



Two new species of protoplophorid mites (Acari: Oribatida: Protoplophoridae) from Thailand

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Abstract

Two new species of the oribatid mite family Protoplophoridae (Acari: Oribatida), *Arthrhoplophora adjacentis* **sp. nov.** and *Protoplophora takensis* **sp. nov.**, collected from leaf litter of dry evergreen forest, are described and illustrated from Thailand. *Arthrhoplophora adjacentis* **sp. nov.** is unique in having the long ciliated rostral setae which are closely paired and bidactylous claws on pretarsi I, whereas pretarsi II–IV are tridactylous. *Protoplophora takensis* **sp. nov.** differs from its congeners by the presence of notogastral setae *cp*, seven pairs of genital setae and four-segmented palpi. Identification keys to species of *Arthrhoplophora* and *Protoplophora* are also provided.

Key words: Oribatid mites, Enarthronota, Protoplophoridae, *Arthrhoplophora*, *Protoplophora*, new species, taxonomy

Introduction

Members of the family Protoplophoridae are primitive oribatid mites of the major group Enarthronota that live in soil and leaf-litter habitats. Little is known about their biology and ecology. They, as other members within the superfamily Protoplophoroidea, possess a unique pharyngeal complex suggesting the capacity for strong aspiration (Norton & Behan-Pelletier 2009). Protoplophorid mites can be recognized by the unique combination of two characters: 1) their ptychoid body form, able to fold the apidosoma under the opisthosoma: a homoplastic trait found also in another enarthronote superfamily (Hypochthonioidea: Mesoplophoridae) and in the Ptyctima (Euphthiracaroidea and Phthiracaroidea) (Norton 2001; Niedbała 2004); 2) the notogaster is divided into four parts comprising the anterior plate (or pronotapis), the posterior plate (or pygidium), always with the 2–3 transverse sutures, and two lateral plates (or pleurapis) (Niedbała 2004; Norton & Behan-Pelletier 2009). Presently, 28 species have been recognized in 10 genera and are collectively distributed in the tropical and subtropical zones (Niedbała 2004).

In Thailand, no protoplophorid mites have been previously documented. The present paper reports the first records of this taxon in Thailand and contains descriptions of two new species, *Arthrhoplophora adjacentis* **sp. nov.** and *Protoplophora takensis* **sp. nov.**, collected from leaf-litter of dry evergreen forest, western Thailand. Keys to known (extant) species of *Arthrhoplophora* and *Protoplophora* are also provided.

Material and methods

Mites were extracted from leaf-litter and top-soil samples (see *Material examined* for locality data) using Tullgren funnels for seven days. The specimens were preserved in 70 % (v/v) ethanol and then transferred to lactic acid for clearing. Intact specimens were studied in temporary slides with diluted lactic acid as a medium. Some specimens were dissected and mounted in Hoyer's solution on microscopic slides (Walter & Krantz 2009). Observations were made under a compound microscope equipped with a camera lucida for use in drawing. Measurements are in microns and mostly presented in parentheses. Terminology generally follows the system of F. Grandjean, as recently summarized by Norton and Behan-Pelletier (2009).