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A review of progress in taxonomy of water mites from China (Acari: Hydrachnidia)*

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Abstract

With a brief review on taxonomic studies of Chinese water mites since the early 20th century, this paper gives a checklist of the 193 species in 34 subgenera, 36 genera, 19 subfamilies, 19 families, 7 superfamilies, recorded from China. Forty-five of these species (23.38%) are Palaearctic-Oriental or polyregional, 19 (9.9%) Palaearctic, 129 (66.8%) Oriental, and 118 (61.1%) known at present only from China. The information on distribution within China is given for each species. *Hygrobates* (*Rivobates*) *octoporus* Jin, 1996 is replaced with *Hygrobates* (*Rivobates*) *hexoporus* Jin & Yi nomen novum.

Key words: water mites, Hydrachnidia, taxonomy, species list, China

Introduction

Mites in non-marine aquatic habitats, commonly called water mites, also known as the Hydrachnidia, Hydracarina, Hydrachnellae or Hydrachnidiae in the Cohort Parasitengona, are the by far most abundant, taxonomically diverse and ecologically important group of the Acari in fresh water. Hydrachnidia evolved from terrestrial ancestors within the Trombidia as a sister group and are presently found in virtually all types of freshwater bodies, springs, running as well as standing waters, some species are even found in tree holes and coastal waters (Cook 1974, 1984; Smith *et al.* 2001). Water mites usually have a parasitic larva mainly associated with various fresh water invertebrate groups such as Hempitera, Odonata, Coleoptera, Diptera, Plecoptera, Collembola, Hymenoptera and Trichoptera in Insecta, Malacostraca in Crustacea, as well as other animals like snails (Gastropoda), mussels (Lamellibranchia), and even newts (Salamandridae) of Caudata (Goldschmidt *et al.* 2002; Goldschmidt & Köhler 2007). By far most adults are free-living predators feeding on insects and microcrustacea, and a few are parasitic upon freshwater mussels in stages of nymph and adult (Proctor & Pritchard 1989).

There are over 6,000 species described worldwide except Antarctica, representing seven (Cook 1974; Krantz & Walter 2009) or nine superfamilies (Harvey 1978; Jin 2000), 57 families, 81 subfamilies and more than 400 genera (Di Sabatino *et al.* 2008). Based on the available information, more than 10,000 species could be reasonably expected to occur in inland waters worldwide (Di Sabatino *et al*. 2008). However, as the water mite faunas in many countries and regions, especially in Africa, Asia, and South America, are still poorly studied, this number is likely a great underestimate. Until the 1980s the study of the Chinese water mite fauna was on rare occasions and even at a

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