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

PEDRO RÊ
ARmando J. ALMEIDA

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OBSERVATIONS ON THE BIOLOGY OF

**OPHIOBLENNIUS ATLANTICUS ATLANTICUS**

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(PISCES : BLENNIIDAE) FROM THE AZORES

by

PEDRO RÉ (1)
ARMANDO J. ALMEIDA (1)

**ABSTRACT:** The eggs and newly hatched larvae of *Ophioblennius atlanticus atlanticus* 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.

I — INTRODUCTION

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

(1) Museu Bocage, Faculdade de Ciências de Lisboa, Portugal.

O. a. macclurei: Bermuda, off North Carolina, off Georgia, Florida, Bahamas, Gulf of Mexico, 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

All 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 borax.

All 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

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

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

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

The egg patch has an irregular form being easily visible to the naked eye. Eggs at different stages of development were sampled at the same nest site, indicating that successive spawnsings 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 of the egg vary from 0.79 to 0.84 mm ($\bar{x} = 0.82$ mm; $s = 0.01$) for the major axis of the capsule and from 0.72 to 0.76 mm ($\bar{x} = 0.74$ 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 (Figure 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 lengths comprised between 3.15 and 3.47 mm ($\bar{x} = 3.29$ 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 postanal distance. The mouth is already functional at the time of hatching and pectoral fins are also developed.
b) **Adults.**

**MATERIAL:**


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.
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<tr>
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<th>in length per-cent</th>
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<td></td>
<td>Total</td>
<td>Standard</td>
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<tr>
<td></td>
<td>m ± tSm (1)</td>
<td>Cv (1)</td>
<td>m ± tSm</td>
<td>Cv</td>
<td>m ± Sm</td>
</tr>
<tr>
<td>Standard Length</td>
<td>79.86–84.21</td>
<td>81.98 ± 4.30</td>
<td>2.55</td>
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<tr>
<td>Head length (between</td>
<td>15.26–15.97</td>
<td>16.98 ± 1.79</td>
<td>2.16</td>
<td>18.12–20.00</td>
<td>18.92 ± 1.40</td>
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<td>snout tip and opercular</td>
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<td>bone extremity</td>
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<tr>
<td>Preorbitral length</td>
<td>2.77–3.68</td>
<td>15.50 ± 0.69</td>
<td>13.86</td>
<td>3.44–4.54</td>
<td>3.90 ± 1.20</td>
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<tr>
<td>Horizontal diameter of</td>
<td>3.03–3.81</td>
<td>3.20 ± 0.91</td>
<td>9.35</td>
<td>3.59–4.78</td>
<td>4.02 ± 0.95</td>
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<td>the eye</td>
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<tr>
<td>Preanal length</td>
<td>34.44–39.58</td>
<td>3.29 ± 0.63</td>
<td>6.36</td>
<td>61.25–49.56</td>
<td>45.27 ± 6.80</td>
</tr>
<tr>
<td>Predorsal length</td>
<td>11.66–16.96</td>
<td>37.08 ± 4.86</td>
<td>15.04</td>
<td>44.48–29.14</td>
<td>17.05 ± 4.89</td>
</tr>
<tr>
<td>Preanal fin length</td>
<td>34.44–39.58</td>
<td>13.99 ± 4.33</td>
<td>6.36</td>
<td>40.00–47.82</td>
<td>43.84 ± 6.49</td>
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<tr>
<td>Head height (at the</td>
<td>15.78–18.05</td>
<td>37.08 ± 4.86</td>
<td>5.14</td>
<td>19.48–22.60</td>
<td>20.72 ± 2.43</td>
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<td>rear level of the</td>
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<td>opercular bone)</td>
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(1) m — mean; tSm — confidence interval with a security coefficient 99%: Cv — deviation coefficient.
ACKNOWLEDGEMENTS

The authors are indebted to Prof. L. SALDANHA who directed the Bio-oceanographic mission to the Azores were all the material was collected, and also for his critical reading of the manuscript.
On the Biology of Ophioblennius atlanticus atlanticus

REFERENCES


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 depth, S. Miguel-Azores)

Photo 2 — Egg patch of *O. a. atlanticus*, (4 meters depth, Graciosa-Azores)
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