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***Zygonemella*: the forgotten genus of the family Xyalidae (Nematoda)**

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Species descriptions of the family Xyalidae, as well as of most marine nematodes, were in general largely made in the past century (e.g. Allgén, 1927; Cobb, 1920; Gerlach, 1957; Lorenzen, 1977). Many of these descriptions were based on one or two specimens or even on juveniles with relatively few features of taxonomic value. Lack of types and inaccuracy in sampling localities are other problems associated with taxonomy of marine nematodes. These issues, together with the fact that in the past researchers had slower exchange of information and reduced access to some journals, led to the multiplication of synonyms. To propose a new species of nematode, particularly within a genus with a convoluted historical background, requires caution and critical taxonomical review prior to the description (Adams, 2001; Fonseca & Decraemer, 2008).

Nematodes species delimitation based solely on morphological characters is problematic for three reasons: a) high phenotypic plasticity among populations (Sommer and Ogawa, 2011), which reduces the number of diagnostic characters; b) poor taxonomical descriptions (Nadler, 2002); and c) existence of cryptic species (Derycke *et al.*, 2005; Fonseca *et al.*, 2008). These problems often lead to greater taxonomic uncertainty within very speciose genera and may bias diversity studies.

This problem is particularly evident in the species-rich and often ecologically dominant Xyalidae Chitwood, 1951. This family contains 44 genera, with some genera, such as *Daptonema* Cobb, 1920 and *Theristus* Bastian, 1865, having more than one hundred nominal species (Fonseca & Bezerra, 2012). Most species descriptions are limited to a few and poorly described diagnostic morphological characters. Moreover, identification keys and systematic revisions (e.g. Lorenzen, 1977; Fonseca & Bezerra, 2012) need to be revised and updated.

Daptonema matrona Neres, Fonseca-Genevois, Torres, Cavalcanti, Castro, Da Silva, Rieger, & Decraemer 2010 was recently described from Pina Basin, an estuarine area located on the coast of the state of Pernambuco (Brazil). The main diagnostic characters given by the authors were: 1) reduced cephalic setae in relation to the head diameter, 2) straight shape of the spicules, 3) amphidial fovea slightly oval, situated less than one head diameter from the anterior end and 4) viviparous reproduction. To accommodate this new species, the authors amended the diagnosis of the genus *Daptonema* proposed by Lorenzen (1977). According to Lorenzen, *Daptonema* species had L-shaped spicules and four cephalic setae longer than 5µm in length. The spicules of *D. matrona* are straight, and their cephalic setae are smaller than 5µm (Neres *et al.*, 2010).

However, the four characters listed by Neres *et al.* (2010) are also the diagnostic characters of the genus *Zygonemella* erected by Cobb (1920) from material sampled in Punta Arenas, Pacific coast of Costa Rica. Gerlach (1957) identified some specimens of *Z. striata* from the mangrove of Cananéia, south coast of São Paulo, Brazil. In his work, Gerlach pointed out that although the specimen from Costa Rica had a larger b-ratio (rate of body length divided by the pharynx length) and tail length than specimens from Cananéia, he considered these differences insufficient to erect a new species. Further revisions recognized the validity of *Zygonemella* as a distinct genus from *Daptonema* (Lorenzen, 1977; Gerlach and Riemann, 1974; Nicholas & Trueman, 2002; Fonseca & Bezerra, 2012). When comparing the descriptions of *Z. striata* and *D. matrona*, the only two morphological differences reported are the presence of a gubernaculum and the presence of five ejaculatory glands in the specimens examined by Neres *et al.* (2010). The gubernaculum was neither mentioned by Cobb or Gerlach, and the male described by Cobb had 10 ejaculatory glands.

To determine if *D. matrona* should be synonymized with *Z. striata*, we sampled specimens from the coast of São Paulo (mangroves at Ubatimirim, Guaratuba, Juréia-Itatins and Cananéia) including the sampling localities previously sampled by Gerlach (1957) at Cananéia and compared with the published data by Neres *et al.* (2010) from Pernambuco.