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Phytoseiidae (Acari: Mesostigmata) of China: a review of progress, with a checklist*

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Abstract

This paper reviews the research on the systematics of the family Phytoseiidae in China, with an updated checklist of 304 species.

Key words: Phytoseiidae, history, faunistics, checklist, biocontrol, China

Introduction

Phytoseiid mites are some of the most common natural enemies of pest mites and some other small arthropods. They are diverse and widespread on plants or in soil, playing an important role in ecological balance. Some early papers—Scheuten (1857), Koch (1839), Ribaga (1902), Parrott *et al.* (1906), Oudemans (1915, 1929, 1930), Vitzthum (1941) Garman (1948), Nesbitt (1951), Athias-Henriot (1957), Dosse (1958), Muma (1961a,b) and Schuster & Pritchard (1963)—reported that *Typhlodromus* spp., *Amblyseius* spp. and *Phytoseiulus persimilis* were important predators of *Tetranychus* species and eriophyid mites. The Europeans, e.g. Dosse (1961) and Gould *et al.* (1968), have made extensive and successful use of *P. persimilis* for biological control of spider mites in greenhouses. Methods for mass-rearing of phytoseiid mites have progressed greatly, and some phytoseiid species could be mass-produced with the use of acarid mites as prey.

The taxonomy of phytoseiids advanced relatively fast. Nesbitt (1951) first revised this family, including in it about 41 species, several of which are now considered not to belong to this family. Chant (1959, 1965), Karg (1960, 1983), Muma (1961), Wainstein (1962), Hirsthmann (1962), Lindquist & Evans (1965), Van der Merwe (1968), Denmark (1966, 1982, 1988), Tseng (1975, 1976), Chaudhri (1979), Ragus*a &* Athias-Henriot (1983), Rogusa & Tsolakis (1994), Schicha (1987), Schicha & Corpuz-Raros (1992), Wu *et al.* (1997) and Ehara & Amano (1998) also made many comments on the taxonomy of phytoseiids. But there are obvious disagreements on the classification of the Phytoseiidae at the family and genus level. These debated for more than 20 years, and the taxonomic systems of Chant & McMurtry (1994, 2003ab, 2004ab, 2005abc, 2006ab, 2007) and Moraes *et al.*(2004) are relatively more comprehensive. The latter catalogue of Moraes *et al.* presents the phytoseiid mites in the world, listing 2243 species in total. This paper follows the

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