

## ON THE OCCURRENCE OF *PARABLENNIUS SANGUINOLENTUS* (PISCES: BLENNIIDAE) ON THE PORTUGUESE COAST

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In this paper we report for the first time the occurrence of *Parablennius sanguinolentus* in mainland Portuguese waters. Since this species is common in the Mediterranean and in the Bay of Biscay, there appears to be a distributional gap along the Portuguese coast. The present finding, together with recent data on the occurrence of several other blenniids in the Atlantic coast of the Iberian Peninsula, formerly supposed to be Mediterranean endemics, stresses the urgent need for detailed zoogeographical investigations on the inshore fish fauna of south-west Europe.

*Parablennius sanguinolentus* (Pallas, 1811) is widespread in the Mediterranean (Zander, 1986). On the Atlantic coast of Europe, however, it was known only from the Bay of Biscay where it is abundant in some places (Motos & Ibañez, 1979), from the north-west coast of Spain (Devesa *et al.*, 1979) and recently from the Atlantic coast of Andalucía (Spain) (Rubio, 1991). It is also very common in the Azores, Madeira and Canary Islands if one assumes that *P. parvicornis* (Valenciennes, 1836) belongs to the same species, but this is as yet an unresolved issue (Zander, 1979; Almeida & Harmelin-Vivien, 1983; Bath, 1990; Santos, 1992). Although Zander (1986) presented a distributional map that includes the mainland Portuguese coast, no report on the occurrence of this species was known for this area. In a survey of the literature on the blennioid fishes occurring in Portuguese waters, we could not find a single citation that could possibly be ascribed to *P. sanguinolentus* for mainland Portugal (Oliveira *et al.*, 1992).

Two specimens (one male and one female) of *P. sanguinolentus* were collected by scuba-diving with the help of a hand net, on the Arrábida coast (38°28'N 8°59'W) on 21 March 1992. The fishes were fixed in 10% formalin and preserved in alcohol. Meristic and morphometric characters are summarized in Table 1.

The male presented bulb-like anal glands in the two spiny rays of the anal fin, as described by Papaconstantinou (1979). Supra-orbital tentacles were short and branched in the two animals. No notch was found between the first and second dorsal fins. Lateral line was type C of Bath (1977). Coloration corresponded to that described by Bauchot & Pras (1980), the male being more greenish and the female presenting mainly a light brown coloration. Both specimens presented a black spot between the first two dorsal fin-rays and several white spots on the flanks.

The fishes were found in the upper mid-littoral zone among boulders covered by *Enteromorpha* sp. At high tide the water depth was between 0.5 and 1 m.

It is important to stress that this occurrence does not represent an isolated case. Indeed, since 1989, a few individuals (usually less than five) were consistently found during various dives. This number probably underestimates the actual abundance of the species, since the dives were focused on observations of other fishes. The same species was also found occurring at Ria Formosa (south coast of Portugal) in 1988. At both sites the fishes occurred in well-illuminated

Table 1. Meristic and morphometric characters of two specimens of *Parablennius sanguinolentus*.

	Male	Female
Total length (mm)	104	99
Standard length (mm)	89	86
Pectoral fin	13/13	13/13
Dorsal fin	XII+21	XII+20
Anal fin	II+20	II+21
Pelvic fin	I+3	I+3
Caudal fin	IV+13+IV	IV+13+IV
Head length (from tip of snout to posterior end of the opercular bone) (mm)	21	19
Head height (measured at the level of the operculum) (mm)	20	18
Pre-dorsal length (from tip of snout to the insertion of the first dorsal fin-ray) (mm)	16	15
Pre-anal length (from tip of snout to the insertion of the first anal fin-ray) (mm)	44	40
Number of mandibular teeth	2+30+3	1+26+1
Number of maxillar teeth	1+29+1	1+26+1

places, in the littoral zone, in sheltered areas where the wave action is minimal and the substrate is mainly composed of boulders. Zander (1972) describes a similar habitat for the Mediterranean populations.

In general, the specimens described here are more similar to the Mediterranean forms (lack of small teeth in front of the canines, XII spiny rays in the dorsal fin) (Bauchot & Pras, 1980; Zander, 1979), than to those described for the Atlantic islands and the African coast that many authors place under the specific name *P. parvicornis* (Zander, 1979; Bath, 1990). The validity of the distinction between the two species is still controversial, partly due to the wide variability in the meristic and morphometric characters and colour patterns of blenniids both within and between populations (see Zander, 1979 and Santos, 1992 for discussions and additional references). This issue will not be taken further in this paper and will be resolved only with detailed genetic and zoogeographical comparison of the different populations.

Zander (1972) mentioned ten blenniid species as being endemic in the Mediterranean. Since then, five species have been found to occur on the Atlantic coast of the Iberian Peninsula (Zander, 1980). However, *Salaria fluviatilis* (Asso, 1801) was already known from Portuguese rivers (Reis, 1924 cited by Nobre, 1935), lowering the number of Mediterranean endemics to four.

It is urgent to undertake regular surveys of the south-west coast of Europe in order to determine to what extent the presence of these predominantly Mediterranean species in Atlantic waters is due to a faunal change currently in progress, as described by Southward (1963) for the Plymouth area, or to a lack of adequate collecting effort in the past.

As far as *P. sanguinolentus* is concerned hundreds of hours of collection and observation by the authors and other investigators indicate that this species is absent from most sites on the mainland Portuguese coast. Motos & Ibañez (1979) describe the species as being among the most common blenniids in the eastern part of the Bay of Biscay. The scarcity of *P. sanguinolentus* on the mainland Portuguese coast may reflect the predominance of exposed shores unsuitable for this species, or the presence of colder waters along the shore, in contrast with the warmer waters that prevail at Biscay, at least during the Summer (Ibañez *et al.*, 1984 and personal communication). Whatever the reason, the western coast of the Iberian Peninsula must be a partial barrier, reducing gene flow between Mediterranean and Biscay populations.

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