

ADDITIONS TO THE MARINE MOLLUSCS OF THE FORMIGAS ISLETS, AZORES

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ABSTRACT

The Formigas islets were surveyed for its molluscan fauna in 1990 during the "Santa Maria & Formigas 1990" scientific expedition. Preliminary results were published by Ávila & Azevedo (1997). That earlier list is here complemented with new records and some corrections. Species determination, synonymy and the ordination of families follows the CLEMAM database (<http://www.mnhn.fr/base/malaco.html>).

Six new taxa are reported to the Azores: *Vitreolina curva* (Monterosato, 1874), *Nassarius* cf. *ovoideus* (Locard, 1886), *Mangelia coarctata* (Forbes, 1840), *Raphitoma leufroyi* (Michaud, 1838), *Coryphela* sp. and *Pseudochama gryphina* (Lamarck, 1819). The total number of shallow-water marine molluscs from Formigas islets is now of 88 taxa (1 Polyplacophora, 66 Gastropoda, 20 Bivalvia and 1 Cephalopoda).

RESUMO

A fauna malacológica dos Ilhéus das Formigas foi abordada por Ávila & Azevedo (1997). A presente lista vem completar e corrigir aquele documento. Seis novos taxa são dados para os Açores: *Vitreolina curva* (Monterosato, 1874), *Nassarius* cf. *ovoideus* (Locard, 1886), *Mangelia coarctata* (Forbes, 1840), *Raphitoma leufroyi* (Michaud, 1838), *Colyphela* sp. e *Pseudochama gryphina* (Lamarck, 1819). O número total de moluscos marinhos das águas pouco profundas dos ilhtus das Formigas ascende agora a 88 taxa (1 Polyplacophora, 66 Gastropoda, 20 Bivalvia e 1 Cephalopoda).

## INTRODUCTION

The shallow bottoms of the Formigas islets were surveyed for its molluscan fauna in 1990 during the "Santa Maria & Formigas 1990" scientific expedition. Preliminary results were published by Ávila & Azevedo (1997). That earlier list is here complemented with new records and some corrections. Species determination, synonymy and the ordination of families follows the CLEMAM database (<http://www.mnhn.fr/base/malaco.html>).

Six new taxa are reported to the Azores: *Vitreolina curva* (Monterosato, 1874), *Nassarius* cf. *ovoideus* (Locard, 1886), *Mangelia coarctata* (Forbes, 1840), *Raphitoma leufroyi* (Michaud, 1838), *Coyphela* sp. and *Pseudochama gryphina* (Lamarck, 1819). The total number of shallow-water marine molluscs from Formigas islets is now of 88 taxa (1 Polyplacophora, 66 Gastropoda, 20 Bivalvia and 1 Cephalopoda).

## ABBREVIATIONS USED IN TEXT

DBUA -Department of Biology of the University of the Azores, Ponta Delgada.

ImagDOP -image bank of the Department of Oceanography and Fisheries, University of the Azores, Horta.

DOP/ML -Molluscs Reference Collection of the DOP/UA.

DOP/MF -DOPMARè Formigas: *in situ* visual identification by researchers of the DOP/UA team (specimens were not collected).

DO -personal collection of Mr. Duarte Oliveira.

## SYSTEMATIC LIST

Phylum MOLLUSCA

Class POLYPLACOPHORA

Order LEPIDOPLEURIDA

Ischnochitonidae

***Lepidochitona simrothi* (Thiele, 1902)**

*Lepidochitona simrothi* (Thiele). DOP/ML 0032

Class GASTROPODA

Subclass PROSOBRANCHIA

Order APOGASTROPODA

Eulimidae

***Vitreolina curva* (Monterosato, 1874)**

*Eulima* sp. Formigas (Ávila & Azevedo, 1997: 327) (misidentification).

*Vitreolina curva* (Monterosato, 1874). DBUA 338, 343, 355.

Remarks: first record to the Azores.

Rissoidae

***Alvania internodula* (Hoenselaar & Goud, 1998)**

*Alvania* sp. Formigas (Ávila & Azevedo, 1997: 326).

Assimineidae

***Paludinella littorina* (delle Chiaje, 1828)**

*Paludinella littorina* (delle Chiaje, 1828). DBUA 355.

Cypraeidae

***Luria lurida* (Linnaeus, 1758)**

*Gibberula* sp. (Ávila & Azevedo, 1997: 327) (misidentification). DBUA 362 (juvenile).

Ranellidae

***Ranella olearium* (Linnaeus, 1758)**

*Ranella olearium* (Linnaeus, 1758). DO 15.

Nassariidae

***Nassarius* cf. *ovoideus* (Locard, 1886)**

? *Colus* sp. Formigas (Ávila & Azevedo, 1997: 327) (misidentification).

*Nassarius* cf. *ovoideus* (Locard, 1886). DBUA 340.

Remarks: first record to the Azores.

## Collumbellidae

*Anachis avaroides* Gofas, 1989.

*Raphitoma carnosula* (Jefferys, 1869). Formigas (Ávila & Azevedo, 1997: 327) (misidentification).

*Anachis avaroides* Nordsieck, 1975. DOP/ML 0034

## Marginellidae

*Volvarina oceanica* Gofas, 1989

*Volvarina* sp. Formigas (Ávila & Azevedo, 1997: 327).

*Volvarina oceanica* Gofas, 1989. DBUA 338,342.

## Mitridae

*Mitra cornea* (Lamarck, 1811)

*Mitra nigra* (Gmelin, 1791). Formigas (Ávila & Azevedo, 1997: 327) (misidentification).

*Mitra cornea* Lamarck, 1811. DOP/ML 0035.

*Remarks:* *Mitra nigra* (Gmelin, 1791) is a species that extends from Cape Verde Islands to Angola, being present also at São Tomé (Rolan *et al.*, 1997). *Mitra cornea*, a species with a planktotrophic type of development, has a white body with a yellow border along the superior margin of the foot and in the tentacles, whereas the body of *M. corniculum*, is entirely white (see Moran *et al.*, 1989; Rolan *et al.*, 1997).

## Turridae

*Haedropleura septangularis* (Montagu, 1803)

*Haedropleura septangularis* (Montagu, 1803). DBUA 338.

## Conidae

*Mangelia coarctata* (Forbes, 1840)

*Mangelia* sp. Formigas (Ávila & Azevedo, 1997: 327).

*Mangelia coarctata* (Forbes, 1840). DBUA 338.

*Remarks:* first record to the Azores.

*Raphitoma leufroyi* (Michaud, 1838)

*Raphitoma leufroyi* (Michaud, 1838). DBUA 338, 343.

*Remarks:* first record to the Azores.

## Subclass OPISTHOBRANCHIA

## Order THECOSOMATA

## Cavoliniidae

*Cavolinia inflexa* (Lesueur, 1813)

*Cavolinia inflexa* (Lesueur, 1813). DBUA 355.

## Order NUDIBRANCHIA

## Chromodorididae

*Chromodoris britoi* Ortea & Perez, 1983

*Chromodoris britoi* Ortea & Perez, 1983. Formigas Islets (DOP/MF 1999/06/11).

*Chromodoris krohni* (Vérany, 1846)

*Chromodoris krohni* (Vérany, 1846). *Imag*DOP 34, 35.

*Chromodoris purpurea* (Risso in Guérin, 1831)

*Chromodoris purpurea* (Risso in Guérin, 1831). *Imag*DOP 34.

*Glossodoris edmundsi* Cervera, Garcia-Gomez & Ortea, 1989.

*Glossodoris edmundsi* Cervera, Garcia-Gomez & Ortea, 1989. Formigas Islets (DOP/MF 2000/08/31). Dollabarat bank (DOP/MF 1999/06/07, DOP/MF 2000/08/01)

*Hypselodoris picta* (Schultz in Philippi, 1836)

*Hypselodoris picta* (Schultz in Philippi, 1836). *Imag*DOP 33, 34, 35. Formigas Islets (DOP/MF 1999/06/11, DOP/MF 2000/08/31). Dollabarat bank (DOP/MF 1999/06/09). DBUA 354.

*Remarks:* *Hypselodoris picta azorica* Ortea, Valdés & Garcia-Gomez 1996 is a junior synonym.

## Discodorididae

*Discodoris atromaculata* (Bergh, 1880)

*Discodoris atromaculata* (Bergh, 1880). 1997 327). Formigas Islets (DOP/MF 1999/06/01). Between Dollabarat bank and the Formigas Islets (DOP/MF 1999/11/06).

## Platydorididae

*Platydoris argo* (Linnaeus, 1767)

*Discodoris* cf. *millegrana* (Alder & Hancock, 1854). Ávila & Azevedo, 1997: 328 (misidentification).

*Platydoris argo* (Linnaeus, 1767). Dollabarat bank (DOP/MF 1999/06/07).

## Polyceridae

*Polycera elegans* (Bergh, 1894)

*Polycera elegans* (Bergh, 1894). Formigas Islets (DOP/MF 1999/06/04).

## Flabellinidae

*Coryphella* sp.

*Coryphella* sp. *Imag*DOP 34.

*Remark* it is the first time that this genus is given to the Azores.

Class BIVALVIA

Subclass HETERODONTA

Order PTERIOIDA

## Pectinidae

*Chlamys* cf. *varia* (Linnaeus, 1758)

*Chlamys* cf. *varia* (Linnaeus, 1758). DBUA,340.

Order VENEROIDA

## Chamidae

*Pseudochama gyphina* (Lamarck, 1819)

*Spondylus* cf. *senegalensis* Schreibers, 1793. Formigas (DBUA 364) (Ávila & Azevedo, 1997: 328) (misidentification).

*Remarks*: first record to the Azores.

## Veneridae

*Venus casina* Linnaeus, 1758

*Venus casina* Linnaeus, 1758. DBUA 338.

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