

**Preliminary Biological Data of Silvery Pout (*Gadiculus argenteus argenteus*) in the Northern Euboean Gulf (Greece)**

Vassiliki VASSILOPOULOU

National Centre for Marine Research, Hellinikon (Greece)

**INTRODUCTION**

*Gadiculus argenteus argenteus* is a Gadidae species quite abundant in depths from 250 to 500m in Greek seas. Age and growth data of the species are not available. However, there are a few studies concerning ichthyoplankton (LANDINI & VAROLA, 1983; HALBEISEN, 1983; IZETA, 1985) and bathymetric distribution (MANCHLINE & GORDON, 1984).

**MATERIAL and METHODS**

Samples were collected seasonally between December 1986 and June 1987 in the northern Euboean Gulf. In each fish, total length and weight were recorded to the nearest respectively millimetre and gramme. Determination of age was based on otolith reading.

**RESULTS**

Total lengths ranged from 3.5 to 15cm and the main body of the stock was comprised between 8 and 11cm (Fig. 1a), corresponding to ages II and III (Fig. 1b).

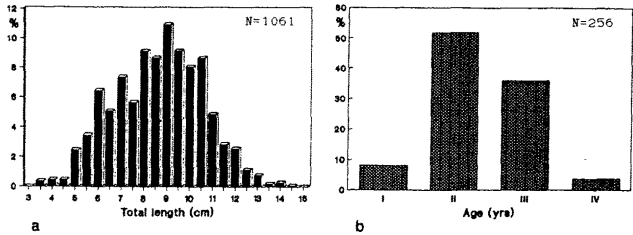


Figure 1. Length frequency polygons (a) and age composition (b) of silvery pout caught in the northern Euboean Gulf from December 1986 till June 1987.

The relationship between otolith radius (S) and total length (TL) was:  $TL = -0.39 + 1.38 \times S$  ( $r = 0.89$ ). On the basis of this formula Table 1 was calculated. The 49.8% of the maximal size of the silvery pout was attained during the first year of its life, while an abrupt reduction of growth rate occurred during the second year and continued in a smoother way over the next two years. The parameters of von Bertalanffy's equation were calculated according Ford-Walford's method, yielding  $L_{\infty} = 19.72$  cm,  $k = 0.19$  and  $t_0 = -0.94$ .

Table 1. Back calculated total lengths of silvery pout *Gadiculus argenteus argenteus*, in the northern Euboean Gulf (1986-1987).

Age	N	Mean Observed Length (TL)	Back calculated length			
			I	II	III	IV
IV	10	12.56	5.60	8.39	10.44	12.04
III	92	11.00	6.00	8.45	10.38	
II	133	9.27	6.02	8.41		
I	21	6.82	6.06			
Mean TL			6.00	8.42	10.39	12.04
Mean annual increm.			6.00	2.42	1.97	1.65
" " " (%)			49.83	20.10	16.36	13.70
N			256	235	102	10

The computation of the total length (TL) - weight (W) relationship, based on 317 individuals, gave:  $W = 0.000336 \times TL^{2.73}$  ( $r = 0.87$ ). The confidence interval of the exponent, being  $2.73 \pm 0.17$ , had a statistically significant difference from the value 3 ( $P < 0.05$ ) implying an allometric growth of the species. The condition factor, estimated for the total sample was  $K = 1.82 \pm 0.36$  (mean  $\pm$  confidence interval,  $P = 0.05$ ).

The 69% of the individuals caught in December were sexually mature; this proportion dropped to 21.9% in February and to 1.2% in June.

**REFERENCES**

- IZETA, L. M., 1985. The larval development of the southern silvery pout, *Gadiculus argenteus argenteus*, (Guichenot, 1850). J. Plankton Res., 7(6): 937-946.
- HALBEISEN, H. W., 1983. Fish larvae communities west of Ireland in spring. Proc. ICES Council Meeting 1983, 24pp.
- LANDINI, W. & VAROLA, A., 1983. Ichthyofauna of the lower pleistocene near Matera. Thalassia Salent. 12-13: 16-49.
- MANCHLINE, J. & GORDON, J. D. M., 1984. Feeding and bathymetric distribution of the gadoid and morid fish of the Rockall Trough. J. Mar. Biol., 64(3): 657-665.