



## New species of subgenus *Megaluracarus* (Acari: Hydrachnidiae: Arrenuridae: *Arrenurus*) from Mexico

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### Abstract

Four new water mite species of the subgenus *Arrenurus* (*Megaluracarus*) from lakes and ponds in Mexico are described and illustrated: *Arrenurus* (*Megaluracarus*) *anitahoffmannae* sp. nov., *A. olmeca* sp. nov., *A. maya* sp. nov., and *A. urbanus* sp. nov. With these species the number of known species of this subgenus in Mexico increases to 21.

**Key words:** Prostigmata, water mites, taxonomy, diversity

### Introduction

At least 250 species of water mites in the genus *Arrenurus* have been included in the subgenus *Megaluracarus* worldwide. Nearly 200 of these are found in the New World, and 17 of them have been reported from eastern and central Mexico (Table 1) (Cook 1980; Cramer and Cook 1992). Although Mexico has been explored extensively for water mites, new species are found on almost every collecting trip, particularly in regions that have many permanent lentic water bodies. Smith *et al.* (2001) suggested that these types of environments, in combination with the fast life cycles of the water mites' hosts, create the ideal scenario for a rapid diversification. They estimated that nearly half of the species of hydrachnids expected to be present in North America are not yet named. This paper describes four new species collected from lakes and ponds in Tabasco, Yucatán, Quintana Roo, and Mexico City. With these new species, the total number of species of the subgenus *Megaluracarus* known from Mexico now is 21 (Table 1); these data, allow us to confirm that this is the most complex subgenera of *Arrenurus* globally. This complexity exists not only in terms of species diversity but as well in the range of morphological characteristics, the coexistence of several species in the same locality and the wide range of geographical distribution. Most Mexican species of *Megaluracarus* so far have been found in the coastal states at altitudes below 1000 masl. *Arrenurus anitahoffmannae* nov. sp., *A. olmeca* nov. sp. and *A. maya* nov. sp. are even restricted to sample sites at 0–50 masl; nevertheless *Arrenurus urbanus* nov. sp. is the first record of *Megaluracarus* in the Mexican central plateau above 2000 masl. It is evident that we need to continue the taxonomical work on *Megaluracarus*—in Mexico as well as worldwide—in order to be able to address to ecological and biogeographical questions in detail.

### Material and methods

Specimens were obtained from materials sampled as part of a project intended to explore the diversity and ecology of Mexican water mites, which is ongoing in the Laboratorio de Acarología “Anita Hoffmann”, Facultad de Ciencias, Universidad Nacional Autónoma de México. The material was collected following the methodology described by Smith *et al.* (2001). The morphological studies were performed under both light and scanning electron microscopy. Type specimens were prepared and slide-mounted as described by Cook (1974). The specimens mentioned in the Other material section were preserved in Koenike's fluid. The morphological description follows