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A new species of *Carnoya* Gilson, 1898 (Rhigonematida: Carnoyidae) parasite of a spirobolid (Diplopoda: Spirobolida) from Cuba

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Abstract

Carnoya isabelica n. sp. is described parasitizing *Nesobolus piedra* from Eastern Cuba. The new species is characterized by the presence of 13 copulatory papillae in males (the post-cloacal arranged in two trios, with two lateral papillae and one median papilla that can be laterally displaced), the presence of collars of spines in the both sexes and females with 23–25 collars of spines, cephalic end not swollen and lateral alae extending from the end of spines to the base of the tail. SEM images of both sexes are given.

Key words: Carnoyidae, *Carnoya*, Cuba, new species, taxonomy, SEM

Introduction

The family Carnoyidae comprises 16 genera of rhigonematids, parasites of millipedes in the tropical and subtropical regions. *Carnoya* Gilson, 1898, includes ca 22 species from South America, West Indies, Australasia and the Pacific. This genus is characterized by its remarkable appearance, notable sexual dimorphism and apparent affinity for millipedes of the family Rhinocricidae (Hunt and Moore 1998).

Five species have been recorded from Cuba: *C. pyramboia* Artigas, 1926, the only rhigonematid shared with South America; *Carnoya guantanamera* Spiridonov, 1989; *Carnoya ariguanabo* (Coy, García & Álvarez 1993), previously described as *Clementeia ariguanabo*; *Carnoya abeli* García, 1997 and *Carnoya cubitas* García, Coy & Ventosa, 1998 (Spiridonov 1989, Coy *et al.* 1993, García 1997, García *et al.* 1998, García and Ventosa 2009).

The aim of this paper is to describe a new species of *Carnoya* parasitizing a species of Spirobolida from Cuba.

Material and methods

Five specimens of *Nesobolus piedra* Pérez-Asso, 1996 (Diplopoda: Rhinocricidae) were collected in the surroundings of the coffee plantation “La Isabelica”, La Gran Piedra, Santiago de Cuba province, Cuba, at 1000 m a.s.l. The millipedes were collected by hand from litter or rotting logs and kept alive in plastic jars with moistened litter until arriving to the lab.

The hosts were killed by immersion in 70% ethanol and immediately dissected by cutting the last segments of the body. Intestines were extracted and excised in normal saline. The nematodes found were killed with hot water (60–70°C) and fixed in 70% ethanol.

Nematodes were transferred to anhydrous glycerine via slow evaporation method and then mounted in the same medium. The edges of the coverslips were sealed with nail varnish in order to avoid the hydration of the glycerine. Measurements were made after Hunt and Moore (1998) using a calibrated eyepiece micrometer attached to a compound microscope and are given in millimeters. De Manian indexes a, b, c and V were calculated. Variables are shown as range followed by the mean plus standard deviation in parentheses. The number of measurements is also given.

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