

**Observations on a female Bramble shark,  
*Echinorhinus brucus* (BONNATERRE, 1788)  
(Chondrichthyes: Echinorhinidae), caught off the  
Algerian coast (southern Mediterranean)**

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*The authors report the capture of a bramble shark, *Echinorhinus brucus* (BONNATERRE, 1788), off Annaba, on the eastern coast of Algeria, close to the Tunisian frontier. The specimen, probably, an adult female, was 2.54 m total length and its eviscerated weight 99 kg. A short description is given. The distribution of *E. brucus* in the Mediterranean is discussed.*

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**Key words:** Chondrichthyes, Echinorhinidae, *Echinorhinus brucus*, distribution, Coast of Algeria, Mediterranean

## INTRODUCTION

According to BASS *et al.*, (1976), the bramble shark, *Echinorhinus brucus* (BONNATERRE, 1788) is "fairly common in the eastern Atlantic and western Indian Oceans". They added that on the east coast of the southern Africa, the species has been found on the continental shelf from South West Africa to southern Natal, but is nowhere common. GARRICK (1960) noted that in New Zealand waters both *E. brucus* and *E. cookei* are found, but the latter species is more present in the area. This is also the case off Australia (LAST and STEVENS, 1994). COMPAGNO (1984) reported the occurrence of *E. brucus* in the western Pacific and off Japan.

The bramble shark is also recorded in the Mediterranean but the captures were rarely described and poorly documented. The recent capture of a female from off the Algerian coast give us the opportunity to comment on the distribution of the species in the Mediterranean.

## DESCRIPTION OF THE SPECIMEN

The specimen, a female *E. brucus*, was observed, on 2<sup>nd</sup> April 2000, at the Algiers fish market. It was caught off Annaba, city located on the eastern area of the Algerian coast, 400 east from Algiers and less than 100 km west from the Tunisian frontier (Fig. 1).

It was caught by trawling probably at depth more than 500 m. Unfortunately, it was eviscerated.

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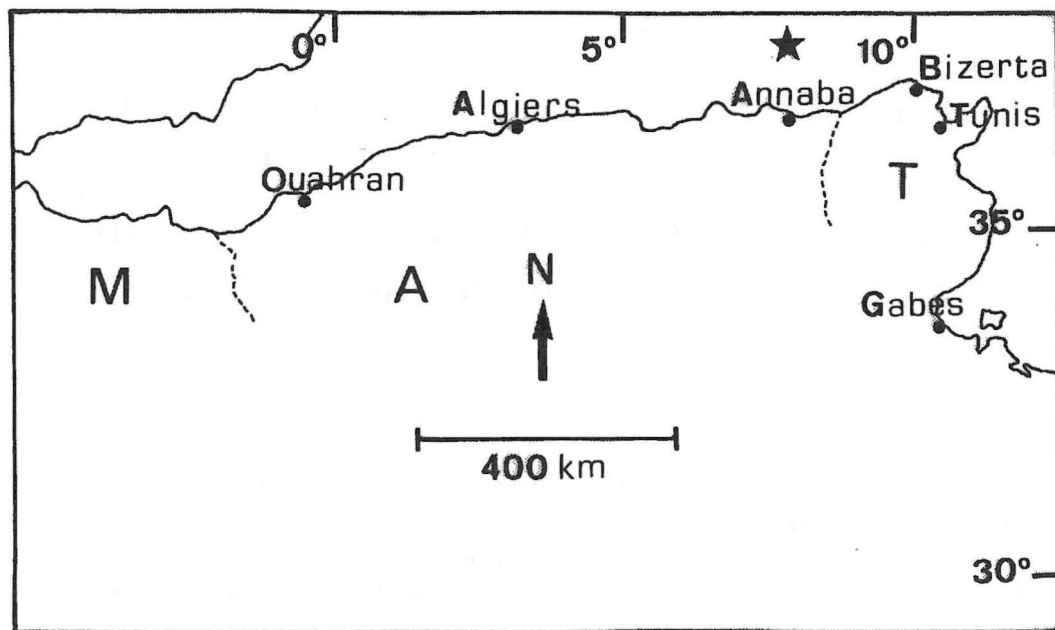


Fig. 1. Map of the Mediterranean Maghreb coast showing the location (black star) where the female *Echinorhinus brucus* was caught off Annaba. A: Algeria; M: Morocco; T: Tunisia

ated by fishermen as soon as it was landed on the boat deck.

The body is elongated and rather cylindrical (Fig. 2). The lateral line begins at the level of the first gill opening and is rather sinuous. It consists of a marked furrow flanked on both sides by a cutaneous ridge. The head is short, flattened above, ending with a broadly rounded snout (Fig. 3). The eyes are circular with a small spiracle behind them. The nostrils are large with a long and acute nasal valve. They are rather closed to mouth than to the end of the snout. The mouth is arched (Fig. 4). The labial furrows do not encircle the mouth but are restricted to its corners. The lips are not papillose. The gill slits are slightly oblique, but the 5<sup>th</sup> is wider than the others.

The dorsal fins are small and rounded, the second smaller than the first. The pelvic fins begin at the level of the first dorsal fin and their base length is quite twice as large as that of the first dorsal fin. The pectoral fins are short and rounded with a long base. The caudal fin is triangular, broadly rounded at its inferior edge and without subterminal notch at its posterior edge (Fig. 5).

The body color is brownish, rather blackish on the ridges of the fins and with violet, reddish and black notches. The ventral face of the head is rather pale or yellowish.

The body is covered by numerous, sparse and irregularly distributed dermal denticles (Fig. 6). These denticles are abundant on the ventral face of the snout and around the mouth. They are large, some fused into plates with one or two cusps. The diameter of large plates ranged from 10 to 25 mm. Their margins are not stellate but have slight furrows (Fig. 7).

The teeth of both jaws exhibit a pointed medial cusp strongly oblique towards the commissure of the mouth. This cusp is more developed in the medial series. The inner ridge of these teeth have from two to three smaller or symphyseal cusplets, the outer ridge from 0 to two smaller or commissural cusplets (Fig. 8). This teeth description follows LEDOUX (1970).

There are 26 teeth in the upper jaw and 24 teeth in the lower jaw. The dental formula is 13 - 0 - 13 / 12 - 0 - 12.

The total length (*TL*) of this female was 2.54 m and its eviscerated weight was 99 kg. Other measurements are as follows:



*Fig. 2. Female Echinorhinus brucus caught off Annaba*



*Fig. 3. Head of the female Echinorhinus brucus*



*Fig. 4. Open mouth of the female Echinorhinus brucus showing upper and lower jaws*



*Fig. 5. Caudal fin of the female Echinorhinus brucus*



*Fig. 6. Dermal denticles of the female Echinorhinus brucus*

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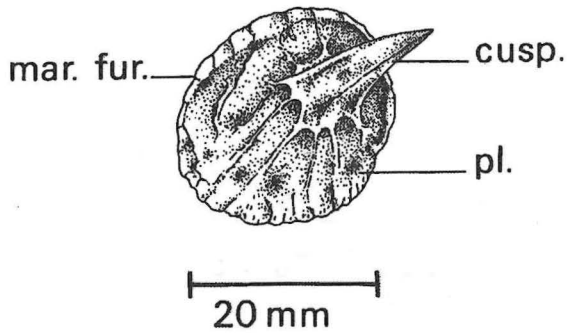


Fig. 7. Detail of a dermal denticle. Cusp.: cusplet; mar. fur.: margin furrow; pl.: plate

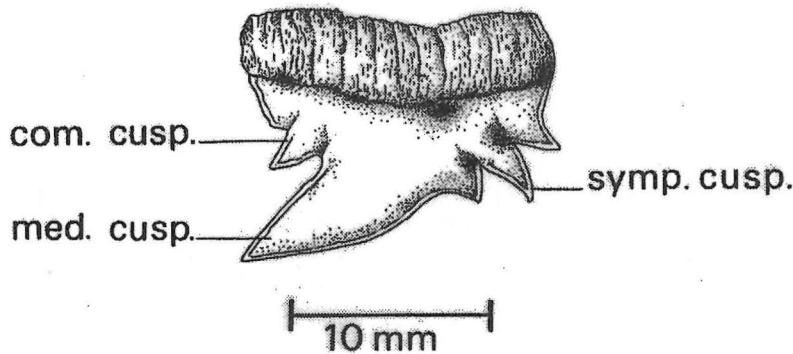


Fig. 8. Detail of a medial tooth, external face, right side of the upper jaw. Com. cusp.: commissural cusp; med. cusp.: medial cuspid; symp. cusp.: symphyseal cusp.

*E* distance between snout to first dorsal fin: 1520 mm;

*E* distance between snout to second dorsal fin: 1800 mm;

*E* snout length: 220 mm;

*E* upper caudal fin length: 590 mm;

*E* mouth width: 310 mm;

*E* space between nostrils and mouth: 70 mm;

*E* space between nostrils: 80 mm.

## DISCUSSION

Our description of *E. brucus* caught off the Algerian coast agrees with those of BIGELOW and SCHROEDER (1948); TORTONESE (1956); BINI (1967); BASS *et al.* (1976); CADENAT and BLACHE (1981); FISCHER *et al.* (1981); COMPAGNO (1984) and LAST and STEVENS (1994) and confirms the identification of the species.

The size of this exemplar, 2.54 m, suggests that it was an adult female based on previous data provided by other authors. BASS *et al.* (1976) recorded a female, 2.13 m *TL* from southern Natal coast, which contained 24 embryos averaging 165 mm *TL*. CADENAT and BLACHE (1981) observed an adult female caught off the Ivory Coast (eastern tropical Atlantic) which was 2.28 m *TL* and weighed 72 kg. This female was pregnant and contained 15 developing embryos. CADENAT and BLACHE (1981) reported that the largest *E. brucus*

recorded was caught off New Zealand. It was 2565 mm *TL* and weighed 158 kg.

BARRUL and MATE (1996) noted that the species reaches 3.10 *TL* and a weight of 170 kg. They added that sexual maturity occurs between 2.13 and 2.31 m for females, and between 1.50 and 1.74 m for males.

According to CADENAT and BLACHE (1981), *E. brucus* is currently caught by anglers off the coast of Senegal. For instance, on 9<sup>th</sup> December 1961, they observed 6 specimens in a single pirogue. However, recently, CAPAPÉ *et al.* (1994, 2001) did not mention captures of *E. brucus* in the area.

In the Mediterranean, to our knowledge, the first record of *E. brucus* was mentioned by RISSO (1810) off Nice and the last one by GRANIER (1964) in the Gulf of Aigues-Mortes, southern France, who reported the capture of a single specimen in June 1940 without more detail.



Fig. 9. Historical and geographical records of *Echinorhinus brucus* in the Mediterranean. 1. RISSO (1810), off Nice (France); 2. TROIS (1876, in TORTONESE, 1956), in Adriatic Sea; 3. VINCIGUERRA (1923, in TORTONESE, 1956), probably off Genoa (Italy); 4. CIPRIA (1937), in the Straits of Messina (Italy); 5. GRANIER (1964), in the Gulf of Aigues-Mortes (France), specimen observed in 1940; 6. HEMIDA and CAPAPÉ, this paper, 2000 off Annaba (Algeria)

*E. brucus* was recorded for the first time in Adriatic by TROIS (1876, in TORTONESE, 1956). CIPRIA (1937) described an embryo of 295 mm TL weighing 164 g, removed from a female weighing 60 kg which was caught during July in the Straits of Messina. TORTONESE (1956) based his *E. brucus* description on a specimen, weighing 80 kg and preserved in the Museum of Natural History of Genova, which was also studied by VINCIGUERRA (1923, in TORTONESE, 1956).

All these historical and geographical data are plotted and summarized in Figure 9.

Off the Maghreb shore, *E. brucus* is recorded by COLLIGNON and ALONCLE (1972) in Moroccan waters and by DIEUZEIDE *et al.* (1953) off Algeria. However, these authors did not describe precise captures. On the other hand, CAPAPÉ (1987) and BRADAÏ (2000) did not observe bramble shark from off the Tunisian coasts.

All these observations allowed suggesting that *E. brucus* had probably disappeared from

the Mediterranean. However, the capture of an adult female showed that it still occurs in the area. The scarcity of bramble shark captures seems due to fact that the species inhabits deep bottoms between 500 and 900 m, where it is not the object of an anthropic fishing pressure. Consequently, an evaluation of *E. brucus* stocks remains difficult. *E. brucus* was only recorded in the western Mediterranean basin (Fig. 9) and not in the eastern Mediterranean (GOLANI, 1996). This suggests that these *E. brucus* captures were fortuitous, due to specimen migrations from the eastern coast of Africa through the Straits of Gibraltar. This hypothesis requires confirmation. Generally deep-sea sharks are not highly migratory, except vertical migrations of gravid females at the end of gestation when they approach the shore in order to give birth.

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**Opis ženke psa zvjezdaša, *Echinorhinus brucus*  
(BONNATERRE, 1788) (Chondrichthyes: Echinorhinidae),  
ulovljene u vanjskom dijelu alžirske obale (južni Mediteran)**

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**SAŽETAK**

Autori izvješćuju o ulovu psa zvjezdaša, *Echinorhinus brucus* u vanjskome dijelu istočne obale Alžira blizu tuniske granice. Primjerak je vjerojatno odrasla ženka, dužine 2,54 m i težine (bez utrobe) 99 kg. Dat je kratak opis primjerka te njegova distribucija u Sredozemlju.

**Ključne riječi:** hrskavičnjače, Echinorhinidae, *Echinorhinus brucus*, raspodjela, alžirska obala, Sredozemlje

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