
Confirmation of the presence of *Gadella maraldi* (RISSO, 1810) in the seas of Turkey

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*On November 28, 1997, two female specimens of *Gadella maraldi* (RISSO, 1810) were caught at a depth of 150 m in the Gulf of Saros (40° 28' 58" N; 26° 10' 30" E). Measurements and meristic counts of this species are given for the first time from Turkish seas. The present recording confirms the presence of *G. maraldi* in the seas of Turkey.*

Key words: *Gadella maraldi*, Moridae, deep-sea fishes, seas of Turkey

INTRODUCTION

Little is known about the deep-sea fishes in the seas of Turkey and very few studies have been carried out on this subject (DEMİR, 1958; MATER *et al.*, 1988; KAYA, 1993; ÜNSAL and KABASAKAL, 1998). On November 28, 1997, a bottom trawler haul at 150 m on a muddy-sandy bottom in the Gulf of Saros (40° 28' 58" N; 26° 10' 30" E) (Fig. 1) included two specimens of *Gadella maraldi*

(RISSO, 1810) (Fig. 2) the presence of which was not confirmed until now.

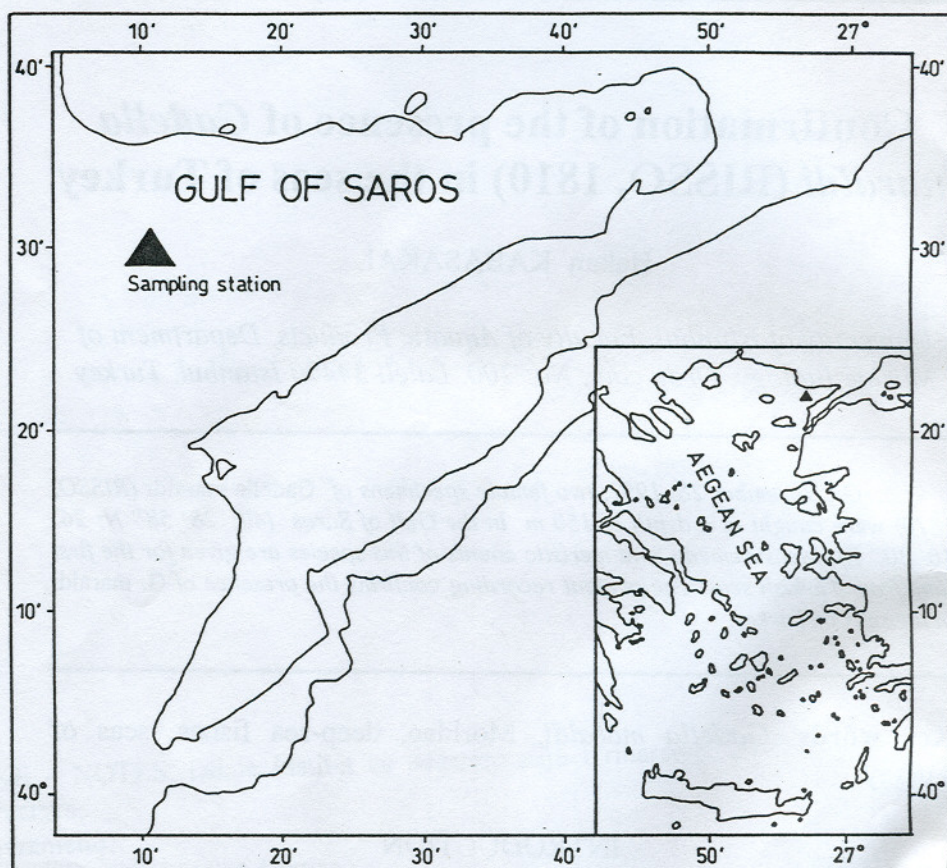


Fig. 1. Sampling station in the Gulf of Saros ($40^{\circ} 28' 58''$ N; $26^{\circ} 10' 30''$ E)



Fig. 2. *Gadella maraldi* (RISSO, 1810), scale bar 10 mm

G. maraldi belongs to family Moridae and generally occurs at the depths between 150 and 700 m (COHEN, 1986; BAUCHOT, 1987; COHEN *et al.*, 1990). The occurrence of this species in the eastern Atlantic Ocean (Madeira, coasts of Morocco and Iberian peninsula) and in the Mediterranean Sea has been well documented (ŠOLJAN, 1948, in the Adriatic Sea as *Uraleptus maraldi*; BENTUVIA, 1971; COHEN, 1986; COHEN *et al.*, 1990). It's presence in the Aegean Sea has been reported by PAPACONSTANTINOU and TSIMENIDIS (1979).

In the present study, a description of *G. maraldi* based on two specimens caught in the Gulf of Saros is given.

MATERIAL AND METHODS

A commercial trawler with a cod-end mesh opening of 22 mm from knot to knot was used for the sampling. Samples were fixed and stored in 5 percent formalin solution. The total lengths of the fishes were 206 and 176 mm, respectively. The specimens were accurately identified according to the taxonomic key provided by COHEN (1986). The total length (TL) was measured to the nearest 1.0 mm, while morphometric measurements to the nearest 0.1 mm. The material was preserved at the Faculty of Aquatic Products, Marine Biology Laboratory at the University of Istanbul.

RESULTS

Selected measurements and meristic counts of the two specimens are presented on Tables 1 and 2.

Table 1. Selected measurements of two specimens; body proportions are given as a percentage of total length

MEASUREMENTS	mm	%	mm	%
Total length	206	-	176	-
Standard length	181	87.8	158	89.7
D1 Base length	16.4	7.9	14.05	7.9
D2 Base length	101.4	49.2	88.45	50.2
Interdorsal space	2.75	1.3	1.85	1.05
Base length of anal fin	118.1	57.3	102.35	58.1
Pectoral length	32.85	15.9	31	17.6
Head length	51.3	24.9	41.2	23.4
Eye diameter	14.4	6.9	9.65	5.4
Preorbital distance	12.9	6.2	11.95	6.7
Postorbital distance	24	11.6	19.6	11.1
Interorbital space	16	7.7	12.6	7.1
Body depth at anal fin origin	44	21.3	38.15	21.6
Depth of caudal peduncle	4.55	2.2	3.35	1.9

Table 2. Meristic counts of two specimens

MERISTIC COUNTS	NUMBER	
	TL 206 mm	TL 176 mm
D1 rays	11	10
D2 rays	54	54
Anal rays	57	57
Pectoral rays	24	20
Pelvic rays	7	7
Scales on the lateral line	104	102
Gill rakers on the 1st left branchial arch	11	12

Description

The body is elongate, compressed (body depth at anal fin origin 21.3 to 21. 6 % of TL) and tapering posteriorly; head is long and 23.4 to 24.9 % of TL. The snout is rather broad and obtusely rounded, preorbital distance 11.1 to 11.6 % of TL. Chin barbel absent. The upper jaw with two rows of teeth, the outer row with small teeth interspersed with notably large ones; the inner row with small teeth only. No teeth on vomer and palatines. A projection of the swimbladder extends far anteriorly on each side of the fish, and attaches to the rear of the cranium. There are two dorsal fins; interdorsal space is narrow and 1.05 to 1.3 % of TL. The origin of the anal fin nearly at the level of the origin of first dorsal fin; anal fin not indented. The tip of each pectoral fin extends far beyond the origin of anal fin. The body and the head covered with small cycloid scales with exception of chin and lips. There is a light organ is present as a small, scaleless patch on the belly.

The body is dark brown; the belly and the sides below the pectoral fins bluish-black. The mouth is pale. The operculum is covered by numerous dark and small spots.

Biology

According to COHEN (1986), BAUCHOT (1987) and COHEN *et al.* (1990) *G. maraldi* attains a maximum size of 30 cm, reaches sexual maturity at the total length of 15 cm and spawns in spring. AKŞIRAY (1987) stated that egg diameter of *G. maraldi* varied between 0.8 and 1.2 mm. No eggs were observed in the ovaries of the specimens with naked eye, but microscopical observations of ovaries revealed numerous eggs which diameter varied between 0.14 and 0.28 mm.

G. maraldi is known to be a carnivorous fish which primarily feeds on benthic invertebrates, such as worms, shrimps and small crustaceans, and small fish (AKŞIRAY, 1987). The stomach of the specimen of 176 mm TL was empty, while the stomach of the specimen of 206 mm TL contained five otoliths and remains of teleost fish (species unidentified).

DISCUSSION AND CONCLUSIONS

The presence of *G. maraldi* in the seas of Turkey is now confirmed, and information about depth and locality where the specimens of this species were caught, are given for the first time from Turkish waters. According to AKŞIRAY (1987) *G. maraldi* is present in the seas of Turkey with exception of Black sea, but AKŞIRAY has not given any information about depth and locality where this species was caught nor where the study material was available for inspection. In one of the most extensive studies on the deep sea fishes of the Aegean Sea, there is no record of *G. maraldi* from the seas of Turkey (KAYA, 1993). Furthermore, there is no record of *G. maraldi* in the recent study of MATER and MERİÇ (1996) which lists marine fishes from the seas of Turkey found to date. PAPACONSTANTINO (1990) stated *G. maraldi* was a rare fish throughout the Aegean Sea and his suggestion was confirmed by the single occurrence of two specimens during the three year research period.

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Potvrda prisutnosti *Gadella maraldi* (RISSO, 1810) u turskim vodama

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SAŽETAK

U kočarskoj lovini ostvarenoj 28. studenoga 1997. u Saroskom zaljevu (Egejsko more) na 150 m dubine i muljevito-pjeskovitom dnu ulovljena su dva primjerka ribe *Gadella maraldi* (Risso, 1810) (por. Moridae), što je potvrda njene prisutnosti u turskim vodama. Ukupna tjelesna dužina primjeraka bila je 206, odnosno 176 mm. Iznose se njihove morfometrijske i merističke karakteristike.