

## SHORT COMMUNICATION

## Seven invertebrates new for the marine fauna of Madeira Archipelago

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## INTRODUCTION

Ocaña and den Hartog (2002) recorded 18 species of sea anemones from Madeira archipelago. During SCUBA dives along the coasts of Madeira and Porto Santo, the present author encountered a further three sea anemone species and several other marine invertebrates not yet recorded for the marine fauna of Madeira Island. Similar to previous publications (e.g. Wirtz 1998, Wirtz 2007, Ocaña & Wirtz 2009), these findings are reported here.

## MATERIAL &amp; METHODS

The observations were made while SCUBA diving and snorkelling at various sites (described below) around Madeira and Porto Santo Islands. Specimens were deposited in the collection of the Natural History Museum of Funchal, Madeira, in the collection of the Museu del Mar de Ceuta, and in the private collections of Lucas Cervera (*Limenandra nodosa*) and Oscar Ocaña (*Sagartia troglodytes*).

## RESULTS

CNIDARIA: ACTINIARIA

*Aiptasia diaphana* (Rapp, 1829)

Only the closely related *Aiptasia mutabilis* (Gravenhorst, 1831) has previously been recorded from Madeira (Ocaña & den Hartog 2002); it was found by the present author to be common in shallow water, in particular in large tide-pools. The related species *Aiptasia diaphana* is now common in the harbour of Porto Santo Island (33°03'41''N, 16°18'51''E), the harbours of Quinta do Lorde (32°44'29''N, 16°42'43''E) and of Santa Cruz (32°41'29''N, 16°47'39''E), Madeira Island, where it covers large areas on pontoons and floating ropes. Specimens from Porto Santo harbour (Figure 1) were deposited in the collection of the Funchal Natural History Museum under the number MMF 36280. Additional specimens are in the collection of the Museu del Mar de Ceuta, MMC-115.

*A. diaphana* has been previously recorded from the Mediterranean Sea, continental Portugal, and from the Canary Islands (Ocaña & Den Hartog 2002)

*Andresia parthenopea* (Andres, 1883)

This sea anemone reaches a tentacle diameter of almost 10 cm (Figure 2). It was occasionally encountered at night, on sandy bottom, in 18-25 m depth, off Quinta do Lorde harbour (32°44'29''N, 16°42'43''E). One specimen was deposited in the collection of the Funchal Natural History Museum under the number MMF 40167. Another

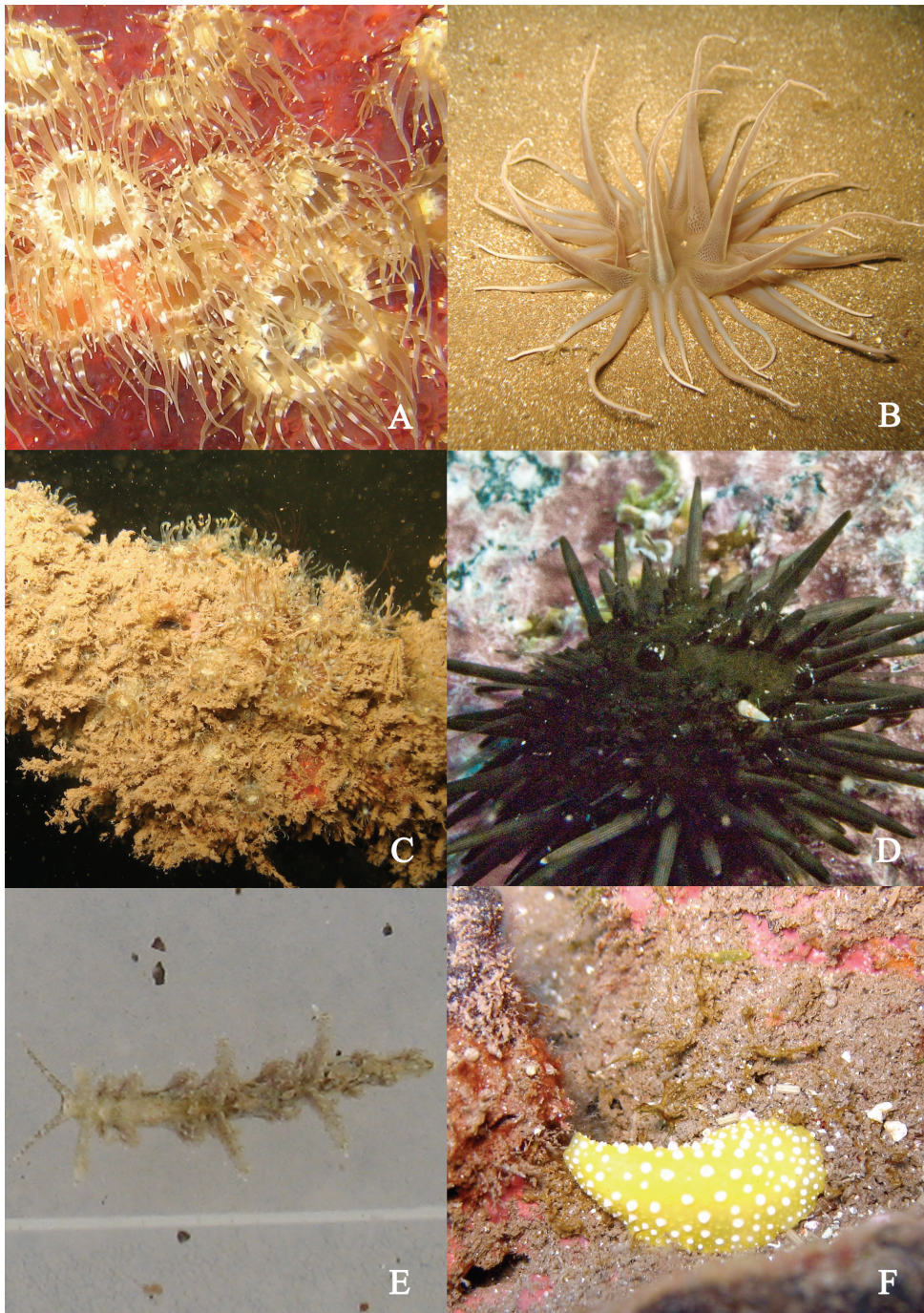


Fig. 1. New invertebrates for the marine fauna of Madeira: A) *Aiptasia diaphana* from Porto Santo harbour; B) *Andresia parthenopea* off Quinta do Lorde harbour, Madeira Island; C) *Sagartia troglodytes* in Machico harbour, Madeira Island; D) *Vitreolonia* sp. on *Arbaciella elegans* at Caniço, Madeira; E) *Limenandra nodosa* from Porto Moniz, Madeira; F) *Phyllidia flava* from near Porto Moniz, Madeira (photo credits – A,B,C,E and F by Peter Wirtz, photo D by Rodrico Schuetz).

specimen is in the collection of the Museu del Mar de Ceuta, MMC-116.

The species is known from the Mediterranean Sea and in the eastern Atlantic from the coast of France (Roscoff, Cherbourg) to the Algarve (den Hartog & Ates 2011). Madeira extends the known range of the species southwards.

***Sagartia troglodytes* (Price, 1847)**

A colony of this species was encountered on an iron rod in Machico harbour (32°43'06''N, 16°45'42''E), in 2 m depth, during a night dive (Figure 3). It is known from the Mediterranean Sea, and in the eastern Atlantic from Iceland to the Canary Islands (Ocaña & den Hartog 2002). There is some discussion as to the validity and distribution of the species (compare Shaw et al. 1987, Ocaña & den Hartog 2002, and den Hartog & Ates 2011) but the question appears unresolved and (following advice by O. Ocaña) the name *Sagartia troglodytes* (Price, 1847) is maintained here rather than consider it *Sagartia ornata* Holdsworth, 1855.

MOLLUSCA

***Vitreolina* sp.**

This small snail of the family Eulimidae is quite common on the sea urchin *Arbaciella elegans* (Figure 4), in a depth range of at least 10 to 15 m, below stones, at Caniço de Baixo (32° 38'27''N, 16°49'57''E). Specimens were sent to Anders Warén, who wrote that it might be an undescribed species; the specimens are now in the Swedish Museum of Natural History under the number SMNH 103138. Another specimen is in the collection of the Funchal Natural History Museum under the number MMF 40203.

MOLLUSCA: NUDIBRANCHIA

***Limenandra nodosa***

Haefelfinger & Stamm, 1958

One individual of this species was encountered on an unidentified brown alga in 2 m depth, at night, on the inner wall of Porto Moniz harbour in September 2011. The specimen was sent to Lucas Cervera, who identified the species, which is

known from the Mediterranean Sea and the Canary Islands (Cervera et al. 2006).

***Phyllidia flava* (Aradas, 1847)**

One individual of this species was encountered on rocky bottom in 30 m depth at Baixa da Gerarda near Porto Moniz (32°51'38'' N, 17°09'07'' W) in July 2010. The specimen is in the collection of the Funchal Natural History Museum under the number MMF 41958. The species is known from the Mediterranean Sea, the Canary Islands and from the Cape Verde Islands (Cervera et al. 2006, Wirtz 2009).

CHORDATA: APLOUSOBRANCHIA

***Distaplia corolla* Monniot, 1975**

The Caribbean tunicate *Distaplia corolla* has probably been transported to the Azores by boats (Monniot & Monniot 1983). It is a common species there. In a previous publication (Wirtz 2007), its presence at Porto Santo Island was reported. The species has now spread to Madeira Island. It can be found not only inside St Cruz harbour (32°41'29''N, 16°47'39''E) and inside Quinta do Lorde harbour (32°44'29''N, 16°42'43''E) but also in the area outside Quinta do Lorde harbour.

DISCUSSION

*Aiptasia diaphana* and *Sagartia troglodytes* were found only inside harbours and *Andresia partenopea* was found close to a harbour. It therefore appears possible that these species have only recently been introduced, by man, to Madeira archipelago. The spread of *Distaplia corolla* and *Zoobotryon verticillatum* (Wirtz & Canning-Claude 2009) from inside harbours to outside harbours also exemplifies the continuous, man-made changes in the marine fauna of Madeira Island.

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anemones and comments on *Sagartia troglodytes*. Anders Warén identified the *Vitreolina* and Lucas Cervera identified *Limenandra nodosa*. Thanks to Rainer Holland, who - in 2 m depth - sawed through the iron rod on which *Sagartia troglodytes* was growing.

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