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Raphignathoidea of China: a review of research progress

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Abstract

This paper reviews the taxonomy and applied research of the superfamily Raphignathoidea in China from 1965 to 31 Dec. 2009. So far 64 taxonomic papers had been published by 47 authors, describing 82 species collected from China as new to science. And 17 applied papers had been published on the biology, ecology and related fields. A checklist of 112 species in 31 genera and eight families is attached.

Key words: Caligonellidae, Camerobiidae, Cryptognathidae, Eupalopsellidae, Homocaligidae, Raphignathidae, Stigmaeidae, Xenocaligonellididae, mainland China, Hong Kong, Taiwan

Introduction

Although members of the superfamily Raphignathoidea are tiny in size they are not usually overlooked because of their stunning colours ranging from white, bright yellow, bright red, dark red, pale brown to dark brown. Researchers are often impressed by their delicate ornamentations which can be observed under a light microscope or a scanning electron microscope. Moreover, they are important in agriculture because they prey on plant pests including scale insects, spider mites, eriophyoid mites, tarsonemid mites, etc. (Gerson *et al*. 2003). However, our current knowledge about this superfamily is very limited. Around eight hundred species have been described worldwide and the biology of only a few dozen of arboreal species has been studied (Fan & Zhang 2005).

China lies in the Palaearctic and the Oriental regions and is very rich in animal biodiversity. For mites of the Raphignathoidea, the taxonomic foundation of the country was settled in the 1980s, and research boomed in the 1990s and smoothly developed in the 2000s. There are 112 valid species of the Raphignathoidea that have been discovered (Cheng & Fan 2008), which is more than 14% of the species known worldwide. It is conservative to say that this is only a small proportion of the Chinese fauna because most of the species known from China were collected in limited areas within the Oriental region, especially in the southeast China, and many areas of China remain untouched.

Although there have been a couple of dozen published papers on the biology and applied science of the Raphignathoidea, most of them had focused only on a few species of the genus *Agistemus*. The research in this field is still in very early stages.

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