

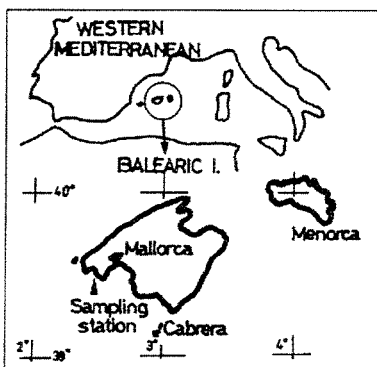
FAUNISTIC STUDY OF THE MESOZOOPLANKTON FROM THE SOUTH-WEST OF MALLORCA (BALEARIC ISLANDS)

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This paper shows the faunistic results of the HERCULE project planktonic study carried out in a sampling station placed south-west of Mallorca (Fig.). This study tries to contribute to the project goal, bringing information about hydrography and planktonic dynamics from whole Mediterranean Sea. The hydrographical and phytoplanktonic results are showed in the other two papers (FERNÁNDEZ DE PUELLES *et al.*, 1995; GOMIS and FERNÁNDEZ DE PUELLES, 1995). The zooplankton samples were got using Bongo net hauls provided with a 20 cm mouth diameter and 250 µm mesh-size. The sampling was done every ten days during an annual cycle (April 93–April 94). Two kinds of hauls were carried



Location of the sampling station

out in each sampling : a horizontal–superficial and an oblique (from -75 m approximately to surface). The collected organisms are fixed in a 4% formaldehyde solution buffered with hexamethylenetetramine. The use of sub-sampling methods makes easy the zooplankton identification and count (Table 1):

- 1. The highest qualitative and quantitative participation of total occurs in the summer, when the availability of phytoplankton persists.

- 2. The zooplanktonic community is characterized by the presence of a perennial species group: copepods *Paracalanus parvus*, *Clausocalanus spp.*, *Acartia clausi*, *Oithona nana*, *Oithona helgolandica*, immature individuals of the chaetognath *Sagitta* and the larvacean *Oikopleura dioica*. Every one of them is quoted as common epiplankton of the Western Mediterranean Sea.

- 3. Seasonal organisms add to the community in the course of the year : **summer**: case of cladocerans and the copepod *Temora stylifera* (observed during the longer part of the year, their presences are scarce in the winter samples), the doliolid *Doliolum nationalis* and molluscs (holo- and meroplanktonic species). Their observations occur in summer preferably because they are thermophile organisms; **autumn and spring** : the larger part of meroplanktonic larvae (decapods and polychaete larvae), in accordance with their planktotrophic characteristics; **winter** : abundance of the copepods *Centropages typicus* and *Isias clavipes*.

- 4. And a occasional species group is observed in the community. Their presences depend on the kind of haul (deep organisms such as ostracods *Conchoecia* in the oblique haul and Pontellidae hyponeustonic copepods in the surface haul) and climatic conditions (allochthonous species coming from oceanic holoplankton carried away by the storms, case of amphipods Hyperiidea). In this way, the larvae of brief planktonic live can be considered occasional, such as the Phoronids Actinotrocha.

FAUNISTIC GROUP	ZOOPLANKTONIC SPECIES	S		M		A		W			
		o	h	o	h	o	h	o	h		
H O L O P L A N K T O N	Cladocerans	<i>Penilia avirostris</i> Dana, 1849		4	3	4	4	4	3	1	1
	Cladocerans	<i>Evyadne spinifera</i> Müller, 1868		4	4	4	4	4	3	1	1
	Copepods	<i>Calanus helgolandicus</i> (Claus, 1863)		2	1	1	1	2	2	3	3
	Copepods	<i>Paracalanus parvus</i> (Claus, 1863)		4	4	3	3	4	4	3	3
	Copepods	<i>Clausocalanus</i> spp.		4	4	3	3	4	4	3	3
	Copepods	<i>Temora stylifera</i> (Dana, 1848)		3	3	3	3	3	3	2	2
	Copepods	<i>Centropages typicus</i> Krøyer, 1848		3	3	2	2	3	3	3	3
	Copepods	<i>Isias clavipes</i> Boeck, 1864		2	2	-	-	2	2	3	3
	Copepods	<i>Labidocera wollastoni</i> (Jubbok, 1857)		1	2	-	2	1	1	-	-
	Copepods	<i>Acartia clausi</i> Giesbrecht, 1889		3	3	3	2	3	3	2	2
	Copepods	<i>Oithona nana</i> Giesbrecht, 1892		3	3	3	2	3	3	2	2
	Copepods	<i>Oithona helgolandica</i> (Claus, 1863)		3	3	3	2	3	3	2	2
	Ostracods	<i>Conchoecia</i> spp.		1	-	1	-	1	-	2	-
	Amphipods	Hyperidea		1	-	-	-	-	-	1	-
	Molluscs	<i>Cresis acicula</i> Rang, 1828		2	2	3	3	2	2	-	-
	Molluscs	<i>Limacina</i> spp.		3	3	3	3	3	3	1	-
	Chaetognaths	<i>Sagitta</i> spp. (immature individuals)		2	2	2	2	2	2	2	2
	Larvaceans	<i>Oikopleura dioica</i> Föl, 1872		3	3	2	2	3	3	2	2
	Doliolids	<i>Doliolum nationalis</i> Borgert, 1894		2	2	3	3	2	2	-	-
M E R O	Polychaete	Nectocheta Larvae		2	2	-	-	2	2	1	1
	Decapods	Zoea Larvae		3	2	2	1	2	2	-	-
	Molluscs	Veliger Larvae		3	3	3	2	2	2	-	-
	Phoronids	Actinotrocha Larvae		1	-	-	-	1	-	-	-

Table 1. Participation of the most common zooplanktonic organisms.

Abundance groups: 1/ 0 – 10 individuals/10 m³; 2/ 10 – 100 individuals/10 m³; 3/ 100 – 1 000 individuals/10 m³; 4/ more than 1 000 individuals/10 m³.

Legend: S, spring. M, summer. A, autumn. W, winter. o, oblique haul. h, horizontal and superficial haul.

REFERENCES

- FERNANDEZ DE PUELLES, M.L. *et al.*, 1995. Zooplankton seasonal variations during a year study in the Majorcan shelf (Balears, Spain) (39°28'59 N; 2°25'63 E). *Rapp. Comm. int. Mer Médit.* 34.
- GOMIS, C. and FERNANDEZ DE PUELLES, M.L., 1995. The phytoplankton cycle in the south-west of the Majorcan shelf (Balearic Islands): seasonal distribution. *Rapp. Comm. int. Mer Médit.* 34.