

OBSERVATIONS ON THE BIOLOGY OF
OPHIOBLENNIUS ATLANTICUS ATLANTICUS
(VALENCIENNES in CUV. & VAL., 1836),
(PISCES: BLENNIIDAE) FROM THE AZORES

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OPHIOBLENNIUS ATLANTICUS ATLANTICUS
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by

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ABSTRACT: The eggs and newly hatched larvae of *Ophioblennius atlânticas atlânticas* are described for the first time. Some comments are also made regarding its spawning behaviour and bathimetric distribution. Finally Meristic characters are presented for 6 adults collected at S. Miguel and Graciosa-Azores.

1 — INTRODUCTION

Ophioblennius atlanticus is represented by two subspecies; *Ophioblennius atlânticas atlânticas* (VALENCIENNES in CUV. & VAL., 1836) and *Ophioblennius atlânticas macclurei* (SILVESTER, 1915), with the following known geographical distribution:

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O. a. atlanticus: Madeira, Canary islands, Cape Verde, Senegal, São Tomé, Armo Bom, Ascension, St. Helena, Angola and Brazil (GONTHER, 1861; NORONHA & SARMENTO, 1948; STEINITZ, 1950; CADENAT, 1951; PINTO, 1955; SPRINGER, 1962; BAUCHOT, 1966; PENRITH & PENRITH, 1972).

O. a. macclurei: Bermuda, off North Carolina, off Georgia, Florida, Bahamas, Gulf of México, Western Caribbean Sea, Cuba, Jamaica, Haiti, Virgin islands, Saba islands, Anguilla islands, Barbados and Venezuela (SPRINGER, 1962).

O. a. atlanticus was for the first time observed at S. Miguel-Azores by WOOD & WILLIAMS (1973).

The redlip blennie is, after our own observations, very common in the Azores archipelago, (these observations were made during a Bio-oceanographic mission directed by Prof. L. SALDANHA at three islands, S. Miguel, Faial and Graciosa).

Its eggs and newly hatched larvae are unknown. Postlarvae were described by SPRINGER (1962) and BAUCHOT (1966).

II — MATERIAL AND METHODS

AU observations and samples were made by skin and scuba diving. Adult fishes were captured with small hand nets or with a rubber powered harpoon gun, at two islands, S. Miguel and Graciosa.

Eggs were collected using small plastic jars that were scraped along the surface in order to detach them from the substrate. Fixation and preservation were made with 5 % formalin buffered with bórax.

AU measurements were made on preserved material. Adult fishes were measured to the nearest millimeter. Eggs and larvae were measured to the nearest one hundredth millimeter with a calibrated micrometer eyepiece and a stereomicroscope.

Figures of eggs and larvae were drawn with the aid of a Wild camera lucida attachment.

Several underwater photographs were made (photos 1 and 2) of nesting males and nest sites.

III — RESULTS

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O. a atlanticus is an abundant species in the Azores archipelago. it was observed from very near the surface to 25 meters deep, beeing most abundant between 1 and 6 meters.

Nest sites of the redlip blennie were observed at two islands, (Faial and Graciosa) at the begining of August, 1979. The nest site was in ali cases located on an exposed rock, near the surface (2 to 4 meters), beeing vigorously defended by breeding males.

Nesting males showed agonistic behaviour to ali fishes that transgressed its territory including conspecific ones and even scuba-divers.

The egg patch has an irregular form beeing easily visible to the naked eye. Eggs at different stages of development were sampled at the same nest site, indicating that sucessive spawnings may occur.

a) *Eggs and newly hatched larvae.*

The egg is demersal, sub-spherical in shape and adherent in a single layer to the substrate. The periviteline space is relatively small, the yolk is segmented and there is only one oil globule of variable dimensions.

The dimensions o f the egg vary from 0,79 to 0,84 mm ($x = 0,82$ mm; $s = 0,01$) for the major axis of the capsule and from 0,72 to 0,76 mm ($x = 0,74$ mm ; $s = 0,02$) for the minor axis of the capsule, (from a sample of 100 eggs).

Eggs were figured at two stages of development (F'igure 1). The time of development could not be determined as we did not incubate them in the laboratory.

Newly hatched larvae (Figure 2), have total lenghts comprised between 3,15 and 3,47 mm ($x = 3,29$ mm ; $s = 0,09$), (from a sample of 50 larvae).

Its pigmentation is very characteristic. The eyes are strongly pigmented and there is a row of melanophores extending from behind the eye, along the dorsal portion of the digestive tract to mid postanel distance. The mouth is already functional at the time of hatching and pectoral fins are also developed.

b) *Adults.**MATERIAL:*

3 males of S. Miguel, collection of Museu Bocage n.º 2493, 2494-C and 2494-D; 2 females of Miguel coll. Mus. Boc. n.º 2494-A, 2494-B and 1 female of Graciosa, coll. Mus. Boc. n.º 2503.

Meristic characters of 5 specimens captured at S. Miguel and 1 specimen captured at Graciosa are given in Table I.

TABLE I

Meristic characters of *Ophioblennius atlanticus atlanticus*

	S. Miguel (5 specimens)	Graciosa (1 specimen)
Dorsal fin	XII / 21-22	XI/22
Anal fin	II / 21 - 22	II/23
Caudal fin (only soft rays)	13	13
Ventral fin	I/ 4	I/ 4
Pectoral fin	15	15

Finally the body proportions of the 5 specimens captured at S. Miguel are presented in Table II.

TABLE II
BODY PROPORTIONS OF *OPHIOBLENNIUS ATLANTICUS ATLANTICUS* (5 specimens from S. Miguel - Azores)

	in length per-cent				Head	
	Total m \pm tSm (1)	Cv (1)	Δ standard	m \pm tSm	Cv	m \pm Sm Cv
Standard Length	79,86-84,21	81,98 \pm 4,30	2,55			
Head length (between snout tip and opercu- lar bone extremity)	15,26-15,97	16,98 \pm 1,79	2,16	18,12-20,00	18,92 \pm 1,40	3,60
Preorbital length	2,77- 3,68	15,50 \pm 0,69	13,86	3,44- 4,54	3,90 \pm 1,20	0,12
Horizontal diameter of the eye	3,03- 3,81	3,20 \pm 0,91	9,35	3,59- 4,78	4,02 \pm 0,95	11,56 19,23-23,91 21,26 \pm 3,58 8,18
Prenal length	34,44-39,58	3,29 \pm 0,63	6,36	41,25-49,56	45,27 \pm 6,80	7,30
Predorsal length	11,66-16,96	37,08 \pm 4,86	15,04	14,48-20,14	17,05 \pm 4,89	13,95
Prenal fin length	34,44-39,58	13,99 \pm 4,33	6,36	40,00-47,82	43,84 \pm 6,49	7,20
Head height (at the rear level of the opercular bone)	15,78-18,05	37,08 \pm 4,86	5,14	19,48-22,60	20,72 \pm 2,43	5,71

(1) m — mean; tSm — confidence interval with a security coefficient 99%; Cv — deviation coefficient.

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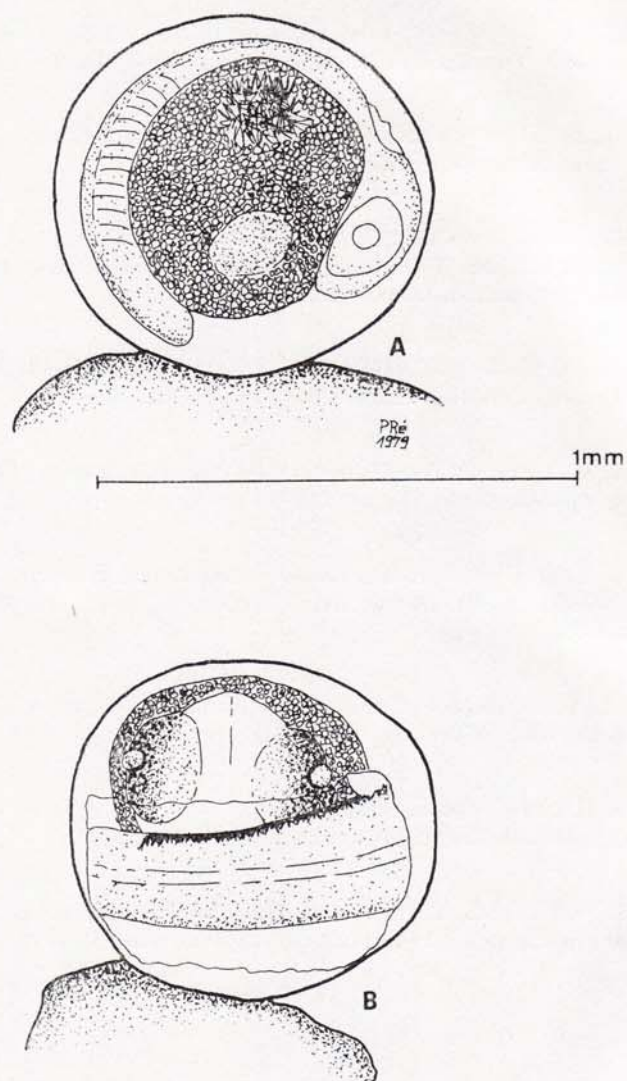


Fig. 1 — Eggs of *Ophioblennius atlanticus atlanticus* at two stages of development.
A — intermediate stage, B — prior to hatching.

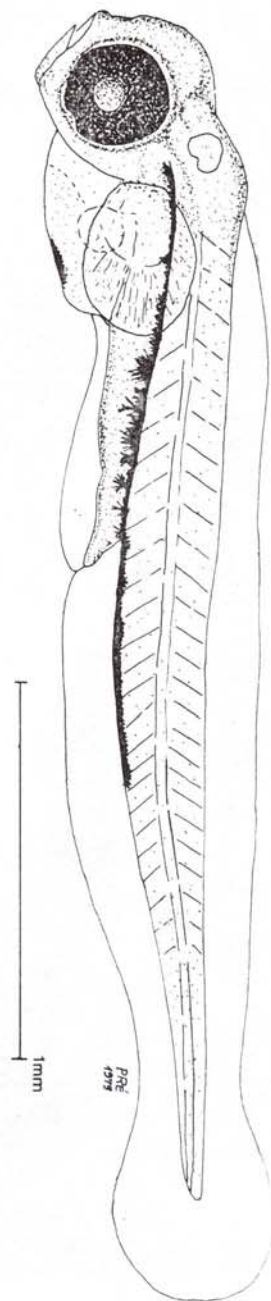


Fig. 2 — Newly hatched larva of *Ophioblennius atlanticus atlanticus*



Photo 1— Nesting male of *O. a. atlanticus*, (3 meters depht, S. Miguel-Azores)
Photo 2— Egg patch of *O. a. atlanticus*, (4 meters depht, Graciosa-Azores)