain; *idem*, 22-VI-23, collector not noted; *idem*, 24-VI-1923, C.A. Frost; *idem*, 24-VI-1923, Chamberlain; *idem*, 1-VI-1922, K. F. Chaimberlain; *idem*; 8-VII-1928, K. F. Chamberlain; Litchfield County, 11-?-1921, K. F. Chamberlain; Fairfield County, Stanford, collection date and collector not noted: **Delaware;** Taylor County, 2 mi SE Salem, 20-IV-1976, R. L. Penrose; Sussex County; Bridgeville, 15-VII-1958: **Florida;** Marion County, Route 316, Oklawaha River, under Bridge, 5-V-2002, M. H. Rabovsky; 2.5 SSE Micanopy, 2-13-IV-2013, Malaise trap, D. B. Wahl; Indian River County, .5 mi W I-95, 29-III-2-IV-1976, collector not noted; Leon County, Tallahassee, 6-29-1902, UV trap, G. J. Wibmer & C. W. O'Brien; *idem*, 4-VII-2002, G. J. Wibmer; Polk County, Lake Marion Estate, 1-V-1999, M. C. Thomas; Polk County, Highway 542, W. of Jennings Road, 7-VII-2005, B. Kondratieff, J. Owens, J. Schmidt, D. Leatherman; Jefferson County, Monticello, 26-IV-2002, on persimmon, R. Mizell; *idem*, 17-IV-1994, Buck B. Pales; *idem*, 8-V-1994, Buck B. Pales; *idem*, 1-V-1994, Buck B. Pales; *idem*, 2-V-1994, Buck B. Pales; *idem*, 24-IV-1994, Buck B. Pales; *idem*, 8-V-1994, Buck B. Pales; *idem*, 28-V-1994, Buck B. Pales; Duval County, Jacksonville, ?-V-?, collection date and collector not noted; Dade County, 1 mi S Florida City, 22-IV-1976, beating miscellaneous slash, F. T. Hovore; Alachua County, 21-V-1978, M. C. Thomas; Alachua County, Payne Prairie State Preserve, 14-16-V-1984, light trap, G. B. Fairchild & H. V. Weems; Alachua County, Austin Cary Forest, 12-21-IV-?- Insect flight trap, Fairchild, & Roberts; idem, 19-21-III-1982, insect flight trap, G. B. Fairchild & H. V. Weems; Alachua County, 9 mi NW Gainesville, University of Florida Horticultural Unit, 16-20-IV-1977, Malaise trap, H. N. Greenbaum; Palm Beach County, Royal Palm Park, ?-V-1948; Liberty County, Torreya State Park, 16-V-1971, in blacklight trap, H. W. Weems, Jr., & G. B. Fairchild; Highlands County, Archbald Biological Station, 29-III-1983, hickory, L. L. Lampert, Jr.; *idem*, 25-IV-1980, L. L. Lampert, Jr.; *idem*, 4-VI-1978, insect flight trap, H. V. Weems, Jr. & Lisa K. Klein; Putnam County, 11-V-1959, H. W. Weems; Putnam County, Interlachen, 21-III-1953, sweeping oak, B. K. Dozier; *idem*, 4 mi n Old Town, 18-20-V-1978, E. Giesbert; Dixie County, 4-5 mi N Old Town , 27-IV-1979, beaten from hardwood slash, R. L. Penrose; *idem*, 5-V-1979, R. L. Penrose; 5 mi N. Old Town, 23-V-1978, on persimmon stump, Woodruff & Choate; Old Town, 30-V-1978, G. B. Edwards; *idem*, 20-V-1978, G. B. Edwards; Dixie County, 3.5mi N of Old Town, Rt. 349, 13-V-1979, Lloyd R. Davis, Jr.; *idem*, 27-IV-1979, M. C. Thomas; *idem*, 8-V-1978, M. C. Thomas; *idem*, 4 mi N Old Town, 6-7-V-1978, F. Hovore; *idem*, 11-12-V-1979, E. Giesbert; Seminole County, Econ Wild Area, 17-VI-2000, scrub oak/saw palmetto (burned), Malaise trap, Trevor Smith; 8 miles W Cross City, 30-III-1990, W. F. Chaimberlain; Hernando County, Withlacoochee State Forest, Richloam Tract, 9-IV-1992, M. C. Thomas; *idem*, 8-IV-1994, M. C. Thomas; 3.8 mi SW Archer, 17-23.IV.1988, Malaise trap in rosemary turkey oak sand hill, P. Skelley; Volusia County, Port Orange, 5-IV-1962, J. F, Brimley; Monroe County, 3-5-V-1978, F. Hovore;

No Name Key Quarry, 12-VI-2013, D. Fine; Liberty County, Torreya State Park, 6-V-1979, M. C. Thomas; *idem*, 7-V-1989, M. C. Thomas; Bradford County, 8 km W Starke, 23-30-VI-1980, Alan Wilkening; Gadsden County, Aspalaga Landing, Aspalaga Road, 9-V-2005, Gino Nearns; Hillsborough County, University of Southern Florida campus, ?-?-1968, collector not noted; *idem*, 18-VII-1972, collector not noted; Pinellas County, Tarpon Springs, 20-III-1950, H. & H. Howden: **Georgia;** Jasper County, Berner, 20-VI-1979, H. Flaschka; Hart County, Neberg, black light, 4-5-VII-1980, F. N. Young; Oglethorpe county, 12-V-1959, O. Tyre; Baldwin County, ?-IV-1973, J, H. West; Berrien County, near Alapaha, ?-VI-VII-1973, ex pecan logs, J. R. Ables; Berrien County, 3 mi Alapaha, emerged from wood of pecan, 25-III-1973, R. Turnbow; Dekalb County, ?-?-1971, reared, collector not noted; Clinch County, ?-V-1973, reared from pecan, collector not noted; Henry County, ?-VI-VII-1973, reared from pecan, collector not noted; Walker County, 5 mi SE Villanow, 8-VI-1969, R. L. Wescott; Richmon County, Augusta, 7-V-1946, P. W. Fattig; Fulton County, 28-IV-1943, P. W. Fattig; Barrien County, 3 mi E Alapaha, emerged from wood of pecan during June 1973, R. Turnbow; *idem*, 2-4-IV-1973, R. Turnbow; Clarke County, Whitehall Forest, 27-III-1973, R. Turnbow; *idem*, emerged from wood of *Cornus florida* Linnaeus on 1-6 III-1976, R. Turnbow; *idem*, 30-VI-1973, R. Turnbow; *idem*, 30-IV-1972, R. Turnbow; Upson County, Pleasant Grove Road, 1-IV-1993, ex. Persimmon & Ironwood, R. Morris; Lamar County, Barnesville, Howard Road, 3-4-VII-1999, R. Morris; Tallnall County, 2 mi E 147 Ohoopee River, 15-30-I-1999, limbs of *Quercus* species, R. Morris; Union County, Blairsville, 18-24-VI-1990, P. J. Landolt; Union County, hwy 180, 4.8 mi NE junction129 & 19, 4-5-VI-1981, R. L. Penrose; Clinch County, ?-VI-1973, J. E. Wappes; Twiggs County, Sawmill, 22-V-1970, collector not noted; Green County, Ocanee National Forest, 14-21-V-2004, M. D.Ulyshen: **Illinois;** Platt County, Allerton Park, 7-VIII-1974, Lloyd R. Davis, Wabash County, Wabash, ?-V-1878, F. C. Bowditch; Lake County, Lake Forest, 1-VII-1917, collector not noted; Cook County, Glenview, 2-VII-1905, collector not noted; *idem*, 4-VI-1915, F. J. Psota; Cook County, Beverly Heights, 15-VI-1913; Cook County, Schiller Park, 21-VII-1935, collector not noted; Cook County, Palos Park, 20-VII-1937, Hank Dybas; Cook County, Glendon Park, 7-VI-1903, A. B. Wolcott; *idem*, 14-VI-1903, A. B. Wolcott; LaSalle County, Starved Rock State Park, 18-VI-1940, Floyd G. Werner; *idem*, 23-VI-1940, Floyd G. Werner; Cook County, Edgebrook, 20-VI-20014, E. Liljeblad; Macon County, 12-V-1981, P. Skelley; Mason State Forest, 16-VI-1963, J. M. Campbell; Union County, Pine Hills, 17-V-1963, J. M. Campbell; Monroe County, Bloomington, 6-8-VI-1988, F. N. Young, *idem*, 4-VII-1898, collector not noted; Coös County, Shelburn, ?-VII-1884, collector not noted; La Salle County, Starved Rock State Park, 18-VI-1940, Floyd G. Werner; Kankakee, County, 19-VI-1937, collector not noted; Winnebago County, Rockford, 13-VI-1944, H. S. Dybas; Du Page County, Glendon Park, 14-VI-1903, A. B. Wolcott; Du Page County, Argonne National Lab14-VII-1967, J. Wagner & W. Suter; McHenry County, Algonquin, collection day not noted, W. A. Nason; Bond County, Greenville, 26-VI-1966, D. J. & J. N. Knull; Lake County, Ravinia, 21-VII-1935, B. C. Williams; McLean County, Lexington, collection date and collector not noted; Cook County, Riverside, 25-VI-1927, collector not noted; Cook County, Edgebrook, 18-VI-18, F. Psota; Cook County, Glendon Park, 7-VI-1903, A. B. Wolcott; Cook County, Schiller Park, 21-VII-1935, R. Wenzel; Cook County, Chicago, 18-VI-1921, collector not noted; Cook County, Willow Springs, 3-VII-1916, F. J. Psota; *idem*, 26-VI-1904, W. J. Gerhard; *idem*, 16-VII-1932, W. J. Gerhard; *idem*, 30-VI-1912, W. J. Gerhard; *idem*, 2-VII-1905, W. J. Gerhard; *idem*, 6-VI-1922, W. J. Gerhard; *idem*, 4-VI-1905, W. J. Gerhard; *idem*, 29-VI-1916, collector not noted; *idem*, 10-VI-1914, collector not noted; *idem*, 30-VI-1912, W. J. Gerhard; *idem*, 4-VII-1924, W. J. Gerhard; *idem*, Willow Springs, 16-VII-1974, C. Selinger; Macon County, 30-VI-1979, P. Skelley: **Indiana;** Pulaski County, Jasper-Pulaski Forest, 7-VII-1961, Charles E. White; Clay County, Poland, 6-VI-1963, reared from *Carya*, Charles E. White; White County, 12-VII-1961, Charles E. White; Posey County, 19-VI-1963, Charles E. White; Crawford County, 21-VI-1966, Dianne Eckert; Lawrence County, Mitchell, 6-VI-1908; Morgan County, 12-VII-1912, Gerhard; Porter County, Beverly Shores, 16-VII-1935, H. Dybas; Porter County, Dunes State Park, 22-VI-1939, H. Dybas; Lake County, Hessville, 12-VII-1908, W. J. Gerhard; Lake County, 4-VI-1921, Marion County, Indianapolis, 16-V-1938, reared from Elm; *idem*, emerged from 4 inch branch of elm on 20-VI-1939; Tippecanoe County, Lafayette, 2-I-1998, N. M. Downie; *idem*, 3-I-1990, M. Downie; *idem*, 14-VII-1982, M. Downie; *idem*, 10-VII-1982, M. Downie; *idem*, 5-VI-1982, M. Downie; *idem*, 10-VII-1981, M. Downie; Tippecanoe County, McCormick's Woods, 12-V-1989, N. M. Downie; *idem*, 24-VII-1989, N. M. Downie; Tippecanoe County, 2-VII-1989, N. M. Downie; *idem*, 10-VII-1956, N. M. Downie; *idem*, 4-VI-1962, N. M. Downie; Tippecanoe County, 12-VI-1961, N. M. Downie; *idem*, 31-V-1951, N. M. Downie; Tippecanoe County, 27-VII-1958, N. M. Downie;

Brown County, Bear Wallow, 31-V-1965, Charles E. White; Knox County, 21-VI-1937; Brown County, Bear Wallow, 27-V-1988, J. E. Wappes; *idem*, 9-VI-1967, Charles E. White; *idem*, 7-VI-1985, Charles E. White; *idem*, 12-VI-1967, blacklight trap, Charles E. White; Brown County, ?-Vi-1970, N. M. Downie; Brown County, Bear wallow, 10-VI-1978, collector not noted: **Idaho;** Cassia County, Little Cottonwood Creek, Crater of the moon National Monument, 8-IV-1965, D. S. Horning; Cassia County, Hecker Canyon, winter, 1970, reared from Alder, W. F. Barr; Butts County, 19 mi E Howe, winter 1970, reared from Juniper, W. F. Barr; Lemhl County, Second Creek, Salmon R, George, S. of Salmon, 14-VII-1959, H. B. Leech; Owyhee County, 4 mi W Homedale, 15-VI-1960, R. B. Roberts; Boundary County, Paradise Valley, 23-VI-1960, A. R. Gittins; Canyon County, Parma, 22-VIII-1959, W. F. Barr; *idem*, 10-V-1954, on peach, 2131 ft, A. J. Walz; *idem*, 10-V-1954, 2231 ft, on peach, A. J. Walz; *idem*, 10-VII-1952, A. J. Walz; *idem*, Parma, 28-VII-1965, L. de los Reyes: **Iowa;** Story County, Ames, ?-VI-?, collector not noted; Polk County, W Sailorville Lake, 6-9-VI-1985, R. Schieferstein; Howard County, Elma, 10-VII-1962, collector not noted; *idem*, 10-VII-1904, collector not noted; Dallas County, Waukee, emerged from hickory wood on 13-VI-1972, A. Stewart Cott; Linn County, 3.0 mi N Viola, 17-22-VII-1972, E. L. Sleeper: **Kansas;** Woodson County, 3 miles SW Piqua, ?-IV-1996, D.J. Heffern; Atchison County, Atchison, 10-VI-1956, J. W. McReynolds; Labette County, Big Hill Reservoir, NW of dam, 37°16'.55''N 95°28'.43''W, 13-28-VI-2005, G. A. Salsbury, Cherokee County, 2 mi S Galena, 37°02'.64''N 94°38'.18''W, 13-V-2-VI-2005, Canopy trap, G. A. Salsbury; *idem*, 13-28-V-2-VI-2005, Canopy trap, G. A. Salsbury; 14-V-2-VI-2005, Canopy trap, G. A. Salsbury; Crawford County, 3 mi NE Pittsburg, NW of dam, 37°26'.64''N 94°37'.04''W, 13-VI-2005, Canopy trap, G. A. Salsbury; Jefferson County, The Falin property, 1.5 km N jct.94th Sreet & Kingman Road, 39°13'.38''N 95°24'.24''W, 20-27-VI-2005, ex Malaise trap, lower meadows, Z. H. Falin; *idem*, 24-29-VI-2005, ex Malaise trap, lower meadows, Z. H. Falin; 10-20-VI-2005, ex Malaise trap, lower meadows, Z. H. Falin; 29-V-7-VI-2005, ex Canopy Malaise trap, lower meadows, Z. H. Falin; 20-19-24-V-2005, ex Canopy Malaise trap, lower meadows, Z. H. Falin; 27-VI-3-VII-2005, ex Canopy Malaise trap, lower meadows, Z. H. Falin; Jefferson County, Perry State Park,4-IV-1977, ultraviolet light, G.H. Nelson; Shawnee County, Topeka, 16-VI-1904, Knaus; Barber County, Medicine Lodge, 2-VI-1975, on *Sapindus drummondii* Hook & Arn.; Reno County, 6-VI-1914, J. Warren; Pottawatomie County, Onaga, 10-VI-1901, Crevencoon; Pottawatomie County, St. Mary, 4-VII-1938, J. W. Green; Saline County, Salina, ?-V-2000, W. Opitz; Riley County, Kings Creek, Konza Prarie Nature Area, 20-V-1986, Baumann & Nelson; Riley County, 24-VI-?, Popenoe; Riley County, Upper King Creek, Konsa Prarie Natural Area, 20-V-1986, R. W. Bauman; 12-VI-1978, S. Krueger; Riley County, ?-VII-1955, V. E. Adler; Jefferson County, Perry State Park, 3-VI-1977, UV light, G. H. Nelson; Douglas County, 2 mi NW of Baldwin, between 1550E & 1600E Roads at 500N Road, 38°48'.58''N 95°12'.56''W, 9-16-VI-2005, Canopy Trap, S. White; Douglas County, Lawrence, 18-VI-1922, C. H. Curran; Chase County, 21-VI- 1923, W. J. Brown; Johnson County, Shawnee, 1.2 mi N of 43rd Street, near Kansas River, 39°02'.82''N 94°48'.94''W, 2-9-VI-2005, ex Canopy trap, S. White: **Kentucky;** Green County, Crail Hope, i-VII-1946, J. W. Green; *idem*, 13-V-1946, J. W. Green; Christian County, 26-VI-1961m J. M. Campbell: **Louisiana;** East Feliciana Parish, Thompson Creek, 1 miles W Jackson, 1-V-2002, H. & A. Howden; Saint John The Baptist Parish, Edgard, 18-V-1973, Ultra violet light, V. Brou; Iberville Parish, Sunshine, 5-VIII-1972, V. A. Broun; Winn Parish, 21-VI-1915, collector not noted; Winnfield, ?-VI-1916, collector not noted; Acadia Parish, Crowley, 13-IV-1980, F. H. Shoemaker; Rapides Parish, Alexandria, 6-V-1963, light trap, L. A. Cambre; Natchitoches Parish, Campti, 22-VII-1978, S. M. Clark; Claiborne Parish, Corney Lake 27-I-1983, B. P. & J. L. Carr; Baton Rouge Parish, Place DuPlantier Apts., 27-IV-1985, E. G. Riley; La Bossier Parish, 11 km NE Bossier City15-VI-2013, black light, Brandon Hays: **Maine;** Oxford County, Paris, 10-VII-1915, C. A. Frost; Kennebec County, Monmouth, 27-VI-1912; idem, 26-VI-1905, collector not noted: **Maryland;** Dorchester County, Cambridge, 14-VI-1947, H. L. Dozier; Baltimore County, 5-VII-1931, J. W. Green; Prince George's County, Laurel, 25-VI-1965, Malaise trap; Prince George's County, United States Agricultural Center, 27-VI-1954, fresh break in gum sapling, H. L. Dozier; Prince George's County, Hyattsville, 5-VI-1919, L. L. Buchanan; *idem*, 19-V-1918, L. L. Buchanan; Prince George's County, College Park, 23-VI-1951, oak slash, B. K. Dozier; *idem*, 13-VI-1934, oak slash, B. K. Dozier; *idem*, 28-V-1967, on foliage of black locust, B. K. Dozier; Prince George's County, Beltsville, 27-VI-1934, oak slash, B. K. Dozier; Frederick County, Braddock Heights, 14-VI-1952, on slash, B. K. Dozier; Charles County, nanjemoy3-VI-1948, H. Howden: **Massachusetts;** Barnstable County, Barnstable, ?-VII-1898. Collector not noted; Bristol County, 2-VIII-1923, N. S. Easton; Plymouth County, 29-V-1932, C. E. White; Suffolk County,

Dorchester, 9-VI-1907, collector not noted; Suffolk County, 8-VII-1915, Boister; Bristol County, 15-V-1915, N. S. Easton; Hampshire County, Notch Roas, S, Amherst, 24-VI-1998, F. Knab; Norfolk County, Brookline, collection date not noted, Bowditch; *idem*, 22-VI-1901; Norfolk County, 25-VI-1910, Bolster; Norfolk County, Brooklyn, D. A. Fenyes; Norfolk County, collection date not noted, Bowdich; Norfolk County, Dover, 20-VI-1916, F. W. Graham; Norfolk County, 11-XI-1899, collector not noted; Middlesex County, Framingham, 4-VIII-1920, C. A. Frost; Middlesex County, Newton, ?-VI-?, collector not noted; Middlesex County, Cambridge, collection day and collector not noted; Middlesex County, 7-VI-1951, W. Rosenberg; Northampton, 13-VII-1971, E. J. Kiteley; Tyngsborough, 27-VII-1873, collector not noted: **Michigan;** Clinton County, Rose Lake, Wild. Reserve area, 4-VII-1987, sweeping vegetation, J. Jenkins; Saint Joseph County, vicinity Klinger Lake, 23-VI-1975, E. Giesbert; Livingston County, 2 mi N Whitmore Lake, 14-VII-1956, beating *Quercus alba*, G. H. Nelson; *idem*, 26-VI-1956, on trunk of dying *Populus tremuloides* eating *Agrilus*, G. H. Nelson; Washtenaw County, Ann Arbor, 4-XII-1968, in wood cellar, W. W. Newcomb; Marquette County, ?-VI-1928, Collector not noted; Presque Isle County, Ocqueoe State Park, 5-VII-1961, K. Willis; Berrien County, Harbert, 27-VII-1974, E. Giesbert; *idem*, 23-VI-1985, E. Giesbert; Cheboygan County, 16-VII-1945, Alyce Ridinger: **Minnesota;** Itasca State Park, 21-VII-1937, H. R. Dodge; Crow Wing County, Brainerd, 12-VI-1962, E. J. Kiteley; Clearwater County, Itasca State Park, June-?-1957; Butler County, 16-VI-1961; Anoka County, Brine Road, 25-VI-1951, E. J.Kiteley; Hubbard County, Park Rapids, 4-VII-1959, E. J. Kiteley; Cook County, Gunflint Trail Road2-VII-1984, slash areas/log depots, Downie & Wappes; Saint Louis County, 14 miles W Ely, 30-VI-1984, Wappes & Downie: **Mississippi;** Harrison County, Gulfport, 21-VI-1968, collector not noted; Washington County, Stoneville, 10-11-VI-1981, F. Hovore; Washington County, Carroll County, 2 mi W Carrollton, 29-V-1981, F. Hovore; Scott County, Forkvillem 1 mi S, 9-VI-1981, R. L. Penrose; Montgomery County, 3.0 mi W Stewart on hwy 82, 22-VI-1999, mixed hardwood slash; Lafayette County, 19-VI-1954, F. M. Hull: **Missouri;** Green County, 11-18-V-2014, Rogersville, 8725 E Buckhorn Lane, J. Courtney, K. Smith, S. Fitzgerald; Henry County, 7 mi E Clinton, 17-VI-1973, on *Diospyros virginiana* Linnaeus; Vernon County, 4-VII-1969, McReynolds; Saint Louis County, Clarkson Valley, Jct Orville & Shepard Rds, emerged 24-31-V-1998 ex dead branch of *Juglans negra* L., T. C. MacRae; Saint Louis County, Chesterfield Village, Monsanto Campus, emerged 1-16-V-1999 ex dead branch of *Acer saccharum* Marsh, T. C. MacRae; Ripley County, Bald Hill Glade National Ar, 4.6 mi SW hwy V, emerged 17-31-VII-1997 ex trunk of *Quercus stellata*, T. C. MacRae; Berry County, 3.2 mi S Roaring River on hwy 112, 14-VI-1997, on *Carya* species, T. C. MacRae; Taney County, 2 mi N Forsyth, 8-V-2000, Eric Eaton; Taney County, Mincy Conservation Area, 27-VI-1998, UV light in oak/hickory forest, T. C. MacRae; *idem*, emerged from dead branch of *Quercus muhlenbergi* during 9-15-VI-2001, T. C. MacRae; *idem*, emerged from dead branch of *Quercus muhlenbergi* during 16-22-VI-2001, T. C. MacRae; Dade County, Stockton Lake, emerged 1-7-VI-1998, ex trunk of *Carya ovata* (P Mill.) K Kotch, T. C. MacRae; Carter County, Pinewoods Lake National Forest, 2-VI-1984, deciduous forest, shallow lake and pinewoods, blacklight, J. R. Heiteman; Mark Twain National Forest, Pinewoods Lake, 2.0 mi W Ellsmore, emerged from cut log of *Carya* during 17-31-V-1999, T. C. MacRae; Stoddard County, Holly Ridge State Forest, emerged 8-14-VI-1989, dead 1-3'' branch *Prunus serotina* Ehrh. T. C. MacRae; Bollinger County, Duck Creek Cons. Area, NE Corner Pool 2, emerged from upper trunk/main branch of dead *Carya alba* (L.) Nutt. During 24-31-V-1998, T. C. MacRae; Oregon County, Mark Twain National Forest, McCormack Lake, 3-VI-1976, on *Juglans negra* L., G. H. Nelson; *idem*, Junction hwy 19 & Eleven Point R, 3-VI-1976, on dead trunck of *Quercus falcata*, G. H. Nelson; Butler County, 2.4 mi E hwy W University Forest, 4-VI-1999, on cut stump of *Quercus coccinea* Muenchh, T. C. MacRae; Jasper County, Carterville, 27-VII-1986, Gregory V. Myers; Kansas City; Jackson County, Lees Summit, 18-VII-1947, R. E. White; Burr Oak Woods, Natural Area, 24-VI-1998, on *Quercus macrocarpa* "en copula", G. H. Nelson; ,?-VII-1953, Ronald H. Pine; Blue Springs, 7-VII-2000, downed limb of *Robinia pseudo-acacia*, G. H. Nelson; *idem*, 20-V-1998, G. H. Nelson; *idem*, 28-VI-2000, G. H. Nelson; *idem*, emerged from wood of *Gleditsia triacanthos* (Linnaeus), G. H. Nelson; *idem*, 5-VI-1997, G. H. Nelson; *idem*, 7-VII-2000, on *Gleditsia triacanthos* (Linnaeus); *idem*, 29-VI-1953, D. J. & J. N. Knull; *idem*, 13-IV-1955, E. J. Kitelley; Valeey View glades, 13-V-1987, T. C. MacRae; Raytown, 14-VII-1970; Warren County, 10 mi W Highway F, Village of Insbrook, 3-VII-1999, T. C. MacRae; *idem*, emerged from the wood of *Ulmus americana* on 5-VI-1970, G. H. Nelson; *idem*, 7-VI-1969, on *Cercis canadensis*, G. H. Nelson; *idem*, emerged from wood of *Ulmus americana* on 22-XII-1968, G. H. Nelson; *idem*, 7-VIII-1970, G. H. Nelson; *idem*, 10-VI-1970, G. H. Nelson; *idem*, 30-VI-1978, ultraviolet light, G.

H. Nelson; *idem*, 23-VI-1974, on *Carya ovata*, G. H. Nelson; *idem*, 25-VI-1974, on *Carya ovata*, G. H. Nelson; Wayne County, Williamsville, 7-VII-1955, U V light trap, E. C. Becker; Carter County, Peck Ranch Conservation Area, Stegall Mountain, 16-23-V-2001, on lower trunk of fire-killed *Quercus velutina*, T. C. MacRae; *idem*, emerged from dead branch of *Amelanchier arborea* during 24-31-V-2001, , T. C. MacRae; Saline County, Nelson, 2-VI-1974, E. G. Riley; Miami Access, emerged from dead branch of *Quercus macrocarpa* Michx., during 25-30-VI-2002, T. C. MacRae; Adaire County, Kirksville, 13-VI-1981, M. Huybenez; Pike County, New Hartford, 13-VI-1940, W. B. Craig, Clay County, 2 mi W Missouri City, Coolie Lake, 2-VII-1997, on *Acer negundo*, G. H. Nelson; *idem*, 22-VI-1997, on *Acer negundo*, G. H. Nelson; Boone County, 25-VII-1967, S. Poe; Boone County, Ashland Wildlife Ar. 17-VI-1977, E. G. Riley; Randolph County, 1 mile E Moberly, 9-VI-1974, E. G. Riley; Randolph County, Sugar Creek lake, 15-VI-1974, E. G. Riley; Stone County, 3 miles NE Blue Eye, 12-V-1987, T. C. MacRae; Franklin County, Meramec State park, 15-VI-1987, T. C. MaCrae; Boone County, 15-VI-1973, light trap, J. W, Smith: **Montana;** Missoula County, ?-?-1913, C. C. Adams: **New Mexico;** Chaves County, 27-VII-2009, J. Hardin: **Nebraska;** Douglas County, 30-VI-1938, D. J. & J. N. Knull; Valley, 30-VI-1938, D. J. & J. N. Knull: **New Hampshire;** Carroll County, Chocorua, collection day and collector not noted; Rockinham County,10-VII-1901, S. A. Shaw Crafton County, Hanoverm ?-VI-1928, collector not noted: **New Jersey;** Gloucester County, Paulabero, 11-VI-1961, H. L. Dozier; Camden County, Camden, ?-VI-1917, collector not noted; Greenwood Lake, 20-VI-1924, collector not noted; Burlington County, Medford, 2-VII-1939, E. J. F.Marx; Burlington County, Atsion, 12-VI-1945, J. W. Green; *idem*, 28-VI-1946, J. W. Green; Ocean County, Lakehurst, 25-V-1960, W. F. Barr; Orange County, Fort Montgomery, 3-VII-1915; Somerset County, Griggstown, 8-VI-1936, reared from Elm, C. H. Hoffmann; Orange County, Greenwood Lake, 7-VI-1942, M. Cazier; Essex County, South Orange, 16-VI-1889; Essex County, Newark, collection date and collector not noted; Essex County, Montclair, 25-VI-1922, A. Nicolay; Essex County, Montclair, 19-VI-1925, A. Nicolay; Essex County, South Orange, 8-VI-1959, collector not noted; *idem*, 30-VI-1889, collector not noted; Essex County, Bloomfield, 20-VI-1939, feeding on *Scolytus multistriatus* Marsh.; Mercer County, Princeton, 4-VI-1934, bred from Elm, Woodley; *idem*, 9-VI-6-VII-1943, collector not noted; Camden County, Camden; Camden County, Clementon, ?-V-1930, collector not noted; Cape May County, 21-VI-1941, J. W. Green; Cape May County, Ocean City, 21-VI-1941, R. C. Casselberry; Warren County, 1-VII-1917, J. W. Green; Cumberland County, Rutgers experiment Station, 21-V-1988, J. E. Wappes; Bergen County, Passaic Junction7-VII-1912, collector not noted; Bergen County, Fort Lee, collection date and collector not noted; Monmouth County, 16-VI-1935; Somerset County, Somerville, ?-VI-?, Schott: **New York;** Columbia County, Mellenville, 10-VII-2007, Lindgrin funnel, J. Dallessandro; Saint Lawrence County, Canton, 4-VI-1935, N. M. Downie; Orange County, West Point, 9-VI-1915, W. Robinson; Orange County, Fort Montgomery, 3-VII-1915, F. M. Shoft; Rockland County, 12-VI-?, collector not noted; Queens County, Queens, 31-V-1924, F. M. Schott; Tompkins County, Six Mile Creek, 9-VII-1959, collector not noted; Tompkins County, Ithaca, ?-VII-1917, collector not noted; Westchester County, Peekskill, collection date and collector not noted; *idem*, collection date and collector not noted; *idem*, 15-VI-1889, Sherman; Suffolk County, Wading River, 23-VI-1917, collector not noted; Onondaga County, 14-VII-1946, N. M. Downie; Suffolk County, Montauk, Long Island, 4-VII-1916, F. M. Schott; Onondaga County, Syracuse, collection date and collector not noted; Onondaga County, 21-VI-1941, N. M. Downie; Nassau County, Roslyn, Long Island, 24-VI-1930, J. N. Belkin; Tomkins County, 10-VIII-1940, J. N. Belkin; Kings County, Brooklyn, Flatbush, 3-VI-1896, J. L. Zabriskie: **North Carolina;** Rockingham County, Mayo River State Park, ?-IV-V-2015, flight intercept trap, W. D. Merritt; Rockinham County, Reidsville, 30-V-1973, J. S. Ashe; Buncombe, Black Mountain, 1-VI-1912, Beutenmuller; Anson County, Peachland, 15-VI-1953, oak slash, B. K. Dozier; Wake County, Raleigh, 2-VI-1952, B. K. Dozier; Moore County, Southern Pines, 24-V-?, A. H. Manee; Jackson County, Highlands, Whitesides Mountain, 1-VII-1957, W. J. Brown; Jackson County, 19-VI-1959, W. Rosenberg; Orange County, University of North Carolina, 30-V-1972, Wharton; Burke County, Lake James, State Park, 13-V-26-VI-2014, flight intercept trap, W. D. Merritt; Cumberland County, Cavers Creek State Park, ?-VII-VIII-2011, flight intercept trap, W. D. Merritt; Guilford County, Haw River State Park, V-VI-2015, flight intercept trap, W. D. Merritt; Camden County, Dismal Swamp State Park, 2-V-7-VI-2011, flight intercept trap, W. D. Merritt; Mecklenburg County, Charlotte, VI-VII-1998, ultra violet light trap, J. F. Cornell; Wake County, 7 miles SW Raleigh, off road 1152, 1-VI-1985, Malaise trap, C. S. Parron; Chovan County, 1.6 km W Edentun, road 1200, 18-VI-1987, A. C. Evenson, Jr: **North Dakota;** Ransom County, 5 mi NW McLeod, 4-VII-1968, H. F. Howden: **Ohio;** Clermont

County, 28-V-1962, R. D. Mathis; Champaign County, 6-VI-1954, R.E. Woodruff; Green County Ohio, 14-V-?, D. J. & J. N. Knull; *idem*, 13-VI-1956, D. J. & J. N. Knull; *idem*, 22-VI-?, D. J. & J. N. Knull; Delaware County, 27-VI-1943, D. J. & J. N. Knull; *idem*, 8-VII-1942, D. J. & J. N. Knull; *idem*, 17-VII-1945, D. J. & J. N. Knull; *idem*, 22-VI-?, D. J. & J. N. Knull; Green County, 15-VI-1953, D. J. & J. N. Knull; Scioto County, 9-VI-1945, D. J. & J. N. Knull; Hocking County, 29-V-?, D. J. & J. N. Knull; *idem*, 16-VI-1959, J. N. Knull; *idem*, 14-VI-1950, D. J. & J. N. Knull; 1-VI-?, D. J. & J. N. Knull; Hamilton County, Cincinnatti, Lower Price Hill, 23-VI-1996, E. Eaton; Hamilton County, Cincinnati, 23-VI-1903, collector not noted; *idem*, Clifton,13-VI-1990, Eric Eaton; Franklin County, ?-VII-1927, J. N. Knull; *idem*, 9-VI-1952, D. J. & J. N. Knull; Coshocton County, Cavallo; Guernsey County, Millwood, 19-VII-1940**;** Guernsey County, 19-VII-1940; Knox County, 5-VI- 1942, H. F. Strohecker; Chillicothe, 10-VI-1923, A. E. Miller; Stoney Creek Forest, 6-14-1928; Vinton County, Lake Hope state park, 25-V-1985, R. Androw; Muskingum County, Zanesville, 24-VI-1987, P. W. Kovarik: **Oklahoma;** Comanche County, Fort Sill, East Range, 11-13-VI-2002, B. Condratieff, J. Scmidt, , D. Leatherman; Garfield County, Fairmont, 9-12-VII-1982, John F. Reinert; *idem*, 9-11-VII-1980, insect flight trap, John F. Reinert; Cherokee County, Tahlequah, 170VI-1939, Kaiser-Nailon; Marshall County, Willis, 1 mi SE, 6-VI-1972, W. Suter; Marshall County, Lake Texoma, 13-VI-1969, W. Suter; Pontotoc County, Ada, 17-Vi-1952, D. J. 7 J. N. Knull; Wichita National Forest, 9-VI-1932, E. B. Webster; Cleveland County, Norman, ?-VI-1980, Willian D, Shepard; Cleveland County, 11-VI-1976, light trap, William D. Shepard; *idem*, 30-VII-1976, William D. Shepard; Muskogee County, 3mi W Webbers Falls, 7-VI-1964, H. S. Dybas; Muskogee County, Camp Gruber, 6-VI-1943, J. A. Wilcox; Marshal County, Oklahoma University Biological Station, 24-VII- 1969, R. H. Arnett, Jr.; Oklahoma City, summer 1958, W. Rosenberg; Hayes County, Chouteau, 27-VI-1967, on weed, D, C. Arnold; Osage County, Ponca Lake, 10-VII-1981, K. Burnham; Latimer County, ?-V-1986, K. Stephan; *idem*, ?-IV-1987, K. Stephan; *idem*, ?-V-1987, K. Stephan; *idem*, ?-VII-1986, K. Stephan; *idem*, ?-IV-1986, K. Stephan; *idem*, ?-VI-1987, K. Stephan; *idem*, ?-IV-1988, K. Stephan; *idem*, ?-VI-1988, K. Stephan; *idem*, ?-V-1988, K. Stephan; *idem*, ?-V-1989, K. Stephan; *idem*, ?-VI-1989, K. Stephan; *idem*, ?-VI-1991, K. Stephan; *idem*, ?-VII-1991, K. Stephan; *idem*, ?-X-1988, K. Stephan; *idem*, ?-IV-1986, K. Stephan; *idem*, ?-VII-1988, K. Stephan; *idem*, ?-V-1982, K. Stephan; *idem*, VI-1989, Karl Stephan; Latimer County, 5 mi W Red Oak, ?-VII-1981, K. Stephan; *idem,* 11-VII-1977, K. Stephan; *idem,* 11-VII-1977, K. Stephan; *idem*, 7-V-1977, K. Stephan; *idem*, 11-VI-1977, K. Stephan; *idem*, 30-IV-1977, K. Stephan; *idem*, ?-VI-1984, K. Stephan; *idem*, ?-V-1984, K. Stephan; *idem*, ?-VI-1985, K. Stephan; *idem*, ?-VII-1983, K. Stephan; *idem*, ?-VI-1983, K. Stephan; *idem*, ?-IV-1985, K. Stephan; *idem*, ?-VII-1982, K. Stephan; *idem*, 2-VII-1977, Karl H. Stephan; Payne County, VI- 1924, W. J. Browa; Payne County, Stillwater, 28-V-1981, D. C. Arnold; LeFlore County, Lake Wister State Park, ?-V-1992, ex. Quercus, D. J. Heffern: **Oregon;** Deschutes County, Cline Falls, 8-VII-1946, Frank M. Beer; Baker County, Wallowa Mountains, 4-VII-1922, collector not noted; Umatilla County, 11.5 mi W Rieth, emerged from wood of *Betula occidentalis* on 27-X-1972, R. L. Westcott; **Pennsylvania;** Fulton County, 1-2 mi N Covans Gap State Park, 10-11-VII-1978, E. Giesbert; Huntingdon County, Huntingdon, State Game Lands # 112B, M Gap Road, 5-VI-2001, Frank D, Fee; Huntingdon County, 2 mi E Neelyton, 18-VI-1989, J. E. Wappes; Lancaster County, collection date and collector not noted; berks County, Mount Penn, 20-VI-1950, D, C. Kissinger; Berks County, Stoney Creek Mills, 26-VII-1950, D. G. Kissinger; Berks County, Stoney Creek Mills, 12-VII-1950, D. G. Kissinger; Berks County, Mount Penn, 26-VI-1950, D. G. Kissinger; Franklin County, Mount Alto, 5-VII-?, J. N. Knull; Allegheny County, collection date and collector not noted; Dauphin County, Linglestown, 24-VI-?, collector not noted; Dauphin County, Clarks Valley, reared, collection date not noted, J. N. Knull; *idem*, 15-VI-1958, J. N. Knull; Tioga County, 21-VI-1918, collector not noted; Cumberland County, Lemoyne, 23-IV-1910, collector not noted; *idem*, 3-V-1910, J. N. Knull; Cumberland County, 15-V-1911, collector not noted; Cumberland County, Lemoyne, 19-V-1910; *idem*, 5-X-1910, H. H. Kirk; Dauphin County, Harrisburg, 14-IV-1911, H. B. Kirk; *idem*, 22-V-1922, A. B. Champlain; *idem*, 14-IV-1911, H. B. Kirk; Dauphin County, Harrisburg, 21-IV-1911, emerged from elm, H. H. Kirk; Dauphin County, Hummelstown, *idem*, 26-VI-1933, J. N. Knull; *idem*, 4-VII-1915, J. N. Knull; *idem*, 26-VI-1933, J. N. Knull; *idem*, 3-V-1912, J. N. Knull; *idem*, 26-VI-1923, J. N. Knull; *idem*, 30-VI-1912, J. N. Knull; *idem*, 1-VI-1933, J. N. Knull; *idem*, 2-VI-1920, J. N. Knull; Franklin County, Mount Alto, 4-VII-?, J. N. Knull; Delaware County, Glenolden, ?-V-1912, collector not noted; *idem*, 12-V-?, collector not noted; Delaware County, 6-V-1904, J. W. Green; Northampton County, 14-VII-1931, J. W. Green; Delaware County, ?-VI-1918, collector not noted; Northampton County, 18-VI-1923, J. W. Green; *idem*, 5-VIII-1912, W. Green;

Philadelphia County, Philadelphia, collection date and collector not noted; Philadelphia County, Angora, 18-VI-?, W. Green; *idem*, 20-VI-?, W. Green; *idem*, ?-VI-1915;Chester County, Downingtown, 4-VII-1935, L. J. Bottimer; Abington County, ?-VI-1920, collector not noted; Montgomery County, Abington, collection date and collector not noted; NE Jamison, Horseshoe bend, Neshaminy Greek, ?-VIII-1956, W. Ivie; Monroe County, Delaware Water Gap, collection date and collector not noted: **Rhode Island;** Providence County, Providence, 18-VII-1926: **South Carolina;** Pickens County, Table Rock, ?-VIII-1958, D. Thornton; Clemson, 13-V-1989, J. K. Moulton; Dovehaven, 7 mi NE of Pickens, 19-VII-1990, H. L. Dozier; *idem*, 20-V-1984, H. L. Dozier; *idem*, 7-V-1979, H. L. Dozier; *idem*, 23-V-1989, H. L. Dozier; *idem*, 6-VI-1983, Annie Dozier; Cherokee County, Kings Mountain National Park, 23-V-1973, L. L. Lambert; Oconee County, CCC camp F2, 30-VI-1036, O. L. Cartwright: **Tennessee;** Hamilton County, Signal Mountain, 10-V-1922, C. F. Dalman. Warren County, McMinnville, 20-VI-2003, sticky trap, J. B. Oliver; *idem*, 24-VI-2003, J. B. Oliver; *idem*, reared from *Quercus* during 2004-2005, Nadeer N. Yousef; Lake County, Reelfoot, Lake, 2-VI-1954; Franklin County, 7-VI-1958, at light, J. A. Steeves; Morgan County, Deer Lodge, ?-VI-1937, Bernard Benesh; *idem*, 22-VI-1932, Bernard Benesh; Morgan County, Burrville, B. Benesh; Cannon County, Woodbury, 23-V-1993, E. J. Ford; Knox County, Knoxville, 10-V-1955, H. &. H. Howden; Blount County, Chilhowee Mountain21-VI-1954, on oak, H. & A. Howden: **Texas;** Kelley's Pond, Sam Houston Notional Forest, 15-VI-1990, W. F. Chamberlain; Sabine County, 8 miles E Hemphill, 7-V-4-VI-2011, D. Heffern & B. Raber; Lee County, 14-VI-1907, collector not noted; Fedor, 6-VI-1904, Birkmann; Matagorda County, 2 mi SE Blessing, 19-IV-1984, Marlin Rice; Wharton County, 8-V-1963, Macay, black light trap, Marlin Rice; 8 miles NW El campo, 19-IV-1986, D. J. Heffern; Montgomery County, The Woodlands, 12-13-V-1978, N. M. Downie; Robertson County, 8 miles E Hearns, 21-27-IV-1991, M. Hallmark; Benchley, 30-IV-1941, D. J. & J. N. Knull; Cameron County, Brownsville, Esperanza Ranch, 1-VIII-?, collector not noted; Kleberg County, Kingsville, collection date not noted, C. T. Reed; Lee County, Fedor, collection date not noted, Bock; Nacogdoches County, near Garrison Camp, Whispering Pines, 28-VI-1981, N. Rulien; Nacogdoches, 7-IV-1968, H. R. Burke; *idem*, 25-VI-1965, at electric light, R. R. Murray; *idem*, 20-IV-1971, at electric light, William D. Shepard; *idem*, 4-VIII-1966, fresh cut oak log, R. R. Murray; Parker County, Weatherford, 30-I-1974, Erik L. Klee; Anderson County, Gus Engeling Wildlife Management Area, 2-V-1999, S. M. Clark; Dallas County, 25-V-1907; Dallas County, 12-VI-1938, J. H. Robinson; Dallas, 15-V-1907, F. C. Prott; Brazos County, Near Millican, 12-IV-1986, J. E. Wappes; College Station, 20-VIII-1950, L. S. & E. S. Dillon; *idem*, 31-V-1919, H. J. Reinhard; Brazos County, nr Millican, 12-IV-1986, J. E. Wappes; College station, Lick Dreek Park15-30-VI-2000, yellow cup trap on dead *Quercus stellata*, E. G. Riley; 1.5 W Bryan, 19-25-VI-1982, R. Turnbow; 10 mi S College Station, 22-26-IV-1991, R. Turnbow; *idem*, 5-25-1981, beaten from dead oak, R. L. Penrose; *idem*, hwy 30, Navasota River, 21-IV-1988, R. Anderson; Grayson County, 18-VI-1983, B. F. & J. L. Carr; Jones County, 12 mi W Anson, 2-VI-1982, Cicero; Harris County, Houston Airport, emerged 20-31-1991, D. J. Heffern; Harris County, near W. Houston Airport, ?-IV-1994, reared from dead *Zanthozylum clava-herculis*, D. J. Heffern; Fort Bend County, Brazos State Bend Park, 21-IV-1998, D. J. Heffern; Montague County, Forestburg, 10-VII-1948, collector not noted; Montague County, S Shore Lake Nocona, 26-IV-2003, J. Owens, J. Scmidt; Terran County, Doug Russel Park, 17-VII-1982, C. S. Wolfe; Angelina County, Angelina National Forest, 5.5 miles SE Zavalla, 19-IV-2-V-1996, Clark, Menard, & Riley; Erath County, Stephenville, 6-XI-1980, T. Riherd; Dickens County, White River Reservation, 10-19-VI-1988, R. Morris; Crocket County, 28 miles E Iraan, 1-VI-1973, Gaumer & Clark; Dimmit County, 13-III-1976, S. E. Jones, Smith County, 27-III-1956, collector not noted; Kerr County, Kerrville, 20-VI-1996, W. F. Chamberlain; Jackson County, 4 miles SW Francitas, ?-VI-1992, emerged from *Ulmus crassifolia*, D. J. Heffern; Baxar County, 19-IV-1932, H. B. Parks; Liberty County, Liberty, 15-IV-1934, collector not noted; Madison County, 17-VII-1932, collector not noted; Cherokee County, 5-V-1952, H. J. Reihard; Wood County, N Hawkins, 20-V-1998, C. Wolfe & O. Marqua; Kaufman County, 10.4 km NE Forney, 22-VI-2013, Brandon Hays; Milam County, 5.6 km NE Gause, 27-V-1995, H. & A. Howden: **Virginia;** Rockbridge County, Vesuvius, 25-VI-1956, B. & B. Valentine; Campbell County, Lynchburg, 12-V-1990, J. R. Mawdsley; *idem*, 13-VI-1987; Northwest Virginia, 8-V-1952, G. H. Nelson; Fairfax County, East Falls Church, 4-VI-1916, J. N. Knull; Fairfax County, 22-VI-1923, A. Nicolay; *idem*, 4-VI-1916, J. N. Knull; Blue Ridge Parkway, milepost 100, 21-VI-1988, N. M. Downie; Hampton, 12-V-1944, N. m. Downie; Boutetourt County, Highway 615, near Hipes, 10.5 road mile W Junction Highway 220, 24-V-2006, E. G. Riley; Appomattox County, Vera, 21-VI-1984, Pierre Bélanger; Fairfax County, Alexandria, collection date and collector not noted:

West Virginia; Richland County, Lone Rock, 27-VII-1906; Greenbrier County, White Sulphur Springs, 3-VII-1912, W. Robinson. **Wisconsin;** Dane County, 10-VII-1940, H. R. Dodge; Walworth County, Delavan, ?-VIII-1962, Eugene Ray; Walworth County, 30-VI-1940, H. S. Dybas; Polk County, Balsam Lake, 1-VIII-1958, E. D. Kiteley. "Tymgo" 27-VII-1873; Monitowoc County, Point Beach State Park, 20-VII-1966, H. Darling. Specimens are deposited in: AMNH, BYUC, CASC, CMNC, CNCI, CSUC, FSCA, MCZC, NCSU, PMNH, SEMC, TAMU, UGCA, USNM, WFBM, and WOPC.

***Chariessa ramicornis* Perty**
Figures 14, 15, 19, 23, 32, 48, 63, 70.

Chariessa ramicornis Perty, 1932: 109. Lectotype. Gender not known. Type locality: Sebastianopolin (= Brazil, Sâo Paulo, Sebastionópolis do Sul) (ZSMC).

Diagnosis. In members of this species the elytra are mostly dark blue; the disc shows two yellow transverse fascia, one on the anterior margin and the other behind the middle.

Redescription. *Size:* Length 10.5 mm; width 5.0 mm. *Form:* As in Fig. 48. Mouthparts testaceous, except mandibles brown; antennae bicolored, capitulum black, remainder testaceous; cranium and pronotum black, with a bluish luster; mesothorax castaneous, pterothorax, legs, and abdomen testaceous; mesoscutellum black; elytra mostly black, with a bluish luster, with two narrow fasciae, one at anterior margin, the other behind middle. *Head*: Funicular antennomeres progressively shorter and wider towards capitulum, capitulum longer than combined length of funicular antennomeres, capitular antennomeres 9 and 10 with collateral branch (Fig. 14, 15), antennomere 11 oblong; eyes small, frons wider than width of eye (EW/FW 35/20). *Thorax*: Pronotum (Fig. 23) transverse (PW/PL 95/85), side margins evenly arcuate, disc finely punctate; elytral asetiferous punctation small, profusely distributed throughout disc (EL/EW 230/75); protibial anterior margin spinous. *Abdomen*: Pygidium scutiform; aedeagus (Fig. 63) poorly sclerotized ventrally; phallobasic lobes slightly developed, fimbriate, phallobasic rod long, linear, phallobasic apodeme broad; phallus with subapical sclerotization, phallic apex triangular/subacuminate.

Natural history. A specimen was collected during November.

Variation. Size: Length 10.0-14.5 mm; width 4.8-7.0 mm.

Distribution (Fig. 70). I examined 5 specimens from: **BRAZIL: Santa Catarina;** Nova Teutonia, ?-?-1941, Fritz Plaumann; *idem*, 27-XI-1941, Fritz Plaumann: **Espírito Santo: Bahia.** Specimens are deposited in FMNH and WOPC.

***Chariessa texana* Wolcott**
Figures 9, 18, 26, 33, 49, 50, 64, 67.

Chariessa texana, Wolcott, 1908: 72. Holotype. Gender . Type locality: United States of America, Texas, Nolan County, Sweetwater (FMNH). Paratypes: Two, one of which has been located. United States of America, Texas, Nolan County, Sweetwater (FMNH)

Diagnosis. Specimens of this species are distinguished from those of the superficially similar *Chariessa pilosa* by the coloration of the pronotum, which is mostly red in *C. texana* and broadly red at the pronotal sides in *C. pilosa* specimens, Also, in *C. texana* specimens the pronotal arch shows two dark punctiform marks, which may coalesce and expand posteriorly. In *C. pilosa* specimens the pronotum always shows two black lines between which there is a narrow reddish line.

Redescription. *Size:* Length 12.0 mm; width 4.0 mm. *Form:* As in Fig. 49. Mouthparts, cranium, antennae, pterothorax, legs, and abdomen dark brown; pronotum sanguineous, disc with two black circular spots centrally located at the anterior margin; elytra black. *Head*: Funicular antennomeres progressively shorter and wider towards capitulum, capitulum longer than combined length of funicular antennomeres, capitular antennomeres 9 and 10 with collateral branch (Fig. 9, 18), antennomere 11 oblong, anterior margin sinuous; eyes small, frons wider than width of eye (EW/FW 15/35). *Thorax*: Pronotum (Fig. 26) quadrate (PW/PL 90/90), side margins with small tubercle, disc finely punctate; elytral asetiferous punctation small, profusely distributed throughout disc (EL/EW 260/60); protibial anterior margin spinous. *Abdomen*: Pygidium oblong/scutiform, deeply incised apically; 5th visible sternite emarginated; aedeagus (Fig. 64) poorly sclerotized ventrally; phallobasic lobes slightly developed, fimbriate, phallobasic rod long and narrow, phallobasic apodeme explanate at extremity; phallus with subapical sclerotization, phallic apex triangular/subacuminate.

Variation. Size: Length 6.0-17.0 mm; width 2.0-6.0 mm. There is polymorphism in the coloration of the elytra. I some specimens the epipleural and sutural margins are flavotestaceous. Further, the two spots on the pronotal arch may coalesce and expand posteriorly into a broad black streak.

Natural history. Specimens have emerged from a dead trunk of sugarberry [*Celtis laevigata* Willdenow (Cannabaceae)], from wood of the Oklahoma redbud [*Cercis reniformi* Engls. (Fabaceae)] infested with *Crysobothris analis* LeConte (Buprestidae), and from wood of the Texas cedar elm [*Ulmus crassifolia* Nutt. (Ulmaceae)]. These beetles were also captured on the persimmon *Diospyros texana* Scheele (Ebenaceae) and on a willow species of *Salix* Linnaeus (Salicaceae). They are attracted to light.

Distribution (Fig. 67). I examined 101 specimens from: **UNITED STATES OF AMERICA: Oklahoma;** Beaver County, near Wichita Road 26 m 30-IV-1968, J. C. Barlow: **Texas;** Uvalde County, Garner State Park, 22-24-VI-1961, R. L. Westcott; Kimble County, TTU Center Junction, 12-VI-1990, black light, J. A. Back; Harris County, 3 mi SW Westfield, 27-28-VI-1961, R. L. Westcott; Real County, 3 mi E Camp Wood, emerged from wood of *Cercis reniformis* infested with *Crysob analis* on 13-VII-1972, G. H. Nelson; *idem*, emerged from redbud infested with *Chrysob analis* and *Elaphidion* on 14-I-1972, G. H. Nelson; *idem*, emerged from redbud infested with *Chrysob analis* and *Elaphidion* on 22-I-1972, G. H. Nelson; Real County, 6 mi SE Leakey, 1-VII-1971, at light, G. H. Nelson; Williamson County, 30-V-1941, E. K. Waering; Williamson County, Florence, 30-V-1941, E. K. Wearing; Eastland County, 19-VI-1924, Grace O. Wiley; Gillespie County, 20-VI-?, D. J. & J. N. Knull; Jeff Davis County, Davis Mountains, 6-VII-?, J. N. Knull; Val Verde County, Pecos River, Hwy 90, 20-VI-1963, on leguminous shrub, G, H. Nelson & Family; Val Verde County, 13 mi W Comstock, 22-VI-1965, on *Diospyros texana*, G. H. Nelson; Jeff Davis County, Davis Mountains State Park, 18-20-VI-1979, F. Hovore; Val Verde County, 9 mi W Del Rio, 22-VI-1965, on *Diospyros texana*, G. H. Nelson; Val Verde County, 17-V-1982, E. G. Linsley; Val Verde County, 14-VI-1949, D. J. & J. N. Knull; Brown County, Brownwood, 21-26-VIII-?, J. N. Knull; Culberson County, Upper Dog Canyon, Guadalupe National Park, 19-VII-1975, J. V. Moody; Comal County, 19-V-1948, D. J. & J. N. Knull; Caldwell County, Luling, 30-VI-1972. J. Wappes; Uvalde County, 23-V-1948, D. J. & J. N. Knull; Bexar County, Jct Loop 1604 & Potranco Rd., emerged from trunk of dead *Celtis laevigata* on 4-IV-1999, T. C. MacRae & D. W. Sundberg; Babcock Rd. & Scenic Loop, near San Antonio, 11-VII-1986, on dead trunk of *Celtis laevigata* Sarg, G. H. Nelson; Leon Springs, 19-VI-1999, G. H. Nelson; East Southside Park, emerged from *Ulmus crassifolia* on ?-V-1989, D. J. Heffern; San Antonio, 4-VI-1975, uv light, M. Druckenbrod; Burnet County, 28-V-1964, K. Stephan; Potter County, Lake Meredith, McBride Canyon, 1-VI-1971, C. W. O'Brien; Taylor County, Abilene State Park, 17-VII-1982, Cicero; Kerr County, Kerrville, 22-IV-1959, Becker & Howden; Lake Corpus Christi State Park, 21-VI-1971, on *Salix*, G. H. Nelson; *idem*, 20-VI-1971, on *Salix*, G. H. Nelson; Stephens County, Clear Fork, Brazos River, Highway 183, 16-31-IV-1996, D. J. Haffern; Atascosa County, 8 miles NW Poteet, 11-17-VI-1999, J. E. Wappes; Comal County, Rittiman Ranch near Spring, Branch Oak, 3-5- IV-2003; Parker County, Weatherford, 6-XI-?, collector not noted; San Patricio County, Welder Wildlife Refuge, 17 km NE Sinton, 17-25-V- 1985, H. & A. Howden, C. Scholtz. Specimens are deposited in BYUC, CMNC, CMNH, CSUC, FMNH, FSCA, MCZC, TAMU, USNM, WFBM, and WOPC.

Notes. I examined 1558 specimens of *Chariessa pilosa* and 101 specimens of *C. texana*. The male genitalia of these two species are identical, but their pronotal coloration easily separated them, as does, to some extent, their geographic distribution. *Chariessa pilosa* extends from Texas to southern Canada, mostly east of the Rocky Mountains, whereas *C. texana* is known only from Texas and Oklahoma. Thirteen specimens from Texas present an intermediate condition of the pronotal color; the black punctiform spots on the pronotal arch extend posteriorly to reach the pronotal collar, and there is a faint red line in the middle of the dark discal line. I interpret these specimens as hybrids (Fig. 52) from a cross between *C. pilosa* and *C. texana*. They have been labeled: Hybrid, *Chariessa pilosa*/*Chariessa texana*.

***Chariessa vestita* (Chevrolat), 1835**
Figures 16, 17, 29, 51, 65, 70.

Brachymorphus vestitus Chevrolat, 1835: 150. Lectotype. Gender not known. Type locality: Mexico (MNHN). Corporaal 1950: 277. Opitz, 2014: 25. Chevrolat did not specify as to the number of specimens that were involved in his description. Therefore, I invoke Recommendation 73F of the ICZN (1999) and designate a lectotype for this nominal species
Corynetes spectabilis Laporte, 1836: 50.

Diagnosis. Specimens of this species are distinguished from congeners by the subrotund hind body and by the two patches of black setae at the middle of the blue elytral disc.

Redescription. *Size:* Length 13.0 mm; width 7.0 mm. *Form:* As in Fig. 51. Mouthparts, cranium, prosternum, pterothorax, legs, and abdomen testaceous; antenna bicolorous, capitulum black, remainder testaceous; pronotum black, profusely vested with white setae; elytra black, with a blue luster, profusely vested with white setae, but with two large spheroid patches of black setae. *Head*: Funicular antennomeres progressively shorter and wider towards capitulum, capitulum longer than combined length of funicular antennomeres, capitular antennomeres 9 and 10 with collateral branch (Fig. 16, 17), antennomere 11 oblong, anterior margin sinuous; eyes small, frons wider than width of eye (EW/FW 20/43). *Thorax*: Pronotum (Fig. 29) slightly transverse (PW/PL 115/110), side margins evenly arcuate, disc finely punctate; elytral asetiferous punctation small, profusely distributed throughout disc (EL/EW 260/105; protibial anterior margin spinous. *Abdomen*: Pygidium transverse/scutiform; aedeagus (Fig. 65) poorly sclerotized ventrally; phallobasic lobes slightly developed, fimbriate, phallobasic rod long and briefly bifid distally, phallobasic apodeme explanate at extremity; phallus with subapical sclerotization, phallic apex broad/triangular, phallic plates broad.

Variation. Size: Length 7.0-12.0 mm; width 4.0-7.0 mm.

Natural history. Specimens have been reared from the Texas cedar elm (*Ulmus crassifolia* Nutt.(Ulmaceae)], from the wood of the mesquite *Prosopis juliflora* (Sw.) DC. (Fabaceae), and emerged from a stalk of a grapevine [*Vitis* Linnaeus (Vitaceae)] infested with the red-headed ashborer [*Neoclytus acuminatus* Fabricius (Cerambycidae)]. They have also been collected on a species of blue wood [*Condalia* Cav. (Rhamnaceae)].

Distribution (Fig. 70). I examined 155 specimens from: **UNITED STATES OF AMERICA: Texas;** Hidalgo County, Mount View Acres, Ebony Hill, Research station, 22-V-1979, Roy O. Kendall & C. A. Kendall; Bentsen, Rio Grande State Park, emerged from *Prosopis* wood on 21-XII-1975, R. Turnbow; Santa Ana National Refuge, 8-9-V-1978, N. M. Downie; Bentsen State Park, ?-?-1977, reared from Cedar Elm, J. E. Wappes; *idem*, emerged from wood of cedar elm /-I-1977, J. L. Wappes; Wallacey County, N Raymondville, 26-V-1979, N. M. Downie; Live Oak County, 10 mi NE Geo. West.4-IV-1980, N. M. Downie; San Patricio County, lake Corpus Cristi State park, 26-27-IX-1976, J. E. Wappes; 2-5 m, N Sinton, 18-23-X-1978, N. M. Downie; Nueces County, Lake Corpus Christi, 24-III-1963, D. J. & J. N. Knull; *idem*, 22-III-1954, D. J. & J. N. Knull; Lake Corpus Christi State Park, 8-IV-1972, on *Acasia farpesiana*, G. H. Nelson; Live Oak County, 17 mi SW Geo. West, 23-V-1982, on *Condalia*, Marlin E Rice; Kenedy County,

7 mi S. Sarita, ?-V-1994, ex *Vitis* infested with *Neoclytus acuminatus,* D. Heffern; Bexar County, San Antonio, 14-XI-1985, D. W. Sundberg; Leon Valley, emerged from woof of *Prosopis juliflora* (Sv.) DC. on 14-VI-1979, G. H. Nelson; San Patricio County, Lake Corpus Christi State Park, 12-V-1977, slash pile, R. L. Penrose; Goliad County, Goliad State park, 17-18-V-1980, R. L. Penrose; Wilson County, Floresville, 8-V-1996, J. Hill; Galveston County, Texas City7-VIII-1997, on Arizona ash, Quinton; Karnes County, Ecleto, Metz Ranch, 17-IV-1997, J. E. Wappes; Harris County, by W. Houston Airport, ?-IV-1992, D. J. Heffern; Atascosa County, Junction Highway 97 & FM 1784, 3-V-1992, D. J. Heffern; Dimmit County, Chaparral V. M. A., 9-10-IV-1977, T. Friedlander; Bastop County, Bastop, 3-VI-1997, S. G. Wellso; Live Oak County, 5 miles NE G. West, 30-V-1979, J. E. Wappes; Zapata County, San Ygnacio, 18-III-1994, at light, W. F. Chamberlain; Travis County, Austin, ?-VI-2014, M. Quinn; Aransas County, Fulton, 17-IV-2006, R. L. Klopshinske; Kenedy County, 7 miles S Sarita, emerged from *Vitis* infested with *Neoclytus acuminatus* on 1-15-VII-1994, D. J. Heffern; Frio County, 13-III-1933, collector not noted; Guadalupe County, Cibolo Creek4-IV-1986m D. V. Sundberg. **MEXICO: Chiapas;** 35 miles Sw Cintalapa11-VII-1971, Clark, Murray, Hart, Schaffner: **Michoacán;** 22 mi SE Huetamo, 9-VII-1970, E. Fisher & P. Sullivan: **Oaxaca;** Temescal, 3-VI-1964, D. H. Janzen; *idem*, 2-V-1964, D. H. Janzen: **Tamaulipas;** Rio Corona, 18 mi N Ciudad Victoria, 3-VI-1978, Gyllaspy & Party; Nacimiento del Rio Frio, 30-III-1983, Gillespy & Lara; Ciudad Victoria, 20-VIII-1921, H. S. Dybas; Oaxaca; Temascal, 3-VI-1964, D. H. Janzen: **Quintana Roo;** Hwy 286, 17 km W jct.. 307, 31-V-1984, R. Turnbow; N Nuevo Villadolid, 1-7-VI-2014, J. Cope; 26 km S Tulum, 25-28-V-2003, J. Cope; 5 km S Tulum, 26-V-2000, J. Cope: **Nayarit;** Bucerías, 8-VI-1983, on *Acasia*, W. F. Barr; Durango, 103 mi W El Salto, 20-VII-1952, J. D. Lattin; Chiapas, Simojovel, 1-16-VIII-1958, J. A. Chemsak; Chiapas, Santo Domingo, 15 mi SE Simojovel, 8-15-VII-1958, J. A. Chemsak: **Yucatán;** 3 km NW Macario Gomez, 4-VI-1992, F. Hovore; Nayarit, Punta Mita, 11-VI-1983, beating *Prosopis*, W. F. Barr. **GUATEMALA. EL SALVADOR: La Libertad**; 10 km E La Libertad, 3-V-1971, H. F. Howden. **NICARAGUA: Managua**; San Ramón Tecuantepe, collection date and collector not noted; El Carmen Ocotal, 3-V-1960, Sandoval; Managua, 18-VI-1961, Livid Saenz. **COSTA RICA: Puntarenas;** San Luis Valley, 1-VII-1989, F. Hovore; Monteverde, 27-I-1998, F. T. Hovore; Manuel Antonio National Park, 28-VII-1990, Frank Hovore; 4 KW NW Santa Elena, 12-14-V-1999, Jim Cope: **Limón** (near)**;** Valle de la Estrella, Pandora, 17-20-XII-1984, H. & A. Howden; Waldeck Farm, 7-IV-1930, F. Nevermann; Hamburg Farm, Revantazon, 9-VIII-1929, F. Nevermann: **Guanacaste;** 3 km N Cañas, Hacienda La Pacifica, 9-11-VIII-1987, 90 m, H. & A. Howden; 25 km SE Cañas, 26-V-1979, 150 m, J. M. & B. A. Campbell; La Pacifica, 31-V-1992, blacklight, F. Andrews & A. Gilbert; Finca Jenny, 80 km N Liberia, Parque Nacional, ?-?-1990, Malaise trap; 25 km SE Cañas, 26-V-1979, J. M. Campbell; Santa Clara, Las Mercedes, 100 m, 12-VI-1928, F. Nevermann. **VENEZUELA.** Specimens are deposited in: BYUC, CASC, CMNC, FMNH, FSCA, TAMU, USNM, WFBM.

Notes. Corporaal (1950) lists Brazil as a locality for this species. This location for *C. vestita* is unconfirmed.

Zoogeographic Considerations

Five maps (Fig. 66-70) depict the approximate geographic distribution of the species of *Chariessa*. These maps show a generalized dichotomy in distribution that coincides with two major phylogroups in the hypothesized phylogeny (Fig. 44). In general, the texana-catalina lineage (descendents of progenitor D; Fig. 44) is found in more northern portions of the 30° Meridian, north of the Tropic of Cancer, whereas the duponti-ramicornis lineage (descendents of progenitor C; Fig. 44) shows a more southern distribution. The extant distribution and the evolution of the northern components were undoubtedly greatly influenced by oscillating climate events during the Pleistocene. As has been suggested by various authors (Rand 1948; Howden 1969: 43; Vuilleumier 1971: 771; Delcourt and Delcourt 1981: 145; Bartlein and Prentice 1989: 196; Knowles 2000: 1337), Pleistocene southern glacial movements had a dramatic effect on the distribution of vegetation and their associated animal fauna.

Of particular interest is the southwestern pattern of distribution of four species in the texana-catalina lineage and the autochthonous *C. floridana* from the Floridian Key Largo (Fig. 67). In contrast, the other species in the lineage, *C. pilosa*, is widely distributed in the United States and Canada with

only limited occurrence in the southwest (Fig. 66). It is postulated that the distributions of *C. catalina*, *C. dichroa*, *C. elegans*, and *C. texana* reflect Quaternary speciation events, an evolution from an ancestor that was pushed southward during the cooling periods generated by the intrusions of various Pleistocene glaciers. These species essentially evolved, and currently live, under southern relictual conditions, not able to compete with more widely, more northerly distributed *C. pilosa*. This scenario implies recent, probably Pleistocene, speciation among the species of the texana-catalina lineage, events that seem to coincide well with the findings of Rand (1948: 320). However, Bartlein and Prentise (1989: 198) and Knowles (2000: 1346) posit that the frequency of Pleistocene glacial cycles may not have provided sufficient time for speciation events to take place; which may provide an explanation for the existence of the purported *C. pilosa*/*texana* hybrids. Conversely, Stuart et al. (2014: 466) provide conclusive evidence for the hypothesis that, "interactions between closely related species are an important force for evolutionary diversification", and can promote rapid evolution. This seems an important consideration for explaining the Pleistocene diversification among the species of the texana-catalina lineage, whose proximity with competing closely related species taxa, within Pleistocene refugial terrains, was undoubtedly assured by the southern migration of *C. pilosa, C. dichoroa,* and *C. elegans*, during the various north to south glacial movements. The idea that Pleistocene glaciations caused rapid speciation in southern refugia coincides well with the known distribution of *C. floridana.* The latter exist only in the Floridian Key Largo, whose paleohistory involves terrestrial habitation earlier than 125,000 years ago, up to which time the Floridian Keys were totally inundated (Jones 1997: 116).

Another distributional point of interest is presented by the presence of *C. pilosa* on both sides of the Rocky Mountains (Fig. 66). It is probable that this distribution pattern does not reflect a trans-mountain dispersal, but a migration to the western slopes across the Wyoming Corridor (Smith and Chiszar 1996: 28).

There is considerable morphological diversity among the three more-southern species, those represented in the duponti-ramicornis lineage, which suggest a pre-Pleistocene history, perhaps during the middle Tertiary, when closures of the Middle American (Opitz 2005: 97) portals and orogenic events of the South American Andes influenced Central and South American distributions and speciation. More distributional records of these three species are needed for a more detailed zoogeographic analysis.

Phylogenetic Interpretations

My current understanding of the phylogenetic relationships for *Chariessa* species are depicted in Fig. 44 and are based strictly on adult external morphology. The phylogeny was computer generated via NONA (Goloboff 2003) in concert with Winclada version 1.00.08 (Nixon 2002). The analysis yielded one parsimonious tree with the following steps and confidence indices: L= 11; Ci= 100; and Ri = 100. A subapical sclerotization on the phallus is the basis for considering *Chariessa* to comprise a monophyletic group. Morphological analysis, the canons of Hennigian phylogenetics, and the suggested phylogenetic outcomes leads me to predict that the ancestor of the *Chariessa* species (ancestral species B) was characterized as follows: Antennae comprised of 11 antennomeres, antennomeres 9 and 10 with collateral branch, eyes comprised of small ommatidia, pronotal side margins with small tubercle, elytral disc sculptured with small asetiferous punctures, elytra not flared, and phallus with subapical sclerotization. This ancestor probably existed in South America, where today we find the more primitive members of the genus (*C. ramicornis* and *C. vestita*). The presence of *C. vestita* in more numerous northern latitudes is considered a manifestation of collecting bias.

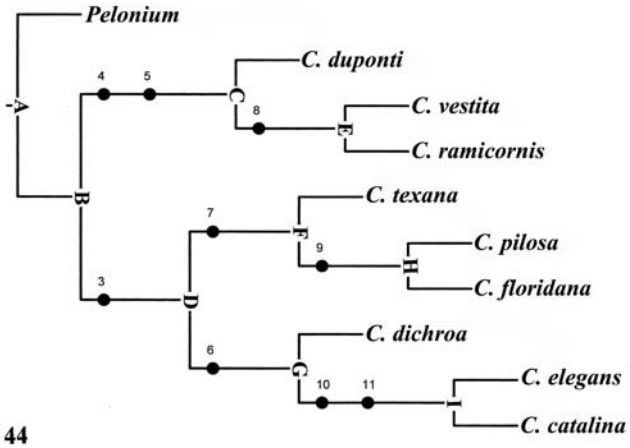


Figure 44. Hypothesized phylogenetic tree for *Chariessa* species.

Ancestral species B generated two major lineages, stemmed by progenitors C and D. In the former the pronotum remained unicolorous, the elytra became flared, and the pronotal side margins became evenly rounded. In ancestor D, the pronotum became bicolorous, the elytra remained its sub-rectangular shape, and the pronotal side margins retained a slight tubercle. Ancestral species C diversified into *C. duponti* and progenitor E, in which the elytral ground color became blue; as it is found in its progeny species *C. vestita* and *C. ramicornis*. Progenitor D, very likely of southwestern USA origin, generated ancestral species F and G. Ancestor F, in which the male pygidium became emarginated, subsequently evolved *C. texana* and progenitor H. The latter evolved a striped pronotum and subsequently produced *C. pilosa* and *C. floridana*. The further evolution of ancestor G produced *C. dichroa*, whose populations apparently flourished west of the Continental Divide, and progenitor I, in which the legs became bicolorous and the pronotal collar infuscated. Finally, ancestral species I evolved into the southwestern species *C. elegans* and *C. catalina*.

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I thank the curators listed in the "Repositories of specimens" section for entrusting me with specimens in their charge. I have benefited greatly from discussions with William L. Grogan, Jr., Louis Somma, and Michael C. Thomas about historical North American biogeography. The reviews of Lionel Stange and Michael C. Thomas are much appreciated. My wife Galena provided much support in her Montage and SEM activities. My thanks to Paul E. Skelley for many departmental courtesies.

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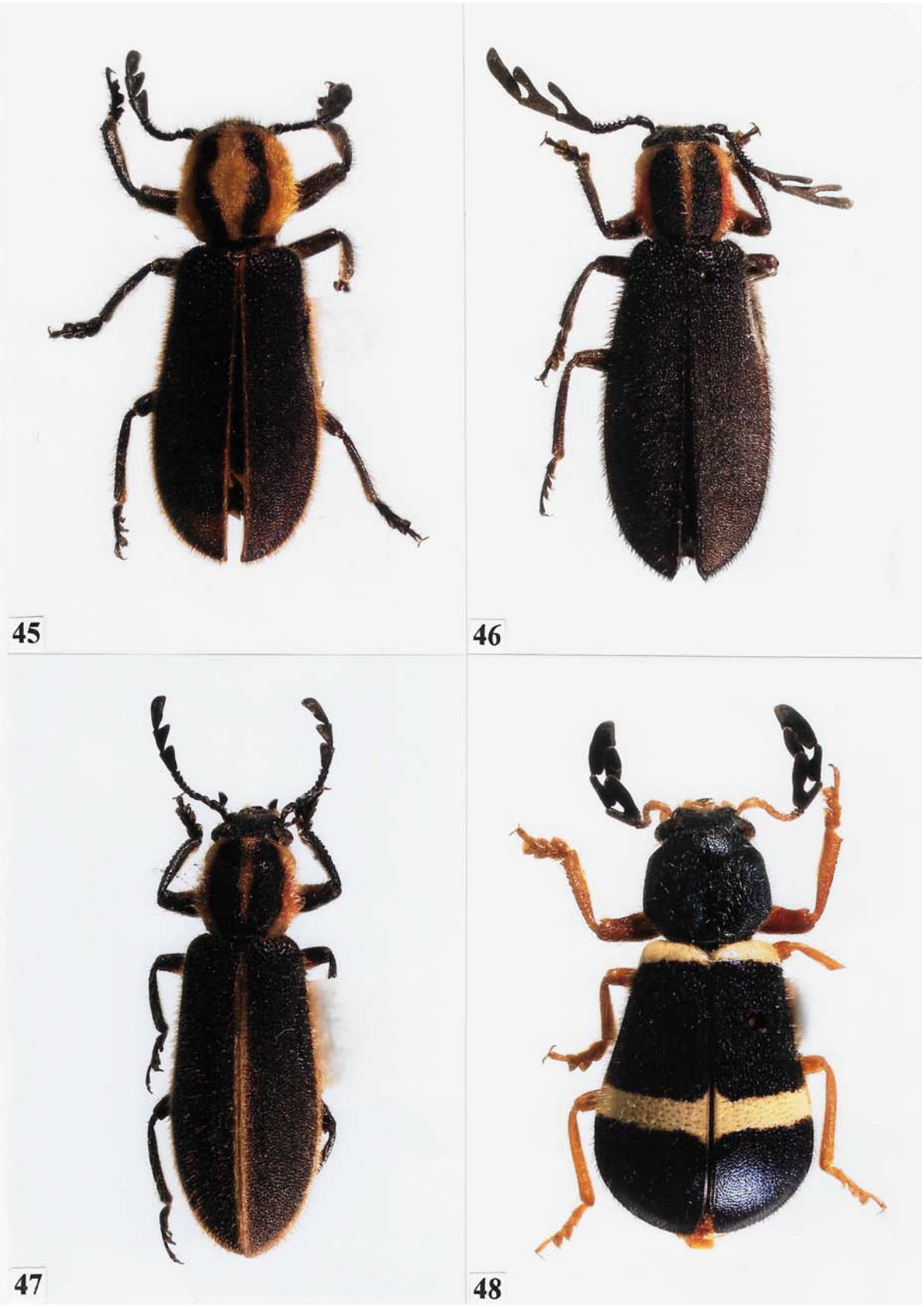
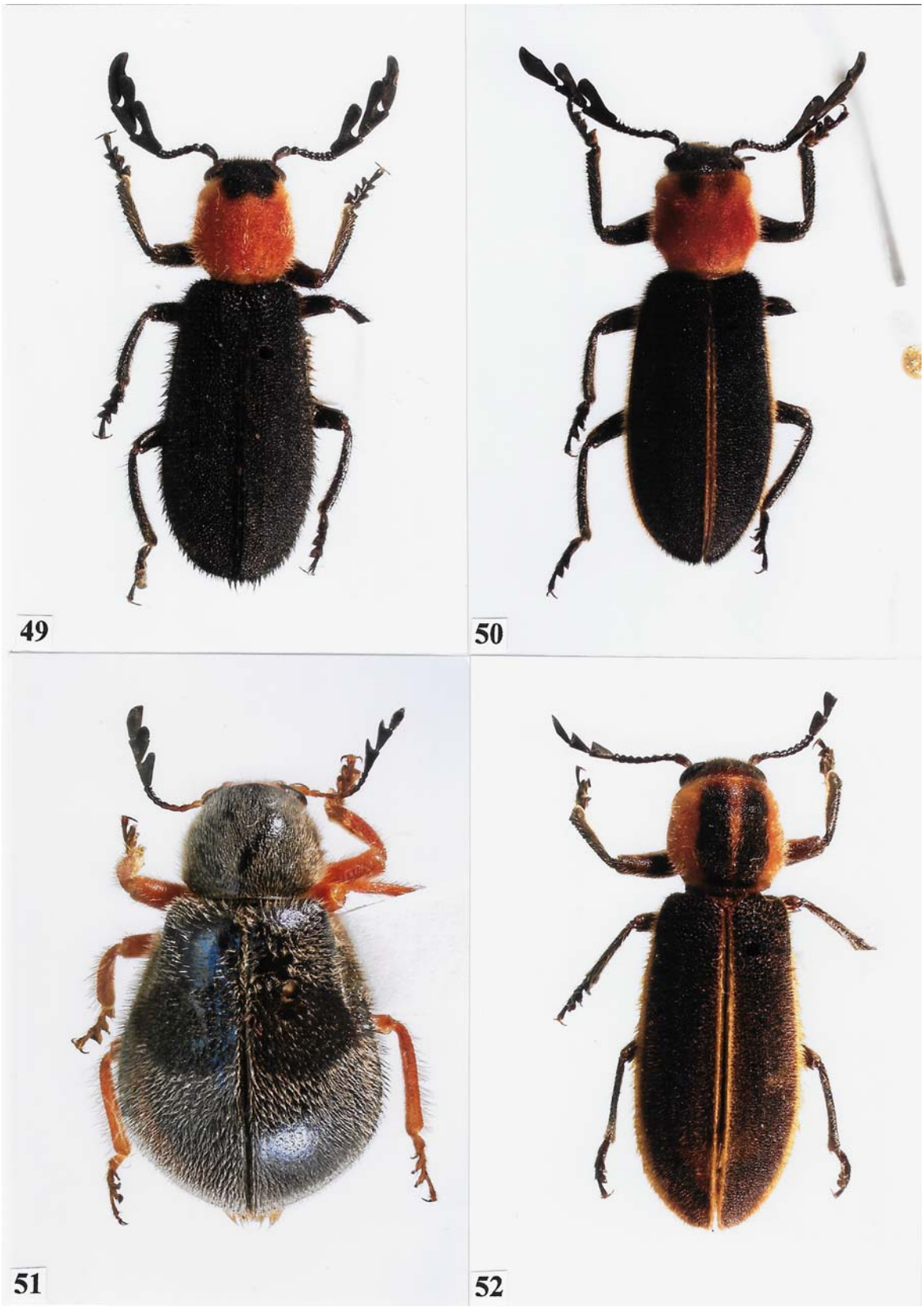
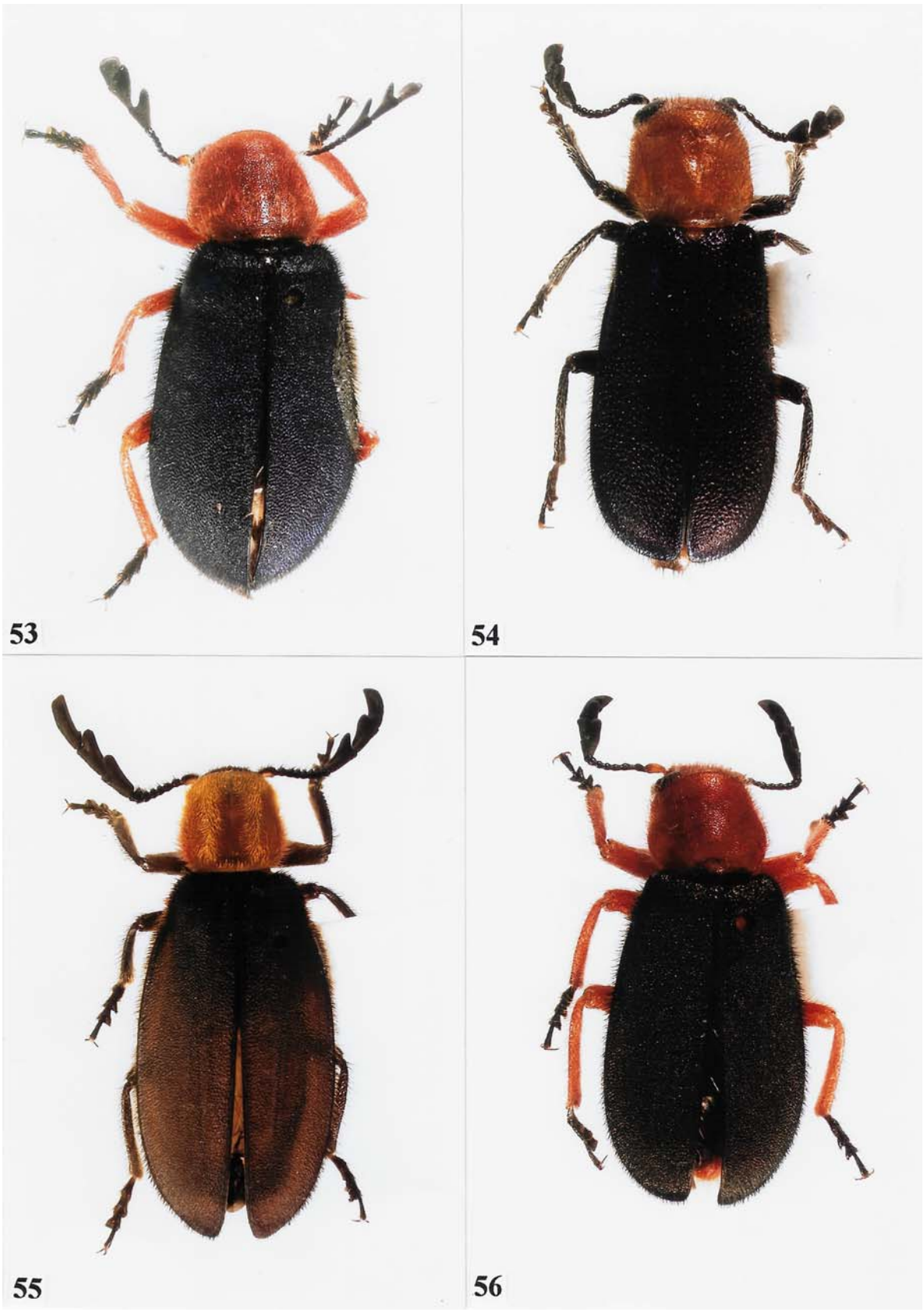


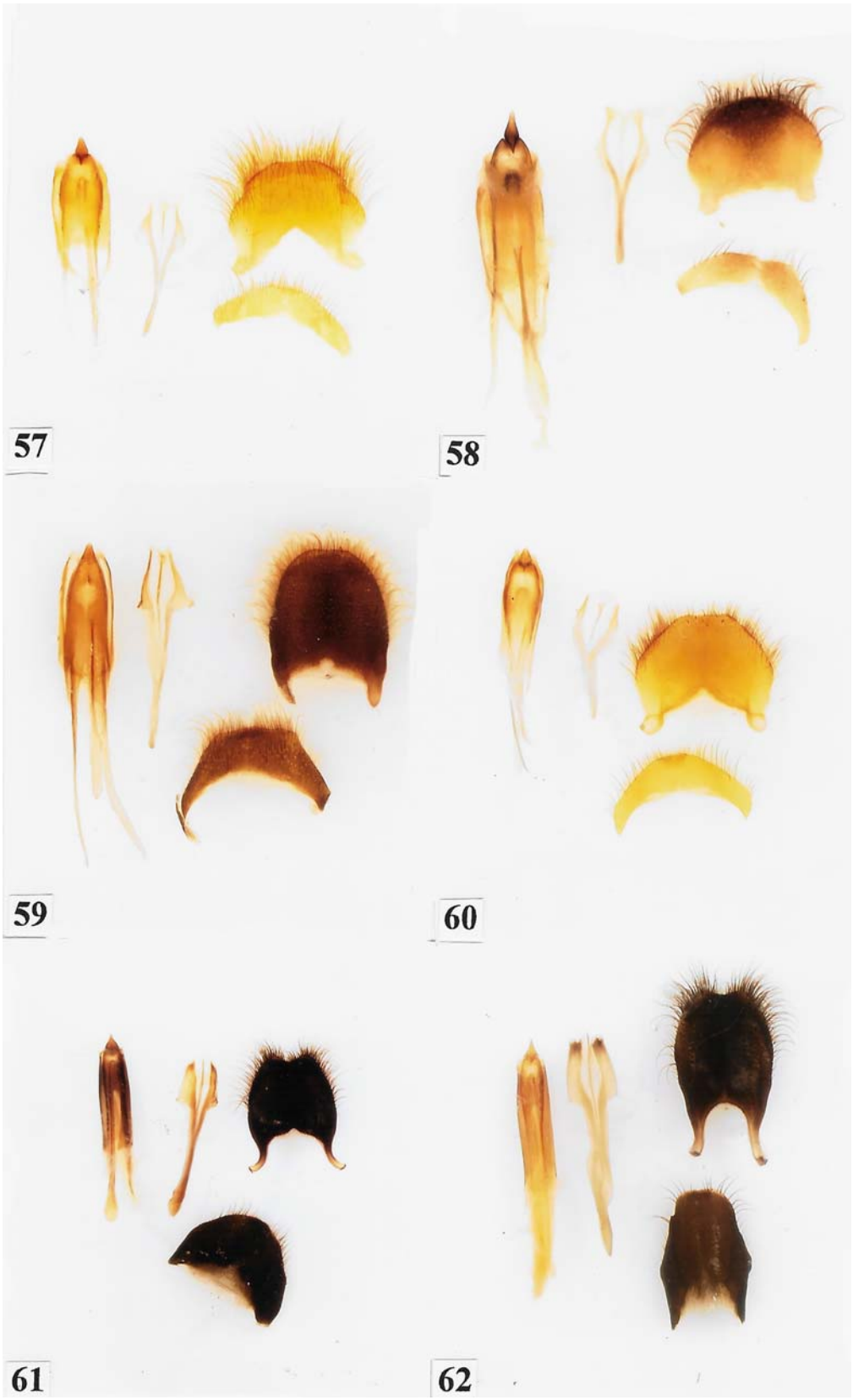
Figures 45-48. Habitus of *Chariessa* spp. **45)** *Chariessa floridana.* **46)** *C. pilosa.* **47)** *C. pilosa.* **48)** *C. ramicornis.*



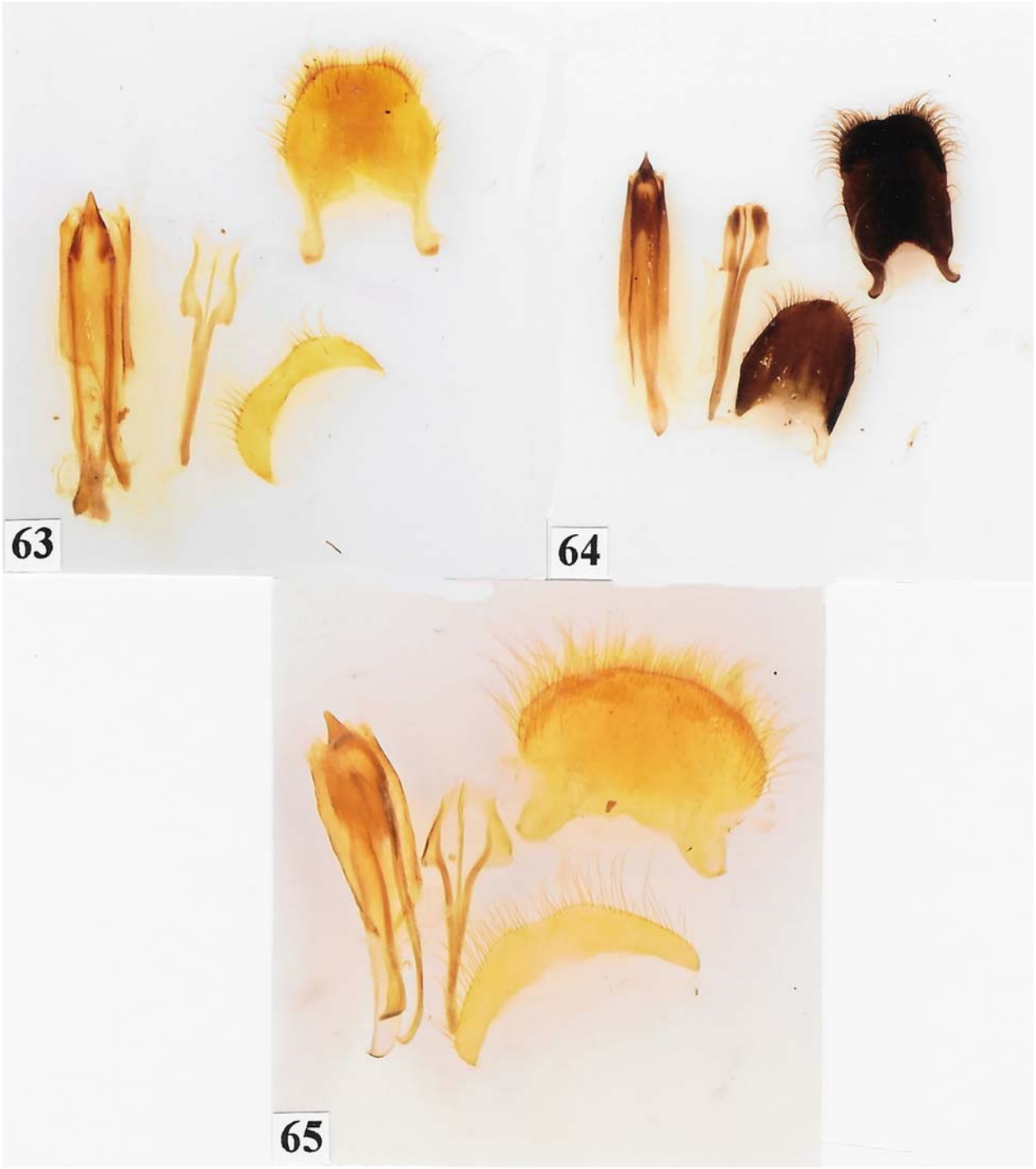
Figures 49-52. Habitus of *Chariessa* spp. **49)** *Chariessa texana*. **50)** *C. texana*. **51)** *C. vestita*. **52)** *C. pilosa*/*texana* hybrid.



Figures 53-56. Habitus of *Chariessa* spp. **53)** *Chariessa catalina.* **54)** *C. dichroa.* **55)** *C. duponti.* **56)** *C. elegans.*



Figures 57-62. Male genitalia and aedeagi. **57)** *Chariessa catalina*. **58)** *C. dichroa*. **59)** *C. duponti*. **60)** *C. elegans*. **61)** *C. floridana*. **62)** *C. pilosa*.



Figures 63-65. Male genitalia and aedeagi. **63)** *Chariessa ramicornis*. **64)** *C. texana*. **65)** *C. vestita*.

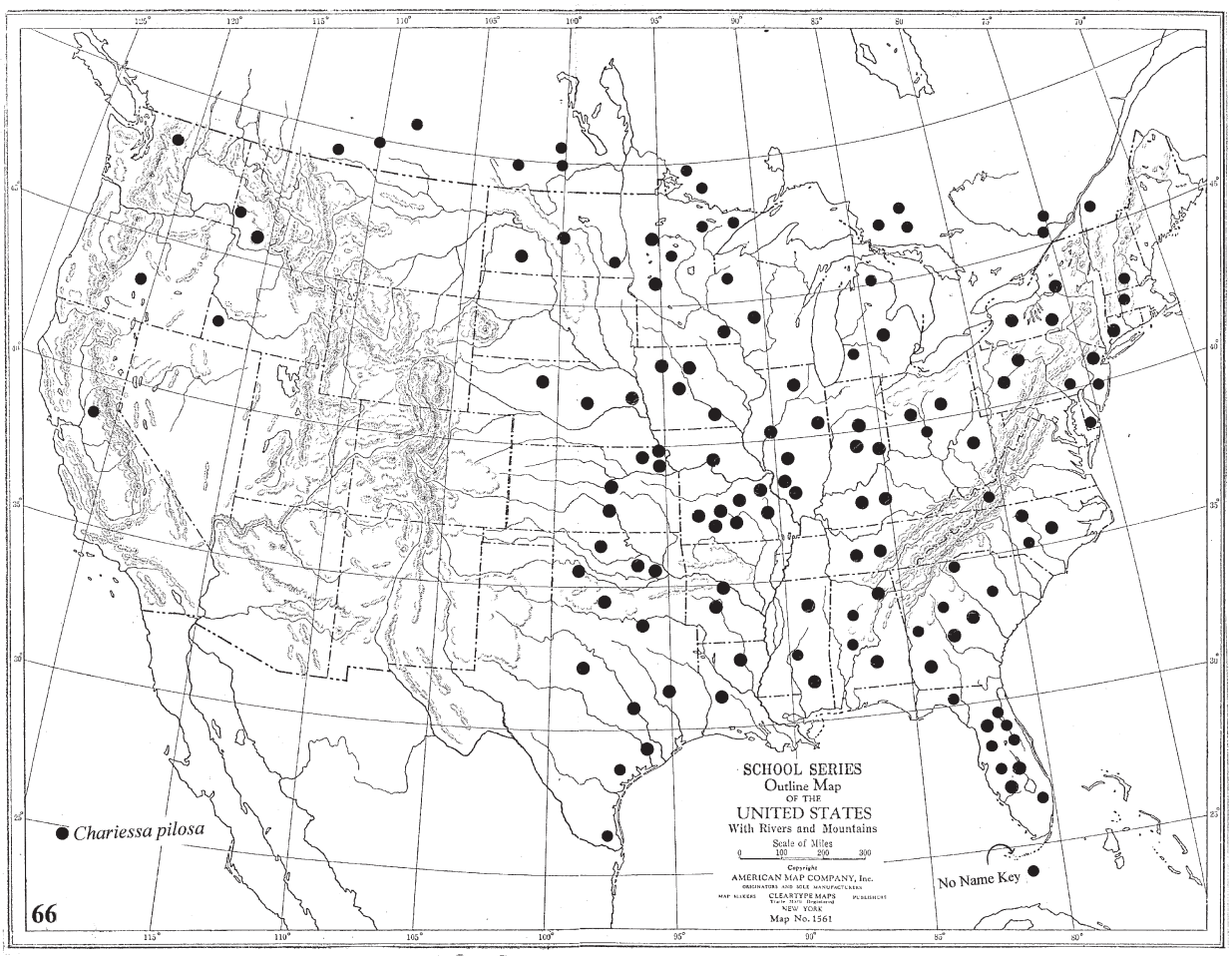


Figure 66. Geographical distribution of *Chariessa pilosa*.

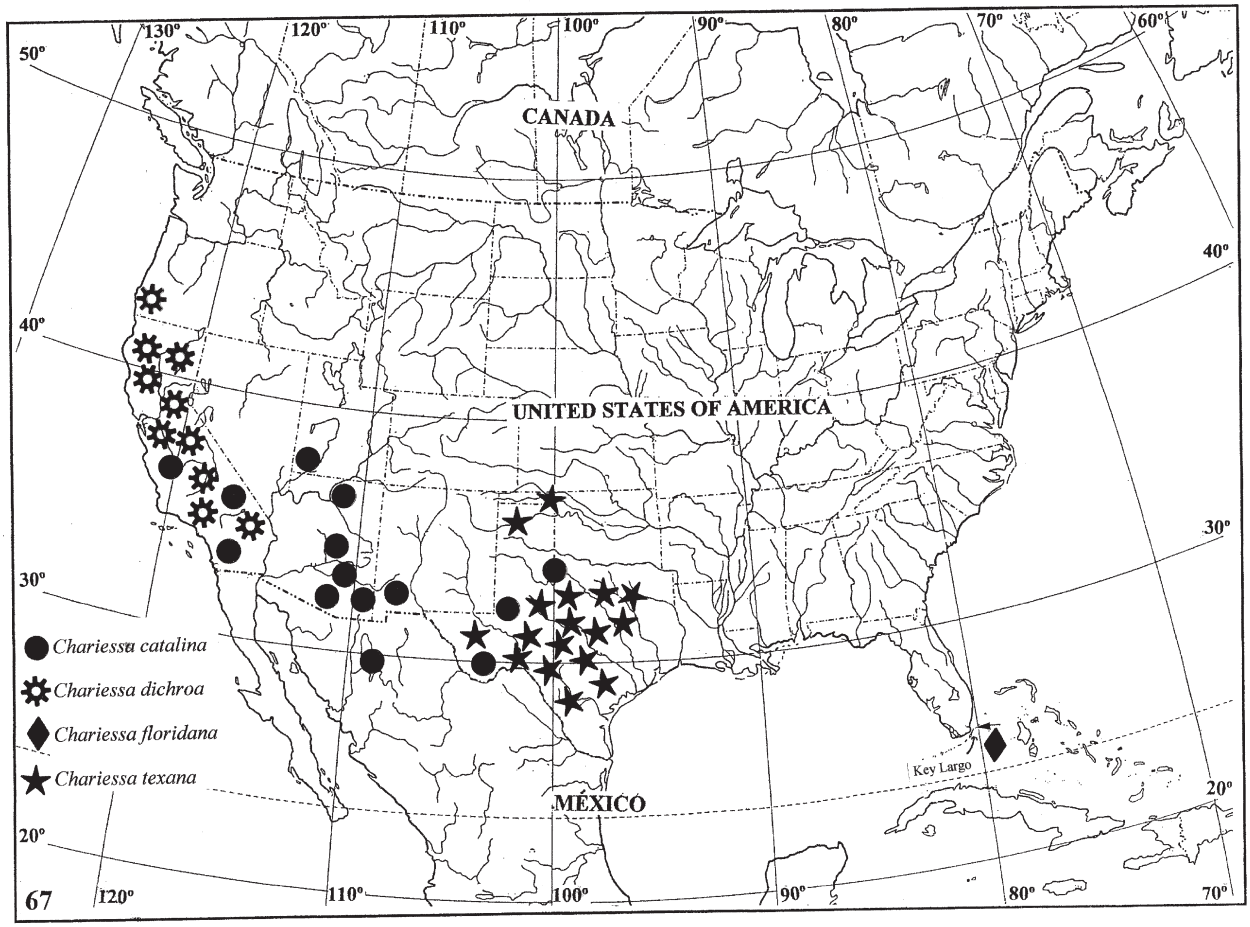


Figure 67. Geographical distribution of *Chariessa* species as noted.

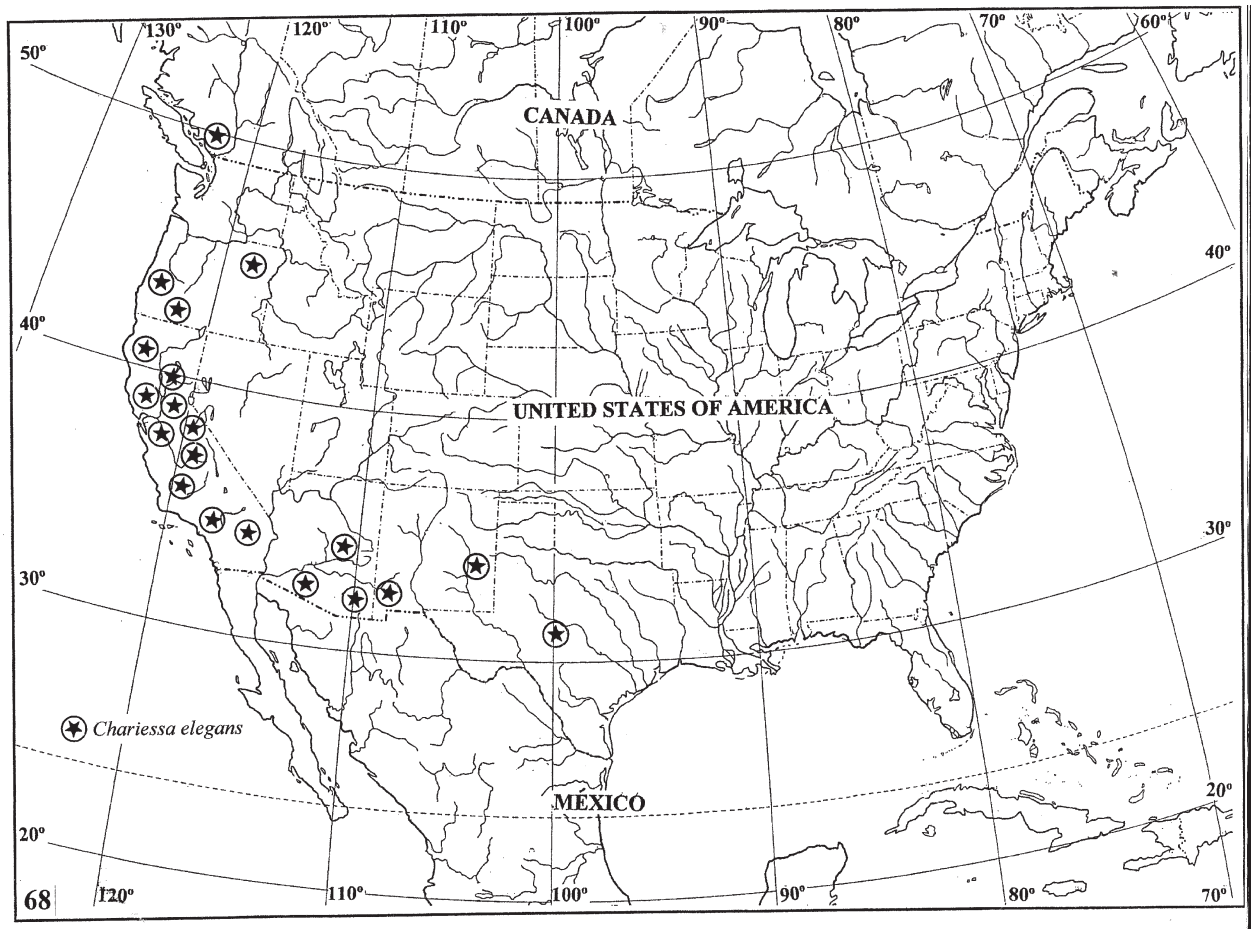


Figure 68. Geographical distribution of *Chariessa elegans*.

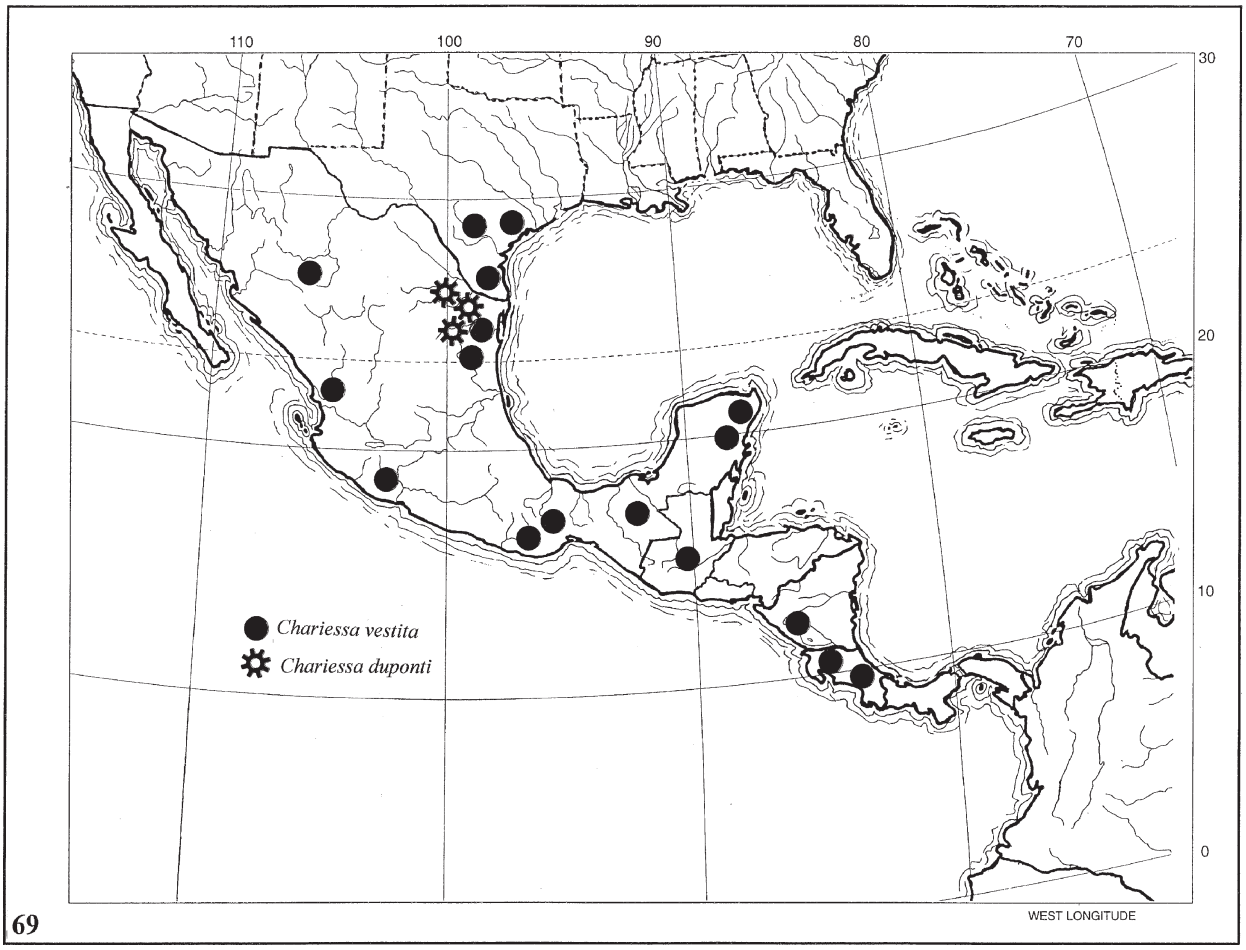


Figure 69. Geographical distribution of *Chariessa* species as noted.

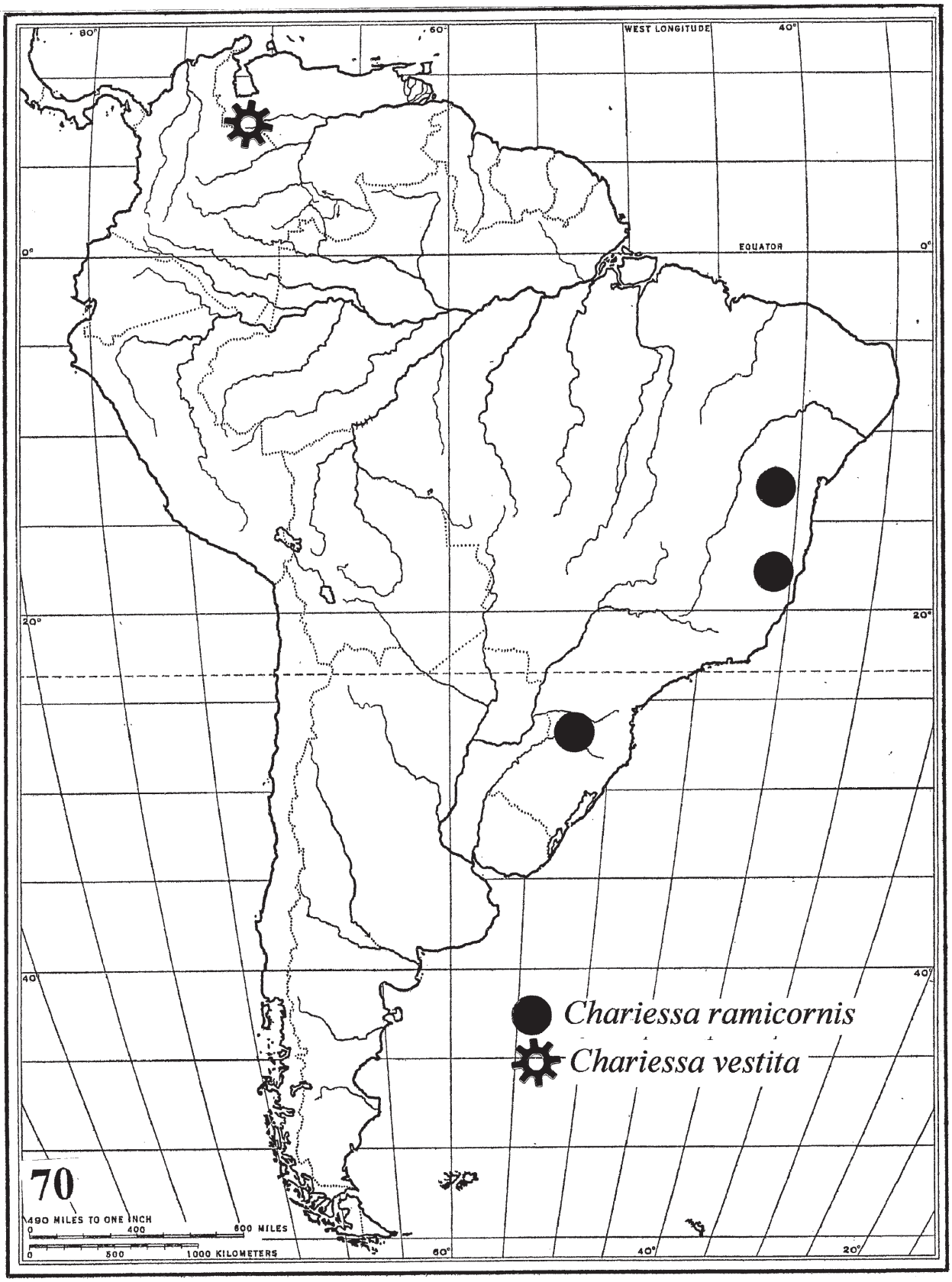


Figure 70. Geographical distribution of *Chariessa* species as noted.