

**A PRELIMINARY REPORT ON THE INVESTIGATIONS OF THE BULLET TUNA (*AUXIS ROCHEI*, RISSO 1810) CAUGHT IN THE TURKISH WATERS**

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**SUMMARY**

Samples of bullet tuna were collected in the northeastern Mediterranean Sea from January to May, 1994.

A total of 354 specimens of bullet tunas were collected from purse seiners. The fork length, total weight, sex, and weight of the gonads were determined and first dorsal spines and otoliths were collected. Data from the 354 specimens were recorded on the upper jaw-fork length in cm and round weight in kilograms.

The fork lengths varied between 28 and 44 cm; the weights of the bullet tunas ranged between 515 g and 1,550 g.

The extraction, preparation and cutting of the spines was carried out according to the Cort (199) method.

The reading of the spines is not yet completed and investigation will continue.

**RESUME**

Des échantillons d'*Auxis rochei* ont été prélevés dans le nord-est de la Méditerranée de janvier à mai 1994.

De cette espèce, 354 individus avaient été capturés par des senneurs. La longueur fourche, le poids total, le sexe et le poids des gonades ont été déterminés, et des épines de la première dorsale et des otolithes ont été prélevés. La longueur maxillaire supérieur-fourche en cm et le poids total en kg des 354 individus ont été enregistrés.

La longueur fourche variait de 28 cm à 44 cm. Le poids des *Auxis rochei* allait de 515 g à 1.550 g.

La méthode d'extraction, de préparation et de découpage des épines a été appliquée selon Cort (1990). La lecture de ces épines n'est pas encore terminée. Les recherches se poursuivent.

**RESUMEN**

Desde enero a mayo (1994), se recolectaron muestras de *Auxis rochei* en el nordeste del Mar Mediterráneo.

Los cerqueros capturaron 354 individuos de *Auxis rochei*. Se determinó la longitud a la horquilla, peso total, sexo, y peso de las gónadas, y se recolectaron radios de la primera aleta dorsal y otolitos. Se registró la medición de la mandíbula superior-longitud a la horquilla en cm. y el peso total en kg de los 354 individuos.

Las longitudes a la horquilla variaron entre 28 cm y 44 cm. El peso de *Auxis rochei* se encontraba entre 515 g. y 1550 g.

La extracción, preparación y corte de los radios se hizo según el método de Cort (1990).

La lectura de los radios aún no ha terminado. La investigación sigue en curso.

## INTRODUCTION

The Bullet tuna is distributed in the epipelagial and mesopelagial periodically in coastal warm and warm temperate waters (Hureau, J.C., Monod, Th. 1973).

Akşiray (1987) studied the systematics of the Bullet tunas in Turkish waters.

The Bullet tuna is commonly caught in the Atlantic, in the Pacific and, in the Indian Ocean and, in the Caribbean, Mediterranean and, in the Black seas (Uchida, 1981).

The Bullet tunas are mainly caught in the Mediterranean Sea. In the Black Sea, they are overfished.

This species is taken direct primarily towards monitoring the catches of ringnets and handlines and secondarily for bagnet, gillnet and troll lines, pole (Yesaki and Arce, 1984). Bait fishing and purse seining are the most important fishing methods of the Bullet tuna (ICCAT, 1994).

## MATERIALS AND METHODS

In this study between January-May 1994, 354 samples were caught by purse seining on the Turkish coast of Mediterranean Sea.

Fork lengths and weights were measured, sex was determined and when possible otoliths and and the first of dorsal fin rays were collected.

The methods of extraction, preparation and the cutting of the spine which was described by Cort (1990) was used. The reading of spines have not finished yet.

The Bullet tunas ranged in fork length from 28 cm to 44 cm and in weight from 515 g to 1550 g. The fork length as reference was taken.

## FISHERIES

The Bullet tuna is only caught by purse seines in the Turkish waters.

The average catch per day by the purse-seiners in Turkey was in 1990 72789 kg, in 1991 18421 kg, in 1992 108618 kg, in 1993 456020 kg, in 1994 148480 kg (included seven months) at İstanbul Fish Market (Fig. 1).

## LENGTH WEIGHT RELATIONSHIP

Weighted mean length was  $36.164 \pm 0.108$  cm ( $\bar{x} + S_x$ ), the minimum mean length being 28.1 cm and, the maximum mean length being 43.9 cm. The variation was 4.1293 and the standart deviation was 2.0381 in the Mediterranean Sea.

Weighted mean weight was  $731.44 \pm 9.51$ g ( $\bar{x} + S_x$ ) the minimum mean weight being 508.45 and the maximum mean weight being 1550.12 g. The variation was 32077.025 and the standart deviation was 179.1012 in the Mediterranean Sea.

In 1994 length frequency (FL) distribution is shown in Figure 3. The peak is seen at 600g in the Mediterranean Sea.

Length-weight relationship of the examined Bullet tuna is shown in the Figure 4.

## SEX DETERMINATION

In total 263 specimens were investigated. The range of the specimens which were investigated varied between 28.1 - 43.9 cm.

The female gonads ( $n = 141$ ) had maximum weight of 26.90 g. The male gonads ( $n = 141$ ) had maximum weight of 26.90 g. The male gonads ( $n = 122$ ) had maximum weight of 30.29 g.

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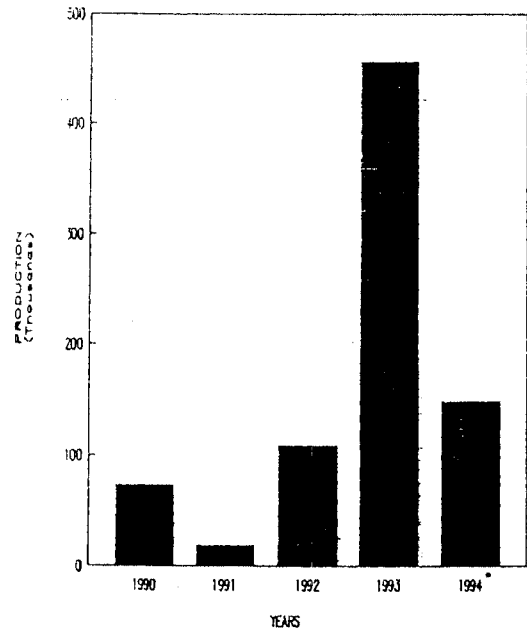


Fig. 1: Total catch of Bullet tunas by purse seine fishery in the Mediterranean Sea.

\* From January to July.

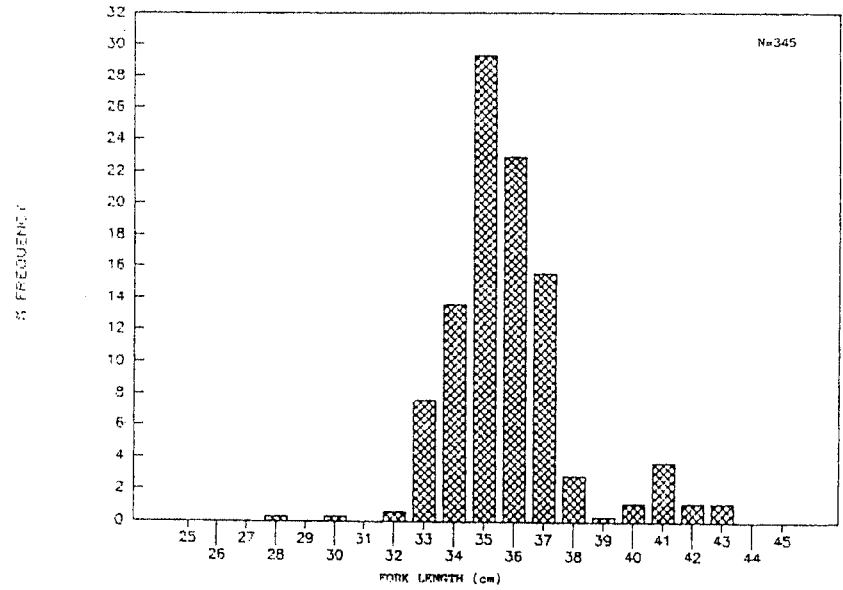


Fig. 2: Fork length composition of Bullet tunas by purse-seine fishery in the Mediterranean Sea, 1994.

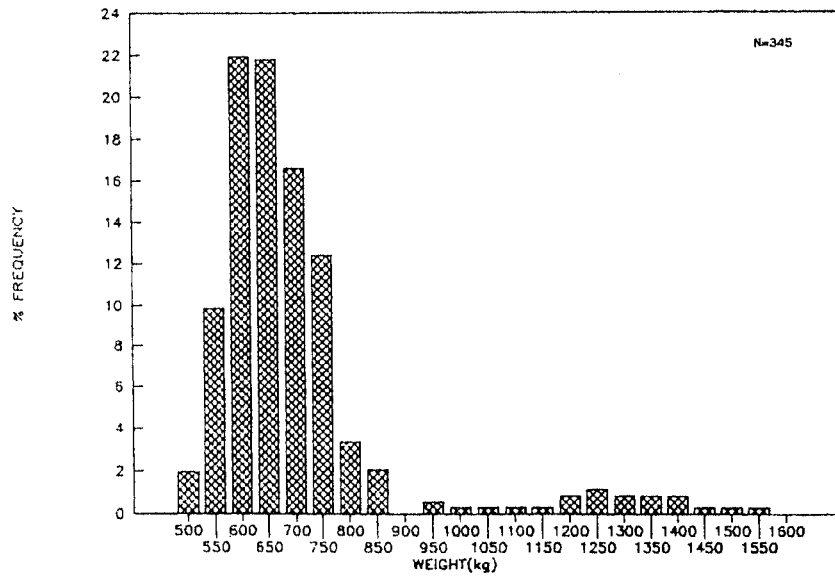


Fig. 3: Weight composition of Bullet tunas by purse-seine fishery in the Mediterranean Sea, 1994.

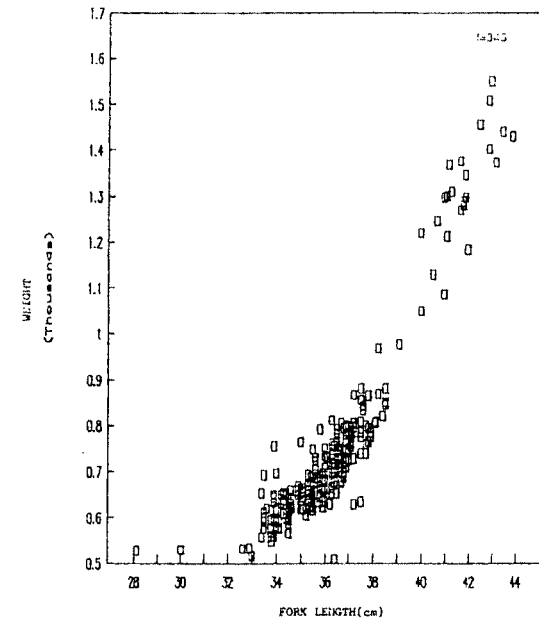


Fig. 4: Length-Weight Relationship for the sexes combined.