



## Two new heterobathmiid moth species with distinctive female genital configurations (Lepidoptera: Heterobathmiidae)

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### Abstract

Two new species of the basal (non-glossatan) moth family Heterobathmiidae are described: *Heterobathmia megadecella* and *H. nielsenella*. Both species have particularly notable features in their female postabdomen: *H. megadecella* has a distinct sclerotization in the genital chamber and a somewhat elaborate sclerite complement on the otherwise membranous venter of the ‘terminal unit’ formed by segments IX–X(XI), and *H. nielsenella* has a remarkable forwards extension of the sclerotized upper surface of the ‘subgenital plate’ and a continuation of this extension into a sizable apodemal lamella. The description of these taxa in advance of a comprehensive taxonomic treatment of all presently available *Heterobathmia* (including a number of additional undescribed species) is prompted by the need for available names to be used in a morphological treatment of the heterobathmiid postabdomen now nearing completion.

**Key words:** female postabdomen, genital chamber, *Heterobathmia*, new species

### Introduction

Heterobathmiidae are the most recently discovered and still least known of the only three extant families in the non-glossatan grade within the Lepidoptera, and the family is of exceptional phylogenetic interest as the putative sister group of the Glossata (Kristensen *et al.* 2007 and references therein); molecular support for an alternative sister group relationship to Agathiphagidae is weak (Mutanen *et al.* 2010). Heterobathmiid moths are known only from temperate South America. The larvae are leaf miners in deciduous *Nothofagus* (Fagaceae), and the adult moths are active in late winter and early spring (review: Kristensen 1998).

The integumental structure of adult Heterobathmiidae was described in some detail in the first account of the taxon (Kristensen & Nielsen 1979), in which the two then known species were named. Sizable heterobathmiid material, including some fixed specimens suitable for examination of ‘soft anatomy’, has subsequently been procured, and a comprehensive treatment of the family is arguably long overdue. Preparation of an account of this kind was initiated in the 1990s by the late Ebbe S. Nielsen and NPK, and it led to the recognition of at least nine species, which may all appropriately be placed within the single genus *Heterobathmia*. While they have overall uniform facies, and their genitalia are similarly mostly uniform in basic design (although with good diagnostic differences in details), one of the newly-recognized species (*H. valvifer* Kristensen, 1998<sup>1</sup>) was so unusual in its

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1. *Heterobathmia valvifer* was formally described in an article by N. P. Kristensen and E. S. Nielsen in *Steenstrupia* 24(1): 141–156. This *Steenstrupia* issue bears the statement of being published “December 1998”, but was actually not published until February 1999, as has also been stated elsewhere about other animal taxa described in the same issue. It was intended and expected that publication of the *Steenstrupia* issue in question would have preceded the publication of Kristensen (1998), which unfortunately was not the case: The *Handbook/Handbuch* volume was actually available in December 1998, and while the book has “1999” on the front page, “1998” is stated correctly on the colophon. Since these publications preceded the 4<sup>th</sup> edition of the *ICZN* (effective from Jan 1, 2000) which demands explicit statements about naming of new taxa, and since the mention of unique traits of *H. valvifer* in Kristensen (1998) evidently qualifies as a description, the correct authorship of the taxon is *Heterobathmia valvifer* Kristensen, 1998, not Kristensen & Nielsen as had been intended.