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NEW FINDINGS OF *FISTULARIA COMMERSONII* RÜPPELL, 1835 AND *SPHOEROIDES PACHYGASTER* (MÜLLER & TROSCHEL, 1848) IN THE NORTHERN TYRRHENIAN SEA

Abstract - The present note describes the most north-westward record in the Mediterranean Sea of the bluespotted cornetfish, *Fistularia commersonii* Rüppell, 1835, and a further finding of the blunthead puffer fish, *Sphoeroides pachygaster* (Müller & Troschel, 1848). Morphometric and meristic characters of the two specimens collected are provided. The bluespotted cornetfish, a maturing male, was the largest specimen collected up to now in the Mediterranean Sea. The blunthead puffer fish was a juvenile male.

Key words - Alien species, lessepsian migration, *Fistularia commersonii*, *Sphoeroides pachygaster*, Mediterranean Sea.

Riassunto - Nuovi ritrovamenti di *Fistularia commersonii* Rüppell, 1835 e *Sphoeroides pachygaster* (Müller e Troschel, 1848) nel Mar Tirreno Settentrionale. La presente nota descrive il nuovo ritrovamento di esemplari di pesce trombetta, *Fistularia commersonii* Rüppell, 1835, e di pesce palla, *Sphoeroides pachygaster* (Müller & Troschel, 1848), nel Mar Tirreno Settentrionale. *F. commersonii* è un migrante lessepsiano, penetrato, cioè, in Mediterraneo attraverso il Canale di Suez. Il pesce palla, *S. pachygaster*, invece, sarebbe entrato attraverso lo Stretto di Gibilterra, essendo le prime segnalazioni pervenute dal settore occidentale del Mediterraneo. Sono stati rilevati i principali caratteri morfometrici e biologici dei due esemplari. *F. commersonii*, un maschio con gonadi in maturazione, è risultato l'esemplare più grande rinvenuto in Mediterraneo fino ad oggi, misurando una lunghezza totale di 101 cm. Inoltre, si tratta della segnalazione più settentrionale di questa specie nel bacino Mediterraneo. L'esemplare di *S. pachygaster* è risultato un maschio con gonadi ancora immature, di circa 13 cm di lunghezza totale. La nuova segnalazione di queste specie contribuisce ad integrare le conoscenze sul processo di evoluzione della biodiversità delle comunità ittiche del bacino Mediterraneo.

Parole chiave - specie aliene, migrazione lessepsiana, *Fistularia commersonii*, *Sphoeroides pachygaster*, Mar Mediterraneo.

INTRODUCTION

Since the opening of the Suez Channel, the migration of Indo-Pacific and Red Sea species into the Mediterranean Sea has been increased continuously, producing changes in biodiversity of the Mediterranean fish fauna (Golani *et al.*, 2002). Due to the increasing attention paid to this phenomenon, invaders from the tropical Atlantic realm have been more frequently recognized as well, as a result of a natural invasion through the Gibraltar Strait.

The present note describes the findings of one specimen of bluespotted cornetfish, *Fistularia commersonii* Rüppell, 1835 (Syngnathiformes, Fistulariidae) and one of blunthead puffer fish *Sphoeroides pachygaster* (Müller & Troschel, 1848) (Tetraodontiformes, Tetraodontidae) in the northern Tyrrhenian Sea.

MATERIALS AND METHODS

F. commersonii was caught on December 2006 by means of trammel net on a sandy bottom at 30 m depth, while *S. pachygaster* was caught by trawling on muddy bottoms, between 100 and 130 m depth, at the end of August 2005 (Fig. 1).

Morphometric and meristic analysis of the specimens was performed. Sex and the maturity stage were determined through the macroscopic observation of the gonads.

RESULTS

Fistularia commersonii

The specimen morphology (Fig. 2) fully agrees with the typical diagnostic features of the species (Golani, 2000; Golani *et al.*, 2002): a very elongate and depressed body, flattened between the pectoral and the caudal fins; a very long and tubular snout; a small and oblique mouth; a forked caudal fin with the two middle rays very elongated in a long filament. The live body colour was grey-olive, green in the snout, the back and the flanks; the belly was silvery-white, while the dorsal, the anal and the caudal fins were transparent. The following morphometric data were collected: 14 dorsal fin rays, 13 anal fin rays, 14 pectoral fin rays, and 6 pelvic fin rays; total weight was 550.5 g, total length (L_T) 1010 mm, standard length (L_S) 965 mm, body depth 24 mm, body width 47 mm, head length 285 mm, snout length 220 mm, eye diameter 23 mm, inter-orbital space 21 mm, caudal filament length 120 mm. The specimen is the largest one of those collected in the Mediterranean, followed by the female of 920 mm L_T recorded in the Aegean Sea by Karachle *et al.* (2004). The specimen was a male, with maturing gonads. The stomach, weighing 11.8 g, contained three juveniles (two in an advanced state of digestion) of the teleost *Spicara smaris*, accounting for total wet weight 6.0 g.

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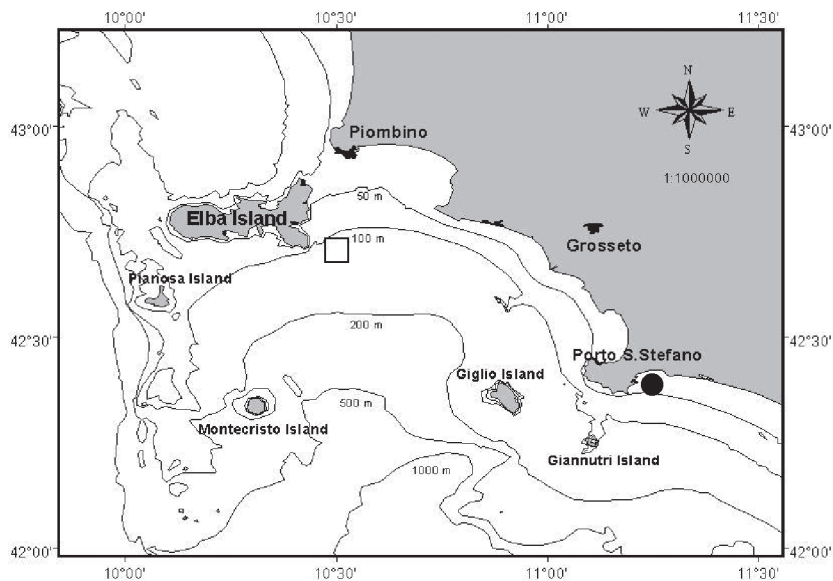


Fig. 1 - Findings of *Fistularia commersonii* (●) and *Sphoeroides pachygaster* (□) in the northern Tyrrhenian Sea (NW Mediterranean).

As reported by Corsini *et al.* (2002), the bluespotted cornetfish is a predator on several exploited native populations of economic important Mediterranean demersal species.

Sphoeroides pachygaster

The specimen (Fig. 3) was identified as *S. pachygaster* due to the body inflatable, with large head and rounded snout; two large teeth in each jaw (forming a beak-like dental plate); scales absent and skin completely smooth, without spines and bony plates. One lateral line; dorsal fin single, placed behind midpoint and opposite the similar-shaped anal fin. Pelvic fin absent and caudal fin truncated. Colour was greyish on dorsal and whitish on its inflatable belly. The specimen was an immature male. The morphometric analyses gave the following results: 9 dorsal fin rays, 8 anal fin rays, 14 pectoral fin rays, 10 caudal fin rays; total weight was 66.4 g, total length (L_T) 125 mm, standard length (L_S) 113 mm, head depth 37 mm, head width 25 mm, head length 44 mm, snout length 22 mm, eye diameter 11 mm, inter-orbital space 16 mm.

DISCUSSION

F. commersonii is a widely distributed Indo-Pacific species. In the Red Sea it is rather common, mainly on coral reef habitats, but also it is present on shallow sandy shores (Golani, 2000). The species was recently included among the exotic fishes penetrated into the Mediterranean Sea (Golani *et al.*, 2002). The first record of this Lessepsian migrant in the Mediterranean Sea was due to Golani (2000), along the coasts of Israel.

In the eastern and central Mediterranean, records of this species have been continuous in last years showing a westward colonization: Anatolian coast (Bilecenoglu *et al.*, 2002), Aegean Sea (Corsini *et al.*, 2002; Karachle *et al.*, 2004), and central Mediterranean (Azzurro *et al.*, 2004; Fiorentino *et al.*, 2004; Pipitone *et al.*, 2004; Souissi *et al.*, 2004).

The specimen of *F. commersonii* was collected in the northern Tyrrhenian Sea (NW Mediterranean), and, jointly with the specimen collected in 2004 by Micarelli *et al.* (2006) in the same area, is to date the most north-westward limit of the species distribution in the Mediterranean.

The specimen of *S. pachygaster* here described is the second record from the northern Tyrrhenian Sea (Ligas *et al.*, 2006) after that by Bedini (1998). The blunt-head puffer fish is a deep water species, circumglobally distributed in tropical and temperate waters (Golani *et al.*, 2002). Its presence in the Mediterranean basin was reported for the first time by Oliver (1981) from the Balearic Islands. Many records of this species have been reported in last decades both in western and central Mediterranean (see Psomadakis *et al.*, 2006). In the eastern sector, the first record dates 1991 (Golani, 1996); more recent findings have been given by Zachariou-Mamalinga & Corsini (1994) and by Erylmaz *et al.* (2003). These observations strongly support the hypothesis of a recent immigration of *S. pachygaster* in the Mediterranean, probably undergoing a fast diffusion eastwards (Ragonese *et al.*, 1992).

The new record of a juvenile of *S. pachygaster* further supports the hypothesis of local reproduction activities and of the presence of self-sustaining populations in the Mediterranean Sea. Observations on reproduc-

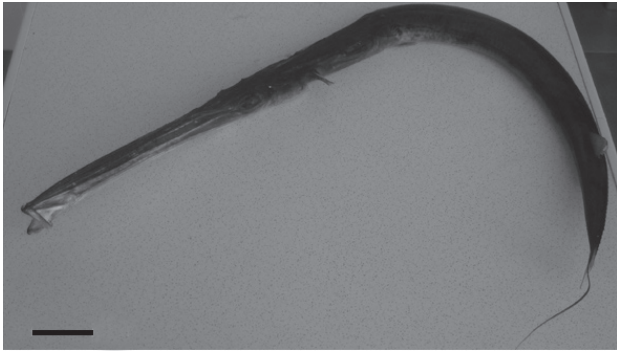


Fig. 2 - Bluespotted cornetfish, *F. commersonii* (scale bar 10 cm).



Fig. 3 - Blunthead puffer fish, *S. pachygaster* (scale bar 2 cm).

tion and fecundity of females in the Sicilian Channel (Ragonese *et al.*, 2001) showed active specimens with a large reproductive period and high fecundity, key factors for a quick spreading ability of the *S. pachygaster* Mediterranean populations.

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