

Accepted Manuscript

Evolutionary stasis in enigmatic jacobsoniid beetles

Shûhei Yamamoto, Yui Takahashi, Joseph Parker

PII: S1342-937X(16)30196-4
DOI: doi:[10.1016/j.gr.2016.12.008](https://doi.org/10.1016/j.gr.2016.12.008)
Reference: GR 1728

To appear in: *Gondwana Research*

Received date: 11 September 2016
Revised date: 19 December 2016
Accepted date: 22 December 2016



Please cite this article as: Yamamoto, Shûhei, Takahashi, Yui, Parker, Joseph, Evolutionary stasis in enigmatic jacobsoniid beetles, *Gondwana Research* (2017), doi:[10.1016/j.gr.2016.12.008](https://doi.org/10.1016/j.gr.2016.12.008)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Evolutionary stasis in enigmatic jacobsoniid beetlesShûhei Yamamoto^{a*}, Yui Takahashi^b, Joseph Parker^{c,d*}^aEntomological Laboratory, Graduate School of Bioresource and Bioenvironmental Sciences, Kyushu University, 6-10-1 Hakozaki, Fukuoka 812-8581, Japan^bGraduate School of Life and Environmental Sciences, University of Tsukuba, 1-1-1 Tenoudai, Tsukuba, Ibaraki 305-0001, Japan^cDepartment of Genetics and Development, Columbia University, 701 West 168th Street, New York, NY 10032, USA^dDivision of Invertebrate Zoology, American Museum of Natural History, New York, NY 10024, USA

*These authors contributed equally to this work.

Corresponding author: Joseph Parker (jp2488@columbia.edu).

Abstract. Jacobsoniidae is a small but perplexing beetle family, with unknown phylogenetic relationships to other polyphagan Coleoptera. To date, only a single fossil jacobsoniid has been described, from Eocene Baltic amber (~40 Ma). Here, we push back the oldest definitive record of Jacobsoniidae by approximately 60 million years with a new fossil species recovered from mid-Cretaceous (~99 Ma) Burmese amber from Myanmar. Remarkably, exploration of the fossil's morphology with confocal laser scanning microscopy revealed that it belongs to an extant genus, *Derolathrus*. The similarity of the new taxon, *Derolathrus abyssus* n. sp., to modern congeners provides a striking example of morphological stability over deep evolutionary time—a possible outcome of long-term persistence of mesic microhabitats, a hypothesis we argue is supported by a variety of other Recent, litter-inhabiting arthropod taxa now known to be largely unchanged since the Mesozoic. Many such examples belong to the Staphylinoidea—a hyperdiverse beetle superfamily that dominates contemporary mesic habitats, and with which Jacobsoniidae may have a close phylogenetic relationship.

This published work has been registered in ZooBank,
<http://zoobank.org/urn:lsid:zoobank.org:pub:7C65ACAF-456E-4301-BDD7-0A801768EEB9>

Keywords: Jacobsoniidae, Coleoptera, Bradytely, Evolutionary Stasis, Amber

Download English Version:

<https://daneshyari.com/en/article/5785311>

Download Persian Version:

<https://daneshyari.com/article/5785311>

[Daneshyari.com](https://daneshyari.com)