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Cave millipeds of the United States. V. The genus *Idagona* Buckett & Gardner (Chordeumatida, Conotylidae, Idagoninae)

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Abstract

The conotylid milliped subfamily Idagoninae presently includes but a single genus and species, *Idagona westcotti* Buckett & Gardner, known from lava tubes in Idaho, USA. This study presents new records of the genus *Idagona*, extending its distribution into Utah and Nevada, its habitat records to limestone caves, and describes two additional species, *Idagona lehmanensis*, n. sp., from limestone caves in the Great Basin National Park in eastern Nevada, and *Idagona jasperi*, n. sp., from a high-altitude limestone cave in northern Utah.

Key words: *Idagona*, Great Basin National Park, troglophile, troglobiont, lava tubes, limestone caves, Idaho, Utah, Nevada, Bear River Range

Introduction

The milliped species *Idagona westcotti* Buckett and Gardner was described in 1967, based on specimens from two lava tubes in Clark and Butte Counties, Idaho. While postulating a relationship to the Conotylidae, Buckett and Gardner determined that this species differed from members of that family to the extent that they proposed a new family, Idagonidae Buckett and Gardner 1967, for this one species. Indeed, at the stage of development of chordeumatidan milliped taxonomy 40 years ago, their proposal seemed justified. The gonopods of *I. westcotti* were unlike those of any other known North American species, in that while two pairs of legs, the eighth and ninth, were profoundly modified, the ninth pair had subsequently become reduced to a small remnant tightly appressed to the eighth pair. In the conotylids to which they compared the new species, the ninth legs bore elaborate coxites which actually play a role in spermatophore transfer, and thus these modified legs can justifiably be called posterior gonopods. In addition, conotylids are characterized by the reduced telopodites of the ninth legs, consisting only of a cylindrical prefemur and a usually swollen, pyriform or oblate femur. In *I. westcotti*, the telopodites of the ninth legs have disappeared completely and only the small colpocoxites remain (Figs. 1, 2; see also Fig 23).

Subsequently I carried out detailed studies of the Conotylidae which resulted in a number of clarifications of the relationships within that family (Shear 1971, 1972, 1976). It was my conclusion in 1972 that Idagonidae was a synonym of Conotylidae in that the fundamental gonopod structure, gnathochilarium, and distribution of coxal glands all fit the conotylid plan. In 1976, I divided the Conotylidae into subfamilies and placed *Idagona* in the subfamily Austrotylinae Shear 1976. I neglected to note that by bringing *Idagona* into this subfamily, I was also bringing in the established family-level name, so the subfamily should have been termed Idagoninae Buckett and Gardner. However, Hoffman (1979) separated *Idagona* and the subfamily name Idagoninae from the austrotylines, solving that nomenclatorial problem and presenting an arrangement with which I now completely agree. Idagoninae is not closest to Austrotylinae, but obviously to Conotylinae,

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