

First Documented Record of Dogtooth Grouper *Epinephelus caninus* (Valenciennes, 1834), Perciformes, Serranidae, in the Syrian Marine Waters

Adib Ali Saad^{*(1)} Ahmad Kamel Solaiman⁽²⁾ and Hasan Haitham Alkusairy⁽¹⁾

(1). Marine Sciences Laboratory, Faculty of Agriculture, Tishreen University, Latakia, Syria.

(2). Animal Production Department, Faculty of Agriculture, Tishreen University, Latakia, Syria.

(*Corresponding author: Dr. Adib Ali Saad. E-Mail: adibsaad52@gmail.com).

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Abstract

In this work, the first documented record of dogtooth grouper *Epinephelus caninus* in the Syria coast. A specimen (181 mm TL) was captured on 20th February 2018 using a trap-net at a depth 30 m. The capture site was located 50 m off coast of Tartous city (35° 91' E, 35° 87' N). The identification of the present specimen of *Epinephelus caninus* was based on morphological features, colour, and morphometric measurements and meristic counts.

Keys words: Syrian coast, Eastern Mediterranean, *Epinephelus caninus*, First record.

Introduction:

The family of Serranidae is quite diverse and includes 3 subfamilies, 64 genera and 475 species (Nelson *et al.*, 2016). It is widely distributed in the tropical and subtropical waters of three oceans. The genus *Epinephelus* is itself very diverse and includes 98 species, of which 9 inhabit the Eastern Atlantic Ocean and the Mediterranean Sea (Heemstra et Randall, 1993). In this study the first documented record of the dogtooth grouper *Epinephelus caninus* in the Syrian coast is reported. *E. caninus* is a subtropical species distributed widely in the Eastern Atlantic Ocean from Portugal to Angola and in the Mediterranean Sea (Heemstra et al., 1993). Up to date there is no published evidence of the occurrence of this species in the Syrian marine waters (Saad, 2005); Ali, 2018), but all that has been mentioned in scientific literature about the presence of *E. caninus* in the Syrian coast was not based on the results of field studies but rather the process of probability or extrapolation (Whitehead *et al.*, 1986; Francour, and Pollard, 2018; Fish Base, 2018)

Materials and Methods:

A single specimen was caught using a spear of sport fisherman at a depth 12 m on 29 March 2018, in the coast of Tartous city, grid reference is :35° 91' E, 34° 87' N, (Fig. 1). The specimen was identified using the basic manual of Heemstra *et al.*, (1993) and supported by additional identification keys to marine fishes by Whitehead *et al.*, 1986). The specimen is preserved in the Ichthyological collection of the Marine Sciences Laboratory, Faculty of Agriculture, Tishreen University (reference N0: MSL, 192018)

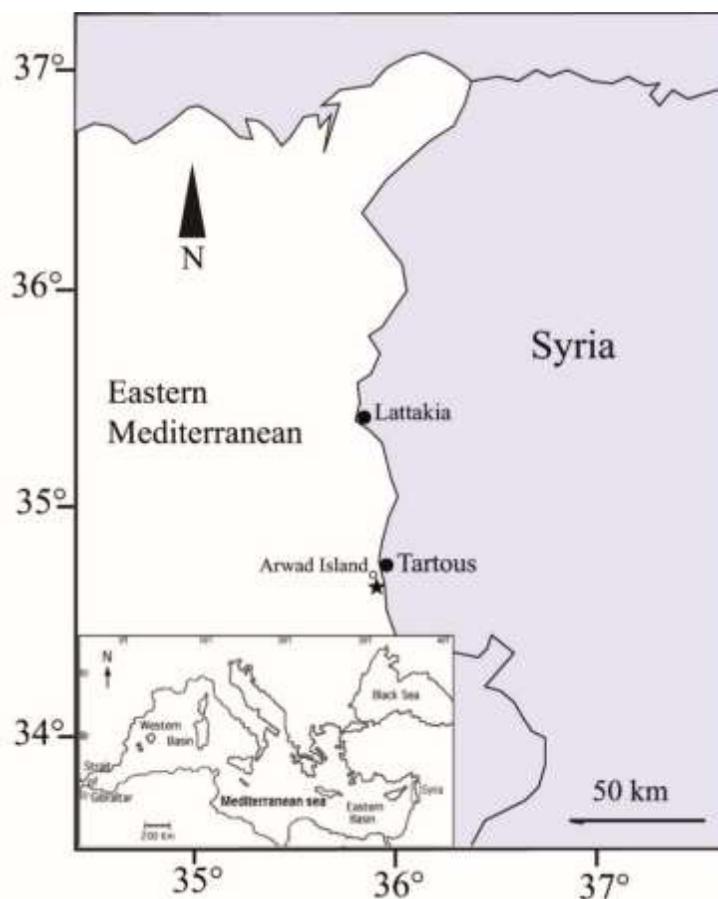


Fig. 1. Map showing the sampling area, pointing out the specimen collecting locality of *Epinephelus caninus* (black star)

Results and discussion:

The collected specimen were measured and identified as a dogtooth grouper *Epinephelus caninus* (Valenciennes, 1834) (Fig.2). All measurements and meristic for this specimen were reported in the Table 1. Body weight (BW) was 387.8 gram, total length (TL) was 295 mm with a standard length (SL) of 230 mm. The dorsal fin had 11 spines and 13 soft rays. Membranes are deeply incised between spines. The anal fin had 3 spiny rays and 8 soft rays. The third spine of the dorsal fin was the largest one (Fig. 3). Soft rays of the dorsal fin are quite high, which is characteristic for young specimens of groupers; the length of the tallest soft ray was equal to the length of the third spiny ray. The Ventral fin had 1 spine and 5 soft rays. Pectoral fins are formed with 15 soft rays, with a length two times the head length.



Fig. 2. Specimen of *Epinephelus caninus* captured off the coast of Tartous city (ref. MSL.19-2018); scale bar: 50 mm.

Table 1. Measurements and meristic for *Epinephelus caninus* specimen caught in Syrian coastal waters

Parameter	Value	Abbreviation
Body weight (gr)	387.8	BW
Total length (mm)	295	TL
Standard length (mm)	230	SL
Maximum body depth (mm)	92	Mbb
Pre-pectoral (mm)	82	Pp
Head length (mm)	94	Hl
Pre-orbital length (mm)	26	Po
Eye diameter (mm)	14	Yd
Counts		
Dorsal fin spines	XI	
Dorsal fin soft rays	13	
Ventral fin spines	I	
Ventral fin soft rays	5	
Pectoral fin soft rays	15	
Anal fin spines	III	
Anal fin soft rays	8	

The caudal fin was truncate with edges slightly rounded. In the lower preopercle, there were 4 notable, densely packed spines, while in the back part of operculum, there were three spines, which were separated (Fig.3). The back edge of the operculum was sharpened. Two small and ventrally orientated spines were present in front of the eye. Scales were of average size. The fish was evenly dark in color when in a calm state. Three clusters of large white spot are present along the upper half of the body, near the base of dorsal fin (behind the back of the head) (Figures 2 and 3). A further small cluster of white spots was situated near the end of the soft rays of the dorsal fin. There also were white spots of average size below the lateral line. They registered seldom-white points lower the lateral line. There were white spots on the dorsal fin spines, developed directly above clusters on the upper part of the body that are mentioned above. There was a wide white band along the edge of the dorsal fin spines. Several small white spots also existed in the lower part of the soft rays of the dorsal fin. Other fins were evenly colored and dark.

There was a thin and weakly expressed white rim along the edge of the soft part of the dorsal and anal fins (more pronounced on the caudal fin).

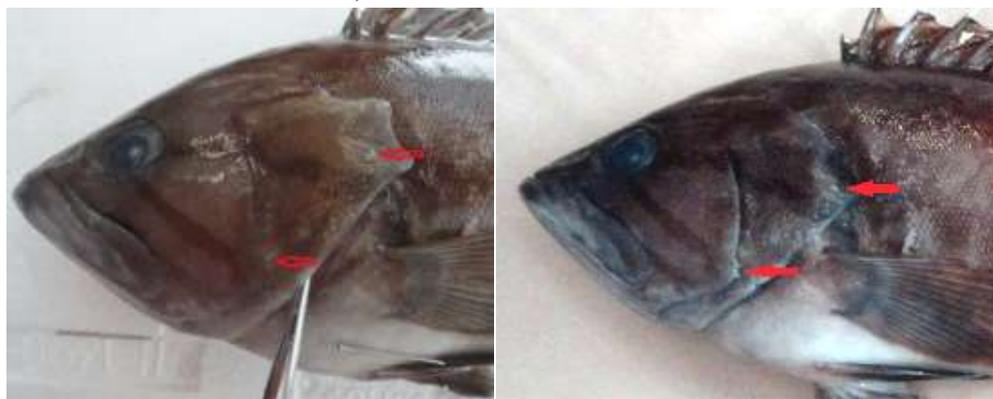


Fig. 3. The three spines, which were separated at the back part of operculum

Fish color weakened considerably under stress, and acquired a motley camouflage with the domination of grey colors of different intensity. Under weak light the body color had dark tints from black, dark-brown to dark-grey, with separate white spots in the upper half of the body. There were three dark bands on the head (Fig.3), characteristic for young fish of standard length less than 450 mm for this species (Whitehead *et al.*, 1986; Heemstra and Randall, 1993). The upper band was the widest and began near the posterior edge of eye, went through the spines in the preopercle and ended near the lower rear edge of the operculum (Fig 3). The second band commenced from the middle of the lower edge of the eye and continued through to about the end of the lower part of the preopercle, before the spines. The third band was situated above the upper jaw. Both upper bands were orientated at about 45° ventrally. Dogtooth grouper can reach a standard length (SL) of 150 cm, but generally they grow up to 100 cm, with a total length of 157 – 164 cm; maximum body mass is up to 78 kg (Fischer *et al.*, 1981; Whitehead *et al.*, 1986; Heemstra and Randal, 1993). Life span can be up to 75 years (IUCN, 2018). The dogtooth grouper is an eastern Atlantic species that is distributed from Portugal to Angola, including the Mediterranean and the Canary Islands (Spain). It has not been previously confirmed in the Syrian coast (Gruvel, 1931; Saad *et al.*, 2002; Saad, 2005; Lakkis and Sabour, 2007; Ali, 2018), and recently (for 5 years ago) it was found in the Black Sea (Boltachev and Karpova, 2013). Dogtooth grouper belong to typical nektobenthic fauna, occurring on sandy mud substrates in depths from 30 m to 300 – 400 m (Heemstra and Randall, 1993). It is a predatory fish, feeding on smaller fishes and macro-invertebrates, mostly crustaceans (Whitehead *et al.*, 1986; Heemstra and Randall, 1993; Francour and Pollard, 2018). This grouper is of commercial importance in the Eastern Atlantic, along the west coast of Africa and in the Mediterranean Sea, but catches are considered together with other *Epinephelus* commercial species. Due to the lack of population data and potential major threat from fishing, this species is listed as data deficient.

After addition of *E. caninus*, the number of species belonging to the Genus *Epinephelus* recorded in the Syrian coast became 6:

Epinephelus aeneus (Geoffroy St Hiaire, 1817); *E. costae* (Steindachener, 1878) [= *E. alexandrinus* (Valenciennes, 1828)]; *E. marginatus* (Lowe, 1843) [= *E. guaza* (L., 1758)]; *E. haifensis* Ben-Tuvia, 1953; *E. coioides* (Hamilton, 1822); *E. malabaricus* (Bloch and Schneider, 1810); *E. fasciatus* (Forsk., 1775, including 2 immigrant species from the red sea: *E. coioides* and *E. malabaricus*)

Conclusion:

This result presents a first documented field record of the dogtooth grouper in the Syrian coast. Research is needed on its population status and reproductive biology.

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التسجيل الأول الموثق لسماك اللقس الداكن *Epinephelus caninus* (فالنسيان،
1834)، فصيلة اللقسيات، رتبة سيرانيدي، في المياه البحرية السورية

أديب علي سعد*⁽¹⁾ وأحمد كامل سليمان⁽²⁾ وحسن هيثم القصيري⁽¹⁾

(1). مخبر علوم البحار، كلية الزراعة، جامعة تشرين، اللاذقية، سورية.

(2). قسم الإنتاج الحيواني، كلية الزراعة، جامعة تشرين، اللاذقية، سورية.

(*للمراسلة: د. أديب سعد. البريد الإلكتروني: adibsaad52@gmail.com).

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الملخص

قدّم في هذا العمل أول تسجيل موثق لنوع سمك اللقس الداكن *Epinephelus caninus* في المياه البحرية السورية. تم صيد عينة (فرد) بطول كلي للجسم 181 مم (TL) بتاريخ 20 شباط 2018 باستخدام قفص معدني على عمق 30 متراً ، وعلى بعد 50 متراً قبالة ساحل مدينة طرطوس (35 ° 91 شرقاً، 35 ° 87 شمالاً). وقد تم تحديد الموقع التصنيفي للعينة السمكية بأنها تابعة لنوع اللقس الداكن *Epinephelus caninus* استناداً على الخصائص المورفولوجية، واللون ، والقياسات المورفومترية والعدد. الكلمات المفتاحية: اللقس الداكن، الساحل السوري، البحر المتوسط الشرقي، أول توثيق.