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Cave millipedes of the United States. XIII. A new, troglobiotic species of *Austrotyla* from Colorado (Diplopoda, Chordeumatida, Conotylidae)

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Abstract

Austrotyla stephensoni n. sp., from Colorado, is described as the first troglobiotic species of its genus, and compared to sympatric *Austrotyla coloradensis* (Chamberlin 1910). A key to all *Austrotyla* species is provided.

Key words: Diplopoda, Chordeumatida, Conotylidae, *Austrotyla stephensoni*, new species

Introduction

The millipede genus *Austrotyla* was established by Causey in 1961, for the type species *Conotyla specus* Loomis 1939, a troglophile common in caves in southern Wisconsin, eastern Iowa, Illinois and Missouri, and occasionally found in surface forest litter. A little later in the same year, Hoffman (1961) set up the genus *Sonoratyla* for another Loomis species, *Conotyla montivaga* Loomis 1943, an epigeal species from Pima Co., Arizona. The two species are clearly congeneric (Shear 1971) and Causey's name, published earlier, takes precedence.

Causey (1961) recognized the relationship between the two species, but erred by sinking *montivaga* as a subspecies under *specus*, and placing pigmented, epigeal specimens of *specus* from Illinois and Missouri as *A. specus montivaga*, though on biogeographic grounds it seems improbable that the same subspecies would occur in the mesic forests of the northern Mississippi Valley and on isolated mountains in southern Arizona. Causey also seemed to be laboring under the then common misapprehension that subspecies designation could be used for morphological variants, even if they were sympatric (and in this case virtually syntopic) with another "subspecies." (For an excellent discussion of the subspecies problem in general and with particular application to millipedes, see Jorgensen *et al.* [2012]). In fact, *montivaga* proved to be a distinct species limited to Arizona, as Loomis (1943) originally thought; Causey's (1961) contention that the gonopods of *montivaga* and *specus* were identical was incorrect (Shear 1971). Causey also included in *Austrotyla* Chamberlin's *Conotyla coloradensis* 1910 (Chamberlin 1910), designating a neotype.

Ten years after the description of the genus, Shear added two additional species: *A. borealis* Shear 1971 and *A. chihuahua* Shear 1971, the former from Jasper National Park, Alberta, Canada, and the latter from Rio Urique, Chihuahua, México (Shear 1971). A further species, *Austrotyla montani* Loomis & Schmitt 1971 came from Missoula, Montana. Finally, in a reclassification of the family Conotylidae, Shear (1976) made *Austrotyla* the type genus of a subfamily Austrotylinae, which also includes the northern Rocky Mountain genus *Corypus* Loomis & Schmitt 1971 and *Achemenides* Shear 1971 from the upper Mississippi Valley.

Austrotyla as of 1976 therefore consisted of six species, distributed in the Rocky Mountains from southern Alberta, Canada, to Chihuahua, México, and in the Mississippi Valley from Wisconsin (possibly Minnesota) to Missouri. No additional work on the genus has appeared in the past 37 years.

Austrotyla coloradensis is the species best represented in collections and seems widespread in montane, forested habitats and canyon riparian zones in Colorado. *Austrotyla coloradensis* is sometimes taken as a troglophile in Colorado caves as well. However, one collection recently made by DS had a distinctive

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