Zoosymposia 4: 225–259 (2010)
www.mapress.com/zoosymposia/

ISSN 1178-9905 (print edition)
ZOOSYMPOSIA
ISSN 1178-9913 (online edition)

Acaridia (Acari: Astigmatina) of China: a review of research progress*

QING-HAI FAN [1, 3], YAN CHEN [2] & ZI-QING WANG [1]

[1] *Key Lab of Biopesticide and Chemical Biology, Ministry of Education; College of Plant Protection, Fujian Agriculture and Forestry University, Fuzhou 350002, China. E-mail: qhfanacari@gmail.com*

[2] *Fujian Entry-exit Inspection and Quarantine Bureau of China, 312 Hudong Road, Fuzhou 350001, China*

[3] *Current address: Plant Health & Environment Laboratory, MAF Biosecurity New Zealand, 231 Morrin Road, St Johns, PO Box 2095, Auckland 1072, New Zealand. E-mail: qinghai.fan@maf.govt.nz*

* *In*: Zhang, Z.-Q., Hong, X.-Y. & Fan, Q.-H. (eds) Xin Jie-Liu Centenary: Progress in Chinese Acarology. *Zoosymposia*, 4, 1–345.

Abstract

Research history of the taxonomy and morphology, investigation and survey, biology and ecology, and pest management of the Acaridia in China until 31 Dec 2009 was summarized in time line format. A checklist of 136 species in 50 genera of 14 families is provided.

Key words: Acaroidea, Canestrinioidea, Glycyphagoidea, Hemisarcoptoidea, Histiostomatoidea, China, Hong Kong, Taiwan

Introduction

The Acaridia consists of a large group of mites inhabiting a broad range of habitats. It is not hard to find an acaridian on dry arboreal microhabitats such as leaf surface but most of them are in favour of environments with relatively high humidity, i.e. soil, litter, tree holes, phytotelmata, houses, animal nests, carrion, stored products, and some groups have evolved to adapt the fresh or salt water. They were also discovered from the human body surface, respiratory system or digestion system of animals. Usually, these mites are free-living and feed on fungi, bacteria, plant tissue, seeds, animal cuticle or skin, etc. Some are observed to prey on insect or mite eggs (OConnor 2009). The Acaridia has a worldwide distribution. Members of this group were discovered from every continent but most of the known species are recorded from areas colonized by human and other animals.

Very recently, the Astigmata—ranked as an order or suborder in the past—was lowered to a cohort Astigmatina of the supercohort Desmonomatides (= Desmonomata) in the suborder Oribatida (OConnor 2009). The Astigmatina now contains two major groups, Acaridia and Psorptidia. There are about 1400 species grouped in 430 genera in 27 families in the Acaridia, which is represented in China by about 136 species, 9.7 % of the world fauna, in 50 genera of 14 families.

There has long been a need for a thorough review of the research progress of the Acaridia in China. More than 280 papers on taxonomy and morphology, investigation and survey, biology and ecology, and management had been issued in scattered journals, books and other reference resources. The aim of this paper is to provide an overview of the research on the Acaridia in China with a list of the known species and to facilitate the future studies of Acarology.

Accepted by Z.-Q. Zhang: 10 Apr. 2010; published:30 Jun. 2010