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**MARINE MOLLUSCS BROUGHT FROM THE EXPEDITIONS
FROM TURKEY
“TAURUS” - 2005 AND “FOCIDA” - 2006**

GABRIELA ANDREI, RĂZVAN POPESCU-MIRCENI

Abstract. The authors present the results of the studies on the malacologic material brought from the expeditions from Turkey, “Taurus”-2005 and “Focida”-2006. The two expeditions were organized by the NGO - “Oceanic Club” Constanța - Society of Oceanographical Exploration and Protection of the Marine Environment of Constanța, in collaboration with “Grigore Antipa” National Museum of Natural History (Bucharest) and the Museum of National History and Archaeology (Constanța). The material originates in 12 collecting places: 10 at the Aegean Sea and two at the Mediterranean Sea. Taxon list includes 62 species (27 gastropods, 33 bivalves, one polyplacophoran and one cephalopod) belonging to 42 families and subfamilies. This material is preserved in the collections of “Grigore Antipa” National Museum of Natural History.

Résumé. Les auteurs présentent les résultats de l'étude du matériel de mollusques collecté au cours des expéditions effectuées en Turquie, „Taurus”-2005 et „Focida”-2006. Les deux expéditions ont été organisées par „Océanique Club” Constanța – Société d'Explorations Océanographiques et Protection du Milieu Marin, en collaboration avec le Muséum National d'Histoire Naturelle „Grigore Antipa” (Bucarest) et le Muséum d'Histoire Nationale et Archéologie (Constanța). Le matériel a été collecté dans 12 sites: 10 à la Mer Egée et deux à la Mer Méditerranée. La liste des taxons comprend: 62 espèces (27 gastéropodes, 33 bivalves, un poli-placophore et un céphalopode) appartenant à 42 familles et sous-familles. Ce matériel se trouve dans les collections du Muséum „Grigore Antipa”.

Key words: marine molluscs, gastropods, bivalves, polyplacophorans, cephalopods, Mediterranean Sea, Aegean Sea, expeditions, Turkey.

INTRODUCTION

The expeditions in Turkey, “Taurus”- 2005 (9-31 July 2005) and “Focida”-2006 (30 July – 7 August 2006) was organized by NGO - “Oceanic Club” Society of Oceanographical Exploration and Protection of the Marine Environment of Constanța, in collaboration with “Grigore Antipa” National Museum of Natural History (Bucharest) and the Museum of National History and Archaeology (Constanța).

MATERIAL AND METHOD

The material consists of some hundreds of marine molluscs specimens. It was collected either from the beach by all the members of expeditions, or during the day and night diving, at depth up to 5-6 m made by Constantin and Eduard Chera, Răzvan Popescu-Mirceni and Răzvan Zaharia.

In “Taurus”- 2005, the molluscs, mainly the marine ones, were collected by all members of the expedition: Corneliu Pârvu, Răzvan Popescu-Mirceni, Gabriel Chișamera – biologists, archaeologist Constantin Chera, accompanied by his son Eduard Chera, pupil, and Daniela Nanu. In the second expedition, “Focida”- 2006, in the list of those who collected malacologic material other names were added: physician Mihai Ionescu, Răzvan Zaharia, Sorin Grigore, Sorana Someșan, students.

English translation by Mihaela Barcan Achim.

The material originates in 12 collecting places (ten at the Aegean Sea and two at the Mediterranean Sea) represented by letters, both on the map (Fig. 1), and the species list (Tabs 5-8), as follows: 10 km west to Küçükkuuyu (**K**); Bodrum – beach (**B**); Çamiçi Gölü (Bafa Gölü) (**ÇG**); Doğanbey (**Do**); Yenifoça (**Y**); locality Dikili – salt water bay (**Di**); Çandarlı - beach (**Ça**); Ayvalık, Alibey Island (**Al**); Ayvalık, near Alibey Island (**Ay**); 5 km S to Burhanlı (**Bu**), Chimera, Etmek Park (**Ch**); Patara Beach, at the mouth of Eşen Çayı River (**P**).

Details on the collecting places are included in the annexes I and II.

For the identification of the taxa we used several papers, which we mention here, in alphabetical order and not according to their importance in our identifications: Abbott (1985); Abbott & Dance (1990); Cherbonnier (1967); Dance (1977); Crucitti & Rotella (1990); D'Angelo & Gargiullo (1979); Lindner (1989); Oliver (1979); Parenzan (1970, 1974, 1976); Poorten (2005); Sabelli, Giannuzzi-Savelli & Bedulli (1990).

All these specimens collected from Turkey in the two expeditions represent a valuable contribution to the marine mollusc collections from “Grigore Antipa” Museum of Bucharest.

The list of the taxa includes 62 species (27 gastropods, 33 bivalves, one polyplacophora and one cephalopoda) belonging to 42 families and subfamilies.

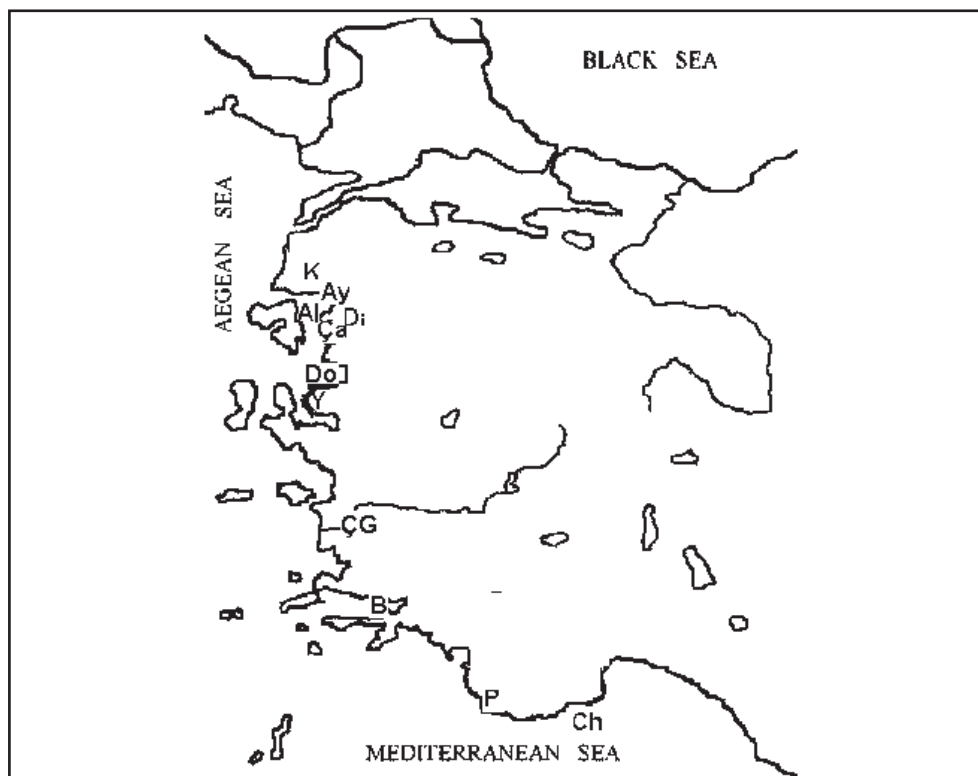


Fig. 1 – “Taurus” - 2005 and “Focida” - 2006 expeditions. Collecting sites for marine molluscs from Western Turkey: **K** – Küçükkuuyu; **B** - Bodrum – beach; **ÇG** - Çamiçi Gölü; **Do** – Doğanbey; **Y** – Yenifoça; **Di** - Dikili; **Ça** - Çandarlı – beach; **Al** - Alibey Is; **Ay**- Ayvalık, near Alibey Is; **P** - Patara Beach; **Ch** - Chimera, Etmek Park.

We present the studied material in two types of tables, each of them containing the data of both expeditions, marked by **T** ("Taurus") and **F** ("Focida").

Tables 1-4: *Rough systematic list of gastropods, bivalves, polyplacophorans, respectively cephalopods* – includes the orders of the four classes – with the families and genera ordered alphabetically, for an easier approach. At every genus we put the number of the species identified by us.

Tables 5-8: *The alphabetical list of the species of gastropods, bivalves, polyplacophorans, respectively cephalopods*. Because in our list the chitons are represented by a single species, as chephalopods, we placed both classes in the end.

The collecting places, abbreviated by **K, B, ÇG, Do, Y, Di, Ça, Ay, Al, Bu, Ch, P** are chronologically ordered here, thus the route of the two expeditions being followed. The number of the collected specimens of the respective species is written near the origin area. The last column of the tables 5-8, "Remarks", includes data on the preserving method, collecting conditions, collector, and so on, of course if these notes initially existed. For all data, in "Remarks" we used *abbreviations* and *arbitrary symbols*.

In order to find easier the collecting sites in the map (Fig. 1), we used the same marks as in the list of species (Tabs 5-8). The paper comprises also photos of some specimens (Figs 2-5), inclusively the species preserved for the first time in the collections of "Grigore Antipa" Museum.

Abbreviations and symbols for tables 1-8:

T	"Taurus" 2005 Expedition	GC	legit Gabriel Chişamera
F	"Focida" 2006 Expedition	SG	legit Sorin Grigore
A	Aegean Sea	MI	legit Mihai Ionescu
MS	Mediterranean Sea	CP	legit Corneliu Pârnu
K	Küçükkuyu	RPM	legit Răzvan Popescu-Mirceni
B	Bodrum – beach	SS	legit Sorana Someşan
ÇG	Çamiçl Gölü	RZ	legit Răzvan Zaharia
Do	Doğanbey	☉	collected alive and preserved in liquid
Y	Yenifoça	○	shell only
Di	Dikili	A	bought shell
Ça	Çandarlı - beach	()	cuttlebone only
Al	Alibey Is	≈	preserved in liquid
Ay	Ayvalık, near Alibey Is	∅	broken shell or fragments of shell
Bu	Burhanlı	◆	one or several specimens with operculum
Ch	Chimera, Etmek Park	⊠	one or several specimens with pagurian
P	Patara Beach	‡	fixed on another shell
NIS	non-indigenous species	[on spongius
a	adult	‡	with other species fixed on the shell
sa	subadult	<i>b</i>	collected on the beach
y	juvenile	<i>p</i>	with periostracum
CC	legit Constantin Chera	<i>ep</i>	with epibiosis
EC	legit Eduard Chera		

RESULTS AND DISCUSSIONS

Comparing the material collected in 2005 by "Taurus" Expedition with that from 2006 brought by "Focida" we could observed that some of the species were frequently occurred in both expedition (e.g. *Hexaplex trunculus*), in comparison

with others, collected in only one of them. Thus *Haliotis tuberculata lamellosa* was found in a large number in the “Focida” expedition, only in Yenifoça, and *Cerithium rupestre*, only in “Taurus” expedition, in Dikili. *Hypselodoris picta* was collected in both expeditions, only from Yenifoça.

In 2003, Demir published the list of the molluscs (shells) collected from the seas of Turkey. Referring only to the Aegean Sea (AS) and the Mediterranean Sea (MS), we make some remarks. From the six species of *Cerithium* mentioned by Demir, we found again three: *Cerithium rupestre* in **Di** (AS), *C. vulgatum* in **Di**, **Ça**, **Y** (AS) and *C. scabridum*, the only species among nine rocky intertidal cerithiid species of the Sinai coast of the Red Sea which has managed to cross the Suez Canal, as well as to colonize the Mediterranean (Ayal & Safriel, 1983). Recorded firstly from Port Said, Egypt (Keller, 1883) this species was recorded successively from Israel (Haas, 1937), Syria and Lebanon in 1938, Sicily (Di Natale, 1978), Naples (Mienis, 1985), southern Turkey (Enzenross et al., 1990), southern Tunisia in 2001 etc. *Cerithium scabridum* is one of the earliest recorded and most successfully of the Lessepsian migrants, which now constitutes large, stable populations, locally invasive. It was collected by “Taurus” from Chimera, Etmek Park (**Ch**) at MS (stations 38 and 39: 2-5 m depth). The fourth species, *Cerithium haustellum*, not mentioned by Demir, was collected in “Taurus” expedition at the Aegean Sea, from Küçükkuyu (**K**).

From the species which are not mentioned in Demir’s list, we point out: *Vermetus semisurrectus* collected by “Taurus” from **Y**, from shells of *Barbatia barbata*; *Crassostrea gigas* collected by “Focida” from **Y**; *Mytilus edulis*, collected by “Focida” from **Bu** (AS); *Cerastoderma edule*, collected by “Taurus” from **Do** and **Di** (AS); *Ensis arcuatus*, collected by “Taurus” from **Do** (AS); *Sepia officinalis* – several cuttlebones collected by “Taurus” from **Y** and **Di**, and by “Focida” from **K** (AS).

A more recent, rapidly expanding invader, in the Mediterranean, the gastropod *Strombus persicus* or *Strombus (Conomurex) decorus persicus* was firstly occurred in Mersin Bay, southern coast of Turkey, in 1978 (Nicolay & Romagnano-Manoja, 1983; Nicolay, 1986) and then in rapid succession off Israel (Mienis, 1984), Rhodos (Verhecken, 1984), Cyprus (Bazzocchi, 1985) and Lebanon (Bogi & Khaizallah, 1987). It was postulated that *S. persicus* may have arrived in discharged ballast water from oil tankers coming from the Persian Gulf (Oliverio, 1995). However, the gastropod has been found far from oil terminals, and because tankers at the time lacked segregated ballast tanks, oil-laden vessels would not carry ballast water. Off the Israel coast the shallow sandy littoral is littered with them: hundreds of dead shells on the beaches and shoals of *Strombus*, of all sizes, colours and patterns, feeding on the sea floor up to 20 m depth (Galil & Zenetos, 2002). *Strombus (Conomurex) decorus persicus*, reported by Demir at MS, was found again by “Taurus”, also at MS, at Chimera, Etmek Park (**Ch**) (Fig. 2).

The introduction of non-indigenous species (NIS) across the major European seas is a dynamic non-stop process. In the Mediterranean, introductions via the Suez Canal and via Gibraltar constitute a significant part of the NIS introduced. The Mediterranean is by far the major recipient of exotic species (Streftaris, Zenetos & Papanathanassiou, 2005).

The nudibranch *Hypselodoris picta* (Fig. 3) is the largest chromodorid from the Mediterranean Sea and it is widely distributed on both sides of the Atlantic. The species is not mentioned by Demir. It was collected alive in both expeditions, from

the same place of the Aegean Sea, Yenifoça, on 23rd of July 2005 (st. 70) - legit Constantin Chera and on the 6th of August 2006 (st. 47) - legit Răzvan Zaharia & Sorin Grigore. The species *Hypselodoris picta* enters for the first time in the collections of "Grigore Antipa" Museum.

Yenifoça (Izmir) at the Aegean Sea is the place with the most numerous stations (13) from where most of the species were collected (26 species: polyplacophorans - 1; gastropods - 11; bivalves - 13; cephalopods - 1) (Tabs 5-8).

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MOLUȘTE MARINE ADUSE DE EXPEDIȚIILE ÎN TURCIA „TAURUS” - 2005 ȘI „FOCIDA” - 2006

REZUMAT

Câteva sute de exemplare de moluște marine, în special gasteropode și bivalve, au fost colectate de membrii expedițiilor în Turcia „Taurus” - 2005 (9-31 Iulie) și „Focida” - 2006 (30 Iulie – 7 August), organizate de Oceanic Club Constanța – Societatea de Explorări Oceanografice și Protecție a Mediului Marin, în colaborare cu Muzeul Național de Istorie Naturală „Grigore Antipa” din București și Muzeul de Istorie Națională și Arheologie din Constanța. Materialul provine din 30 de stații din 12 zone de colectare, aparținând regiunilor Çanakkale, Muğla, Aydın, Izmir, Bergama, Balıkesir, la Marea Egee și Antalya, la Marea Mediterană. Lista taxonilor cuprinde 62 de specii (27 gastropode, 33 bivalve, un poliplacofor și un cefalopod) aparținând la 42 de familii și subfamilii. Astăzi acest material face parte din colecțiile Muzeului „Grigore Antipa”.

LITERATURE CITED

- ABBOTT, R. T., 1985 - Seashells of the World. A Golden Guide: 1-160. Wisconsin.
- ABBOTT, R. T., S. P. DANCE, 1990 (Fifth printing) - Compendium of Seashells: 1-411. American Malacologists, Inc. Melbourne, Burlington, MA ISBN 0-915826-17-8.
- AYAL, Y., U. N. SAFRIEL, 1983 - Does a suitable habitat guarantee successful colonization? Journal of Biogeography, 10 (1): 37-46.
- BAZZOCCHI, P., 1985 - Prima segnalazione di Strombus (Conomurex) decorus raybaudii Nicolay & Romagna Manoja, 1983 per l'isola di Cipro. Bolletino Malacologico, 21: 64.
- BOGI, C., N. H. KHAIZALLAH, 1987 - Nota su alcuni molluschi di provenienza indo-pacifica raccolti nella Baia di Jounieh (Libano), Contributo I. Notiziario del CISMA, 10: 54-60.
- CHERBONNIER, G., 1967 - Rivages d'Europe: 1-160. Editions des Deux Coqs d'Or, Paris.
- CRUCITI, P., G. ROTELLA, 1990 - Una popolazione di Strombus (Conomurex) decorus del Golfo di Iskenderun (Turchia sud-orientale): biometria e osservazioni ecologiche. Bolletino Malacologico, 26 (10-12): 211-218.
- DANCE, P. S., 1977 (Second edition) - The Encyclopedia of Shells: 1-288. Blandford Press Limited. Poole, Dorset.
- D'ANGELO, G., S. GARGIULLO, 1979 (Ristampa) - Guida alle Conchiglie Mediterranee: 1-224. Fabbri Editori S.p.A., Milano.
- DEMIR, M., 2003 - Shells of Mollusca collected from the Seas of Turkey. Turkish Journal of Zoology, 27: 101-140.
- Di NATALE, A., 1978 - Note sur la présence et la répartition de Cerithium scabridum Philippi, 1849 (Mollusca, Gastropoda) sur les côtes siciliennes. Bulletin de l'Office National des pêches de Tunisie, 2 (1-2): 193-198.

- ENZENROSS, L., R. ENZENROSS, H. J. NIEDERHÖFER, 1990 - Wissenschaftlich interessante Funde aus der Sammlung Enzenross (marine Invertebraten). Jahreshefte der Gesellschaften fuer Naturkunde in Wuerttemberg, 145: 283-294.
- GALIL, B. S., A. ZENETOS, 2002 - A sea change -exotics in the Eastern Mediterranean Sea. Pp. 325-336. *In: Invasive Aquatic Species in Europe. Distribution, Impacts and Management.* E. Leppakoski, S. Gollasch, S. Olenin (Eds.), Dordrecht, Boston, London. Kluwer Academic Publishers.
- HAAS, G., 1937 - Mollusca marina. *In: F. S. Bodenheimer (ed.) Prodromus faunae Palaestinae, Essai sur les Eléments zoogeographiques et historiques du sud-ouest du sous-règne Paléarctique.* Memoires présentés à l'Institut d'Egypte, 33: 275-280.
- KELLER, C., 1883 - Die Fauna im Suez Kanal und die Diffusion der mediterranen und erythraischen Thierwelt. Eine thiergeographische Untersuchung. Neue Denkschriften der allgemeinen Schweizerischen Gesellschaft für die gesammten Naturwissenschaften, Zürich, 28 (3): 1-39, pl. 1-2. Basel.
- LINDNER, G., 1989 (Deuxième édition) - Guide des coquillages marins. Les Guides du Naturaliste, 1-255. Delachaux & Niestlé. Neuchâtel-Paris.
- MIENIS, H. K., 1984 - *Strombus decorus persicus* found in Israel. Hawaii Shell News, 32: 4.
- MIENIS, H. K., 1985 - An old record of *Cerithium scabridum* from Gulf of Naples? *Levantina: Journal of Malacology*, 55: 626.
- NICOLAY, K., 1986 - Sempre più diffuso il strombo del Mediterraneo (Nonstop spreading of Mediterranean *Strombus*). *La Conchiglia*, Milan, 18 (202-203): 29.
- NICOLAY, K., E. ROMAGNA - MANOJA, 1983 - *Strombus (Conomurex) decorus raybaudii* n. ssp. *La Conchiglia*, Rome, 15 (176-177): 17-18.
- OLIVER, A. P. H., 1979 - Les coquillages marins du monde en couleurs: 1-320. Elsevier Séquoia. Paris-Bruxelles.
- OLIVERIO, M., 1995 - The status of the living Mediterranean *Strombus*, or: What is a lessepsian migrant. *Notiziario del CISMA*, 16: 35-40.
- PARENZAN, P., 1970 - Carta d'identità delle conchiglie del Mediterraneo, 1. Gasteropodi: 1-283. Edit. Bios Taras Taranto.
- PARENZAN, P., 1974 - Carta d'identità delle conchiglie del Mediterraneo, 2 (1) Bivalvi: 1-280. Edit. Bios Taras Taranto.
- PARENZAN, P., 1976 - Carta d'identità delle conchiglie del Mediterraneo, 2 (2) Bivalvi: 281-546. Edit. Bios Taras Taranto.
- POORTEN, J. J. ter, 2005 - Outline of a Systematic Index Recent Cardiidae (Lamarck, 1809). *Visaya*, Feb. 2005.
- SABELLI, B., R. GIANNUZZI-SAVELLI, D. BEDULLI, 1990 - Catalogo annotato dei molluschi marini del Mediterraneo/Annotated check-list of Mediterranean marine mollusks, 1:1-348. Società Italiana di Malacologia. Edizioni Libreria Naturalistica Bolognese.
- STREFTARIS, N., A. ZENETOS, E. PAPATHANASSIOU, 2005 - Globalisation in marine ecosystems: The story of non-indigenous marine species across European seas. *Oceanography and Marine Biology: An Annual Review*, 43: 419-453. Editors Taylor & Francis.
- VERHECKEN, A., 1984 - *Strombus decorus raybaudii* in der Middellandse Zee. *Gloria Maris*, 23: 79-88.

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Gabriela Andrei

Muzeul Național de Istorie Naturală "Grigore Antipa"

Sos. Kiseleff 1, 011341 București 2, România

e-mail: gabria@antipa.ro / arnold4386@yahoo.com

Răzvan Popescu-Mirceni

Societatea de Explorări Oceanografice

și Protecție a Mediului Marin "Oceanic Club"

Str. Decebal nr. 1, Constanța, România

e-mail: club@oceanic.ro



Fig. 2 – *Strombus (Conomurex) decorus persicus* Swainson collected by "Taurus" from Chimera, Etmek Park (Mediterranean Sea) (Photo: Gabriel Chişamera).

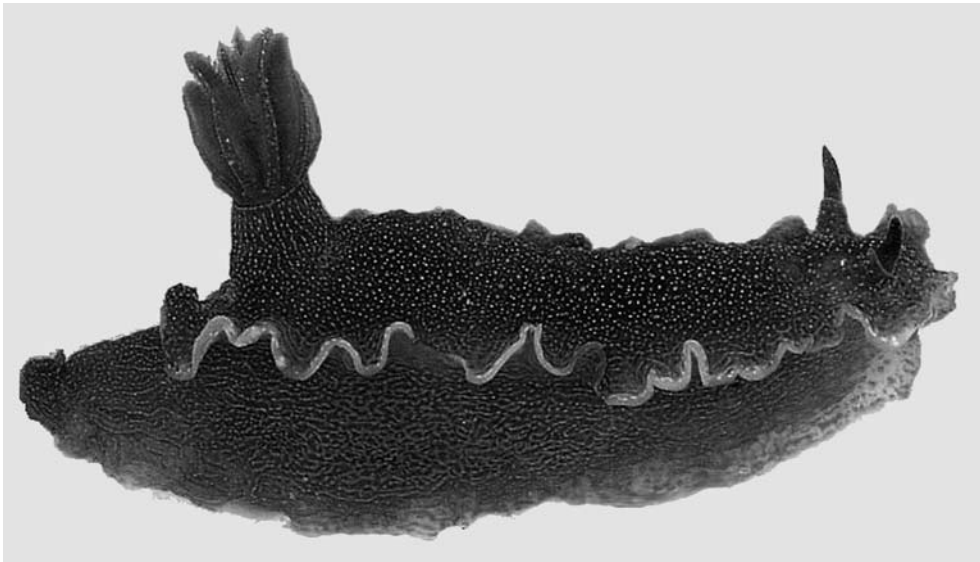


Fig. 3 – *Hypselodoris picta* (Schultz) collected by "Taurus" and "Focida" from Yenifoça (Aegean Sea), species preserved for the first time in collections of the "Grigore Antipa" Museum.

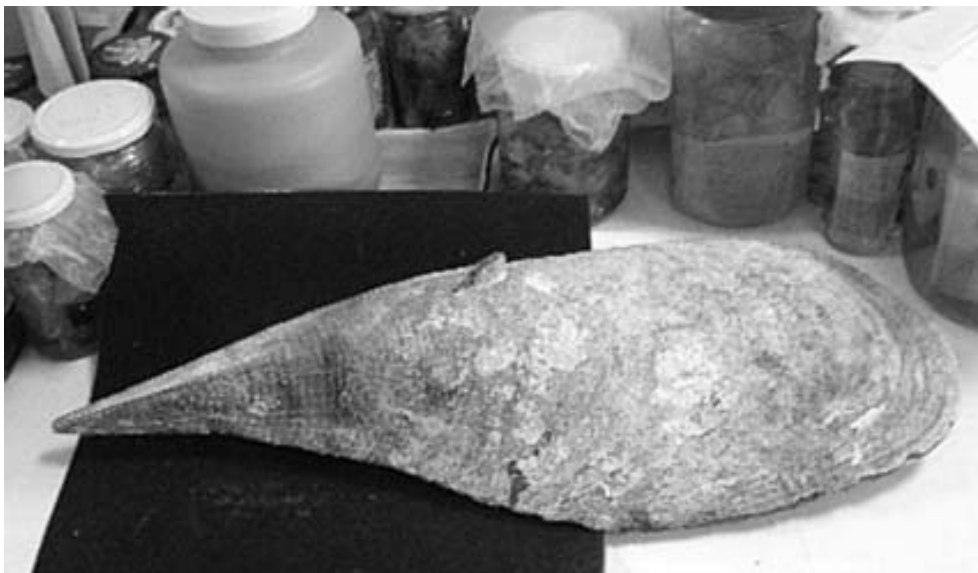


Fig. 4 – *Pinna nobilis* L.- A beautiful shell from Alibey Is. (Photo: Angela Petrescu).

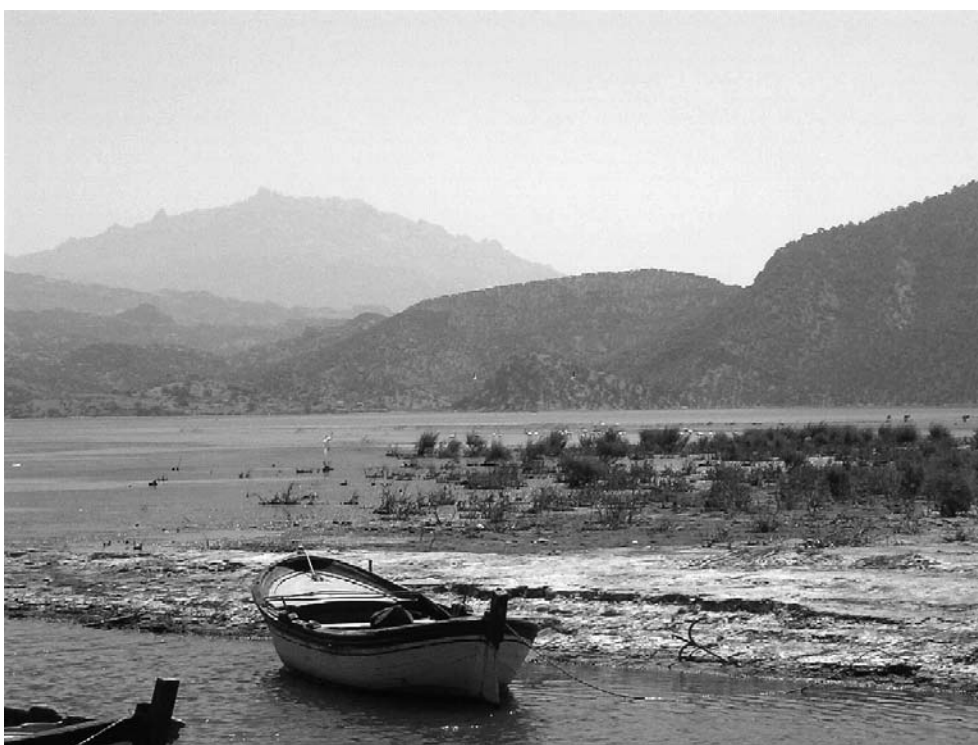


Fig. 5 – Doğanbey (Aydın). Aegean Sea. (Photo: Gabriel Chișamera).

Annex I: "Taurus" - 2005 Expedition.
Collecting stations of marine molluscs, in chronological order.

Marine mollusks, brought by "Taurus"- 2005 Expedition, were collected both from the Aegean Sea (AS) and the Mediterranean Sea (MS), within the period 9th – 31st of July 2005, by C. Chera (CC), E. Chera (EC), R. Popescu-Mirceni (RPM), C. Pârnu (CP), G. Chişamera (GC) and D. Nanu (DN). The material was collected from 19 stations, situated in 11 collecting areas, from the regions Çanakkale, Muğla, Aydın, İzmir, Bergama, Balıkesir – from the Aegean Sea and Antalya – from the Mediterranean Sea:

- st. 4: AS: Edremit Bay: Çanakkale: 10 km West to Küçükkuşu, (K) 10.07.2005 EC
 st. 12: AS: Edremit Bay: Çanakkale: 10 km West to Küçükkuşu (K) 1.5 m - 11.07.2005 RPM, CC, EC
 st. 38: MS: Antalya: Chimera, Etmek Park (Ch), 2-5 m depth, 16.07.2005, CC, EC
 st. 39: MS: Antalya: Chimera, Etmek Park (Ch), 2-5 m depth, 16.07.2005, RPM
 st. 47: MS: Antalya: Patara Beach, at the mouth Eşen Çayı (P), 18.07.2005, DN
 st. 55^{*}: AS: Muğla: Bodrum – beach (B) 20.07.2005, EC
 st. 59: AS: Aydın: Çamiçi Gölü (Bafa Gölü) (ÇG) 21.07.2005, CP
 st. 61: AS: İzmir: Doğanbey (Do) 21.07.2005, RPM, EC
 st. 62: AS: İzmir: Doğanbey (Do) 21.07.2005, CC, EC
 st. 65: AS: İzmir: Yenifoça (Y), 1-3 m, 23.07.2005, RPM
 st. 69: AS: İzmir: Yenifoça (Y), 23.07.2005, CC
 st. 70: AS: İzmir: Yenifoça (Y), 23.07.2005, CC
 st. 74 bis 1: AS: Bergama: Dikili locality – salt water bay (Di), 24.07.2005, CP
 st. 74 bis 2: AS: Bergama: Dikili locality – salt water bay (Di), 24.07.2005, CP
 st. 75: AS: Bergama: Çandarlı - beach (Ça), 24.07.2005, EC
 st. 76: AS: Bergama: Çandarlı - beach (Ça), 24.07.2005, CC
 sts 78 I, II: AS: Edremit Bay, Balıkesir: Ayvalık, near Alibey Island (Ay), 25.07.2005, EC, CC
 st. 80: AS: Edremit Bay, Balıkesir: Ayvalık, Alibey Island (Al), 25.07.2005, GC, CP

Abbreviations:

- **K** = 10 km West to Küçükkuşu (sts 4, 12)
- **B** = Bodrum – beach (st. 55^{*})
- **ÇG** = Çamiçi Gölü (Bafa Gölü) (st. 59)
- **Do** = Doğanbey (sts 61, 62)
- **Y** = Yenifoça (sts 65, 69, 70)
- **Di** = Dikili (sts 74 bis1, 74 bis2)
- **Ça** = Çandarlı (sts 75, 76)
- **Ay** = Ayvalık – near Alibey Island (sts 78 I, 78 II)
- **Al** = Alibey Island (st. 80)
- **Ch** = Chimera, Etmek Park* (sts 38, 39)
- **P** = Patara beach – at the mouth of the Eşen Çayı River (st. 47)

* Etmek Park, for the protection of the turtle *Caretta caretta*.

Annex II: "Focida" - 2006 Expedition.
Collecting stations of the marine molluscs, in chronological order.

Marine mollusks brought by "Focida 2006" Expedition were collected exclusively from the Aegean Sea, within the period 30th of July – 7th of August 2006, by M. Ionescu (MI), R. Zaharia (RZ), S. Grigore (SG), R. Popescu-Mirceni (RPM) and E. Chera (EC). The material originates in the 11 stations, placed in the 4 collecting areas, from the regions Çanakkale, Balıkesir and İzmir:

- st. 5: AS: Çanakkale: Küçükkuşu N39°31'49" E026°30'58" (K), 30.07.2006, wave stroke area, MI

- st. 6: AS: Çanakkale: Küçükkuyu N39°31'49" E026°30'58" (K), 30.07.2006, selective collecting at 1 m \perp and 10-15 m off the shore, MI
- st. 13: AS: Edremit Bay, Baltkesir: Ayvalık, N39°20'32" E026°34'35" (Ay), 31.07.2006, 4-6 m \perp , MI, EC (muricid egg laying)
- st. 30: AS: Izmir: Yenifoça, N38°43'51" E026°44'32" (Y), 05.08.2006, RPM
- st. 32: AS: Izmir: Yenifoça, N38°43'51" E026°44'32" (Y), 05.08.2006, EC
- st. 34: AS: Izmir: Yenifoça, N38°43'51" E026°44'32" (Y), 05.08.2006, MI
- st. 39: AS: Izmir: Yenifoça, N38°43'51" E026°44'32" (Y), 05.08.2006 stones with marine epibiosis, 3 m \perp , RZ, RPM
- st. 40: AS: Izmir: Yenifoça, N38°43'51" E026°44'32" (Y), 05.08.2006, at 3-4 m \perp , RZ
- st. 41: AS: Izmir: Yenifoça, N38°43'51" E026°44'32" (Y), 05.08.2006, RPM; RZ
- st. 44: AS: Izmir: Yenifoça, N38°43'51" E026°44'32" (Y), 05.08.2006, marine benthos at 3 m \perp , collected under the stones, RPM, RZ
- st. 46: AS: Izmir: Yenifoça, N38°43'51" E026°44'32" (Y), 06.08.2006, 4-5 m \perp , RZ, SG
- st. 47: AS: Izmir: Yenifoça, N38°43'51" E026°44'32" (Y), 06.08.2006, 4-5 m \perp , (*Possidonia* with epibiosis) RZ, SG
- st. 48: AS: Izmir: Yenifoça, N38°43'51" E026°44'32" (Y), 06.08.2006, 4-5 m \perp , RZ, SG
- st. 53: AS: Çanakkale: at 5 km S de Burhanli N40°17'27" E026°30'47" (Bu), 07.08.2006, CC

Abbreviations:

- **K** = Küçükkuyu N39°31'49" E026°30'58" (sts 5, 6)
- **Ay** = Ayvalık, N39°20'32" E026°34'35" (st.13)
- **Y** = Yenifoça, N38°43'51" E026°44'32" (sts 30, 32, 34, 39, 40, 41, 44, 46, 47, 48)
- **Bu** = at 5 km S to Burhanli N40°17'27" E026°30'47" (st. 53)

Table 1

Rough systematic list of gastropods.

Class / Subclass: GASTROPODA: PROSOBRANCHIA												
Orders	T	F	Families & Subfamilies	T	F	Genera	T	F	Number of species	T	F	
1	2	3	4	5	6	7	8	9	10	11	12	
DOCOGLOSSA	•	•	PATELLIDAE	•	•	<i>PATELLA</i> Linnaeus, 1758	•	•	3	1	3	
VETIGASTROPODA	•	•	HALIOTIDAE		•	<i>HALIOTIS</i> Linnaeus, 1758		•	1		1	
			TROCHIDAE		•	<i>MONODONTA</i> Lamarck, 1799	•	•	1	1	1	
			MONODONTINAE		•							
			TURBINIDAE		•	<i>BOLMA</i> Risso, 1826	•	•	1	1	1	1
NEOTAENIOGLOSSA	•	•	ASTRAEINAE	•	•		•	•	4	4	1	
			CERITHIIDAE	•	•	<i>CERITHIUM</i> Bruguière, 1789	•	•	1	1	1	
			POTAMIDIDAE	•	•	<i>BITTUM</i> Gray, 1847	•	•	1	1	1	
			RISSOIDAE	•	•	<i>PIRENELLA</i> Gray, 1847	•	•	1	1	1	
			RISSOINAE	•	•	<i>ALYANIA</i> Risso, 1826	•	•	1	1	1	
			STROMBIDAE	•	•	<i>STROMBUS</i> Linnaeus, 1758	•	•	1	1	1	
			VERMETIDAE*	•	•	<i>VERMETUS</i> Cuvier, 1800	•	•	1	1	1	
				•	•	<i>PETALOCONCHUS</i> Lea, 1843	•	•	1	1	1	
				•	•	<i>TONNA</i> Brunnich, 1771	•	•	1	1	1	
				•	•	<i>BOLINUS</i> Pusch, 1837	•	•	1	1	1	
NEOGASTROPODA	•	•	MURICIDAE	•	•	<i>HEXAPLEX</i> Perry, 1811	•	•	1	1	1	
			MURICINAE	•	•			•	1	1		
			BUCCININAE	•	•	<i>BUCCINULUM</i> Deshayes, 1830		•	1	1		
				•	•	<i>POLLIA</i> Gray J. E. in Sowerby, 1834	•	•	1	1		
			FASCIOLARIINAE	•	•	<i>FASCIOLARIA</i> Lamarck, 1799	•	•	1	1		
			NASSARIINAE	•	•	<i>NASSARIUS</i> Duméril, 1806	•	•	1	1		
				•	•	<i>CYCLOPE</i> Risso, 1826	•	•	1	1		
			COLUMBELLIDAE	•	•	<i>COLUMBELLA</i> Lamarck, 1799	•	•	1	1		
CONIDAE	•	•	<i>CONUS</i> Linnaeus, 1758	•	•	1	1					

Table 1 (continued)

Class / Subclass: G A S T R O P O D A : O P I S T O B R A N C H I A											
Orders	T	F	Families & Subfamilies	T	F	Genera	T	F	Number of species	T	F
1	2	3	4	5	6	7	8	9	10	11	12
NUDIRANCHIA	•	•	CHROMODORIDIDAE	•	•	<i>HYPSELODORIS</i> Stimpson, 1855	•	•	1	1	1

* In the material there are more specimens of vermetides than those identified by us.

Table 2

Class / Subclass: B I V A L V I A : P T E R O M O R P H A											
Orders	T	F	Families & Subfamilies	T	F	Genera	T	F	Number of species	T	F
1	2	3	4	5	6	7	8	9	10	11	12
ARCORIDA	•	•	ARCIDAE ARCINAE GLYCYMERIDIDAE GLYCYMERIDINAE	•	•	<i>ARCA</i> Linnaeus, 1758 <i>BARBATIA</i> Gray J. E., 1842 <i>GLYCYMERIS</i> Da Costa, 1778	•	•	1 1 2	1	2
MYTLOIDA	•	•	MYTILIDAE MYTILINAE PINNIDAE	•	•	<i>MYTILUS</i> Linnaeus, 1758 <i>MYTILASTER</i> Monterosato, 1883 <i>PINNA</i> Linnaeus, 1758	•	•	1 1 1	1	1

Rough systematic list of Bivalves.

Table 2 (continued)

Orders	T	F	Families & Subfamilies	T	F	Genera	T	F	Number of species	T	F	
												5
1	2	3	4	5	6	7	8	9	10	11	12	
PTEROIDA	•	•	PECTINIDAE	•								
			PECTININAE	•		<i>PECTEN</i> Müller O. F., 1776	•		1	1		
			CHLAMYDINAE	•	•	<i>CHLAMYS</i> Röding, 1798	•	•		1	1	1
			ANOMIIDAE		•	<i>ANOMIA</i> Linnaeus, 1758		•		1		1
OSTREINA		•	LIMIDAE	•	•	<i>LIMA</i> Bruguière, 1797	•	•	2	1	1	
			OSTREIDAE									
			OSTREINAE		•	<i>OSTREA</i> Linnaeus, 1758	•	•		1		1
			CRASSOSTREINAE		•	<i>CRASSOSTREA</i> Sacco, 1897		•		1		1
						<i>OSTREOLA</i> Monterosato, 1884		•		1		1
						<i>CHAMA</i> Linnaeus, 1758	•		•		1	
VENEROIDA	•	•	CARDITIDAE	•		<i>VENERICARDIA</i> Lamarck, 1801	•		1	1		
			VENERICARDIINAE	•								
			CARDIIDAE			<i>ACANTHOCARDIA</i> Gray J. E., 1851	•			1	1	
			CARDIINAE	•								
			LAEVICARDIINAE	•		<i>LAEVICARDIUM</i> Swainson, 1840	•		•	1	1	1
						<i>CERASTODERMA</i> Poli, 1795	•		•	2	2	2
			MACTRIDAE									
			MACTRINAE			<i>MACTRA</i> Linnaeus, 1767	•		•	1	1	1
			SOLENIIDAE									
			SOLENINAE			<i>SOLEN</i> Linnaeus, 1758	•		•		1	1
			PHARELLIDAE			<i>ENSIS</i> Schumacher, 1817	•		•		2	2
			DONACIDAE			<i>DONAX</i> Linnaeus, 1758	•		•		1	1
			PSAMMOBIIDAE									
			PSAMMOBIINAE			<i>PSAMMOBIA</i> Lamarck, 1818		•			1	
SOLECURTIDAE												
SOLECURTINAE			<i>PHARUS</i> Gray J. E., 1840	•		•		1	1	1		

Table 2 (continued)

Orders	T	F	Families & Subfamilies	T	F	Genera	T	F	Number of species	T	F
1	2	3	4	5	6	7	8	9	10	11	12
VENEROIDA	•	•	VENERIDAE VENERINAE CHIONINAE PITARINAE TAPETINAE	•	•	VENUS Linnaeus, 1758 CHAMELEA Moerch, 1853 CALLISTA Poli, 1791 VENERUPIS Lamarck, 1818	•	•	2 1 1 1 1	1	1

Table 3

Rough systematic list of Chitons.

Orders	T	F	Families & Subfamilies	T	F	Genera	T	F	Number of species	T	F
1	2	3	4	5	6	7	8	9	10	11	12
LEPIDO- PLEURIDA	•	•	CHITONIDAE CHITONINAE	•	•	CHITON Linnaeus, 1758	•	•	1	1	1

Class: POLYPLACOPHORA

Table 5 (continued)

Species & Subspecies	Collecting areas / specimens																	Remarks
	AS															MS		
	T							F								T		
	K	B	ÇG	Do	Y	Di	Ça	Ay	Al	K	Ay	Y	Bu	Ch	P			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
<i>Columbella rustica</i> (Linnaeus, 1758)					1							1				⊙ 1-3 m ⊥ RZ SG RPM O Ø ≈ CC		
<i>Conus mediterraneus</i> Hwass in Bruguière, 1792					2											O ≈ RPM EC ⊙ ◆ a y ≈ 2-5 m ⊥ RPM EC CC		
<i>Cyclope neritea</i> (Linnaeus, 1758)				5	9										2	⊙ O ≈ RPM EC ⊙ ◆ a y ≈ 2-5 m ⊥ RPM EC CC		
<i>Fasciolaria lignaria</i> (Linnaeus, 1758)																⊙ O ≈ RPM EC ⊙ ◆ a y ≈ 2-5 m ⊥ RPM EC CC		
<i>Haliotis tuberculata lamellosa</i> Lamarek, 1822												13				⊙ O ≈ RPM EC ⊙ ◆ a y ≈ 2-5 m ⊥ RPM EC CC		
<i>Hexaplex trunculus</i> (Linnaeus, 1758)					1	1	1	1	1	1		6			5	⊙ ◆ O ≈ ep ⊥ b 2-5 m ⊥ CP RPM EC CC RZ SG ⊙ CC		
<i>Hypselodoris picta</i> (Schultz in Philippi, 1836)					1							1				⊙ CC		
<i>Monodonta (Osilinus) turbinata</i> (Von Born, 1778)	5				128					1	2				1	⊙ ◆ O ≈ 2-5 m ⊥ EC CC RPM MI ≈ RPM EC CC		
<i>Nassarius (Sphaeronassa) mutabilis</i> (Linnaeus, 1758)				2												O ≈ RPM EC CC		
<i>Patella caerulea</i> f. <i>subplana</i> Potiez & Michaud, 1838												12			3	O ≈ ⊥ 2-5 m ⊥ CC EC RPM RZ Ø ≈ ⊥ CC		
? <i>Patella rustica</i> Linnaeus, 1758													1			Ø ≈ ⊥ CC		
<i>Patella ulysipponensis</i> Gmelin, 1791													1			O RZ SG		
<i>Pataloconchus (Macrophragma) glomerata</i> (Linnaeus, 1758)																O ⊥ (on <i>Haliotis</i>) RPM RZ		
<i>Pirenella conica</i> (Blainville, 1826)										9						O ≈ a sa y CP		

Table 5 (continued)

Species & Subspecies	Collecting areas / specimens																Remarks
	AS																
	T								F								
	K	B	ÇG	Do	Y	Di	Ça	Ay	Al	K	Ay	Y	Bu	Ch	P	MS	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
<i>Polia scacchiana</i> (Philippi, 1844)															1		O ≈ RPM
<i>Strombus (Conomurex) decorus persicus</i> Swainson, 1821															25		O ≈ NIS 2-5 m ⊥ EC CC RPM
<i>Tonna galea</i> (Linnaeus, 1758)	1																Ø sa 1.5 m ⊥ EC
<i>Vermetus semisurrectus</i> Bivona Ant., 1832					1												O ⊥ (on <i>Barbatia</i>) CC

Table 6

Alphabetic list of Bivalves.

Species & Subspecies	Collecting areas / specimens																Remarks
	AS																
	T								F								
	K	B	ÇG	Do	Y	Di	Ça	Ay	Al	K	Ay	Y	Bu	Ch	P	MS	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
<i>Acanthocardia (Rudicardium) tuberculata</i> (Linnaeus, 1758)							1 v										O b CC
<i>Anomia ephippium</i> Linnaeus, 1758												1 v					O ≈ MI
<i>Arca tetragona</i> Poli, 1795												1 v					O ⊥ ≈ EC
<i>Barbatia (Barbatia) barbata</i> (Linnaeus, 1758)					1 v												O b ⊥ CC
<i>Callista chione</i> (Linnaeus, 1758)	3; 5 v				1; 1 v		1	7; 20 v									O a y ⊥ ≈ 1.5 m ⊥ EC CC RZ SG

Table 6 (continued)

Species & Subspecies	Collecting areas / specimens																	Remarks
	AS														MS			
	T							F							T			
	K	B	ÇG	4	5	6	7	8	9	Ai	K	Ay	Y	Bu	Ch	P		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
<i>Cerastoderma edule</i> (Linnaeus, 1758)				1 v		9 v										O a sa EC CC CP		
<i>Cerastoderma glaucum</i> (Poiret, 1789)			27		1											O ≈ CP		
<i>Chama gryphoides</i> Linnaeus, 1758									1							O † (on <i>Pinna</i>) A		
<i>Chamelea gallina</i> (Linnaeus, 1758)				1 v												O ≈ RPM EC		
<i>Chilamys (Proteopecten) glabra</i> (Linnaeus, 1758)								1 v			1					O a sa EC CC RZ RPM		
<i>Crassostrea gigas</i> (Thunberg, 1793)																O NIS 4-5 m ⊥		
<i>Donax (Serrula) trunculus</i> Linnaeus, 1758				1 v												O ≈ RPM EC		
<i>Ensis arcuatus</i> (Jeffrayes, 1865)				4 v												O EC CC		
<i>Ensis minor</i> (Chenu, 1843)				1; 1 v												O EC CC RPM		
<i>Glycymeris bimaculata</i> (Poli, 1795)	2 v							1 v								O Ø † 1.5 m ⊥ EC CC		
<i>Glycymeris pilosa</i> (Linnaeus, 1758)	3 v							2; 2 v								O † b 1.5 m ⊥ EC CC		
<i>Laevicardium crassum</i> (Gmelin, 1791)								1 v								O EC CC		
<i>Lima (Lima) hians</i> (Gmelin, 1791)												1				⊙ RZ SG		
<i>Lima (Lima) lima</i> (Linnaeus, 1758)														1 v		O ≈ 2-5 m ⊥ EC CC		
<i>Macra stultorum</i> (Linnaeus, 1758)				22 v				1 v								O † (with <i>Acetabularia mediterranea</i>) EC CC RPM		
<i>Mytilaster minimus</i> (Poli, 1795)			1													⊙ CP		
<i>Mytilus edulis</i> Linnaeus, 1758																O ≈ † (with many Vermetidae) CC		

Table 6 (continued)

Species & Subspecies	Collecting areas / specimens																Remarks
	AS												MS				
	T						F						T				
	K	B	ÇG	Do	Y	Di	Ça	Ay	Al	K	Ay	Y	Bu	Ch	P		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
<i>Ostrea edulis</i> Linnaeus, 1758												1 v				O RZ RPM	
<i>Ostrea stentina</i> (Payraudeau, 1826)												1 v				O RZ SG	
<i>Pecten jacobaeus</i> (Linnaeus, 1758)								1 v								Ø EC CC	
<i>Pharus legumen</i> (Linnaeus, 1758)				1 v												O EC CC	
<i>Pinna nobilis</i> Linnaeus, 1758							1; 1 v		1							⊙ O a sa 2 m ⊥ b A EC CC GC	
<i>Psammobia (Gobreaeus) depressa</i> (Pennant, 1777)												2 v	1			O ≈ y RZ SG CC	
<i>Solen marginatus</i> Pulteney, 1799					4											O CC	
<i>Venericardia antiquata</i> (Linnaeus, 1758)								1 v								O EC CC	
<i>Venerupis decussata</i> (Linnaeus, 1758)												1				O ≈ y RZ SG	
<i>Venus casina</i> Linnaeus, 1758								1 v								O EC CC	
<i>Venus verrucosa</i> Linnaeus, 1758	3 v				2 v		3; 2 v	1 v								⊙ O ≈ a y 1.5-4 m ⊥ b EC CC RPM RZ SG GC CP	

Table 7

Species & Subspecies	Collecting areas / specimens													Remarks	
	AS												MS		
	T						F						T		
K	B	ÇG	Do	Y	Di	Ça	Ay	Al	K	Ay	Y	Bu	Ch	P	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<i>Chiton (Rhyssoplax) olivaceus</i> Spengler, 1797			1									3			© RZ RPM

Table 8

Species & Subspecies	Collecting areas / specimens													Remarks	
	AS												MS		
	T						F						T		
K	B	ÇG	Do	Y	Di	Ça	Ay	Al	K	Ay	Y	Bu	Ch	P	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<i>Sepia officinalis</i> Linnaeus, 1758					2	2				1					() CC CP MI