Biometric Data and weight-lenght relationship of *Nezumia sclerorhynchus* (Valenciennes, 1838) (Pisces; Macrouridae) in the Northern Tyrrhenian Sea

S. DE RANIERI[1] and M. SBRANA[2]

[1] Dipartimento di Scienze dell'Ambiente e del Territorio, Università di PISA (**Italia**)
[2] Centro Interuniversitario di Biologia Marina, LIVORNO (**Italia**)

Nezumia sclerorhynchus is a characteristic species of bathyal bottoms from 350 metres of depth in the Northern Tyrrhenian Sea (Western Mediterranean) between Giglio and Montecristo Isles (SARTOR *et al.*, 1990; 1991). Until now biology of this species has been studied little in the Mediterranean Sea except some aspects concerning feeding (GEISTDOERFER, 1975; 1978) and growth (RANNOU, 1976).

This paper presents both information about the relationship between some morphometric measures and the weight-length relationship of 213 specimens of *Nezumia sclerorhynchus* collected during three trawl surveys (April 91, July 91 and October 91) on a bottom ranging from 380 to 600 metres of depth. The organisms were fixed in 5% seawaterformalin for a period of about 30 days.

On every specimen the following remarks were made: total weight (approximated to 0.1 gram); total length (T.L.) of 78 specimens, only those with the whole caudal zone; opercular length (O.L.) from the tip of the snout to the opercular margin (BAS, 1963). The linear measures were approximated to the lowest millimetre below.

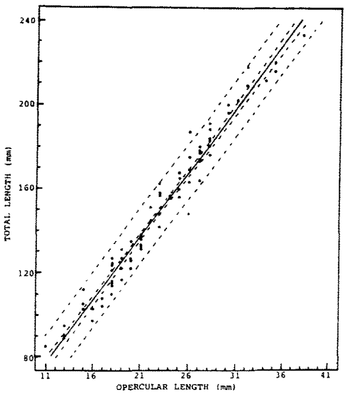


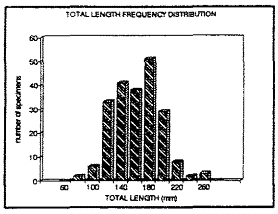
Fig. 1

T.L. and O.L. (fig. 1) were highly correlated (r=0.987571) and the linear regression parameters (a=9.3408; b=6.1216) were calculated with model I of regression that explains a variance of 96.53%.

The equation of regression (T.L.=9.3408+6.1216*O.L.) enable us to calculate T.L. of all collected specimens and to reconstruct the size composition of the sampled population (fig. 2) (range T.L.: 70.56-248.08 mm).

The weight-length relation-ship (fig.3) was calculated by a linear regression (model I) applied to the multiplicative model y=aX^b. It has turned out a positive allometric relation (weight=3.4*10^-8* T.L.^3.78913) with high corre-lation coefficient (r=0.989356) and an explained variance of 97.88%.

Fig. 2



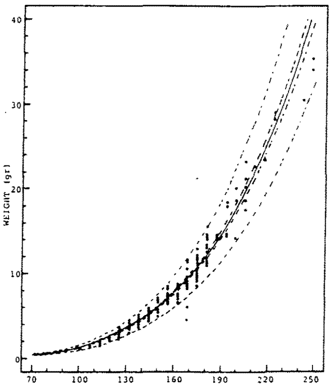


Fig. 3

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Relationship between total length vs. otolith length in *Mullus barbatus* L. and *Trisopterus minutus capelanus* (Lacepède) in the Northern Tyrrhenian Sea

Stefano DE RANIERI and Claudio VIVA*

Dipartimento di Scienze dell'Ambiente e del Territorio, PISA (**Italia**)
*Centro Interuniversitario di Biologia Marina, LIVORNO (**Italia**)

Relationships between the current body length of a fish and the sizes of one or more marks in some hard part of its body are widely used in fishery biology. For example back-calculation method enable fishery researchers to obtain growth parameters estimates that, in addition, could be used to validate results coming from direct reading of otoliths. Moreover computation of the relationship between fish total length (T.L.) and otolith size is very useful in trophic ecology studies, where otoliths are often the only recognizible fish structure in the stomach content of many predators.

This work deals with the relationship between fish T.L. vs. otolith length in two very common fish species in the Northern Tyrrhenian Sea (DE RANIERI *et al.*, 1988; BIAGI *et al.*, 1990, 1992): *Mullus barbatus* and *Trisopterus minutus capelanus*. The specimens were collected by otter trawl in the area between Elba and Giannutri Islands during October 1991. Five otoliths (Sagitta) were sampled for each 1 cm size class of fish T.L. The sagittae were cleaned and preserved in 50% alcool after extraction. Otolith length was measured by micrometric binocular and it was approximated to the nearest 0.16mm.

Analysis of the scatterplots suggest a linear relationship in both species. The parameters were estimated by model I of linear regression (SOKAL & ROHLF, 1981; FRANCIS, 1990) and the relationships are shown in Fig. 1 and Fig. 2 for M. *barbatus* and T. *minutus capelanus* respectively.

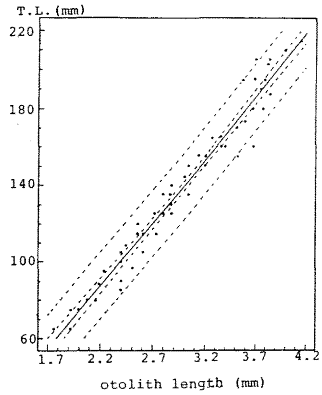

Fig. 1: M. barbatus

n° = 60
y = -56.68 + 65.48 * x
r = 0.9818.

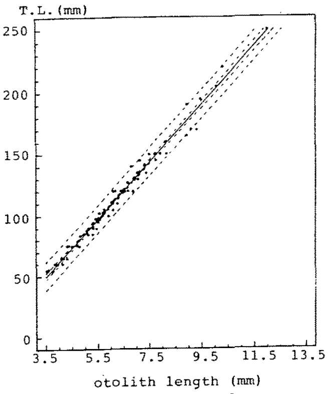

Fig. 2: T. minutus capelanus

n° = 70
y = -31.78 + 23.29 * x
r = 0.9913.

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