



***Aplysina* Nardo (Porifera, Verongida, Aplysinidae) from the Brazilian coast with description of eight new species**

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Abstract

A revision of Brazilian *Aplysina* was conducted based on morphological study of species alive as well as preserved in the collections of Museu Nacional. In total, 190 specimens were studied in the lab. Identification was achieved by analysis of the external morphology, in combination with skeletal architecture and its components. Our analyses revealed marked within individual variation for most species in characters associated to the spongin fibres, suggesting a low diagnostic strength for this set of characters in *Aplysina*. External morphology, on the other hand, permitted clearcut diagnoses for most species. Fifteen species were identified and are fully described below. Eight of these are new to science. A neotype for *A. fulva* is proposed here. The amended list of *Aplysina* species for the Brazilian coast is: *A. alcicornis* sp.n., *A. caissara*, *A. cauliformis*, *A. cristagallus* sp.n., *A. fistularis*, *A. fulva*, *A. insularis*, *A. lacunosa*, *A. lactuca* sp.n., *A. lingua* sp.n., *A. muricyana* sp.n., *A. orthoreticulata* sp.n., *A. pergamentacea*, *A. pseudolacunosa* sp.n. and *A. solangeae* sp.n. A tentative identification key for these species is provided.

Key words: *Aplysina*, Porifera, Sponges, Taxonomy, marine biodiversity, continental shelf, SW Atlantic, REVIZEE

Introduction

Aplysina Nardo, 1834 often comprises large sponges, with live colours and varied forms. These sponges possess a skeleton formed only by pithed spongin fibers arranged in tridimensional geometric meshes, without spicules or foreign detritus. The presence of a rich array of brominated compounds in these animals motivated Bergquist (1978, 1980) to propose their classification in a separate order, Verongida. A series of biological activities is already known for *Aplysina*-derived compounds, viz. antibiotic (antibacterial—Fattorusso et al., 1972; D'ambrósio et al., 1983; antifungal—Murata et al., 1992), antiviral (Gunasekera and Cross, 1992) and especially cytotoxic/antitumoral (e.g. Kreuter et al., 1989; Acosta & Rodriguez, 1992). *Aplysina* is highly conspicuous in the Tropical South-western Atlantic, being widely distributed on the Brazilian coast. In some localities it constitutes an important fraction of the biomass of Porifera (Muricy et al., 1991, 2006) as well as relative to other sessile benthic invertebrates. *Aplysina* is one of a few sponge genera which are markedly richer in the Atlantic, in contrast to the Indian and Pacific Oceans.

Only eight species of *Aplysina* were this far known from the Brazilian coast: *A. archeri* (Higgin, 1875), *A. caissara* Pinheiro and Hajdu, 2001, *A. capensis* (Carter, 1881), *A. cauliformis* (Carter, 1882), *A. fistularis* (Esper, 1794), *A. fulva* (Pallas, 1766), *A. lacunosa* (Pallas, 1766) and *A. pergamentacea* Hechtel, 1983. Two of these records, viz. *A. archeri* (Higgin, 1875) sensu Lendenfeld (1889) and *A. capensis* (Carter, 1881), are considered invalid here. The rationale for this decision will be presented in the discussion section. In this work, we describe fifteen species of *Aplysina* from the Brazilian coast, eight of which are new to science, based on underwater observations of large populations as well as on preserved material in collections (ca. 200 specimens examined).

Material and Methods

The specimens were collected by snorkeling, scuba diving or dredging and photographed *in situ* whenever possible. The main sources for the materials worked with here were a series of bioprospecting expeditions to Salvador (BA; Berlinck et al., 2004) and Fortaleza (CE), Programme REVIZEE – Central Score (Lavrado & Ignacio, 2006), as well as isolated research projects on Brazilian islands and archipelagoes (e.g. Muricy et al., 2003; Ribeiro & Muricy, 2004; Moraes et al., 2006). Mostly, specimens were preserved in 70 or 96% ethanol. The microscopic slides of spongin fibers were prepared according to Pinheiro & Hajdu (2001).

Abbreviations used are: AL (Alagoas State), BA (Bahia State), BMNH (The Natural History Museum, London), CAPES (Coordination for the Improvement of Graduate Level Personnel), CE (Ceará State), MNRJ