

First record of the yellowmouth barracuda, *Sphyraena viridensis* (Sphyraenidae) from Adriatic Sea

by

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RÉSUMÉ. - Premier signalement du barracuda à bouche jaune, *Sphyraena viridensis* (Sphyraenidae) en mer Adriatique.

Trois spécimens de *S. viridensis* ont été capturés avec un banc de *S. sphyraena* dans les environs de Dubrovnik, Croatie (42°41'N-17°57'E), le 2 septembre 2003. Le poids moyen du corps était de 80 g et la longueur totale était de 278 mm. C'est le premier signalement de cette espèce au sud-est de la mer Adriatique.

Key words. - Sphyraenidae - *Sphyraena viridensis* - Yellowmouth barracuda - MED - Adriatic Sea - First record.

The yellowmouth barracuda, *Sphyraena viridensis* (Cuvier, 1829) is a predator in both coastal and pelagic waters.

Four *Sphyraena* species have been recorded in the Mediterranean Sea: *S. sphyraena*, *S. chrysostaenia*, *S. flavicauda* and *S. viridensis* (Ben-Tuvia, 1986; Fischer *et al.*, 1987; Fredj and Maurin, 1987; Golani *et al.*, 2002). While *S. sphyraena* is autochthonous to the Mediterranean, and with a broad Atlantic distribution, the other three species are new. *S. chrysostaenia* and *S. flavicauda* are Lessepsian migrants (Golani *et al.*, 2002), while the transport vector of *S. viridensis* is unknown, as it is an Atlantic species (Tortonese, 1975).

In the Adriatic Sea, *S. sphyraena* is a resident species, whereas juvenile *S. chrysostaenia* was noted for the first time in 2000 (Pallaoro and Dulčić, 2001).

The present paper describes the first record of the yellowmouth barracuda in the south-eastern Adriatic Sea.

RESULTS AND DISCUSSION

On September 2, 2003, three specimens of *S. viridensis* (Fig. 2) were captured with a seine net at 2 m depths and at a sea temperature of 24°C in waters around Dubrovnik (42°41'N, 17°57'E) (Fig. 1). These specimens were captured with a school of *S. sphyraena*. The main morphometric and meristic data of these specimens are presented in table I. All specimens showed an oblong body, elongated jaws, projecting lower jaw, and strong canine-like teeth; gillrakers are absent; there is no scales on the posterior part of the preoperculum, and the posterior edge is rounded. Pelvic fins were inserted below the first dorsal fin. The tips of pectoral fins did not reach the pelvic fins. The colour of the specimens was dark above and silvery below. The analyzed specimens of *S. viridensis* were observed two days after their capture and the vertical bars were poorly visible and located across the upper part of the body, extending anteriorly and slightly below the lateral line.

Counts, measurements and descriptions agree with those reported by Ben-Tuvia (1986). In contrast to our study, Relini and Orsi-Relini (1997) counted 14-15 rays in the pectoral fin, whereas we found only 13 rays. Also, we counted I+9 rays in the anal fin, as did Relini and Orsi-Relini (1997), while Corsini and Economidis (1999) noted II+8 rays. In recent years, the dispersion of this spe-



Figure 1. - Map of South Adriatic Sea showing the locality where the three specimens of *Sphyraena viridensis* were caught (X). [Carte de la mer Adriatique sud montrant la localité où les trois spécimens de *Sphyraena viridensis* ont été capturés (X).]



Figure 2. - The three specimens of *Sphyraena viridensis* caught near Dubrovnik, South Adriatic Sea. [Les trois spécimens de *Sphyraena viridensis* capturés près de Dubrovnik, mer Adriatique sud.]

cies was noted in Greece (Aegean Sea) (Corsini and Economidis, 1999), Italy (Ligurian sea, Ustica Islands) (Relini and Orsi-Relini, 1997; Vacchi *et al.*, 1999) and along the eastern coasts of Algeria (Kara and Bourehail, 2003). Due to considerable similarity, *S. sphyraena* is frequently confused with *S. viridensis* (Ben-Tuvia, 1986; Silva, 1990). *S. viridensis* has no scale on the preoperculum (Fig. 3), which is a main characteristic that differentiates it from *S. sphyraena* (Fig. 4). This is the first time that *S. viridensis* was recorded from the Adriatic Sea, but the time of appearance is hard to determine precisely, especially because of considerable similarity with *S. sphyraena*. The distribution of *S. viridensis* to the north might be linked to the dispersion of other fish species, but this phenomenon is not yet explained. Another species from the genus *Sphyraena* have been also recorded, *S. chrysostaenia* were noted for the first time in 2000 (Pallaoro and Dulčić, 2001).

It can be considered that the dispersion of *S. viridensis* is fast and that more samples of this species will be caught in the future in the middle and north Adriatic Sea.

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Table I. - Morphometric (mm) and meristic characteristics of the three yellowmouth barracuda *Sphyraena viridensis* from the south-eastern Adriatic Sea. [*Caractéristiques morphométriques (mm) et méristiques des trois spécimens de Sphyraena viridensis capturés dans la mer Adriatique sud-orientale.*]

Characteristics	N1	N2	N3
Body weight	91.4 g	67.2 g	81.4 g
Total length (LT)	295	264	275
Standard length (LS)	264	233	248
Head length	83	73	77
First predorsal length	122	108	114
Second predorsal length	187	167	173
Preanal length	184	160	171
Prepectoral length	81	73	79
Preventral length	124	106	114
First dorsal fin length	28	21	24
Second dorsal fin length	33	28	26
Anal fin length	30	25	25
Pectoral fin length	24	21	22
Pelvic fin length	21	20	20
Caudal fin length	44	40	42
Maximal body depth	35	31	32
Minimal body depth	23	22	24
Eye diameter	10	11	10
Interorbital length	12	10	12
Preorbital length	29	27	28
Postorbital length	39	37	39
First dorsal fin	V	V	V
Second dorsal fin	I+9	I+9	I+9
Anal fin	I+9	I+9	I+9
Pectoral fins	13	13	13
Pelvic fins	I+5	I+5	I+5
Lateral line	136	138	140

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Figure 3. - One of the *Sphyraena viridensis* specimens showing areas with no scales on the preoperculum. [*Un des spécimens de Sphyraena viridensis montrant les zones sans écaille sur le préopercule.*]



Figure 4. - Preoperculum of *Sphyraena sphyraena*, completely scaled. [*Préopercule de Sphyraena viridensis, complètement couvert d'écailles.*]