Zootaxa 3322: 1–34 (2012)
www.mapress.com/zootaxa/

Article

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

Review of the genus *Scaeosopha* Meyrick, 1914 (Lepidoptera, Cosmopterigidae, Scaeosophinae) in the world, with descriptions of sixteen new species

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Accepted by J.-F. Landry: 13 Mar. 2012; published: 23 May 2012

Abstract

The genus *Scaeosopha* Meyrick is reviewed on a worldwide basis. A total of 26 species are treated, which are divided into two species groups except *S. atrinervis* Meyrick, 1931, the *percnaula*-group and the *mitescens*-group. Sixteen new species are described: *S. betrokensis* Sinev *et* Li **sp. nov.**, *S. erecta* Li *et* Zhang **sp. nov.**, *S. hongkongensis* Li *et* Zhang **sp. nov.**, *S. minuta* Sinev *et* Li **sp. nov.**, *S. nullivalvella* Li *et* Zhang **sp. nov.**, *S. sabahensis* Sinev *et* Li **sp. nov.**, *S. spinivalvata* Li *et* Zhang **sp. nov.**, *S. tuberculata* Li *et* Zhang **sp. nov.**, *S. victoriensis* Sinev *et* Li **sp. nov.**, *S. convexa* Li *et* Zhang **sp. nov.**, *S. dentivalvula* Li *et* Zhang **sp. nov.**, *S. gibbosa* Li *et* Zhang **sp. nov.**, *S. grandannulata* Li *et* Zhang **sp. nov.**, *S. nigrimarginata* Li *et* Zhang **sp. nov.**, *S. rarimaculata* Li *et* Zhang **sp. nov.** and *S. trigonia* Li *et* Zhang **sp. nov.** One new synonym is established: *Scaeosopha stagnigera* Meyrick, 1932 **syn. nov.** (= *Scaeosopha percnaula* Meyrick, 1914), and one new combination is proposed: *Scaeosopha triocellata* (Stainton, 1859) **comb. nov.** The previously unknown females of *S. chionoscia* Meyrick, 1933, *S. sinevi* Ponomarenko *et* Park, 1997 and *S. sattleri* Li, 2005 are described for the first time. Photographs of the adults and the genitalia of the new species as well as several of the described species are provided, along with a key for the identification of the known species and two maps to show the distribution of these species.

Key words: Lepidoptera, Cosmopterigidae, distribution, key, new species, new combination, world

Introduction

The genus *Scaeosopha* was originally described as a member of the family Oecophoridae by Meyrick in 1914. It was organized as Scaeosophides group (Meyrick 1922; Gaede 1938), which was subsequently upgraded to family rank Scaeosophidae (Meyrick 1932). Clarke (1955) transferred *Scaeosopha* to the family Cosmopterigidae. Diakonoff (1968) reestablished Meyrick's concept, but regarded it as a subfamily Scaeosophinae, and placed it in the family Cosmopterigidae. Becker (1984) considered two Brazilian species, *Scaeosopha albicellata* Meyrick and *S. citrocarpa* Meyrick, in Cosmopteriginae of Cosmopterigidae as "mispl." species (generic placement uncertain or incorrect), which he referred to *Triclonella* of Cosmopteriginae in 1999. Nye & Fletcher (1991) included *Scaeosopha* in Cosmopterigidae. Sinev (1992) followed Meyrick, regarding Scaeosophidae as a family but placed it in the superfamily Cosmopterigoidea instead of in Gelechioidea. Sinev also suggested the taxonomic position of *Scaeosopha* as a subfamily Scaeosophinae in Cosmopterigidae (Ponomarenko & Park 1997). Hodges (1999) placed *Scaeosopha* in Cosmopteriginae of Cosmopterigidae. Presently, we regard it as a member of Scaeosophinae based on our recent study.

Prior to this study, the genus *Scaeosopha* comprises ten species worldwide (Gaede 1938; Ponomarenko & Park 1997; Sinev 2002; Li 2005). The aim of the present paper is to review the genus *Scaeosopha* on a worldwide basis and describe new species. A total of 26 species are treated, which are divided into two species groups, the *percnaula*-group and the *mitescens*-group. *Scaeosopha atrinervis* Meyrick, 1931, is provisionally left as uplaced. One new synonym, *Scaeosopha stagnigera* Meyrick, 1932 **syn. nov.** (= *Scaeosopha percnaula* Meyrick, 1914), and one new combination, *Scaeosopha triocellata* (Stainton, 1859) **comb. nov.** (from *Allotalanta* Meyrick) are established. A key for the identification of these species are given based on the male genitalia (excluding *S. mitescens* and *S. atrinervis*, whose males are unknown or unavailable).

The hindwing of the moths bearing a transparent patch with an elliptical unscaled area posteriad of the cell usually is considered as the main synapomorphy of the subfamily Scaeosophinae (Meyrick 1922; Sinev 2002).

A phylogenetic study is needed to further the study of this genus when more females are recognized. Currently such a study is difficult because only a few females are known.

Material and methods

Pinned adults were collected by using light traps in the mountainous areas of China. Other specimens were on loan from the Natural History Museum, London, UK; the Landessammlungen für Naturkunde, Karlsruhe, Germany; the Netherlands Centre for Biodiversity, Naturalis, Leiden, The Netherlands. Genital slides were made by mounting the material in Euparal (BMNH, LNK, RMNH) or Canada balsam (NKUM) following the methods outlined by Li (2002). Digital images of adults were taken with a Nikon D300 digital camera plus Nikon AF-S VR Micro-Nikkor 105 mm f/2.8G IF-ED lens, and the genitalia were captured with an Olympus C-7070 digital camera attached to a