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The family Opilioacaridae (Parasitiformes: Opilioacarida) in Mexico, description of two new species and notes on biology and geographical distribution

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Abstract

Two new species of Opilioacaridae from Mexico are described, *Neocarus chactemalensis* sp. nov. and *N. comalensis* sp. nov., and new records for *N. texanus* Chamberlin & Mulaik and *N. veracruzensis* Vázquez & Klompen are presented. Relative positions of internal structures of the ovipositor, a highly variable character, are described based on comparisons of invaginated and evaginated ovipositors. A study of records of Opilioacaridae in Mexico shows that the group is distributed across a wide range of ecosystems and elevations, from dry, semi-desert to wet tropical forest, and coastal plains to the altiplano (>2,000m).

Key words: *Neocarus*, ovipositor, habitat distribution

Introduction

Mites in the family Opilioacaridae are relatively large, free-living scavengers and perhaps occasional predators (Walter & Proctor 1998). The family is widely distributed throughout the tropical and warm temperate regions of the world, although the number of described species is small (Walter & Proctor 2013). That being said, the group is interesting as one of the most basal, and unusual, lineages in the entire (super)order Parasitiformes (Grandjean 1969; Klompen 2010).

The genus *Neocarus* is both the most species-rich, with 14 described species, and most widely distributed genus, occurring from Florida and Texas (U.S.A.) to northern Argentina. The density of described species across that range varies dramatically, with the highest number in Mexico (Hoffmann & Vázquez 1986; Vázquez & Klompen 2002, 2009). Six species and subspecies have been described from Mexico, *N. bajacalifornicus* (Vázquez & Klompen), *N. bajacalifornicus chamelaensis* Vázquez & Klompen, *N. calakmulensis* Vázquez & Klompen, *N. nohbecanus* (Vázquez & Klompen), *N. siankaanensis* (Vázquez & Klompen), and *N. veracruzensis* Vázquez & Klompen, with an additional species to the north, *N. texanus* Chamberlin & Mulaik from the United States, and one to the south, *N. nicaraguensis* (Vázquez & Klompen) from Nicaragua. A final described species to be noted is *N. orchidani* (Juvara-Bals & Baltac) described from Cuba.

Additional collections from a variety of sites across Mexico allowed us to refine the distribution map for the family in Mexico, as well as describe two new species.

Materials and methods

Most material was studied as slide-mounted specimens. For this purpose, specimens were dissected (due to size), cleared in lactic acid and mounted on slides using Hoyer's medium (Walter & Krantz 2009). Frequently, parts of single specimens were mounted on multiple slides. Terminology for the palp tarsal sensilla follows Grandjean (1936) as modified by Vázquez & Klompen (2002).