Zootaxa 3791 (1): 001–099
www.mapress.com/zootaxa/

Monograph

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3791.1.1
http://zoobank.org/urn:lsid:zoobank.org:pub:1C6E3E9C-E1F4-4A0E-9481-B59B817C8355

ZOOTAXA

3791

The Madagascan endemic myrmicine ants related to *Eutetramorium* (Hymenoptera: Formicidae): taxonomy of the genera *Eutetramorium* Emery, *Malagidris* nom. n., *Myrmisaraka* gen. n., *Royidris* gen. n., and *Vitsika* gen. n.

BARRY BOLTON[1] & BRIAN L. FISHER[2]

1 c/o Life Sciences, The Natural History Museum, Cromwell Road, London SW7 5BD, U.K.
2 Department of Entomology, California Academy of Sciences, Golden Gate Park, San Francisco, California 94118, U.S.A.

Magnolia Press
Auckland, New Zealand

Accepted by J. Longino: 4 Feb. 2014; published: 24 Apr. 2014

BARRY BOLTON & BRIAN L. FISHER

The Madagascan endemic myrmicine ants related to *Eutetramorium* (Hymenoptera: Formicidae): taxonomy of the genera *Eutetramorium* Emery, *Malagidris* nom. n., *Myrmisaraka* gen. n., *Royidris* gen. n., and *Vitsika* gen. n.

(*Zootaxa* 3791)

99 pp.; 30 cm.

24 Apr. 2014

ISBN 978-1-77557-374-6 (paperback)

ISBN 978-1-77557-375-3 (Online edition)

FIRST PUBLISHED IN 2014 BY

Magnolia Press

P.O. Box 41-383

Auckland 1346

New Zealand

e-mail: zootaxa@mapress.com

http://www.mapress.com/zootaxa/

ISSN 1175-5326 (Print edition)

ISSN 1175-5334 (Online edition)

Table of Contents

Abstract

The monophyletic group of myrmicine ant genera related to *Eutetramorium* is described and its taxonomy is documented. The group is endemic in Madagascar and contains five genera: *Eutetramorium* Emery, 1899 (3 species, 1 of which is new); *Malagidris* nom. n., a replacement name for *Brunella* Forel, 1917, junior homonym of *Brunella* Smith, G.W. 1909 (Crustacea) (6 species, 5 of which are new); *Myrmisaraka* gen. n. (2 species, both new); *Royidris* gen. n. (15 species, 11 of which are new); *Vitsika* gen. n. (14 species, all of which are new). Keys to the worker caste are provided for all genera, and provisional keys to known males are given for *Malagidris* and *Vitsika*.

Key words: Madagascar, ants, taxonomy, *Eutetramorium, Malagidris, Myrmisaraka, Royidris, Vitsika*

Introduction

In this day and age it is very uncommon to have the opportunity to study an entirely new group of ant genera in which most species are undescribed. Madagascar is one of the few places left on earth where such a myrmecological feat is still possible. This study introduces a new myrmicine group of ant genera, containing five genera and a total of 40 species (33 of which are new), found only on the island of Madagascar. Morphologically, the group spans a wide range of characters, reflecting its extensive radiation on the island, with various genera paralleling other myrmicines from elsewhere in the world. Few species within the group had been discovered and described until the present time (Table 1), when the extensive collecting activities of one of us (BLF) radically changed the situation by providing hundreds of specimens from a very wide range of habitats.

The relatively long, low postpetiole of *venustas* is also developed in *labes*, but the latter is a larger (HL 0.68–0.77, HW 0.56–0.66, SL 0.48–0.54, MfL 0.60–0.72), more darkly coloured species, in which the eyes tend to be somewhat smaller (EL/HW 0.26–0.29). In reality, the size ranges of the two form a rough continuum, with the upper limits for *venustas* constituting the lower limits for *labes*, which raises the possibility that *labes* is merely a larger morphotype of *venustas*. Contradicting this possibility is the fact that specimens of both forms have never been retrieved from a single sample, and some series of *venustas* are extensive. Consequently, the two are regarded as separate species here.

Most examples of *venustas* were retrieved from leaf litter samples in rainforest, but a few have been found in pitfall traps and yellow pan traps, and a colony was discovered in a dead twig on the ground.

Non-paratypic material examined. **Madagascar**: Prov. Antsiranana, P.N. Marojejy, NE Andapa (*Fisher et al*.); Prov. Toamasina, S. Ambanizana, Andranobe (*B.L. Fisher*); Prov. Toamasina, SSE Ambanizana, Andranobe (*B.L. Fisher*); Prov. Toamasina, Mont. Anjanaharibe, NNE Ambinanitelo (*Fisher et al*.); Prov. Toamasina, Anjanaharibe (*Jackson & Carpenter*); Prov. Toamasina, Mont. Akirindro, NNW Ambinanitelo (*Fisher et al*.); Prov. Toamasina, Nosy Mangabe (*P.S. Ward*); SW Antalaha (*G.D. Alpert*).

Acknowledgments

Our thanks and gratitude to the curators of those institutions where type-material of previously described species are deposited: Bernhard Merz (MHNG), Fabio Penati (MSNG), Suzanne Ryder (BMNH) and Steve Shattuck (ANIC). We thank Michele Esposito for creating the plates and Flavia Esteves for organizing the R scripts for creating the maps and for processing the shape files. Moreover, the fieldwork on which this study is based could not have been completed without the gracious support of the Malagasy people and the Arthropod Inventory Team (Balsama Rajemison, Jean-Claude Rakotonirina, Jean-Jacques Rafanomezantsoa, Chrislain Ranaivo, Hanitriniana Rasoazanamavo, Nicole Rasoamanana, Clavier Randrianandrasana, Njaka Ravelomanana, and Manoa Ramamonjisoa). Research, collecting and export permits were obtained through collaboration with the "Ministère de l' Environnement et des Forêts" and the Madagascar National Parks. This study was supported by the National Science Foundation under Grant No. DEB-0072713, DEB-0344731, and DEB-0842395.

References

Ashmead, W.H. (1905) A skeleton of a new arrangement of the families, subfamilies, tribes and genera of the ants, or the superfamily Formicoidea. *Canadian Entomologist,* 37, 381–384. http://dx.doi.org/10.4039/ent37381-11

Bolton, B. (1976) The ant tribe Tetramoriini. Constituent genera, review of smaller genera and revision of *Triglyphothrix* Forel. *Bulletin of the British Museum (Natural History) (Entomology)*, 34, 281–379.

Bolton, B. (1982) Afrotropical species of the myrmicine ant genera *Cardiocondyla*, *Leptothorax*, *Melissotarsus*, *Messor* and *Cataulacus. Bulletin of the British Museum (Natural History) (Entomology)*, 45, 307–370.

Bolton, B. (1987) A review of the *Solenopsis* genus-group and revision of Afrotropical *Monomorium* Mayr. *Bulletin of the British Museum (Natural History)* (Entomology), 54, 263–452.

Bolton, B. (1992) A review of the ant genus *Recurvidris*, a new name for *Trigonogaster* Forel. *Psyche*, 99, 35–48. http://dx.doi.org/10.1155/1992/58186

Bolton, B. (2003) Synopsis and classification of Formicidae. *Memoirs of the American Entomological Institute,* 71, 1–370.

Branstetter, M.G. (2009) The ant genus *Stenamma* Westwood redefined, with a description of a new genus *Propodilobus. Zootaxa,* 2221, 41–57.

Branstetter, M.G. (2013) Revision of the Middle American clade of the ant genus *Stenamma* Westwood (Hymenoptera, Formicidae, Myrmicinae). *ZooKeys*, 295, 1–277. http://dx.doi.org/10.3897/zookeys.295.4905

Brown, W.L. Jr. (1958) A review of the ants of New Zealand. *Acta Hymenopterologica,* 1, 1–50.

Cornet, A. (1974) *Essai de cartographie bioclimatique à Madagascar*. Notice Explicative. ORSTOM, No. 55, 28 pp.

Don, W. (2007) *Ants of New Zealand*, Otago University Press, 239 pp.

Emery, C. (1899) Formiche di Madagascar raccolte dal Sig. A. Mocquerys nei pressi della Baia di Antongil (1897–1898). *Bullettino della Società Entomologica Italiana,* 31, 263–290.

Emery, C. (1912) Etudes sur les Myrmicinae. *Annales de la Société Entomologique de Belgique,* 56, 94–105.

Emery, C. (1914) Intorno alla classificazione dei Myrmicinae. *Rendiconto delle Sessioni della R. Accademia delle Scienze dell'Istituto di Bologna* (N.S.), 18, 29–42.
Emery, C. (1915a) Definizione del genere *Aphaenogaster* e partizione di esso in sottogeneri. *Parapheidole* e *Novomessor* nn. gg. *Rendiconto delle Sessioni della R. Accademia delle Scienze dell'Istituto di Bologna* (N.S.), 19, 67–75.
Emery, C. (1915b) Noms de sous-genres et de genres proposés pour la sous-famille des Myrmicinae. Modifications à la classification de ce groupe. *Bulletin de la Société Entomologique de France,* 1915, 189–192.
Emery, C. (1924) *Genera Insectorum*. *Hymenoptera, Fam. Formicidae, subfam. Myrmicinae, Fasc*. 174C (1922), 207–397.
Forel, A. (1895) Nouvelles fourmis de l'Imerina oriental (Moramanga *etc*.). *Annales de la Société Entomologique de Belgique,* 39, 243–251.
Forel, A. (1917) Cadre synoptique actuel de la faune universelle des fourmis. *Bulletin de la Société Vaudoise des Sciences Naturelles,* 51, 229–253.
Heterick, B.E. (2006) A revision of the Malagasy ants belonging to genus *Monomorium* Mayr, 1855. *Proceedings of the California Academy of Sciences,* 57, 69–202.
Heinze, J., Hölldobler, B. & Alpert, G. (1999) Reproductive conflict and division of labor in *Eutetramorium mocquerysi*, a myrmicine ant without morphologically distinct female reproductive. *Ethology*, 105, 701–717.
http://dx.doi.org/10.1046/j.1439-0310.1999.00450.x
Jansen, G. & Savolainen, R. (2010) Molecular phylogeny of the ant tribe Myrmicini. *Zoological Journal of the Linnean Society,* 160, 482–495.
http://dx.doi.org/10.1111/j.1096-3642.2009.00604.x
Longino, J.T. (2005) Complex nesting behavior by two Neotropical species of the ant genus *Stenamma*. *Biotropica*, 37, 670–675.
http://dx.doi.org/10.1111/j.1744-7429.2005.00085.x
Mayr, G. (1853) Beiträge zur Kenntniss der Ameisen. *Verhandlungen des Zoologisch-Botanischen Vereins in Wien,* 3, 101–114.
R Development Core Team (2014) R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. Available from: http://www.R-project.org (accessed 19 February 2014)
Schatz, G.E. (2000) Endemism in the Malagasy tree flora. *In*: Lourenço, W.R. & Goodman, S.M. (Ed.), *Diversity and Endemism in Madagascar*. Mémoire de la Société de Biogéographie, Paris, pp. 1–9.
Smith, G.W. (1909) The freshwater Crustacea of Tasmania, with remarks on their geographical distribution. *Transactions of the Linnean Society of London*. 2nd Series: Zoology, 11 (4), 61–92.
http://dx.doi.org/10.1111/j.1096-3642.1909.tb00193.x
Wheeler, W.M. (1910) Ants, their structure, development and behaviour. *Columbia University Biological Series,* 9, 1–663.
Wheeler, W.M. (1911) A list of the type species of the genera and subgenera of Formicidae. *Annals of the New York Academy of Sciences,* 21 (1), 157–175.
http://dx.doi.org/10.1111/j.1749-6632.1911.tb56932.x