

**TWO NEW SPECIES OF HOPLININE STILT BUGS (HETEROPTERA:
BERYTIDAE: GAMPSOCORINAE) FROM BRAZIL, WITH NEW
COUNTRY RECORDS FOR THREE OTHER SPECIES**

THOMAS J. HENRY

Systematic Entomology Laboratory, Agricultural Research Service, United States Department of Agriculture, c/o National Museum of Natural History, Smithsonian Institution, P. O. Box 37012, Washington, DC, USA 20013-7012 (e-mail: thomas.henry@usda.gov; <https://orcid.org/0000-0002-0653-7728>; urn:lsid:zoobank.org:author:AE9BFF29-C17E-428E-8181-A5CCCCAC0132)

Abstract.—The hoplinine stilt bugs (Heteroptera: Berytidae: Gampsocorinae) *Hoplinus cincospinus* Henry, new species from Minas Gerais, Brazil, and *Parajalysus brunneus* Henry, new species from Pará, Brazil, are described. A diagnosis, description, and digital images of the adult and selected structures are provided for each species and a revised key to the species of *Hoplinus* and a partial key to the species of *Parajalysus* are given to aid identification. New country records are given for *Parajalysus punctipes* Van Duzee, *P. tenuicornis* Henry, and *P. verucosus* Štusák.

Key Words: Insecta, Hemiptera, Pentatomomorpha, true bugs, Lygaeoidea, distribution

DOI: 10.4289/0013-8797.124.1.66

The family Berytidae is a small group of lygaeoid Heteroptera, comprising about 180 species worldwide and 58 species in the Western Hemisphere, separated into three subfamilies (Berytinae, Gampsocorinae, and Metacanthinae) and six tribes (Henry and Froeschner 1998, Henry et al. 2015, Dellapé and Henry 2021). In the New World, the gampsocorine tribe Hoplinini is the largest group, with 10 genera and 39 species (Henry 1997, Dellapé and Carpintero 2007, Henry and Wall 2019, Henry and Dellapé 2021, Dellapé and Henry 2021).

Prior to this study, the genus *Hoplinus* Stål represented the third largest genus of the tribe, with six species (Henry 2002), behind only *Parajalysus* Distant, with 12 species,

and *Pronotacantha* Uhler, with seven species (Henry 1997, Dellapé and Henry 2021). While sorting undetermined material in the University of California, Riverside's insect collection and the U.S. National Museum of Natural History, I discovered two new species from Brazil, one belonging in *Hoplinus* and another in *Parajalysus*. In this paper, I provide descriptions of these newly discovered species. Photographs of the holotypes and selected morphological structures are provided and an updated key to the species of *Hoplinus* and a partial key to the species of *Parajalysus* are given to facilitate identification. New country records are given for *Parajalysus punctipes* Van Duzee, *P. tenuicornis* Henry, and *P. verucosus* Štusák.

MATERIALS AND METHODS

Color images were captured using a Visionary Digital imaging system that includes an Infinity Optics K2 long-distance microscope affixed to a Canon EOS 40D digital SLR camera. A Dynalite M2000 power pack and Microptics ML1000 light box provided illumination and image stacks were montaged using Helicon Focus 4.2.1. Color photos and illustrations were edited using Adobe Photoshop CS5.

Abbreviations for depositories listed in this paper are

UCR (University of California, Riverside; D. Yanega)

USNM ([United States] National Museum of Natural History, Washington, DC; T. J. Henry)

Lsids registered in ZooBank (<http://zoobank.org>) and in the Lygaeoidea Species File world catalog (<http://Lygaeoidea.SpeciesFile.org>) (Dellapé and Henry 2021) are provided.

***Hoplinus cincospinus* Henry, new species**

<http://zoobank.org:act:DB00F9C2-0874-442A-BDF5-9DE0C0EE1937>

<http://lsid.speciesfile.org/urn:lsid:Lygaeoidea.speciesfile.org:TaxonName:516295>
(Figs. 1–4)

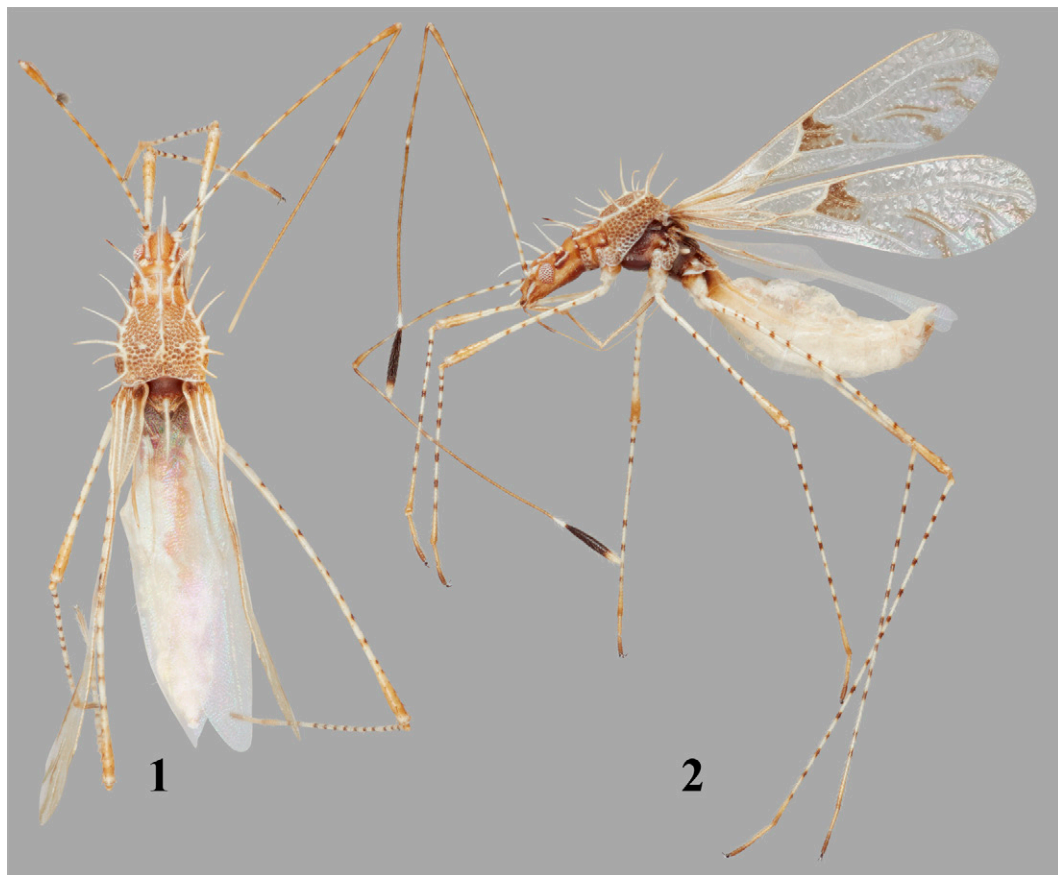
Diagnosis.—This new species is recognized by the generally slender body, the elongate fusiform antennal segment IV, the five lateral and three median pronotal spines (Figs. 3, 4), and the hemelytra lacking spines along the veins (Figs. 1, 2).

Hoplinus cincospinus is most similar to *H. paulai* Henry, *H. scutellatus* Henry, and *H. strigosus* Henry, based on the relatively slender body form and the lack of spines on the hemelytral veins. It differs from *H. scutellatus* by the larger size (4.00 mm versus 2.52 mm or less) and shorter

scutellar spine (Fig. 3 versus Henry 1997: fig. 44), and from *H. strigosus*, in having five lateral and three median pronotal spines (Figs. 3, 4) rather than three lateral and two median spines.

Henry (2002) erred in describing *H. paulai* as having the “lateral [pronotal] margin with 5 spines...,” but correctly indicated “4 lateral spines” in the key (couplet 5, second rung). A restudy of the holotype and the long series of paratypes confirms that *H. paulai* has only four lateral pronotal spines. Thus, *H. cincospinus* is distinguished from *H. paulai* by the fusiform (Fig. 2) rather than globose antennal segment IV (Henry 2002: fig. 2), and the five (Figs. 3, 4) rather than four (Henry 2002: fig. 4) lateral pronotal spines.

Description.—*Holotype female*: Length 4.00 mm. General coloration yellowish brown to brown; glabrous except for a few simple setae on head. *Head*: Length 0.59 mm, width 0.35 mm, interocular width 0.21 mm; brown, meson with one long spine on posterior lobe, two long spines on frons, and two short spines on clypeus, side of head in front and behind each eye with a short carina; lower sides and ventral surface with a few short, simple setae. *Labium*: Length 1.34 mm. *Antenna*: Segment I, length 2.08 mm, yellow to pale yellowish brown, with evenly spaced brown bands becoming less distinct distally; II 0.88 mm, yellowish brown with four or five brown bands; III 1.36 mm, pale yellowish brown, with apex white; IV width 0.07 mm, length 0.56 mm, black with apex white, fusiform. *Pronotum*: Length 0.75 mm, basal width 0.61 mm; anterior lobe quadrate, each lateral margin with a distinct carina ending in a short anterior tubercle, mostly impunctate, with a few punctures around calli, with two long, diverging spines near anterior margin; posterior lobe deeply and evenly punctate, lateral margin with



Figs. 1, 2. *Hoplinus cincospinus* new species, holotype ♀. 1, Dorsal habitus. 2, Lateral habitus.

five long erect spines, meson with three long erect spines, area between lateral and mesal spines with two much smaller erect spines. *Scutellum*: Spine long, slender, and curved, length about 0.46 mm. *Hemelytron*: Macropterous, membrane fully developed, veins prominent but not raised or thickened; middle of corium with a relatively large brown blotch, apex with a vague brown spot between each pair of veins. *Ventral surface*: Thoracic sterna dark brown; abdomen pale yellow, segment II darker brown. *Ostiolar evaporative area* (Fig. 4): Dark brown, tubercle whitish. *Legs*: Pale yellowish brown; femora and tibiae with evenly spaced, narrow, brown bands. *Femoral*

lengths: Pro- 1.24 mm; meso- 1.40 mm; meta- 2.16 mm. *Tibial lengths*: Pro- 1.46 mm; meso- 1.72 mm; meta- 2.88 mm.

Male: Unknown.

Etymology.—The specific epithet is from the Portuguese and Spanish words “cinco,” meaning five, combined with “spinus,” to denote the five spines along each lateral margin of the posterior pronotal lobe.

Host.—Unknown.

Distribution.—Minas Gerais, Brazil.

Type material.—Holotype ♀, Brazil, Minas Gerais, UFMG Campus, Pampulha, Belo Horizonte, 19°52'S, 43°58'W, Nov. 1997, D. Yanega (UCR).



Figs. 3, 4. *Hoplinus cincospinus* new species, holotype ♀. 3, Head and pronotum, dorsal aspect. 4, Head and pronotum, lateral aspect.

Key to the Species of *Hoplinus*

- 1. Hemelytra armed with spines along veins, including costal margins 2
 - Hemelytra unarmed 3
- 2. Abdomen with distinct setigerous tubercles; lateral margin of pronotum usually with four erect spines in brachypterous forms; each hemelytron with four rows of spines; northwestern Mexico and western United States.....
 - *H. echinatus* (Uhler)
 - Abdomen without tubercles, at most with fine transverse striations; lateral margin of pronotum with only three erect spines in brachypterous forms; each hemelytron with only three rows of spines; Chile
 - *H. spinosissimus* (Signoret)
- 3. Scutellar spine long, reclining, parallel to hemelytra, extending almost to apex of abdomen; size small, about 2.50 mm long; Costa Rica and Mexico
 - *H. scutellatus* Henry
 - Scutellar spine short, erect, hardly extending beyond apex of scutellum; size larger, 3.50 mm or longer 4
- 4. Hemelytra broadly rounded, veins modified into high thickened ridges; head with six median spines; Peru
 - *H. wygodzinskyi* (Stusák)
 - Hemelytra narrow and elongate, veins not modified into high ridges (Fig. 1); head with five or fewer median spines 5
- 5. Antennal segment IV globose, about three times longer than wide; posterior

- lobe of pronotum with four lateral spines; Minas Gerais, Brazil*H. paulai* Henry
- Antennal segment IV fusiform, eight times or more longer than wide; posterior lobe of pronotum with three or five lateral spines 6
6. Posterior pronotal lobe with three lateral and two median spines; Paraná, Brazil*H. strigosus* Henry
- Posterior pronotal lobe with five lateral and three median spines; Minas Gerais, Brazil
.....*H. cincospinus* Henry new species

***Parajalysus brunneus* Henry, new species**

<http://zoobank.org:act:A03383CC-E6F5-4B61-A84A-CF50CF17D035>

[http://lsid.speciesfile.org/urn:lsid:](http://lsid.speciesfile.org/urn:lsid:Lygaeoidea.speciesfile.org:TaxonName:516296)

[Lygaeoidea.speciesfile.](http://lsid.speciesfile.org:TaxonName:516296)

[org:TaxonName:516296](http://lsid.speciesfile.org:TaxonName:516296)

(Figs. 5–8)

Diagnosis.—This species belongs to the group of four species of *Parajalysus* having a linear (Fig. 5) rather than spindle-shaped fourth antennal segment. In Henry (1997), it runs to *P. tenuicornis* Henry in couplet 4 of the *Parajalysus* key. It is distinguished from *P. grandis* Henry in lacking a tubercle on the frons (Figs. 7, 8); from *P. papillatus* Henry in lacking setigerous, white tubercles on the pronotum (Fig. 7); from *P. nigrocephalus* Henry by the brown (Figs. 5–8), rather than black head and pronotum and the shorter fourth antennal segment that is subequal in length to segment III; and from *P. tenuicornis* by the smaller size (5.52 mm vs. 7.50 mm or more), the more uniformly yellowish-brown general coloration, the brown rather than black pronotal spines, the distinctly spotted tibiae and femora (Figs. 5, 6), with the clavate femoral apices concolorous with the remainder of the segments, rather than contrastingly fuscous or black as in *P. tenuicornis*.

Description.—*Holotype male*: Length 5.52 mm. General coloration yellowish brown; glabrous with only a few scattered setae on abdomen. *Head*: Length 1.02 mm, width 0.62 mm, interocular width 0.36; yellowish brown. *Labium*: Length, segments I–III 1.68 mm; segment IV missing. *Antenna*: Yellowish brown, segment I with apex and indistinct bands darker brown, segments II and III dark brown, segment IV black, linear; segment I, length 3.70 mm; II, 1.85 mm; III, 1.60 mm; IV 1.60 mm. *Pronotum*: Length 1.26 mm, basal width 1.02 mm; brown to yellowish brown; anterior lobe laterally and around base of spine impunctate, punctate anteriorly and along posterior edge, spine length 0.64 mm; posterior lobe evenly punctate, median and lateral carinae yellow, spines dark brown, humeral spine length 0.68 mm, median spine 0.94 mm. *Scutellum*: Yellowish brown, globose tubercle yellow, with a short decurved spine. *Hemelytron*: Hyaline, inner corial margin narrowly dark brown. *Ventral surface*: Yellowish brown. *Ostiolar evaporative area* (Fig. 8): Yellowish brown, central tubercle whitish. *Legs*: Uniformly yellowish brown, including apices of femora; tibiae and femora with distinct dark brown spots. *Femoral lengths*: Pro- 2.24 mm, meso-2.76 mm, meta- 3.84 mm. *Tibial lengths*: Pro- 2.08 mm, meso- 3.12 mm, meta- 5.15 mm. *Genitalia*: Unique male holotype not dissected.

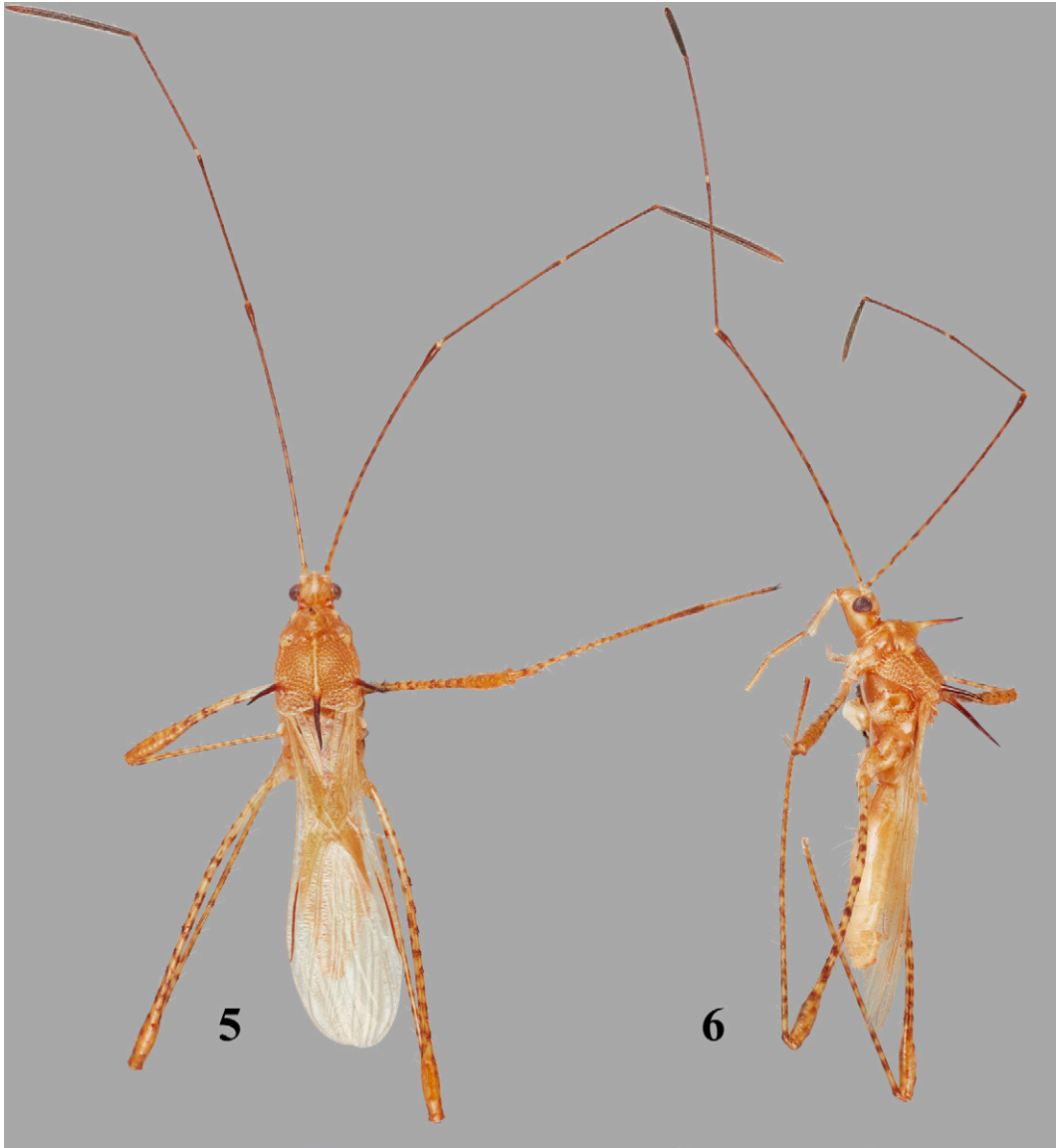
Female: Unknown.

Etymology.—The specific epithet “*brunneus*” is used to denote the uniformly yellowish-brown color of this species.

Host.—Unknown.

Distribution.—Known only from Belém, Pará, Brazil.

Type material.—Holotype ♂ [Brazil], Pará, Belém, Aug. [19]53, Duret coll. (USNM).



Figs. 5, 6. *Parajalysus brunneus* new species, holotype ♂. 5, Dorsal habitus. 6, Lateral habitus.

New *Parajalysus* Records

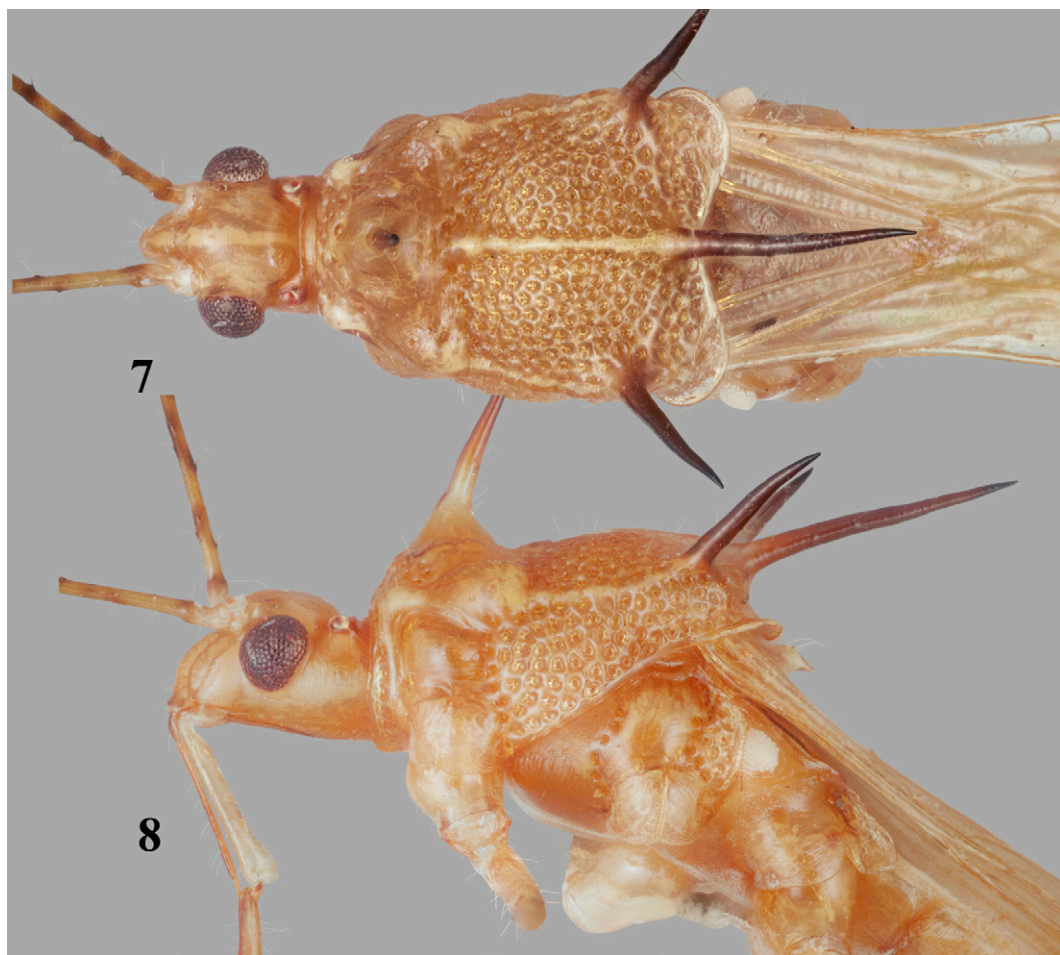
Parajalysus punctipes Van Duzee, 1933

[http://lsid.speciesfile.org/urn:lsid:
Lygaeoidea.speciesfile.
org:TaxonName:479879](http://lsid.speciesfile.org/urn:lsid:Lygaeoidea.speciesfile.org:TaxonName:479879)

Distribution.—Previously known from Brazil, Mexico, Nicaragua, Paraguay, and

the United States (Henry 1997) and, more recently, reported from Guatemala (Zack et al. 2022). Costa Rica is a new country record.

Specimens examined.—2 ♂♂, 2 ♀♀, COSTA RICA, Alajuela Prov., road through Bosque del Paz, Bajos El Toro, 10°, 12.11'N, 084°19.13'W, 1475 m, 25 June 2003, S. H. McKamey (USNM).



Figs. 7, 8. *Parajalysus brunneus* new species, holotype ♂. 7, Head and pronotum, dorsal aspect. 8, Head and pronotum, lateral aspect.

Parajalysus tenuicornis Henry, 1997

<http://lsid.speciesfile.org/urn:lsid:Lygaeoidea.speciesfile.org:TaxonName:479877>

Distribution.—Previously known from Panama (Henry 1997). Ecuador is a new country record.

Specimen examined.—1 ♂, ECUADOR, Orellana Prov., Reserva Ethnica Waorani, 1 km S. Ocone Gare Camp, Trans. Ent., 10 Feb. 1996, 216.3 m, 00°39'10"S, 76°26'00"W, T. L. Erwin, et al., insecticidal fogging of mostly bare green leaves, some covering

of lichenous and bryophytic plants in terre firme forest, Lot 1487, Trans T-9 (USNM).

Parajalysus verucosus Stusák, 1971

<http://lsid.speciesfile.org/urn:lsid:Lygaeoidea.speciesfile.org:TaxonName:479876>

Distribution.—Previously known from Brazil (Henry 1997). Bolivia is a new country record.

Specimen examined.—1 ♀, BOLIVIA, Dept. Santa Cruz, Prov., Andres Ibáñez, Potrerillos, del Guenda, 17°40'S, 63°27'W,

370 m, 5–8 Dec. 2008, T. J. Henry, S. Lingafelter, and D. Windsor (USNM).

Key to the Species of *Parajalysus* with Linear Fourth Antennal Segments

1. Fourth antennal segment linear, uniformly slender throughout, as long or longer than segment III 2
 - Fourth antennal segment spindle shaped, always thicker at middle than at apex or base, never as long as segment III [See Henry (1997) for continuation of key to species with spindle-shaped fourth antennal segments] 6
2. Frons with a distinct, blunt tubercle, most easily visible in lateral aspect; Peru *P. grandis* Henry
 - Frons without a blunt tubercle, at most medially carinate or ridged but appearing smooth in lateral aspect 3
3. Pronotum with numerous, small, white, setigerous tubercles; Panama *P. papillatus* Henry
 - Pronotum without setigerous tubercles 4
4. Dorsum of head and pronotum uniformly black; antennal segment IV longer than combined lengths of antennal segments II and III; Amazonas, Brazil, and Peru *P. nigrocephalus* Henry
 - Dorsum of head and pronotum brown to yellowish brown; antennal segment IV shorter than combined lengths of antennal segments II and III 5
5. Larger species, length 7.90 mm or longer; head with a dark stripe behind each eye; pronotal spines black, anterior spine curved posteriorly at apex; femora uniformly brown or with only a few small indistinct spots, clavate apices fuscous; Costa Rica, Panama *P. tenuicornis* Henry
 - Smaller species, length 5.52 mm; head uniformly yellowish brown, without a dark stripe behind each eye; pronotal

spines brown to dark brown, anterior spine straight; femora, including clavate apices, yellowish brown, with numerous, distinct, dark brown spots; Pará, Brazil *P. brunneus*, new species

ACKNOWLEDGMENTS

I thank Douglas Yanega (UCR) for lending the specimen of *H. cincospinus* and Alyssa Seemann (Systematic Entomology Laboratory, ARS, USDA, c/o USNM) for the digital images of the new species. Pablo Dellapé (Museo de La Plata, La Plata, Argentina) and A. G. Wheeler, Jr. (Clemson University, Clemson, SC, USA) kindly reviewed the manuscript. Mention of trade names or commercial products in this publication is solely for the purpose of providing specific information and does not imply recommendation or endorsement by the USDA. The USDA is an equal opportunity provider and employer.

LITERATURE CITED

Dellapé, P. M. and D. L. Carpintero. 2007. *Cuscohoplinini pagoreni*: a new genus and species of Hoplinini stilt bug from Peru (Heteroptera: Berytidae). *Revista de Biología Tropical* 55: 673–676.

Dellapé, P. M. and T. J. Henry. 2021. Lygaeoidea Species File. Version 5.0/5.0. <http://Lygaeoidea.SpeciesFile.org>. [Last accessed 24 August 2021].

Henry, T. J. 1997. Monograph of the stilt bugs, or Berytidae (Heteroptera), of the Western Hemisphere. *Memoirs of the Entomological Society of Washington* 19: 1–149.

Henry, T. J. 2002. Review of the stilt bug genus *Hoplinus*, with the description of a new species and notes on other Hoplinini (Heteroptera: Berytidae: Gampsocorinae). *Journal of the New York Entomological Society* 110: 182–191.

Henry, T. J. and P. M. Dellapé. 2021. Revision of the Neotropical stilt bug genus *Metajalysus* Štusák (Hemiptera: Heteroptera: Berytidae), with descriptions of three new species. *Zootaxa* 4958: 690–701.

- Henry, T. J. and R. C. Froeschner. 1998. Catalog of the stilt bugs, or Berytidae, of the world (Insecta: Hemiptera: Heteroptera). Contributions of the American Entomological Institute 30(4): 1–72.
- Henry, T. J. and M. A. Wall. 2019. *Bajacanthus immaculatus*: a new hoplinine genus and species of stilt bug (Hemiptera: Heteroptera: Berytidae) from Baja California Sur, Mexico, with a revised key to the genera of the tribe. Proceedings of the Entomological Society of Washington 121: 616–624.
- Henry, T. J., P. M. Dellapé, and A. S. de Paula. 2015. The big-eyed bugs, chinch bugs, and seed bugs (Lygaeidae), pp. 459–514. In Panizzi, A. R. and J. Grazia, eds. True Bugs (Heteroptera) of the Neotropics. Springer Science, Dordrecht. 901 pp.
- Stusák, J. M. 1971. A new species of *Parajalysus* Distant from Brazil (Heteroptera, Berytidae). Acta Entomologica Bohemoslovaca 68: 149–152.
- Van Duzee, E. P. 1933. Characters of twenty-four new species of Hemiptera of the Galapagos Islands and the coast of Central America and Mexico. Proceedings of the California Academy of Sciences, Fourth series 21: 25–40.
- Zack, R. S., T. J. Henry, and J. Monzón Sierra. 2022. Annotated checklist of the stilt bugs (Hemiptera: Heteroptera: Berytidae) of Guatemala, with new country records. Pan-Pacific Entomologist 97(4): 210–219.