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Two new species of *Eucyclops* Claus (Copepoda: Cyclopoida) from the Chihuahuan Desert with a redescription of *E. pseudoensifer* Dussart

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Abstract

Two new species of the freshwater copepod genus *Eucyclops* are described from two sites in the Chihuahuan Desert (CHD), which includes parts of northern Mexico and southern United States. *Eucyclops cuatrocienegas* **sp. nov.** is distinguished by having a short inner spiniform seta on the fifth leg, relatively short caudal rami, and a partially naked spine of the fourth endopod, among other characters. The finding of *E. cuatrocienegas* in Cuatro Ciénegas, an area in the CHD that is known for harbouring the highest number of endemic aquatic species in North America, suggests that these habitats could yield other endemic forms. The other new species resembles the Neotropical *E. pseudoensifer* Dussart, 1984 but differs in having a shorter basipodal spine of the first leg, shorter outer terminal spiniform caudal seta, a different length ratio of inner/outer spines of leg 4 third endopodal segment, and a different pattern of the serra on the caudal rami. *Eucyclops pseudoensifer*, originally collected from a high altitude lake in the Andean system of western Venezuela, is here redescribed from female and male type specimens. The description of *E. chihuahuensis* **sp. nov.** recognizes both the subtle but consistent differences of this population and its environmental isolation in this arid region. The North American records of *E. pseudoensifer* should be revised in the light of these findings in order to determine the real distributional ranges of these species.

Key words: taxonomy, arid systems, new species, crustacean freshwater zooplankton

Introduction

Among the freshwater cyclopoid copepods, the genus *Eucyclops* Claus, 1893 is one of the most diverse; there are more than 135 nominal species and subspecies known to date (Dussart and Defaye 2001, 2006). However, the taxonomic knowledge of the genus is far from complete; the taxonomy of the group is plagued by incomplete species descriptions and by records based on cursory observations (Ishida 1997; Alekseev *et al.*2006). The main source of such confusion was the incomplete description of the type species of the genus: *Eucyclops serrulatus* (Fischer, 1851). Alekseev *et al.* (2006) redescribed the species based on an upgraded set of morphological and genetic characters and contributed much to solve this basic taxonomic problem. This species, however, shows a high intraspecific morphological variability and was long regarded as a cosmopolitan form. This notion hampered the recognition of cryptic forms with restricted distributional ranges. The taxonomical confusion also extends to *E. agilis* (Koch, 1838), a widespread species (Yeatman 1959; Reid 1992) the name of which recently has been deemed as invalid (Alekseev *et al.* 2006). The American records of both *E. agilis* and *E. serrulatus* are, in general, assignable to the currently valid species *E. pectinifer* (Dussart and Defaye 2006).

The bi-national environmental system known as the Chihuahuan Desert (CHD) includes states of northern Mexico and southern United States. It is considered to be one of high priority for conservation and regional development among the hydrological basins of North America. The CHD comprises many arid and semi-arid

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