FIRST DATA ABOUT ZOOPLANKTON IN S. STEFANO ROADSTEAD (LA MADDALENA'S ARCHIPELAGO)

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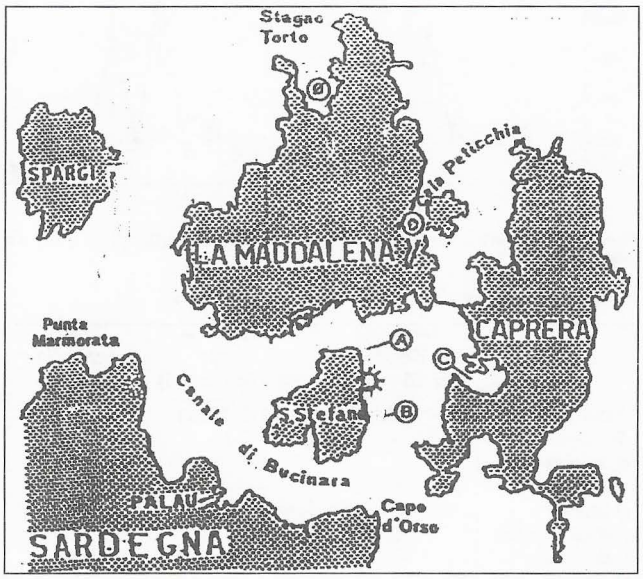
Summary

This work is related to the result archieved from the sampling of the zooplankton in La Maddalena's Archipelago; besides, it has been verified possible presences of radioactivity.

Key-words: Plankton, coastal water, radioactivity.

Since 1972, when a USA support naval base for nuclear submarines settled down in S. Stefano roadstead, many problems arose in order to protect people and environment. Monthly researches have been carried out in order to study the environing characteristic and the zooplankton in collaboration with La Maddalena Italian Navy Nucleo SDAI and the Sassari Ambient Physics Laboratory (1995-96). In this case of need 4 stations (0, A, B, C) have been set besides the radioactivity testing on the plankton patterns (1,2). (Fig.1).



In each station water samples have been draw on the surface and below as well; basic mesologic characteristics have been mesured. Also a double vertical netful has been done for gathering the zooplankton by using a 200 μm mesh net. The first one has been filtered using filters paper of cellulose acetate with porosity of 0.45 μm in order to get a spectrometric g analysis with a germanium detector in a 30000 sec analysis time.; the other one has been used for studying zoocoenosis.

No remarkable temperature change has been noticed between the surface and the seabed. The highest temperature has been registered in august with 28°, the lowest has been tested in december with 12°.The maximum oxygen concentration has been found out in june (116% saturation point); the minimum one in december (81%). The pH kept within sea water bounds with a change between 7.56 and 8.25.

The following taxa have been found:

Foraminifera: (*Textularia agglutinans* Orb., *Tretomphalus bulloides* (d'Orbs.); Radiolaria: (*Heliosoma echinaster* Haeck); Tintinnidae: (*Codonella aspera* (Fol.), *Poroecus apiculatus* (Cl.), *Favella serrata* (Mob.), *Xystonella lohmanni* Brandt; Anthomedusae: (*Eucodonium brownei* Hartlaub); Siphonophora: (*Sulculeolaria quadrivalvis* Blainville); Gastropoda: (larvae n.d.); Bivalvia: (larvae n.d.); Polychaeta: (*Sabellaria sp* (larvae), *Sabellaria alveolata* (larvae); Cladocera: (*Evadne spinifera* Mull.); Copepoda: (*Euterpina acutifrons* Claus, *Microsetella norvegica* Boeck, *Clausocalanus avenicornus* Dana, *Acarta clausi* Giesbrecht, *Centropages typicus* Kröyer, *Oithona nana* Giesbrecht); Ostracoda: (*Cypridina mediterranea* Costa); Cirripedia: (nauplius); Echinoidea: (*Echinocyamus pusillus* (O.F. Muller) (larvae); Ophiuridea: (*Ophiothrix fragilis* (Abild.); Appendicularia: (*Oikopleura dioica* Fol.); Salpida: n.d.

In station 0 has been registered the lowest number of taxa; station C is the one with the highest number. Copepoda, Cirripedia, Gastropoda, Bivalvia, Appendicularia and Foraminifera are the most recurrent. Their highest density has been registered respectively in A, B and C stations; station 0 has showed the lowest level.

Considering the spectrometric g tests about environing radioactivity (Tab. 1) registered on the plankton provided by Sassari USL office N°1 it has been remarked that radioactivity level is below the ambient average allowed registered in 1984 (3, 4).

According to the ecological data we can say that the environment is quite integral as the communities variety shows.

Tab.1 – Spectrometric g-tests on the plankton. The symbol < mean that the value noticed is lower than minimum value to reference.

Act-s (Bq/l)	Stat. A	Stat. B	Stat. C	Stat. 0
Ac-228	< 0,21762	< 0,16080	< 0,19429	< 0,21306
Be-7	< 15,794	< 12,360	< 12,903	< 16,916
Bi-214	< 0,12106	< 0,11083	< 0,10910	< 0,12905
Ce-141	< 16,632	< 16,151	< 18,140	< 19,840
Ce-144	< 0,26123	< 0,21747	< 0,28470	< 0,33434
Co-60	< 3,99883E-02	< 3,63638E-02	< 4,04547E-02	< 5,40287E-02
Cs-134	< 4,98928E-02	< 4,68360E-02	< 4,46057E-02	< 6,39316E-02
Cs-137	< 3,91346E-02	< 3,02048E-02	< 4,00206E-02	< 4,84988E-02
K-40	< 1,7899	< 1,6580	< 1,4847	< 2,1033
Mn-54	< 6,90693E-02	< 5,68262E-02	< 6,84941E-02	< 9,60961E-02
Pb-212	< 9,67370E-02	< 8,42424E-02	< 9,37124E-02	< 0,11513
Pb-214	< 8,38144E02	< 8,32805E-02	< 8,58532E-02	< 8,73801E-02
Ra-226	< 0,79838	< 0,71384	< 0,86072	< 0,91582
Ru-103	< 5,5835	< 5,1639	< 6,8782	< 7,5356
Th-232	< 22,783	< 17,980	< 20,626	< 24,593
Th-234	< 3901,7	< 3562,5	< 4200,4	< 4433,2
Tl-208	< 7,33299E-02	< 6,81128E-02	< 7,79036E-02	< 7,75862E-02
Zr-95	< 1,1085	< 1,3218	< 1,6302	< 1,7609

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