



## Aspidochirotida (Echinodermata: Holothuroidea) from the northeast coast of Brazil

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### Abstract

This is a taxonomic work on the aspidochirotid sea cucumbers from shallow waters in Northeast Brazil. We studied 165 specimens, classified into 2 families, 3 genera, 7 subgenera and 9 species. Descriptions, illustrations and literature data are included for each species, in addition to ecological notes and information on their distribution in the northeast coast of Brazil. A taxonomic key is provided for the identification of the species.

**Key words:** Sea cucumbers, South Atlantic, Stichopodidae, Holothuriidae

### Resumo

Este é um trabalho taxonômico sobre as holotúrias da ordem Aspidochirotida de águas rasas do Nordeste do Brasil. Foram analisados 165 espécimes, classificados em 2 famílias, 3 gêneros, 7 subgêneros e 9 espécies. São incluídas descrições, ilustrações e dados da literatura para cada espécie, além de notas ecológicas e informações sobre sua distribuição na costa do Nordeste do Brasil. Uma chave taxonômica é fornecida para a identificação das espécies.

**Palavras-chave:** Holotúrias, Atlântico Sul, Stichopodidae, Holothuriidae

### Introduction

Aspidochirotida is one of the most diverse orders of the class Holothuroidea. It usually comprises medium to large size holothurians and some species of commercial value (Conand 2001). Its diversity is high in shallow tropical environments (O'Loughlin *et al.* 2007). Three families are included in the Aspidochirotida: Stichopodidae, Synallactidae, and Holothuriidae. The latter taxon is the most numerous, containing about 11 genera, of which *Holothuria* has more species (Honey *et al.* 2011). Studies on Holothuroidea from the Brazilian coast are still insufficient to estimate the current diversity of the class. The first inventories including this fauna were Ludwig (1881) and Sluiter (1910). Later, works such as Ancona Lopez & Sawaya (1955), Deichmann (1963), Mondin (1973), and Tommasi (1969) listed altogether 31 species of holothurians for the Brazilian coast and contributed with new records. Recent studies such as Moura *et al.* (2010), Martins *et al.* (2012a; 2012b) and Oliveira & Christoffersen (2012) have increased our knowledge on the holothurians of Brazil, which presently includes around 40 species. This work presents the aspidochirotid holothurians from shallow waters of the northeast coast of Brazil. A key for their identification is provided and notes on their ecology and distribution were added.

features. The study area receives a large influence from rivers. Moreover, in the East South Atlantic the holothurian fauna also is impoverished as observed by Thandar (1984). Few studies were developed for Holothuroidea in the South Western Atlantic (Hadel *et al.* 1999), mainly in Brazil. Furthermore, the material comes from shallow waters, so that research in subtidal areas is needed and should be encouraged.

Many aspidocrotids species are commercially important. Their fishing in Brazilian waters is not common. However there is fishing activity of *I. badiotus* and *H. (H.) grisea* in the States of São Paulo and Rio de Janeiro (Hadel *et al.* 1999), but such activities are not known in the northeast. *Actinopyga agassizii* is much fished in the Caribbean Sea, but its fishing was not observed in Brazil. According to data of the IUCN Red List of Threatened Species, *Holothuria (Thymiosycia) arenicola* was listed in “Data deficient” rank (Conand & Gamboa 2013), which suggests more studies are needed on its taxonomy, biology and ecology. The species *Actinopyga agassizii*, *Holothuria (Halodeima) grisea*, *Holothuria (Platyperona) parvula*, *H. (S.) surinamensis* and *H. (T.) princeps* were listed in “Least Concern” rank (Alvarado *et al.* 2013, Mercier 2013, Toral-Granda *et al.* 2013a, 2013b). According to Samyn (2013) the loss of habitats due to coastal development is a threat for *H. (S.) surinamensis*, and this concern can be extended to other shallow-water species.

New sampling efforts in shallow waters and in waters below ten meters depth may increase these numbers in the future. In addition, more studies on taxonomy, ecology and physiology of Aspidochirotida species are needed to estimate their stocks and in order to propose actions for their conservation in these and other localities. The present study provides an important evaluation on the diversity of Holothuroidea to along the northeastern coast of Brazil.

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