



A new subgenus and two new species of *Zercon* C. L. Koch, 1836 (Acari: Zerconidae) from Southeast Asia

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Abstract

Two new species, *Zercon (Zercorientalia) formosianus* **sp. nov.** and *Zercon (Zercorientalia) spinosus* **sp. nov.**, are described from the high mountain zone of Taiwan. A new subgenus, *Zercon (Zercorientalia)* **subgen. nov.**, is established for these species, on the basis of a unique combination of podonotal chaetotaxy and pore positions. *Zercon (Zercorientalia) sinensis* Petrova & Taskaeva, 1968 is transferred from *Zercon (Zercon)* Koch, 1836 to the new subgenus. The taxonomic relevance of podonotal chaetotaxy is discussed.

Key words: Zerconidae, *Zercon*, new subgenus, new species, Taiwan

Introduction

The family Zerconidae constitutes an important predatory component of the soil mesofauna of the Northern Hemisphere. Zerconid mites inhabit moss, lichen, leaf-litter, soil and decaying organic detritus, even in the canopy zone, and probably feed on nematodes. The geographical distribution of the family extends from the northern boreal zone to the southern border of the temperate climate zone. Species have previously been recorded from several areas near the Tropic of Cancer (Petrova & Taskaeva, 1968; Ujvári, 2010, 2011a, b), but it seems that they are absent from the subtropical and tropical rainforests, spreading southwards along the temperate forests of high mountains. Currently the family is represented by 14 genera in East Asia. The most extensive studies were carried out on the fauna of the Korean Peninsula (Błaszak, 1976a, b, c; Halašková, 1979; Lim & Lee, 2001; Lee & Lim, 2004), but several species were recorded from the East Asian Mainland in Mongolia (Błaszak, 1978) and China (Ma & Yin, 1999; Ma, 2002, 2003a, b; Bei *et al.*, 2002), and the islands of Japan (Aoki, 1964, 1966; Ishikawa, 1969, 1972; Błaszak, 1977) and Taiwan (Ujvári, 2010, 2011a). On the basis of previous studies, the fauna of the region is related to both Western Palearctic and Nearctic, but the number of the unique, probably endemic genera is high. In spite of the relatively high number of publications, the fauna of East Asia is poorly known in comparison with that of Europe. It is likely that a lot more undiscovered endemic species and genera inhabit this region, and it is important to explore the areas that represent hotspots of species richness or endemism, such as Taiwan.

Tectonically Taiwan was formed as a result of the movement of the Philippine Sea plate in a northwest direction, with respect to the Eurasian plate. The fauna of Taiwan was strongly influenced by the changes of sea level caused by climatic changes. The average depth of sea between Taiwan, the mainland and the Japanese islands (Ryukyu islands) is less than 100 m, therefore these regions were connected to each other many times during the periods when sea level was low, allowing free migration of species. With the rising of sea level the present islands were separated from the mainland and from each other, and many endemic species evolved during the warmer climatic periods.

The Hungarian Natural History Museum acquired a rich collection of Taiwanese soil material due to the zoological expeditions organized in the past three years. A large part of the soil samples have already been elaborated, resulting in four new species of Zerconidae and the establishment of a new genus and a new subgenus (Ujvári, 2010, 2011a), and a species of *Rotundabaloghia* Hirschmann, 1975 (Kontschán, 2008). However, within the mate-