



Morphological and molecular evidence for a new species of longnose skate (Rajiformes: Rajidae: *Dipturus*) from Argentinean waters based on DNA barcoding

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Abstract

A new species of *Dipturus* is described from ten specimens collected off Patagonia, Argentina. Morphological and molecular approaches were used to compare among specimens of recognized *Dipturus* species. By comparing morphometric, meristic and mitochondrial cytochrome *c* oxidase I (COI) sequence data, specimens referred to as longnose skate and originally regarded as *D. chilensis* were shown to be a discrete species as distinguished from both the Yellownose skate, *D. chilensis* and the Roughskin skate, *D. trachyderma*. *Dipturus argentinensis* n. sp. can be distinguished from all other southwestern Atlantic longnose skate species by its color pattern, lack of squamation on both upper and lower surfaces of the disc, and a long, thin tail that is approximately half the total length. The new species has one median row of 10 to 24 small caudal thorns, one or two interdorsal thorns and 35 to 40, and 34 to 43 tooth rows on upper and lower jaws, respectively. The 648 base pair COI mitochondrial DNA “barcodes” derived from specimens of *D. argentinensis* are identical to each other and exhibit greater than 3% sequence divergence from all other *Dipturus* species similarly characterized to date. Taken together, these independent morphological and molecular observations serve to corroborate one another and thus provide strong evidence for the recognition of *D. argentinensis* as a new species.

Key words: *Dipturus argentinensis*, n. sp., COI, DNA barcode, Argentina, Rajidae

Introduction

Longnose skates of the genus *Dipturus* Rafinesque have a worldwide distribution occurring mostly in cool-temperate to tropical seas, continental shelves and slopes except the Eastern North Pacific (Compagno 1999), from 25 to approximately 1150 m depth (Mc Eachran & Miyake 1990). Ebert & Compagno (2007) recognized 31 nominal species of *Dipturus*, two of which have been reassigned to the genus *Zearaja* (Last & Gledhill 2007). Since then 12 more new nominal species have been described for Australian waters (Last 2008, Last *et al.* 2008, Séret & Last 2008), and another one for the south China Sea (Jeong & Nakabo 2008). In the southwest Atlantic the genus is represented by five valid species: the South American Yellownose skate *D. chilensis* (Guichenot 1848), the Thorny tail skate *D. diehli* Soto & Mincarone 2001, the Thintail skate *D. leptocauda* (Krefft & Stehmann 1975), the South Brazilian skate *D. mennii* Gomes & Paragó 2001 and the Roughskin skate *D. trachyderma* (Krefft & Stehmann 1975). The Florida skate *D. teevani* (Bigelow & Schroeder 1951) although currently known from tropical waters of the Caribbean Sea (Jacob & McEachran 1994) has been