Tetronarce cowleyi, sp. nov., a new species of electric ray from southern Africa (Chondrichthyes: Torpediniformes: Torpedinidae)

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Abstract

A new species of torpedo ray, Tetronarce cowleyi, sp. nov., is described from specimens collected from the southeastern Atlantic Ocean. The new species is placed in the genus Tetronarce based on a uniform dorsal coloration and absence of papillae around the spiracles. The new species is distinguished from its closest congeners, the North Atlantic Tetronarce nobiliana Bonaparte, 1835, and southwestern Atlantic Tetronarce puelcha Lahille, 1926, by a combination of morphological characteristics including a shorter spiracular length, a proportionally greater head length as measured between snout margin and fifth gill openings, a proportionally greater preoral snout length, a uniform shiny black or dark gray dorsal surface, lacking any prominent markings, and a creamy white ventral color with dark edges in juveniles but fading with growth. Tetronarce cowleyi, sp. nov., is further distinguished from T. nobiliana by its more circular anterior disc shape (vs. relatively straight in T. nobiliana), fewer tooth rows (32/28 vs. 38–53/38–52 in T. nobiliana), greater mouth width (1.5–1.7 times as great as interorbital width vs. 0.5–0.6 times interorbital width in T. nobiliana), smaller distance between second dorsal and caudal fins (3.5–4.9% vs. 6.6–6.8% in T. nobiliana), and a clasper length extending nearly to lower caudal fin origin (claspers in T. nobiliana that extend only two-thirds distance between second dorsal and caudal fins). Tetronarce cowleyi, sp. nov., is known from Walvis Bay, Namibia to Algoa Bay, Eastern Cape, South Africa, at depths of 110 to 457 m.

Key words: Tetronarce, electric ray, new species, Namibia, South Africa, Southeastern Atlantic Ocean

Introduction

The family Torpedinidae Bonaparte, 1838, has long been considered to consist of a single genus, Torpedo Houttuyn, 1764, and two subgenera, Tetronarce Gill, 1862, and Torpedo Houttuyn, 1764 (Compagno, 2005). However, these two subgenera have been recently elevated to full generic rank based on their distinct morphology (treated as distinct genera in Carvalho et al., 2002; Ebert et al., 2013; Ebert, 2014; Carvalho, in press). The two genera can be distinguished by their dorsal coloration and the presence or absence of spiracular papillae. Furthermore, Tetronarce species tend to attain a much larger size (up to 180 cm total length; TL) than Torpedo species, which are usually small to moderate sized (range from 25 to 80 cm TL) electric rays (Carvalho, in press). The genus Tetronarce has up to 10 valid species, while the genus Torpedo has at least 15 valid species; both genera have several known undescribed species (Carvalho et al., 2002; Compagno, 2005; Haas & Ebert, 2006; Carvalho, in press).

Representatives of both genera occur in southern African waters. The genus Torpedo is represented by T. fuscomaculata Peters, 1855, and T. sinuspersici Olfers, 1831 (Compagno, 1986; Compagno et al., 1989; Carvalho,
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