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NOMENCLATURAL CHANGES IN THE LACHNOPHORINI (COLEOPTERA: CARABIDAE) OF THE WESTERN HEMISPHERE

LAURA S. ZAMORANO, TERRY L. ERWIN
Hyper-diversity Group, Department of Entomology, MRC-187
National Museum of Natural History, Smithsonian Institution
P. O. Box 37012, Washington, DC 20013-7012, USA
laura.s.zamorano@gmail.com, erwint@si.edu

AND

DAVID H. KAVANAUGH
Department of Entomology, California Academy of Sciences
55 Music Concourse Drive, San Francisco, CA 94118, USA
dkavanaugh@calacademy.org

ABSTRACT

Type status (holotype or lectotype), current scientific name, author, and a label “designated by Zamorano/Erwin 2017” are given for species in the following Lachnophorini genera: *Amphithasus* Bates, 1871; *Anchonoderus* Reiche, 1843; *Aporesthus* Bates, 1871; *Calybe* Laporte de Castelnau, 1834; *Eucaerus* LeConte, 1853; *Euphorticus* G. Horn, 1881; *Lachnophorus* Dejean, 1831; *Peruphorticus* Erwin and Zamorano, 2014; and *Pseudophorticus* Erwin, 2004. Fourteen new combinations and one new status are presented across these genera.

RESUMEN

Estatus de tipo (holotipo o lectotipo), nombre científico actual, autor y una etiqueta “designated by Zamorano/Erwin 2017” son proporcionados para especies en los siguientes géneros de Lachnophorini: *Amphithasus* Bates, 1871; *Anchonoderus* Reiche, 1843; *Aporesthus* Bates, 1871; *Calybe* Laporte de Castelnau, 1834; *Eucaerus* LeConte, 1853; *Euphorticus* G. Horn, 1881; *Lachnophorus* Dejean, 1831; *Peruphorticus* Erwin y Zamorano, 2014; y *Pseudophorticus* Erwin, 2004. Catorce nuevas combinaciones y un estatus nuevo son presentados dentro de estos géneros.

Key Words: taxonomy, ground beetles, Harpalinae, lectotype, new combination, elevated name status

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The tribe Lachnophorini is a moderately diverse group of carabid beetles in the Western Hemisphere that currently includes 144 described species arranged in 13 genera, all exhibiting a more or less distinctive body form (*e.g.*, Fig. 1). Our interest in this tribe of Carabidae began with the description of *Quammenis spectabilis* Erwin, 2000. In 2014, LSZ joined TLE with a revision of *Asklepia* Liebke, 1938, and she became intrigued with the diversity within the tribe and its need for taxonomic clarity and an understanding of ecological factors governing the species’ micro- and macro-distributions across the global landscape. To proceed with taxonomic clarity, knowing that the genus *Lachnophorus* Dejean is composed of several different generic level clades, we needed to see the types housed in the Muséum National d’Histoire Naturelle (MNHN) in Paris, France. The purpose of the present paper is to provide lectotype designations and assignment of the correct generic concept to those types.

MATERIAL AND METHODS

During March 2016, DHK had the opportunity to visit the MNHN and look for type material representing lachnophorine genera about which little or nothing was known, beyond their original descriptions. With the help of Thierry Deuve and Azadeh Taghavian, three drawers of lachnophorine specimens, including many type series, were located in the main collection and examined. Unfortunately, many specimens from these series, as well as some unique specimens for a few taxa, were found to be out on loan. One of the three drawers (Fig. 2) contains the distinctive pink labels that indicate which taxa and series had specimens missing on loan to Arthur Jasinski in Poland. Direct and/or indirect requests by MNHN staff for the return of this long-outstanding loan have gone unanswered, and the status of this material remains in question. We therefore chose to move ahead with the nomenclatural changes provided herein based on the



Fig. 1. *Amphithasus truncatus*, female. ECUADOR, Pr. Orellana, Tiputini Biodiversity Station, nr Yasuni National Park, Trocha Numa nr. 50 m mark, 225 m, 20 June 2014, 0.63801° S, 76.14928° W, L.S. Zamorano, T.L. Erwin Colls. Lot#3553- ADP145030 (at edge of flooded stream in leaf litter, sifting). Length 6.5 mm.

material available. Each primary type presented below has been labeled on red acid-free paper with the type status (holotype or lectotype), current scientific name, author, and “designated by Zamorano/Erwin 2017.”

ACCOUNTS OF TAXA

Amphithasus Bates, 1871

Amphithasus Bates 1871: 32.

Amphithasus Bates: Csiki 1931; Erwin 1991; Lorenz 1998; Ball and Bousquet 2000; Bousquet 2012.

Amphithasus elegans (Dejean, 1831)

Anchomenus elegans Dejean 1831: 725.

This species was placed in “*Amphithasus*” by Lorenz (1998). We have not seen the type (MNHN). However, Bates (1871), not Lorenz, is the one who first suggested *A. elegans* belonged in *Amphithasus*, as Bates wrote “It is probable that *A. elegans*, Dej. (Sp., v, 725) belongs also to the genus.” referring to *Amphithasus*. The holotype is from Cartagena, Colombia, but it was not found by DHK among lachnophorines in MNHN during his visit in 2016. We suggest it may be among the platynines rather

than lachnophorines, as its original placement was in *Anchomenus* Bonelli, 1810.

Amphithasus truncatus Bates, 1871

Amphithasus truncatus Bates 1871: 33. (Fig. 1, newly collected specimen, not the lectotype).

Holotype male: Brazil, Amazonas, Ega (Tefé) (MNHN). Labeled by Zamorano/Erwin 2017.

Anchonoderus Reiche, 1843

Anchonoderus Reiche 1843: 38.

Axylosius Liebke 1936: 461. Liebherr 1988: 24.

Anchonoderus cyanesces (Putzeys, 1878), new combination

Lachnophorus cyanesces Putzeys 1878: 56.

Lectotype female: Colombia (“San Carlos”) (MNHN). Designated herein by Zamorano/Erwin 2017 and so labeled.

Anchonoderus subaeneus Reiche, 1843

Anchonoderus subaeneus Reiche 1843: 40.

Lectotype female: Colombia (“Novae-Granatae”) (MNHN). Labeled lectotype by G. E. Ball 1972 and again by A. Jasinski 1999 (neither published). Designated herein by Zamorano/Erwin 2017 and so labeled.

Aporesthus Bates, 1871

Aporesthus Bates 1871: 103.

Phaedrusium Liebke 1941: 249. Erwin 1991: 44.

Aporesthus anomalus Bates, 1871

Aporesthus anomalus Bates 1871: 103.

Holotype male: Brazil, Rio de Janeiro (MNHN). Labeled by Zamorano/Erwin 2017.

Calybe Laporte de Castelnau, 1834

Calybe Laporte de Castelnau 1834: 92.

Chalybe Lacordaire 1854: 378.

Calybe leprieuri Laporte de Castelnau, 1834

Calybe leprieuri Laporte de Castelnau 1834: 92.

Lectotype male: Guyane, Cayenne (MNHN). Designated herein by Zamorano/Erwin 2017 and so labeled.

Calybe leucopa (Bates, 1871)

Chalybe leucopa Bates 1871: 80.

Holotype male: Amazonas, São Paulo de Olivença (MNHN). Labeled lectotype by A. Jasinski 1999 (not published). Labeled by Zamorano/Erwin 2017.

Eucaerus LeConte, 1853

Eucaerus LeConte 1853: 386.

Eucaerus opacicollis (Bates, 1872)

Lachnaces opacicollis Bates 1872: 202.

Holotype male: Amazonas, Ega (Tefé) (MNHN). Labeled by G. E. Ball 1972 (not published).

Eucaerus sericeus Bates, 1871

Eucaerus sericeus Bates 1871: 78.

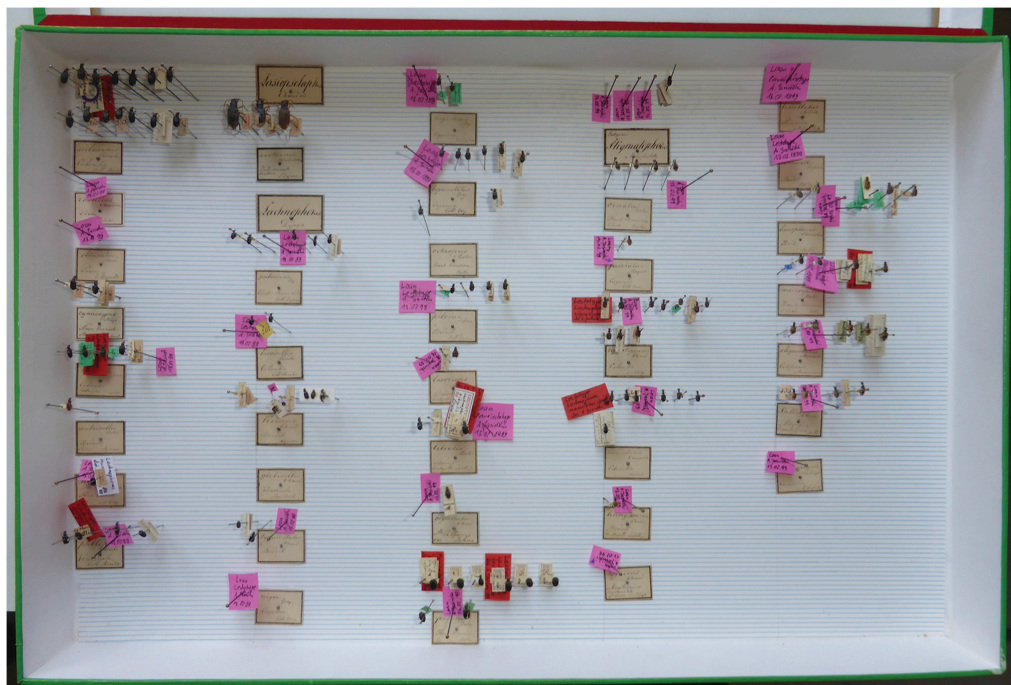


Fig. 2. One of three boxes of Lachnophorini in the main collection at MNHN with types. Pink cards indicate position of specimens borrowed in past decades by Arthur Jasinski (Poland) that have not been returned nor published upon.

Eucaerus sericatus Ball and Hilche 1983: 107.

Holotype female: Amazonas, Ega (Tefè) (MNHN). Labeled by G. E. Ball 1972. Ball and Hilche (1983) regarded the genus *Lachnaces* Bates, 1872 as a subgenus of *Eucaerus*, thus they were required to rename Bates' species because it became a junior secondary homonym. We treat *Lachnaces* as a full genus and restored it as such (Erwin and Zamorano 2014), thus Bates' original name stands.

***Eucaerus striatus* Bates, 1871**

Eucaerus striatus Bates 1871: 78.

Lectotype female: Brazil, Pará, Rio Tapajós at Santarém (MNHN). Labeled by G. E. Ball 1972 (not published). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Eucaerus sulcatus* Bates, 1871**

Eucaerus sulcatus Bates 1871: 78.

Holotype male: Brazil, Pará, Rio Tapajós at Santarém (MNHN). Labeled by G. E. Ball 1972 (not published).

***Euphorticus* G. Horn, 1881**

Euphorticus G. Horn 1881: 144

***Euphorticus laevicollis* (Reiche, 1843),
new status**

Lachnophorus laevicollis Reiche 1843:180

Euphorticus laevicollis (Reiche, 1843): Bates 1883: 156.

Lectotype female: Colombia ("Novae-Granatae") (MNHN). Designated herein by Zamorano/Erwin 2017 and so labeled. Bates (1883) synonymized *E. laevicollis* with *E. pubescens*. However, we compared the two primary types and determined they are not the same species.

***Euphorticus pilosus* (Dejean, 1831),
new combination**

Lachnophorus pilosus Dejean 1831: 29.

Lectotype female: Brazil (MNHN). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Euphorticus pubescens* (Dejean, 1831)**

Lachnophorus pubescens Dejean 1831: 30.

Euphorticus pubescens (Dejean, 1831): Lindroth 1955: 22.

Lectotype male: USA (MNHN). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Lachnophorus* Dejean, 1831**

Lachnophorus Dejean 1831: 28.

Arctonotus Liebke 1936: 461. Liebherr 1988: 34.

***Lachnophorus maculatus* Chaudoir, 1850**

Lachnophorus maculatus Chaudoir 1850: 400.

Lectotype female: Colombia (MNHN). Labeled lectotype by A. Jasinski 1999 (not published). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Lachnophorus ornatus* Bates, 1871**

Lachnophorus ornatus Bates 1871: 58.

Lectotype male: Brazil, Amazonas, São Paulo de Olivença (MNHN). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Lachnophorus signatipennis* Chaudoir, 1850**

Lachnophorus signatipennis Chaudoir 1850: 402.

Lectotype male: Colombia (MNHN). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Peruphorticus* Erwin and Zamorano, 2014**

Peruphorticus Erwin and Zamorano 2014: 26.

***Peruphorticus pallipes* (Reiche, 1843),
new combination**

Lachnophorus pallipes Reiche 1843: 179.

Lectotype female: Colombia ("Novae-Granatae") (MNHN). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Peruphorticus rugatus* (Reiche, 1843),
new combination**

Anchonoderus rugatus Reiche 1843: 40

Lectotype male: Colombia ("Novae-Granatae") (MNHN). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Peruphorticus rugosus* (Dejean, 1831),
new combination**

Lachnophorus rugosus Dejean 1831: 857.

Lectotype female: Colombia, Cartagena (MNHN). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Pseudophorticus* Erwin, 2004**

Pseudophorticus Erwin 2004: 7.

***Pseudophorticus bipunctatus* (Gory, 1833),
new combination**

Lachnophorus bipunctatus Gory 1833: 245.

Lectotype male: Cayenne (MNHN). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Pseudophorticus foveatus* (Bates, 1871),
new combination**

Lachnophorus foveatus Bates 1871: 55.

Lectotype male: Brazil, Amazonas, "upper Amazon" (MNHN). Labeled lectotype by A. Jasinski 1999 (not published). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Pseudophorticus guttulatus* (Bates, 1883),
new combination**

Lachnophorus guttulatus Bates 1883: 153.

Lectotype female: Guatemala, San Geronimo (in Museum of Comparative Zoology, Cambridge, MA (MCZ)). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Pseudophorticus macrospilus* (Bates, 1871),
new combination**

Lachnophorus macrospilus Bates 1871: 58.

Lectotype female: Brazil, Amazonas, São Paulo de Olivença (MNHN). Labeled lectotype by A. Jasinski 1999 (not published). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Pseudophorticus notatus* (Chaudoir, 1850),
new combination**

Lachnophorus notatus Chaudoir 1850: 401.

Lectotype female. Designated herein by Zamorano/Erwin 2017 and so labeled. Chaudoir's description does not give a locality. However, the type matches specimens from Costa Rica.

Lachnophorus humeralis Bates 1883: 153. **New synonymy.**

Lectotype female: Panama, Bugaba (MCZ). Designated herein by Zamorano/Erwin 2017 and so labeled.

There is an *L. notatus* determination label by Jasinski on the lectotype in the MNHN. The specimen was labeled by D. H. Kavanaugh in 2016 as "???. notatus Chd." and stands by the *L. notatus* Chaudoir label.

Anchonoderus humeralis (Bates, 1883). Liebherr 1988: 25 (new combination).

***Pseudophorticus ochropus* (Bates, 1871),
new combination**

Lachnophorus ochropus Bates 1871: 56.

Lectotype female: Brazil, Amazonas, Ega (Tefé) (MNHN). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Pseudophorticus tibialis* (Bates, 1871),
new combination**

Lachnophorus tibialis Bates 1871: 56.

Lectotype male: Brazil, Amazonas, São Paulo de Olivença (MNHN). Labeled lectotype by Erwin 1978 and again by A. Jasinski 1999 (not published). Designated herein by Zamorano/Erwin 2017 and so labeled.

***Pseudophorticus submaculatus* (Bates, 1871),
new combination**

Lachnophorus submaculatus Bates 1871: 56.

Lectotype female: Brazil, Amazonas, Ega (Tefé) (MNHN). Designated herein by Zamorano/Erwin 2017 and so labeled.

SUMMARY AND FUTURE DIRECTIONS

Cataloging all of the Earth's species continues to be a cardinal objective of biological research. Recognizing, describing, and naming new species are fundamental steps in this process, and the foundation for naming biodiversity, the system of binomial nomenclature introduced by Linnaeus (1758), remains the best way to ensure concordance when talking about biological entities. In an effort to contribute to the knowledge of Lachnophorini, we provide 14 new combinations and one new status

across many of the genera within this tribe. In turn, this modernizing of the nomenclature will provide a basis for the revisions and descriptions of the numerous Neotropical species currently represented in the Smithsonian collection.

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REFERENCES CITED

- Ball, G. E., and Y. Bousquet. 2000.** Carabidae (Latreille, 1810) [pp. 32–132]. *In: American beetles. Volume 1. Archostemata, Myxophaga, Adephaga, Polyphaga, Staphyliniformia* (R. H. Arnett, Jr., and M. C. Thomas, editors). CRC Press, Boca Raton, FL.
- Ball, G. E., and G. J. Hilehie. 1983.** Cymindine Lebiini of authors: Redefinition and reclassification of genera (Coleoptera: Carabidae). *Quaestiones Entomologicae* 19: 93–216.
- Bates, H. W. 1871.** Notes on Carabidae, and descriptions of new species (No. 7). *Entomologist's Monthly Magazine* 8: 77–81.
- Bates, H. W. 1872.** Notes on Carabidae, and descriptions of new species (No. 12). *Entomologist's Monthly Magazine* 8: 199–202.
- Bates, H. W. 1883.** Coleoptera, Carabidae, Cicindelidae [vol. 1, pt. 1, Supplement, pp. 153–255]. *In: Biologia Centrali-Americana* (F. D. Godman and O. Salvin, editors.). Taylor and Francis, London, UK.
- Bonelli, F. A. 1810.** Observations entomologiques. Première partie (cicindèles et portion des carabiques) [with the “Tabula synoptica exhibens genera carabiorum in sectiones et stirpes disposita”]. Turin, Italy.
- Bousquet, Y. 2012.** Catalogue of Geadephaga (Coleoptera, Adephaga) of America, north of Mexico (in three parts). *ZooKeys* 245: 1–1722.
- Chaudoir, M. de. 1850.** Mémoire sur la famille des carabiques. *Bulletin de la Société Impériale des Naturalistes de Moscou* 23: 349–460.
- Csiki, E. 1931.** Carabidae: Harpalinae V, Pars 115 [pp. 739–1022]. *In: Coleopterorum Catalogus* (W. Junk and S. Schenkling, editors). W. Junk, Berlin, Germany.
- Dejean, P. F. M. A. 1831.** Species général des coléoptères, de la collection de M. le Comte Dejean, 5. Méquignon-Marvis, Paris, France.
- Erwin, T. L. 1991.** Natural history of the carabid beetles at the BIOLAT Rio Manu Biological Station, Pakitza, Perú. *Revista Peruana de Entomologia* (1990) 33: 1–85.
- Erwin, T. L. 2004.** The beetle family Carabidae of Costa Rica and Panamá: Descriptions of four new genera and six new species with notes on their way of life (Insecta: Coleoptera). *Zootaxa* 537: 1–18.
- Erwin T. L., and L. S. Zamorano, 2014.** A synopsis of the tribe Lachnophorini, with a new genus of Neotropical distribution and a revision of the Neotropical genus *Asklepia* Liebke 1938 (Insecta: Coleoptera: Carabidae). *ZooKeys* 430: 1–108.
- Gory, H. L. 1833.** Centurie de carabiques nouveaux. *Annales de la Société Entomologique de France* 2: 168–247.
- Horn, G. 1881.** On the genera of Carabidae with special reference to the fauna of boreal America. *Transactions of the American Entomological Society* 9: 91–196.
- Lacordaire, J. T. 1854.** Histoire Naturelle des Insectes. Genera des coléoptères ou exposé méthodique et critique de tous les genres proposés jusqu'ici dans cet ordre d'insectes. Tome premier contenant les familles des cicindèles, carabiques, dytiscides, gyrinides et palpicornes. Roret, Paris, France.
- Laporte de Castelnau, F. L. 1834.** Études entomologiques, ou descriptions d'insectes nouveaux et observations sur la synonymie [pp. 1–94]. Méquignon-Marvis, Paris4.
- LeConte, J. L. 1853.** Notes on the classification of the Carabidae of the United States. *Transactions of the American Philosophical Society, (Series 2)* 10: 363–403.
- Liebherr, J. K. 1988.** Redefinition of the supertribe Odacanthitae, and revision of the West Indian Lachnophorini (Coleoptera: Carabidae). *Quaestiones Entomologicae* 24(1): 1–42.
- Liebke, M. 1936.** Die Gattung *Lachnophorus* Dejean (Col. Carabidae). *Revista de Entomologia* 6: 461–468.
- Liebke, M. 1941.** Carabidae truncatipenne Col. [pp. 215–266]. *In: Beiträge zur Fauna Perus. Nach der Ausbeute der Hamburger Südperu- Expedition 1936, anderer Sammlungen, wie auch auf Grund von Literaturangaben, I* (E. Titschack, editor). [All but 6 copies destroyed in WWII. Reprinted, 1951, *Beiträge zur Fauna Perus. Nach der Ausbeute der Hamburger Südperu- Expedition 1936, anderer Sammlungen, wie auch auf Grund von Literaturangaben, II. iv + 403pp.* Verlag von Gustav Fisher, Jena].
- Lindroth, C. H. 1955.** Dejean's types of North American Carabidae (Col.). *Opuscula Entomologica* 20: 10–34.
- Linnaeus, C. 1758.** *Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus differentis, synonymis, locis. Editio decimal, reformata.* Tomus I. Laurentii Salvii, Stockholm, Sweden.
- Lorenz, W. 1998.** Systematic list of extant ground beetles of the world (Insecta, Coleoptera “Geadephaga”:

Trachypachidae and Carabidae incl. Paussinae, Cicindelinae, Rhysodinae). Privately published, W. Lorenz, Tutzing, Germany.

Motschulsky, V. de 1858. Synonymie et critique. Coléoptères. Études Entomologiques 7: 153–158.

Putzeys, J. A. A. H. 1878. Descriptions de carabides nouveaux de la Nouvelle Grenada rapportés par

Mr. E. Steinheil. Mittheilungen des Münchener Entomologischen Vereins 2: 54–76.

Reiche, L. 1843. Coleoptera colombiana. Revue Zoologique 1843: 37–41, 75–79, 141–145, 177–180.

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