



Five new species of *Ceratoppia* (Acari: Oribatida: Peloppiidae) from western North America

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Abstract

I present the systematics and distribution of five new species of oribatid mites in the genus *Ceratoppia* (Oribatida: Peloppiidae) from western North America. The species are described on the basis of adult morphology using the following character states: number of hypostomal setae, number, length and expression of posterior notogastral setae, length of lamellae and lamellar cusp, length of interlamellar setae, and the shape and dentition of the rostrum. *Ceratoppia indentata* n. sp. is described from forest floor habitats, while *Ceratoppia longicuspis* n. sp. and *Ceratoppia tofinoensis* n. sp. are described from arboreal bryosphere habitats; *Ceratoppia offarostrata* n. sp. is associated with bark habitats. *Ceratoppia valerieae* n. sp. was collected from both arboreal and forest floor samples. Distributions of all species are provided based on museum and collection records; *C. indentata*, *C. longicuspis*, *C. tofinoensis* are recorded from coastal temperate coniferous rainforests of the Pacific Northwest of North America, while *C. valerieae* was found in coastal temperate rainforests and extending along the southern border of British Columbia into eastern Alberta. *Ceratoppia offarostrata* is collected only from a small number of locations on the west coast of Canada. Comments on other North American *Ceratoppia* species is given. A morphological key is presented to the described adult species for the genus *Ceratoppia* in North America.

Key words: arboreal habitats, *Ceratoppia*, Oribatida, Pacific Northwest, Peloppiidae, temperate rainforest, western North America

Introduction

The genus *Ceratoppia* Berlese, 1908 (Acari: Oribatida: Peloppiidae) has 18 described extant species and subspecies world-wide (Schatz 2004, Subías 2009). The genus is limited to the northern hemisphere, with species having mainly Holarctic distributions, although Schatz (2006) reported unidentified *Ceratoppia* from Costa Rica and Panama subalpine and montane sites. In North America there are four recorded species: *Ceratoppia bipilis* (Hermann, 1804), *Ceratoppia quadridentata* (Haller, 1882), *Ceratoppia sexpilosa* Willmann, 1938, and *Ceratoppia sphaerica* (L. Koch, 1879), and two subspecies; *C. bipilis spinipes* (Banks, 1906) and *C. quadridentata arctica* Hammer, 1955 (Marshall *et al.* 1987). However, the validity of the subspecies *C. quadridentata arctica* and *C. bipilis spinipes* is questionable, as variation in many characters, such as the length of lamellar cusps, used to differentiate species from subspecies may be due to geographical variation and ecology (Grandjean 1936).

The two main character states differentiating North American species of *Ceratoppia* are the number of hypostomal setae on the subcapitular mentum, and the number and expression of posterior notogastral setae. Other diagnostic characters include the length of the lamellae and shape of the rostrum. *Ceratoppia bipilis* and its subspecies *C. bipilis spinipes* are rare among *Ceratoppia* in having two pairs of hypostomal setae, which is considered a derived character state compared to one pair of setae (Grandjean 1936) which is found in the other previously described North American *Ceratoppia*. The genus *Ceratoppia* typically has two or three pairs of long, conspicuous posterior notogastral setae. The dominant form of setal expression is two pairs of posterior seta expressed (p_1, p_3) as found in *C. quadridentata*, *C. sphaerica* and *C. bipilis*, while the subdominant character state of three pairs of posterior notogastral seta expressed (h_1, p_2, p_3) is observed in *C. sexpilosa* (Seniczak & Seniczak 2010). Among *Cer-*