

A journal of world insect systematics

INSECTA MUNDI

1025

New *Plagiosarus* Bates, 1880 (Cerambycidae: Lamiinae:
Acanthoderini) from Costa Rica
and notes on *P. melampus congestus* Bates

Josef Vlasak

207 Silverbrook Drive, Schwenksville, PA 19473, USA

Antonio Santos-Silva

Museu de Zoologia, Universidade de São Paulo, São Paulo, SP, Brazil

Date of issue: December 29, 2023

Center for Systematic Entomology, Inc., Gainesville, FL

Vlasak J, Santos-Silva A. 2023. *New Plagiosarus* Bates, 1880 (Cerambycidae: Lamiinae: Acanthoderini) from Costa Rica and notes on *P. melampus congestus* Bates. *Insecta Mundi* 1025: 1–7.

Published on December 29, 2023 by
Center for Systematic Entomology, Inc.
P.O. Box 141874
Gainesville, FL 32614-1874 USA
<http://centerforsystematicentomology.org/>

INSECTA MUNDI is a journal primarily devoted to insect systematics, but articles can be published on any non-marine arthropod. Topics considered for publication include systematics, taxonomy, nomenclature, checklists, faunal works, and natural history. *Insecta Mundi* will not consider works in the applied sciences (i.e. medical entomology, pest control research, etc.), and no longer publishes book reviews or editorials. *Insecta Mundi* publishes original research or discoveries in an inexpensive and timely manner, distributing them free via open access on the internet on the date of publication.

Insecta Mundi is referenced or abstracted by several sources, including the Zoological Record and CAB Abstracts. *Insecta Mundi* is published irregularly throughout the year, with completed manuscripts assigned an individual number. Manuscripts must be peer reviewed prior to submission, after which they are reviewed by the editorial board to ensure quality. One author of each submitted manuscript must be a current member of the Center for Systematic Entomology.

Guidelines and requirements for the preparation of manuscripts are available on the *Insecta Mundi* website at <http://centerforsystematicentomology.org/insectamundi/>

Chief Editor: David Plotkin, insectamundi@gmail.com

Assistant Editor: Paul E. Skelley, insectamundi@gmail.com

Layout Editor: Robert G. Forsyth

Editorial Board: Davide Dal Pos, M. J. Paulsen, Felipe Soto-Adames

Founding Editors: Ross H. Arnett, Jr., J. H. Frank, Virendra Gupta, John B. Heppner, Lionel A. Stange, Michael C. Thomas, Robert E. Woodruff

Review Editors: Listed on the *Insecta Mundi* webpage

Printed copies (ISSN 0749-6737) annually deposited in libraries

Florida Department of Agriculture and Consumer Services, Gainesville, FL, USA

The Natural History Museum, London, UK

National Museum of Natural History, Smithsonian Institution, Washington, DC, USA

Zoological Institute of Russian Academy of Sciences, Saint-Petersburg, Russia

Electronic copies (online ISSN 1942-1354) in PDF format

Archived digitally by Portico.

Florida Virtual Campus: <http://purl.fcla.edu/fcla/insectamundi>

University of Nebraska-Lincoln, Digital Commons: <http://digitalcommons.unl.edu/insectamundi/>

Goethe-Universität, Frankfurt am Main: <http://nbn-resolving.de/urn/resolver.pl?urn:nbn:de:hebis:30:3-135240>

This is an open access article distributed under the terms of the Creative Commons, Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original author(s) and source are credited.
<https://creativecommons.org/licenses/by-nc/3.0/>

New *Plagiosarus* Bates, 1880 (Cerambycidae: Lamiinae: Acanthoderini) from Costa Rica and notes on *P. melampus congestus* Bates

Josef Vlasak

207 Silverbrook Drive, Schwenksville, PA 19473, U.S.A.

josef_vlasak@merck.com

✉ <https://orcid.org/0000-0001-7514-0305>

Antonio Santos-Silva

Museu de Zoologia, Universidade de São Paulo, São Paulo, SP, Brazil

toncriss@uol.com.br

✉ <https://orcid.org/0000-0001-7128-1418>

Abstract. *Plagiosarus transversus* Vlasak and Santos-Silva, **new species** (Cerambycidae: Lamiinae: Acanthoderini), is described from Costa Rica. The rank of *Plagiosarus melampus congestus* Bates, 1885 is discussed.

Key words. Longhorned beetles, Neotropical region, Central America, taxonomy.

ZooBank registration. urn:lsid:zoobank.org:pub:71496BE9-C69F-43B4-AF33-E3376DA6E083

Introduction

The genus *Plagiosarus* Bates, 1880 currently includes three species and one subspecies and is distributed from Mexico to Panama (Bezark 2023b; Monné 2023; Roguet 2023; Tavakilian and Chevillotte 2023). The genus was established to separate species with a tuft of setae only on antennomere III from *Tetrasarus* Bates, 1880 that has tufts of setae on both antennomeres III and IV. Additional characters listed by Bates (1880), such as shorter antennae and the tuft of setae on antennomere III compressed, adhering only to the lower surface without embracing the sides are variable within these two genera and are unreliable to differentiate these two genera.

Three additional genera within Acanthoderini feature a tuft of setae on antennomere III. *Anasillus* Marioni and Martins, 1978 is the most similar to *Plagiosarus* but differs by having a brush of setae on sides of elytra and on middle of tibiae. *Discopus* Thomson, 1864 differs from *Plagiosarus* by more elongated body, by sides of elytra strongly converging from humerus to apex, and by the tuft on antennomere III covering more than half of the flagellomere. *Paradiscopus* Schwarzer, 1930 differs from *Plagiosarus* by prothorax with only small and obtuse lateral tubercles, elytra without carinae, and by antennomere IV with a tuft of setae on its apex.

Materials and Methods

Photographs were taken with a Canon Rebel T3i camera equipped with Canon MP-E 65 mm f/2.8 1–5× macro lens. Specimens were illuminated with Dome of light (RK Science Factory, Brazil). The specimens were examined with Amscope stereomicroscope at 30× magnification. Measurements in “mm” were taken in Adobe Photoshop from a specimen photographed with a scale bar.

The collection acronyms used in the text are as follows:

JVCO Josef Vlasak Collection, Schwenksville, Pennsylvania, USA

MZSP Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil

Results

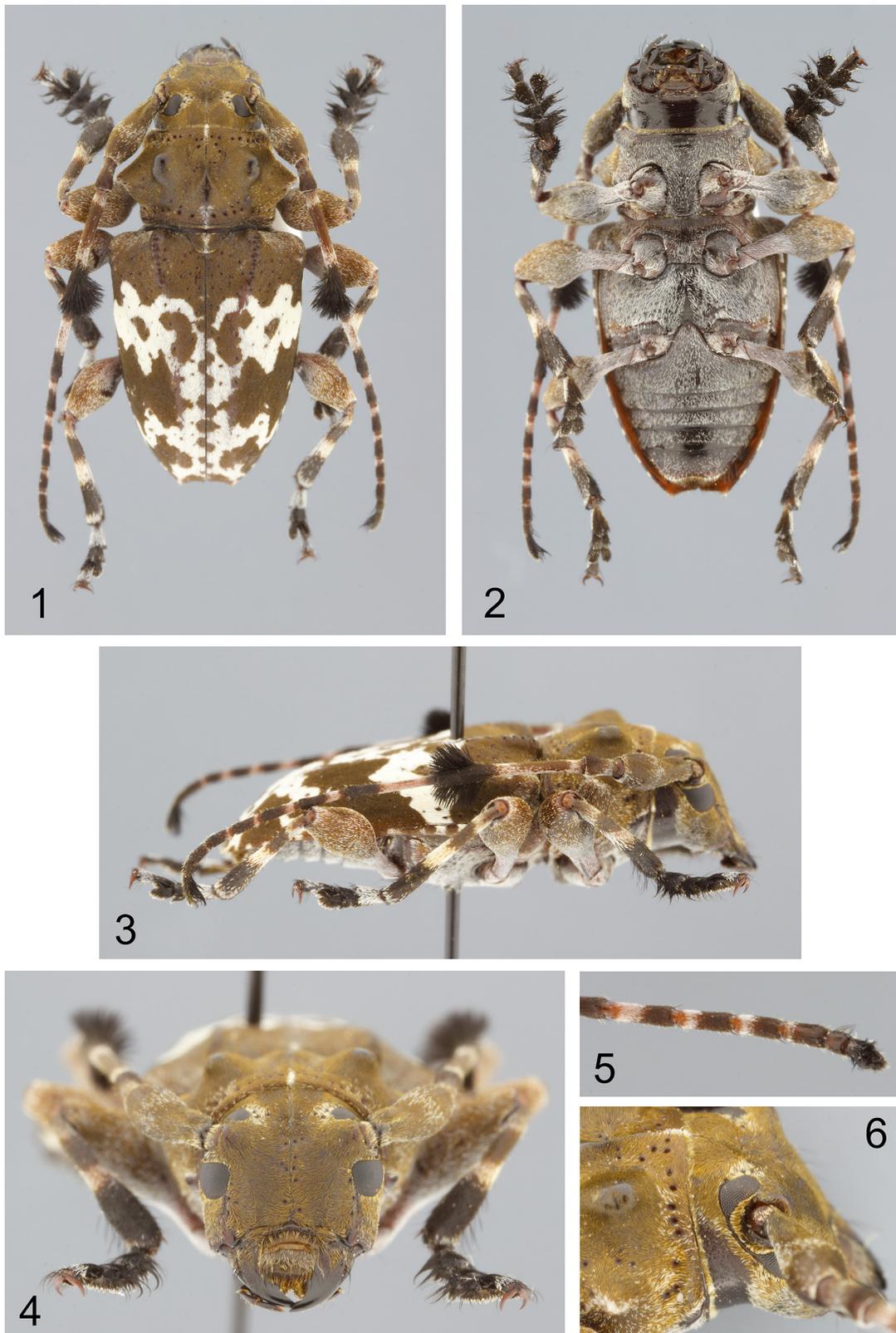
LAMIINAE Latreille, 1825
ACANTHODERINI Thomson, 1860

Plagiosarus transversus Vlasak and Santos-Silva, new species

(Fig. 1–8)

Description. **Holotype male** (Fig. 1–6). Integument mostly dark brown. Ventral mouthparts reddish brown to brown, except palpomeres dark brown with light apices; gulamentum dark brown; antennomere III and IV dark brown to black on apical third, brown on remaining surface; antennomere V–IX light brown basally, dark brown to black apically, dark area gradually increasing toward IX; antennomeres X–XI dark brown. Femoral peduncles slightly lighter than femoral clubs; tibiae brownish on basal and central rings, dark brown to black on remaining surface; protarsi black except claws, meso- and metatarsi black except base of tarsomere I and claws.

Head. Frons sparsely, coarsely punctate along median groove and on sides; with dense brownish pubescence mostly obscuring integument except glabrous median groove. Antennal tubercles with abundant brownish pubescence mostly obscuring integument. Vertex depressed centrally between antennal tubercles and upper eye lobes; sparsely, coarsely punctate close to upper eye lobes, with brownish pubescence centrally and whitish pubescence close to upper eye lobes. Area behind upper eye lobes with dense brownish pubescence mostly obscuring integument. Area between upper and lower eye lobes with narrow band of mixed white and brownish pubescence, glabrous close to prothorax. Area behind lower eye lobes with mixed white and brownish pubescence close to eye, glabrous close to prothorax. Genae densely, somewhat finely, punctate; with abundant brownish pubescence toward frons and clypeus, with both brownish and whitish pubescence toward ventral surface, except glabrous apex. Wide central area of postclypeus glabrous centrally, with abundant brownish pubescence close to frons and bristly yellowish-brown pubescence close to anteclypeus, and a few long, erect dark-brown setae interspersed. Sides of postclypeus glabrous. Labrum with abundant grayish pubescence on posterior $\frac{2}{3}$, with long, erect dark-brown setae interspersed, glabrous on anterior third, except anterior margin with dense fringe of yellowish-brown setae. Gulamentum smooth, glabrous, except intermaxillary process with sparse whitish pubescence. Eye lobes united by thin carina without ommatidia (Fig. 6). Distance between upper eye lobes 0.45 times distance between outer margins of eyes; in frontal view, distance between lower eye lobes 0.65 times distance between outer margins of eyes. Antennae 1.75 times elytral length, reaching elytral apex at antennomere VII. Scape elongate-piriform; with two carinae on basal third of dorsal surface; with dense brownish pubescence dorsally and diffused transverse whitish band past middle, with mixed brownish and whitish pubescence ventrally and on sides. Pedicel with mostly brownish pubescence dorsally, darker in color on apical half, with narrow band of whitish pubescence on apex; with mostly whitish pubescence ventrally; with sparse, short, bristly yellowish-brown setae interspersed. Antennomere III with two whitish pubescent rings dorsally, one basally, another past middle, area between whitish pubescent rings with short brownish pubescence; ventral side with mostly whitish pubescence; apical third with dense tuft of long black setae covering about inner half of antennomere (Fig. 3); with sparse, short, bristly yellowish-brown setae interspersed and a few long, erect dark setae ventrally. Antennomere IV with broad band of whitish pubescence on central light area, with minute grayish to blackish pubescence on dark basal and apical areas; with sparse, short, bristly yellowish-brown setae interspersed and with a few long, erect dark setae ventrally forming a small cluster apically; antennomeres V–VIII with minute grayish to blackish pubescence on dark basal and apical areas, basal area getting gradually shorter, apical area getting gradually longer; with narrow ring of whitish pubescence in between, ring getting gradually shorter; entire area with sparse, short, bristly yellowish-brown setae, apex with a few long, erect dark setae ventrally or laterally; antennomere IX as antennomere VIII, but with ventral side glabrous; antennomere X with minute grayish to blackish pubescence except glabrous ventral side (Fig. 5), with sparse, short, bristly yellowish-brown setae and a few long, erect dark setae ventrally; antennomere XI arcuate, with small tuft of long, erect black setae ventrally and sparse, short, bristly yellowish-brown setae dorsally. Antennal formula based on length of antennomere III: scape = 0.61; pedicel = 0.26; IV = 0.50; V = 0.25; VI = 0.23; VII = 0.19; VIII = 0.18; IX = 0.16; X = 0.09; XI = 0.19.



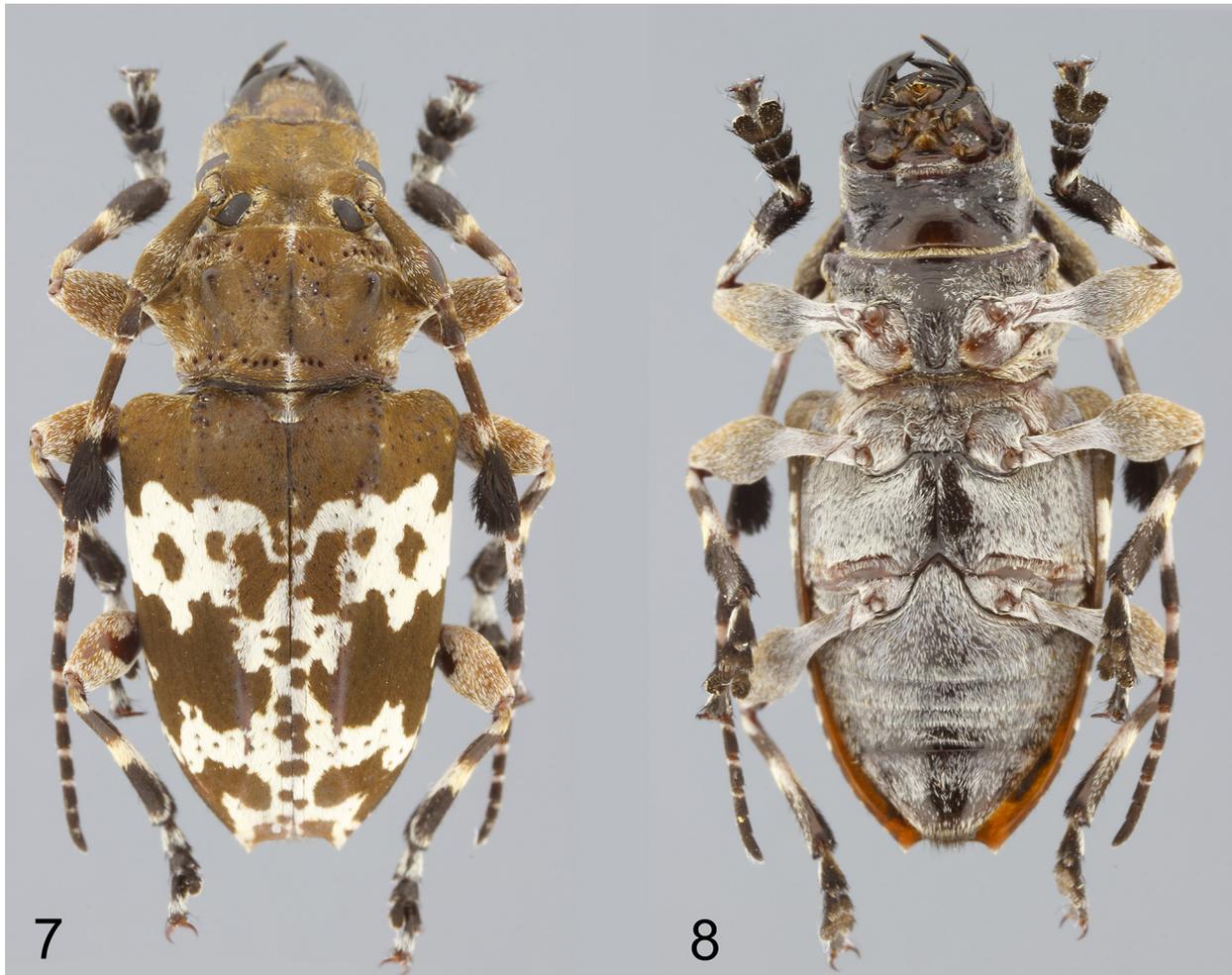
Figures 1–6. *Plagiosarus transversus* new species, holotype male. 1) Dorsal habitus. 2) Ventral habitus. 3) Lateral habitus. 4) Head, frontal view. 5) Distal antennal segments, ventral view. 6) Eye, lateral view.

Thorax. Prothorax transverse, with large, conical tubercle on each side. Pronotum with large, elevated tubercle on each side of central region, apex unevenly rounded, feebly depressed centrally; with median longitudinal ridge from anterior margin to about middle, widened into large diamond-shaped gibbosity on posterior half; with central area between tubercle and longitudinal ridge depressed; sparsely, coarsely punctate, punctures larger and concentrated along anterior and posterior margins; with abundant brownish pubescence mostly obscuring integument, except glabrous apex of central tubercles, glabrous median longitudinal ridge and apex of diamond-shaped gibbosity, with narrow median longitudinal band of white pubescence on anterior sixth, similar band on posterior sixth but triangularly expanded from posterior margin, sparse white pubescence on sides of anterior and posterior fifth and toward apex of lateral tubercles, and black bristly seta in some punctures. Sides of prothorax with yellowish-brown pubescence mixed with whitish pubescence, mostly obscuring integument. Prosternum with abundant whitish pubescence not obscuring integument, except glabrous area close to anterior margin. Prosternal process with sides slightly convergent from base to middle, then slightly widened toward apex, apical half depressed centrally, apex rounded; narrowest area 0.65 times procoxal width; with abundant whitish pubescence not obscuring integument, apex glabrous. Mesoventrite with whitish pubescence not obscuring integument. Mesanepisternum with pubescence as on mesoventrite except postero-central area with mostly yellowish-brown pubescence, this area expanding into anterior third of mesepimeron, remaining surface of mesepimeron with whitish pubescence. Mesoventral process slightly convergent from base to about apical seventh, then slightly expanded, with anterolateral tubercles, apex truncate, narrowest area 0.80 times mesocoxal width; with abundant whitish pubescence not obscuring integument, denser centrally. Metaventrite with dense whitish pubescence partially obscuring integument, except median glabrous triangular area on posterior half. Metanepisternum with dense whitish pubescence not obscuring integument, except central area on posterior half with mostly brownish pubescence. Scutellum subtriangular with broad, rounded apex; with whitish pubescent band centrally, pubescence more abundant on basal half, and brownish pubescence laterally. **Elytra.** Proportionally wide, 1.3 times longer than humeral width. Humerus rounded; sides gradually convergent from humerus to about middle, then more abruptly rounded toward apex; apex concave-truncate, outer angle slightly triangularly projected; centrobasal crest strongly elevated, with dense granules dorsally; with slightly elevated carina from apex of centrobasal crest to posterior quarter; sparsely, somewhat coarsely punctate, punctures larger and denser on basal quarter; with dense, short brown pubescence obscuring integument, without erect setae; humeral area with dense, short whitish and yellowish-brown pubescence interspersed; with broad transverse band of dense, short white pubescence from basal quarter to about middle, with sinuous margins and brown maculae interspersed, larger, ear-shaped macula close to suture, smaller, subcircular macula centrally, narrower transversal band of white pubescence on apical quarter, another small transversal band near apex, the three transversal bands connected by white median, longitudinal band, with brown circular maculae interspersed along suture. **Legs.** Femora with abundant, whitish pubescence partially obscuring integument on peduncle, with abundant, mixed whitish and yellowish-brown pubescence mostly obscuring integument on club, dorsal side more brownish. Tibiae with whitish pubescent ring basally and wider, denser whitish pubescent ring on about middle, with brownish pubescence not obscuring integument in between; with dense black pubescence on remaining surface, with black bristly pubescence ventrally on all tibiae and dorsally on mesotibiae, except dorsal apex with whitish pubescence, especially on metatibiae. Protarsomeres I–III with abundant, long black setae laterally, base of protarsomere I and apical half of protarsomere V with whitish pubescence. Base of meso- and metatarsomeres I and meso- and metatarsomeres V with whitish pubescence. Meso- and metatarsomeres II and III with blackish pubescence.

Abdomen. Ventrites with abundant, short white pubescence not obscuring integument, except glabrous apex of ventrites 2–4, pubescence sparser on ventrite 4 centrally and ventrite 5 centrally and laterally; apex of ventrite 5 concave (Fig. 2).

Female (Fig. 7–8). Differs from male by protarsi without fringe of thick black setae, antennae shorter, reaching elytral apex at antennomere X, antennomere XI without tuft of black setae, ventrite 5 about as long as ventrites 2–4 together, apex of ventrite 5 rounded with fringe of black setae.

Dimensions in mm (Holotype male/paratype female). Total length, 11.25/14.10; prothoracic length, 2.65/3.00; anterior prothoracic width, 3.10/3.30; posterior prothoracic width, 3.40/3.95; maximum prothoracic width, 4.75/5.25; humeral width, 5.05/6.10; elytral length, 6.70/8.30.



Figures 7–8. *Plagiosarus transversus* new species, paratype female. 1) Dorsal habitus. 2) Ventral habitus.

Type material. Holotype male from COSTA RICA, *Puntarenas*: Golfito, Playa Nicuesa, 17–19.IV.2017, J. Vlasak leg. (MZSP), on fallen tree at night. Paratype female, same data as holotype (JVCO).

Etymology. The name *transversus* (Latin, meaning transverse or going across) refers to the irregular white transverse bands on elytra.

Remarks. The white transverse bands on the elytra make *Plagiosarus transversus* distinctive among other species of the genus. *Plagiosarus transversus* is somewhat similar to *Plagiosarus melampus congestus* Bates, 1885 (see photographs on Bezark 2023a) but differs by the prothorax being proportionally larger (proportionally smaller in *P. melampus congestus*), by having white transverse bands reaching the suture (only on outer half of each elytron in *P. melampus congestus*) and by the elytra being wider relative to its length—1.3 times longer than humeral width in *P. transversus* and 1.5 times in *P. melampus congestus*. By the pubescent pattern, *P. transversus* superficially resembles *Tetrasarus plato* Bates, 1885 from which it can be clearly distinguished by the absence of a tuft of setae on antennomere IV.

***Plagiosarus melampus congestus* Bates, 1885**

Plagiosarus melampus var. *congestus* Bates 1885: 383; Aurivillius 1923: 383 (cat.); Monné 1994: 52 (cat.).

Plagiosaurus [sic] *melampus congestus*; Chemsak et al. 1992: 132 (checklist).

Plagiosarus melampus v. *congestus*; Blackwelder 1946: 610 (checklist); Gilmour 1965: 611 (cat.).

Plagiosarus melampus var.? *congestus*; Monné 2005: 198 (cat.); 2023: 310 (cat.).

Plagiosarus melampus subsp. var. *congestus*; Bezark 2023b: 246 (checklist).

Remarks. Bates (1885) reported on *P. melampus congestus* (translated): “It differs so much, especially by the spots of the elytra fused in two transverse lateral bands.”

After the original description, this *P. melampus congestus* is mentioned again only in Aurivillius (1923), who listed the “variety” as a synonym of *P. melampus* Bates, 1885. However, this cannot be considered a formal synonymy. This is because Aurivillius’ catalogs always listed all varieties, forms, morphs, and aberrations as synonyms. Blackwelder (1946), Gilmour (1965), Monné (1994), Tavakilian and Chevillotte (2023), and Bezark (2023b), in an ambiguous situation in the latter, followed Aurivillius (1923) and also listed *P. melampus congestus* under synonymy of *P. melampus*. Chemsak et al. (1992), apparently, considered *P. melampus congestus* as a subspecies of *P. melampus* because they did not use “var.” or “v.” After this, Monné (2005, 2023) used “var.?” suggesting his doubt about the status of *P. melampus congestus*.

Nevertheless, despite all the different forms in which *P. melampus congestus* appears in catalogs and checklists, the Code (ICZN 1999) is quite clear about the status of this variety (see also Lingafelter and Nearn 2013): “45.6.4. it is subspecific if first published before 1961 and its author expressly used one of the terms “variety” or “form” (including use of the terms “var.,” “forma,” “v.” and “f.”), unless its author also expressly gave it infrasubspecific rank, or the content of the work unambiguously reveals that the name was proposed for an infrasubspecific entity, in which case it is infrasubspecific.” Since Bates (1885) did not clearly give the infrasubspecific rank and there is no formal synonymy of *P. melampus congestus* with *P. melampus*, the subspecies name must be considered as available. This does not mean that we are formally considering *P. melampus congestus* to be truly different from *P. melampus melampus*: it is just an application of the ICZN’s (1999) rules.

Acknowledgments

We express our sincere thanks to Mike Brattain and Steve Lingafelter for review of the manuscript and suggestions, which improved the work.

Literature Cited

- Aurivillius C. 1923.** Cerambycidae: Lamiinae II. p. 323–704. In: Junk W, Schenkling S (eds.). *Coleopterorum Catalogus*. Pars 74. W. Junk; Berlin. 381 p.
- Bates HW. 1880.** Longicornia. p. 17–152. In: Godman FD, Salvin O (eds.). *Biologia Centrali-Americana, Insecta, Coleoptera*. Vol. 5. Taylor and Francis; London. xii + 525 p.
- Bates HW. 1885.** Supplement. p. 249–436. In: Godman FD, Salvin O (eds.). *Biologia Centrali-Americana, Insecta, Coleoptera*. Vol. 5. Taylor and Francis; London. xii + 525 p.
- Blackwelder RE. 1946.** Checklist of the coleopterous insects of Mexico, Central America, the West Indies and South America. Part 4. *Bulletin of the United States National Museum* 185: 551–763.
- Bezark LG. 2023a.** A Photographic Catalog of the Cerambycidae of the World. *New World Cerambycidae Catalog*. Available at <http://bezbycids.com/byciddb/wdefault.asp?w=n/> (Last accessed 10 October 2023.)
- Bezark LG. 2023b.** Checklist of the Oxypeltidae, Vesperidae, Disteniidae and Cerambycidae (Coleoptera) of the Western Hemisphere. 2023 Edition (updated through 31 December 2022). Available at <http://bezbycids.com/byciddb/wdefault.asp?w=n> (Last accessed 10 October 2023.)
- Chemsak JA, Linsley EG, Noguera FA. 1992.** Listados faunísticos de México. II. Los Cerambycidae y Disteniidae de Norteamérica, Centroamérica y las Indias Occidentales (Coleoptera). Universidad Nacional Autónoma; Mexico City. 204 p.
- Gilmour EF. 1965.** *Catalogue des Lamiaires du Monde* (Col., Cerambycidae). *Museum G. Frey, Tutzing bei München* 8: 559–655.
- ICZN (International Commission on Zoological Nomenclature). 1999.** *International Code of Zoological Nomenclature*. International Trust for Zoological Nomenclature; London. xxx + 306 p.
- Lingafelter SW, Nearn EH. 2013.** Elucidating Article 45.6 of the International Code of Zoological Nomenclature: A dichotomous key for the determination of subspecific or infrasubspecific rank. *Zootaxa* 3709(6): 597–600.

- Monné MA. 1994.** Catalogue of the Cerambycidae (Coleoptera) of the Western Hemisphere. Part XVII. Subfamily Lamiinae: Tribes Anisocerini, Polyrhaphidini, Xenofreini, Acrocinini and Acanthoderini. Sociedade Brasileira de Entomologia; São Paulo. 110 p.
- Monné MA. 2005.** Catalogue of the Cerambycidae (Coleoptera) of the Neotropical Region. Part II. Subfamily Lamiinae. Zootaxa 1023: 1–759.
- Monné MA. 2023.** Catalogue of the Cerambycidae (Coleoptera) of the Neotropical region. Part II. Subfamily Lamiinae. Available at <https://cerambycids.com/catalog/> (Last accessed 10 October 2023.)
- Roguet J-P. 2023.** Lamiines of the World. Available at lamiinae.org (Last accessed 10 October 2023.)
- Tavakilian GL, Chevillotte H. 2023.** Titan: base de données internationales sur les Cerambycidae ou Longicornes. Available at <http://titan.gbif.fr/> (Last accessed 10 October 2023.)

Received October 22, 2023; accepted December 7, 2023.

Review editor Alessandra Pandolfi.

