

**AN ATTEMPT TO FIND EGGS AND LARVAE OF BLUEFIN TUNA (*THUNNUS THYNNUS*)  
IN THE BLACK SEA**

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**SUMMARY**

In July, 1993, a short searching cruise for bluefin eggs and larvae was carried out in the Black and Marmara Seas. Twenty zoa and ichthyoplankton samples were collected. The analysis of all the samples shows the absence of bluefin tuna eggs and larvae.

**RESUME**

En juillet 1993, une courte campagne de recherche d'oeufs et de larves de thons rouges a été réalisée dans la mer de Marmara et dans la mer Noire. Vingt échantillons de zooplancton et d'ichtyoplancton ont été collectés. L'analyse de tous les échantillons a montré l'absence d'oeufs et de larves de thons rouges.

**RESUMEN**

En julio de 1993 se llevó a cabo una breve campaña de búsqueda de huevos y larvas de atún rojo en el Mar Negro y en el Mar de Mármara. Se recogieron veinte muestras de zoo e ictioplancton, cuyo análisis demostró la ausencia de huevos y larvas de atún rojo.

## INTRODUCTION

At present, as far as the bluefin tuna in the Atlantic Ocean is concerned (*Thunnus thynnus* L.), it is generally well accepted the supposition of 2 stocks (East and West), with two different spawning areas: the Gulf of Mexico and the Mediterranean Sea.

Piccinetti and Piccinetti Manfrin (1993) report that the eggs and larvae of bluefin tuna have been found all over Mediterranean Sea except Alboran Sea, the Gulf of the Lions, Ligurian Sea and Northern Adriatic Sea, and they also express some doubts about their presence in Aegean Sea, Marmara Sea and Black Sea. Recently, Papacostantinou *et al.* (1992) have still found eggs and larvae of bluefin tuna in the most Southern Aegean Sea, next to the south area of Dodecanese as well as in the north and in the south of Crete. On the contrary, there are not sure information about Black Sea, even if in the past, Vodionitzkii and Kazanova (1954) pointed out their presence, and Akiuz and Artuz (1957) observed, in July, many adult bluefin tunas with ripe gonads.

## MATERIALS AND METHODS

In July 1993 (14.7 - 30.7) some drawings of zoo and ichthyoplankton were carried out in Black Sea (n° 17) and in Marmara Sea (n° 3) in order to understand if these spawning areas are suitable to bluefin tuna. A Bongo-Net 60 supplied with some flowmeters and a double plankton net was used (500 u and 350 u). The drawings were carried out in a double and slanting way from the surface down to 120 m. The oceanographic parameters were collected by a sounding line. Afterwards all the samples were fixed in formaldehyde at 4% and then tested in the Laboratory.

## RESULTS

There were no eggs and/or larvae of bluefin tuna or other great pelagic fishes in the drawings above-mentioned were not found; but it was possible to observe many eggs *Engraulis encrasicolus ponticus* and some of *Engraulis encrasicolus*. On the contrary a lot of Cnidaria with *Aurelia aurita* and Ctenoforia with *Mnemiopsis leidyi*, which caused a great ecologic disaster in the last years in Black Sea, Azov Sea and Marmara Sea (GESAMP, 1993), were observed. Even though it is not possible to exclude the presence of eggs and larvae of bluefin tuna at all as the material collection concerned only the southern Black Sea and 3 samples in Marmara Sea, it is reasonable to think that these areas are not interested in bluefin tuna's reproduction in spite of the observations by Vodionitzkii and Kazanova (1954). The latter supposition might be likely as it perfectly agrees with the thesis of other researchers from the University of Istanbul and some Turkish fishermen on the occasion of the symposium held in Istanbul in February 1993. On this occasion they pointed out that bluefin tunas suddenly have missed both in Black Sea and Marmara Sea for ten years (Miyake, 1993). This is certainly because of the last deep ecologic changes which occurred in those Seas.

Considering the oceanographic parameters, and in particular the usual rough thermic and salt changes (Kocatas *et al.*, 1993), it cannot be excluded that in the past tuna did not reproduce in those areas either, so that the observations by Vodionitzkii and Kazanova (1954) about the eggs and larvae finding, might be caused by a mistake coming from a wrong interpretation (Piccinetti and Piccinetti Manfrin, 1993), whereas the ones by Akiuz and Artuz (1957), concerning the presence of bluefin tunas with ripe gonads, might be referred to the migrating animals towards the most suitable areas to their reproduction.

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