

EGG-CASES OF *GALEUS MELASTOMUS* (CHONDRICHTHYES, SCYLIIORHINIDAE) IN SARDINIAN WATERS

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Abstract

In this paper some morpho-biometric aspects of *Galeus melastomus* egg cases in Sardinian waters were analysed. The egg case had a rounded vase-like shape and did not have tendrils. The mean length without posterior horns was 4.2 mm and mean width was 1.6 mm. Egg cases from Sardinian waters were smaller than those from Atlantic and other Mediterranean areas.

Keywords: *Elasmobranchii, South-Western Mediterranean, Biometrics*

Introduction

The blackmouth catshark, *Galeus melastomus* Rafinesque, 1810, a common deep-water bottom-dwelling shark, is distributed in the eastern Atlantic Ocean and in the whole Mediterranean Sea, where it is found from depths of 55 to 1750 m [1]. It is an oviparous species and lays its eggs in a protective egg case. Descriptions of egg cases in Mediterranean Sea are given by few authors [2,3,4,5,7], then the aim of this paper is to analyse some morpho-biometric aspects of egg cases in the Sardinian waters.

Materials and Methods

The total length of each egg-bearing female was measured (cm) and the egg cases were removed from the oviducts of fresh specimens, weighted (fresh weight in grams), described and measured (mean±SD; cm). The egg case length (ECL) was used as an independent variable for proportional dimensions of other egg case structures [6] (Fig. 1).

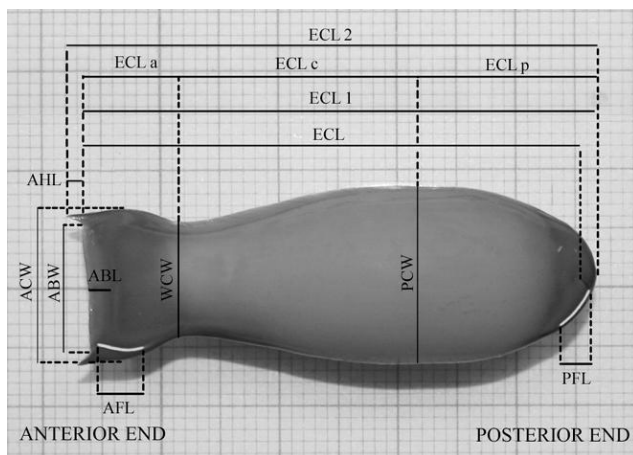


Fig. 1. Egg case measurements of *Galeus melastomus*.

Length of egg-bearing females was correlated with the egg-cases number, ECL and PCW.

Results and Discussion

A total of 41 egg cases (from 1 to 4 in each specimen) were found in 16 egg-bearing females between 45.1 and 52.7 cm of total length (49.1±2.0). The egg case had a rounded vase-like shape and did not have tendrils on either the anterior or posterior end. The surface was smooth in appearance and minute longitudinal ridges were visible running the length of both faces. Two white respiratory fissures on each side (one anterior and one posterior) were present. The egg case color changed from honey-brown to dark-brown related to stage of development. The length without horns (ECL) ranged from 35.9 to 43.8 mm (40.2±1.8), ECL1 ranged from 37.5 to 45.0 mm (41.9±1.6) and ECL2 ranged from 39.5 to 46.7 mm (43.9±1.8). The mean posterior case width (PCW) ranged from 14.4 to 7.4 mm (16.2±0.9) (40.2% ECL) and the posterior length was 17.1±1.2 mm (ECLa). Waist width (WCW) ranged from 8.9 to 12.8 mm (11.7±0.9) (29% ECL) and the anterior length was 17.5±1.5 mm (ECLb). The anterior egg case width (ACW) ranged from 11.0 to 13.4 mm (12.4±0.6) (30.8%

ECL) and the central length was 7.5±0.7 mm (ECLc). Egg case height (CHI) ranged from 8.3 to 11.8 mm (9.9±0.8) (24.7% ECL). Anterior border was straight with two horns (AHL=2,1±0.4 mm). The anterior border width (ABW) was 9.7±0.6 mm and the anterior border length (ABL) was 1.5 mm. Posterior end showed two little horns in close proximity with one other. Anterior and posterior respiratory fissures length was 5.5 mm (AFL) and 4.1 mm (PFL) respectively. Fresh weight ranged from 1.6 to 3.6 g (2.2±0.5). Egg case seemed to develop proportionately and there was no relationship between the number and dimension with the size of females. Finally, dimensions of egg cases changed in relation to geographical area according to other authors [4]. Egg cases from Sardinian specimens were smaller than those from other Mediterranean areas and much smaller than those from Atlantic (Tab. 1).

Tab. 1. Measurements recorded in egg cases of *Galeus melastomus* from different areas (ECL1 and PCW in this study).

Authors	Area	length (cm)	width (cm)
ATLANTIC			
Smitt (1893)	western coast of Africa	4.5-6.5	1.8-2.0
Le Danois (1913)	Off France	6	3
Iglesias et al. (2002)	Eastern north Atlantic	5.1-6.5	1.8-2.3
Costa et al. (2005)	southern Portugal	3.5-6.3 (5.4)	1.4-2.5 (2.1)
MEDITERRANEAN			
Lo Bianco (1909)	Off Naples	4.5	1.8
Capapé and Zaouali (1977)	Tunisian coast	4.2-4.8 (4.6)	1.8-2.5 (2.1)
Tursi et al. (1993)	Ionian Sea	4.5-5.5	1.7-2.0
Capapé et al. (2008)	southern France	3.8-5 (4.5)	1.4-2.1 (1.8)
Rey et al. (2010)	Alboran Sea	4.1-4.7 (4.4)	1.5-1.7 (1.6)
This study (2013)	Sardinian waters	3.7-4.5 (4.2)	1.4-1.7 (1.6)

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