

## North American species of *Diamphidaxona* (Acari: Hydrachnida: Hygrobatidae)

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## Abstract

Members of the genus *Diamphidaxona* Cook, 1963 are found from southeastern Canada to Argentina, with greatest diversity of species and species groups in the southwestern United States and Mexico. In this paper the three species of *Diamphidaxona* previously known from North America, *D. pallida* Cook, *D. dolichosoma* Cook and *D. imamurai* Cook, are redescribed. Eleven new species, including *D. arizonica* **sp. nov.**, *D. brevitarsa* **sp. nov.**, *D. californica* **sp. nov.**, *D. cavecreekensis* **sp. nov.**, *D. chihuahua* **sp. nov.**, *D. chiricahua* **sp. nov.**, *D. crameriae* **sp. nov.**, *D. neomexicana* **sp. nov.**, *D. parvacetabula* **sp. nov.**, *D. platysoma* **sp. nov.** and *D. sabinalensis* **sp. nov.**, are also described. North American species are allocated to two subgenera, the nominate subgenus and *Diamphidaxonella* **subgen. nov.**, for which diagnoses are provided. New distributional data and a key for all North American species are presented.

**Key words:** water mites, stream fauna, hyporheic zone

## Introduction

Members of the genus *Diamphidaxona* are known exclusively from interstitial hyporheic habitats in streams in the New World where they occur from southeastern Canada to Argentina. Twelve species have been described previously, including three from North America (Cook 1963, 1974), two from Mexico (Cook 1980; Cramer-Hemkes & Letechipía-Torres 1996), one from Guatemala (K.O. Viets 1978), one from Cuba (Orghidan & Gruia 1983), two from Venezuela (Orghidan & Gruia 1987) and three from Argentina (Cook 1980; Fernández 1987, 1995). The type species of the genus, *D. pallida* Cook, was described from streams in Missouri, Arkansas and Oklahoma (Cook 1963). The other previously known North American species, *D. dolichosoma* Cook and *D. imamurai* Cook, were described from streams in Montana (Cook 1963) and New Mexico (Cook 1974), respectively. The purpose of this paper is to redescribe the 3 known species from North America and describe 11 new species. We also present new distributional data and provide a key for all North American species.

## Methods

Samples were collected by digging and stirring substrata in rocky riffles and gravel bars in streams to depths ranging from 25 cm to 1 m using spades, collecting dislodged organisms and detritus in fine meshed nets (250 µm) and recovering specimens both with eye droppers as they moved about in shallow trays of water and with forceps from preserved subsamples examined under a microscope (Smith *et al.* 2001).

In the following descriptions, measurements are expressed as ranges in micrometres (µm). Measurements of holotypes follow in brackets where appropriate. Missing measurements from structures that were damaged or distorted during slide-mounting are