

THE VERTICAL DISTRIBUTION OF FISH EGGS AND LARVAE AND Pelagia noctiluca OBTAINED
IN A CYCLE OF 24 HOURS.

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ABSTRACT

This paper summarizes the vertical distribution of fish eggs and larvae and Pelagia noctiluca obtained during a 24 hours station in the Catalan Sea, May 1984. The material was collected from 500 m depth to the surface by a multiple opening-closing net with intervals of four hours.

RESUME

Nous avons étudié la distribution verticale de l'ichthyo-plancton et de Pelagia noctiluca provenant d'une station fixe de 24 heures réalisée en mer Catalane au mois de mai 1984. Les pêches ont été effectuées à intervalles de 4 heures de 500 m jusqu'à la surface. La plupart des larves appartiennent à des espèces mésopélagiques, celles des Mictophidés étant les plus abondantes. En ce qui concerne les oeufs, les plus nombreux ont également été ceux des Mictophidés.

Between the 6th and the 11th of May, 1984, a transect of seven hydrographic stations was done in the Catalan Sea. In order to find the variations of vertical distribution of fish eggs and larvae during 24 hours six catches were done with intervals of four hours in St. 3 (40° 50' lat N., 3° 13' Lon E, depth: 2300 m). The material was collected from 500 m depth to the surface, by a multiple opening-closing net (Weikert and John, 1981). This multinet has a mouth area of 0.25 m² and was fitted with five nets of 300 size. Oblique tows were made between the following intervals: 500-200, 200-100, 100-50, 50-20 and 20-0 m. This station was coincident with a Pelagia noctiluca swarm, to evaluate its density in surface water was done an horizontal surface catch by means of a buoyant Bongo net with mesh size of 300 and 500 . Data of salinity and temperature standard levels were obtained for hydrographic cast using Niskin bottles, with reversing thermometers.

A total of 752 larvae and 449 fish eggs were examined. Almost all the larvae belonged to mesopelagic fish, among them, the most abundant were those of Myctophidae. Seventeen species of fish larvae were identified (table 1).

Virtually all the eggs belonged to the family Myctophidae. The vertical distribution of the total number of fish eggs and larvae found during the 24 h. cycle are shown by a contour diagram in fig. 1. We didn't find any differences between daylight and darkness catches.

500 specimens of Pelagia noctiluca were examined. The ephirae were

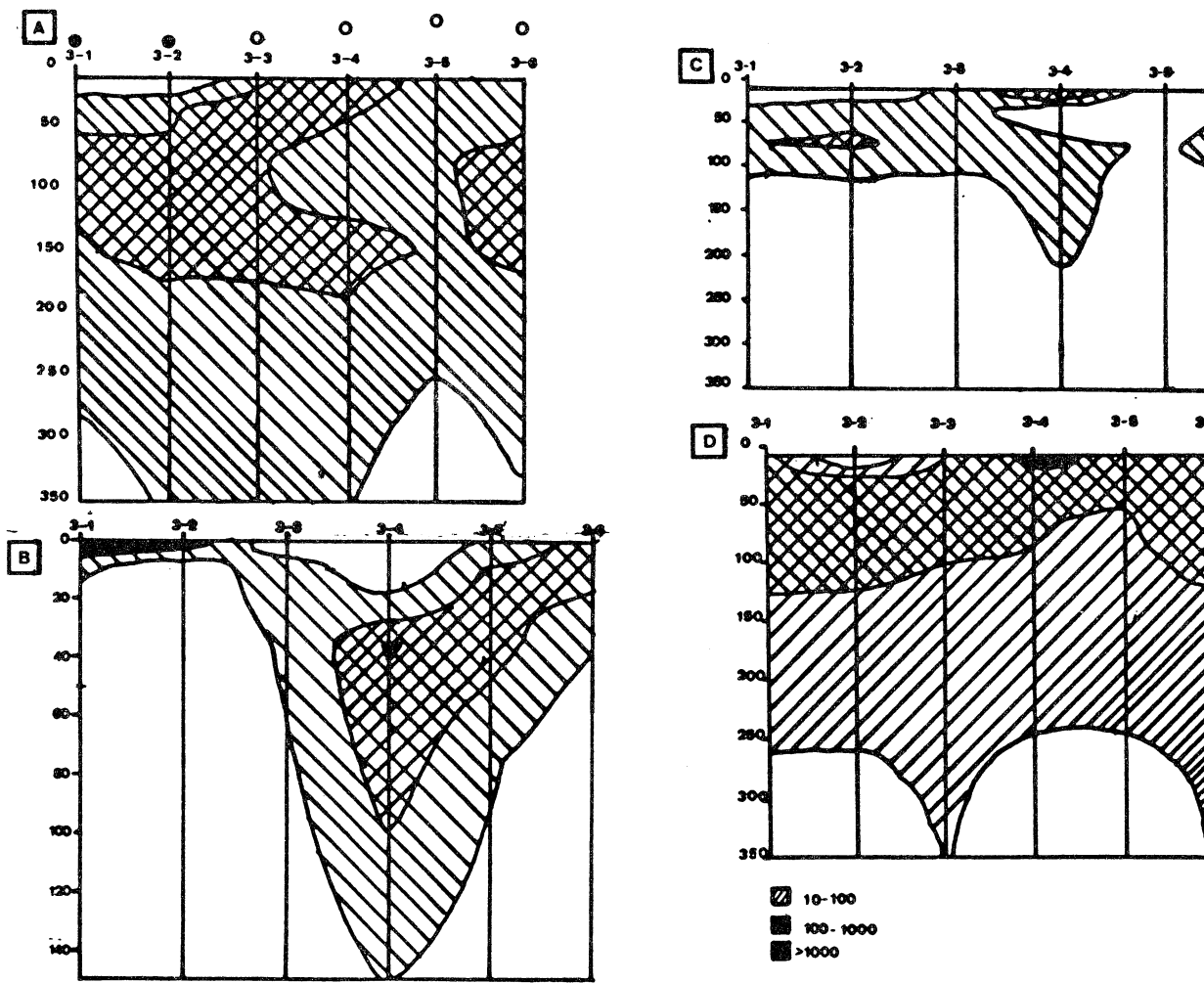


Fig.1.- Contour diagram of the vertical distribution of : A) Total eggs; B) *Pelagia m*; C) *Benthosema glaciale* and D) Total larvae, during the cycle in ST. 3

very scarce, only 34 individuals. The majority of the medusae were small in size, with an average diameter of 20.10 mm. Fig 1 shows the vertical distribution of this medusae. The maximum surface abundance was at night and at sunset. Although the number of individuals are not comparable because the movement of swarm, a vertical migration could be observed.

Between the St. 3 and 5 (40° 12' lat N, 3° 35' Lon E), a wide front of low salinity was found, probably due to the influence of Atlantic water mass (Salat and Cruzado, 1981), coming from the South of the Balearic Islands. The occurrence and movement of the swarm could be related to this front of Atlantic influenced water (fig.2).

95 contents of Pelagia noctiluca were analyzed, only in one of the gut contents appears one larvae belonged to Benthoosema glaciale, the most abundant species, and five eggs of Myctophidae. Thus Pelagia seems not to be an active predator of this species.

REFERENCES

- Salat, J and A. Cruzado, 1981.- Masses d'eau dans la Méditerranée occidentale: Mer Catalane et eaux adjacentes. Rapp. Comm. Int. Mer Médit., 27,6 (1981): 201-209
- Weikert, H and John, H.Ch. 1981.- Experiences with a modified Bé multiple opening-closing plankton net. J. Plankton Res., 3:167-176

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|--|---------|---------------------------------|----------|
| F. Myctophidae | | F. Sternoptichidae | |
| <u>Benthoosema glaciale</u> | 2,3,4,5 | <u>Argyropelecus hemigymnus</u> | 1,2,3,4, |
| <u>Myctophum punctatum</u> | 2,3,4,5 | F. Paralepididae | |
| <u>Notoscopelus elongatus</u> | 3,4,5 | <u>Notolepis rissoi</u> | 2,3,4 |
| <u>Notoscopelus bolini</u> | 3,4,5 | <u>Lestidiops sp.</u> | 2,3,4 |
| <u>Hygophum sp.</u> | 2,3,4 | F. Stomiatidae | |
| <u>Lampanyctus pusillus</u> | 3,4,5 | <u>Stomias boa boa</u> | 3,4,5 |
| <u>Lampanyctus crocodrilus</u> | 3,4 | F. Sparidae | 4 |
| <u>Ceratoscopelus maderensis</u> | 2,3,5 | F. Pleuronectidae | 4 |
| <u>Symbolophorus veranyi</u> | 3,4 | | |
| F. Gonostomatidae | | | |
| <u>Maurolicus muelleri</u> | 2,3,4,5 | | |
| <u>Cyclothone sp.</u> | 3,4,5 | | |
| <u>Vinciguerrria sp.</u> | 3 | | |
| Table 1.- List of Species. The depth where they appeared is indicated. | | | |
| | | Depth | |
| | | 1= 500-200 m | |
| | | 2= 200-100 m | |
| | | 3= 100- 50 m | |
| | | 4= 50- 20 m | |
| | | 5= 20- 0 m | |