Cymatium corrugatum (Lamarck 1816) Gastropoda, Prosobranchia. A new species for the Adriatic

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Abstract – Very valuable papers concerning malacology of the Adriatic Sea deal, for the most part, with the systematics, whereas there is a substantial number of papers with very scarce information on the ecology of individual species. Since I intended to provide some more comprehensive data on individual species, rather complex bionomic and biocoenological research was undertaken aiming to study the taxonomy and the ecology of the Prosobranchiata group. Present research covered different biotopes of the northern, middle and southern Adriatic, both in the shallow coastal and deeper open littoral, and hard and mobile bottoms. Material was collected in two ways: 1) Scuba diving or direct collection and observations; and 2) an indirect method of collection of samples by Petersen grab, dredge and trawl. Throughout years of investigations of the coastal and open Adriatic, the species *Cymatium corrugatum* has been recorded only in the vicinity of the Vis and Hvar islands, at 60 and 80 m depths. It was found in the biocoenosis of detritic bottoms of the open sea and biocoenosis of coastal detritic bottoms. *Cymatium corrugatum* is a new species for the Adriatic and therefore it should be included in the register of the Gastropod fauna of the Adriatic Sea.

***Cymatium corrugatum* / Gastropoda / new species / Adriatic Sea**

Résumé – *Cymatium corrugatum* (Lamarck 1816) gastéropode prosobranche. Une espèce nouvelle en Adriatique. Les travaux sur la malacologie de l'Adriatique concernent, en général, l'aspect taxonomique, tandis que ceux qui traitent de l'écologie des espèces individuelles, n'apportent que peu d'informations. Pour améliorer la connaissance des espèces individuelles, des recherches complexes ont été entreprises sur la bionomie et la biocoenologie du groupe des Prosobranches, parallèlement aux études taxonomiques et écologiques. Les recherches ont couvert différents biotopes de l'Adriatique septentrionale, centrale et méridionale, à la côte et au large, sur des fonds solides et mobiles. Deux méthodes de prélèvement ont été utilisées : 1) observation et échantillonnage directs par plongeurs en scaphandre autonome et 2) échantillonnage indirect par benne Petersen, dragage et chalutage. Au cours de plusieurs années, l'espèce *Cymatium corrugatum* n'a été signalée que près des îles Vis et Hvar, entre 60 et 80 m de profondeur, dans les biocoenoses des fonds détritiques côtiers et dans ceux du large. *Cymatium corrugatum*, espèce nouvelle pour l'Adriatique, devrait être insérée dans l'inventaire de la faune des gastéropodes adriatiques.

***Cymatium corrugatum* / gastropode / espèce nouvelle / mer Adriatique**

1. INTRODUCTION

During long-term research (twenty years) which I carried out in a large part of the Adriatic, on more or less all types of bottoms, I found the species *Cymatium corrugatum* only in the coastal areas of Hvar and Vis islands. Consulting the literature for Mollusca group available for the Adriatic, I found no report on the presence of this species in this sea.

2. MATERIAL AND METHODS

2.1. List of sampling stations

Trawl (*figure 1*). Biocoenosis of detritic bottoms in the open sea:

Station 24 (43° 07' N; 16° 10' E; 43° 11.5' N; 16° 09.5' E), 80 m: 21 April, 1981 – 1 specimen; 10 June, 1982 – 1 specimen; 15 December, 1983 – 1 specimen.

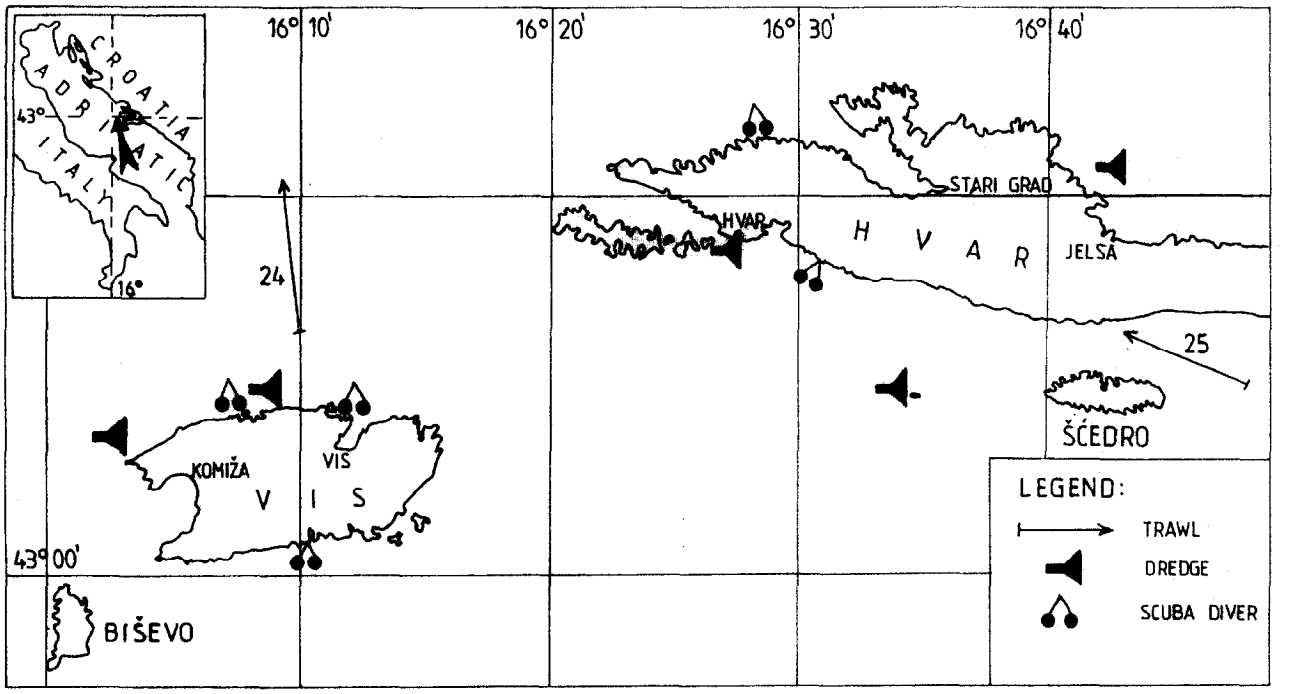

Figure 1. Study area.

Biocoenosis of coastal detritic bottoms:

Station 25 (43° 05.5' N; 16° 48' E; 43° 07' N; 16° 43.3' E), 60 m: 17 January, 1984 – 1 specimen. Bottom fauna: *Verongia cavernicola, Laetmonice hystrix, Lambrus massena, Laevicardium oblongum, Acanthocardia echinata, Pecten jacobaeus, Echinaster sepositus, Anseropoda placenta, Astropecten irregularis, Psammechinus microtuberculatus, Microcosmus sulcatus* and a large number of rock and other fragments, particularly of shellfish.

For the determination of the species *Cymatium corrugatum* I made use of the following papers: Carus [2], Nobre [10], Nordsieck [11], Sabelli and Spada [19], Starmuhlner [24] and Gaillard [5].

Benthic biocoenosis were determined and classified according to Pérès and Picard [15], Pérès and Gamulin-Brida [14] and Gamulin-Brida [6].

3. RESULTS AND DISCUSSION

Cymatium corrugatum (Lamarck 1816) (*figure 2*)

Synonyms: *Triton corrugatum* Lamarck 1916.

Previous reviews:

Adriatic: A new species for the Adriatic;

Figure 2. *Cymatium corrugatum* (9.0 cm × 4.5 cm × 3.2 cm). Station 24 (December, 1983).

Mediterranean and Atlantic: Philippi [16, 17]; Hidalgo [7, 8]; Bucquoy, [1]; [Locquard [9]; Carus [2]; Nobre [10]; Pallary [12]; Nordsieck [11]; Parenzan [13]; Franchini [4]; D'Angelo [3]; Sabielli [19, 20]; Saunders [22]; Starmuhlner [24]; Sabelli [21]; Poppe [18].

Distribution: Atlantic (Gulf of Biscay, south of Angola, Canary Islands and Madeira), Mediterranean.

Description: Shell fusiform with little inflated whorls, narrow, well pronounced and separated deep sutures.

Spire shorter than the line aperture (fissure) canal. Aperture elongated, extends into a syphonal, massive and open (fissure) canal. Columellar callus thin and transparent so that the underlying structure is visible. Lip edge thickened by a thick varice with a series of massive teeth extending inward. Contour made of strong spiral tapes, three at spire whorls and eleven (three specimens) and thirteen (one specimen) at the last whorl; their spans with light intermediar ribs. Tubercles parallel on different tapes of the same whorl give impression that the ribs are axially positioned. The operculum horny, oval. The shell ivory in colour. Biometrical data of recorded specimens:
I. length: 8.5 cm; width: 4.0 cm, depth: 3.0 cm.
II. 7.5 × 3.5 × 2.8
III. 9.3 × 4.6 × 3.2
IV. 9.0 × 4.5 × 3.2.
Parenzan [13] stated that the species *Cymatium corrugatum* had never been recorded from the Adriatic. Starmuhlner [24] also reported its absence from the Adriatic. It is interesting that this species, which is rather big in size (measured lengths 7.5 to 9.3 cm), was not discovered in the Adriatic earlier since it is a sea which is so intensively investigated (particularly its northern and middle parts). Although it is a rare Adriatic species, it is not that rare in the areas in which it was recorded (in the first place around the Vis Island). Starmuhlner [24] believed it to be the species inhabiting rocks rich in detritus or secondary stiffened substrate. Hidalgo [8] recorded it at a depth of 16 m on a muddy bottom, Sabelli and Spada [19] from detritic-muddy bottoms of the circalittoral, Settepassi [23] reported it to prefer coralligeneous and laminar bottoms, Franchini [4] its presence between 10 and 20 m on hard bottoms rich in algae in the Aegean Sea, and Poppe and Goto [18] stated that this species lived on all types of bottoms between 15 and 200 m. I recorded three specimens from the biocoenosis of detritic bottoms of the open sea and one from the biocoenosis of coastal detritic bottoms. At both stations, particularly in the area of Vis, the total number of specimens and biomass (bottom fauna) is rather large. In spite of well known sites of records of this species, the ecological data are still too scarce to establish exactly all its habitats. It should be emphasized that both records originate from the close vicinity of the coast (two miles off Vis and one mile off Hvar) pointing to the fact that it is a species inhabiting inshore waters. Nobre [10] also believed it to live not far offshore. As found in the literature [4, 8, 10, 11, 18, 19, 22, 23, 24] the depths it inhabits range from 5 to 200 m. Saunders [22] reported its distribution in the Mediterranean, from the southern part of Portugal to Senegal in the Atlantic and as questionable in the area of Angola. The same author recorded it from the area of Canary Islands, but also stated that no records can be traced from the Cape Verde Islands. Nobre [10] also reported it for the Mediterranean, and for only the Cape Verde Islands in the Atlantic (p. 224). Poppe and Goto [18] gave the most complete report on the species *Cymatium corrugatum*, both in ecological and zoogeographic aspects. I broadly agree with their statement that the collections of data on its biotope and depth should be continued since it is still very poorly known.

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