

THREE SHRIMPS, FIVE NUDIBRANCHS, AND TWO TUNICATES NEW FOR THE MARINE FAUNA OF MADEIRA

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ABSTRACT: The shrimps *Hippolyte hunti* (GOSSE, 1877), *Processa macrophthalma* NOUVEL & HOLTHUIS, 1957, *Thor amboinensis* (DE MAN, 1888), the nudibranchs *Chromodoris purpurea* (LAURILLARD, 1831), *Chromodoris britoi* ORTEA & PEREZ, 1983, *Hypselodoris webbi* (ORBIGNY, 1839), *Discodoris atromaculata* (BERGH, 1880), *Platydoris argo* (L. 1776), and the tunicates *Eudistoma angolanum* MICHAELSEN, 1915 and *Phallusia mammillata* (CUVIER, 1815) are recorded from the coast of Madeira for the first time.

For *Thor amboinensis* this is a northward extension of the known range, for *Phallusia mammillata* this is a southward extension of the known range; the presence of the other eight species was to be expected as they had already been recorded both north and south of Madeira.

RESUMO: TRÊS CAMARÕES, CINCO LESMAS DO MAR, E DOIS TUNICADOS NOVOS PARA A FAUNA MARINHA DA MADEIRA. Os camarões *Hippolyte hunti* (GOSSE, 1877), *Processa macrophthalma* NOUVEL & HOLTHUIS, 1957, *Thor amboinensis* (DE MAN, 1888), as lesmas do mar *Chromodoris purpurea* (LAURILLARD, 1831), *Chromodoris britoi* ORTEA & PEREZ, 1983, *Hypselodoris webbi* (ORBIGNY, 1839), *Discodoris atromaculata* (BERGH, 1880), *Platydoris argo* (L., 1776), e os tunicados *Eudistoma angolanum* MICHAELSEN, 1915 e *Phallusia mammillata* (CUVIER, 1815) são assinalados pela primeira vez nas costas da Madeira. Para a espécie *Thor amboinensis* este facto corresponde a uma extensão da sua distribuição conhecida para Norte; para a espécie *Phallusia mammillata* este facto corresponde a uma extensão da sua distribuição conhecida para Sul; a presença das outras oito espécies nas costas da Madeira não surpreende, porque existem registos para áreas situadas mais a Norte e Sul do Arquipélago da Madeira.

INTRODUCTION

During a survey of the larger marine invertebrates at the coasts of Madeira, I encountered a number of species that apparently had not yet been recorded from Madeira. In the following I describe ten such cases. Specimens of several other species of uncertain status, some of them as yet undescribed, were sent to specialists, who will report on them in the course of their work.

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MATERIAL AND METHODS

The ongoing survey of the larger marine invertebrates of the coasts of Madeira is performed SCUBA-diving and therefore limited to a depth range down to about 50m. Animals are photographed in the field. When it appears necessary, specimens are then collected for later identification. In most cases, preserved specimens are sent to specialists for identification or confirmation of identification (see Acknowledgements).

RESULTS

A) Crustacea, Natantia

1) *Hippolyte hunti* (GOSSE, 1877)

The species is quite common in shallow water (at least 5-18m depth, probably also outside this range) at the south coast of Madeira. As described from various other places (references in TÜRKAY & GÖTHEL, 1990), *Hippolyte hunti* lives in close association with feather-stars of the genus *Antedon*. A colour photo of the species can be found in TÜRKAY & GÖTHEL (1990). Specimens have been deposited at the Museu Municipal do Funchal - registration number MMF 25345 - and at the National Natuurhistorisch Museum at Leiden, The Netherlands,- registration number RMNH D 42415.

Previously known distribution: West coast of Ireland, Channel coast of England and France, western Mediterranean (TÜRKAY & GÖTHEL, 1990; FRANSEN, pers. com.), Canary Islands (PÉREZ SANCHEZ & MORENO BATET, 1991).

2) *Processa macrophthalma* NOUVEL & HOLTHUIS, 1957

The species is common in shallow water (at least 10-22m depth, probably also outside this range) at the south coast of Madeira. During night dives it is occasionally seen running over sandy, muddy, and pebble substrate. Specimens have been deposited at the Museu Municipal do Funchal - registration number MMF 25407 - and at the National Natuurhistorisch Museum at Leiden, The Netherlands,- registration number RMNH D 42415.

Previously known distribution: Mediterranean Sea, Portugal (Algarve), Spain (near Cadiz) and Gulf of Guinea (FRANSEN, pers. com.).

3) *Thor amboinensis* (DE MAN, 1888)

At Madeira, the species is frequently associated with the large actinian *Telmatactis cricoides* as described in a popular article by WIRTZ (1991a); this article also contains two colour photos of the species. *Thor amboinensis* has a worldwide circumtropical distribution and has been encountered in association with 13 different genera of sea anemones (FRANSEN, 1989). A specimen from Madeira has been deposited at the National Natuurhistorisch Museum

at Leiden, the Netherlands, - registration number RMNH D 42416.

Previously known distribution: circumtropical, in the eastern Atlantic north to Canary islands (FRANSEN, 1989 and pers. com.)

B) Mollusca, Nudibranchiata

1) *Chromodoris purpurea* (LAURILLARD, 1831)

This nudibranch is occasionally seen crawling over rock face during night dives in a depth range of at least 4 to 24m. At day it can be found by turning over stones. A colour photo is given by GOSLINER (1990). A specimen has been deposited at the Museu Municipal do Funchal - registration number MMF 25346.

Previously known distribution: Mediterranean Sea, Eastern Atlantic coast from the Cape Verde islands north to Spain and the Azores (ORTEA, 1988, GOSLINER, 1990).

2) *Chromodoris britoi* ORTEA & PEREZ 1983

A single animal was found each by turning over stones at a depth of about 15 m near Caniço, southeastern coast of Madeira and at a depth of about 10 m near Cabo Girão, south coast of Madeira. The second specimen was sent to J. ORTEA at Oviedo for confirmation. A colour photo of the species can be found in GOSLINER (1990), who uses the name *C. clenchi* (RUSSEL, 1935) and states that the name *C. britoi*, ORTEA & PEREZ 1983 is a synonym. However, recently ORTEA *et al.* (in print) have shown that *C. britoi* is a valid Eastern Atlantic species, whereas *C. clenchi* apparently occurs only in the Western Atlantic.

Previously known distribution: Eastern Atlantic from the Azores to the Canary Islands and in the Mediterranean Sea (ORTEA *et al.* in print).

3) *Hypselodoris webbi* (ORBIGNY, 1839)

A specimen of this conspicuous, large blue nudibranch was collected at 34 m depth at Cais do Porto Novo, southeast coast of Madeira and deposited at the Museu Municipal do Funchal, registration number MMF 25385. The species is quite common at Madeira, on rocky shores, during the months of spring and early summer.

Previously known distribution: Western Atlantic from Brazil, Puerto Rico and Florida; eastern Atlantic from the Cape Verde Islands, the Canary islands, the Azores, and the Atlantic coasts of France and Spain; Mediterranean Sea (references in ORTEA, 1988 and in GOSLINER, 1990).

4) *Discodoris atromaculata* (BERGH, 1880)

As in other areas, this species (which frequently is called *Peltodoris atromaculata*) is usually seen on the fig sponge *Petrosia ficiformis*, on which it feeds. It is common at

Madeira and Porto Santo islands.

Previously known distribution: Mediterranean Sea and Spanish Atlantic Coast to Canary Islands; also Azores (WIRTZ and MARTINS, 1993).

5) *Platydoris argo* (LINNAEUS, 1776)

This is another common species at Madeira. It is night-active at rocky shores in a depth range of (at least) 5 to 25 m. Previously known distribution: Western Mediterranean Sea, Atlantic coasts from France to the Canary islands; also Azores (WIRTZ and MARTINS, 1993).

C) Tunicata

1) *Eudistoma angolatum* MICHAELSEN, 1915

Colonies of this tunicate were seen at overhanging rock walls in shallow water (2 to 5 m depth) both at the southeastern and at the northwestern coast of Madeira and at the southeastern coast of Porto Santo. A colour photo of the species is printed in a popular article by WIRTZ (1991b). Specimens are deposited in the Muséum National d'Histoire naturelle at Paris, registration number MNHN A3 EUD 68 and at the Museu Municipal do Funchal, registration number MMF 25384.

Previously known distribution: South Africa to Senegal, Azores (MONNIOT, 1974).

2) *Phallusia mammillata* (CUVIER, 1815)

Individuals of this large white tunicate were seen in the harbour of Porto Santo, in the harbour of Funchal and in front of the Lido, Funchal, in a depth range of 0.5 to 20 m. Specimens are deposited in the Muséum National d'Histoire naturelle at Paris, registration number MNHN P5 PHA 71 - and the Museu Municipal do Funchal - registration number MMF 25401.

Previously known distribution: Mediterranean Sea, northeastern Atlantic (MONNIOT, pers. com.).

DISCUSSION

In the Eastern Atlantic, the shrimp *Thor amboinensis* appears to reach as far north as Madeira. The marine fauna of Madeira is a mixture of species with Mediterranean affinities and of more "tropical" species that sometimes have their northern limit here. Other examples of "tropical" species that apparently reach their northern limit at Madeira are the coral *Madracis asperula* and the fish *Heteroconger longissimus*.

For the tunicate *Phallusia mammillata* the record at Madeira provides a southward extension of the known range. The presence of the other eight species at Madeira was to be

expected as they had already been recorded both north and south of Madeira.

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