Four new species of free-living marine nematodes of the family Desmodoridae (Nematoda: Desmodorida) and a redescription of Desmodora nini (Inglis, 1963) from the continental shelf off northeastern Brazil

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Abstract

Four new species of marine nematodes were collected from the continental shelf of the Potiguar Basin in northeastern Brazil. Zalonema vicentei sp. n. and Zalonema mariae sp. n. are characterized by having multispiral fovea amphidialis, lateral alae and ventral ala. These features also are found in Pseudochromadora, Desmodorella and Psamnonema. They differ in the cephalic arrangement, and shape of the cephalic capsule and the fovea amphidialis. Croconema fortis sp. n. resembles Desmodora in the shape of the fovea amphidialis and cephalic capsule, but differs in the number of subcephalic setae and ornamentation on the cuticle. Desmodora paraconica sp. n. is characterized by the loop-shaped fovea amphidialis and the long conical-cylindrical tail. This species is similar to the genus Bolbonema, but differs in having the cephalic setae anterior to the fovea amphidialis. Desmodora nini is redescribed, to record details lacking in the original description.

Key words: Nematoda, Zalonema, Croconema, Desmodora, new species, taxonomy, Potiguar Basin

Introduction

The order Desmodorida De Coninck, 1965 is characterized by having a cuticle with transverse striations, usually lacking punctuation and ornamentation (Decraemer & Smol 2006). This order has six families, among them the family Desmodoridae which consists almost exclusively of marine nematodes, except for Prodesmodora Micoletzky, 1923 and Sibayinema Swart & Heyns, 1991, which include freshwater species (Decraemer & Smol 2006).

The family Desmodoridae has 6 subfamilies, of which Desmodorinae contains 16 valid genera. Desmodora De Man, 1889 is characterized by a cryptospiral or spiral fovea amphidialis and with subcephalic setae present or absent (Tchesunov 2014). This genus, most recently revised by Verschelde et al. (1998), contains 34 valid species (Moura et al. 2014). Most species are recorded from the North Sea. The genus Zalonema Cobb, 1920 has 5 valid species; the last species described was by Verschelde & Vincx (1996). The most recent species description and revision of the genus Croconema Cobb, 1920 were contributed by Verschelde et al. (2006). Tchesunov (2014) listed 18 valid species for this genus.

Here, we re-describe Desmodora nini (Inglis 1963) and describe four new species of the family Desmodoridae: Zalonema vicentei sp. n., Zalonema mariae sp. n., Croconema fortis sp. n. and Desmodora paraconica sp. n., from samples collected from the continental shelf in the Potiguar Basin, northeastern Brazil. This is the first report from Brazil of D. nini, originally described from the South African coast.

Materials and methods

Study area. The Potiguar Basin (35 30’S and 035 37’W), located in the states of Ceará and Rio Grande do Norte, Brazil (Figure 1), covers an area of 48,000 km² of which 55% is submerged (Costa et al. 2006). The continental...