

**First record of the red-mouthed goby, *Gobius cruentatus* (Gobiidae)
from the middle Black Sea coast**

**Kırmızı ağızlı kaya balığının *Gobius cruentatus* (Gobiidae)
Orta Karadeniz için ilk kaydı**

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ABSTRACT

Two individuals of goby species *Gobius cruentatus* (one male and one female) were captured by fishing line on 20 October 2017 at a depth of two meters from the middle Black Sea coast. The total lengths and weights were measured as 108.61 mm and

13.85 g for the male and 112.57 mm and 20.70 g for the female specimens. This is the first record of occurrence for *G. cruentatus* from the middle Black Sea region.

Keywords: Red-mouthed goby, *Gobius cruentatus*, Black Sea, Turkey

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ÖZET

Bu çalışmada, iki adet (biri dişi ve diğeri erkek) *Gobius cruentatus* türü kayabalığı Orta Karadeniz Bölgesi'nde 20 Ekim 2017 tarihlerinde olta ile, 2 m derinlikte örneklenmiştir. Örneklenen erkek ve dişi bireyin boy ve ağırlıkları sırasıyla 108.61 mm ve 13.85 g, 112.57 mm ve 20.70 g olarak ölçülmüştür. Bu bildirim *G. cruentatus* türü için Orta Karadeniz'de ilk kayıttır.

Anahtar sözcükler: Kırmızı ağızlı kayabalığı, *Gobius cruentatus*, Karadeniz, Türkiye

1. INTRODUCTION

Gobius cruentatus (Gmelin, 1789) is a benthic species prevalent in the North Atlantic Ocean and the Mediterranean Sea. Individuals prefer to inhabit coastal rocky fields and the areas near cast stones (Miller, 1986). *G. cruentatus* is not native to the Black

Sea, and its first record along the Turkish coasts of the Black Sea was noted by Engin *et al.*, (2007) for the Eastern Black Sea (Hopa and Rize, Turkey). The species later was recorded on the coasts of Sevastopol by Boltachev *et al.*, (2009) and on the coasts of Anapa and Novorossiysk by Prokofiev (2016) (Figure 1).

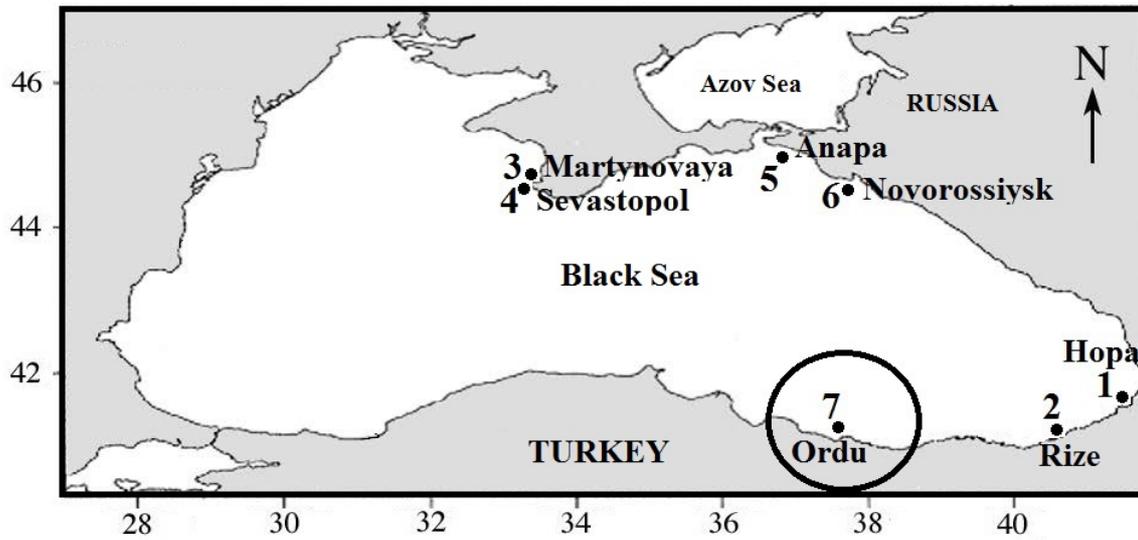


Figure 1. Map of the Black Sea showing sites of records of *Gobius cruentatus*. 1 and 2) Engin *et al.*, (2007), 3 and 4) Boltachev *et al.*, (2009), 5 and 6) Prokofiev, (2016), 7) This study.

2. MATERIAL AND METHOD

The samples used in the study, two *Gobius cruentatus* specimens, one of each sex, were captured by a fishing line on 20 October 2017 from a depth of 2 m at the Ordu/Fatsa harbor located in the middle Black Sea region. The specimens were sent to a laboratory for necessary measurements to be carried out.

3. RESULTS

The total lengths of the male and female specimens were 108.61 mm and 112.57 mm,

respectively, and the total weights of the male and female specimens were 13.85 g and 20.70 g, respectively (Figure 2).

The gonads of the female fish were determined to have reached maturity, and the gonad weight was measured to be 1.47 g (Figure 3). The number of eggs was 16250 eggs/1g. In addition, the diameters of the eggs were measured (50 eggs), and the mean egg diameter was determined to be 531.23 ± 38.2 μm (minimum 385.84 μm ; maximum 689.55 μm). Table 1 shows the metric and meristic characteristics of the specimens.



Figure 2. *Gobius cruentatus* specimen (male)



Figure 3. *Gobius cruentatus* specimen (female)

Table 1. Some metric and meristic characteristics of *Gobius cruentatus*

Character	Value	
	Male	Female
Total length (mm)	108.61	112.57
Total weight (g)	13.85	20.70
Standard length (mm)	88.84	95.09
Max. body depth (mm)	19.06	23.88
Head length (mm)	24.11	26.63
Post-orbital distance (mm)	12.35	14.00
Eye diameter (mm)	6.54	6.61
Caudal peduncle minimal depth (mm)	8.02	8.67
Pre-dorsal distance (mm)	29.41	32.18
Length of dorsal 1 fin basis (mm)	16.87	17.72
Length of dorsal 2 fin basis (mm)	27.45	28.14
Length of pectoral fin basis (mm)	20.74	21.93
Length of ventral fin basis (mm)	19.46	22.01
Pre-anal distance (mm)	50.54	58.28
Length of anal fin basis (mm)	22.71	24.91
Dorsal 1 fins	VI	
Dorsal 2 fins	I+14	
Anal fins	I+13	
Pectoral fins	20	
Ventral fins	8	
Caudal fins	16	
Line-Lateral scales	52	54

4. DISCUSSION

The species has been speculated to exist in the Black Sea since the early 2000s (Prokofiev, 2016). However, the presence of the species in the Black Sea was first recorded in 2007 (Engin *et al.*, 2007). This study is the second study on the presence of *G. cruentatus* on the Turkish coasts of the Black Sea and the fourth study on its presence in the Black Sea (Engin *et al.*, 2007; Boltachev *et al.*, 2009; Prokofiev, 2016). Marine species of the Mediterranean Sea are known to pass through the Turkish strait systems (Dardanelles and Bosphorus) and adapt to the Black Sea, and the “mediterraneanization” of the Black Sea has long been observed. Reports mention the presence of various Mediterranean species in the northern regions of the Black Sea (Boltachev and Yurakhno, 2002; Boltachev and Karpova, 2014; Prokofiev, 2016). In recent years, the number of reports on the presence of the Mediterranean species along

the southern coasts of the Black Sea has increased (Yankova *et al.*, 2013; Aydın, 2015; Aydın and Sözer, 2016; Aydın, 2017a; 2017b; 2017c) which is an indicator of the ever-escalating “mediterraneanization” of the Black Sea.

The gonads of the female specimen were determined to have reached maturity. That indicates that the species has developed reproductive traits in the Black Sea. This study is the first to report on egg diameter and egg count for the Black Sea.

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