

## **Article**



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## Three new species of Oppioidea (Acari: Oribatida) from India

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## **Abstract**

Three new oribatid mite species of the superfamily Oppioidea—Cycloppia asetosa sp. nov., C. spindleformis sp. nov. and Hammerella (Hammerella) excisa sp. nov.—are described from India. The genus Cycloppia and subgenus Hammerella (Hammerella) are for the first time recorded in India. Cycloppia asetosa sp. nov. differs from all species of Cycloppia by the rostrum with indentation and the absence of interlamellar setae and their alveoli. Cycloppia spindleformis sp. nov. differs from all species of Cycloppia by the presence of interlamellar alveoli only. Hammerella (H.) excisa sp. nov. differs from all species of Hammerella (Hammerella) by the rostrum with indentation and the presence of notogastral setae c. The identification keys to all known species of Cycloppia and Hammerella (Hammerella) are provided.

Key words: oribatid mites, Oppioidea, Cycloppia, Hammerella, new species, key, India

## Introduction

In the course of taxonomic identification of Indian oribatid mites (Acari: Oribatida), we found three new species of the superfamily Oppioidea, two belonging to the genus Cycloppia Balogh, 1983 (Oppiidae), and one to the subgenus Hammerella (Hammerella) Balogh, 1983 (see Ermilov et al. 2012) of the genus Hammerella Balogh, 1983 (Granuloppiidae). The main purpose of this paper is to describe and illustrate the new species under the names Cycloppia asetosa sp. nov., C. spindleformis sp. nov. and Hammerella (H.) excisa sp. nov.

Cycloppia (Acari: Oribatida) is an oppiid genus that was proposed by Balogh (1983) with Lanceoppia simplex Suzuki, 1973 as type species. However, Lanceoppia simplex is a junior synonym of Cycloppia restata (Aoki, 1963) (Oppia), therefore the latter is a type species of Cycloppia now. Currently, this genus comprises four species, which are distributed in Japan, Taiwan and New Guinea (Subías 2004, online version 2012). The genus Cycloppia is for the first time recorded in India. The main diagnostic characters of Cycloppia are (summarized from Subías & Balogh 1989; Balogh & Balogh 1992; Ohkubo 2003; also including our additions): Lanceoppiinae with body of small or medium size (340–652 × 205–465); body surface smooth or granulate; rostrum rounded, tripartite or with median indentation; sensilli spindle-form, bacilliform or with short head; interlamellar setae present or absent; lamellar and translamellar lines absent or partially indistinctly developed; nine pairs of notogastral setae present, setae c absent or represented by alveoli; four pairs of genital setae present; adanal lyrifissures located in inverse apoanal or paraanal position.

Hammerella is a granuloppiid genus that was proposed by Balogh (1983), with Brachioppiella gracilis Hammer, 1977 as type species. The subgenus Hammerella (Hammerella) comprises two species (Ermilov et al. 2012), which are distributed in the Palearctic and Oriental regions (Subías 2004, online version 2012). The subgenus Hammerella (Hammerella) is for the first time recorded in India. The main diagnostic characters of the subgenus are (data from Ermilov et al. 2012; also including our additions): Hammerella with body of small size (322–398 × 182–215); rostrum without or with incisions; sensilli with developed head, with short or long branches; ten pairs of notogastral setae present (setae c present or represented by alveoli); dorsal setae of notogaster inserted in two parallel rows; one pair of notogastral humeral tubercles present; epimeral border IV distinctly developed.

Also, we present the identification keys to the known species of Cycloppia and Hammerella (Hammerella).