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REPORT ON A COLLECTION OF DEMOSPONGIAE FROM SOFT BOTTOMS OF THE EASTERN ADRIATIC SEA

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ABSTRACT

The present paper deals with the material collected and sorted by Prof. Helena Gamulin-Brida during different expeditions in the Adriatic Sea. All the sponges were collected from the surface, mainly with dredges, from soft or detritic bottoms at 26 to 208m depth. Forty-one sponges were identified, in two cases at generic level only. The systematic position of *Spongosorites pachastrelloides* is here discussed.

INTRODUCTION

The Adriatic Sea has been intensively studied by many spongologists both in the distant past (Schmidt, 1862, 1968; Babic, 1922; Volz, 1939) and in more recent times (Rützler, 1965; Sará, 1961, 1969; Sará & Melone, 1963) but most of these studies focused on the coastal zone. However, due to the kindness of Prof. Helena Gamulin-Brida, I have received a collection of sponges coming, instead from soft or detritic bottoms of the Eastern Adriatic Sea that seemed to me worthy of a brief systematic study.

This material was collected between 1957 and 1971 in the course of different expeditions by the Institute of Oceanography of Split. Dredges and other surface devices were used to collect the sponges, due to the depth of the sampling sites, which ranges from 26 to 208m. Some ecological observations on the benthic community recorded in each station will be reported in a paper in preparation with Prof. Gamulin-Brida, Prof. Sará and other colleagues of the Zoological Institute of Zagreb.

The present collection includes 41 species of 32 genera.

List of sampling sites (see Fig. 1)

1. North Kvarner, mud, 51 - 54m.
2. Canal of Velebit: a) off Selce-Crikvenica, mud, 50m; b) off Novog, mud, 61 - 64m.
3. Canal of Velebit: a) off Senj, mud, 72 - 76m; b) canal between Rab and Goli Islands, mud, 72m.
4. Kvarnerić, East of Kres Island, mud, 94m.
5. South Kvarnerić, sandy-muddy bottom, 87-96m.
6. Canal of Velebit, from Koromačine to Karlobagu, mud, 70 - 74m.
7. Canal Jadrana, North of Vir Island, sandy-muddy bottom, 72m.
8. Cruise of the M.V. Hvar, 43° 35′ N - 15° 31′ E, muddy clay, 208m.
9. Cruise of the M.V. Hvar, 43° 34′ N - 15° 39·5′ E, mud, 164 - 188m.
10. Cruise of the M.V. Hvar, 43° 31.5′ N – 15° 45' E, mud, 168m.
11. Cruise of the M.V. Hvar, 43° 27′ N – 15° 46′ mud, 137 - 157m
12. Cruise of the M.V. Hvar, 43° 25.5′ N – 15° 27.5′ E, mud, 186 - 199m
13. Cruise of the M.V. Hvar, 43° 19′ N – 15° 35′ E, mud, 150 - 157m
14. Cruise of the M.V. Hvar, 43° 15′ N – 15° 54′ E, sandy-muddy bottom, 122m.
15. West of Sulet Island, sandy-muddy detritic bottom, 90 - 102m.
16. Canal of Split, mud, 51 - 76m;
17. Canal of Hvar, SW of Brač Island, sandy-muddy bottom, 72 - 83m.
18. Canal of Korćula, South of Ščedro Island, sandy-muddy bottom, 62 - 73m.
19. Canal of Hvar, SE of Brač Island, mud, 60 - 66m.
20. Canal of Neretva, between Hvar Island and Peljesac Peninsula, sandy-muddy detritic bottom, 26 - 36m.
21. NW of Palagruža Island, *Lithothamnion* bottom, 80 - 100m.

TETRACTINOMORPHA

Stellettidae

Stelletta grubii Schmidt 1862

Occurrence: 1028, St. 13, mud, 168m, 24.11.1968
Small, whitish fragment of a bigger specimen. Spicules: straight oxea 1550 - 2600 by 30 - 50um, orthotriaenes with rhabdome 1230 - 2070um by 40 - 62um and clads up to 100 by 30 - 40um. Oxyasters, 32 - 51 in diameter. Chiasters, 8 10um in diameter.

Stryphnus ponderosus (Bowerbank 1866)
Occurrence: 218, St. 19, mud, 60-66m, 29.7.1957.

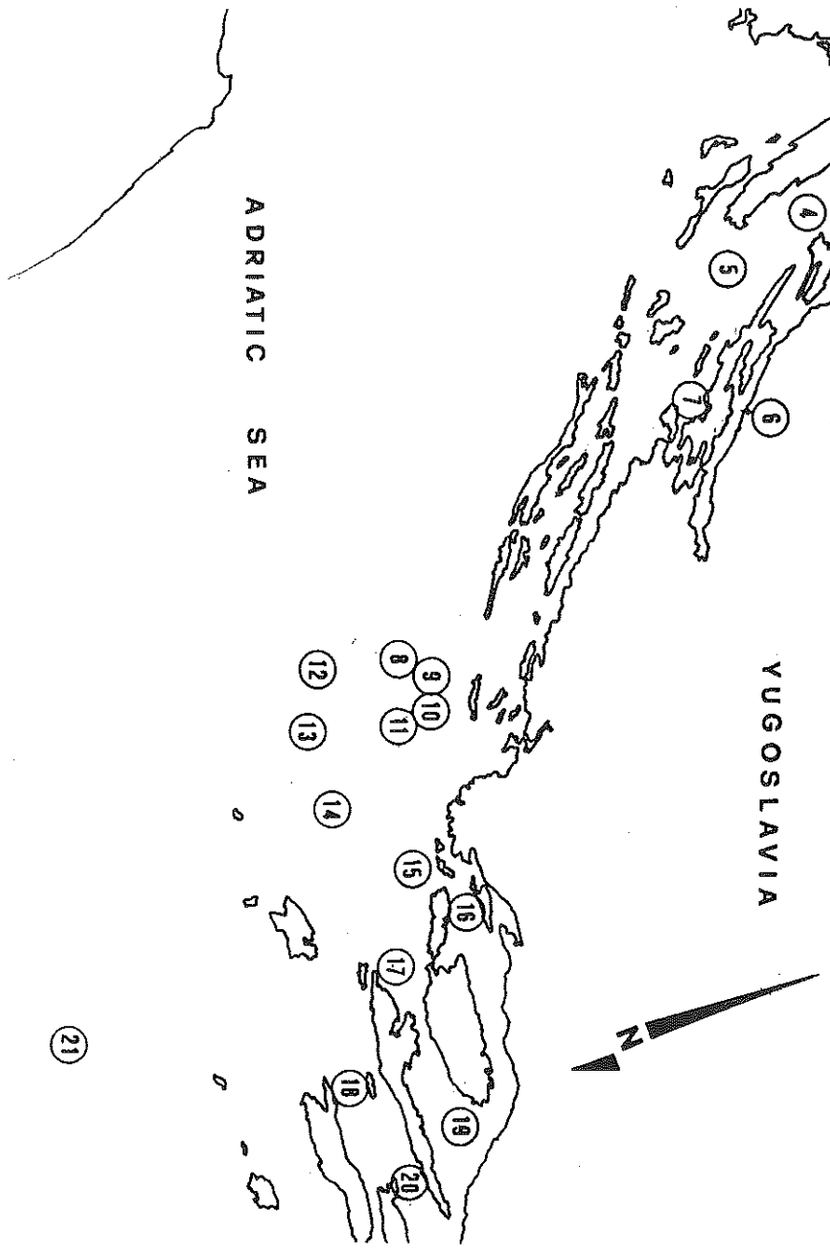

Fig. 1 – Map of Eastern Adriatic Sea. Numbers referring to the stations as given in the list of sampling sites.

97; 379; 14 I/1, St. 20, sandy-muddy detritic bottom, 26 - 36m, 30.6.1957.

All the specimens are massive and show a brownish ectosome and a paler choanosome. Spicules as usual. These findings confirm that the species is distributed on detritic bottoms, while *S. mucronatus* (not found in the present collection) seems to be restricted to shaded rocky cliffs at shallow depths.

Geodidae

Geodia cydonium (Jameson 1811)

Occurrence: 377, St. 20, sandy-muddy detritic bottom, 26 - 36m, 7.9.1957.

Pachastrellidae

Poecillastra compressa (Bowerbank 1866)

Occurrence: 7, St. 21, Lithothamnion bottom, 80 - 100m, 20.9.1961. 70/1, St. 15, sandy-muddy detritic bottom, 90 - 102m, 29.6.57. 219, St. 19, mud, 60 - 66m. 29.7.1957.

The shape of the specimens in life is not known, but some of the fragments are flattened (1cm thick).

Theneidae

Thenea muricata (Bowerbank 1858)

Occurrence: 1007, St. 1, mud, 51-54m. 25.7.1971. (2 specimens). IV/5(2), St. 9, mud, 164-188m, 24.4. 1957 (2 specimens). K58, St. 11, mud, 137 - 157m, 24.4.1957. H 71/5, St. 14, sandy-muddy bottom, 122m, 23.4.1957. 7 bis, St. 21, Lithothamnion bottom, 80 -100m, 20.9.1961.

The seven specimens are rather small, averaging 2cm in diameter excluding the roots. They are characterized by the abundance of slightly rough plesiasters and belong to the form *schmidti* (Babić, 1916). The presence of this species in the channel region of the North-Eastern Adriatic in relatively shallow waters (Gamulin Brida, 1969) is remarkable.

Suberitidae

Suberites domuncula (Olivi 1792)

Occurrence: 14 III/3, St. 20, sandy-muddy detritic bottom, 26 - 36m, 7.9.1957. 1011; 1034, St. 2 b, mud, 61 - 64m, 26.7.1971.

Fragments of massive specimens with the typical smooth surface. The colour in alcohol is brown. Spicules: tylostyles variable in length and thickness (135 - 350μm by 4 - 7μm) with well formed heads. Modifications into styles and oxea are rare. Microstrongyles (18 - 20 by 1 - 2μm) are always abundant.

Suberites carnosus (Johnston 1842)

Occurrence: 6 a/1, St. 14, sandy-muddy bottom, 122m, 23.41957. IV/7 (4), St. 12, mud, 186-199m, 24.4.1957. 51; 52, St. 13, mud, 150 -157m 24.4.1957. 1015, St. 5, sandy-muddy bottom, 87 - 96m, 27.8.1968.

Specimen 6a/1, belonging to the form *ramosus,* shows anastomosed cylindrical branches 2 - 4mm in diameter and up to 10cm long. The tylostyles are variable in size: 198 - 561 by 6 - 11um. The other three globose specimens belong to the form *typicus.* Their spicules are in the same size range.

Rhizaxinella elongata (Ridley & Dendy 1886)

Occurrence: 1010, St. 1, mud, 51 - 54m, 25.7.1971

Fragment without stalk, about 1 cm in diameter. Spicules: styles 240 - 2170 by 6 - 17μm; tylostyles 210 - 450 by 4 - 8μm.

Rhizaxinella pyrifera (Delle Chiaje 1828)

Occurrence: 1012, St. 3a, mud, 72 - 76m, 26.7.71. 1001; 1002, St. 9, mud, 200m. 10.10. 1968. 55, St. 13. 13, mud, 150 - 157m, 24.4.1957. 6a/2, St. 14, sandy-muddy bottom, 122m, 23.4.1957.

Cylindrical or elongated bodies up to 3cm long with a diameter of 1cm. The stalks, 3 - 4mm thick and 3 - 4 cm long, may dichotomise (1002) carrying separate bodies. Spicules: styles to subtylostyles, flexuous in the axis, 175 - 1320 by 4 - 25μm; rhapides: 95 - 120 by less than 1μm.

Clionidae

Cliona vastifica Hancock 1849

Occurrence: IV/3, St. 8, mud. 208m, 24.4.1957.

Spiny oxea and tylostyles were observed in a preparation of *Spongosorites pachastrelloides.*

Tethyidae

Tethya citrina Sará & Melone 1963

Occurrence: 1013, St. 3a, mud, 72-76m, 26.7.1971.

Axinellidae

Axinella damicornis (Esper 1794)

Occurrence: 243, St. 17, sandy-muddy bottom, 72 - 83m, 26.7.1957

Oxea stronger than usual, up to 17um thick (Pansini, 1983).

Hemiasterellidae

Stelligera stuposa (Ellis & Solander 1786)

Occurrence: 1009, St. 1, mud, 51-54m, 25.7.1971. 14 III/4, St. 20, sandy-muddy detritic bottom, 26 - 36m, 7.9. 1957.

Specimen 1009 is formed by hispid, slender (2mm thick) slightly flattened branches with frequent dichotomies and pointed tips. The bigger fragment is 4cm high. Specimen 14 III/4 is smaller, only 2cm high, and shows two flattened branches. Spicules: styles to strongyles, straight, bent or flexuous, 520 - 2530 by 5 - 24μm. Slender oxea, which may be straight, gently curved and sometimes bent in the middle. They measure 350 - 950 by 1.5-4.5μm. Oxyasters: 14-25μm in diameter, not abundant. Specimen 14 III/4 differs from the other in the thickness of the spicules (styles and strongyles not exceeding 16μm) and in the diameter of the oxyasters (up to 18μm).

Raspailiidae

Raspailia viminalis Schmidt 1862

Occurrence: 1004, St. 1, mud, 51-54m, 25.5.1971. 13 II/1, St. 18, sandy-muddy bottom, 62 - 73m, 28.7.1957.

Fragments of stems about 5cm high and 3mm thick. The colour in alcohol is brown and the surface hispid. Spicules: styles to tylostyles with faint swellings at their heads. Most of them measure 2100 - 2700 by 14 - 37μm, but smaller spicules (300 - 400μm long) do occur. Anisoxea to strongyloxea, straight or slightly curved 400 - 500 by 2 - 5μm. Acanthostyles: straight, with small heads, 108 - 145 by 5 - 7μm;

CERACTINOMORPHA

Halichondriidae

Halichondria aurantiaca (Schmidt 1864)

Occurrence: 160, St. 19, mud, 60-66m, 29.7.1957.

Fragments from a massive specimen, with typical halichondroid skeleton. The colour in alcohol is cream. The surface is smooth and the ectosome not separable. Oxea bent or straight with sharpened ends. They measure 330 - 805 by 4 - 14μm.

Spongosorites pachastrelloides (Topsent 1892)

Occurrence: IV/3 bis, St. 8, mud. 208m, 24.4.1957

The specimen is cylindrical, probably erect, with two deep narrowings (Fig. 2). It is 7cm high with an average diameter of 1.5cm. The surface is smooth, with a layer of tangentially arranged oxea which do not form a detachable ectosome. The dense halichondroid choanosome gives the sponge a firm consistency. The colour in alcohol is whitish. Very small oscula, about 0.5mm wide, are scattered in the median part of the cylinder. The oxea (Fig. 3) may be divided into two categories even if intermediate forms can be found: big oxea, slightly curved, with sharpened or somestimes stepped ends, measuring 660 - 1410 by 14 - 33um; small oxea of the same form as the big ones but often showing a double bend on the same side. They measure 105 - 300 by 5 - 10um.

Remarks. The attribution of this specimen to *S. pachastrelloides* seems to me certain, since it shows all the characteristics described by Topsent (1892) for the type specimen. Vacelet (1961, p. 29), however, taking into account the size of the spicules, refers to *S. pachastrelloides* rather than to *S. genitrix* (Schmidt) = *S. intricatus* (Topsent) two specimens from Bonifacio which are black, massive, and frequently show malformed oxea. Pulitzer-Finali (1977, 1983) describes as *S. intricatus* several specimens showing the typical teratological alterations of the spicules and, often only after preservation, the black colour. Levi first (1957) and secondly Pulitzer-Finali (1983) referred to *S. intricatus* a black specimen from Algeria described by Topsent (1901) as *Topsentia glabra.* According to these records and to the numerous specimens of *S. intricatus* that I have collected in the Ligurian Sea, it seems to me that *S. pachastrelloides* and *intricatus* greatly differ in colour, form, consistency, shape and size of the oxea, and depth distribution. I am thus inclined to consider the specimens collected by Vacelet as *intricatus,* whose spicule size range would be extended, and to regard the one recorded above as the first mediterranean record of *S. pachastrelloides.*

Hymeniacidonidae

Hemimycale columella (Bowerbank 1874)

Occurrence: 13 I/5, St. 18, sandy-muddy detritic bottom, 62 - 73m, 30.6.1957. 382, st. 20, sandy-muddy detritic bottom, 26 - 36m, 7.9.1957.

Styles and strongyles, straight or slightly curved, measuring 360 - 460 by 4 - 7μm.

Ulosa digitata (Schmidt 1866)

Occurrence: 233, St. 17, sandy-muddy bottom, 72 - 83m, 26.7.1957. 1008, St. 1, mud, 51 - 54m, 25.7.1971.

Thinner and thicker styles, straight or gently curved: 155 - 202 by 2 - 9μm. They can show swellings along the shaft. Oxea of the same form

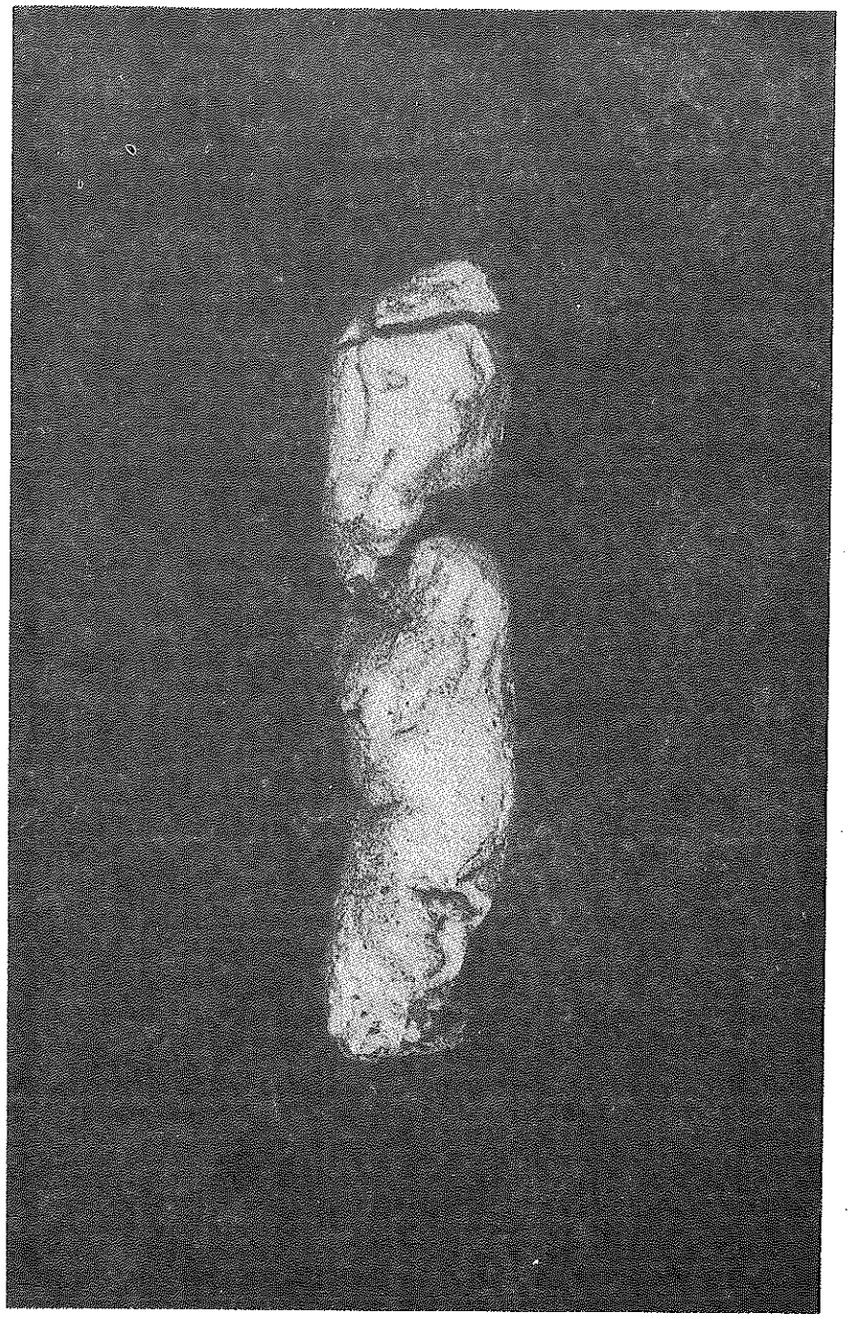

Fig.2 - *Spongosorites pachastrelloides,* specimen IV/3

and size as styles can occasionally be observed.

Mycalidae

Mycale contarenii (Martens 1824)

Occurrence: 65/1, St. 16, mud, 51 - 59m, 26.6.1957. 232; 237, St. 17, sandy-muddy bottom, 72 - 83m, 26.7.1957. 284; 285, St. 18, sandy-muddy bottom, 62 - 73m, 28.7.1957. 217, St. 19, mud, 60 -66m, 29.7.1957.

Mycale massa (Schmidt 1862)

Occurrence: 72; 228, St. 15, Sandy-muddy detritic bottom, 90 - 102m, 29.6.1957. 235, St. 17, sandy-muddy bottom, 72 - 83m, 26.7.1957. 186; 323, St. 19, mud, 60 - 66m, 29.7.1957. 14 III/5, St. 20, sandy-muddy detritic bottom, 26 - 36m, 7.9.1957.

Mycale syrinx (Schmidt 1862)

Occurrence: 1005, St. 1, mud, 51 - 54, 25.7.1971. 1014, St. 5, sandy-muddy bottom, 87 - 96m, 27.8.1968, H 44/1, St. 8, clay, 208m, 24.4.1957 IV 6/3, St. 9, mud, 164-188m, 24.4.1957. IV 8/5, St. 12, mud, 186 - 199m, 24.4.1957. 58, St. 13, mud, 150 - 157m, 24.4.1957. H 71/2; H 71/3; 6a/3, St. 14, sandy-muddy bottom, 122m, 23.3.1957. 232 bis, St. 17, sandy-muddy bottom, 72 - 83m, 26.7.1957.

These three *Mycale* species were so carefully described by Topsent (1924) that, having only material preserved for a long time, I cannot add new information. The abundance of the genus *Mycale* on these soft, relatively deep, bottoms is remarkable.

Biemnidae

Sigmatoxella annexa (Schmidt 1870)

Occurrence: 1020, St. 4, mud, 94m, 22.8.1968. IV/2, St. 8, mud, 208m, 24.4.1957. 1003; IV/4 (1), St. 9, mud, 164 - 188m, 24.4.1957. 1017, St. 10, mud, 168m, 12.10.1968. H71; H71/1; H71/4, St. 14, sandy-muddy bottom, 122m, 23.4.1957. 70/II, St. 15, sandy-muddy detritic bottom, 90 - 102m, 29.6.1957. 202, St. 16, mud, 76m, 25.8.1957. 283, St. 18, sandy-muddy bottom, 62 - 73m, 28.7.1957.

Specimens massive or erect, in the form of more or less flattened cylinders. A flashy pulp underlies an easily detachable ectosome. The colour in alcohol is light brown. Spicules: tylosytles 260 - 725 by 3 - 17um. They are fusiform in specimen H 71/1. Toxa: 93 - 122 by 1 - 2um. Sigmata: 25 - 35 ny 2 - 3um and 12 - 16 by 1 -2um

Crellidae

Yvesia topsenti (Babić 1922)

Occurrence: 383, St. 20, sandy-muddy detritic bottom, 26 - 36m, 7.9.1957.

The single fragment I have from a massive specimen is fleshy, soft and completely without colour. Spicules: stout strongyles curved or slightly flexuous, 260 - 290 by 4 - 5μm. Thin strongyles of the same form, not thicker than 1.5μm. These strongyles, which were noted by Babić (1922, p. 247) and apparently disregarded by Topsent (1928, p 231), do not seem to be juvenile forms but a distinct category of spicules. Acanthoxea, curved, 100 - 159 by 4 - 5μm. Isochelae, not abundant, 14 - 16μm. Sigmata, numerous, 11 - 38 by 1 - 2μm.

Myxillidae

Myxilla rosacea (Lieberkühn 1859)

Occurrence: 236, St. 17, sandy-muddy bottom, 72 - 83m, 26.7.1957. 378, St. 20, sandy-muddy, detritic bottom, 26 - 36m, 7.9.1957.

Crumby fragments, friable when dried. Spicules: acanthostyles to acanthostrongyles, 197 - 230um by 7 - 9μm. Tornota 180 - 200 by 2 - 3 μm; sigmata 14 - 21 μm, very thin; isanchorae 10 - 32μm.

Myxilla prouhoi (Topsent 1892)

Occurrence: 1018, St. 10, mud, 168m, 12.10.1968. 240, St. 19, mud, 60 - 66m, 29.7.1957.

Fragments of rather bushy specimens, friable when dried; the colour in alcohol is light brown. Spicules: ectosomal strongyles, 180 - 200 by 5um. Acanthostyles and acanthostrongyles with spines on their whole length (Topsent 1925, p. 699), 150 - 200 by 9 - 10um. Isanchorae: 28 - 61um.

Myxilla sp.

Occurrence: 6a/2bis, St. 14, sandy-muddy bottom, 122m, 23.4.1957.

The specimen is amorphous, rather soft and friable, light beige in alcohol. The oscula are very small, 0, 5 - 1mm in diameter, with an irregular contour. The sponge is covered by a translucent not easily detachable ectosome, which is formed by tornota sometimes arranged in bunches. Underlying the tornota a dense layer of isanchorae and sigmata can be observed. The crumby, not very thick, choanosome is formed by a rather confused meshwork of acanthostyles.

Spicules (Fig. 4.): Dermal tornota, straight,

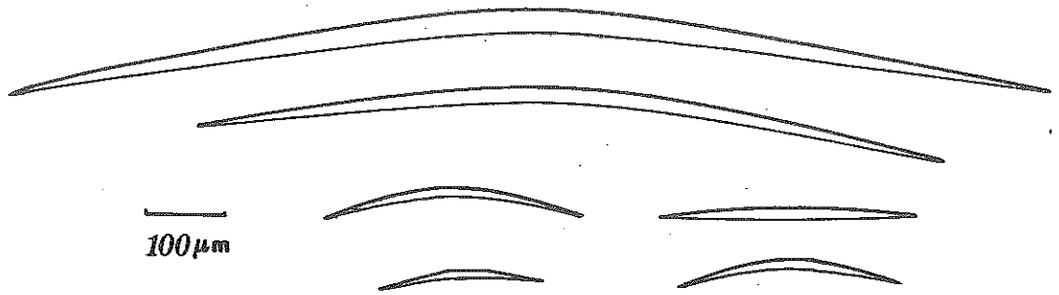

Fig. 3 — Spicules of *Spongosorites pachastrelloides*

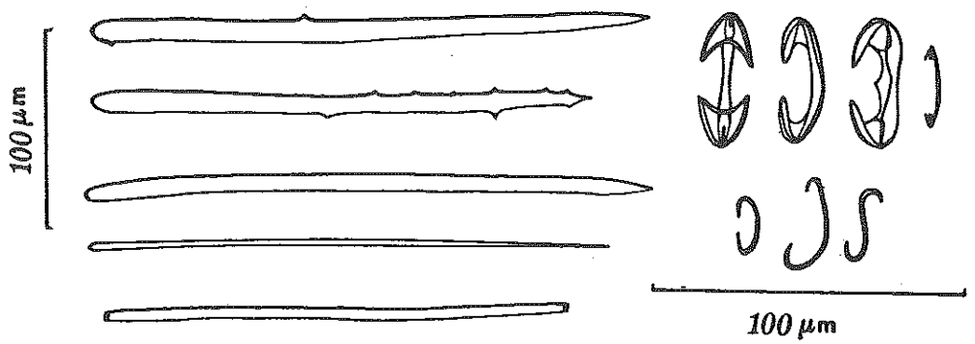

Fig. 4 — Spicules of *Myxilla* sp.

curved or lightly sinuous with the ends finely spined: 202 - 235 by 3- 6μm. Acanthostyles: straight or slightly curved, especially in their basal third; they are often completely smooth. The rare spines, which may be cuspidate and stout, can be scattered or concentrated on the basal end. Very slender form do occur and are always smooth. They measure 260 - 290 by 4 - 9μm. Isanchorae: these spatuliferous chelae can be divided in categories according to their dimensions: 16 - 22μm and 35 - 47μm of chord length. In the bigger ones single spines both in the concave and convex part of the shaft may be occasionally observed. Sigmata: abundant, thin, 18 - 28μm.
Remarks: The present species is well characterized by the particular form and hispidation of its acanthostyles. Close to it are *M. rosacea* which has similar tornota, sigmata and isanchorae and *M. prouhoi* which is alike in the hispidation of the acanthostyles, but shows also ectosomal strongyles and lacks sigmata and spined tornota. It seems to me untimely, however, before examining more material coming from the same area, to propose a new name for this species; I prefer to refer to it as *Myxilla* sp.

Lissodendoryx isodictyalis (Carter 1882)
Occurrence: 244, St. 19, mud, 60 - 66m, 29.7.57. 239, St. 17, sandy-muddy bottom, 72 - 83m, 26.7.1957.

Fragments of specimens probably encrusting but rather thick, measuring at least 1cm in height. Spicules: mucronated or smooth styles, 275 - 300 by 2 - 10μm; tylota, 275 - 320 by 3 - 7μm; arcuate isochelae, 12 - 38μm; sigmata, "C" shaped or rounded, 8 - 15μm.

Anchinoidae
Anchinoe mercator (Schmidt 1868)
Occurrence: 13 I/3, St. 18, sandy-muddy bottom, 62 - 73m, 30.6.1957.

An amorphous mass, soft, slightly hispid, formed by the sponge growing with an unidentified specimen of hydroid. Spicules: anisostrongyles, 260 - 290 by 4 - 6μm. Two categories of acanthostyles distinguished by their size: 120 - 160 and 200 - 300μm in length, both 4 - 8μm thick. The longest ones have the spines concentrated on the basal third.
Remarks. The specimen is referred to *A. mercator* due to the absence of chelae and to the form of the strongyles and acanthostyles, even if the latter are longer than usual.

Clathriidae
Antho involvens (Schmidt 1864)
Occurrence: 242, St. 19, mud, 60-66, 29.7.1957.

The specimen, light tan in alcohol, is soft, friable.

Clathria coralloides (Olivi 1792)
Occurrence: 158; 238, St. 19, mud, 60 - 66m, 29.7. 1957. 381/1, St. 20, sandy-muddy detritic bottom, 26 - 36m, 7.9.1957.

The specimens, broken into fragments, had probably been thickly encrusting. They show many lobes and small, flattened branches. The surface is hispid and the colour light brown. No oscula are detectable. The skeleton (Fig. 5) is a reticulation of more or less rectangular meshes. The fibres may be coated by the principal and by the auxiliary subtylostyles or cored by two or three of these spicules. They are echinated by the accessory subtylostyles which occasionally show vestigial spines. The secondary fibres are often free of spicules and non-echinated. Spicules: (fig. 6) the principal subtylostyles are always smooth and cannot be divided into categories according to their dimensions, but only to the position in the skeleton. The longer subtylostyles are slightly curved while the shorter ones are often straight and club shaped. They measure 115 - 450 by 7 - 18μm. Auxiliary subtylostyles, straight or slightly curved, rarely flexuous, 245 - 460 by 1.5-6μm. Palmate isochelae, abundant, 10 - 15μm. No toxa have been observed.
Remarks. In spite of the absence of toxa, which according to Topsent (1925) may be rare in some specimens, and after the examination of other specimens coming from the Adriatic Sea which have no toxa as well, I do not hesitate to attribute the present specimens to *C. coralloides*.

Haliclonidae
Reniera
Occurrence: 1021, St. 4, mud, 94m, 22.8.1968. 1016, St. 3b, mud, 72m, 23.8.1969. 328, St. 15, sandy-muddy detritic bottom, 90-102m, 2.9.1957.

Three small, massive fragments of a soft, crumby, slightly hispid, light brown *Reniera*. The skeleton is rather confused, but plurispicular tracts with transverse oxea can be detected. The ectosome is fragile, due to the presence of a layer of irregularly arranged tangential oxea with wide ostioliferous areas which are almost aspicular. The oscula are small (0.3 - 0.5mm) and numerous. Spicules: oxea straight or slightly curved; most

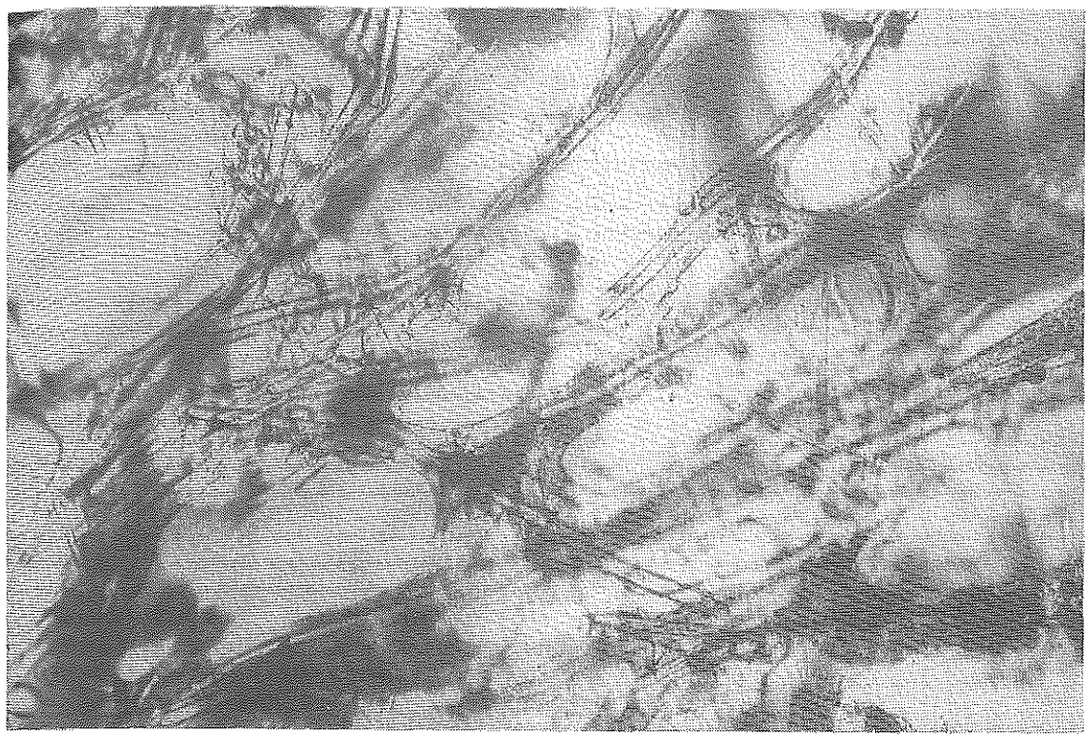

Fig. 5 – *Clathria coralloides:* perpendicular section of a branch

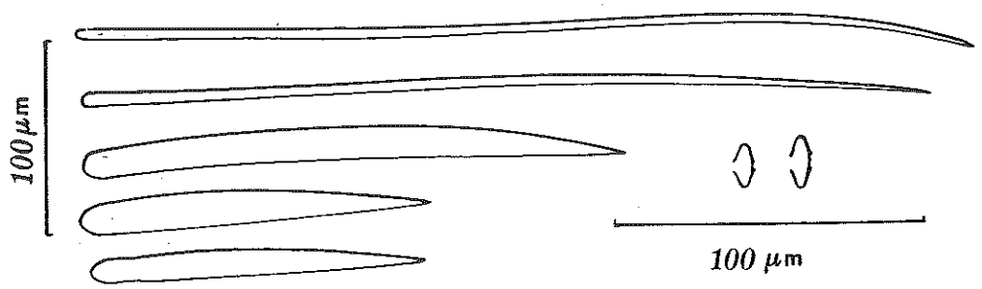

Fig. 6 – Spicules of *Clathria coralloides*

of their ends are pointed but blunt ones do occur. They measure 145 - 205 by 2 - 6µm.

Remarks. The sponge was not identified down to specific level due to the lack of information on the characters observed in vivo and to the smallness of the specimens.

Sigmadocia flagellifer (Ridley & Dendy 1886)
Occurrence: H 71/1; H71/4, St. 14, sandy-muddy bottom, 122m, 23.4.1957. 70/II, St. 15, sandy-muddy detritic bottom, 90 - 102m, 29.6.1957.

The characteristic flagelliform sigmata in three preparation of *Sigmatoxella annexa* reveal the presence of this species. The oxea too were found and measured, while the normal sigmata are not distinguishable from those of *S. annexa* Spicules: oxea, slightly curved, stout, tapering to sharp points; flagelliform sigmata, 93 - 122 by 3 - 4µm.

Adocia simulans (Johnston 1842)
Occurrence: 13I/1, St. 18, sandy-muddy bottom, 62 - 73m, 30.6.1957. 14III/2, St. 20, sandy-muddy detritic bottom, 26 - 36m, 7.9.1957.

Specimen 13I/1 is a hollow conical branch 4cm high and about 10mm wide, with roundish oscula (0.5 - 2mm) scattered on its sides. Specimen 14III/2 is flattened, from 2 to 5mm thick, with a small conical process 3mm high bearing an osculum. The consistency of the dried specimens is tough, even if they can be easily broken; The ectosome is a unispicular network of oxea forming more or less triangular meshes. In the choanosome plurispicular tracts with transverse spicules are detectable in a dense skeletal mass. Spicules: oxea, sharpened, straight or slightly curved, 80 - 180 by 2.5 - 9µm.

Spongiidae
Spongia officinalis L. 1759
Occurrence: 1036, St. 7, sandy-muddy bottom, 72m, 26.8.1969.

Thorectidae
Cacospongia mollior Schmidt 1862
Occurrence: 3II/225, St. 15, sandy-muddy detritic bottom, 90 - 102m, 26.7.1957.

Ircinia foetida (Schmidt 1862)
Occurrence: 98; 909, St. 20, sandy-muddy detritic bottom, 26 - 36m, 30.6.1957.

Two fragments of specimens well characterized by the conules and by the very thin filaments. The colour in alcohol is greyish-brown.

Ircinia dendroides (Schmidt 1862)
Occurrence: 14I/2; 100; 390, St. 20, sandy-muddy detritic bottom, 26 - 36m, 30.6.1957.

Three grey, branched specimens, as figured by Pulitzer-Finali & Pronzato (1980, p. 146).

Dysideidae
Dysidea avara (Schmidt 1862)
Occurrence: 1030, St. 6, mud, 70-74m, 13.8.1967.

Dysidea fragilis (Montagu 1818)
Occurrence: 13II/2, St. 18, sandy-muddy bottom, 62 - 73m, 28.7.1957.

The specimen is branched, dirty yellow.

Dysidea incrustans (Schmidt 1862)
Occurrence: 3II/255, St. 15, sandy-muddy detritic bottom, 90 - 102m, 26.7.1957.

The specimen is amorphous while the secondary fibres are free of inclusions.

Aplysinidae
Aplysina cavernicola (Vacelet 1959)
Occurrence: 1032, St. 6, mud, 70-74m, 13.8.1967.

A tubular process coming from a bigger, probably digitated specimen. The colour in alcohol is dark violet as usual.

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SUMMARY

Forty-one Demospongiae species coming from soft bottoms of the Eastern Adriatic Sea were identified and briefly described. The systematic position of *Spongosorites pachastrelloides* is here discussed, while a probably new *Myxilla* species is described but not erected, pending the study of further material.

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