

## SHORT COMMUNICATION

### *Hydatina physis* (MOLLUSCA: GASTROPODA: OPISTHOBRANCHIA) FROM THE AZORES

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The opisthobranch gastropod *Hydatina physis* (Linné, 1758) is recorded from the Azores for the first time. The distribution of the species is reviewed. Colour photos of live animals are presented and colour variation of the species is discussed.

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O gastropode opistobrânquio *Hydatina physis* (Linné, 1758) é registado nos Açores pela primeira vez. A distribuição da espécie é revista. Fotografias a cores de animais vivos são apresentadas e a variação da cor da espécie é discutida.

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## INTRODUCTION

VOSKUIL (1995) revised the genus *Hydatina*. He recognized six species, five from the tropical Indo-Pacific, one from the Atlantic. For the Atlantic species *Hydatina vesicaria* (Lightfoot, 1786), he notes a curious distribution pattern: tropical in the western Atlantic (Brazil to Florida) and subtropical (Canary Islands to Iberian Peninsula) in the eastern Atlantic. Such a distribution pattern would be very unusual because most (if not all) amphi-atlantic species have their centre of distribution in the tropics on both sides of the Atlantic (see VERMEIJ & ROSENBERG 1993 for a discussion of amphi-atlantic molluscs). It appeared far more likely that the species had simply not yet been recorded in the tropical eastern Atlantic, which is much less studied than its western counterpart. However, a

search of the literature revealed that *Hydatina* had already been found in the tropical eastern Atlantic: PILSBRY (1985: 387) recorded the species from São Vicente, Cape Verde Islands. Here I report an additional record from the Cape Verde Islands and a new record for the Azores.

Many authors (e.g. RUDMAN 1972) consider *H. vesicaria* (Lightfoot, 1786) a junior synonym of *H. physis* (Linné, 1758). VOSKUIL (1995) writes that *H. vesicaria* has a more slender shell with more irregularly spaced and thinner brownish spiral lines and more "frilly" lateral lobes than the Indo-Pacific *H. physis*. No measurements are given for the statement on shell-shape by VOSKUIL (1995). As shown below the other two characters do in fact not differentiate Atlantic and Indo-Pacific specimens, and I will use the name *H. physis* in the following.

## RESULTS

### CAPE VERDE ISLANDS

On 29 March 1986, the author and P. Nahke observed an adult *H. physis* in a tide pool at Calheta de São Martinho, south coast of São Tiago Island, Cape Verde Islands. The animal was photographed *in situ* (Fig. 1) but not collected.

### AZORES

A single, large (shell length 3.6 cm) individual of *H. physis* was found in the natural swimming pool at Varadouro, southwestern coast of Faial Island, Azores, on the night of the 26th of August 1999. The animal was in the process of depositing eggs when encountered. The animal is shown in Fig. 2. The specimen has been deposited in the collection of the Department of Oceanography and Fisheries of the University of the Azores.

## DISCUSSION

An underwater photo of an animal from Tenerife, Canary Islands is reproduced in Fig. 3. Another photo (by R. Herrera) of an animal from Gran Canaria, Canary Islands, can be found in WIRTZ (1995, p. 185). The origin of the two shells depicted in POPPE & GOTO (1991, plate 37) is, unfortunately, not stated by the authors.

As regards the colour pattern, a comparison of the three photos printed here and that in WIRTZ (1995) with four photos of animals from the Indo-Pacific (GOSLINER 1987, p. 40; DEBELIUS 1998, p. 127; RUDMAN 1998) shows that - contrary to Voskuil's statement - Indo-Pacific animals can have lines on the shell that are either thicker or thinner, more or less numerous and more closely or more widely spaced than animals from the Atlantic.

Atlantic *Hydatina* are supposed to have more "frilly" lateral lobes than Indo-Pacific ones (VOSKUIL 1995) but the animals from the Azores (Fig. 1) and from the Cape Verde Islands (Fig. 2) do not have more frilly lobes than the *H. physis* from the Indian Ocean depicted by GOSLINER (1987, p 40).



Fig. 1. São Tiago Island, Cape Verde Islands (photo P. Nahke).



Fig. 2. Faial Island, Azores (photo P. Wirtz).



Fig. 3. Tenerife, Canary Islands (photo P. Wirtz).

Atlantic *Hydatina* are supposed to have a pale white margin of the lateral lobes, while this is blue in Indo-Pacific animals (VOSKUIL 1995).

While all Atlantic animals seen by me did, indeed, have white margins of the lateral lobes, an animal from Australia depicted by RUDMAN (1998) also had a white margin of the lateral lobes.

Thus, none of the differentiating characters given by VOSKUIL (1995) is supported. In addition, as pointed out by RUDMAN (1972), the type material for *H. physis* (Linné, 1758) comes from the West Indies and thus *H. physis* would be the correct name for Atlantic animals, even if the Atlantic and Indo-Pacific animals belonged to different species.

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#### REFERENCES

- DEBELIUS, H. 1998. *Nudibranchs and sea snails Indo-Pacific field guide*. IKAN, Frankfurt, 2nd edition. 321 pp.
- GOSLINER, T. 1987. *Nudibranchs of Southern Africa*. Sea Challengers, Monterey, 136 pp.
- PILSBRY, H.A. 1985. Polyplacophora. Acanthochitonidae, Cryptoplacidae and appendix. Textibranchia. *Manual of Conchology* (1) 15 (60), 181-436. Philadelphia.
- POPPE, G.T. & Y. GOTO 1991. *European Seashells*. Vol 1. Verlag Christa Hemmen, Wiesbaden. 352 pp
- RUDMAN, W.B. 1972. The anatomy of the opisthobranch genus *Hydatina* and the functioning of the mantle cavity and alimentary canal. *Zoological Journal of the Linnean Society* 51: 121-139.
- RUDMAN, W.B. 1998. *Hydatina physis*. In: Sea Slug Forum, [www.austmus.gov.au/seaslug/hydaphys](http://www.austmus.gov.au/seaslug/hydaphys), last assessed 16 September 1999.
- VERMEIJ, G.J. & G. ROSENBERG 1993. Giving and receiving: the tropical Atlantic as donor and recipient region for invading species. *American Malacological Bulletin* 10/2: 181-194.
- VOSKUIL, R.P.A. 1995. The living species of the genus *Hydatina* Schumacher, 1817, (Mollusca: Gastropoda: Opisthobranchia: Hydatinidae) with the description of a new species. *Vita Marina* 43 (1-2): 29-38.
- WIRTZ, P. 1995. *Underwater Guide Madeira Canary Islands Azores Invertebrates*. Nagelschmid Verlag, Stuttgart. 248 pp.

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