

***Cymapamphantus valentineorum*, a New Genus and Species of  
Pamphantinae (Heteroptera: Lygaeoidea: Geocoridae) from the  
British Virgin Islands, with a Checklist of the Species and Keys  
to the Tribes and Genera of the Subfamily**

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**CYMAPAMPHANTUS VALENTINEORUM, A NEW GENUS AND SPECIES  
OF PAMPHANTINAE (HEMPTERA: LYGAEOIDEA: GEOCORIDAE)  
FROM THE BRITISH VIRGIN ISLANDS, WITH A CHECKLIST  
OF THE SPECIES AND KEYS TO THE TRIBES AND GENERA  
OF THE SUBFAMILY**

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*Abstract.*—The **new genus and new species** *Cymapamphantus valentineorum*, belonging to the geocorid subfamily Pamphantinae, is described from one brachypterous male and six brachypterous females taken on Guana Island, British Virgin Islands. A dorsal habitus illustration, dorsal and lateral photographs of the male and female, diagnosis, and description of *C. valentineorum* are provided to help distinguish this new Caribbean bug from other New World pamphantines. A checklist of the species, keys to the three tribes and eight genera, and a color photograph of a representative species of each genus of the New World Pamphantinae are provided.

*Key Words:* Insecta, Hemiptera, Heteroptera, Geocoridae, Pamphantinae, new genus, new species, British Virgin Islands, Guana Island, keys, checklist

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The family Geocoridae contains the four subfamilies Australocorinae Malipatil, Geocorinae Stål, Henestarinae Douglas and Scott, and Pamphantinae Barber and Bruner (Henry 1995, Malipatil 2012). The Geocorinae are a worldwide group, the Henestarinae are restricted to the Old World, the Pamphantinae are found only in the Western Hemisphere (Slater 1964), except one genus and species described from Queensland, Australia (Slater 1981a), and the Australocorinae are known only from Queensland (Malipatil 2012). Slater (1999) reviewed the systematic position of the Pamphantinae and recognized the tribes Cattarini Slater, Epipolopini Slater,

and the nominate Pamphantini. Slater and Henry (1999) reviewed the catarine genus *Cattarus* and described a remarkable new mimetic genus and species from Ecuador, Brailovsky (1989) provided a key to the genera of the New World Pamphantinae, Baranowski and Slater (2005) gave a key to the genera and species of the West Indies, and Henry (2006) revised *Epipolops* Herrich-Schaeffer and discussed its position within the Pamphantinae.

While sorting undetermined specimens in the collection of Dr. Barry Valentine (Emeritus Professor, Ohio State University, Columbus) in preparation for a synopsis of the Heteroptera of Guana Island

(Lazell 2005) in the British Virgin Islands, I discovered four specimens of an unusual brachypterous pamphantine geocorid, which represent a new genus and new species. In 2012, the first known male and two additional females were taken in Malaise trap samples on Guana Island.

In this paper, I describe, diagnose, and provide an illustration and color photographs of *Cymapamphantus valentineorum*. A checklist of the species, keys to the three tribes and eight genera, and color photographs of representative species of each genus of the New World Pamphantinae are provided to facilitate recognition.

#### METHODS

Color adult habitus images were captured using an EntoVision Imaging Suite that included a JAI Technologies (AT-200GE) digital camera mounted to a Leica Z16 zoom lens via a Leica z-step microscope stand. Multiple focal planes were merged using Cartograph 8.0.6 (Microvision Instruments, France) software. Final illustrations were rendered using Adobe Photoshop CS4 and the plates were prepared using Adobe Illustrator CS4. The digital illustration of the adult female was created using Adobe Photoshop CS4.

All specimens are deposited in the National Museum of Natural History (USNM), Smithsonian Institution, Washington, D.C.

#### *Cymapamphantus* Henry, new genus

Type species: *Cymapamphantus valentineorum* Henry, new species.

Diagnosis.—This new genus is distinguished from all other Pamphantini by the presence of a small fore femoral spine; the lack of ocelli; the quadrate pronotum with the anterior lobe slightly broader and 2.5 times longer than the posterior lobe; the staphylinoid condition of the hemelytra (sensu Slater 1975) in both

sexes, lacking any trace of a membrane; and the presence of a stridulitrum on each side of abdominal segment III and a plec-tron across the base of each hind femur.

Description.—Length to apex of abdomen 2.93–3.14; length to apex of hemelytra 1.73–1.86 mm. *Head*: Nearly quadrate, slightly wider than long; eyes relatively small, coarsely faceted; ocelli absent; antenniferous tubercles prominent; vertex, frons, and clypeus alutaceous to finely punctate, with a few large deep punctures between clypeus and antenniferous tubercles; undersurface densely and deeply punctate; buccula short, enclosing only base of labial segment I. *Labium*: Extending to bases of hind coxae; length of segments I, II, and IV subequal; ratios 14: 14: 11: 14. *Antenna*: Segment I elongate barrel-shaped, extending beyond apex of clypeus; segment II longest, segment I shortest, segment IV longer than III; ratios 9: 20: 14: 19. *Pronotum*: Bilobed; anterior lobe broader and 2.5 times as long as posterior lobe, deeply and densely punctate except for smooth or impunctate area around calli, lateral margins rounded or convex with a narrow lateral carina; posterior lobe shorter and narrower than anterior lobe, deeply and densely punctate. *Ventral surface of thorax*: Deeply and densely punctate. *Scutellum*: Equilateral; deeply and densely punctate. *Hemelytron*: Staphylinoid, clavus and corium fused without a suture between, each hemelytron meeting evenly along midline, truncate posteriorly, apex extending nearly to abdominal tergum III, membrane absent. *Abdomen*: Dorsum impunctate, with scent gland scars between terga 4 and 5 and 5 and 6 exposed; sutures 4 and 5 U-shaped through middle, strongly curving posteriorly; hypandrium impunctate, extending posteriorly slightly beyond genital capsule; ventrally impunctate, smooth, shiny, segments II and III fused, segment II swollen posteriorly

with a distinct curving stridulitrum on each side; spiracles II–IV dorsal on connexiva, spiracles V–VII ventral. *Ostiole evaporative area*: Reduced, covering slightly protruding auricle and narrow surrounding margin. *Legs*: Femora moderately swollen, fore femur with a small subapical spine, hind femur with a transverse plectron across base; tibiae slender basally, gradually thickening distally; tarsi three-segmented; claws strongly curving, with large fleshy pulvilli.

*Etymology*.—The prefix of the name of this new genus is taken from the superficially similar but distantly related cymid genus *Cymus* [Cymidae] and is combined with the pamphantine genus *Pamphantus* with which this new genus shares the most characters. The gender is masculine.

*Discussion*.—Unlike members of the Cattarini (*Cattarus* and *Cephalocattarus*), which have a distinct stridulitrum on the side of the head below the eyes and a plectron on the fore femur in both sexes, only males of *Cymapamphantus valentineorum* possess a stridulitrum on the side of the abdomen and a plectron on the hind femur. I have examined males of other pamphantine genera, including all species of *Epipolops*, *Neopamphantus maculatus* Barber and Brunner, *Pamphantus elegantulus* Stål, *Parapamphantus erikae* Brailovsky, and *Tropicopamphantus amazonicus* Brailovsky and have not found any stridulatory structures among them. Males are unknown for *Adpamphantus gibbosus* Barber, so it is not certain if this species has such sound-producing mechanisms.

*Cymapamphantus valentineorum*

**Henry, new species**

(Figs. 1–5)

*Diagnosis*.—This species is distinguished by the combination of generic

characters, including the presence of a small fore femoral spine, the lack of ocelli, the quadrate pronotum, and the short quadrate hemelytral pads lacking any remnants of a membrane, as well as the uniformly yellowish-brown color and the evenly and deeply punctate pronotum and hemelytral pads.

*Description*.—*Holotype male* (Figs. 2, 3): Length to apex of abdomen 2.90 mm, length to apex of hemelytra 1.73 mm, width across hemelytra 0.64 mm; width across abdomen 0.77 mm. *Head*: Length 0.51 mm; width across eyes 0.64 mm, interocular width 0.40 mm. *Labium*: Length 1.25 mm, extending to the bases of the hind coxae. *Antenna*: Segment I length 0.24 mm, II 0.50 mm, III 0.42 mm, IV 0.51 mm. *Pronotum*: Anterior lobe length 0.38 mm, posterior lobe length 0.18 mm; anterior lobe width 0.69 mm, posterior lobe width 0.64 mm.

*COLORATION*: Uniformly yellowish brown; labium and legs more pale yellow

*STRUCTURE, TEXTURE, AND VESTITURE*: *Head*: Quadrate, dorsal surface mostly alutaceous or finely punctate, either side of clypeus with several large, deep punctures, ventral surface evenly and deeply punctate; vertex with a short central carina at middle, each side bordering eyes with a shallow ridge or carina. *Pronotum*: Anterior lobe 2.5 times as long as posterior lobe, lateral margins convex and narrowly carinate, surface punctate, except for shiny, impunctate calli; posterior lobe much wider than long, narrower than anterior lobe, lateral margins weakly rounded and ecarinate. *Scutellum*: Equilateral, evenly and deeply punctate. *Hemelytron*: Micropterous or staphylinoid, quadrate, evenly and deeply punctate; truncate apically, membrane absent. *Abdomen*: Dorsum impunctate, segments II and III fused; ventral surface shiny, impunctate, segment III

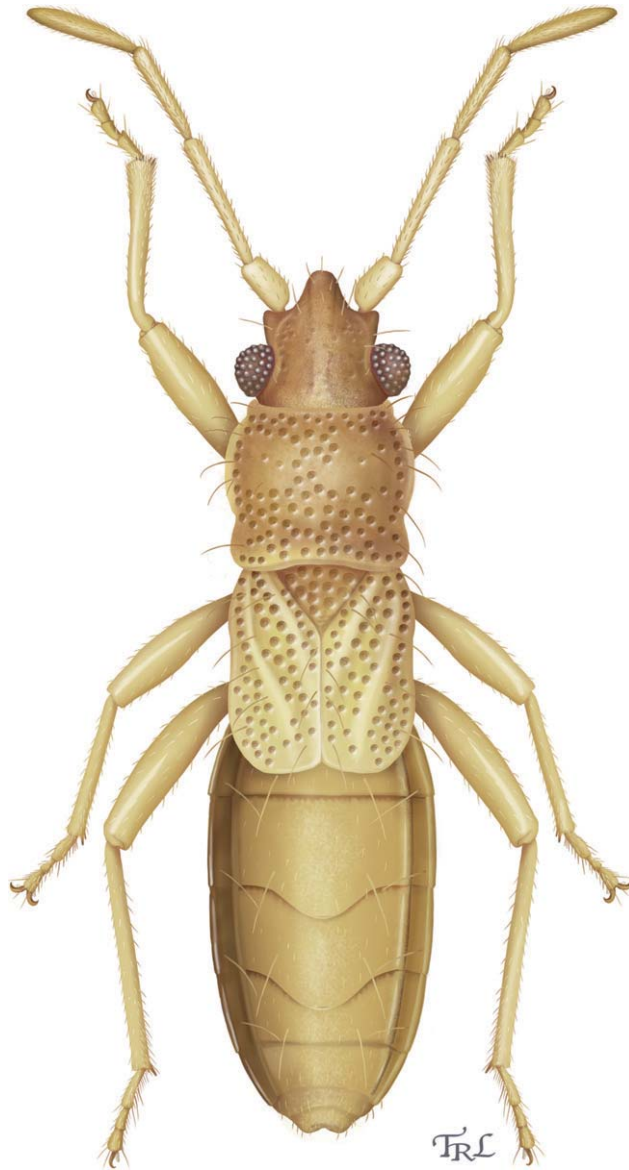
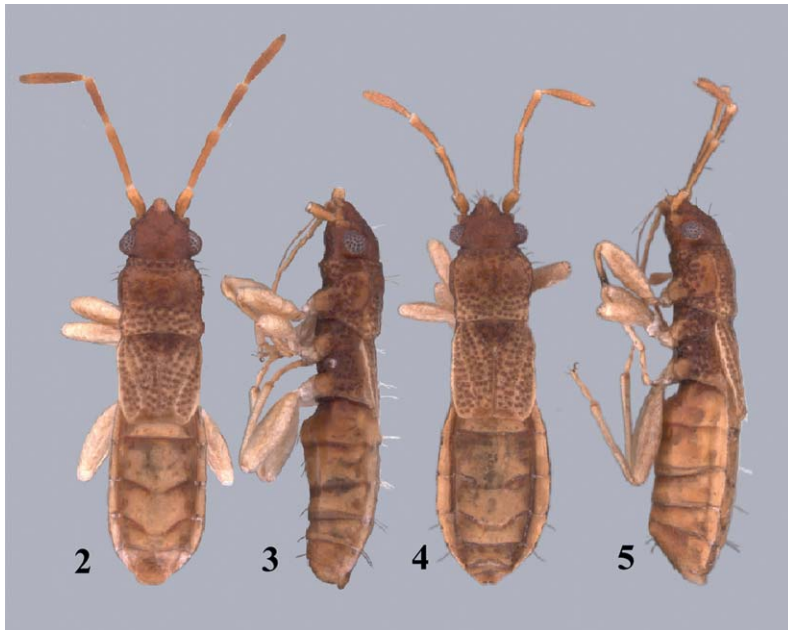


Fig. 1. Dorsal habitus illustration of adult female *Cymapamphantus valentineorum*.

swollen posteriorly (Fig. 3) with a distinct stridulitrum on each side. *Dorsal setae*: Head, pronotum, scutellum, and hemelytra with a few scattered, long, erect setae; abdominal segment III with four long, erect trichobothria across middle, segment IV with three, and segments V–VI with two.

*Male genitalia*: Unique male holotype not dissected until more material becomes available.

*Female* (Figs. 1, 4, 5) (n = 4): Length to apex of abdomen 2.93–3.14 mm, length to apex of hemelytra 1.73–1.86 mm, width across hemelytra 0.69–0.74 mm. *Head*: Length 0.53–0.58 mm, width across



Figs. 2–5. Photographs of the adult male and female of *Cymapamphantus valentineorum*. 2, adult male (holotype), dorsal aspect. 3, adult male (holotype), lateral aspect. 4, adult female, dorsal aspect. 5, adult female, lateral aspect.

eyes 0.61–0.65 mm, interocular width 0.38–0.42 mm. *Labium*: Length 1.30–1.57 mm, extending to bases of hind coxae. *Antenna*: Segment I length 0.22–0.26 mm, II 0.50–0.54 mm, III 0.38–0.40 mm, IV 0.48–0.53 mm. *Pronotum*: Length 0.53–0.58 mm, anterior lobe width 0.69–0.70 mm, posterior lobe width 0.61–0.64 mm.

**Etymology.**—I am pleased to name this new brachypterous pamphantine in honor of Dr. Barry D. and Mrs. Buena Valentine, and their daughter Susan Valentine-Cooper for their efforts to inventory the insect fauna of Guana Island, including their collections of the first four known specimens of this new species.

**Discussion.**—This peculiar new species is known from only seven adults, all of which are short winged and flightless (hind wings absent). Nevertheless, three adults and one third-instar nymph were

taken in a Malaise trap and one was taken on a sheet at ultraviolet light, indicating that these bugs are wide roaming and crawled into the traps. The three remaining specimens were either beaten or swept from foliage. Nothing is known of the feedings habits or biology of this bug or any other Pamphantinae.

The male genitalia have been illustrated for only a few species of Pamphantinae (Slater 1981a, 1999), primarily because of the lack of males or adequately long series. I too refrain from dissecting the unique male of *C. valentineorum* until additional comparative material becomes available.

**Type material.**—Holotype ♂, British Virgin Islands, Guana Island, North Beach, nr gravel pit, 18°28'47.33"N, 64°34'26.78"W, Sept. 2012, W. P. Liao, Malaise trap. Paratypes: 1 ♀, British Virgin Is[lands]., Guana I[sland], 11/20-x-2002,



R. R. Snelling, E end of White Beach; 1 ♀, British Virgin Islands, Guana Island, 1/7-x-03, B[arry]. & B[uena]. Valentine, sweeping & beating; 1 ♀, British Virgin Islands, Guana Is[land], Upper Camanoe, u/v [light], 26 Oct. 2008, B. D. and S [usan]. C. Valentine; 1 ♀, British Virgin Islands, Guana Is[land], Monkey Point Trail, 27-x-2009, S. Valentine-Cooper; 2 ♀♀, same data as for holotype (and one 3<sup>rd</sup> instar, May 2012), with dates Dec. 2011 & June 2012.

KEY TO THE NEW WORLD TRIBES OF PAMPHANTINAE

- 1. Males and females with a distinct lunate stridulitrum on side of head below eyes and a plectron on inner face of fore femur; male abdomen with a distinct tubercle on each side of segment III; anterior and posterior pronotal lobes separated by a deep transverse impression (Figs. 6, 7) . . . . . Cattarini
- Male and females without a stridulitrum on head or a plectron on fore femur; male abdominal segment III without tubercle, though sometimes slightly swollen; pronotal lobes usually not separated by a deep transverse impression . . . . . 2
- 2. Eyes strongly stylate, extending laterally well beyond outer margin of head; pronotum usually with lobes and/or spines along lateral margins (Fig. 8); includes only *Epipolops* . . . . . Epipolopini
- Eyes not stylate, never extending beyond outer margin of head; pronotum entire, without lateral lobes or spines (Figs. 9–13) . . . . . Pamphantini

KEY TO THE GENERA OF CATTARINI

- 1. Lateral margins of pronotal lobes unarmed (Fig. 6) . . . . . *Cattarus* Stål
- Lateral margin of anterior pronotal lobe with a broad winglike process and each humeral angle of posterior lobe with a spinelike

projection (Fig. 7) . . . . .  
 . . . . . *Cephalocattarus* Slater and Henry

KEY TO THE GENERA OF PAMPHANTINI

- Anterior femur without a distinct subapical spine . . . . . 2
- Anterior femur with one or two distinct subapical spines . . . . . 3
- 2. Anterior and posterior lobes of pronotum little separated, without a deep transverse impression; posterior lobe of pronotum almost flat, without swellings (Fig. 12) . . . . . *Parapamphantus* Barber
- Anterior and posterior lobe of pronotum separated by a deep transverse impression; posterior lobe with a distinct swelling or blunt tubercle on each side (Fig. 13) . . . . . *Tropicoparapamphantus* Brailovsky
- 3. Head lacking ocelli . . . . . 4
- Head with distinct ocelli between eyes . . . 5
- 4. Anterior pronotal lobe greatly swollen or globose; narrow posterior lobe with a long, slender, curving spine arising at each humeral angle (Fig. 9) . . . . . *Abpamphantus* Barber
- Anterior pronotal lobe not greatly swollen, two and half times as long and only slightly wider than posterior lobe; humeral angles unarmed (Figs. 2–5) . . . . . *Cymapamphantus*, new genus
- 5. Eyes large and substylate, inner margin of eye extending laterally past anterior angle of pronotum; distance between ocelli less than to subequal to the distance from an ocellus to an eye; posterior half of hemelytra convex or rounded; profemur with two spines (apical spine broken on three specimens examined) (Fig. 10) . . . . . *Neopamphantus* Barber & Bruner
- Eyes prominent, but not substylate, inner margin of eye not extending laterally past anterior angle of pronotum; each ocellus closer to eye than to each other; hemelytra subparallel throughout; profemur with only one spine (Fig. 11) . . . . . *Pamphantus* Stål

## CHECKLIST OF THE PAMPHANTINAE

## Tribe Cattarini

- Cattarus balteatus* (Distant), 1893: 413  
[Brazil, Panama]  
*Cattarus erwini* Slater and Henry, 1999:  
308 [Peru]  
*Cattarus formicarius* (Distant), 1893: 413  
[Panama]  
*Cattarus insignis* Stål, 1860: 42 [Brazil]  
*Cattarus nigritus* Slater and Henry, 1999:  
312 [Ecuador]  
*Cattarus pallidus* Slater and Henry, 1999:  
315 [Ecuador] (Fig. 6)  
*Cattarus pseudoculatus* Slater and Henry,  
1999: 316 [Ecuador]  
*Cattarus stysi* Slater, 1999: 204 [Brazil]  
*Cephalocattarus waorani* Slater and Henry,  
1999: 326 [Ecuador] (Fig. 7)

## Tribe Epipolopini

- Epipolops acuminatus* (Distant), 1893: 389  
[Bolivia, Costa Rica, Panama]  
*Epipolops angelae* Henry, 2006: 507 [Brazil]  
(Fig. 8)  
*Epipolops arboricolus* Brailovsky, 1989:  
126 [Brazil]  
*Epipolops bellus* Brailovsky, 1990:127  
[Venezuela]  
*Epipolops frondosus* Herrich-Schaeffer, 1850:  
202 [Argentina, Bolivia, Brazil, Paraguay]  
*Epipolops kathrynae* Henry, 2006: 514  
[Ecuador]  
*Epipolops lenkoi* Canter, 1964: 64 [Brazil,  
Ecuador]  
*Epipolops mucronatus* (Distant), 1893: 389  
[Panama]  
*Epipolops oculuscanri* (De Geer), 1773:  
343 [Brazil, Colombia, Costa Rica,  
Guyana, Mexico, Panama, Suriname]  
*Epipolops quadrispinus* Stål, 1874: 134  
[Colombia]  
*Epipolops rettenmeyeri* Slater, 1998: 64  
[Ecuador, Peru]  
*Epipolops scudderi* Henry, 2006: 522  
[Panama]

- Epipolops slateri* Henry, 2006: 525 [Ecuador]  
*Epipolops thomasi* Henry, 2006: 528 [Bolivia]

## Tribe Pamphantini

- Abpamphantus gibbosus* Barber, 1954a:  
351 [Cuba] (Fig. 9)  
*Austropamphantus woodwardi* Slater,  
1981a:111 [Queensland, Australia].  
*Cymapamphantus valentineorum* Henry,  
2013 (this paper) [Guana Island, British  
Virgin Islands] (Figs. 2–5)  
*Neopamphantus calvinoi* Barber and Bruner,  
1933: 535 [Cuba]  
*Neopamphantus hispaniolus* Slater, 1965:  
188 [Haiti]  
*Neopamphantus maculatus* Barber and  
Bruner, 1933: 533 [Cuba] (Fig. 10)  
*Pamphantus atrohumeralis atrohumeralis*  
Barber and Bruner, 1933: 537 [Haiti]  
*Pamphantus atrohumeralis dominicanus*  
Slater, 1981b: 83 [Dominican Republic]  
*Pamphantus barberi* Slater (in Baranowski  
and Slater), 2005: 76 [Dominican  
Republic]  
*Pamphantus binotatus* Slater, 1981b: 86  
[Venezuela]  
*Pamphantus elegantulus* Stål, 1874:157  
[Cuba]  
*Pamphantus mimeticus* Barber, 1926: 434  
[Cuba]  
*Pamphantus pallidoides* Slater, 1981b: 83  
[Dominican Republic]  
*Pamphantus pallidus* Barber and Bruner,  
1933: 536 [Cuba] (Fig. 11)  
*Pamphantus pellucidus* Slater, 1956: 50  
[Puerto Rico]  
*Pamphantus stenoides* Guérin-Méneville,  
1857: 400 [Cuba]  
*Pamphantus trimaculatus* Slater, 1981b: 83  
[Dominican Republic]  
*Pamphantus vittatus* Bruner, 1932: 141  
[Cuba]  
*Parapamphantus braziliensis* Barber,  
1954b: 216 [Brazil]  
*Parapamphantus elongatus* Slater, 1981b:  
83 [Brazil]





Figs. 6–13. Photographs of Neotropical Pamphantinae. 6, 7, Cattarini. 6, *Cattarus pallidus* Slater and Henry (holotype ♂, Orellana Prov., Ecuador). 7, *Cephalocattarus waorani* Slater and Henry (paratype ♂, Orellana Prov., Ecuador). 8, Epipolopini. 8, *Epipolops angelae* Henry (holotype ♂, Federal District, Brazil). 9–13, Pamphantini. 9, *Abpamphantus gibbosus* Barber (holotype ♀, Jarahueca, Cuba), dorsal aspect. 10, *Neopamphantus maculatus* Barber & Bruner (holotype ♀, Pico Turquino, Cuba), dorsal aspect. 11, *Pamphantus pallidus* Barber & Bruner (holotype ♂, Sierra Maestra, Cuba), dorsal aspect. 12, *Parapamphantus erikae* Brailovsky (♂, Loja Prov., Ecuador). 13, *Tropicoparapamphantus amazonicus* Brailovsky (♂, Orellana Prov., Ecuador).

*Parapamphantus erikae* Brailovsky, 1989: 197 [Brazil, Ecuador, Venezuela] (Fig. 12)  
*Tropicoparapamphantus amazonicus* Brailovsky, 1989: 195 [Brazil, Ecuador, Peru] (Fig. 13)

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island Malaise trap samples and other materials from 2007 to 2012, and Henry G. Jarecki (owner of Guana Island) and his family for their generous support and uncommon insight into understanding the importance of documenting the fauna of this species-rich island and its subsequent changes over time. Fieldwork for this study was funded in part by The Falconwood Foundation, New York, NY. I thank Pablo M. Dellapé (Museo de La Plata, La Plata, Argentina) and A. G. Wheeler, Jr. (Clemson University, Clemson, SC) for kindly reviewing the manuscript.

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