



## A review of some of the *Binna*-like species of Afrotropical *Spilosoma* Curtis (1825) listed by Goodger & Watson (1995) and including the genus *Radiarctia* Dubatolov (2006) (Lepidoptera: Arctiidae, Arctiinae)

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### Abstract

The taxonomic position of some of the *Binna*-like species of Afrotropical *Spilosoma* Curtis (1825) and *Radiarctia* Dubatolov (2006) are reviewed. Historical and current problems associated with determining taxa by comparison with old or faded type material are highlighted. A new genus *Pseudoradiarctia* is established for *P. rhodesiana* **comb. nov.**, *P. lentifasciata* **comb. nov.**, *P. affinis* **comb. nov.**, and *P. scita* **comb. nov.** A new rank is proposed for and subspecies is described in *Radiarctia screabile*, and three new species are described in *Pseudoradiarctia*. *R. screabile* (Wallengren) and *Binna penicillata* Walker (1866) are redescribed. Lectotypes are designated for *rhodesiana*, *lentifasciata*, *affinis* and *scita*. Notes on a defence mechanism of *screabile* are presented.

**Key words:** Africa, Lepidoptera, Arctiinae, worn and faded specimens, *Binna*, *Spilosoma*, *Radiarctia*, new genus, new species, new combination, lectotypes, defence

### Introduction

This review examines taxa listed by Goodger & Watson (1995, p.17) as species of the genus *Spilosoma* Curtis (1825) displaying colour pattern resembling that of genus *Binna* Walker 1866, in which the yellowish forewings have a radial interneural pattern of grey-brown. Dubatolov (2006) noted Watson's (1989) and Goodger & Watson's (1995) comments regarding the questionable placement of many Afrotropical Arctiinae in *Spilosoma*, and within the *Binna*-like species established *Radiarctia* for *Spilosoma lutescens screabilis* (Wallengren), *S. jacksoni* (Rothschild), *S. rhodesiana* (Hampson), *S. melanochorium* Hering. He additionally placed *S. scita* (Walker) in genus *Binna*. Later, Dubatolov & Haynes (2008) re-examined the *lutescens* species complex and proposed new ranks and a new genus, *Afromurzinia* Dubatolov & Haynes, for *S. sublutescens sublutescens* Kiriakoff, *S. sublutescens fletcheri* Kiriakoff, and *S. lutescens lutescens* Walker.

Historically, there has been confusion surrounding the identity of some of the *Binna*-like Arctiinae, much of which has been caused by examination of worn or faded specimens and incorrect diagnoses from genitalia preparations. In particular, the semihyaline taxa *lutescens* and *sublutescens* closely resemble worn and faded specimens of *screabile*, *rhodesiana* and *lentifasciata* which, from the author's personal observations, rapidly lose scales, and thus interneural distinction, after eclosion; this is especially so with *screabile* males. Older museum specimens are frequently faded and present difficulties when comparing with modern material for the purposes of positive identification.

The aim of this review is to establish the correct placement of taxa in question together with descriptions of new genera and species through a more detailed examination of specimens, including reared material. The known early stages of some of the species reviewed are the subject of future papers currently in preparation (Haynes & Parsons).

Abbreviations are as follows: Natural History Museum, London, England (BMNH); Musée Royal de l'Afrique Central, Tervuren, Belgium (MRAC); Museum Witt, Munich, Germany (MWM); P. G. Haynes private collection, London, England (PGH); Siberian Zoological Museum of the Institute of Animal Systematics and Ecology,