2015

A Monographic Revision Of The Genus *Hoplopyga* Thomson, 1880 (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini)

Jennifer M. Shaughney
University of Nebraska-Lincoln, jenshaughney@gmail.com

Brett C. Ratcliffe
University of Nebraska-Lincoln, bratcliffe1@unl.edu

The Coleopterists Bulletin, 69(4): 579–638. 2015.

A Monographic Revision of the Genus *Hoplopyga* Thomson, 1880 (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini)

Jennifer Marie Shaughney
Systematics Research Collections
W436 Nebraska Hall, University of Nebraska
Lincoln, NE 68588-0514, U.S.A.
Current address:
New Mexico State University Arthropod Museum
945 College Avenue, MSC 3BE, P.O. Box 30003
Las Cruces, NM 88003-8003, U.S.A.
jenshaughney@gmail.com

AND

Brett C. Ratcliffe
Systematics Research Collections
W436 Nebraska Hall, University of Nebraska
Lincoln, NE 68588-0514, U.S.A.
bratcliffe1@unl.edu

Abstract

A comprehensive revision of the genus *Hoplopyga* Thomson, 1880 is presented. Eighteen species are redescribed, and two new species are described. A key for identification, distribution maps, and images of the 20 species are provided. *Hoplopyga ruteri* Antoine is removed from the genus and placed in junior synonymy with *Macrocranius similis* Schürhoff. Lectotypes are designated for *Hoplopyga brasiliensis* (Gory and Percheron), *Hoplopyga corumbana* Schürhoff, and *Hoplopyga multipunctata* (Gory and Percheron). The following **new synonymies** are established: *Hoplopyga lucidiventris* (Thomson) is *Hoplopyga foeda* (Schaum); *Hoplopyga spurca* (Janson) is *Hoplopyga liturata* (Olivier); *Hoplopyga monacha* (Gory and Percheron) and *Hoplopyga rubida* (Gory and Percheron) are *Hoplopyga singularis* (Gory and Percheron). *Hoplopyga pseudomiliaris* Shaughney and Ratcliffe from Guatemala and *Hoplopyga riparia* Shaughney and Ratcliffe from Peru and Brazil are described as **new species.**

Key Words: taxonomy, nomenclature, scarab beetles, fruit beetles, Neotropics

---

The Cetoniinae (Coleoptera: Scarabaeidae) is an attractive subfamily of scarab beetles known as the fruit beetles or flower chafers. Notable among the 12 cetoniine tribes recognized by Krikken (1984) are the Gymnetini, distinguished by having a scutellum that is partially or entirely obscured by the extended basomedian lobe of the pronotum. The Gymnetini are abundant in the New World and vary widely in color, sculpturing, and pattern throughout their range from the central United States to Argentina (Ratcliffe and Deloya 1992). The most recent checklists include 24 genera (Krikken 1984), 25 genera (Hardy 1975), or 27 genera (Krajcik 1998) in the New World Gymnetini, but taxonomic resolution is complicated by the extreme intraspecific diversity and lack of consistent, shared character states among both genera and species. Revisions of the New World Gymnetini genera have been largely completed by Ratcliffe and Deloya (1992) and Ratcliffe (2013, 2014, 2015), but further revisionary work must be done in the genus *Gymnetis* MacLeay (*sensu lato*) to define species limits. The biology of most species remains unknown, and this valuable information may never be discovered if habitats are eradicated before life histories are fully understood.

Thomson (1880) created the genus *Hoplopyga* along with six other gymnetine genera after purchasing a large collection of cetoniine specimens. In the same work, he named *Gymnetis marginesignata* Gory and Percheron as the type species and moved six additional species into the genus. He distinguished *Hoplopyga* as having the elytral apices prolonged into spines and a mesometasternal process that is short, flat, and with a rounded apex. However, these characters are manifested in varying degrees by *Hoplopyga* species as well as by species in other gymnetine genera. Thomson also noted that males of this genus possess protibiae that are "unarmed" or without teeth. This is another inconsistent character, because the males of most *Hoplopyga* species possess bidentate or tridentate protibiae with teeth that

become worn down over time. Schoch (1895b) addressed Thomson's vague generic description and provided a key to the genus (which he misspelled as *Holopyga*), as well as descriptions for six species. Schoch (1895a) transferred two species from *Gymnetis* to *Hoplopyga* and described *Holopyga* [*sic*] *multiguttata*, a species that was later synonymized with *Hoplopyga multipunctata* (Gory and Percheron, 1833). There is currently no key available for identification of *Hoplopyga* species, and there has been no comprehensive revision of this genus. Schoch (1896), Schenkling (1921), Blackwelder (1944), and Krajcik (1998) provided checklists of *Hoplopyga* species, but these checklists contain incorrect nomenclature and are incomplete, since several new species were recently described by Antoine (1998, 2008) and Ratcliffe (2012). The most recent checklist contained 23 species in the genus (Schoolmeesters 2014).

Material and Methods

Morphological species limits and geographical distributions for each species were determined by examining 6,747 *Hoplopyga* specimens from numerous museum and private collections as well as specimens obtained during numerous collecting trips to the Neotropics by BCR. The collections are listed below along with the corresponding acronym from Arnett *et al.* (1993) or an *ad hoc* acronym if not listed in that work. When applicable, the name of the curator or collections manager who provided specimens or data is listed in parentheses.

ADMC Alan Mudge Collection, Jefferson, OR, USA

AMIC Antonio Martínez Collection (then at Salta, Argentina, currently at CMNC) (A. Martínez, deceased)

AMNH American Museum of Natural History, New York, NY, USA (Lee Herman, Jr.)

BCRC Brett C. Ratcliffe Collection, Lincoln, NE, USA

BMNH The Natural History Museum, London, UK (Malcolm Kerley, Max Barclay)

CASC California Academy of Sciences, San Francisco, CA, USA (Norman Penny)

CMNC Canadian Museum of Nature, Ottawa, ON, Canada (François Génier, Robert Anderson)

CMNH Carnegie Museum of Natural History, Pittsburgh, PA, USA (John Rawlins, Robert Davidson)

CNCI Canadian National Collection of Insects, Ottawa, ON, Canada (Patrice Bouchard, Serge Laplante)

CUIC Cornell University Insect Collection, Ithaca, NY, USA (James Liebherr)

CZUG Universidad de Guadalajara, Guadalajara, Mexico (José Luis Navarrete-Heredia)

DCCC David C. Carlson Collection, Fair Oaks, CA, USA

DEIC Senckenberg Deutsches Entomologisches Institut, Müncheberg (formerly in Eberswalde), Germany (Lothar Zerche, Stephan Blank)

EAPZ Escuela Agrícola Panamericana (now Panamerican Agricultural University), El Zamorano, Honduras (then Ronald Cave)

EGRC Edward Riley Collection, College Station, TX, USA

EMEC Essig Museum of Entomology, University of California, Berkeley, CA, USA (Cheryl Barr)

FMNH Field Museum of Natural History, Chicago, IL, USA (Margaret Thayer)

FSCA Florida State Collection of Arthropods, Gainesville, FL, USA (Paul Skelley, Michael Thomas)

HAHC Henry and Anne Howden Collection, Ottawa, ON, Canada (now at CMNC)

HNHM Hungarian Natural History Museum, Budapest, Hungary (Otto Merkl)

INBC Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica (Angel Solís)

INPA Instituto Nacional da Pesquisas da Amazonia, Manaus, Amazonas, Brazil (Claudio Ruy da Fonseca)

JDGC John D. Glaser Collection, Baltimore, MD, USA (now at CMNH)

JEWC James Wappes Collection, San Antonio, TX, USA

JMMC Jean-Michel Maes Collection, León, Nicaragua

KSUC Kansas State University, Manhattan, KS (then Kyle Schnepp)

LACM Los Angeles County Museum of Natural History, Los Angeles, CA, USA (Brian Brown, Weiping Xie)

LSAM Louisiana Arthropod Museum, Baton Rouge, LA, USA (Victoria Bayless)

MACN Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires, Argentina

MAMC Miguel A. Morón Collection, Xalapa, Mexico

MCZC Museum of Comparative Zoology, Harvard University, Cambridge, MA, USA (Philip Perkins)

MHNG Muséum d'Histoire Naturelle, Geneva, Switzerland (Ivan Löbl, Giulio Cuccodoro)

MIZA Museo del Instituto de Zoología Agrícola Francisco Fernández Yépez, Maracay, Venezuela (Luis Joly)

MLPA	Museo de La Plata, La Plata, Argentina (Analía Lanteri, Jhon Neita)
MLUH	Martin Luther Universität, Halle, Germany (Manfred Dorn)
MNHN	Museum National d'Histoire Naturelle, Paris, France (Jean Menier)
MPEG	Museu Paraense Emílio Goeldi, Belém, Pará, Brazil (Bento Mascarenhas)
MZSP	Museu de Zoologia da Universidade de São Paulo, São Paulo, Brazil (Cleide Costa)
NHMB	Naturhistorisches Museum, Basel, Switzerland (Isabelle Zürcher-Pfander)
NMPC	National Museum of Natural History, Prague, Czech Republic (Joseph Jelínek)
OSUC	Ohio State University, Columbus, OH, USA (Charles Triplehorn)
PKLC	Paul Lago Collection, University, MS, USA
QCAZ	Museo de Zoología de la Pontificia Universidad Católica del Ecuador, Quito, Ecuador (Giovanni Onore)
RMNH	Nationaal Natuurhistorisch Museum, Leiden, Netherlands (Jan van Tol)
RMYC	Ronald M. Young Collection, Cody, WY, USA
SEAB	Carlos A. C. Seabra Collection, Rio de Janeiro, Brazil (Carlos Seabra, deceased) (now at UFRJ)
SEMC	Snow Entomological Museum, University of Kansas, Lawrence, KS, USA (Zack Falin)
SLTC	Stephane Le Tirant Collection, Lachenaie, QC, Canada
TAMU	Texas A&M University, College Station, TX, USA (Ed Riley)
UAAM	University of Arkansas, Fayetteville, AR, USA (Jeffrey Barnes)
UCCC	Universidad de Concepcíon, Concepción, Chile (Jorge Artigas)
UFRJ	Museu Nacional - Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil (Miguel Monné)
UMSP	University of Minnesota, St. Paul, MN, USA (Philip J. Clausen)
UNSM	University of Nebraska State Museum, Lincoln, NE, USA (Brett Ratcliffe)
USNM	U.S. National Museum of Natural History, Washington, DC, currently at UNSM (Brett Ratcliffe)
UVGC	Universidad del Valle, Guatemala City, Guatemala (Enio Cano)
WBWC	William B. Warner Collection, Chandler, AZ, USA
ZMHU	Museum für Naturkunde, Berlin, Germany (Manfred Uhlig, Joachim Schulze, Joachim Willers)

Hoplopyga species can vary widely in appearance from specimen to specimen, and each species description attempts to encompass the range of variation seen in each species. The generic and species descriptions were based on the following characters: length from apex of pronotum to apex of elytra (the head is not measured since it may be variably deflexed or extended and thus give an inconsistent measurement); width across humeri; color and markings; form and sculpturing of the head, pronotum, elytra, and pygidium; form of the antenna; armature of the protibia; form of the mesometasternal process; sculpturing and color of the abdominal sternites; and form of the male parameres. Illustrations are provided of the male parameres but should be used with caution because the form of the parameres may vary slightly in some species. The form of the mesometasternal process of each species is also illustrated. In many cases, the mesometasternal process of the female is entirely reddish brown or black and shiny, so for these species we have drawn the mesometasternal process as it appears on males. Minute punctures and setae are generally not seen with 12.5X magnification but are easily seen with 50X magnification. Small punctures and short setae can be seen with 12.5X magnification and with the naked eye. Large punctures and long setae are easily seen without a microscope. Sparse punctures are characterized by numerous puncture diameters between them. Moderately dense punctures have 3–5 puncture diameters between them. Dense punctures have 1–2 puncture diameters or less between them.

The sex of *Hoplopyga* specimens can be determined externally by examining the metatibial spurs. Males have both spurs distinctly pointed, while females have the longer, inner spur distinctly rounded at its apex. In addition, in lateral view, the male abdomen is slightly or distinctly concave, and the female abdomen is flat or slightly convex.

Label data is recorded verbatim for the new species descriptions, new lectotype designations, and for types not previously recorded in Ratcliffe (2004). A question mark indicates an illegible letter or number. A single slash (/) indicates different lines on the same label, and a double slash (//) indicates a separate label. The type locality listed for each species reflects what was stated in the original species description. Those names for which types were not available are maintained as junior synonyms based upon their original descriptions and the subsequent comments, if any, of later authors.

Geographical localities are arranged alphabetically by country, by primary administrative division (state, province, or department), and then alphabetically by locality within each primary administrative division. Many specimens were collected in the 19th and early 20th centuries and the only locality indicated may have been the country. Temporal data are provided, but these data should be used with

caution because many specimens in old collections lack these data, and because collecting efforts are not evenly distributed in space and time. A distribution map was created where each point on the map corresponds to a specimen locality record, and a grey circle signifies a country record only. The distribution maps are meant to illustrate the general geographical distribution of each species, but many species have few data points or data points from only a few collecting events. These maps should also be used with caution.

We use the phylogenetic species concept of Wheeler and Platnick (2000). This concept defines species as the smallest aggregation of (sexual) populations diagnosable by a unique combination of character states.

Hoplopyga Thomson, 1880

Hoplopyga Thomson 1880: 268. Type species: *Gymnetis marginesignata* Gory and Percheron 1833: 72 and 366, by original designation.

Description. Scarabaeidae, Cetoniinae, Gymnetini. **Form:** Length 10.1–21.1 mm. Body shape elongate, rhomboidal, robust. Dorsum velutinous, opaque, or shiny. Color and pattern highly variable, ranging from golden yellow to brownish yellow to various shades of brown, green, gray, maroon, or black; dorsum with small to large, reddish brown to black spots or with fuscous to piceous clouding at base of head, on pronotum, and on elytra; venter opaque, shiny, or weakly metallic, ground color similar to dorsum, with portions of metasternum and sternites reddish brown to piceous, shiny; punctures reddish brown to black. **Head:** Subrectangular. Surface longitudinally convex, slightly depressed either side of middle, with lateral margins weakly to moderately raised. Anterior margin of clypeus weakly to strongly reflexed, weakly to strongly emarginate, rounded or angulate either side of emargination. Eye canthus with dense, minute setae on posterior margin and at apex. Punctures each with a minute to short seta. Interocular width variable intraspecifically. Antennae 10-segmented. **Pronotum:** Subtrapezoidal, lateral margins gradually widening from apex to base or obtusely angulate. Surface punctate, punctures each with a minute seta. Basomedian lobe obscuring all but tip of scutellum. Lateral margins with complete or interrupted, narrow, reddish brown to black bead or not. **Elytra:** Widest at base, with sides weakly tapering towards apex. Surface with costae as follows: 2 weakly elevated, complete discal costae or 2 distinctly elevated discal costae and with lateral costa on each elytron depressed on mediodiscal area. Lateral margins with narrow, reddish brown bead. Apices at suture produced into weak to distinct spines. **Pygidium:** Surface weakly to strongly convex, with large, dense, vermiform or n-shaped punctures, punctures and apical margin with minute to short setae. **Venter:** Mesometasternal process, in lateral view, subparallel to horizonal axis of body or at a slight, oblique angle to horizontal axis of body, rounded, weakly to moderately protuberant beyond mesocoxae; in ventral view, apex subacuminate or rounded. Metasternum and sternites with setigerous punctures. Males with abdomen slightly concave in lateral view, females with abdomen flat or weakly convex. **Legs:** Protibia with 1–3 teeth. Meso- and metatibiae with row of long, dense setae on inner surface. Metatibia at apex with 2 spurs; females with longer spur broad, rounded at apex, males with longer spur slender, acute. **Parameres:** In caudal view, form usually subrectangular, shaft divergent between midpoint and apex or not, apices each with weak to distinct lateral spur.

Diagnosis. *Hoplopyga* species can be distinguished from other genera of Neotropical Gymnetini by a combination of the following characters: lack of armature on the head; clypeal apex reflexed and never deeply bilobed; dorsum glabrous or with sparse, minute or short setae; and sutural apices of the elytra usually prolonged into spines. Most *Hoplopyga* species have a mesometasternal process that is short, subparallel to the horizontal axis of the body and rounded in ventral view, but there are a few exceptions. *Hoplopyga* species can be characterized in one of two ways. "Typical" *Hoplopyga* species have a complete, medial, discal costa on each elytron and a lateral, discal costa that is depressed on the mediodiscal area. These species also have large, n-shaped punctures on the elytra arranged longitudinally in striae in the depressions between the elytral costae. The typical *Hoplopyga* species resemble other New World genera that lack armature on the head, namely *Gymnetis*, *Hologymnetis* Martínez, *Hoplopygothrix* Schürhoff, and *Neocorvicoana* Ratcliffe and Micó. The "atypical" *Hoplopyga* species have indistinct elytral costae or have two weakly raised, complete costae. These species also have large, n-shaped punctures on the elytra, but each puncture is enclosed in a reddish brown to black spot, giving these species a spotted appearance.

"Typical" *Hoplopyga* species can be distinguished from *Gymnetis* (*sensu lato*) species by the elytral costae. In *Hoplopyga* species, the sutural costae are as described above. In *Gymnetis* species, the discal costae are complete and weakly raised or arise on the posterior half of the elytra, and the lateral costa of each elytron is not interrupted. The form of the mesometasternal process can usually be used to distinguish the two genera, but this character state should only be relied upon in combination with other characters because there

are species in both genera that show variation in the angle and protuberance of the mesometasternal process (*e.g.*, the lectotype of *Hoplopyga foeda* (Schaum) has a mesometasternal process that is deflexed downward and subquadrate at the apex in lateral view, while most other *H. foeda* specimens have a mesometasternal process, in lateral view, that has a rounded apex and is subparallel or at an oblique angle to the horizontal axis of the body). Generally, *Hoplopyga* species have a mesometasternal process that is weakly or moderately protuberant beyond the mesocoxae, subparallel or at an oblique angle to the horizontal axis of the body, and rounded at the apex in lateral view. The mesometasternal process in *Gymnetis* species is usually strongly protuberant beyond the mesocoxae and, in lateral view, deflexed or at an oblique angle to the horizontal axis of the body with the apex subquadrate or bulbous.

Hoplopyga can be easily separated from *Hologymnetis* species by the presence of a vertical, prosternal throat spur that is absent in *Hologymnetis* species.

Hoplopyga is similar to *Hoplopygothrix* and *Neocorvicoana*, but *Hoplopyga* is usually glabrous dorsally or with sparse, minute or short setae. *Hoplopygothrix* and *Neocorvicoana* species have a dorsum that is covered with short, dense setae. In addition, *Hoplopygothrix* and *Neocorvicoana* each have a unique, sexually dimorphic character that is not present in *Hoplopyga. Hoplopygothrix* species males have the abdominal sternites deeply, longitudinally sulcate at the middle, and *Hoplopyga* species males do not. *Neocorvicoana* species females have the tarsomeres shortened and compact, and *Hoplopyga* species females do not.

Several of the "atypical", spotted *Hoplopyga* species resemble species in the genera *Marmarina* Kirby and *Macrocranius* Schürhoff. Spotted *Hoplopyga* species can be distinguished from *Marmarina maculosa* (Olivier) by having a tridentate protibia in both sexes and/or beaded lateral margins of the pronotum. In addition, the form of the mesometasternal process can be used to differentiate the genera. Spotted *Hoplopyga* species have a mesometasternal process that is weakly protuberant beyond the mesocoxae, subparallel to the horizontal axis of the body, and with a rounded apex in lateral view. *Marmarina maculosa* has a mesometasternal process that is moderately protuberant beyond the mesocoxae, at an oblique angle to the horiztonal axis of the body, and with the apex rounded or subquadrate in lateral view. *Hoplopyga* species can be distinguished from *Macrocranius similis* Schürhoff by the shape of the head. *Hoplopyga* species have a subrectangular or subquadrate head, while *M. similis* has the apicolateral margins of the clypeus rounded. In addition, the apices of the elytra at the suture are not spinose in *M. similis*. The male parameres of spotted *Hoplopyga* species are also distinct and distinguish these species from *Marmarina* or *Macrocranius* species.

When delineating species limits, we considered transferring the spotted species to either *Macrocranius* or *Marmarina*. We determined that these species do not belong in *Macrocranius* because of the rounded head of *M. similis*, whereas the spotted *Hoplopyga* species all have subrectangular heads, which is a character state also exhibited by the typical *Hoplopyga* species. These species do not belong in *Marmarina* because of the characters listed above, as well as the lack of distinct, elytral costae that are present in some *Marmarina* species. We leave these species in the genus *Hoplopyga* in the interest of parsimony and, more importantly, because of the elytral apices of *H. multipunctata*. This is one of the spotted species, and yet it has the elytral apices distinctly prolonged into spines at the suture. This is the principal character state for which Thomson originally described the genus, making it logical to leave *H. multipunctata* within *Hoplopyga*. If *H. multipunctata* remains in the genus, it follows that the other spotted species should remain as well.

Etymology. The name for this genus is Greek in origin and derives from the prefix *hoplo*, meaning armed, and the suffix *pyga*, meaning posterior. We believe this refers to the spinose sutural apices of the elytra that Thomson thought to be a defining character for this genus.

Distribution. *Hoplopyga* species occur from central Mexico to northern Argentina. One species is known from the West Indies.

Natural History. Adults have been found from elevations ranging from sea level to 3,600 m and are generally diurnal, although several species are frequently caught at lights in the early hours of the morning. Adults are attracted to rotting fruit and can be found feeding on fruits, foliage, flowers, and sap flows. Traps baited with old plantains or bananas are particularly effective in attracting specimens. The immature stages of three species have been described (Vanin and Costa 1984; Micó *et al.* 2001; Morón and Arce 2002), and the immature stages of several species are known to live as inquilines in termite nests (Luederwaldt 1911; Micó *et al.* 2001; Puker *et al.* 2012; label data) or in decomposing tree trunks.

Nomenclature. Gaston Ruter designated a holotype, allotype, and paratypes at the Museum für Naturkunde in Berlin, Germany for a new species, *Hoplopyga hiekei*, but never published the species name. The specimens were an assortment of *Hoplopyga albiventris* (Gory and Percheron, 1833), *Hoplopyga singularis* (Gory and Percheron, 1833), and *Hoplopyga gosseti* Antoine, 2008 from Brazil and Paraguay.

Two species have been removed from *Hoplopyga*. *Gymnetis lugubris* Thomson, 1878 was included in *Hoplopyga* in two catalogs (Blackwelder 1944; Krajcík 1998) after Schürhoff (1937) noted that *G. lugubris* is "probably a large, black *Hoplopyga*", but this species was determined to be a junior synonym of *Allorrhina nigerrima* (Burmeister, 1842) based on examination of the *G. lugubris* holotype at MNHN (Ratcliffe 2015). In addition, we have examined photographs of the holotype of *Hoplopyga ruteri* Antoine, 2008 at MNHN and determined this species to be conspecific with *Macrocranius similis* Schürhoff, 1935 due to the similarity in *gestalt* and the form of the male parameres. Checklists by Schoch (1895a) and Schenkling (1921) included the species *Cetonia reticulata* Kirby, 1818 in *Hoplopyga*, but Ratcliffe and Micó (2001) established the genus *Neocorvicoana* for this species and two others.

Checklist of *Hoplopyga* Species

Hoplopyga aequatorialis (Moser, 1918)
Hoplopyga albiventris (Gory and Percheron, 1833)
  Gymnetis fuscorubra Gory and Percheron, 1833 (synonym)
Hoplopyga antilliana Ratcliffe, 2012
Hoplopyga boliviensis (Moser, 1918)
Hoplopyga brasiliensis (Gory and Percheron, 1833)
  Gymnetis prothoracica Thomson, 1878 (synonym)
Hoplopyga cerdani Antoine, 1998
Hoplopyga foeda (Schaum, 1848)
  Hoplopyga lucidiventris (Thomson, 1878), **new synonymy**
Hoplopyga gosseti Antoine, 2008
Hoplopyga liturata (Olivier, 1789)
  Gymnetis spinosa Fischer von Waldheim, 1823 (synonym)
  Gymnetis hamata Fauvel, 1861 (synonym)
  Hoplopyga spurca (Janson, 1880), **new synonymy**
Hoplopyga marginesignata (Gory and Percheron, 1833)
  Gymnetis fumata Janson, 1880 (synonym)
Hoplopyga miliaris (Gory and Percheron, 1833)
  Gymnetis fodina Gory and Percheron, 1833 (synonym)
  Gymnetis suasa Gory and Percheron, 1833 (synonym)
Hoplopyga miniata (Blanchard, 1846)
Hoplopyga multipunctata (Gory and Percheron, 1833)
  Holopyga [*sic*] *multiguttata* Schoch, 1895 (synonym)
Hoplopyga ocellata (Gory and Percheron, 1833)
Hoplopyga peruana (Moser, 1912)
Hoplopyga pseudomiliaris Shaughney and Ratcliffe, **new species**
Hoplopyga ravida (Janson, 1881)
Hoplopyga riparia Shaughney and Ratcliffe, **new species**
Hoplopyga singularis (Gory and Percheron, 1833)
  Hoplopyga monacha (Gory and Percheron, 1833), **new synonymy**
  Hoplopyga rubida (Gory and Percheron, 1833), **new synonymy**
  Hoplopyga corumbana Schürhoff, 1942 (synonym)
Hoplopyga suilla (Janson, 1881)

Key to the Species of Adult *Hoplopyga* Thomson, 1880

1. Elytra with 2 complete, weakly raised costae or costae indistinct. Dorsum spotted..... 2
1′. Each elytron with 2 distinctly raised, discal costae; lateral costa on each elytron interrupted and depressed on mediodiscal area 6
2. Spots on dorsum coalescing on base of pronotum, base of elytra, and on apical umbone of each elytron (Figs. 77–78). Elytral apices at suture strongly spinose. Argentina, Brazil, Paraguay ..... ***Hoplopyga multipunctata* (Gory and Percheron)**
2′. Spots on dorsum not coalescing as above. Elytral apices at suture subquadrate..... 3
3. Puncture enclosed in each colored spot on dorsum moderate in size or large, horseshoe-shaped, easily seen with the naked eye..... 4
3′. Puncture enclosed in each colored spot on dorsum minute or small, n-shaped, not easily seen with the naked eye, punctures on dorsum too numerous to count. French Guiana..... ***Hoplopyga cerdani* Antoine**
4. Dorsum reddish orange (Fig. 73) and venter entirely reddish brown, shiny. Bolivia..... ***Hoplopyga miniata* (Blanchard)**
4′. Dorsum yellow or brownish yellow, venter similar to dorsum but enamel-like and weakly metallic..... 5
5. Pygidium with n-shaped punctures clustered at base and in 2 spots either side of middle. Brazil, Paraguay..... ***Hoplopyga miliaris* (Gory and Percheron)**
5′. Pygidium with n-shaped punctures irregularly spaced, covering entire surface of pygidium. Guatemala..... ***Hoplopyga pseudomiliaris* Shaughney and Ratcliffe**
6. Protibia with 2 prominent distal (Fig. 8); remaining teeth may be reduced 7
6′. Protibia each with 1 prominent apical tooth (Fig. 45); remaining teeth may be reduced 8

7. Pronotum with lateral margins subparallel on posterior half. Mesometasternal process entirely reddish brown, shiny, or with 1 spot at base. Anteromedial margin on penultimate abdominal sternite with reddish brown, shiny band not reaching posterior margin of sternite, or with band narrowing significantly before posterior margin. Paraguay ..... ***Hoplopyga gosseti* Antoine**

7′. Pronotum with lateral margins obtusely angulate. Base of mesometasternal process with 2 yellow spots at base (spots rarely absent). Anteromedial margin on penultimate abdominal sternite with reddish brown, shiny spot or middle of penultimate sternite reddish brown, shiny. Argentina, Brazil, Paraguay ..... ***Hoplopyga albiventris* (Gory and Percheron)**

8. Elytra with yellow or orangish yellow scalloping on lateral and apical margins (Figs. 61–62). Northern South America..... .....***Hoplopyga marginesignata* (Gory and Percheron)**

8′. Elytra without yellow scalloping.....9

9. Mesometasternal process, in ventral view, with lateral margins expanding just before apex (*e.g.*, Figs. 26 and 111).....10

9′. Mesometasternal process, in ventral view, with lateral margins not expanding before apex (*e.g.*, Fig. 2).....11

10. Elytra with discal area mostly monocolored, and each elytron with oblique, fuscous line extending from humeral umbone to mediodiscal area (Figs. 24–25). South America..... .....***Hoplopyga brasiliensis* (Gory and Percheron)**

10′. Elytra with discal area mottled in appearance, with at least 2 distinct colors, and lacking oblique, fuscous line (Fig. 109). Brazil, Peru ..... ***Hoplopyga riparia* Shaughney and Ratcliffe**

11. Mesometasternal process with numerous minute, round punctures at base, punctures sometimes with a short or long seta.....12

11′. Mesometasternal process without numerous minute, round punctures at base.....15

12. Pronotum with most punctures enclosed in a large, round, black spot. Females with abdominal sternites entirely black, shiny, and with distinct, brownish yellow, posterolateral spots on each sternite. Bolivia..... .....***Hoplopyga boliviensis* (Moser)**

12′. Pronotum with punctures not enclosed in a spot. Sternites on females lacking distinct, brownish yellow, posterolateral spots.....13

13. Punctures between apical umbone and suture on each elytron greatly reduced in size and density or absent. Male protibia with only 1 distinct, apical tooth and female protibia tridentate. Females with apical declivity of elytra sulfur yellow. Western South America, from Colombia to Bolivia .....***Hoplopyga peruana* (Moser)**

13′. Punctures between apical umbone and suture on each elytron not reduced in size and density. Males and females with tridentate protibia. Females with apical declivity of elytra colored as on rest of dorsum.....14

14. Body robust or elongate, with 1or a combination of the following: head with short setae arising from punctures; base of mesometasternal process with long, dense setae; pygidium with "fuzzy" appearance in lateral view due to numerous short setae arising from punctures. Andean mountains in northern and western South America..... .....***Hoplopyga foeda* (Schaum)**

14′. Body elongate, with punctures on head lacking setae, base of mesometasternal process without long, dense setae, and pygidium with minute setae arising from punctures. Ecuador, Peru..... .....***Hoplopyga aequatorialis* (Moser)**

15. Color of dorsum orangish yellow. Pronotum with narrow, longitudinal, orangish yellow band on midline. Abdominal sternites mostly reddish brown, shiny, each with distinct, orangish yellow spots on posterolateral corners of each sternite. Northern Brazil, Trinidad, Venezuela ..... ***Hoplopyga ravida* (Janson)**

15′. Color of dorsum brownish yellow, olive-brown, cinereous, greenish gray, or a combination of earth-colored hues. Pronotum with narrow, longitudinal band on midline, on midline posterior to M-shaped mark, or with band absent. Abdominal sternites not as above.....16

16. Dorsum entirely cinerous, piceous, or dark, greenish gray. Venter entirely reddish brown or black, shiny. Pronotum with sparse to moderately dense punctures. Abdominal sternites with elongate, weakly n-shaped, shallow punctures on lateral thirds, punctures each with a short seta. Trinidad, Venezuela .....***Hoplopyga suilla* (Janson)**

16′. Dorsum not colored as above, or colored as above with the following characteristics: venter with portions of metasternum and/or abdominal sternites greenish gray, brownish yellow, cream-colored, or caesious. Pronotum

with moderately dense to dense punctures. Abdominal sternites with distinctly n-shaped, deep punctures, punctures on lateral thirds or continuing across middle of each sternite, punctures each with a minute seta 17

17. Punctures between medial, discal costa and sutural costa on each elytron becoming smaller and extending to base near scutellum in 2 columns. Pygidium with punctures not usually reaching apex. Metasternum with impunctate spot on posterolateral corners. Argentina, southern Brazil, Paraguay, rarely in northern South America..... .....***Hoplopyga singularis*** **(Gory and Percheron)**

17′. Punctures between medial, discal costa and sutural costa on each elytron ending on mediodiscal area or just past mediodiscal area on each elytron, not extending to base near suture.....18

18. Head with 2 clearly defined, pitchy spots at base. Brownish yellow color of dorsum mostly obscured by black to piceous clouding and flecks on middle of pronotum and elytra (Fig. 13). West Indies..... .....***Hoplopyga antilliana*** **Ratcliffe**

18′. Head with fuscous to pitchy clouding at base either side of middle or not.....19

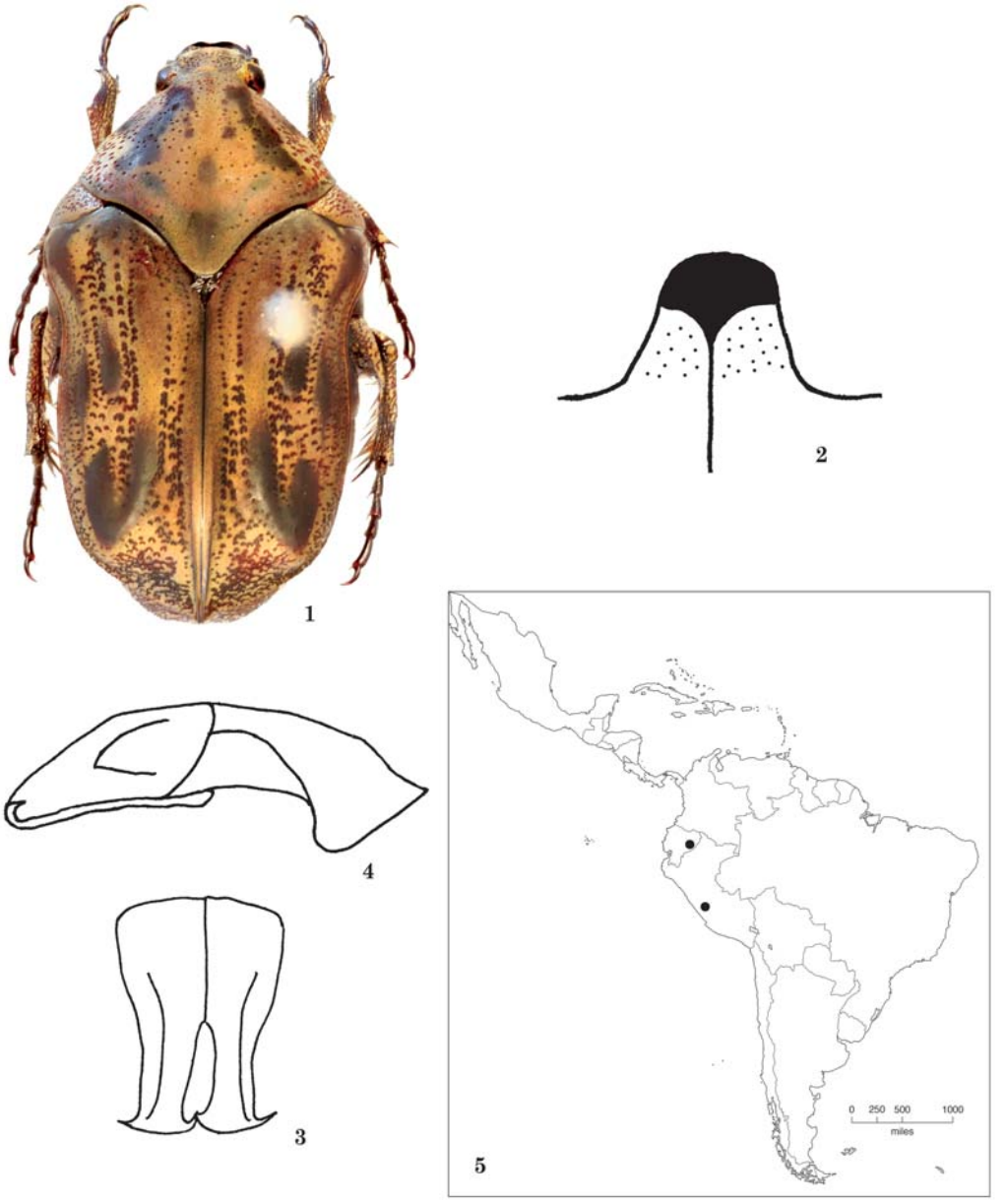
19. Fuscous clouding on middle of pronotum with straight, clearly defined edges, even on dark specimens (Figs. 51, 57–58). Mexico to Argentina.....***Hoplopyga liturata*** **(Olivier)**

19′. Fuscous clouding on middle of pronotum with wavy or indistinct edges. Elytra each with fuscous or piceous spot or band between apical umbone and suture, giving appearance of hourglass shape on elytra (Figs. 83–84). Dark specimens with mediodiscal area on each elytron cream-colored with distinct black spot. Mexico to Paraguay ....***Hoplopyga ocellata*** **(Gory and Percheron)**

Hoplopyga aequatorialis **(Moser, 1918)**
(Figs. 1–6)

Gymnetis (*Hoplopyga*) *aequatorialis* Moser 1918: 171 (original combination). Lectotype male (Ratcliffe 2004) at ZMHU, examined. Type locality: "Ecuador (Santa Inéz)".

Description. Length 16.8–18.5 mm; width across humeri 10.1–11.2 mm. Dorsal surface velutinous to opaque. Ground color of dorsum brownish yellow or entirely black. Head with fuscous clouding either side of midline at base. Pronotum with fuscous clouding on middle, black M-shaped mark (sometimes obscured by clouding), and narrow, brownish yellow band on posterior half of midline (band sometimes absent). Elytra with fuscous clouding at base mesad of mesepimeron and on raised costae, and with black markings as follows: spot on humeral umbone of each elytron, each elytron with 1–2 spots in mediodiscal area and J-shaped mark or reversed J-shaped mark on apical umbone. Ventral surface opaque, ground color as on dorsum. Metasternum with reddish brown, shiny spot at middle on males, females with middle third entirely reddish brown, shiny. Mesometasternal process reddish brown, shiny at apex on males, entirely reddish brown, shiny on females. Males with reddish brown clouding on middle of each sternite and last sternite reddish brown, shiny at middle, females with each sternite reddish brown, shiny on middle third. Setae tawny. **Head:** Surface with large, dense, round punctures, each puncture with a minute seta in fresh specimens. Clypeal apex moderately reflexed, emarginate at middle, weakly angulate either side of emargination. Antennae each with club slightly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins obtusely angulate, appearing broadly rounded. Surface with small, moderately dense, round punctures at middle, punctures becoming large, dense, and n-shaped laterally. Lateral margins with short, reddish brown bead not reaching apex or base. **Elytra:** Surface of each elytron with 2 distinctly elevated, discal costae, lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, dense, arranged longitudinally in striae, becoming smaller and extending to base near scutellum in 2 columns. Apical declivity with large, dense, n-shaped punctures. Lateral margins densely punctate. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture strongly spinose. **Pygidium:** Surface distinctly convex in both sexes, with large, dense, concentric, transversely vermiform punctures. **Venter:** Metasternum with large, elongate, transversely vermiform punctures either side of middle, punctures with short setae. Mesometasternal process, in lateral view, subparallel to horizontal axis of body, moderately protuberant beyond mesocoxae; in ventral view (Fig. 2), apex broadly rounded, with minute, moderately dense punctures at base, punctures each with a minute or short seta or lacking setae. Abdominal sternites with large, dense, n-shaped and elongate punctures on lateral thirds on males or on lateral, opaque areas on females. **Legs:** Protibia tridentate in both sexes. Males with protibia narrow, second tooth often worn down. **Parameres:** Shaft divergent between midpoint and apex (Figs. 3–4). Lateral margins gradually expanding outwards to apex. Apices each with distinct, lateral spur.



Figs. 1–5. *Hoplopyga aequatorialis*. **1)** Habitus; **2)** Mesometasternal process, ventral view; **3–4)** Parameres; **5)** Distribution.

Distribution. *Hoplopyga aequatorialis* occurs in Ecuador and Peru (Fig. 5).

Locality Records. 11 specimens from AMNH, BCRC, FMNH, and ZMHU. Some data from Ratcliffe (2004). **ECUADOR (9):** PASTAZA (9): Santa Inez. **PERU (2):** JUNÍN (2): Chanchamayo (Fig. 6), Río Oxabamba.

Temporal Distribution. Unknown because most specimen labels were older and lacked extensive data.

Diagnosis. *Hoplopyga aequatorialis* is similar to *H. liturata* but can be separated by its larger size (16.8–18.5 mm), the presence of setae on the ventral face of the mesometasternal process (or the presence of punctures that would bear setae),

Fig. 6. *Hoplopyga aequatorialis* habitat at Chanchamayo, Junin, Peru. Photograph by BCR.

and by having punctures that continue to the base of the elytra near the scutellum. *Hoplopyga liturata* never has setae or punctures at the base of the mesometasternal process, and the punctures on the elytra do not continue to the base near the scutellum. *Hoplopyga aequatorialis* is also similar to *H. boliviensis* but is easily distinguished by having punctures on the pronotum that are not each enclosed in a black spot. *Hoplopyga aequatorialis* is separated from *H. foeda* by the lack of conspicuous setae all over the body and by having a body that is more elongate. The male parameres (Figs. 3–4) will also help separate this species from any other.

Nomenclature. Moser (1918) described *Gymnetis aequatorialis* as belonging to the subgenus *Hoplopyga*. Shortly thereafter, the species was listed as *Hoplopyga aequatorialis* in the *Coleopterorum Catalogus* (Schenkling 1921). In his 1937 revision of the genus *Gymnetis*, Schürhoff wrote that the species *Gymnetis sculptiventris* Thomson, 1878 is a black form of *H. aequatorialis*. Subsequently, catalogs and checklists (Blackwelder 1944; Schoolmeesters 2014) listed *H. aequatorialis* as a synonym of *G. sculptiventris*. However, we examined photographs of the female holotype of *G. sculptiventris* at MNHN, and it is clearly a different genus and species based upon the sculpturing and punctation on the elytra, a lack of spinose elytral apices at the suture, and the ventral punctation. Therefore, we consider *H. aequatorialis* to be distinct from *G. sculptiventris*.

Natural History. Nothing is known of the natural history of *H. aequatorialis*.

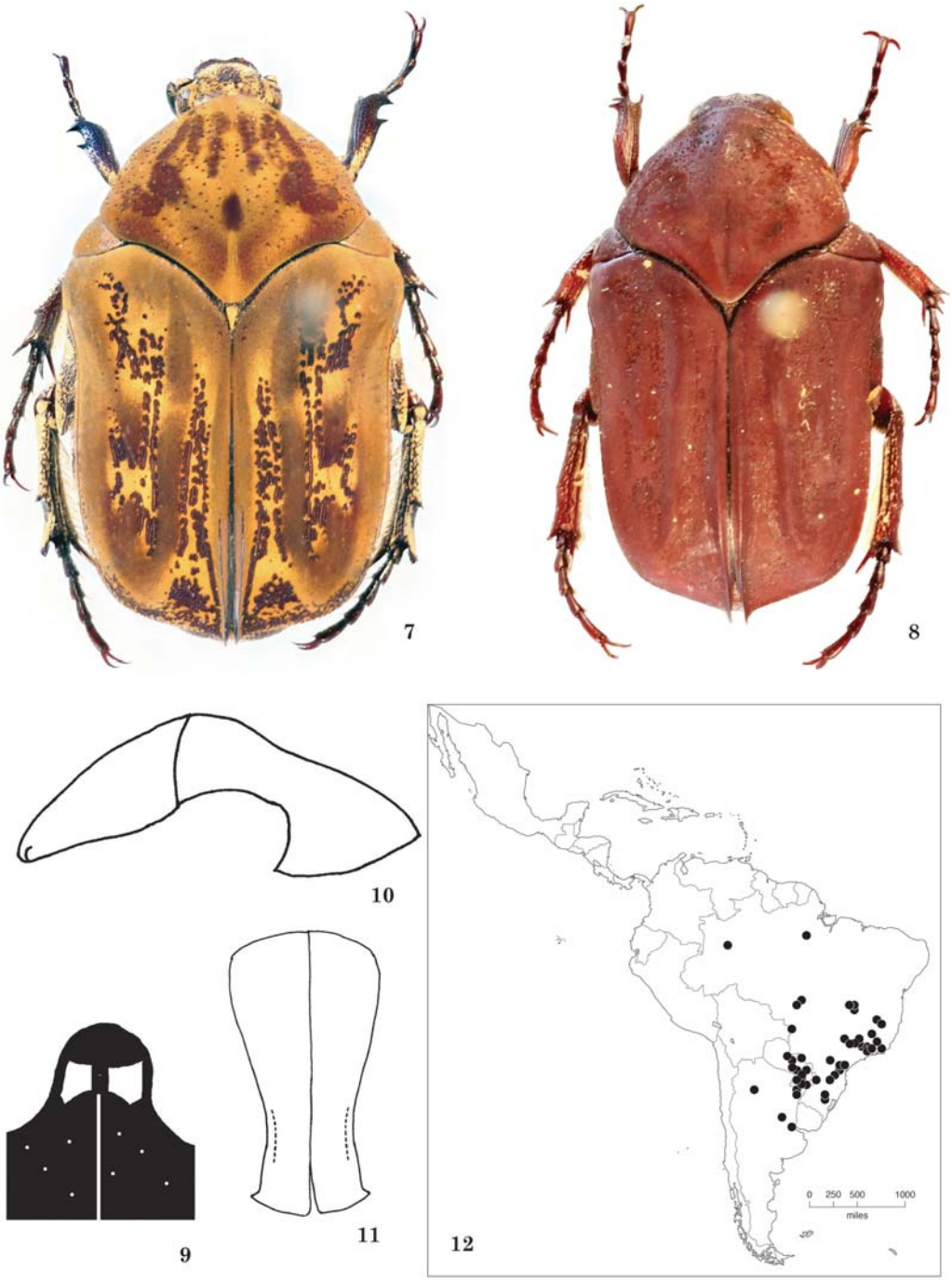
Hoplopyga albiventris (Gory and Percheron, 1833)

(Figs. 7–12)

Gymnetis albiventris Gory and Percheron 1833: 73 and 371 (original combination). Holotype male at MHNG, labeled "Gory/TYPE//albiventris/G. & P. B./Brasil", examined. Type locality: "Brésil."

Gymnetis fuscorubra Gory and Percheron 1833: 73 and 372 (synonym). Type not found. Type locality: "Brésil."

Description. Length 10.5–16.5 mm; width across humeri 6.0–10.0 mm. Ground color of dorsum an opaque sulfur yellow to brownish yellow to orangish yellow with maroon to reddish brown clouding on pronotum (especially posteriorly), raised elytral



Figs. 7–12. *Hoplopyga albiventris*. **7–8)** Habitus; **9)** Mesometasternal process, ventral view; **10–11)** Parameres; **12)** Distribution.

costae, and lateral margins. Some specimens with dorsum maroon, with portions of head, anterior half of pronotum, and pygidium sulfur yellow to brownish yellow. Head sometimes shiny, with anterior third of clypeus reddish brown, shiny on females only, with fuscous spot either side of midline at base in both sexes. Pronotum with fuscous or reddish brown, M-shaped mark (sometimes obscured by ground color in maroon specimens) and narrow, longitudinal, cream-colored to brownish yellow band on midline posterior to M-shaped mark. Ventral surface enamel-like, with ground color cream-colored or brownish yellow. Maroon specimens with venter sulfur yellow with maroon clouding. Metasternum reddish brown, shiny at middle, shiny area cross-shaped. Mesometasternal process entirely reddish brown, shiny, with 2 cream-colored or brownish yellow spots at base on ventral face. Each sternite with reddish brown, shiny spot or band on anterior margin at middle and on anterolateral corners. Setae tawny. **Head:** Frons with large, deep, dense, round punctures becoming smaller and n-shaped laterally and towards clypeus. Clypeal apex moderately to strongly reflexed, distinctly emarginate at middle, distinctly angulate either side of emargination. Antennae each with club distinctly longer than antennomeres 2–7 combined in both sexes. **Pronotum:** Lateral margins obtusely angulate. Surface with minute, sparse punctures, punctures becoming small, moderately dense, and n-shaped laterally. Lateral margins with slender, reddish brown bead from apex to base, bead curving around apical angle. **Elytra:** Mesepimera with minute, sparse punctures, each puncture with a minute seta. Surface of each elytron with 2 distinctly elevated, discal costae, lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, dense, arranged longitudinally in striae, becoming smaller and usually extending to base in 2 columns near scutellum or occasionally not extending to base near scutellum, in a small cluster in apical declivity and behind apical umbone. Lateral margins impunctate. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture weakly spinose. **Pygidium:** Surface distinctly convex in both sexes, with large, dense, n-shaped and elongate, vermiform punctures on midline and either side of midline; punctures obsolete on apical margin, each puncture with minute seta in larger punctures. Apex nearly angulate. **Venter:** Metasternum with large, dense, weakly n-shaped and vermiform punctures either side of middle, posterolateral corners impunctate. Mesometasternal process, in lateral view, subparallel to horizontal axis of body, weakly protuberant beyond mesocoxae, with short setae on anterodorsal face; in ventral view (Fig. 9), apex narrowly rounded or with sides tapering to rounded apex, with short setae on lateral margins of ventral face or not. Abdominal sternites mostly impunctate, each with large, horseshoe-shaped punctures along anterior margin either side of middle and in cluster on anterolateral margins of each sternite, sometimes with small, moderately dense,weakly n-shaped punctures either side of middle. **Legs:** Male protibia with 2 teeth near apex. Female protibia tridentate, with 2 proximal teeth near apex and 1 tooth at protibial midpoint. **Parameres:** Subrectangular (Figs. 10–11). Shaft not divergent at middle or very weakly so. Lateral margins weakly expanding from midpoint to apex. Apices each with minute, lateral spur.

Distribution. *Hoplopyga albiventris* is known from Argentina, Brazil, and Paraguay (Fig. 12).

Locality Records. 538 specimens from AMNH, BCRC, BMNH, CASC, CMNC, CMNH, CNCI, DEIC, FMNH, HAHC, INPA, MCZC, MHNG, MLPA, MNHN, MPEG, MZSP, NMPC, RMNH, SEMC, UFRJ, USNM, and ZMHU. Some data from Di Iorio (2013, 2014). **ARGENTINA (23):** BUENOS AIRES (1): Tigre. CORRIENTES (2): Isla Apipé, Santo Tomé (20 km S Garruchos). ENTRE RÍOS (1): Paraná. MISIONES (13): Estación Experimental Loreto, Loreto, San Pedro, No data. TUCUMÁN (6): No data. **BRAZIL (308):** AMAZONAS (2): No data. GOIÁS (17): Corumbá de Goiás, Jataí, No data. DISTRITO FEDERAL (2): Brasília. MATO GROSSO (9): Chapada dos Guimarães, Cuiabá. MATO GROSSO DO SUL (3): Corumbá. MINAS GERAIS (19): Diamantina, Gouveia, Itajubá, Lambari, Ouro Preto, Passa Quatro, Pouso Alegre, Uberaba, No data. PARÁ (1): Santarém. PARANÁ (16): Araucária, Castro, Curitiba. RIO DE JANEIRO (5): No data. RIO GRANDE DO SUL (4): Rio Pardo, Santa Cruz do Sul, No data. SANTA CATARINA (2): No data. SÃO PAULO (77): Barueri, Botucatu, Campinas, Campos do Jordão, Cantareira, Ipiranga, Itu, Jundiaí, Mogi Guaçu, Piracicaba, São Paulo, Vila Amália, No data. NO DATA (154). **PARAGUAY (196):** ALTO PARANÁ (1): No data. AMAMBAY (4): No data. CONCEPCIÓN (9): Horqueta, Río Apa. CORDILLERA (2): San Bernardino. CENTRAL (63): Asunción. GUAIRÁ (45): Paso Yobai, Villarrica. ITAPÚA (36): Hohenau, No data. MISIONES (1): San Ignacio. ÑEEMBUCÚ (4): Tacuaras. PARAGUARÍ (3): Sapucaí, Tebicuary-mí. NO DATA (28). **NO DATA (11).**

Temporal Distribution. January (25), February (18), March (16), April (2), May (1), June (2), September (1), October (15), November (43), December (26).

Diagnosis. *Hoplopyga albiventris* is distinguished from nearly all other *Hoplopyga* species by having a protibia with two teeth near the apex

(Figs. 7–8). It shares this trait with *H. gosseti*, but these two species can be separated by the shape of the pronotum. The lateral margins of the pronotum are obtusely angulate and appear rounded in *H. albiventris*, whereas *H. gosseti* has the posterolateral margins of the pronotum subparallel. In addition, *H. albiventris* has two yellow spots on the ventral face of the mesometasternal process that are absent in *H. gosseti,* and the sternites of *H. albiventris* are mostly cream-colored or brownish yellow, while the sternites of *H. gosseti* are largely reddish brown and shiny.

Nomenclature. Antoine (2008) synonymized *G. fuscorubra* with *H. albiventris*, and we concur with this synonymy; putative *G. fuscorubra* specimens are simply a reddish form of *H. albiventris*.

Natural History. Specimens have been caught at elevations ranging from sea level to 1,300 m (label data). Luederwaldt (1911) discovered *H. albiventris* larvae in the mounds of *Cornitermes* species (Isoptera) feeding on the walls of the nest. Adults were observed feeding on the sap of *Baccharis rufescens* Spreng and *Vernonia* species flowers (both Asteraceae) (Luederwaldt 1911; Di Iorio 2014). Puker *et al.* (2014) compared species abundance in different habitats in Brazil and only found *H. albiventris* in pastureland where *Cornitermes* species termite mounds were common.

Hoplopyga antilliana Ratcliffe, 2012
(Figs. 13–17)

Hoplopyga antilliana Ratcliffe 2012: 112. Holotype male at FSCA, labeled "WEST INDIES: GRENADA/Par. St. Andrews, Mirabeau/Agric. Lab, 23.VII.1990/Blacklight, H. Thomas", examined. Type locality: "West Indies: Grenada/Par. St. Andrews, Mirabeau/Agric. Lab."

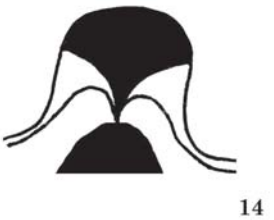
Description. Length 15.5–16.5 mm; width across humeri 9.3–10.5 mm. Ground color of dorsum opaque, brownish yellow speckled with black. Head with distinct black spot either side of middle at base in both sexes. Pronotum with fuscous to piceous speckles or clouding on middle third (nearly or entirely obscuring ground color), fuscous, M-shaped mark (sometimes obscured by speckles), and narrow, longitudinal, brownish yellow band on midline (band sometimes absent or obscured). Elytra with fuscous to piceous clouding on surface (sometimes entirely obscuring ground color except just posterior to apical umbone on each elytron), with black markings as follows: each elytron with spot on mediodiscal area and J-shaped mark or reversed J-shaped mark on apical umbone. Ventral surface opaque, ground color brownish yellow speckled with black. Metasternum with reddish brown to piceous, shiny spot at middle and on apex of mesometasternal process. Abdominal sternites each reddish brown to piceous, shiny on middle third. Setae tawny. **Head:** Surface with large, dense, round and n-shaped punctures, each puncture with a minute seta in pristine specimens, punctures becoming smaller towards apex. Clypeal apex moderately reflexed, weakly emarginate at middle, weakly angulate either side of emargination. Antennal club distinctly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins obtusely angulate, appearing broadly rounded. Surface with small, moderately dense, n-shaped punctures on middle, punctures becoming large and dense laterally. Lateral margins with bead, bead sometimes reaching apical angle. **Elytra:** Surface of each elytron with 2 distinctly elevated, discal costae, lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, dense, arranged longitudinally in striae, not extending to base near scutellum. Apical declivity with large, dense, n-shaped punctures. Lateral margins with small, dense, round punctures, punctures becoming larger and n-shaped towards apex. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture strongly spinose. **Pygidium:** Surface distinctly convex in both sexes, with large, dense, concentric, n-shaped or m-shaped punctures. **Venter:** Metasternum with large, dense, n-shaped and transversely vermiform punctures either side of middle, punctures with short, dense setae. Mesometasternal process, in lateral view, subparallel to horizontal axis of body, moderately protuberant beyond mesocoxae; in ventral view (Fig. 14), apex broadly rounded. Abdominal sternites with large, dense, n-shaped punctures on lateral, opaque areas. **Legs:** Protibia slender, tridentate in both sexes, with distinct apical tooth, middle and basal teeth reduced. **Parameres:** Shaft divergent between midpoint and apex (Figs. 15–16). Lateral margins with broad bulge between midpoint and apex. Apices each with minute, lateral spur. Ventral face obliquely angled, visible in lateral view.

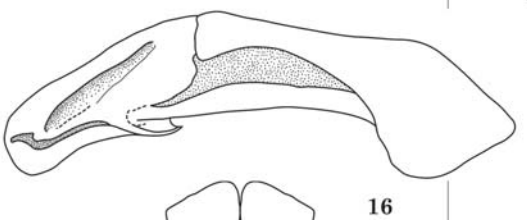
Distribution. *Hoplopyga antilliana* from Grenada and Union Island in the Lesser Antilles (Fig. 17) is the only *Hoplopyga* species known from the West Indies.

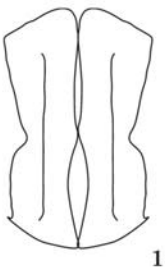
Locality Records. 9 specimens from BCRC, CMNC, FSCA, and UNSM. **GRENADA (8):** SAINT ANDREW (8): Mirabeau, Pearls Airport. **SAINT VINCENT AND THE GRENADINES (1):** UNION ISLAND (1): Chatham Bay.

Temporal Distribution. January (1), June (4), July (1), August (1), September (1), October (1).

Diagnosis. *Hoplopyga antilliana* is similar in appearance to *H. liturata* but is found only in the West Indies, whereas *H. liturata* does not occur there. *Hoplopyga antilliana* is darker and more







Figs. 13–17. *Hoplopyga antilliana*. **13)** Habitus; **14)** Mesometasternal process, ventral view; **15–16)** Parameres; **17)** Distribution.

robust than *H. liturata* and has two distinct, black spots at the base of the head. *Hoplopyga liturata* specimens sometimes have black clouding at the base of the head but never in the form of well-defined spots.

Natural History. Little is known of the natural history of this species, but Ratcliffe (2012) indicated that *H. antilliana* adults are attracted to decaying fruits and sap. Specimens in the type series were attracted to blacklights at night.

***Hoplopyga boliviensis* (Moser, 1918)**
(Figs. 18–23)

Gymnetis (*Hoplopyga*) *boliviensis* Moser 1918:172 (original combination). Lectotype male (Ratcliffe 2004) at ZMHU, examined. Type locality: "Bolivia (Rio Songo)."

Description. Length 15.1–16.9 mm; width across humeri 9.6–10.4 mm. Color of dorsum opaque, mottled, yellowish brown. Head with dark brown clouding either side of midline at base in both sexes. Pronotum with pitchy clouding on middle, a black M-shaped mark (sometimes obscured by clouding), large and moderately dense black spots, and a narrow, longitudinal, yellowish brown band on midline posteriorly. Elytra with pitchy clouding everywhere except from apical umbone to suture on each elytron, with black markings as follows: spot on humeral umbone, each elytron with 2 spots on mediodiscal area and J-shaped mark or reversed J-shaped mark on apical umbone. Ventral surface opaque, ground color as on dorsum. Metasternum with black, shiny spot at middle or oblique, black, shiny spot either side of midline on males, females with most of surface black, shiny. Mesometasternal process black, shiny at apex on males, entirely black, shiny on females. Males with last abdominal sternite black, shiny on anterior and posterior margins, sometimes with pitchy clouding on middle of each sternite. Females with abdominal sternites entirely black, shiny, with brownish yellow, opaque, posterolateral spots on each sternite or on lateral margins of each sternite. Setae tawny to testaceous. **Head:** Surface with minute to small, moderately dense, round and n-shaped punctures, punctures each with a minute or short, tawny seta (setae longest in punctures on frons between eyes). Clypeal apex weakly reflexed, weakly emarginate at middle, weakly angulate or rounded either side of emargination. Antennal club slightly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins obtusely angulate, appearing broadly rounded. Surface with small, moderately dense, round punctures at middle, punctures becoming large, dense, and n-shaped laterally, each puncture enclosed in a black spot. Lateral margins with fragmented, black bead not reaching apex or base. **Elytra:** Surface of each elytron with 2 distinctly elevated, discal costae, lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, dense, arranged longitudinally in striae, becoming smaller and extending to base near scutellum in 3–4 loosely organized columns. Each elytron with punctures reduced in size and density from apical umbone to suture. Apical declivity with large, dense, n-shaped punctures. Lateral margins densely punctate. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture strongly spinose. **Pygidium:** Surface distinctly convex in both sexes, with large, dense, concentric, transversely vermiform and elongate, n-shaped punctures. Surface almost entirely obscured by punctures in females. **Venter:** Metasternum with large, dense, transversely vermiform punctures either side of middle, punctures with short, tawny or testaceous setae. Mesometasternal process, in lateral view, subparallel to horizontal axis of body, moderately protuberant beyond mesocoxae; in ventral view (Fig. 20), apex broadly rounded, base of process with dense, minute punctures, punctures each with a long, tawny seta in males or a short, tawny or testaceous seta in females. Abdominal sternites with large, dense, elongate, n-shaped punctures on lateral thirds on males and on opaque, lateral margins on females. **Legs:** Protibia distinctly tridentate in both sexes. **Parameres:** Shaft divergent between midpoint and apex (Figs. 21–22). Lateral margins with broad bulge between midpoint and apex. Apices each with distinct, lateral spur.

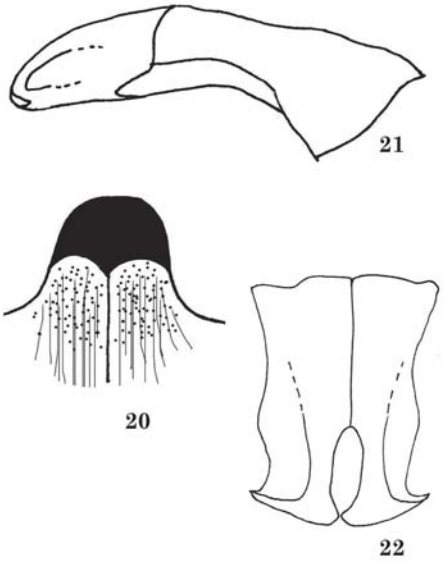
Distribution. *Hoplopyga boliviensis* is found only in mountainous, western Bolivia (Fig. 23).

Locality Records. 119 specimens from BCRC, CASC, MNHN, RMNH, SLTC, and ZMHU. Some data from Ratcliffe (2004). **BOLIVIA (119):** COCHABAMBA (2): Arani. LA PAZ (117): Coroico, Nor Yungas, Río Zongo.

Temporal Distribution. June (28), October (2).

Diagnosis. *Hoplopyga boliviensis* is distinguished from similar species such as *H. foeda, H. peruana*, and *H. aequatorialis* by its mottled dorsum and the punctures on the pronotum each enclosed in a large, black spot. It is also similar to *H. liturata* but is distinguished by the characters above, as well as by having the punctures between the medial, discal costa and the sutural costa on each elytron extending to the base near the scutellum, the head with short setae on the frons, and the base of the mesometasternal process with dense, minute punctures (usually bearing long setae). *Hoplopyga liturata* specimens never have the punctures between the elytral costae extending to the base of the elytra near the scutellum. In addition, *H. liturata* has minute setae from punctures on the head and never has dense, minute punctures at the base of the mesometasternal process.

Natural History. Specimens have been collected at 750 m above sea level (label data). Garcia *et al.* (2013) reportedly found adults



Figs. 18–23. *Hoplopyga boliviensis*. **18–19)** Habitus; **20)** Mesometasternal process, ventral view; **21–22)** Parameres; **23)** Distribution.

and larvae of this species in tree trunks in Mato Grosso do Sul, Brazil, but the figure provided does not appear to be this species. Rodrigues *et al.* (2013) reported this species from Aquidauana, Mato Grosso do Sul, Brazil, but the figure provided is actually of a dark *H. liturata* as evidenced by the punctures on the elytra not extending to the base near the scutellum.

***Hoplopyga brasiliensis* (Gory and Percheron, 1833)**
(Figs. 24–29)

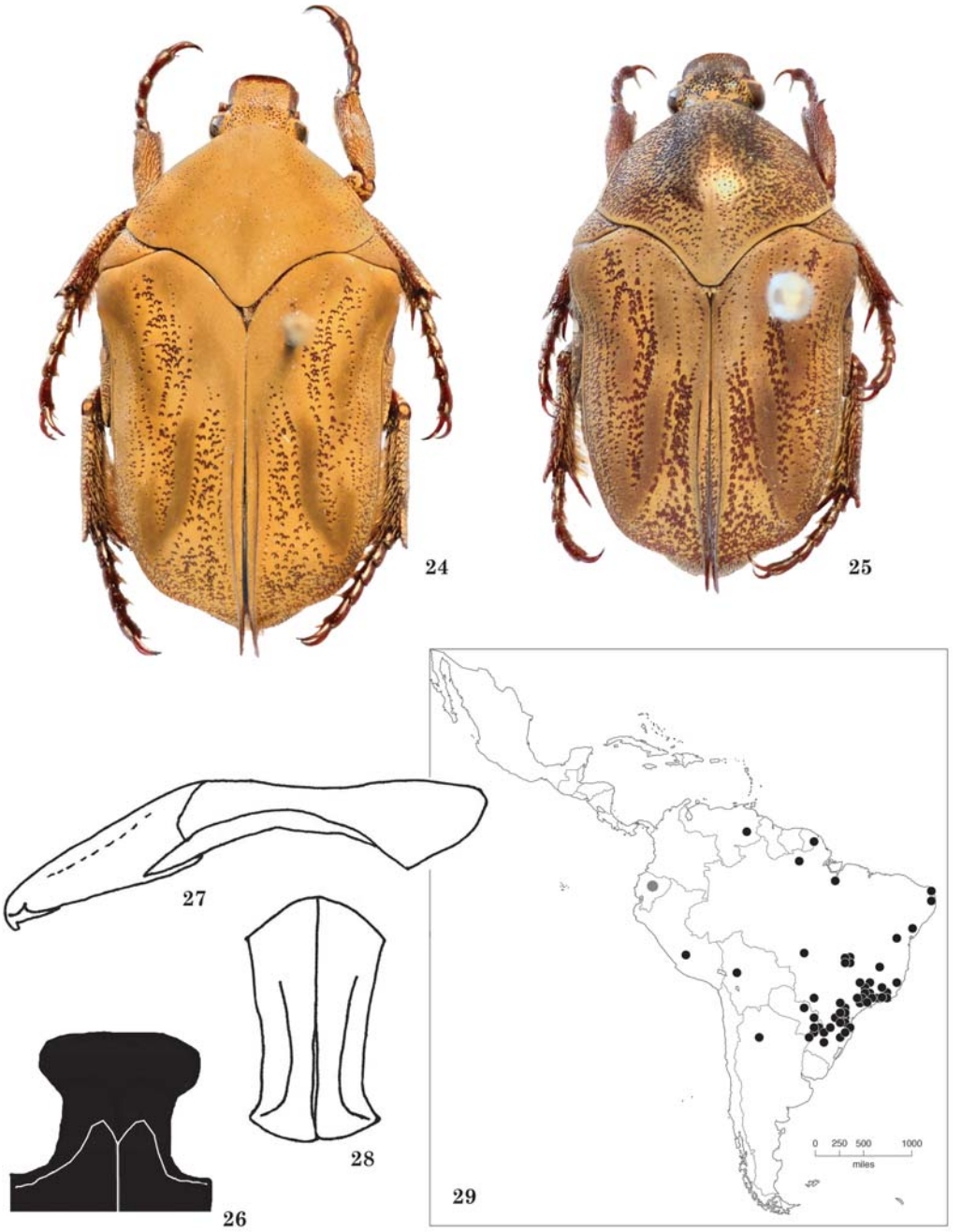
Gymnetis brasiliensis Gory and Percheron 1833: 73 and 370 (original combination). Lectotype male at MHNG, here designated, labeled "Gory/ TYPE" (Gory is handwritten on red label with black border)// "brasiliensis/ G. & P. B./Brasilia" (hand-written green label with black border)// BCR and JMS lectotype label. Single paralectotype male labeled "Gory/TYPE" (Gory is handwritten on red label with black border)// Coll. Melly// BCR and JMS paralectotype label. Type locality: "Brésil."

Gymnetis prothoracica Thomson 1878: 13 (synonym). Holotype female at MNHN, labeled "prothoracica/Thoms. Type/T.C. 12 Bras.//ex Musaeo James Thomson//Th. Type//Type// Museum Paris 1952/Coll. R. Oberthur//H. prothoracica/J. Thomson Type female symbol/ G. Ruter det. 1965//Hoplopyga brasiliensis G&P/G. Ruter det. 1965 female symbol", examined. Thomson (1878) described only a single specimen, and we have no idea why or who placed a "co-type" label on a specimen at RMNH in Leiden. Type locality: "Brasilia."

Description. Length 12.1–17.1 mm; width across humeri 6.9–10.0 mm. Dorsal surface velutinous or opaque, with head and pronotum shiny in females. Ground color of dorsum brownish yellow to olive brown to fuscous. Some specimens entirely black. Head of females with anterior third of clypeus reddish brown, both sexes with fuscous clouding either side of middle at base. Pronotum with fuscous clouding on middle and M-shaped mark (sometimes obscured by clouding or dense punctation). Each elytron with fuscous clouding as follows: at base near scutellum; an oblique line from humeral umbone to mediodiscal area; on costae at apical umbone, giving appearance of J-shaped mark or reversed J-shaped mark. Ventral surface opaque, ground color as on dorsum. Metasternum reddish brown, shiny at middle. Mesometasternal process entirely reddish brown, shiny. Abdominal sternites on males reddish brown, shiny on middle third, females with sternites mostly reddish brown, shiny. Setae tawny. **Head:** Surface with large, dense, round and n-shaped punctures, clypeal punctures each with a minute seta in females. Clypeal apex weakly to distinctly reflexed, subtruncate. Antennal club slightly longer than antennomeres 2–7 combined in both sexes. **Pronotum:** Lateral margins obtusely angulate. Surface in males with minute, sparse, round punctures, punctures becoming larger, denser, and n-shaped laterally; females with small to large, dense, n-shaped punctures either side of midline. Lateral margins with bead from anterior to basal angles. **Elytra:** Surface of each elytron with 2 distinctly elevated, discal costae, lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, dense, arranged longitudinally in striae, not extending to base near scutellum in males, becoming smaller and extending to base in 2 columns in females. Apical declivity with large, dense, n-shaped punctures. Lateral margins densely punctate. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture strongly spinose. **Pygidium:** Surface distinctly convex in both sexes, with large, dense, n-shaped and transversely elongate, vermiform punctures, each puncture with minute setae. **Venter:** Metasternum with large, dense, transversely vermiform punctures either side of middle, punctures with long setae. Mesometasternal process, in lateral view, subparallel to horizontal axis of body or at a slight oblique angle to horiztonal axis of body, moderately protuberant beyond mesocoxae; in ventral view (Fig. 26), lateral margins expanding just before apex, apex broadly rounded. Abdominal sternites with large, dense, n-shaped punctures on lateral thirds. **Legs:** Protibia with distinct apical tooth and 2 subsequent, nearly obsolete teeth. Metacoxa with dense fringe of setae at middle. **Parameres:** Subrectangular (Figs. 27–28). Shaft not divergent or very weakly so. Lateral margins tapering gradually to midpoint of shaft, then widening towards apex. Apices each with minute, lateral spur.

Distribution. *Hoplopyga brasiliensis* is broadly distributed in South America but most records are from Brazil (Fig. 29).

Locality Records. 782 specimens from ADMC, BCRC, BMNH, CASC, CMNH, CMNC, CUIC, DEIC, FMNH, HNHM, INPA, JDGC, JMMC, LACM, MCZC, MHNG, MLPA, MLUH, MNHN, MZSP, NMPC, RMNH, RMYC, SLTC, TAMU, UCCC, UFRJ, WBWC, and ZMHU. Some data from Di Iorio (2013). **ARGENTINA (18):** CORRIENTES (1): Santo Tomé. MISIONES (16): Campo Viera, Estación Experimental Loreto, Garuhapé, Loreto, Pindapoy, No data. SANTIAGO DEL ESTERO (1): Loreto. **BOLIVIA (1):** LA PAZ (1): Caranavi. **BRAZIL (708):** BAHIA (32): Entre Rios, Parque Nacional da Chapada Diamantina, No data. DISTRITO FEDERAL (1): No data. ESPIRÍTO SANTO (37): Santa Maria de Jetibá, Trinidade, No data. GOIÁS (5): Anápolis, Aragarças, Leopoldo de Bulhões. MATO GROSSO (6): Cuiabá, No data. MATO GROSSO DO SUL (12): Córrego Itá. MINAS GERAIS (25): Carmo do Rio Claro, Conceição da Aparecida, Ipatinga, Mar de Espanha, Pocinhos do Rio Verde, Rio Sapucaí, Santa Rita de Caldas, Viçosa, No data. PARÁ (11): Mocajuba, Óbidos, No data. PARAÍBA (3): Lucena. PARANÁ (33): Araucária, Curitiba, Guarapuava,



Figs. 24–29. *Hoplopyga brasiliensis.* **24–25)** Habitus; **26)** Mesometasternal process, ventral view; **27–28)** Parameres; **29)** Distribution.

Ponta Grossa, Rio Negro, Rolândia. RIO DE JANEIRO (135): Corcovado, Deodoro, Guanabara, Itatiaia, Mendes, Petrópolis, Novo Friburgo, Parque Nacional da Tijuca, Serra da Carioca, Serra dos Órgãos, Tijuca Forest, Vista Chinesa, No data. RIO GRANDE DO NORTE (8): Natal, No data. RIO GRANDE DO SUL (25): Pinhal, Santo Augusto, Salvador do Sul, No data. SANTA CATARINA

(97): Caúna, Corupá, Ilha de Santa Catarina (Vargem Pequena), Lages, Mafra, Nova Teutônia, Rio Vermelho, São Bento do Sul, No data. SÃO PAULO (138): Barueri, Campinas, Caviúna, Ibiúna, Instituto Butantan, Ipiranga, Itatiba, Jacareí, Jundiaí, Pinheiros, Piracicaba, Proença, Rio Pardo, São Paulo, São Roque, Vila Olímpia, No data. NO DATA (136). **ECUADOR (2):** NO DATA (2). **FRENCH GUIANA (3):** CAYENNE (3): No data. **PARAGUAY (8):** ALTO PARANÁ (1): No data. CONCEPCIÓN (1): Tacuatí (7 km N). ITAPÚA (6): Hohenau. **PERU (4):** JUNÍN (3): Chanchamayo. NO DATA (1). **VENEZUELA (4):** BOLÍVAR (3): Caura River. NO DATA (1). **NO DATA (34).**

Temporal Distribution. January (47), February (34), March (21), April (7), May (2), July (1), August (2), September (1), October (16), November (35), December (61).

Diagnosis. *Hoplopyga brasiliensis* has a relatively monocolored discal area and a distinct, oblique, fuscous line extending from the humeral umbone to the mediodiscal area on each elytron. It also has the elytral apices at the suture produced into the longest spines of any species in the genus. The form of the mesometasternal process is also distinct, with the lateral margins expanding laterally just before the apex in ventral view.

Nomenclature. The holotype of *G. brasiliensis* seems to have been lost, but two specimens were found at MHNG that appear to match the original description by Gory and Percheron (1833). These specimens were in the collection of A. Melly, who is known to have purchased material from Gory and Percheron (Horn and Kahle 1935–1937). In light of this, we here designate those two specimens as the lectotype and paralectotype for *G. brasiliensis*.

Schürhoff (1937) synonymized *G. prothoracica* with *H. brasiliensis*. We concur with this synonymy, because the female holotype of *G. prothoracica* shares the same characters that define *H. brasiliensis*: a distinct, oblique, fuscous line from the humeral umbone to the mediodiscal area on each elytron, the elytral apices at the suture produced into long spines, and a distinct mesometasternal process. The name *G. prothoracica* refers to specimens that have a densely punctate pronotum (as in Fig. 25), and Thomson (1878) noted the similarities with *H. brasiliensis* in his original description of *G. prothoracica*.

Natural History. *Hoplopyga brasiliensis* has been collected from elevations ranging from sea level to 1,100 m (label data) in fermented banana traps (Fig. 30) (Gonçalves and Louzada 2005). Larvae were described by Vanin and Costa (1984), who noted that they feed on decaying wood. Descriptions and illustrations of the larvae and adult are also included in Costa *et al*. (1988).

Fig. 30. Fermenting banana trap made from a plastic soda bottle. Photograph by Beulah Garner.

Hoplopyga brasiliensis larvae have been found in the bottom of a nest of *Cornitermes cumulans* (Kollar) (Isoptera) and were observed constructing pupal cases out of their own feces, debris from the nest, and soil (Puker *et al.* 2012).

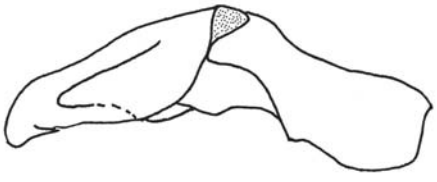
Hoplopyga cerdani Antoine, 1998
(Figs. 31–37)

Hoplopyga cerdani Antoine 1998: 70 (original combination). Holotype male at MNHN, labeled "Barrage de Petit Saut/Guyane 973 – 09/01/97/ P. Cerdan leg.//HOLOTYPE/Hoplopyga/cerdani/ Ph. ANTOINE det. 1998", examined via photographs. Type locality: "Guyane, Barrage de Petit Saut."

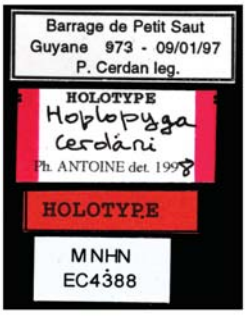
Description. Length 13.9–15.5 mm; width across humeri 9.2–10.0 mm. Color of dorsum opaque, mottled, brownish yellow with small, dense, reddish brown or black spots, each spot enclosing a puncture. Pronotum with narrow, longitudinal, brownish yellow band on posterior third of midline. Ventral surface brownish yellow to brownish orange, opaque. Metasternum with a reddish brown, shiny, oblique spot either side of midline, sometimes with greasy appearance at middle. Mesometasternal process reddish brown, shiny at apex. Sternites each with small, dense, reddish brown or black spots, surface sometimes with greasy appearance at middle. Setae tawny. **Head:** Surface with small, dense, round punctures, punctures usually becoming smaller and less dense on clypeus, each puncture embedded in a spot. Clypeal apex weakly to strongly reflexed, emarginate at middle, angulate either side of emargination. Antennal club distinctly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins obtusely angulate. Surface with small, moderately dense, round punctures

31

32



34



33

35

36

Figs. 31–36. *Hoplopyga cerdani*, holotype. **31)** Dorsal view; **32)** Ventral view; **33)** Labels; **34–35)** Parameres; **36)** Distribution. Photographs courtesy of A. Mantilleri (MNHN).

Fig. 37. *Hoplopyga cerdani* habitat at Montagne de Kaw, Régina, French Guiana. Photograph courtesy of F. Lavalette.

at middle; punctures becoming dense and n-shaped laterally, each puncture embedded in a spot. Lateral margins usually with short bead not reaching apex or base. **Elytra:** Surface of each elytron with 2 complete, weakly elevated, discal costae; mediodiscal area of each elytron with distinct protuberance. Surface with small, dense, round and n-shaped punctures, each puncture embedded in a spot. Apices at suture weakly spinose. **Pygidium:** Surface moderately convex with small, dense, n-shaped punctures, punctures each with a reddish brown to black border and a minute seta. **Venter:** Metasternum with large, irregularly spaced, moderately dense, n-shaped punctures either side of middle, each puncture with a minute seta. Mesometasternal process, in lateral view, subparallel to horizontal axis of body, weakly protuberant beyond mesocoxae, with short setae on anterodorsal face; in ventral view (Fig. 32), apex broadly rounded or with sides tapering to rounded apex. Abdominal sternites with minute, moderately dense punctures at middle, punctures becoming large, dense, distinctly n-shaped laterally, each puncture with a minute to short seta and surrounded by a spot. **Legs:** Protibia tridentate, with second and third teeth often reduced. **Parameres:** Shaft divergent between midpoint and apex (Figs. 34–35). Lateral margins with broad bulge between midpoint and apex. Apices each with distinct, lateral spur.

Distribution. *Hoplopyga cerdani* is found in French Guiana (Figs. 36–37). There is one record from northern Brazil that is possibly erroneous, and additional specimens are needed to verify its occurrence there.

Locality Records. 59 specimens from BCRC, CMNH, DCCC, MNHN, and UNSM. Some data from Antoine (1998). **BRAZIL (1):** AMAZONAS (1): Hyutanaha (Rio Purus). **FRENCH GUIANA (57):** CAYENNE (51): Barrage du Petit Saut, Dégrad Kwata, Régina (Montagne de Kaw, D6, Pk 54), Roura (Montagne des Chevaux, RN 2 Pk 22; Montagne de Kaw, D6, Pk 38), Rue de Belizon (Pk 10), Rue de Kaw (Pk 47), Rue de Régina (N2, Pk 72.5), Saint-Élie (La réserve naturelle nationale de la Trinité, Zone AYA; Inselberg Hte-Kourisbo). SAINT LAURENT DU MARONI (1): Apatou (Pk 25.7) **NO DATA (1).**

Temporal Distribution. January (18), February (12), March (19), July (1), August (1), October (2), November (3), December (5).

Diagnosis. *Hoplopyga cerdani* is similar in appearance to *M. maculosa* but can be distinguished by having an opaque venter in contrast to the enamel-like venter of *M. maculosa*. The mesometasternal process of *H. cerdani* is weakly protuberant beyond the mescoxae and broadly rounded in ventral view, whereas the mesometasternal process of *M. maculosa* is moderately

protuberant beyond the mesocoxae and, in ventral view, has the sides tapering to the rounded apex. In addition, male *H. cerdani* specimens have tridentate protibiae, and male *M. maculosa* specimens never have tridentate protibiae. *Hoplopyga cerdani* differs in appearance from other spotted *Hoplopyga* species by having numerous, small spots covering the dorsum rather than the large spots characteristic of *H. miliaris, H. miniata, H. pseudomiliaris*, and *H. multipunctata*.

Natural History. *Hoplopyga cerdani* has been found in banana traps at 75 m elevation and at blacklights and mercury vapor lamps (Touroult and Dalens 2010, label data). This species has been observed coming to the edges of light traps (Fig. 37) around dawn (0530 to 0630) and then trying to hide when the sun rises. In addition, these beetles are reported to smell of mushrooms or mold when fresh. (F. Lavalette and P. H. Dalens, personal communication to BCR, August 2014, October 2014, and February 2015).

Hoplopyga foeda (Schaum, 1848)
(Figs. 38–43)

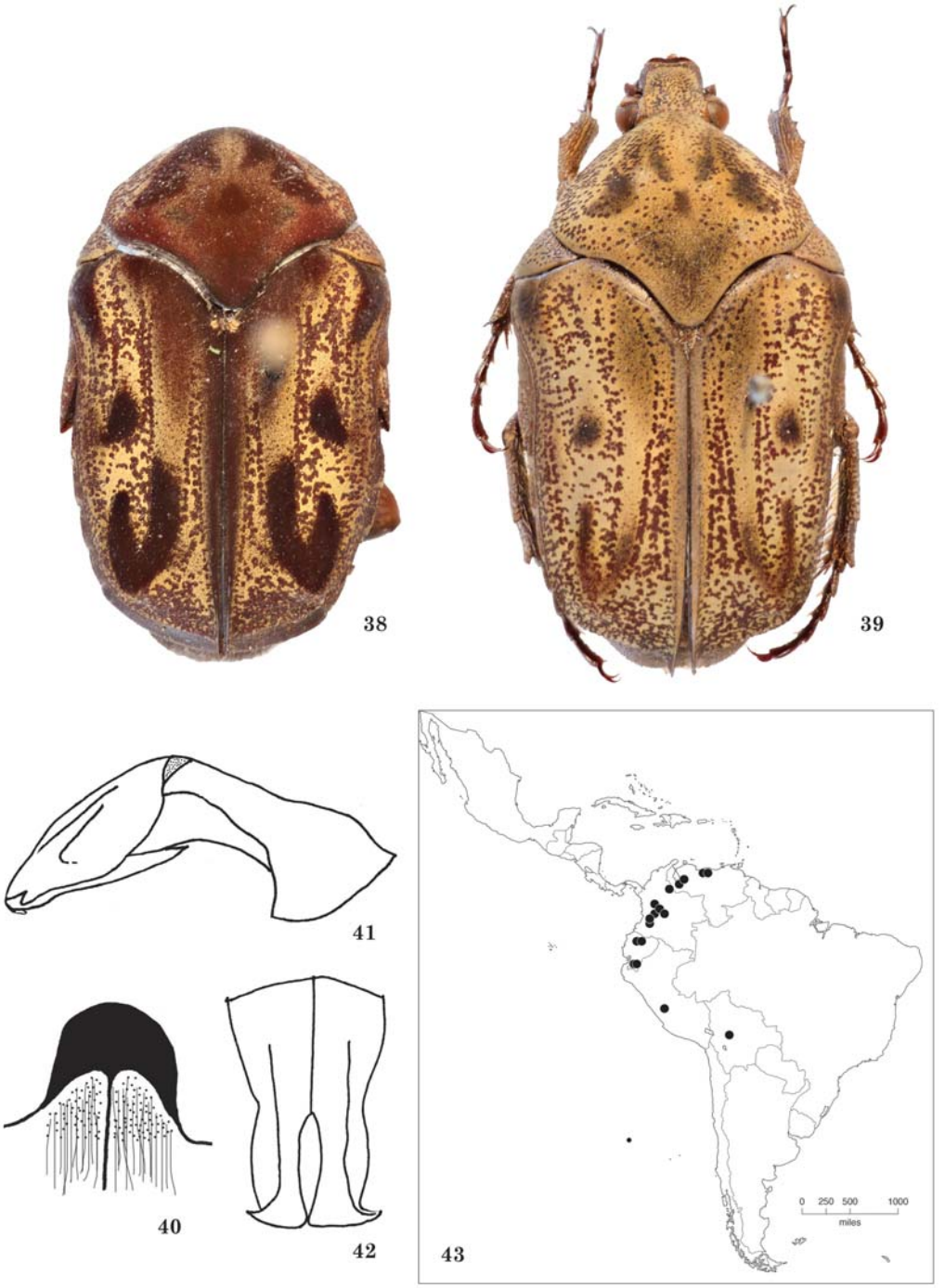
Gymnetis foeda Schaum 1848: 67 (original combination). Lectotype male (Ratcliffe 2004) at BMNH, examined. Type locality: "Venezuelae."

Gymnetis lucidiventris Thomson 1878:14 (original combination). Holotype female at MNHN, labeled "lucidiventris Thoms. Type/T. C. 14 Venez//ex Musaeo James Thomson//Th Type// Type//Museum Paris 1952 Coll. R. Oberthur// Hoplopyga foeda Schaum female symbol/compar au type.G. Ruter det. 1965", examined. Type locality: "Venezuela." **New synonymy**.

Description. Length 15.8–21.1 mm; width across humeri 10.1–12.5 mm. Dorsal surface opaque or velutinous. Ground color of dorsum brownish yellow, grayish yellow, or black. Head with pitchy clouding either side of midline at base in both sexes. Pronotum usually with reddish brown or black clouding on middle and black M-shaped mark (obscured by clouding on black specimens). Elytra with pitchy clouding at base mesad of mesepimeron and at suture, with black markings on each elytron as follows: spot on humeral umbone, spot on mediodiscal area, and J-shaped mark or reversed J-shaped mark on apical umbone. Some specimens entirely black. Ventral surface opaque or shiny, ground color as on dorsum. Metasternum black, shiny at middle or entirely black, shiny. Mesometasternal process entirely black and shiny or reddish brown and shiny at apex only. Males with black clouding on middle of each sternite, or with middle third of each sternite entirely black, shiny. Females with sternites entirely black, shiny, with posterolateral spots on each sternite colored as on dorsum, opaque. Setae tawny, brown, or black. **Head:** Surface with large, dense, round and n-shaped punctures, punctures each with a short to long, tawny seta (setae longest in punctures on frons between eyes). Clypeal apex weakly emarginate at middle, weakly to moderately reflexed, weakly angulate either side of emargination. Antennal club slightly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins obtusely angulate, sometimes appearing broadly rounded. Surface with small or large, moderately dense, round punctures either side of middle, punctures becoming large, dense, and n-shaped laterally. Lateral margins with or without fragmented, black bead not reaching apical or basal angles. **Elytra:** Surface of each elytron with 2 distinctly elevated, discal costae, lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, dense, arranged longitudinally in striae, becoming smaller and extending to base near scutellum in 2 columns. Apical declivity with large, dense, n-shaped punctures. Lateral margins densely punctate. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture strongly spinose. **Pygidium:** Surface distinctly convex in both sexes, with large, dense, concentric, transversely vermiform punctures, punctures bearing short to long setae. **Venter:** Metasternum with large, dense, transversely vermiform punctures either side of middle, punctures usually with long, dense, tawny, brown, or black setae. Mesometasternal process, in lateral view, moderately protuberant beyond mesocoxae, either subparallel to horizontal axis of body, at a slight, oblique angle to horizontal axis of body, or distinctly deflexed; in ventral view (Fig. 40), apex broadly rounded or with sides tapering to rounded apex, base of process with dense, minute punctures, punctures each with a long, dense seta or not. Abdominal sternites with large, dense, n-shaped punctures laterally, punctures each with a short to long seta. **Legs:** Protibia tridentate in both sexes. **Parameres:** Shape slightly variable, divergent between midpoint and apex (Figs. 41–42). Apices each with distinct, lateral spur.

Distribution. *Hoplopyga foeda* is found in the Andes of northern and western South America (Fig. 43).

Locality Records. 172 specimens from the following collections: AMNH, BCRC, BMNH, CASC, CCBM, DCCC, DEIC, FMNH, MIZA, MNHN, QCAZ, RMNH, SLTC, and ZMHU. **BOLIVIA (18):** COCHABAMBA (15): Arani. NO DATA (3). **COLOMBIA (71):** BOGOTÁ (1): Bogotá. CALDAS (3): Manizales. CAUCA (5): Quebrada Pereira, Quebrada Tomé, No data. CHOCÓ (4): Río Aguacate. CUNDINAMARCA



Figs. 38–43. *Hoplopyga foeda*. **38)** Lectotype, dorsal view; **39)** Habitus; **40)** Mesometasternal process, ventral view; **41–42)** Parameres; **43)** Distribution.

(12): Fusagasuga, Río Panche (SE Girardot), Viotá. META (2): Villavicencio. NORTE DE SANTANDER (1): Pamplona. TOLIMA (4): San Antonio, No data. VALLE DEL CAUCA (10): Cali, Calima Valley (45 km W Buga). NO DATA (29). **ECUADOR (16):** COTOPAXI (6): Las Pampas. LOJA (2): No data. NAPO (3): Baeza, Cosanga. PICHINCHA (2): Mindo, Quito. ZAMORA-CHINCHIPE (1): Zamora. NO DATA (2). **PERU (2):** JUNÍN (1): Río Oxabamba. NO DATA (1). **VENEZUELA (61):** ARAGUA (26): Portachuelo. CAPITAL DISTRICT (3): Caracas. MÉRIDA (16): Bailadores, Briceño, Monte Carmelo, La Pedregosa, Sierra Nevada, No data. MIRANDA (2): Guayabo, No data. NO DATA (14). **NO DATA (5).**

Temporal Distribution. January (3), February (2), March (3), April (5), May (3), June (2), July (2), August (3), September (10), October (1).

Diagnosis. *Hoplopyga foeda* is differentiated from other species by its large size (15.8–19.6 mm), robust body, and setose appearance. Certain morphological characters of this species vary significantly across its range. The lectotype of this species (Fig. 38) has a mesometasternal process that is distinctly deflexed, with the apex subquadrate in lateral view, which is a state we have not observed in other specimens of this species. Specimens from the eastern portion of the species' range (Venezuela) typically have the apex of the mesometasternal process at a slight oblique angle to the horizontal axis of the body and have short, dark setae on the metasternum. Specimens from the western portion of the species' range (Colombia and Ecuador) tend to have a mesometasternal process that is subparallel to the horizontal axis of the body and long, dense, tawny setae on the metasternum. The coloration of abdominal sternites varies as well. Sternites of male specimens have a black, shiny area on the middle of each sternite or not. The maculae on the posterolateral corners of each sternite in females vary from being inconspicuous to extremely noticeable. The form of the male parameres of this species varies but is consistent in that the shaft is divergent between the midpoint and the apex, and the apices each have a distinct, lateral spur. This species is similar to large *H. liturata* specimens but can be distinguished by having punctures on each elytron that continue to the base near the scutellum. *Hoplopyga foeda* is also similar to *H. aequatorialis* but can be separated based on the form of the male parameres (Figs. 41–42 vs. Figs. 3–4) and by the amount of setae on the body. *Hoplopyga foeda* usually has a fringe of long, dense setae along the apex of the pygidium, which is lacking in *H. aequatorialis*, and the setae from the punctures on the metasternum in *H. foeda* are generally longer and denser.

Nomenclature. Thomson described *Gymnetis lucidiventris* based on an entirely black female specimen, and Schürhoff (1937) transferred *G. lucidiventris* to the genus *Hoplopyga.* This species is virtually identical to black female *H. foeda* specimens. Because of a lack of any significant differences between the species and the wide variation of character states known in *H. foeda*, we consider *H. lucidiventris* to be conspecific with *H. foeda.*

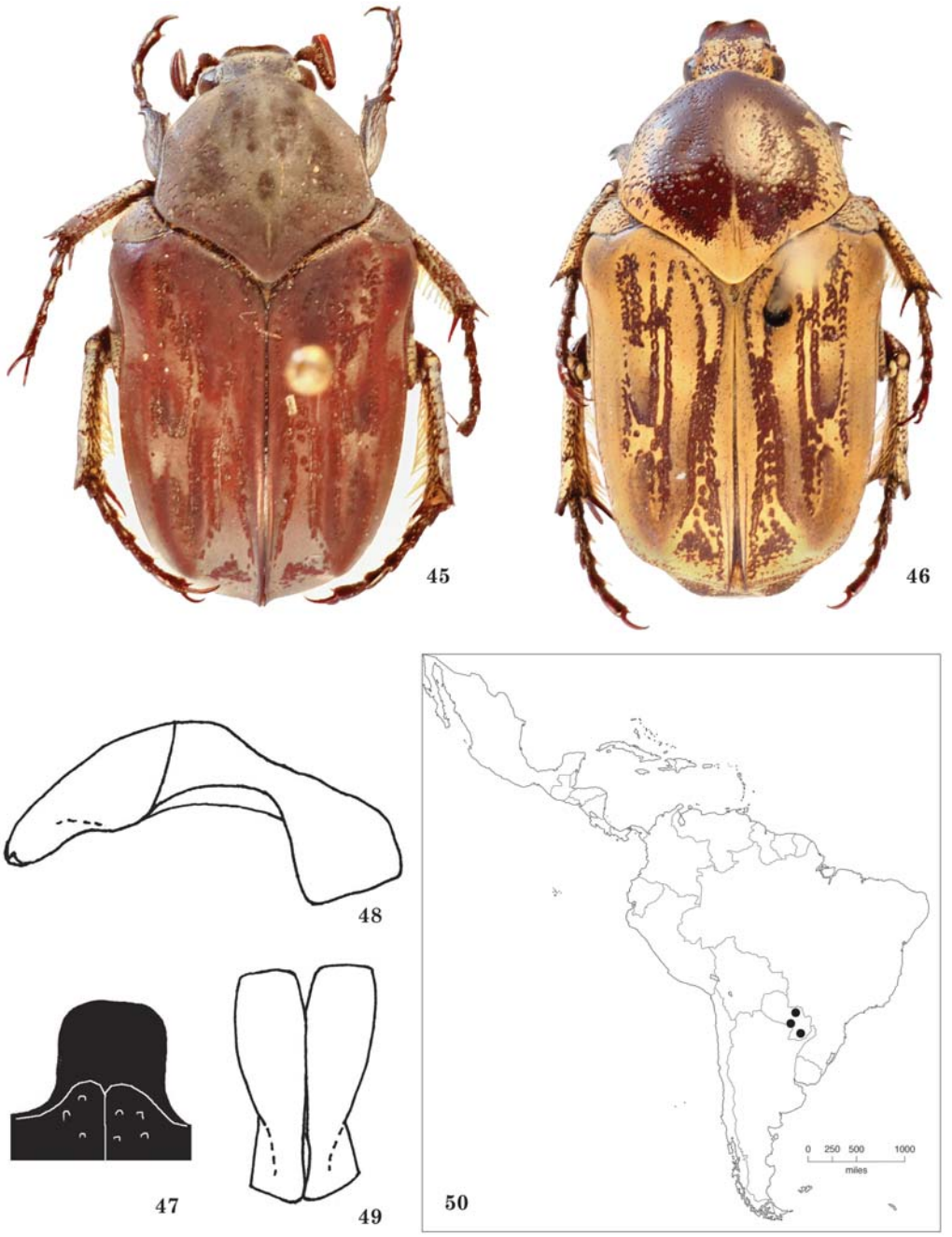
Fig. 44. *Hoplopyga foeda* habitat at Portachuelo Pass, Parque Nacional Henri Pittier, Aragua, Venezuela. Photograph by BCR.

Natural History. Specimens have been caught at elevations up to 2,050 m (Fig. 44) (label data). Otherwise, nothing is known of its life history.

Hoplopyga gosseti Antoine, 2008
(Figs. 45–50)

Hoplopyga gosseti Antoine 2008: 254 (original combination). Holotype male at MNHN, examined via photographs. Type locality: "Paraguay, region d'Asunción."

Description. Length 12.2–14.4 mm; width across humeri 7.1–8.6 mm. Dorsal surface opaque, females normally with pronotum and elytra shiny. Ground color of dorsum cream-colored to brownish yellow to yellowish green. Head with fuscous spot either side of midline at base in both sexes, females with anterior third of clypeus reddish brown, shiny. Pronotum with fuscous clouding at middle, fuscous M-shaped mark when velutinous covering is present, and with narrow, longitudinal, brownish yellow to yellowish green band on posterior half of midline. Ventral surface enamel-like, with ground color as on dorsum. Metasternum reddish brown to piceous, shiny at middle. Mesometasternal process entirely reddish brown, shiny. Males with each sternite reddish brown, shiny on anteromedial margins. Sternites of females entirely reddish brown, shiny at middle of each sternite. Setae tawny. **Head:** Surface with large, dense, deep, round and n-shaped punctures on frons, with punctures smaller and less dense on clypeus. Clypeal apex weakly to moderately



Figs. 45–50. *Hoplopyga gosseti*. **45–46)** Habitus; **47)** Mesometasternal process, ventral view; **48–49)** Parameres; **50)** Distribution.

reflexed, distinctly emarginate at middle, weakly angulate or rounded either side of emargination. Antennal club slightly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins obtusely angulate, posterolateral margins subparallel. Surface with punctures minute to large, sparse to dense, n-shaped. Lateral margins with bead from apex to base and on apicolateral margins.

Elytra: Surface of each elytron with 2 distinctly elevated, discal costae, lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, dense, arranged longitudinally in striae (sometimes coalescing longitudinally), becoming smaller and extending to base near scutellum in 2 columns. Each elytron with cluster of n-shaped punctures on apical declivity and sometimes behind apical umbone. Lateral margins impunctate, or with small, dense, elongate n-shaped punctures posteriorly. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture weakly spinose. **Pygidium:** Surface weakly to moderately convex in both sexes, with large, dense, concentric, elongate, n-shaped punctures in 3 columns, each puncture with a minute seta, punctures not reaching apical margin. **Venter:** Metasternum with large, dense, elongate, n-shaped and transversely vermiform punctures either side of middle, punctures with long setae. Mesometasternal process, in lateral view, subparallel to horizontal axis of body, weakly protuberant beyond mesocoxae; in ventral view (Fig. 47), process rounded, with short, sparse setae on lateral margins of ventral face or not. Abdominal sternites with large, moderately dense, weakly n-shaped punctures either side of middle and along anterolateral margins of each sternite, each puncture with a minute seta. **Legs:** Male protibia with 2 proximal, apical teeth. Female protibia tridentate, with 2 proximal, apical teeth and 1 tooth at protibial midpoint. **Parameres:** Shaft weakly divergent between midpoint and apex (Figs. 48–49). Lateral margins expanding from midpoint to apices. Apices each with minute, lateral spur.

Distribution. *Hoplopyga gosseti* is known from Paraguay (Fig. 50).

Locality Records. 54 specimens from CASC, FMNH, USNM, and ZMHU. Some data from Antoine (2008). **PARAGUAY (54):** AMAMBAY (4): No data. DISTRITO CAPITAL (41): Asunción. ITAPÚA (4): No data. NO DATA (5).

Temporal Distribution. October (4), November (4).

Diagnosis. *Hoplopyga gosseti* is distinguished from all *Hoplopyga* species, except *H. albiventris*, by having a protibia with two proximal, apical teeth in both males and females. This trait is shared with *H. albiventris*, but *H. gosseti* has the posterolateral margins of the pronotum distinctly subparallel, whereas *H. albiventris* does not. In addition, the abdominal sternites on *H. gosseti* are largely reddish brown and shiny on the middle, and the sternites on *H. albiventris* have only a reddish brown, shiny spot or band on the anterior margin of the middle of each sternite. The male parameres can also be used to separate these two species (Figs. 48–49 versus Figs. 10–11). The parameres of *H. gosseti* are slightly divergent at the midline where they meet the phallobase, and the parameres of *H. albiventris* are not.

Natural History. Nothing is known of the life history of this species.

Hoplopyga liturata (Olivier, 1789)

(Figs. 51–59)

Scarabaeus pennicrusta Voet 1776: 10 (*nomen nudum*; see nomenclatural remarks below). Type not found. Type locality: "India Orientali."

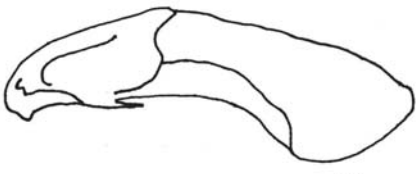
Cetonia liturata Olivier 1789: 86 (original combination). Type not found. Type locality: not given.

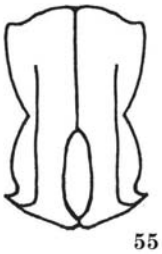
Gymnetis spinosa Fischer von Waldheim 1823: 259 (synonym). Type not found. Type locality: "Brasilia."

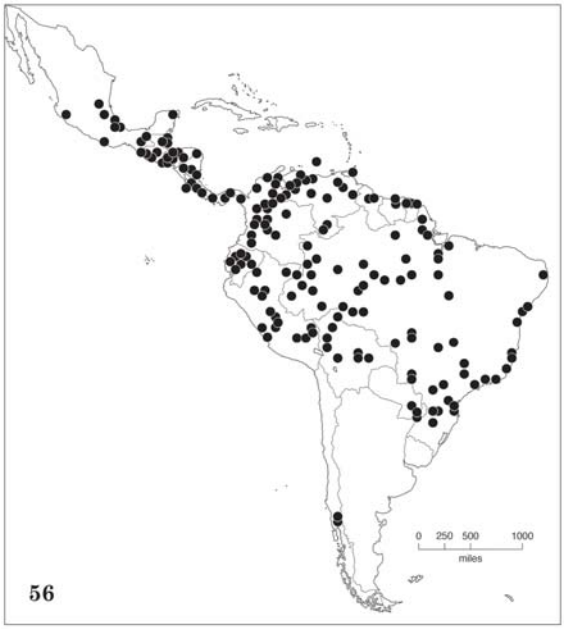
Gymnetis hamata Fauvel 1860: 305 (synonym). Type not found. Type locality: "Cayenne."

Gymnetis spurca Janson 1880: 576 (original combination). Holotype female at RMNH, labeled "Ecuador (Buckley)//Museum Leiden/verz. F. T. Valk Lucassen (O. E. Janson)//Hoplopyga spurca Janson//Type//Gymnetis spurca Janson/female symbol Type//spurca Jans.//Gymnetis spurca, Jans. Type Ecuador//Gymnetis spurca Janson Holotype", examined. Type locality: "Ecuador." **New synonymy**.

Description. Length 11.4–16.7 mm; width across humeri 6.7–10.7 mm. Ground color of dorsum highly variable, ranging from velutinous, brownish yellow to greenish gray. Some specimens entirely black. Head with fuscous clouding either side of midline at base in both sexes. Pronotum with fuscous to piceous clouding at middle, fuscous M-shaped mark (sometimes obscured by clouding), and narrow, longitudinal, brownish yellow band on posterior half of midline (band sometimes absent). Elytra with fuscous to piceous clouding at base mesad of mesepimeron and at suture, and with fuscous to piceous marks as follows: each elytron with 1–2 spots on mediodiscal area and J-shaped mark or reversed J-shaped mark on apical umbone. Ventral surface opaque, ground color as on dorsum. Metasternum with reddish brown, shiny, oblique spot either side of midline or reddish brown, shiny spot at middle or narrow, reddish brown, shiny line on midline on males; females with middle third entirely reddish brown, shiny. Mesometasternal process reddish brown, shiny at apex on males, entirely reddish brown and shiny in females. Abdominal sternites of males each with reddish brown, shiny areas or not, females with middle third of each sternite reddish brown, shiny. Setae tawny. **Head:** Surface with large, dense, round and n-shaped punctures, each puncture with a minute seta in pristine specimens, punctures becoming smaller towards apex.







Figs. 51–56. *Hoplopyga liturata*. **51)** Habitus; **52–53)** Variation in mesometasternal process, ventral view; **54–55)** Parameres; **56)** Distribution.

Clypeal apex weakly emarginate at middle, weakly reflexed, weakly angulate either side of emargination. Antennal club slightly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins obtusely angulate, appearing broadly rounded. Surface with minute to small, sparse, round punctures at middle, punctures becoming large, dense, and n-shaped laterally. Lateral margins with short bead not reaching apical or basal angles. **Elytra:** Surface of each elytron with 2 distinctly elevated, discal costae, lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, dense, arranged longitudinally in striae, not extending to base near

Figs. 57–59. *Hoplopyga liturata*. **57–58)** Dorsal color variation; **59)** Adult *H. liturata* in French Guiana (photograph courtesy of Julien Touroult).

scutellum. Apical declivity with large, dense, n-shaped punctures. Lateral margins densely punctate. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture strongly spinose. **Pygidium:** Surface distinctly convex in both sexes, with large, dense, concentric, transversely vermiform punctures, each puncture with minute setae. **Venter:** Metasternum with large, dense, n-shaped and m-shaped punctures either side of middle, each puncture with a minute to short seta. Mesometasternal process, in lateral view, subparallel to horizontal axis of body (sometimes at a slight, oblique angle to horizontal axis of body in large specimens), moderately protuberant beyond mesocoxae; in ventral view (Figs. 52–53), apex broadly rounded. Abdominal sternites with large, dense, n-shaped and elongate, n-shaped punctures either side of middle in males or on lateral, opaque areas in females, each puncture with a minute to short seta. **Legs:** Protibia short, tridentate in both sexes. **Parameres:** Shaft divergent between midpoint and apex (Figs. 54–55). Lateral margins with broad bulge between midpoint and apex. Apices each with distinct, lateral spur. Ventral face obliquely angled, visible in lateral view.

Distribution. *Hoplopyga liturata* has a broad distribution from the southern half of Mexico to Argentina (Fig. 56). There are two possibly erroneous records from Chile.

Locality Records. 2,998 specimens from the following collections: ADMC, AMIC, AMNH, BCRC, BMNH, CASC, CCBM, CMNH, CNCI, CZUG, DCCC, DEIC, EAPZ, EGRC, EMEC, FMNH, FSCA, HAHC, INBC, INPA, JDGC, JEWC, JMMC, LACM, LSAM, MAMC, MCZC, MIZA, MLUH, MNHN, MPEG, MZSP, NMPC, OSU, PKLC, QCAZ, RMYC, SEMC, SLTC, TAMU, UCCC, UFRJ, UMSP, UNSM, USNM, WBWC, and ZMHU. Some data from Morón (1995), Reyes Novelo and Morón (2005), Fierros-López (2007), Suárez-G. and Amat-García (2007), Jhon Neita (personal communication to BCR, 13 November 2008), Neita Moreno *et al.* (2010), Orozco (2012), Di Iorio (2013), and Rodrigues *et al*. (2013). **ARGENTINA (11):** CHACO (1): No data. MISIONES (9): Estación Experimental Loreto, Pindapoy, No data. NO DATA (1). **BELIZE (25):** BELIZE (3): Manatee, No data. CAYO (8): Chiquibul Forest Reserve, Las Cuevas Research Station. ORANGE WALK (5): La Milpa Field Station, Río Bravo Conservation Area. TOLEDO (7): Punta Gorda, No data. NO DATA (2). **BOLIVIA (38):** BENI (2): Cavinas, Guyaramerín. COCHABAMBA (5): No data. LA PAZ (15): Nor Yungas, Río Zongo, San Jose, Tumupasa. SANTA CRUZ (14): Amboró National Park, Buena Vista, Cuevas (6.2 km SE), Florida, Hotel Fauna y Flora (4–6 km SSE Buena Vista), Loma Alta. NO DATA (2). **BRAZIL (678):** ACRE (1): Río Branco. AMAPÁ (5): Porto de Santana, Río Matapi, Serra Lombarda, No data. AMAZONAS (173): Benjamin Constant, Borba, Guajará, Humaitá, Ipiranga, Lago do Acará, Manacapuru, Manaus, Manicoré, Maués, Obidos, Reserva Ducke (near Manaus), São Paulo de Olivença, Tefé, Tonantins, Yauaretê, No data. BAHIA (27): Alcobaça, Ilhéus, Maragogipe, No data. DISTRITO FEDERAL (1): No data. ESPÍRITO SANTO (68): Colatina, Linhares, Santa Leopoldina, No data. GOIÁS (14): Jataí, Río Verde, No data. MATO GROSSO (17): Cáceres, Chapada dos Guimarães, Cuiabá, Pôrto do Sará, Reserva Humboldt. MATO GROSSO DO SUL (23): Aquidauana, Chapada, Córrego Itá. MINAS GERAIS (12): Río Sapucaí, Varginha. PARÁ (165): Altamira, Belém, Benevides, Cametá, Conceição do Araguaia, Itaituba, Mocajuba, Óbidos, Río Madeira, Santarém, Tapará, Taperinha, Tucuruí, No data. PARAÍBA (4): No data. PARANA (7): Caviuna, Heimtal, Mirador, Ponta Grossa. RIO DE JANEIRO (16): Goytacazes, Guanabara, Itatiaia, No data. RIO GRANDE DO SUL (19): Chapada. RONDÔNIA (62): Abunã, Ariquemes (60 km SW), Fazenda Rancho Grande (62 km S Ariquemes), Ouro Preto do Oeste. SANTA CATARINA (13): Blumenau, Corupá, Joinville, Nova Teutônia, Pinhalzinho. SÃO PAULO (4): No data. NO DATA (47). **CHILE (2):** LOS LAGOS (2): Llanquihue, Puerto Varas. **COLOMBIA (185):** ANTIOQUIA (19): Betania, Estrella, Gómez Plata, Guarne, Medellín, Prado, Santafé de Antioquia, Turbo, Villa Arteaga, Yolombó, No data. BOYACÁ (6): Muzo, Villa de Leyva, No data. CALDAS (1): No data. CASANARE (1): No data. CAUCA (25): Matagang, No data. CHOCÓ (7): La Troje, Tutunendó, Yuto, No data. CÓRDOBA (2): Tres Palmas, No data. CUNDINAMARCA (10): Bogotá, Fusagasugá, Medina, No data. GUAVIARE (1): No data. MAGDALENA (16): Aracataca, Cañaveral, Parque Nacional Natural Tayrona, Patuca, Río Frío, Sevilla. META (8): Parque Nacional Natural Sierra de la Macarena, Villavicencio, No data. NORTE DE SANTANDER (2): La Playa, No data. PUTUMAYO (3): Mocoa. QUINDÍO (2): Calarca, No data. RISARALDA (10): Pereira. SANTANDER (2): Bolívar (65 km NW Tunja), Bucaramanga. SUCRE (1): No data. TOLIMA (7): Honda, Santa Isabel. VALLE DEL CAUCA (32): Cali, Palmira, Río Dagua, Toro, No data. NO DATA (30). **COSTA RICA (603):** ALAJUELA (42): Caño Negro, Dos Ríos, Estación Experimental Agrícola Fabio Baudrit Moreno, Upala, Zapote de Upala, Zarcero, No data. CARTAGO (44): Aquiares (9 km NW of Turrialba), Chirripo Valley (30 mi SE Turrialba), Juan Viñas, Pacayas, La Suiza, Tucurrique, Turrialba. GUANACASTE

(240): Bebedero, La Cruz (9 mi. S Santa Cecilia), Estación Biológica Maritza (Parque Nacional Guanacaste), Estación Bosque Diriá (Bosque Nacional Diriá), Estación Cacao (2 km SW Cerro Cacao), Estación Los Almendros (12 km, Carretera a Santa Cecilia), Estación Pitilla (9 km S Santa Cecilia), Estación Santa Rosa (Parque Nacional Santa Rosa), Finca Jenny (30 km N de Liberia), Finca Pasmompa (5 km SE Santa Cecilia), Hacienda Santa María, Liberia (25 km NE, Parque Nacional Rincón de la Vieja), Palo Verde Biological Research Station, Parque Nacional Barra Honda (3 km NE Nacaome), Parque Nacional Santa Rosa, Sector Pailas (4.5 km SW del Volcán Rincón de la Vieja), Tierras Morenas, Turín, No data. HEREDIA (17): Belen, San Antonio de Belen, San Rafael (Area de Conservación Cordillera Volcánica Central), Selva Verde Lodge, Virgen, No data. LIMÓN (49): Amubri, Area de Conservación Llanuras del Tortuguero, Cerro Tortugero, Guápiles (35 km N), Parismina, La Perla (10 mi. NE Siquirres), Pococí (30 km N Cariari), Puerto Viejo, Reserva Biológica Hitoy Cerere, San Miguel (Finca Los Angeles), Santa Clara (Hamburg Farm). PUNTARENAS (120): Agua Buena, Estación Biológica Las Alturas (Área de Conservación La Amistad-Pacífico), Estación Biológica Monteverde, Estación Pittier (4.2 km SW del Cerro Gemelo), Estación Quebrada Bonita (Reserva Biológica Carara), Estación San Miguel (3 km NW Cabo Blanco), Estación Sirena (Parque Nacional Corcovado), Finca Las Cruces (4 mi S San Vito de Java), Golfito (Reserva Forestal Golfo Dulce), Guacimal (Finca Buen Amigo Monteverde), Monteverde, Río Bonito (2.3 km W Cerro la Gamba), Sabalito, Santa Elena (3 km SW), Sendero Los Patos, Sierpe (Rancho Quemado), Las Tablas Protected Zone. SAN JOSÉ (48): La Caja, Candelarita, Cerro de la Muerte, Curridabat, Estación Zurquí (Parque Nacional Braulio Carrillo), Reserva Biológica Carara (2 km N Bijagual), San Isidro (7 km N), San José, San Pedro, Zurquí de Moravia, No data. NO DATA (43). **ECUADOR (97):** BOLÍVAR (12): Balzapamba, La Chima, Chimbo. COTOPAXI (9): La Maná, Las Pampas (2 km N). GUAYAS (5): Balzar Mountains, Guayaquil, San Francisco. LOS RÍOS (4): No data. NAPO (2): Atahualpa (10–24 km E). PASTAZA (2): Pacayacu. PICHINCHA (11): San Carlos, Santa Inés. SANTO DOMINGO DE LOS TSÁCHILAS (38): Santo Domingo de los Colorados (12 km E.). NO DATA (14). **EL SALVADOR (7):** LA LIBERTAD (1): No data. SAN MIGUEL (1): No data. SAN SALVADOR (2): Los Planes de Renderos, No data. NO DATA (3). **FRENCH GUIANA (161):** CAYENNE (159): Kourou, Macouria, Matoury, Montabo, Mont du Tigre, Montsinéry (D5, km 3.2), Montsinéry-Tonnegrande, Pariacabo, Passoura, Régina, Rémire-Montjoly, Risquetout, Roura (RD 6, km 13.2–39.5), No data. SAINT LAURENT DU MARONI (2): No data. **GUATEMALA (27):** ALTA VERAPAZ (7): Cobán, Panzós, San Juan Chamelco, Senahú, Trece Aguas. BAJA VERAPAZ (1): No data. CHIMALTENANGO (1): Yepocapa. GUATEMALA (2): Guatemala City, Santa Elena Barillas, Villa Lanales. PETÉN (2): Tikal National Park. QUETZALTENANGO (1): Zunil. SAN MARCOS (2): La Conquista, Zapote. SUCHITEPÉQUEZ (4): Finca Chocolá (10 km N San Antonio), Finca El Cipres, Zunilito. ZACAPA (2): San Lorenzo (2 km S), La Unión. NO DATA (5). **GUYANA (41):** CUYUNI-MAZARUNI (15): Bartica, Kartabo. DEMERARA-MAHAICA (8): Georgetown, Hyde Park, No data. NO DATA (18). **HONDURAS (85):** ATLÁNTIDA (29): Boca Cerrada (Refugio de Vida Silvestre Cuero y Salado), Ceiba, Estación CURLA (Parque Nacional Pico Bonito), Estero García (Refugio de Vida Silvestre Cuero y Salado), El Pino (Parque Nacional Pico Bonito), Río Masica (Refugio de Vida Silvestre Cuero y Salado), Salado Barra (Refugio de Vida Silvestre Cuero y Salado). COMAYAGUA (28): Comayagua (8 km N), Siguatepeque, Taladro, Taulabé. COPÁN (1): Copán Ruinas. CORTÉS (5): Lago de Yojoa, Muchilena. FRANCISCO MORAZÁN (1): Valle de Ángeles. GRACIAS A DIOS (1): No data. LA PAZ (4): No data. OLANCHO (2): Parque Nacional La Muralla. YORO (3): Montaña de Santa Bárbara (Parque Nacional Pico Bonito), Portillo (Parque Nacional Pico Bonito), El Progreso. NO DATA (9). **MEXICO (91):** CHIAPAS (19): Comitán de Domínguez, Palenque (10 mi. S), Parque Lagunas Bélgica (12 mi. N Ocozocoautla), Rancho St. Rosa, San Antonio, Tapachula, No data. HIDALGO (2): Molango, Tlanchinol. JALISCO (1): Casimiro Castillo. OAXACA (1): Puerto Escondido Road (km 114). PUEBLA (5): Xicotepec. QUINTANA ROO (13): Nuevo X-Can, Tigre Grande. VERACRUZ (44): Banderilla, Briones, Catemaco, Coatepec, Córdoba, Fortín, Los Tuxtlas, Xalapa, Zapoapan de Cabañas, No data. YUCATÁN (1): Tigre Grande. NO DATA (5). **NICARAGUA (32):** CHONTALES (11): Juigalpa, No data. JINOTEGA (2): El Jaguar Coffee Finca. NUEVA SEGOVIA (2): Dipilto. REGIÓN AUTÓNOMA DEL ATLÁNTICO SUR (7): Río Las Latas, Zelaya. RÍO SAN JUAN (6): Los Guatuzos Wildlife Refuge, Río Papaturro, Refugio Bartola. NO DATA (4). **PANAMA (211):** BOCAS DEL TORO (1): Almirante. CHIRIQUÍ (111): Boquete, Bugaba, Caldera, Cerro la Pelota, Cerro Punta, David, Finca la Suiza (5.3 km N Los Planes), Hato del Volcán, Hornito, Lino, Ojo de Agua, Santa Clara, No data. COCLÉ (4): El Valle. COLÓN (17): Coco Solo Hospital, Fort Gulick, Fort Sherman, Gamboa, Gatún, Gatun Tank Farm,

Madden Forest Preserve, Pipeline Road (Parque Nacional Soberanía), No data. DARIÉN (3): Pirre, El Real de Santa María. PANAMÁ (67): Altos de Campana National Park, Altos (Isla) de Majé, Arraiján, Barro Colorado Island, La Campana, Cerro Azul, Cerro Jefe, Chilibre, Fort Kobbe, Ipetí, Lake Cerro Azul, El Llano-Cartí Rd (km 8–9), Majé, Pacora, Parque Nacional de Soberania (Pipeline Rd., 2 km W. Gamboa). NO DATA (8). **PARAGUAY (10):** GUAIRÁ (1): Villarrica. ITAPÚA (3): Hohenau. NO DATA (6). **PERU (108):** CUSCO (4): Machu Picchu, Marcapata, Valle de Lares (75 km NW Calca). HUÁNUCO (5): Leonpampa, Río Pachitea, Tingo María. JUNÍN (28): Chanchamayo, Río Oxabamba, Sani Beni, San Ramón, Satipo. LIMA (2): Cerro Azul, Upper Río Marañón. LORETO (17): Caballococha, Datem del Marañon, Iquitos, Pucallpa, Yarinacocha, Yurimaguas. MADRE DE DIOS (3): Puerto Maldonado (8 km E), Tambopata National Reserve (30 km SW Puerto Maldonado). PASCO (19): Chontabamba, Pozuzo. SAN MARTÍN (14): Achinamiza, Juanjuí, Moyobamba, Soritor (21 km W of Rioja), Tarapoto, No data. NO DATA (16). **SURINAME (81):** BROKOPONDO (7): Brownsberg, Stone Island Eco Resort. PARAMARIBO (3): No data. NO DATA (71). **TRINIDAD (49):** ARIMA (5): Arima, Asa Wright Nature Center (7.5 mi. N Arima). CITY OF PORT OF SPAIN (9): Maraval, Saint Clair, No data. COUVA-TABAQUITE-TALPARO (10): Caparo. RIO CLARO-MAYARO (1): Mayaro Beach. SAN JUAN-LAVENTILLE (6): Maracas Bay, Maracas Bay Road (Mile Post 6.25). TUNAPUNA-PIARCO (6): Valsayn Park. NO DATA (12). **VENEZUELA (376):** AMAZONAS (12): Río Ocamo, San Carlos de Río Negro, No data. APURE (1): San Fernando de Apure. ARAGUA (56): Choroní, Estación Biológica Rancho Grande, Henri Pittier National Park, El Limón, Maracay, El Portachuelo, No data. BARINAS (9): Barinas, Reserva Forestal de Ticoporo. BOLÍVAR (116): Agua Fría, Anacoco, Caicara (150 km S), El Dorado, Guri, El Pao, Reserva Forestal de Imataca, Río Cuchivero, Río Guaniamo, Suapure, No data. CAPITAL DISTRICT (33): Caracas, Parque Los Chorros, No data. CARABOBO (18): Bejuma, Chirgua, Güigüe, San Esteban, Trincheras, Vigirima. FALCÓN (2): Boca Aroa, Sanare. LARA (1): Bobare. MÉRIDA (2): No data. MIRANDA (8): Quebrada La Guarita, San Antonio de los Altos, Los Teques, No data. MONAGAS (18): Jusepín, Maturín (42 km SE), San José de Buja. PORTUGUESA (1): Biscucuy. TÁCHIRA (16): Bramón, Cordero, La Morita, Machiri, Paramillo, Rubio, San Cristóbal, No data. TRUJILLO (2): Boconó, El Cenizo. YARACUY (20): Cumaragua, La Hoya, Yumare. ZULIA (23): Maracaibo, Serranía de Perijá, El Tucuco, No data. NO DATA (38). **NO DATA (80).**

Temporal Distribution. January (127), February (90), March (174), April (167), May (259), June (231), July (140), August (182), September (163), October (169), November (150), December (168).

Diagnosis. *Hoplopyga liturata* has a broad distribution, and the color and *gestalt* of this species is consequently variable (Figs. 51, 57–59). One of the distinguishing characters for this species is that the punctation between the median elytral costa and the sutural costa of each elytron does not continue to the base of each elytron next to the scutellum. In addition, males of this species lack long, dense setae at the base of the mesometasternal process, a character that is present in some species that appear similar. The parameres of *H. liturata* are unique in that the ventral portions of the shaft are obliquely angled, so that the ventral face is clearly visible in lateral view (Fig. 54). It is most similar to *H. ocellata*, but the area of fuscous clouding on the middle of the pronotum has straight margins in *H. liturata*, while the edges of the fuscous clouding in *H. ocellata* have a scalloped appearance. In addition, *H. ocellata* has an hourglass shape on the elytra that is not present in *H. liturata*.

Nomenclature. Olivier (1789) described *Cetonia liturata* and a subsequent folio of plates (Olivier 1808) clearly shows this species to be *H. liturata*. Gory and Percheron (1833) then moved *C. liturata* to the genus *Gymnetis.* The catalogs of Schenkling (1921), Blackwelder (1944), and Krajčík (1998) listed *Cetonia acuminata* Herbst and *Scarabaeus pennicrusta* Voet (misspelled as *S. penicrusta)* as synonyms of *H. liturata*, but the following will describe why we do not list them as synonyms in this revision.

Cetonia acuminata was actually first described by Fabricius (1775), and it is unclear when and why it was first erroneously attributed to Herbst. Herbst (1790) simply redescribed the species, citing both the original description by Fabricius and Voet's description of *S. pennicrusta* in the *Catalogus Systematicus Coleopterorum*. A syntype of *C. acuminata* was located at the BMNH, and it was noted that this specimen has a visible scutellum (not present in *Hoplopyga* species) and does not resemble *H. liturata* (Malcolm Kerley, personal communication to BCR, 15 October 2014). Therefore, we remove this species from synonymy with *H. liturata*. As for *S. pennicrusta*, Voet published the first 40 pages of the *Catalogus Systematicus Coleopterorum* in 1776, which included the description of *S. pennicrusta*. However, the *Catalogus Systematicus Coleopterorum* is not consistently binomial, thus rendering the names in that work invalid (ICZN Article 11.4). Therefore, *Scarabaeus pennicrusta* is a *nomen nudum*. In addition, the figure of *S. pennicrusta* provided in the second

volume of the *Catalogus Systematicus Coleopterorum* has a visible scutellum, and the type locality given is "India Orientali," the East Indies, where *Hoplopyga* species do not occur.

Janson (1880) described *Gymnetis spurca* from a single female and recognized that it was similar to *H. liturata* but is distinguished by its more robust form and coarse punctation. We have observed that *H. liturata* specimens from Ecuador are frequently larger and darker than specimens from other localities, but putative *H. spurca* homotypes present no significantly consistent differences from *H. liturata* specimens. *Hoplopyga liturata* is extremely variable in appearance over its range from Mexico to Argentina, and we have observed many regional differences in *gestalt* and form of the male parameres. Therefore, we consider *H. spurca* to be conspecific with *H. liturata.*

Schaum (1844) synonymized *Gymnetis spinosa* with *G. liturata*, and Ritsema (1885) synonymized *Gymnetis hamata* with *G. liturata*. We support these synonymies, and the plate in Fischer von Waldheim (1823) illustrating *G. spinosa* shows that the species is conspecific with *H. liturata*. In addition, in his description of *G. hamata,* Fauvel (1860) remarked that the species is very similar to *G. ocellata.* Without type material to examine, we cannot definitively say whether Ritsema's synonymization of *G. hamata* with *G. liturata* is correct or whether it should have been synonymized with *H. ocellata*, but we are comfortable with the synonymy as it stands based upon the description of *G. hamata.*

Natural History. Specimens have been collected at elevations ranging from sea level to 3,600 m and in habitats ranging from tropical moist forests (Fig. 60) to tropical rainforests. Adult beetles are attracted to fermented fruit and sap and have been found in traps baited with avocado, banana, blackberries, mandarin oranges, mango, papaya, plantain, and sugared wine (Gara and Onore 1989; Solís 2004; label data). Gara and Onore (1989) listed several plants on which adult beetles fed on sap or slime flux. These included *Cordia alliodora* (Ruiz and Pavón) Chamisso (Boraginaceae) and *Delonix regia* (Bojer ex Hooker) Rafenesque (Fabaceae) in Ecuador. Adults have been observed feeding on the ripened fruits of *Carica papaya* L. (Caricaceae), *Persea americana* (Miller) (Lauraceae), and *Solanum umbellatum* Miller (Solanaceae) (Gara and Onore 1989) in Ecuador.

Fig. 60. *Hoplopyga liturata* habitat in in tropical moist forest in Cayo District, Belize. Photograph by Jesús Orozco.

Solís (2004) observed adults feeding on the flowers of *Renealmia* species (Zingiberaceae) and noted that disturbing this species caused it to emit a foul odor. Hedström and Elmqvist (1984) observed this species feeding on the sap of *Gouania polygama* (Jacquard) (Rhamnaceae) and noted that butterfly species in the genus *Prepona* Boisduval (Lepidoptera: Nymphalidae) were observed inserting their proboscis into the anus of *H. liturata* specimens, presumably to extract nutrients from the fluid excrement of the beetle. Larvae have been found in the rotten wood of *D. regia*, *Eucalyptus globulus* Labillardière (Myrtaceae), *P. americana*, and *Protium ecuadorense* Benoist (Burseraceae) (Gara and Onore 1989). Larvae, pupae, and adults have been found in the rotten bases of hollow, live trees and adults on plants such as *Acnistus arborescens* (L.) Schlechtendal (Solanaceae) and *G. polygama* (Garcia *et al.* 2013; label data). Neita *et al.* (2006) reported larvae found in the trunk of decomposing *Brosimum utile* (Kungh) Pittier (Moraceae). The larvae and pupae of this species were described by Morón and Arce (2002).

Hoplopyga marginesignata (Gory and Percheron, 1833)

(Figs. 61–66)

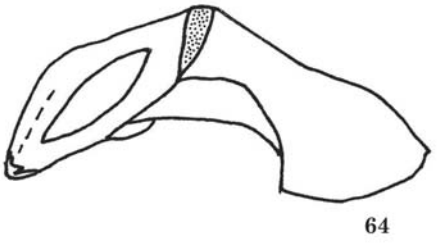
Gymnetis marginesignata Gory and Percheron 1833: 72 and 366 (original combination). Holotype male at MNHN, labeled "Type//Ex Musaeo/ Van Lansberge//marginisignata G&P/Guyana Typus", examined. Type locality: "Cayenne."

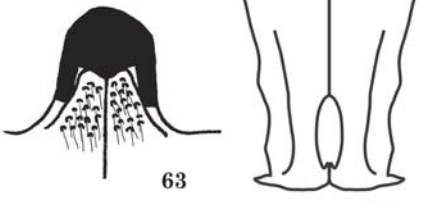
Gymnetis fumata Janson 1880: 576 (synonym). Holotype male at RMNH, labeled "Sarayaco, Ecuador/C. Buckley//male symbol//Gymnetis fumata Janson, type male symbol.Type//Type// Hoplopyga fumata Jans.//Gymnetis fumata O. Jans./Type Ecuador//fumata Jans.//Gymnetis fumata Janson", examined. Type locality: "Sarayaco, Ecuador."

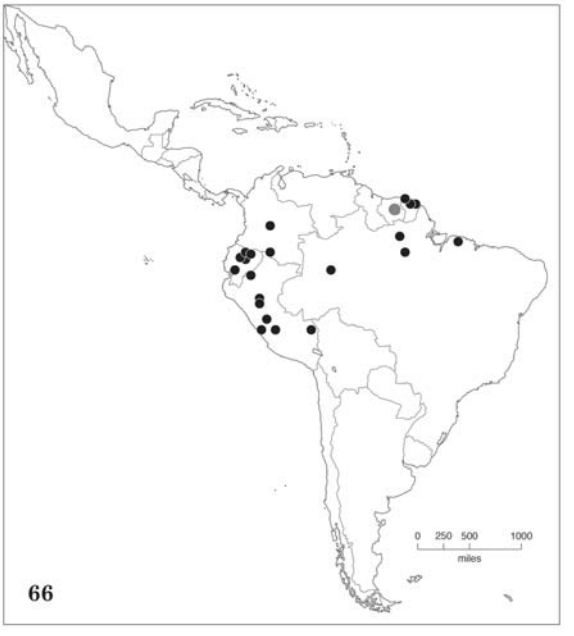
Description. Length 18.9–21.1 mm; width across humeri 10.4–12.5 mm. Dorsal surface velutinous or opaque. Color of head, pronotum, and most of elytra buff-colored to olive brown to piceous. Elytra with orangish yellow to straw-colored, yellow scalloping on lateral and posterior margins, scalloped area sometimes reduced. Pygidium straw-colored to buff-colored to olive brown. Head with anterior third of clypeus reddish brown, shiny. Ventral surface opaque, with ground color as on dorsum. Males with reddish brown, shiny, oblique spot on metasternum either side of midline. Females with metasternum reddish brown, shiny at middle. Mesometasternal process reddish brown, shiny at apex only (males), or entirely (females). Males with last sternite reddish brown, shiny on anterior and posterior margins (rarely with reddish brown, shiny areas at middle of other sternites). Females with sternites mostly reddish brown, shiny, with lateral opaque areas colored as on dorsum. Setae tawny on lighter specimens, testaceous on darker specimens. **Head:** Surface with large, dense, round and n-shaped punctures. Clypeal apex moderately to strongly reflexed (sometimes recurved), weakly emarginate at middle, distinctly angulate either side of emargination. Antennal club slightly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins obtusely angulate. Surface with minute to small, moderately dense, n-shaped punctures, punctures becoming larger and denser laterally. Lateral margins without bead. **Elytra:** Surface of each elytron with 2 distinctly elevated, discal costae, lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, dense, arranged longitudinally in striae, becoming smaller and extending to base near scutellum, smaller or usually obsolete in apical declivity and behind apical umbone. Lateral margins impunctate or with minute, round punctures arranged in 1–3 striae. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture strongly spinose. **Pygidium:** Surface distinctly convex in both sexes, with large, dense, transversely elongate, vermiform punctures, punctures with minute setae. **Venter:** Metasternum with large, dense, transversely vermiform punctures either side of middle, punctures with long setae. Mesometasternal process, in lateral view, subparallel to horizontal axis of body or at a slight, oblique angle to horizontal axis of body, moderately protuberant beyond mesocoxae; in ventral view (Fig. 63), sides weakly tapering to rounded apex, ventral face with minute, moderately dense punctures, punctures each with a long seta in males. Abdominal sternites on males each with large, dense, elongate, n-shaped punctures on lateral thirds, females with large, dense, m-shaped punctures on opaque, lateral margins of each sternite. **Legs:** Protibia tridentate in both sexes. Males with 1 distinct apical tooth and subsequent teeth reduced or obsolete. **Parameres:** Shaft divergent between midpoint and apex (Figs. 64–65). Lateral margins with bulge just before apex. Apices each with distinct, lateral spur.

Distribution. *Hoplopyga marginesignata* is known from Brazil, Colombia, Ecuador, French Guiana, Peru, and Suriname (Fig. 66).

Locality Records. 353 specimens from AMNH, BCRC, BMNH, CASC, DCCC, DEIC, FMNH, MNHN, QCAZ, SLTC, UNSM, USNM, and ZMHU. Some data from Touroult and Dalens (2010). **BRAZIL (19):** AMAZONAS (15): Tefé. PARÁ (4): Bragança, Rio Tapajós, Óbidos. **COLOMBIA (24):** META (3): Villavicencio.







Figs. 61–66. *Hoplopyga marginesignata*. **61–62)** Habitus; **63)** Mesometasternal process, ventral view; **64–65)** Parameres; **66)** Distribution.

PUTUMAYO (11): No data. NO DATA (10). **ECUADOR (13):** NAPO (4): Atahualpa (24 km E), Jatun Sacha Biological Reserve, Tena. PASTAZA (1): Puyo. SUCUMBÍOS (1): La Selva Biological Station. NO DATA (7). **FRENCH GUIANA (270):** CAYENNE (45): Kourou (Wayabo), Macouria, Montagne des Chevaux, Montsinéry (D5, km 3.2–13.2), Régina (D6, km 42.5), Rémire-Montjoly, Roura (D6, km 13.2). SAINT-LAURENT-DU-MARONI (163): Nouveau Chantier, Saint Jean du Maroni. NO DATA (62). **PERU (20):** AMAZONAS (2): Río Santiago. JUNÍN (1): Satipo. LIMA (1): No data. MADRE DE DIOS (1): Puerto Maldonado (30 km SW). PASCO (1): Pozuzo. SAN MARTÍN (4): Juanjuí, Tarapoto. NO DATA (10). **SURINAME (6):** NO DATA (6). **NO DATA (1).**

Temporal Distribution. March (1), May (2), July (1), August (16), September (12), October (17), November (3), December (2).

Diagnosis. *Hoplopyga marginesignata* is distinguished by the yellow scalloping on the elytral lateral margins, the largely monocolored discal area, and its larger size (18.9–21.1 mm). It is similar in appearance to *Gymnetis margineguttata* (Gory and Percheron, 1833), but the outer discal costa on each elytron is depressed between the mediodiscal area and the apical umbone, whereas each elytron of *G. margineguttata* has two complete discal costae. In addition, *H. marginesignata* has distinct n-shaped punctures arranged in striae between the elytral costae, and *G. margineguttata* specimens lack n-shaped punctures on the elytra. The mesometasternal process of *H. marginesignata* is only moderately protuberant beyond the mesocoxae and is subparallel or at a slightly oblique angle to the horizontal axis of the body in lateral view, while *G. margineguttata* has a mesometasternal process that is distinctly protuberant and deflexed.

Nomenclature. Schürhoff (1937) synonymized *G. fumata* with *H. marginesignata* and noted that Janson's description of *G. fumata* as "allied to *G. margineguttata* G. P." was erroneous and should have read "allied to *G. marginesignata* G. & P." We support this synonymy, because the male holotype of *G. fumata* is nearly identical to *H. marginesignata* specimens. The name *G. fumata* reflects specimens that have reduced yellow scalloping around the lateral margins of the elytra.

Natural History. Specimens have been captured in banana traps and at elevations up to 1,000 m (label data).

Hoplopyga miliaris (Gory and Percheron, 1833)

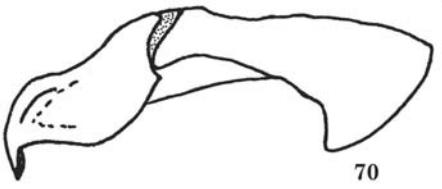
(Figs. 67–72)

Gymnetis miliaris Gory and Percheron 1833: 72 and 365 (original combination). Holotype female at MNHN, labeled "miliaris G&P/Brasilia Type//Type//Ex- Musaeo Van Lansberge//Gymnetis miliaris G&P', examined. Type locality: "Brésil."

Gymnetis fodina Gory and Percheron 1833: 72 and 363 (synonym). Type not found. Type locality: "La capitainerie des Mines, Brésil"

Gymnetis suasa Gory and Percheron 1833: 73 and 374 (synonym). Male holotype at MNHN, labeled "suasa G&P/Brasilia Type Brm//Type//Ex-Musaeo Van Lansberge//Gymnetis suasa G&P", examined. Type locality: "Brésil."

Description. Length 11.1–13.0 mm; width across humeri 6.7–8.5 mm. Color of dorsum opaque (sometimes with shiny head and pygidium) orangish yellow or sulfur yellow with large, dense, reddish brown or black spots, each spot enclosing a puncture as follows: head with small, coalescing spots on frons; pronotum with large, irregularly spaced or coalescing spots either side of midline; elytra with large, irregularly spaced or coalescing spots. Ventral surface cream-colored, shiny, with weakly metallic, bluish green sheen. Metasternum with reddish brown spot on middle. Sternites 2–6 each with reddish brown spot at middle on anterior margin. Setae tawny. **Head:** Clypeus with minute, sparse, round punctures. Frons with small, moderately dense, n-shaped and round punctures, each puncture embedded in a spot with a minute seta. Clypeal apex strongly reflexed, distinctly emarginate at middle, strongly angulate either side of emargination. Antennal club slightly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins obtusely angulate, with posterolateral margins nearly subparallel. Surface with large, dense, n-shaped punctures, each puncture embedded in a spot. Lateral margins with bead from apex to base. **Elytra:** Surface of each elytron with indistinct costae, with large, moderately dense, horseshoe-shaped punctures, each puncture embedded in a spot. Apices at suture subquadrate. **Pygidium:** Surface weakly to moderately convex, with cluster of large, dense, n-shaped punctures along anterior margin and either side of middle, punctures each with a short seta. **Venter:** Metasternum with large, irregularly spaced, n-shaped punctures either side of middle, each puncture with a long seta. Mesometasternal process, in lateral view, subparallel to horizontal axis of body, weakly protuberant beyond mesocoxae, with long, dense setae on anterodorsal face; in ventral view (Fig. 69), apex broadly rounded, surface with short, sparse setae or long, dense setae from punctures at base. Abdominal sternites with large, sparse, n-shaped punctures either side of middle, punctures often arranged along anterior margin of each sternite; last sternite with numerous, minute punctures. **Legs:** Protibia strongly tridentate in both sexes. **Parameres:** Subrectangular, shaft not divergent



Figs. 67–72. *Hoplopyga miliaris.* **67–68)** Habitus; **69)** Mesometasternal process, ventral view; **70–71)** Parameres; **72)** Distribution.

(Figs. 70–71). Lateral margins curving inward just before apices. Apices directed downward, each rounded and curving outward.

Distribution. *Hoplopyga miliaris* is found in Brazil and eastern Paraguay (Fig. 72).

Locality Records. 295 specimens from BCRC, BMNH, CASC, CMNC, CMNH, CNCI, CUIC, DEIC, FMNH, MLUH, MNHN, MZSP, NMPC, UFRJ, USNM, and ZMHU. **BRAZIL (282):** GOIÁS (130): Jataí, Rio Verde, Trinidade. MATO GROSSO (78): Chapada dos Guimarães, Cuiabá, No data. MATO GROSSO DO SUL (2): Corumbá. MINAS GERAIS (28): Chapada Diamantina, Martinho, Pirapora, Poços de Caldas, No data. PARANÁ (2): No data. SÃO PAULO (34): Batatais, Bragança, São Paulo, No data. NO DATA (8). **PARAGUAY (4):** AMAMBAY (3): No data. NO DATA (1). **NO DATA (9).**

Temporal Distribution. January (4), February (2), March (1), September (13), October (26), November (9), December (3).

Diagnosis. *Hoplopyga miliaris* is distinguished from similar species by the following: elytral apices at the suture are not produced into spines; presence of a cream-colored, weakly metallic venter; and surface of the pygidium with n-shaped punctures along the anterior margin and in two clusters either side of the middle. *Hoplopyga miliaris* is similar to *H. miniata* but has a yellow dorsum and a cream-colored venter rather than an orange dorsum and a reddish brown venter seen in *H. miniata*. *Hoplopyga miliaris* is also similar to *H. pseudomiliaris* but can be distinguished by a broadly rounded mesometasternal process and a pygidium with the punctures as described above. *Hoplopyga pseudomiliaris* has a narrowly rounded mesometasternal process and irregularly spaced punctures covering the pygidium. In addition, *H. miliaris* is found in Brazil and Paraguay, and *H. pseudomiliaris* is found in Guatemala. The form of the male parameres of *H. miliaris* is also unique (Figs. 70–71).

Nomenclature. The male type of *G. suasa* is conspecific with *G. miliaris*. The original description of *G. suasa* suggested the head is missing, and Schaum (1844) noted that the type was damaged, but a head had been glued onto the specimen, which does not seem to match the pronotum and elytra in general sculpturing and luster. Burmeister (1842) noted that *G. fodina* did not appear to be a different species than *G. miliaris*, and Schaum (1844) synonymized *G. suasa* and *G. fodina* with *G. miliaris*. The type specimen of *G. fodina* is unknown to us, and we cannot definitively say whether this synonymy is incorrect. However, based upon the descriptions of the species and the plates provided in Gory and Percheron (1833), we believe both synonymies are correct.

Natural History. Nothing is known of the natural history of this species.

Hoplopyga miniata (Blanchard, 1846)

(Figs. 73–76)

Gymnetis miniata Blanchard 1846: 193 (original combination). Holotype female at MNHN, labeled "HOLOTYPE//7???/34//?//Gymnetis/miniata/Blanch//MUSEUM PARIS/BOLIVIE/(CHIQUITOS)/D'ORBIGNY 1834//G. miniata/Type/Bl.//MNHN/EC4453" (Fig. 75), examined via photographs. Type locality: "Chiquitos".

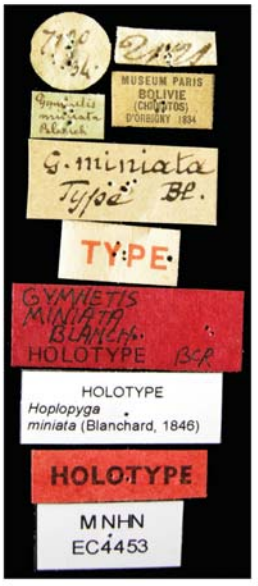
Description. Male unknown. Length 13.0 mm; width across humeri 7.9 mm. Color of dorsum opaque reddish orange with large, dense, reddish brown or black spots, each spot enclosing a puncture as follows: head with small, reddish brown, coalescing spots on frons and clypeus, shiny; pronotum with large, irregularly spaced spots either side of midline; elytra with large, irregularly spaced or coalescing spots. Ventral surface reddish brown, shiny. Setae tawny. **Head:** Clypeus with minute, sparse, round punctures. Frons with small, dense, n-shaped punctures, each puncture embedded in a spot and with a minute seta. Clypeal apex weakly reflexed, emarginate at middle, weakly angulate either side of emargination. Antennal club longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins obtusely angulate, lacking marginal bead. Surface with large, moderately dense to dense, n-shaped punctures, each puncture embedded in a spot. **Elytra:** Surface of each elytron with indistinct costae, with large, moderately dense to dense, horseshoe-shaped punctures, each puncture embedded in a spot. Apices at suture subquadrate. **Pygidium:** Surface moderately convex with large, dense, transversely vermiform punctures nearly obscuring surface, punctures with minute setae. **Venter:** Metasternum with large, dense, n-shaped punctures either side of middle, each puncture with a long seta. Mesometasternal process, in lateral view, at a slight oblique angle to horizontal axis of body, moderately protuberant beyond mesocoxae, with long, dense setae on anterodorsal face; in ventral view (Fig. 74), sides narrowing to rounded apex. Abdominal sternites each impunctate on middle third, with large, dense, n-shaped punctures on lateral thirds, each puncture with a short seta; last sternite with small, dense, weakly n-shaped punctures across middle. **Legs:** Protibia tridentate, with apical tooth distinct and subsequent teeth reduced. **Parameres:** Unknown.

Distribution. *Hoplopyga miniata* is known from one specimen from Chiquitos, Bolivia (Fig. 76).

Locality Record. 1 specimen from MNHN. **BOLIVIA (1):** SANTA CRUZ (1): Chiquitos.

73

74



75

76

Figs. 73–76. *Hoplopyga miniata*, holotype (Photographs courtesy of A. Mantilleri, MNHN). **73)** Dorsal view; **74)** Ventral view; **75)** Labels; **76)** Distribution.

Temporal Distribution. Unknown.

Diagnosis. *Hoplopyga miniata* is similar to *H. miliaris* but can be distinguished by its reddish orange dorsum, entirely reddish brown venter, and by the form of the mesometasternal process. In contrast, *H. miliaris* has a yellow or orangish yellow dorsum, a pale yellow venter, and a mesometasternal process that is broadly rounded in ventral view and, in lateral view, short and subparallel to the horizontal axis of the body.

Nomenclature. The catalogs of Blackwelder (1944) and Krajcik (1998) listed the date of publication of the name *Gymnetis miniata* as 1843, but the correct date should be 1846. The work in which this name first appeared was published in segments from 1837–1846, with this species being described in the last segment. Schürhoff (1937) transferred *G. miniata* to *Hoplopyga.*

Natural History. Nothing is known about the natural history of this species, although Blanchard (1846) mentioned that these beetles are found "on the trees" in his original description.

Hoplopyga multipunctata (Gory and Percheron, 1833)

(Figs. 77–82)

Gymnetis multipunctata Gory and Percheron 1833: 72 and 362 (original combination). Lectotype male at MHNG, here designated, labeled "Gory/ TYPE" (Gory is handwritten on red label with black border)// BCR and JMS lectotype label. Lectoallotype female labeled "Gory/TYPE" (Gory is handwritten on red label with black border)// "multipuncta/ta G. P. B./Brasil" (handwritten green label with black border)// BCR and JMS lectoallotype label. Type locality: "Brésil." Probable additional syntype (not seen) at MACN (see Di Iorio 2013).

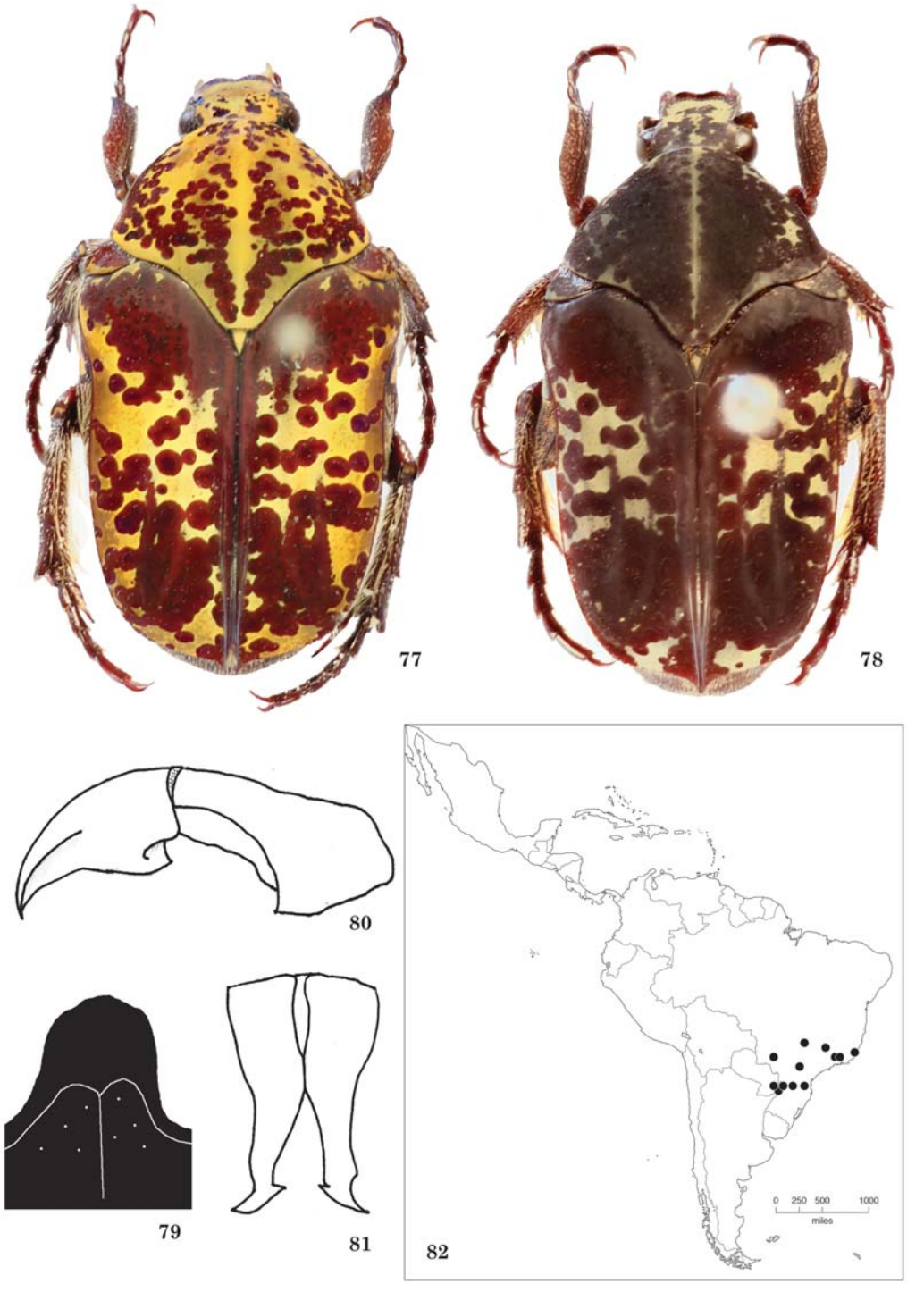
Holopyga multiguttata Schoch 1895b: 77 (synonym; see nomenclatural remarks below). Type not found. Type locality: "Brasilien."

Description. Length 10.1–12.6 mm; width across humeri 6.7–7.5 mm. Color of head, pronotum, and elytra opaque orangish yellow to greenish yellow to greenish gray, with large, dense, reddish brown or black spots, each spot enclosing a puncture as follows: head with small, coalescing spots either side of middle on frons; pronotum with small to large, irregularly spaced or coalescing spots either side of narrow, orangish yellow or greenish yellow band on midline; each elytron with large, irregularly spaced spots usually coalescing at base and on apical umbone. Ground color of pronotum and elytra sometimes entirely obscured by reddish brown to black spots. Pygidium reddish brown, shiny. Ventral surface reddish brown, shiny. Setae tawny. **Head:** Clypeus with minute, sparse, round punctures. Frons with small, moderately dense, n-shaped punctures, each puncture embedded in a spot with a minute seta. Clypeal apex weakly reflexed, emarginate at middle, weakly angulate either side of emargination. Antennal club longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins obtusely angulate. Surface with small, moderately dense, n-shaped punctures, each puncture embedded in a spot. Lateral margins with bead from apex to base. **Elytra:** Surface of each elytron with 2 complete, weakly elevated discal costae. Surface with large, moderately dense, shallow, n-shaped punctures, each puncture enclosed in a spot. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture distinctly spinose. **Pygidium:** Surface distinctly convex in both sexes, with large, dense, transversely elongate, vermiform punctures; punctures with short, dense setae. **Venter:** Metasternum with large, dense, transversely vermiform punctures either side of middle, punctures with long, dense setae. Mesometasternal process, in lateral view, subparallel to horizontal axis of body, moderately protuberant beyond mesocoxae, with long, dense setae on anterodorsal face; in ventral view (Fig. 79), apex narrowly rounded, surface with short, sparse setae laterally at base. Abdominal sternites 1–5 impunctate at center, with large, dense, weakly n-shaped punctures on lateral thirds; last sternite with large, dense, transversely vermiform punctures bearing long, dense setae. **Legs:** Protibia tridentate in both sexes. Males frequently with apical tooth distinct and subsequent teeth reduced to slight swellings. Metacoxa on its interior edge with dense fringe of setae. **Parameres:** Shaft strongly divergent at midpoint (Figs. 80–81). Apices each with distinct medial spur and longer, outward-curving lateral spur.

Distribution. *Hoplopyga multipunctata* is found in Argentina, southern Brazil, and Paraguay (Fig. 82).

Locality Records. 140 specimens from AMNH, BCRC, BMNH, CMNC, CMNH, CNCI, DEIC, FMNH, MCZC, MHNG, MLUH, MNHN, MZSP, UFRJ, UMSP, USNM, and ZMHU. **ARGENTINA (2):** MISIONES (2): Dos de Mayo, San Vicente. **BRAZIL (99):** ESPÍRITO SANTO (3): No data. GOIÁS (1): No data. MATO GROSSO DO SUL (1): Maracaju. PARANA (4): Caviúna (Rolândia). RIO DE JANEIRO (15): Petrópolis, Serra dos Órgãos, No data. SANTA CATARINA (4): Corupá, Hansa Humboldt (Corupá), Nova Teutônia, No data. SÃO PAULO (3): No data. NO DATA (68). **PARAGUAY (1):** ITAPÚA (1): Hohenau. **NO DATA (38).**

Temporal Distribution. January (1), February (2), March (2), April (1), November (3), December (10).



Figs. 77–82. *Hoplopyga multipunctata*. **77–78)** Habitus; **79)** Mesometasternal process, ventral view; **80–81)** Parameres; **82)** Distribution.

Diagnosis. *Hoplopyga multipunctata* is distinguished by having coalescing spots at the base of the elytra and on the apical umbone of each elytron. In addition, *H. multipunctata* has the elytral apices at the suture distinctly spinose and a pygidium and venter that are entirely reddish brown. The form of the male parameres of *H. multipunctata* is also distinct (Figs. 75–76) and will help to distinguish this species from any other.

Nomenclature. *Holopyga* [*sic*] *multiguttata* Schoch is listed as a synonym of *H. multipunctata* in the catalogs of Schenkling (1921), Blackwelder (1944), and Krajcik (1998). It appears that Schoch (1895b) attributed this species name to Gory and Percheron (1833) in an addendum to his cetoniine catalog (Schoch 1895a) and redescribed the species in his own words. However, this species name does not appear anywhere in Gory and Percheron (1833). To further complicate matters, Schoch had already listed *H. multipunctata* as a good *Holopyga* [*sic*] species in his cetoniine catalog (Schoch 1895a). It is possible that the inclusion of *Holopyga* [*sic*] *multiguttata* in the genus *Hoplopyga* was a *lapsus* by Schoch, and so we herein leave *H. multiguttata* as a valid synonym of *H. multipunctata* since Schoch described it.

Lectotypes of *H. multipunctata* were designated from the A. Melly collection at MHNG. Melly was known to have purchased material from Gory and Percheron, and these specimens match the original species description in Gory and Percheron (1833). We have designated the male specimen as the lectotype since the parameres of this species are useful for identification.

Natural History. Nothing is known of the natural history of this species.

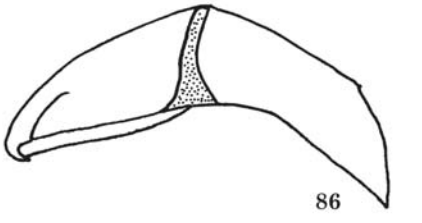
Hoplopyga ocellata (Gory and Percheron, 1833)

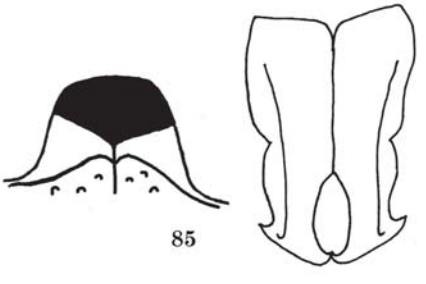
(Figs. 83–90)

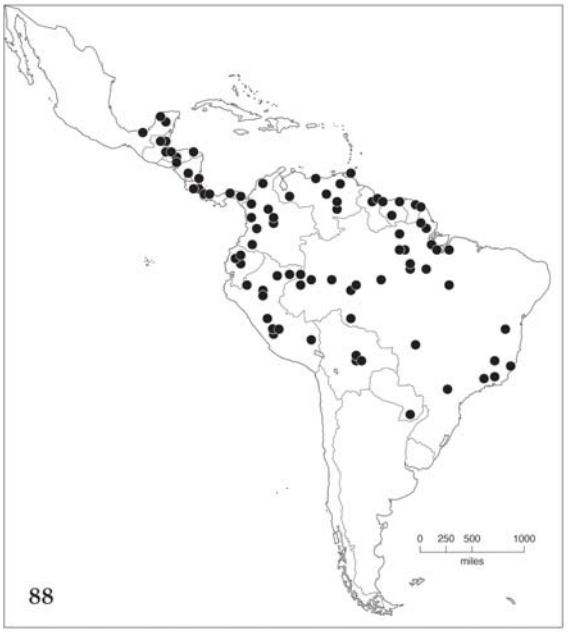
Gymnetis ocellata Gory and Percheron 1833: 72 and 368 (original combination). Holotype female at MHNG, labeled "Gory/TYPE//Coll. Melly//ocellata/G. & P. B./Cayenn", examined. Type locality: "Cayenne."

Description. Length 10.3–14.3 mm; width across humeri 6.6–8.8 mm. Dorsal surface opaque. Color and pattern highly complex**:** head, most of pronotum, mesepimeron, and pygidium brownish yellow to olive to fuscous, ground color of elytra cream-colored. Pronotum with fuscous scalloping between darkened middle and lighter lateral margins, with fuscous, M-shaped mark (sometimes obscured by ground color) anterior to fuscous spot on midline, with narrow, longitudinal, beige band posterior to spot on midline. Elytra at base mesad of mesepimera and suture in various shades of dark brown or olive green. Elytra with fuscous to piceous markings as follows: each elytron with 1–2 spots on mediodiscal area, J-shaped or reversed J-shaped mark on apical umbone, and with fuscous clouding from apical umbone to suture. Ventral surface opaque, with ground color as on dorsum. Metasternum of males with reddish brown, shiny spot at middle, females with middle entirely reddish brown, shiny. Mesometasternal process reddish brown, shiny at apex on males, entirely reddish brown, shiny on females, process sometimes with 2 yellowish spots at base. Abdominal sternites on males with reddish brown, shiny portions on middle of last 2–3 sternites or not, females with sternites entirely reddish brown, shiny, except on lateral margins. Setae tawny. **Head:** Surface with mixture of minute, small, and large, dense, round and n-shaped punctures. Clypeal apex weakly reflexed, weakly emarginate, weakly angulate either side of emargination. Antennal club slightly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins obtusely angulate, appearing broadly rounded. Surface with small, sparse to moderately dense, round or n-shaped punctures, punctures becoming larger and denser laterally. Lateral margins with bead starting at apical angle and ending before basal angle. **Elytra:** Surface of each elytron with 2 distinctly elevated, discal costae, lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, dense, arranged longitudinally in striae, not extending to base near scutellum. Apical declivity with cluster of large, dense, n-shaped punctures. Lateral margins densely punctate. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture distinctly spinose. **Pygidium:** Surface distinctly convex in both sexes. Males with large, dense, concentric, elongate n- or m-shaped punctures. Females with large, dense, transversely vermiform punctures obscuring surface. Punctures with minute setae. **Venter:** Metasternum with large, moderately dense to dense, n-shaped punctures either side of middle, each puncture with a minute to short seta. Mesometasternal process, in lateral view, subparallel to horizontal axis of body or at a slight oblique angle to horizontal axis of body, weakly protuberant beyond mesocoxae; in ventral view (Fig. 85), apex broadly rounded. Abdominal sternites with large, dense, n-shaped punctures either side of middle in males and on lateral, opaque margins in females, punctures each with a minute seta. **Legs:** Protibia short, broad, tridentate in both sexes. **Parameres:** Shaft divergent between midpoint and apex (Figs. 86–87). Lateral margins with small bulge just after midpoint. Apices each with distinct, lateral spur.

Distribution. *Hoplopyga ocellata* is widely distributed from southern Mexico to Paraguay (Fig. 88).







Figs. 83–88. *Hoplopyga ocellata*. **83–84)** Habitus; **85)** Mesometasternal process, ventral view; **86–87)** Parameres; **88)** Distribution.

Figs. 89–90. *Hoplopyga ocellata*. **89)** Habitat of lower montane wet forest in Bocas del Toro, Panama. Photograph by BCR; **90)** Adult in French Guiana. Photograph courtesy of J. Touroult.

Locality Records. 657 specimens from the following collections: ADMC, AMNH, BCRC, BMNH, CASC, CMNH, CMNC, CNCI, CNHM, CUIC, DEIC, FMNH, HAHC, INBC, JEWC, JMMC, KSUC, LACM, MCZC, MIZA, MNHN, MPEG, MZSP, NMPC, QCAZ, RMNH, SEMC, SLTC, TAMU, UAAM, UFRJ, UMSP, UNSM, USNM, WBWC, and ZMHU. Some data from Reyes Novelo and Morón (2005), Neita *et al.* (2006), Suárez-G. and Amat-Garcia (2007), and Touroult and Dalens (2010). **BELIZE (7):** BELIZE (2): Manatee, No date. CAYO (4): Chiquibul Forest Reserve, Las Cuevas Research Station. NO DATA (1). **BOLIVIA (12):** SANTA CRUZ (11): Buena Vista, Cuatro Ojos, Hotel Fauna y Flora (4–6 km SSE Buena Vista), Ichilo, Santa Cruz de la Sierra, No data. NO DATA (1). **BRAZIL (149):** AMAPÁ (3): Limão, Serra do Navio. AMAZONAS (46): Borba, Benjamin Constant, Cametá, Manicoré, São Paulo de Olivença, Tefé, No data. BAHIA (6): No data. ESPÍRITO SANTO (3): Vitoria, No data. GOIÁS (1): Mineiros. MATO GROSSO (1): Humboldt. MINAS GERAIS (5): Ipatinga, No data. PARÁ (40): Alenquer, Altamira (60 km S), Anajás, Belém, Bujaru, Conceição do Araguaia, Mocajuba, Mocambo Forest, Óbidos, Santarém, Serra dos Carajás, Rio Tapajós, No data. PARANA (2): Cambé. RIO DE JANEIRO (4): Itatiaia, Rio de Janeiro, No data. RONDÔNIA (20): Fazenda Rancho Grande (62 km S. Ariquemes). NO DATA (18). **COLOMBIA (36):** ANTIOQUIA (2): Chigorodó. BOYACÁ (1): Muzo. CHOCÓ (7): No data. CUNDINAMARCA (7): Bogotá, No data. MAGDALENA (3): Aracataca, Santa Marta. META (2): Villavicencio. PUTUMAYO (1): Mocoa. VALLE DEL CAUCA (6): Anchicaya Dam (70 km E. Buenaventura), Dagua, No data. NO DATA (7). **COSTA RICA (127):** ALAJUELA (1): San Carlos. CARTAGO (1): Turrialba. GUANACASTE (4): Estación Pitilla (9 km S Santa Cecilia). HEREDIA (6): Estación Biológica La Selva (3 km S Sarapiquí), Estación Magsasay (Parque Nacional Braulio Carrilo). LIMÓN (39): Amubri, Cariari (30 km N), Guápiles, Hamburg Farm, Puerto Viejo, Reserva Biológica Hitoy Cerere, Reserva Vida Silvestre Gandoca Manzanillo, San Miguel, Zent. PUNTARENAS (76): Estación Biológica Sirena (Parque Nacional Corcovado), Estación Quebrada Bonita (Reserva Biológica Carara), Golfito, Jiménez, Osa Peninsula (2.5 mi. SW Rincon), Sierpe. **ECUADOR (37):** BOLÍVAR (20): Chimbo, La Chima. LOS RÍOS (6): Rio Palenque. PICHINCHA (8): Tinlandia Resort (12 km E Santo Domingo de los Colorados). NO DATA (3). **FRENCH GUIANA (99):** CAYENNE (64): Mirande, Montabo, Montagne des Chevaux, Montagne des Pères, Mont du Tigre, Montsinéry-Tonnegrande (RD 5, km 3.2), Patawa (36 km SE Roura), Pied Saut (Oyapock River), Rémire-Montjoly, Roura (RD 6, km 15.7–39.5), Vidal, No data. SAINT LAURENT DU MARONI (16): Nouveau Chantier, No data. NO DATA (8). **GUATEMALA (3):** IZABAL (2): Cayuga. PETÉN (1): Tikal National Park. **GUYANA (16):** CUYUNI-MAZARUNI (1): Kartabo. DEMERARA-MAHAICA (6): Hyde Park, No data. EAST BERBICE-CORENTYNE (1): Blairmont. NO DATA (8). **HONDURAS (7):** COMAYAGUA (2): Siguatepeque, Taulabé. CORTÉS (2): San Pedro Sula. GRACIAS A DIOS (1): Krausirpi. LA PAZ (1): No data. NO DATA (1). **MEXICO (11):** QUINTANA ROO (8): Tigre Grande. TABASCO (1): Frontera. YUCATÁN (2): Mérida. **NICARAGUA (5):** CHONTALES (3): No data. RÍO SAN JUAN (2): Refugio Bartola. **PANAMA (71):** BOCAS DEL TORO (1): Bocas del Toro. COLÓN (24): Coco Solo Hospital, Gatun Lake, Mojinga Swamp. CHIRIQUÍ (17): Finca la Suiza, Hornito, Lino, No data. PANAMA (22): Altos (Isla) de Majé, Barro Colorado Island, Fort Clayton (Albrook Forest). NO DATA (7). **PARAGUAY (1):** MISIONES (1): San Ignacio. **PERU (36):** AMAZONAS (1): Condorcanqui (Río Santiago). HUÁNUCO (3): Leonpampa, Tingo María. JUNÍN (8): Chanchamayo, Sani

Beni (8 km. E Satipo). LIMA (1): Upper Rio Marañón. LORETO (14): Caballococha, Iquitos, Pebas, Yurimaguas. MADRE DE DIOS (1): Tambopata National Reserve (30 km SW Puerto Maldonado). PASCO (5): Pozuzo. SAN MARTÍN (2): Tarapoto. UCAYALI (1): Upper Río Tapiche. **SURINAME (12):** MAROWIJNE (1): Langaman Kondre. SIPALIWINI (2): Kayser Gebergte, No data. NO DATA (9). **TRINIDAD (2):** ARIMA (2): Arima Valley, Asa Wright Nature Center (7.5 mi. N Arima). **VENEZUELA (10):** BARINAS (2): Reserva Forestal de Ticoporo. BOLÍVAR (6): Río Caura, Salto Para, Suapure. MIRANDA (1): No data. MONAGAS (1): Maturín (42 km SE). **NO DATA (16).**

Temporal Distribution. January (14), February (33), March (31), April (43), May (47), June (29), July (34), August (35), September (38), October (36), November (45), December (14).

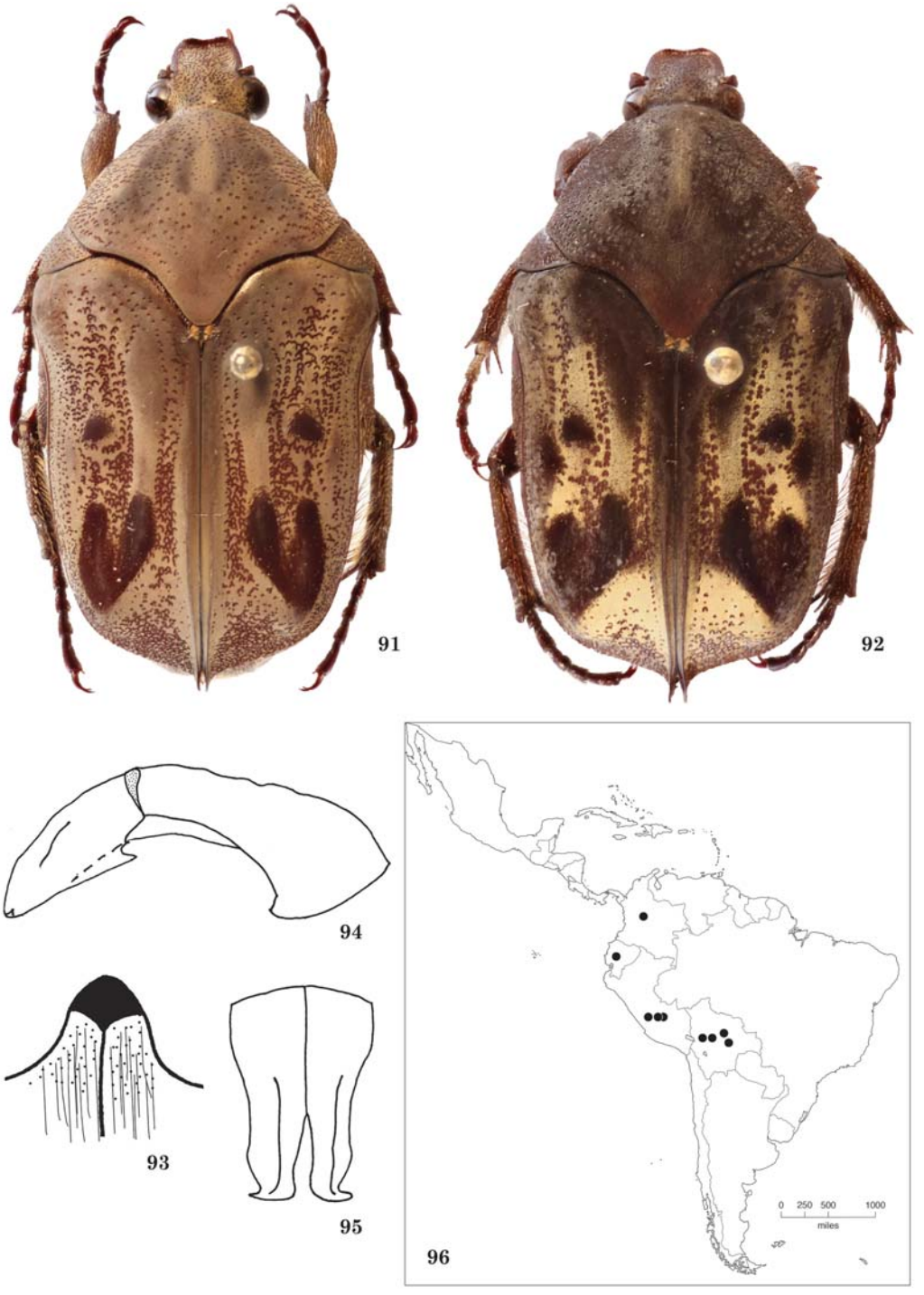
Diagnosis. *Hoplopyga ocellata* is distinguished by the fuscous scalloping on the pronotum and the cream-colored mediodiscal area with a distinct, brown or black spot on each elytron. When the elytra are viewed together, there appears to be a fuscous hourglass shape on most individuals (Figs. 83–84). In addition to the distinct markings, *H. ocellata* has an oval, smaller, more robust body than other *Hoplopyga* species. This species is most similar to *H. liturata* but can be distinguished by the lateral edges of the fuscous area at the middle of the pronotum. In *H. ocellata*, the lateral edges are indistinct or scalloped, and in *H. liturata,* the lateral edges are distinct and straight.

Natural History. Adults have been collected from sea level to 840 m elevation in biotopes ranging from tropical dry forests to lower montane wet forests (Fig. 89) to tropical rainforests. Individuals have been collected in banana traps, on cacao, on flowers of *Varronia* sp. (Boraginaceae), resting on vegetation (Fig. 90), and at lights in the early hours of the morning between 0530 and 0630 (observed by P. H. Dalens and F. Lavalette, personal communication to BCR, October 2014). Larvae and pupae have been found in termite nests (*Nasutitermes* sp., Isoptera) in Costa Rica and Ecuador between April and June (label data).

Hoplopyga peruana (Moser, 1912)
(Figs. 91–96)

Gymnetis (*Hoplopyga*) *peruana* Moser 1912: 562 (original combination). Lectotype male (Ratcliffe 2004) at ZMHU, examined. Type locality: "Peru (Rio Oxabamba)."

Description. Length 16.9–20.1 mm; width across humeri 9.6–11.7 mm. Dorsal surface velutinous or opaque. Males with ground color of dorsum brownish yellow to smoke gray. Pronotum with fuscous clouding at middle and fuscous, M-shaped mark (sometimes obscured by clouding). Elytra with fuscous clouding at base mesad of mesepimeron and at suture. Females with most of dorsum piceous, with apical declivity on each elytron or ground color of each elytron and pygidium sulphur yellow. Pronotum with broad, brownish yellow or sulfur yellow, longitudinal band on anterior half of midline and narrow, longitudinal band on posterior half of midline (posterior band sometimes faint or absent). Elytra with piceous markings as follows: each elytron with 1–2 spots in mediodiscal area and J-shaped mark or reversed J-shaped mark on apical umbone. Ventral surface opaque, colored as on dorsum. Metasternum with reddish brown, shiny, oblique spot either side of midline on males, females with middle entirely reddish brown and shiny. Mesometasternal process reddish brown, shiny at apex on males, entirely reddish brown, shiny. Abdominal sternites on males with last sternite reddish brown, shiny at middle, females with sternites entirely reddish brown, shiny, with lateral margins colored as on dorsum, opaque. Setae tawny to dull brown. **Head:** Surface with large, dense, round and n-shaped punctures, each puncture with a short seta in fresh specimens. Clypeal apex distinctly emarginate at middle, distinctly reflexed, weakly angulate either side of emargination. Antennal club slightly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins gradually widening from apex to base. Surface with small, moderately dense, round punctures, punctures becoming large, dense, and n-shaped laterally. Lateral margins with or without short, interrupted bead on apical half. **Elytra:** Surface of each elytron with 2 distinctly elevated, discal costae, lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, dense, arranged longitudinally in striae, becoming smaller and extending to base near scutellum in 2 columns. Apical declivity impunctate or with minute, sparse punctures. Lateral margins densely punctate. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture strongly spinose. **Pygidium:** Surface distinctly convex in both sexes, with large, dense, concentric, transversely vermiform punctures, punctures with minute setae. **Venter:** Metasternum with large, dense, transversely vermiform punctures either side of middle, punctures with long setae. Mesometasternal process, in lateral view, subparallel or at a slight oblique angle to horizontal axis of body, moderately protuberant beyond mesocoxae; in ventral view (Fig. 93), sides narrowing to rounded apex, ventral face with dense, minute punctures at base, punctures in males each with a long seta. Abdominal sternites with large, dense, elongate, n-shaped



Figs. 91–96. *Hoplopyga peruana*. **91–92)** Habitus; **93)** Mesometasternal process, ventral view; **94–95)** Parameres; **96)** Distribution.

punctures either side of middle in males or on lateral, opaque areas in females, punctures each with a minute to short seta. **Legs:** Protibia of males with distinct, apical tooth and subsequent swelling. Protibia tridentate in females. **Parameres:** Shaft divergent between midpoint and apex (Figs. 94–95). Lateral margins subparallel from midpoint to apex. Apices each with distinct, lateral spur.

Distribution. *Hoplopyga peruana* is known from Bolivia, Colombia, Ecuador, and Peru (Fig. 96).

Locality Records. 193 specimens from the following collections: AMNH, BCRC, BMNH, CASC, CMNH, CNCI, FMNH, JEWC, MCZC, MNHN, MZSP, RMNH, SLTC, UCCC, USNM, and ZMHU. **BOLIVIA (102):** COCHABAMBA (3): Chapare, Cristal Mayu. LA PAZ (68): Nor Yungas, Rio Zongo. SANTA CRUZ (20): Buena Vista, Cuatro Ojos, Potrerillos del Guenda, Rio Yapacaní, Sara. NO DATA (11). **COLOMBIA (2):** CUNDINAMARCA (2): Bogotá. **ECUADOR (1):** BOLÍVAR (1): Balzapamba. **PERU (88):** CUSCO (2): Quiroz (Río Paucartambo). JUNÍN (76): Chanchamayo, Río Oxabamba, Río Toro, Satipo. NO DATA (10).

Temporal Distribution. March (1), April (1), June (2), August (5), September (4), October (1). Few specimens had temporal data on the labels.

Diagnosis. *Hoplopyga peruana* is distinguished by its large size (16.9–20.1 mm), mesometasternal process with the sides narrowing to a rounded apex in ventral view, and the apical declivity on the elytra with greatly reduced or obsolete punctation. Females of *H. peruana* are similar in appearance to entirely black *H. foeda* specimens, but *H. peruana* females have the apical declivity on the elytra sulfur yellow and nearly impunctate. The broad, brownish yellow to sulfur yellow band on the anterior half of the midline of the pronotum is also diagnostic.

Natural History. Specimens have been collected at elevations of 400–500 m (label data).

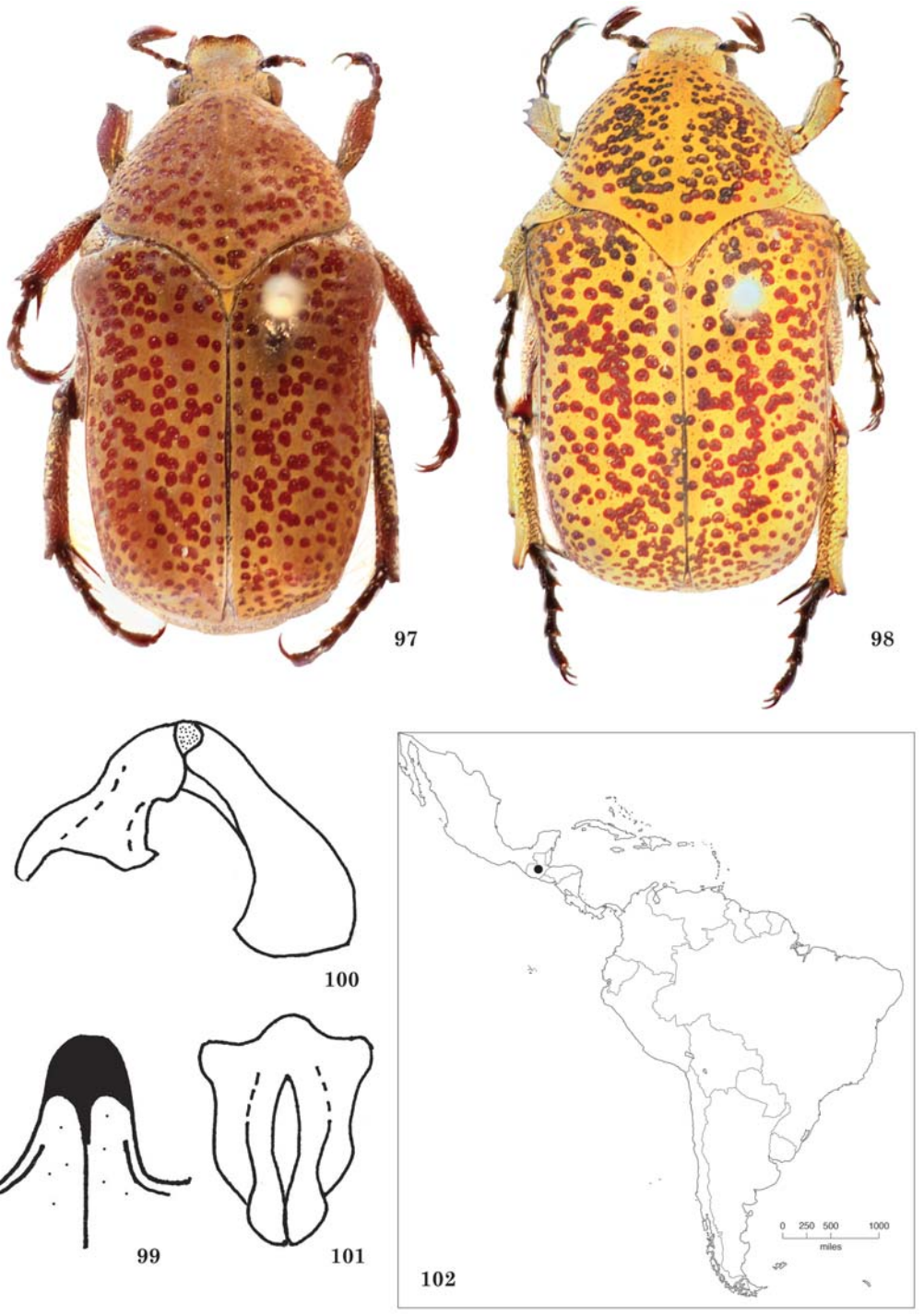
Hoplopyga pseudomiliaris Shaughney and Ratcliffe, new species
(Figs. 97–102)

Type Material. Holotype male, labeled "Guatemala" and with JMS and BCR red holotype label. Allotype female labeled "Los Cerritos, Salamá,/Baja Verapaz, Guatemala,/24-05-2012,/ Jiichiro Yoshimoto leg." and with JMS and BCR red allotype label. One female paratype with same data except date of 27-04-2011 and with JMS and BCR yellow paratype label.

Holotype deposited at SEMC. Allotype deposited at UNSM. Paratype deposited at UVGC.

Description. Holotype. Male (Fig. 97). Length 14.2 mm; width across humeri 7.9 mm. Color of dorsum opaque brownish yellow with large, moderately dense, reddish brown spots, each spot enclosing a puncture as follows: pronotum with large, irregularly spaced spots either side of narrow, longitudinal, yellow band on midline; elytra with large, irregularly spaced spots. Clypeus, mesepimera, and legs shiny, weakly metallic. Ventral surface brownish yellow, shiny, weakly metallic. Metasternum with narrow, longitudinal, reddish brown band at middle and oblique, reddish brown spot either side of middle. Mesometasternal process reddish brown on apex. Sternites each with reddish brown band at middle on anterior margin, reddish brown clouding on middle of each sternite. Setae tawny. **Head:** Surface with minute, moderately dense, round punctures each with a minute seta. Clypeal apex strongly reflexed, distinctly emarginate at middle, strongly angulate either side of emargination. Antennal club slightly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins gradually widening from apex to base. Surface with large, dense, n-shaped punctures each surrounded by a large, reddish brown spot. Anterolateral margins with bead. **Elytra:** Surface of each elytron with costae indistinct. Surface with large, moderately dense, horseshoe-shaped punctures each surrounded by a large, reddish brown spot. Apices at suture subquadrate. **Pygidium:** Surface weakly convex with large, dense, irregularly spaced, n-shaped punctures, punctures each with a short seta. **Venter:** Metasternum with large, dense, n- and m-shaped punctures either side of middle, each puncture with a long seta. Mesometasternal process, in lateral view, subparallel to horizontal axis of body, weakly protuberant beyond mesocoxae, with long, dense setae on anterodorsal face; in ventral view (Fig. 99), sides tapering to rounded apex. Abdominal sternites with large, dense, n-shaped punctures; punctures each surrounded by a small, reddish brown spot, each with a minute seta. **Legs:** Protibia with apical tooth distinct and subsequent teeth reduced to slight swellings. **Parameres:** Subrectangular, shaft divergent between apex and base (Figs. 100–101). Lateral margins expanding outward to midpoint and then curving inward towards apices. Apices rounded, each curving inward.

Allotype. Female (Fig. 98). Length 15.7 mm; width across humeri 8.9 mm. As holotype except in the following respects: **Color:** Body ochre yellow. Mesometasternal process golden yellow at apex. Sternites entirely golden yellow, with reddish brown, anteromedial band on last sternite. **Head:** Surface with small, moderately dense, n-shaped punctures on frons, punctures becoming minute, round, and sparse towards clypeus. Clypeal apex moderately reflexed, broadly rounded either side of emargination. **Pronotum:** Lateral margins obtusely angulate, nearly parallel on posterior half. Punctures on lateral



Figs. 97–102. *Hoplopyga pseudomiliaris.* **97)** Holotype, dorsal view; **98)** Allotype, dorsal view; **99)** Mesometasternal process, ventral view; **100–101)** Parameres; **102)** Distribution.

margins not enclosed in a spot. Lateral margins with bead from apical angle to basal angle. **Pygidium:** Surface flat. **Venter:** Abdominal sternites with minute, sparse punctures at middle, punctures becoming large, moderately dense, n-shaped on lateral thirds. Last sternite covered with small, dense punctures. **Legs:** Protibia tridentate.

Variation. Female (1 paratype). Length 10.3 mm; width across humeri 5.9 mm. The female paratype does not differ significantly from the allotype except that the pygidial surface is weakly convex.

Etymology. The epithet *pseudomiliaris* is derived from the Greek *pseudos*, meaning falsehood, and the specific epithet of *miliaris* in reference to the dorsal *gestalt* of this species that strongly resembles that of *H. miliaris.*

Distribution. *Hoplopyga pseudomiliaris* is known from Guatemala (Fig. 102).

Locality Records. 3 specimens from UNSM, SEMC, and UVGC. **GUATEMALA (3):** BAJA VERAPAZ (2): Salamá: Los Cerritos. NO DATA (1).

Temporal Distribution. April (1), May (1).

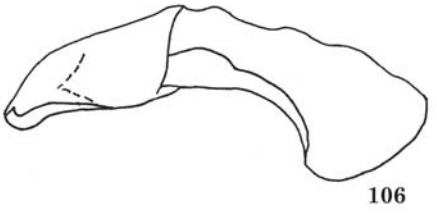
Diagnosis. *Hoplopyga pseudomiliaris* is similar to *H. miliaris* but can be distinguished by having a narrowly rounded mesometasternal process, sternites that are entirely golden yellow or with weak, reddish brown clouding on the middle, and a pygidium with irregularly spaced, n-shaped punctures. *Hoplopyga miliaris* has a broadly rounded mesometasternal process, sternites each with a distinct, reddish brown spot on the middle, and a pygidium with punctures restricted to two clusters either side of the midline and along the anterior margin. The form of the male parameres of *H. pseudomiliaris* is similar to that of *H. miliaris* (compare Figs. 100–101 and Figs. 70–71), but it has a shaft that is divergent at the center and apices that are not recurved downward. *Hoplopyga pseudomiliaris* is similar to *M. maculosa*, but the female protibia is distinctly tridentate, the lateral margins of the pronotum have a distinct bead, and the clypeus, mesepimera, legs, and venter are weakly metallic. *Marmarina maculosa* has only one apical tooth on the protibia, no bead on the lateral margins of the pronotum, and an enamel-like venter. The range of *H. pseudomiliaris* (Guatemala) can also help distinguish it from *H. miliaris* and *M. maculosa*.

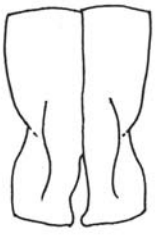
Natural History. Nothing is known of the life history of this species. The type locality at Salamá is dry thorn forest.

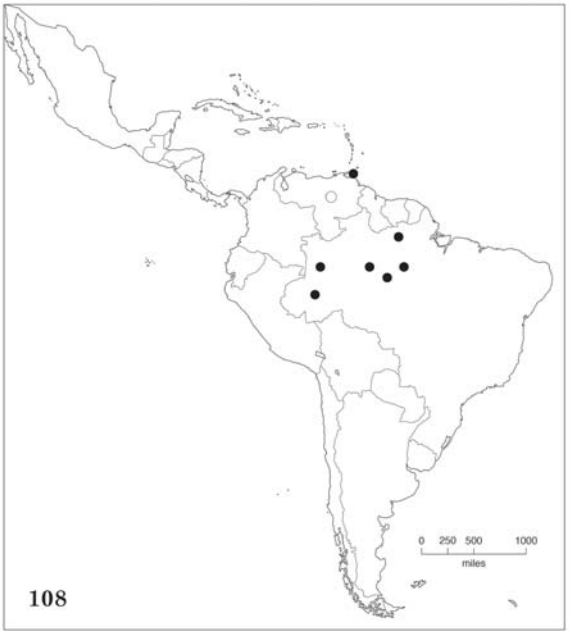
Hoplopyga ravida (Janson, 1881)
(Figs. 103–108)

Gymnetis ravida Janson 1881: 581 (original combination). Holotype male at BMNH (Fig. 103), labeled "Type//Fry Coll./1905-100.//Venez//18603//Gymnetis/ravida. O. Jans./Type//Gymnetis ravida Janson Holotype", examined. Type locality: "Venezuela."

Description. Length 11.4–14.6 mm; width across humeri 6.7–9.0 mm. Color of dorsum opaque, orangish yellow with black clouding as follows: pronotum with clouding at middle, surrounding narrow, longitudinal, orangish yellow band on midline; elytra with clouding laterally, on raised costae, and from apical umbone to suture of each elytron, with black, J-shaped or reversed J-shaped mark on each apical umbone. Ventral surface with ground color opaque, orangish yellow. Metasternum reddish brown, shiny on middle or entirely reddish brown, shiny, with areas of orangish yellow clouding. Mesometasternal process entirely reddish brown, shiny. Sternites entirely reddish brown, shiny, except for orangish yellow, opaque, posterolateral spots on each sternite. Sternites 1–3 sometimes with orangish yellow clouding on middle. Setae tawny. **Head:** Surface with large, moderately dense, round punctures, punctures each with a minute seta. Clypeal apex distinctly reflexed, weakly emarginate at middle, weakly angled either side of emargination. Lateral margins of clypeus rounded. Antennal club distinctly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins obtusely angulate, appearing broadly rounded. Surface with small, moderately dense, round punctures at middle, punctures becoming large and n-shaped laterally. Lateral margins with black bead not reaching apex or base. **Elytra:** Surface of each elytron with 2 distinctly elevated, discal costae, lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, dense, arranged longitudinally in striae, not continuing to base near scutellum. Apical declivity with punctures reduced in density between apical umbone and suture. Lateral margins densely punctate. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture strongly spinose. **Pygidium:** Surface distinctly convex, with large, dense, n-shaped punctures along basal margin and in 3 columns, or with surface almost entirely covered by large, dense, concentric, transversely vermiform punctures. Punctures each with a minute seta. **Venter:** Metasternum with large, dense, n-shaped and m-shaped punctures either side of middle, each puncture with a short seta. Mesometasternal process, in lateral view, subparallel or at a slight, oblique angle to horizontal axis of body, moderately protuberant beyond mesocoxae; in ventral view (Fig. 105), apex broadly rounded. Abdominal sternites with large, dense, shallow, n-shaped punctures on lateral thirds, each puncture with a short seta. **Legs:** Protibia in males with distinct apical tooth and subsequent teeth worn down. Females with tridentate protibia, with second







Figs. 103–108. *Hoplopyga ravida*. **103)** Holotype from BMNH, dorsal view; **104)** Habitus, ventral view of additional specimen; **105)** Mesometasternal process, ventral view; **106–107)** Parameres; **108)** Distribution.

tooth closer to apical tooth than basal tooth. **Parameres:** Shaft divergent between midpoint and apex (Figs. 106–107). In dorsal view, lateral margins subparallel with minute bulge before apex. Apices each with minute, lateral spur.

Distribution. *Hoplopyga ravida* is known primarily from northern Brazil, with the holotype from Venezuela and one specimen from Trinidad (Fig. 108). Additional collecting would help to establish a more accurate range for this species.

Locality Records. 15 specimens from the following collections: AMNH, BMNH, CASC, CMNH, CMNC, RMNH, SEAB, and USNM. **BRAZIL (13):** AMAZONAS (9): Manacapurú, Maués, Obidos, Tonantins. PARÁ (3): Monte Cristo, Óbidos. NO DATA (1). **TRINIDAD (1):** PORT OF SPAIN (1): Chancellor Road. **VENEZUELA (1):** NO DATA (1).

Temporal Distribution. January (1), May (1), August (3), October (1), November (3).

Diagnosis. *Hoplopyga ravida* is easily distinguished from other *Hoplopyga* species by its orangish yellow dorsum, the distinct, longitudinal line on the midline of the pronotum, and the orangish yellow spots on the posterolateral corners of each sternite. This species most closely resembles *H. liturata* but can be distinguished by the characters above as well as by the form of the male parameres, which are distinct for this species.

Natural History. Nothing is known of the biology of this species.

Hoplopyga riparia Shaughney and Ratcliffe, new species
(Figs. 109–114)

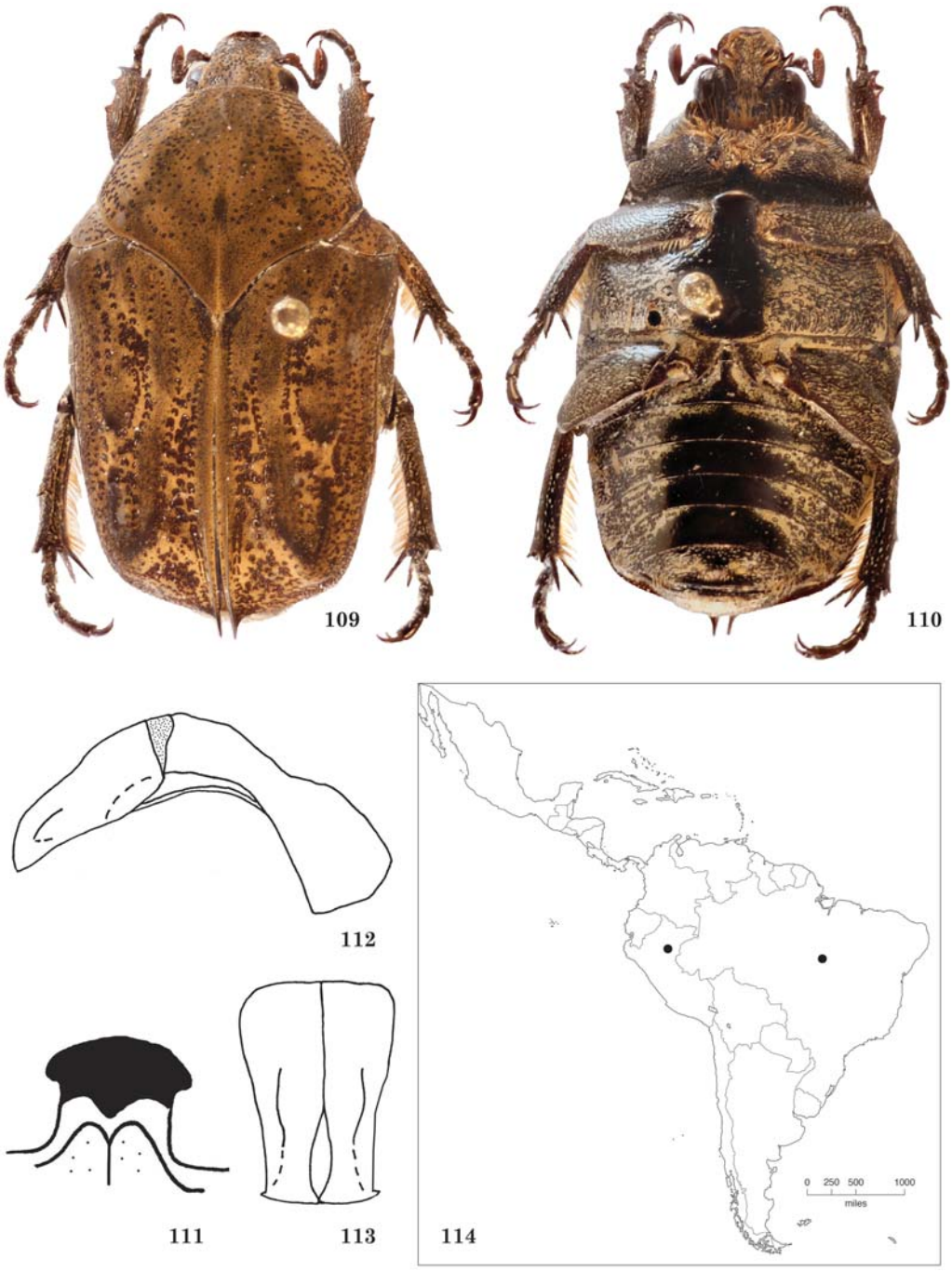
Type Material. Holotype male, labeled "PERU: Loreto; Ucayali/R., Yarina Cocha/VI-22-1954/leg. Peter Hocking" and with JMS and BCR red holotype label. Allotype female labeled "PERU: Loreto; Ucayali/R., Yarina Cocha/II-13-1957/leg. Peter Hocking" and with JMS and BCR red allotype label. Paratypes (1 male, 2 females) labeled as follows: "PERU: Loreto; Ucayali/R., Yarina Cocha/VIII-6-1954/leg. Peter Hocking" (1). "PERU: Loreto; Ucayali/R., Yarina Cocha/V-15-1957/leg. Peter Hocking" (1). "Braz. Mato Grosso/Porto Velho/Rio Tapirape/X-1962" (1). All paratypes with JMS and BCR yellow paratype label.

Holotype and allotype deposited at FMNH. One paratype at CASC and two paratypes at UNSM.

Description. Holotype. Male. Length 15.9 mm; width across humeri 9.8 mm. Color of dorsum opaque, mottled, brownish yellow with fuscous clouding as follows: head with clouding on frons either side of middle; pronotum with clouding at middle and faint, black, M-shaped mark and narrow, longitudinal, brownish yellow band on posterior half of midline; elytra with clouding laterally, on raised costae, and from apical umbone to suture on each elytron. Ventral surface brownish yellow, shiny. Metasternum with reddish brown spot at middle. Mesometasternal process entirely reddish brown. Sternite 5 reddish brown along posteromedioal margin. Last sternite reddish brown on anteromedial and posteromedial margins. Punctures shiny. Setae tawny. **Head:** Surface with large, dense, round punctures, punctures becoming n-shaped and more dense on clypeus. Clypeal apex distinctly reflexed, subtruncate. Lateral margins of clypeus densely rugose. Antennal club distinctly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins obtusely angulate. Surface with small, moderately dense, round punctures at middle, punctures becoming large, dense, and n-shaped laterally. Lateral margins with bead from apex to base. **Elytra:** Surface of each elytron with 2 distinctly elevated, discal costae, lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, dense, arranged longitudinally in striae, continuing to base near scutellum in 2 columns. Apical declivity with punctures reduced in density between apical umbone and suture. Lateral margins densely punctate. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture strongly spinose. **Pygidium:** Surface distinctly convex, with large, dense, concentric, transversely vermiform punctures originating from midline and either side of midline, punctures with minute setae. **Venter:** Metasternum with large, dense, n-shaped and transverse, vermiform punctures either side of middle, each puncture with a minute seta. Mesometasternal process, in lateral view, subparallel to horizontal axis of body, moderately protuberant beyond mesocoxae; in ventral view (Fig. 111), lateral margins expanding just before apex, apex broadly rounded. Abdominal sternites with small, dense, n-shaped punctures on lateral thirds, each puncture with a short seta. **Legs:** Protibia with apical tooth distinct, subsequent teeth reduced. **Parameres:** Shaft divergent between midpoint and apex (Figs. 112–113). In dorsal view, lateral margins narrowing towards apices. Apices each with distinct, lateral spur.

Allotype. Female (Figs. 109–110). Length 16.5 mm; width across humeri 10.4 mm. As holotype except in the following respects. **Color:** Clypeus shiny, reddish brown. Sternites each with reddish brown spot on middle third. **Legs:** Protibia tridentate, with second tooth closer to apex than basal tooth.

Variation. Male (1 paratype). Length 15.6 mm; width across humeri 10.0 mm. Females (2 paratypes). Length 15.8–17.6 mm; width across humeri 10.0–11.0 mm. **Color:** Male paratype



Figs. 109–114. *Hoplopyga riparia*. **109–110)** Habitus of allotype female; **111)** Mesometasternal process, ventral view; **112–113)** Parameres; **114)** Distribution.

with mesometasternal process reddish brown only on apex, metasternum with narrow, longitudinal, reddish brown line at middle. **Legs:** Protibia tridentate in female and male paratypes, with second tooth closer to apex than basal tooth.

Etymology. The species epithet is derived from the Latin *riparius*, meaning of or belonging near the bank of a river. So named because each specimen of the type series was collected near a river in Brazil or Peru.

Distribution. *Hoplopyga riparia* is known from Peru, with one specimen from Brazil (Fig. 114). This species is represented by only five specimens, and additional collecting or museum specimens will better define the distribution of this species.

Temporal Distribution. February (1), May (1), June (1), August (1), October (1).

Diagnosis. *Hoplopyga riparia* most closely resembles *H. liturata* but can be distinguished by having punctures that continue to the base of the elytra near the scutellum. In *H. liturata*, these punctures do not reach the base of the elytra near the scutellum. *Hoplopyga riparia* is also larger (15.6–17.6 mm) than typical *H. liturata* specimens and has a mesometasternal process that widens just before the apex. *Hoplopyga liturata* is usually smaller than 15.8 mm, and the mesometasternal process never widens just before the apex. *Hoplopyga riparia* can be easily distinguished from other *Hoplopyga* species by its mottled dorsal appearance and the distinct form of the male parameres (Figs. 112–113).

Natural History. Nothing is known of the biology of this species.

Hoplopyga singularis (Gory and Percheron, 1833)

(Figs. 115–124)

Gymnetis singularis Gory and Percheron 1833: 73 and 369 (original combination). Holotype male at MNHN, labeled "Type//Ex-Musaeo/Van Lansberge//singularis G&P Burm./Brasilia Type", examined. Type locality: "Mexique" (but see distribution remarks below).

Gymnetis rubida Gory and Percheron 1833: 73 and 372 (original combination). Type not found. Type locality: "Brésil." **New synonymy**.

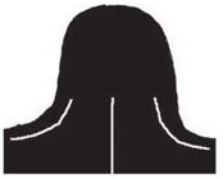
Gymnetis monacha Gory and Percheron 1833: 73 and 373 (original combination). Holotype male at MNHN, labeled "Bras.//monacha GP Type// ex Musaeo James Thomson//Type//Type//(G.) monacha G.P. Type male symbol/G. Ruter det. 1965", examined. Type locality: "Brésil." **New synonymy**.

Hoplopyga corumbana Schürhoff 1942: 286 (synonym). Lectotype male at NHMB, labeled "Corumba/Matt. Grosso//Sammlung/Schürhoff// Hoplopyga Typ. male symbol/corumbana m./determ. Schürhoff, Berlin", here designated and with JMS and BCR red lectotype label. Lectoallotype female at NHMB, labeled "Corumbana/ Matto Grosso/Schürhoff // Typ. female symbol/ corumbana m./determ. Schürhoff, Berlin", here designated and with JMS and BCR red lectoallotype label. Paralectotype male, labeled "Corumba/Matt. Grosso//Sammlung/Schürhoff// co-type//corumbana m", here designated and with JMS and BCR yellow paralectotype label. Type locality: "Corumba (Matto grosso)."

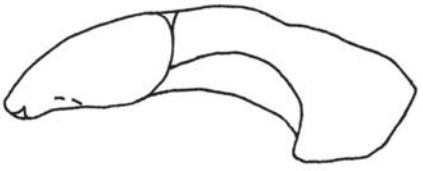
Description. Length 11.2–16.4 mm; width across humeri 6.7–10.4 mm. Dorsal surface velutinous, opaque, or shiny, with mottled appearance due to fuscous or maroon clouding on most of dorsum. Ground color chalky white to yellowish to brownish yellow to bluish gray to greenish gray. Some specimens entirely maroon, shiny or black, velutinous. Head with fuscous clouding either side of midline at base in both sexes, clypeus and sometimes frons reddish brown or black, shiny in females. Pronotum with maroon or black, M-shaped mark at middle and narrow, yellow or bluish gray, longitudinal band on posterior half of midline (band absent in maroon or black specimens). Elytra with maroon or fuscous clouding at base, on costae, and laterally. Ventral surface opaque, with ground color cream-colored to brownish yellow to bluish gray to greenish gray. Metasternum entirely black, shiny, or with middle third black, shiny. Mesometasternal process entirely black, shiny, or with 2 cream-colored spots at base. Sternites with middle third of each sternite black, shiny or not, or entirely black, shiny. Setae tawny. **Head:** Surface with large, dense, deep, round and n-shaped punctures. Clypeal apex weakly to distinctly reflexed, distinctly emarginate at middle, distinctly angulate either side of emargination. Antennal club distinctly longer than antennomeres 2–7 combined in males, females with club subequal in length to antennomeres 2–7. **Pronotum:** Lateral margins obtusely angulate. Surface impunctate or punctate; punctures, when present, small, moderately dense, and n-shaped, becoming larger and denser laterally. Some female specimens with surface densely covered by large, n-shaped punctures, punctures each with a minute to short seta. Lateral and apicolateral margins with bead from apex to base. **Elytra:** Surface with 2 distinctly elevated, discal costae; lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, dense, arranged longitudinally in striae (frequently coalescing longitudinally), becoming smaller and continuing to base near scutellum in 2 columns, in small cluster on apical declivity, and behind each apical umbone (sometimes becoming elongate and vermiform from apical umbone to

115

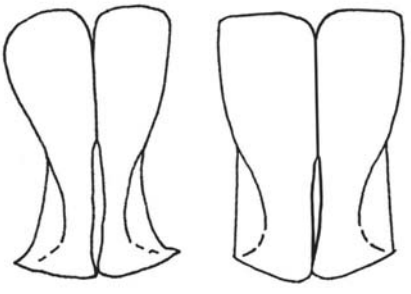
116



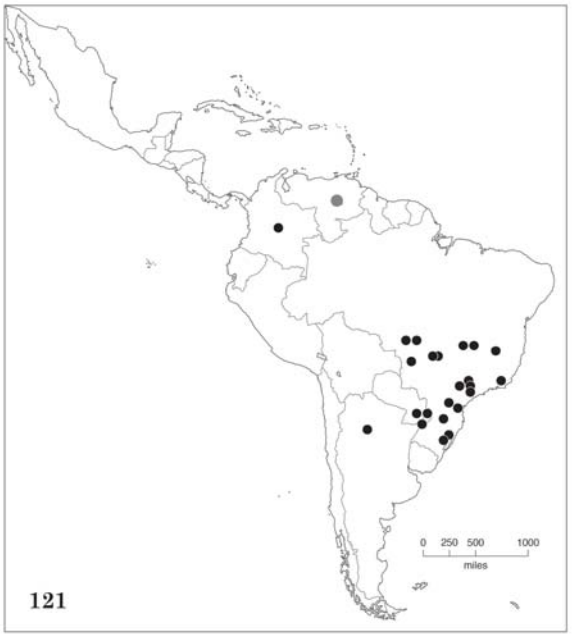
117



118

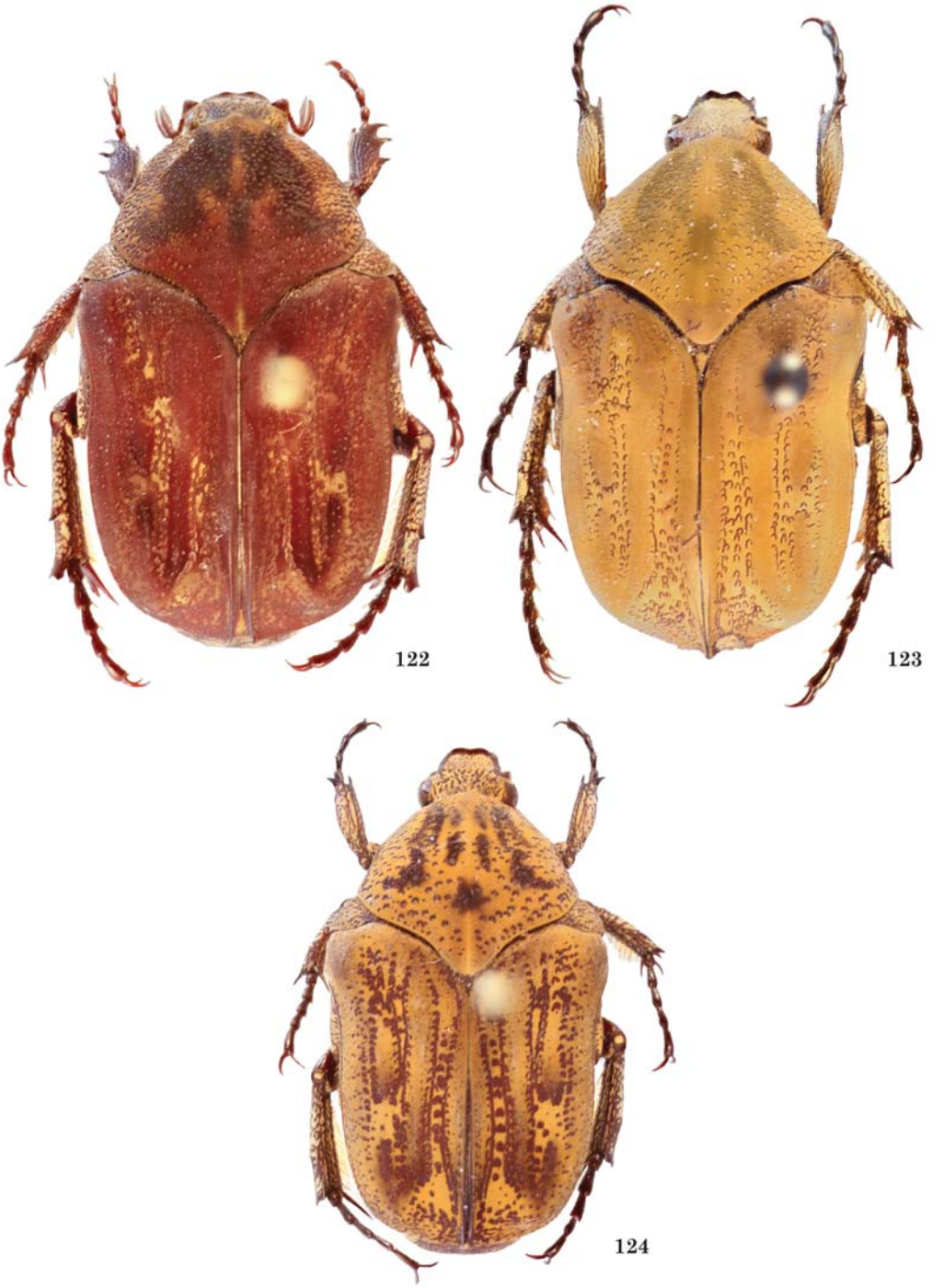


119 120



121

Figs. 115–121. *Hoplopyga singularis*. **115)** Habitus; **116–117)** Variation in mesometasternal process, ventral view; **118–120)** Parameres; **121)** Distribution.



Figs. 122–124. *Hoplopyga singularis*, variation in habitus.

apex). Lateral margins moderately densely punctate. Sutural costae with longitudinal keel on posterior half. Apices at suture weakly spinose. **Pygidium:** Surface weakly to moderately convex in both sexes, with large, dense, concentric, n-shaped and transversely vermiform punctures, punctures with minute setae. **Venter:** Metasternum with large, dense, n-shaped and transversely vermiform punctures either side of middle, punctures with short to long setae. Mesometasternal process, in lateral view (Figs. 116–117), subparallel to horizontal axis of body, weakly protuberant beyond mesocoxae, apex rounded in ventral view. Abdominal sternites with small to large, dense, n-shaped punctures continuing across middle of each sternite or not, lateral punctures each with a minute seta. **Legs:** Male protibia with 1 distinct tooth at apex and second, highly reduced tooth. Female protibia distinctly tridentate. **Parameres:** Form variable. Shaft weakly divergent between midpoint and apex (Figs. 118–120). Lateral margins expanding from midpoint to apex. Apices each with minute or distinct lateral spur.

Distribution. *Hoplopyga singularis* is found in Brazil and neighboring countries (Fig. 121). There is a curious discrepancy between the type locality given in Gory and Percheron (1833) and the locality label on the specimen. The type locality is supposedly "Mexique", but the holotype is labeled "Brasilia". This could be attributed to a mislabeled specimen, since the locality data indicate that this species is not found north of South America. Burmeister (1842) addressed this and noted that the species is not found in Mexico as stated by Gory and Percheron (1833).

Locality Records. 332 specimens from AMNH, BCRC, BMNH, CASC, CMNC, CMNH, FMNH, INPA, MCZC, MLUH, MNHN, MZSP, RMNH, UFRJ, UMSP, USNM, and ZMHU. **ARGENTINA (6):** MISIONES (5): Loreto, Pindapoy, San Pedro, San Vicente (Misiones). SANTIAGO DEL ESTERO (1): Santiago del Estero. **BRAZIL (307):** DISTRITO FEDERAL (3): Brasília. GOIÁS (68): Corumbá de Goiás, Jataí, Mineiros, Rio Verde, No data. ESPÍRITO SANTO (15): Trinidade. MATO GROSSO (157): Chapada, Corumbá, Cuiabá. MINAS GERAIS (6): Diamantina, No data. PARÁ (1): No data. PARANÁ (5): Curitiba, Parque Estadual de Vila Velha, Parque Estadual do Guartelá, Tibagi. RIO DE JANEIRO (10): Nova Friburgo, No data. RIO GRANDE DO SUL (4): Porto Alegre, Serra de Herval, No data. SANTA CATARINA (8): Nova Teutônia, No data. SÃO PAULO (19): Batatais, Botucatu, Campinas, Jundiaí, Piracicaba, No data. NO DATA (12). **COLOMBIA (3):** META (1): Villavicencio. NO DATA (2). **PARAGUAY (1):** ITAPÚA (1): No data. **VENEZUELA (2):** NO DATA (2). **NO DATA (13).**

Temporal Distribution. January (9), February (2), August (1), September (36), October (91), November (22), December (6).

Diagnosis. *Hoplopyga singularis* is distinguished by the mottled appearance of its dorsum, which is created by the presence of maroon or fuscous clouding over much of the dorsal ground color. This species is similar to *H. albiventris* and *H. gosseti* but can be distinguished by the absence of two proximal, apical teeth that are a diagnostic character for those species. *Hoplopyga singularis* is also similar to *H. liturata* but can be differentiated by having punctures that continue to the base of the elytra near the scutellum, whereas in *H. liturata* the punctures on each elytron do not continue to the base near the scutellum.

Nomenclature. *Hoplopyga singularis* has significant variation in color and sculpturing (Figs. 115, 122–124), which has led to the establishment of several different names over the last two centuries. There are two general forms of the male parameres. In maroon, shiny specimens resembling the *H. singularis* holotype (Fig. 115), the apices of the parameres each have a minute, lateral spur, and the parameres are wider (Fig. 119). In the brownish yellow, opaque specimens similar to the morphotype of *H. corumbana* (Fig. 124), the parameres are narrower and more elongate, and each apex bears a distinct, lateral spur (Fig. 118). Most *H. singularis* specimens have parameres that resemble one or the other form, or are somewhere in between having a distinct, lateral spur and a minute, lateral spur on the apices of the parameres. We believe that, despite the variation, these two different forms represent one species. Externally, there are no consistent characters that would support two species.

Schaum (1849) synonymized *H. singularis* with *H. albiventris,* and this synonymy was not explicitly challenged until Antoine (2008) distinguished the two species. Therefore, several catalogs (Schenkling 1921; Blackwelder 1944; Krajcik 1998) listed *H. singularis* as a synonym of *H. albiventris*. Antoine (2008) thoroughly discussed several discrepancies in *Hoplopyga* nomenclature over the last century and synonymized *H. corumbana* with *H. singularis*, but did not address *H. rubida*, a species that had gone mostly unnoticed since its description. Gory and Percheron (1833) described *Gymnetis rubida* as having a maroon dorsum and a reddish brown, shiny venter. After examining putative *H. rubida* specimens, we concluded that they are conspecific with *H. singularis.* The form of the male parameres, mesometasternal process, and overall *gestalt* are identical to maroon *H. singularis* specimens, and the name simply reflects a color variation. The same circumstances apply to *H. monacha*, which was described based on a melanistic specimen. We also place this species

in junior synonymy with *H. singularis* based upon the similarity in character states and the form of the male parameres.

Lectotypes of *H. corumbana* were designated from Schürhoff's type series. Schürhoff (1942) designated male and female syntypes, and we here designate the male as the lectotype because the parameres are useful for circumscription of the species. We uphold Antoine's (2008) synonymization of *H. corumbana* with *H. singularis*. The ventral punctation and form of the mesometasternal process of *H. corumbana* does not differ significantly from *H. singularis*, and the parameres of *H. corumbana* have a narrower ridge along the midline in dorsal view than *H. singularis* parameres but are otherwise identical.

Natural History. *Hoplopyga singularis* has been collected at elevations up to 1,300 m (label data). Micó *et al*. (2001) described *H. singularis* larvae found in a termite nest. Puker *et al.* (2012) collected the larvae of *H. singularis* abundantly under nests of *Diversitermes diversimiles* (Silvestri) (Isoptera) and observed adults feeding on sap flows of *Baccharis* sp. (Asteraceae).

Hoplopyga suilla (Janson, 1881)
(Figs. 125–129)

Gymnetis suilla Janson 1881: 581 (original combination). Holotype female at BMNH, labeled "18[?]04//Venez.//Fry Coll./1905-100//Type// Gymnetis/suilla, O. Jans./Type.//Gymnetis suilla Jans. Holotype", examined. Type locality: "Venezuela."

Description. Length 11.3–14.2 mm; width across humeri 6.6–8.4 mm. Dorsal surface velutinous or opaque. Ground color of dorsum reddish brown, cinereous, or dark, greenish gray. Pronotum with black clouding on middle and narrow, cinereous band on midline (sometimes visible only on basomedian lobe). Each elytron with black clouding on costae, black spot on mediodiscal area, and black, J-shaped mark or reversed J-shaped mark on each apical umbone. Ventral surface entirely reddish brown, shiny, with ground color of metasternum often cinereous either side of middle. Setae tawny. **Head:** Surface with small, sparse to moderately dense, round and n-shaped punctures. Clypeal apex distinctly (males) to weakly (females) reflexed, emarginate at middle, weakly angulate or rounded either side of emargination. Antennal club slightly longer than antennomeres 2–7 combined. **Pronotum:** Lateral margins appearing broadly rounded. Surface with small, sparse punctures becoming n-shaped laterally. Lateral margins with bead from apical angle to basal angle or not. **Elytra:** Surface of each elytron with 2 distinctly elevated, discal costae, lateral costa on each elytron interrupted and depressed on mediodiscal area. Depressions between costae with n-shaped punctures; punctures large, moderately dense, arranged longitudinally in striae, not extending to base near scutellum. Apical declivity with punctures becoming sparse between apical umbone and suture. Lateral margins moderately densely punctate. Sutural costae each elevated into longitudinal keel on posterior half. Apices at suture distinctly spinose. **Pygidium:** Surface weakly to moderately convex in both sexes, with large, dense, concentric, transversely vermiform and n-shaped punctures, punctures with minute setae. **Venter:** Metasternum with large, dense, elongate, n-shaped, and transversely vermiform punctures either side of middle, punctures with long setae. Mesometasternal process, in lateral view, subparallel or at slight oblique angle to horizontal axis of body, moderately protuberant beyond mesocoxae; in ventral view (Fig. 126), apex broadly rounded, with short, sparse setae from punctures at base. Abdominal sternites with minute, moderately dense punctures at middle, punctures becoming large, elongate, n-shaped or vermiform on lateral thirds, each puncture with a short seta. **Legs:** Protibia short, tridentate in both sexes. Males often with first and third tooth distinct, second tooth reduced. **Parameres:** Form elongate and narrow, shaft weakly divergent between midpoint and apex (Figs. 127–128). Lateral margins expanding from midpoint to apex. Apices each with distinct, lateral spur.

Distribution. *Hoplopyga suilla* is known from Trinidad and Venezuela (Fig. 129).

Locality Records. 12 specimens from the following collections: AMNH, BCRC, BMNH, JDGC, and RMNH. **TRINIDAD (9):** PORT OF SPAIN (2): Chancellor Road. SAN JUAN-LAVENTILLE (3): Maracas Bay. TUNAPUNA-PIARCO (4): Mt. St. Benedict. **VENEZUELA (3):** NO DATA (3).

Temporal Distribution. May (1), June (7).

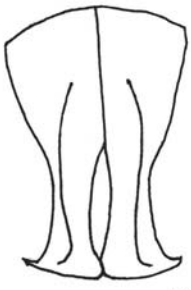
Diagnosis. *Hoplopyga suilla* is distinguished by its small size (11.3–14.2 mm), sparse dorsal punctation, and dorsal coloration. This species is similar to *H. liturata* but has a dorsum that is entirely cinereous and black rather than brownish yellow. *Hoplopyga suilla* has a venter that is mostly reddish brown and shiny, while *H. liturata* specimens have the reddish brown, shiny areas restricted to the middle of the metasternum and abdominal sternites. *Hoplopyga suilla* has different parameres than *H. liturata* (compare Figs. 127–128 and Figs. 54–55) and longer setae arising from punctures on the metasternum and abdominal sternites.

Natural History. Specimens have been collected in traps baited with banana at elevations ranging from sea level to 250 m. We know nothing about the natural history of this species.

125

126

127



128

129

Figs. 125–129. *Hoplopyga suilla*. **125)** Habitus; **126)** Mesometasternal process, ventral view; **127–128)** Parameres; **129)** Distribution.

Acknowledgments

We are grateful to the many museums and individuals who provided specimens, photographs, and locality data (see Material and Methods). Fabrice Lavalette (Rémire-Montjoly, French Guiana) provided photographs, observations on natural history, and specimens of the elusive *H. cerdani*, as well as other species. Antoine Mantilleri (MNHN) provided images of several holotypes, including the images of *H. cerdani* and *H. miniata*. Julien Touroult (Soyaux, France) gave permission to use his photographs of *H. liturata* and *H. ocellata.* Max Barclay (BMNH) hand-carried specimens, including a lectotype, from The Natural History Museum in London to the USA for us to examine. James Boone (then at FMNH) provided assistance searching for *Hoplopyga* specimens during a visit by JMS to the Field Museum of Natural History. Paul Schoolmeesters assisted with tracking down the publication date for Voet (1776). We thank Angie Fox for assistance with the line drawings and M. J. Paulsen for his invaluable help with the habitus figures.

This research was funded by an NSF grant (DEB0716899) to Brett Ratcliffe and Ronald D. Cave. Supplemental funds for travel and research activities for JMS were provided by a Friends of the University of Nebraska State Museum Travel Grant, the Bruner Entomology Club Swenk Fund from the Department of Entomology at the University of Nebraska, and the University of Nebraska's Agricultural Research Division.

References Cited

Antoine, P. 1998. Quelques espèces nouvelles ou peu connues de la famille des Cetoniidae VI (Coleoptera, Cetoniidae). Coléoptères 4: 65–84.

Antoine, P. 2008. Contribution à la connaissance du genre *Hoplopyga* J. Thomson (Coleoptera, Cetoniidae). Coléoptères 14: 241–256.

Arnett, Jr., R. H., G. A. Samuelson, and G. M. Nishida. 1993. The Insect and Spider Collections of the World. Sandhill Crane Press, Gainesville, FL.

Blackwelder, R. E. 1944. Checklist of the coleopterous insects of Mexico, Central America, the West Indies, and South America, Part 2. Bulletin of the United States National Museum 185: 263–264.

Blanchard, E. 1846. Famille des Cétoniens [pp. 193–194]. *In*: Voyage dans l'Amérique Méridionale (le Brésil, la République Orientale de l'Uruguay, la République Argentine, la Patagonie, la République du Chili, la République de Bolivia, laRépublique du Pérou) Exécuté Pendant les Années 1826, 1827, 1828, 1829, 1830, 1831, 1832 et 1833, par Alcide d'Orbigny, Volume 6, Part 2 (Insectes) (E. Blanchard and A. Brullé, editors). Levrault, Paris, France.

Burmeister, H. 1842. Handbuch der Entomologie, Volume 3. T.E.F. Enslin, Berlin, Germany.

Costa, C., S. A. Vanin, and S. A. Casari-Chen. 1988. Larvas de Coleoptera do Brasil. Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil.

Di Iorio, O. 2013. A review of the Cetoniinae (Coleoptera: Scarabaeidae) from Argentina and adjacent countries: systematics and geographic distributions. Zootaxa 3668: 1–87.

Di Iorio, O. 2014. A review of the natural history of adult Cetoniinae (Coleoptera: Scarabaeidae) from Argentina and adjacent countries. Zootaxa 3790: 281–318.

Fabricius, J. C. 1775. *Systema Entomologiae*. Flensburg and Leipzig, Germany.

Fauvel, M. A. 1860. Catalogue des insectes recueillis a la Guyane Française par M. E. Déplanche, chirurgien auxiliaire de la marine impériale, pendant la campagne de l'aviso à vapeur le Rapide, années 1854–55–56. Bulletin de la Société Linnéenne de Normandie 5: 305–306.

Fierros-López, H. E. 2007. Primer registro de *Hoplopyga liturata* (Olivier, 1789) (Coleoptera: Scarabaeidae: Cetoniinae) en Jalisco, México. Dugesiana 14: 111–112.

Fischer von Waldheim, G. 1823. *Coleoptera quaedam exotica descripta*. Mémoires de la Société Naturalists de Moscou 6: 254–267.

Gara, R. I., and G. Onore. 1989. Entomologia Forestal. Proyecto DINAF-AID, Quito, Ecuador.

Garcia, F. P., S. R. Rodrigues, C. A. C. Bagnara, and D. S. Oliveira. 2013. Survey of saproxylophagous Melolonthidae (Coleoptera) and some biological aspects in Aquidauana, MS. Biota Neotropica 13: 38–43.

Gonçalves, T. T., and J. N. C. Louzada. 2005. Estratificação vertical de coleópteros carpófilos (Insecta: Coleoptera) em fragmentos florestais do sul do Estado de Minas Gerais, Brasil. Ecología Austral 15: 101–110.

Gory, H., and A. Percheron. 1833. Monographie des Cétoines et Genres Voisins, formant, dans les Familles Naturelles de Latreille, la Division des Scarabées Mélitophiles. J.-B. Baillière, Paris, France.

Hardy, A. R. 1975. New World Gymnetini: an attempt at clarification (Coleoptera: Scarabaeidae). The Coleopterists Bulletin 29: 205–208.

Hedström, I., and T. Elmqvist. 1984. *Prepona* butterflies (Nymphalidae) and *Hoplopyga* beetles (Scarabaeidae) on the same food source during the Neotropical dry season – a case of commensalism? Revista de Biología Tropical 32: 313–316.

Herbst, J. F. W. 1790. Natursystem aller bekannten in und ausländischen Insekten, als eine fortsetzung der von Büffonschen Naturgeschichte, Käfer, Volume 3. Ben Joachim Pauli, Berlin, Germany.

Horn, W., and I. Kahle. 1935–1937. Über entomologische Sammlungen: Entomologen & Entomo-Museologie (Ein Beitrag zur Geschichte der Entomologie), Teil I–III, Entomologische Beihefte Band 2–4, 1–540. Berlin-Dahlem, Germany.

Janson, O. E. 1880. Descriptions of new American Cetoniidae. Cistula Entomologica 2: 575–580.

Janson, O. E. 1881. Descriptions of new American Cetoniidae. Part II. Cistula Entomologica 2: 581–585.

Krikken, J. 1984. A new key to the suprageneric taxa in the beetle family Cetoniidae, with annotated lists of the known genera. Zoologische Verhandelingen 210: 3–75.

Krajčík, M. 1998. Cetoniidae of the World. Catalogue-Part I. Published by the author, Most, Czech Republic.

Luederwaldt, G. 1911. Quatro lamellicorneos termitophilos. Revista do Museu Paulista 8: 405–413.

Micó, E., W. E. Hall, and B. C. Ratcliffe. 2001. Descriptions of the larvae of *Hoplopyga singularis* (Gory and Percheron) and *Hologymnetis cinerea* (Gory and Percheron) with a revised key to the larvae of New World Gymnetini (Coleoptera: Scarabaeidae: Cetoniinae). The Coleopterists Bulletin 55: 205–217.

Morón, M. A. 1995. Fenología y hábitos de los Cetoniinae (Coleoptera: Melolonthidae) en la region de Xalapa-Coatepec, Veracruz, México. Giornale Italiano di Entomologia 7: 317–332.

Morón, M. A., and R. Arce. 2002. Descriptions of the immature stages of five Mexican species of Gymnetini (Coleoptera: Scarabaeidae: Cetoniinae). Proceedings of the Entomological Society of Washington 104: 1036–1054.

Moser, J. 1912. Beitrag zur Kenntnis der Cetoniden (Col.) XI. Deutsche Entomologische Zeitschrift: 560–574.

Moser, J. 1918. Beitrag zur Kenntnis der Cetoniden (Col.) XVII. Stettiner Entomologische Zeitung 79: 168–190.

Neita M., J. C. J. Orozco A., and B. Ratcliffe. 2006. Escarabajos (Scarabaeidae: Pleurosticti) de la selva baja del bosque pluvial tropical <BP-T>, Chocó, Colombia. Acta Zoológica Mexicana (new series) 22: 1–32.

Neita Moreno, J. C., J. A. Quiroz Gamboa, and L. F. Ocampo Corrales. 2010. Cetoniinae (Coleoptera: Scarabaeidae "Pleurosticti") del Museo Entomológico "Francisco Luis Gallego" de la Universidad Nacional de Colombia, sede Medellín. Boletin del Museo Entomológico "Francisco Luis Gallego" 2: 7–16.

Olivier, A. G. 1789. Entomologie, ou Histoire Naturelle des Insectes, avec leurs Caractères Génériques et Spécifiques, leur Description, leur Synonymie, et leur Figure Enluminée. Coléoptères, Volume 1. Baudouin, Paris, France.

Olivier, A. G. 1808. Entomologie, ou Histoire Naturelle des Insectes, avec leurs Caractères Génériques et Specifiques, leur Description, leur Synonymie, et leur Figure Enluminée. Coléoptères, Volume 7 (Plates). Paris, France.

Orozco, J. 2012. Escarabajos cetoninos de Guatemala (Coleoptera: Scarabaeidae: Cetoniinae) [pp. 181–191]. *In*: Biodiversidad de Guatemala. Volumen 2 (E. B. Cano and J. C. Schuster, editors). Universidad del Valle de Guatemala, Guatemala.

Puker, A., C. Lopes-Andrade, C. S. Rosa, and P. C. Grossi. 2012. New records of termite hosts for two species of *Hoplopyga*, with notes on the life cycle of *Hoplopyga brasiliensis* (Coleoptera: Scarabaeidae: Cetoniinae). Annals of the Entomological Society of America 105: 872–878.

Puker, A., H. L. Ad'vincula, V. Korasaki, F. N. F. Ferreira, and J. Orozco. 2014. Biodiversity of Cetoniinae beetles (Coleoptera: Scarabaeidae) in introduced and native habitats in the Brazilian Atlantic Forest. Entomological Science. doi: 10.1111/ens.12069.

Ratcliffe, B. C. 2004. Lectotype designations in the New World Gymnetini (Coleoptera: Scarabaeidae: Cetoniinae). Zootaxa 729: 1–19.

Ratcliffe, B. C. 2012. First reported occurence of *Hoplopyga* Thomson, 1880 (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini) from the West Indies, with description of a new species. The Coleopterists Bulletin 66: 111–115.

Ratcliffe, B. C. 2013. A revision of the Neotropical genus *Amithao* Thomson, 1878 (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). The Coleopterists Bulletin 67: 265–292.

Ratcliffe, B. C. 2014. A review of the Neotropical genera *Astroscara* Schürhoff, 1937, *Chiriquibia* Bates, 1889, *Hadrosticta* Kraatz, 1892, *Jansonia* Schürhoff, 1937, *Macrocranius* Schürhoff, 1935, and *Tiarocera* Burmeister, 1842 (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). The Coleopterists Bulletin 68: 363–376.

Ratcliffe, B. C. 2015. A revision of the Neotropical genus *Allorrhina* Burmeister, 1842 (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). The Coleopterists Bulletin 69: 91–113.

Ratcliffe, B. C., and A. C. Deloya. 1992. The biogeography and phylogeny of *Hologymnetis* (Coleoptera: Scarabaeidae: Cetoniinae) with a revision of the genus. The Coleopterists Bulletin 46: 161–202.

Ratcliffe, B. C., and E. Micó. 2001. A review of the Neotropical genus *Neocorvicoana* Ratcliffe and Micó, new genus (Coleoptera: Scarabaeidae: Cetoniinae: Gymneini). The Coleopterists Bulletin 55: 279–296.

Ritsema, C. 1885. Note II. Synonymical remarks on Coleoptera. Notes from the Leyden Museum 7: 16.

Rodrigues, S. R., J. L. N. D. Oliveira, C. A. C. Bagnara, and A. Puker. 2013. Cetoniinae (Coleoptera: Scarabaeidae) attracted to fruit-baited traps near Aquidauana, Mato Grosso do Sul, Brazil. The Coleopterists Bulletin 67: 119–122.

Reyes Novelo, E., and M. A. Morón. 2005. Fauna de Coleoptera Melolonthidae y Passalidae de Tzucacab y Conkal, Yucatán, México. Acta Zoologica Mexicana (series neuva) 21:15–49.

Schaum, H. R. 1844. Observations critiques sur la famille des lamellicornes mélitophiles. Annales de la Société Entomologique de France (Series 2) 2: 333–426.

Schaum, H. R. 1848. Two decades of new Cetoniidae. Transactions of the Entomological Society of London 5: 64–76.

Schaum, H. R. 1849. Observations critiques sur la famille des lamellicornes mélitophiles (2^{e} partie). Annales de la Société Entomologique de France (Series 2) 7: 241–295.

Schenkling, S. 1921. *Coleopterorum Catalogus, pars* 72. Scarabaeidae: Cetoniinae. W. Junk, Berlin, Germany.

Schoch, G. 1895a. Die Genera und Species meiner Cetoniden-Sammlung. I. Teil: Trib. Goliathidae,

Gymnetidae, Madagassae, Schizorrhinidae. Zürcher and Furrer, Zürich, Switzerland.

Schoch, G. 1895b. Nachtrag zu den Gattungen und Arten meiner Cetonidensammlung I. Teil. Printed by E. Zwingli, Zürich, Switzerland.

Schoch, G. 1896. *Lamellicornia Melitophila: Catalogus Systematicus Cetonidarum et Trichiidarum ad huc Cognitarum*. Zürich, Switzerland.

Schoolmeesters, P. 2014. Scarabs: World Scarabaeidae Database (January 2014 version). *In*: Species 2000 & ITIS Catalogue of Life: 2014 Annual Checklist. www.catalogueoflife.org/annual-checklist/2014 (accessed 21 April 2015).

Schürhoff, P. N. 1937. Beiträge zur Kenntnis der Cetoniden (Col.) VIII. Revision der Gattung *Gymnetis* Mac Leay. Deutsche Entomologische Zeitschrift 1–2: 56–80.

Schürhoff, P. N. 1942. Beiträge zur Kenntnis der Cetoniden (Col.) IX. Mitteilungen der Münchner Entomologischen Gesellschaft 32: 279–293.

Solís, A. 2004. Escarabajos Fruteros de Costa Rica. Instituto Nacional de Biodiversidad (INBio), Santo Domingo de Heredia, Costa Rica.

Suárez-G., M. A., and G. Amat-García. 2007. Lista de los escarabajos fruteros de Colombia. Biota Colombiana 8: 69–76.

Thomson, J. 1878. *Typi Cetonidarum suivis de Typi Monommidarum et de Typi Nilionidarum Musaei Thomsoniani*. E. Deyrolle, Paris, France.

Thomson, J. 1880. Diagnoses de genres nouveaux de la famille des cétonides. Le Naturaliste 2: 268–269.

Touroult, J., and P.–H. Dalens. 2010. Cétoines de Guyane: variations saisonnières et interannuelles (Coleoptera, Scarabaeoidea, Cetoniinae). Contribution à l'Étude des Coléoptères de Guyane 1: 81–88. (Supplément au Bulletin de Liaison d'ACOREP-France "Le Coléoptériste").

Vanin, S. A., and C. Costa. 1984. Larvae of Neotropical Coleoptera IX: Scarabaeidae, Cetoniinae, Gymnetini. Revista Brasileira Entomologia 28: 329–335.

Voet, J. E. 1776–1804. *Catalogus Systematicus Coleopterorum*, Volumes 1–2. Chez G. Bakhusen, The Hague, The Netherlands.

Wheeler, Q. D., and N. I. Platnick. 2000. The phylogenetic species concept (*sensu* Wheeler and Platnick) [pp. 55–69]. *In*: Species Concepts and Phylogenetic Theory. A Debate (Q. D. Wheeler and R. Meier, editors). Columbia University Press, New York, NY.

(Received 28 April 2015; accepted 23 September 2015. Publication date 18 December 2015.)