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

Ante ŠIMUNOVIC
Institute of Oceanography and Fisheries, Meštrovicevo šetalište 63, 21000 Split, Croatia
(Received 24 March 1998, revised 20 October 1998, accepted 26 October 1998)

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. © Elsevier, Paris / Ifremer / Cnrs / Ird

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.

Oceanologica Acta (1999) 22, 1, 133–136
© Elsevier, Paris / Ifremer / Cnrs / Ird

133
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 placentia, Astroppecten 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 [23, Nobre [10], Nordsieck [11], Sabelli and Spada [19], Starmuhrner [24] and Gaillard [5].

Benthic biocoenosis were determined and classified according to Péres and Picard [15], Péres 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;
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]; Sabelli [19, 20]; Saunders [22]; Starmuhrner [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 intermedai riba. 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 x 3.5 x 2.8
III. 9.3 x 4.6 x 3.2
IV. 9.0 x 4.5 x 3.2.

Parenzan [13] stated that the species Cymatium corrugatum had never been recorded from the Adriatic. Starmuhlnr [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). Starmuhlnr [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, Ssettepassi [23] reported it to prefer coralligenous 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 bioconesias of detritic bottoms of the open sea and one from the bioconesias 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.

REFERENCES