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Research note

BLUESPOTTED CORNETFISH, *FISTULARIA COMMERSONII* RÜPPELL, 1838: A LESSEPSIAN SPRINTER

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Abstract. Bluespotted cornetfish, *Fistularia commersonii* Rüppell, 1838 is a Lessepsian migrant, recorded for the first time in the Mediterranean in Israeli waters in 2000 and two years later off Rhodes Island, south-eastern Aegean Sea. The presenty described case of a single specimen constitutes the first record of its northernmost appearance, caught with trammel-nets in the waters off Loutra Agias Paraskevis (Chalkidiki Peninsula, North Aegean Sea), indicating its fast spreading ability. Based on previously reported data on its feeding habits, its fractional trophic level was calculated and ranged from 4.1 to 4.5, a fact indicating that it is a higher order carnivore. The rate of northward expansion for the 16 Lessepsian migrants found in the Greek seas is also discussed.

Key words: fish, bluespotted cornetfish, *Fistularia commersonii*, Lessepsian migration, North Aegean Sea, Greece.

In general, invasion of organisms, which are known as exotic or alien species, has important implications on the invaded ecosystems, in terms of ecological, economical and social impacts (e.g. Kolar and Lodge 2001, Occhipinti-Ambrogi and Savini 2003). The exotic fish species of the Mediterranean Sea have been elegantly reviewed and described in a recent publication of the International Commission for the Scientific Exploration of the Mediterranean (CIESM) (Golani et al. 2002), including a wealth of information on the invading species. Overall, 90 alien fish species have

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been identified up to March 2002 (from the Indo-Pacific through the Suez Canal, i.e. Lessepsian migrants: 59 species; from the Atlantic through the Gibraltar Straits: 28 species of tropical and 3 species of boreal origin) (Golani et al. 2002).

Bluespotted cornetfish, *Fistularia commersonii* Rüppell, 1838, a reef-associated species of minor fisheries commercial importance, is widely distributed in the East Pacific, from Mexico to Panama, in southern Japanese, Australian and New Zealander waters, in East African waters and in the Red Sea (Froese and Pauly 2003). It was first recorded in the Mediterranean Sea in Israeli waters in January 2000 and was classified as a new Lessepsian migrant (Golani 2000). The species was reported, in considerable abundance, one year later from the waters off Rhodes Island (south-eastern Aegean Sea; Corsini et al. 2002).

In summer 2003 one specimen was caught with trammel-nets in the waters off Loutra Agias Paraskevis (Chalkidiki Peninsula, North Aegean Sea; from 39°90'N, 23°40'E to 39°95'N, 23°50'E), at a depth of 25 m. The specimen had the typical diagnostic features of the species (i.e. fin rays: dorsal 15, anal 14, pectoral 14, and pelvic 6; no elongated bony plates along the dorsal midline, in front and behind the dorsal fin (Golani 2000, Froese and Pauly 2003). The total length of the specimen caught was 920 mm, its standard length (SL) 884 mm and its total weight 448.1 g. It was a female at maturity stage III (Nikolsky 1963), being the largest one caught so far in the Mediterranean Sea (Israeli waters, 3 individuals of 268–516 mm SL and 10.3–82.5 g: Golani 2000; Rhodes Island, 37 individuals of 141–734 mm SL: Corsini et al. 2002).

F. commersonii is a piscivorous species, also feeding on small crustaceans (e.g. mysids, euphasiids, crabs, and other benthic crustaceans) (Froese and Pauly 2003). Data on its feeding habits from various areas of its distribution are shown in Table 1. The stomach contents of the specimen from the Chalkidiki Peninsula included only adult fishes, which were not identifiable. Based on the data reported on the feeding habits of the species in various areas, the fractional trophic levels (*sensu* Pauly et al. 1998) were estimated (Table 1) and ranged from 4.14 ± 0.72 to 4.50 ± 0.80, a fact indicating that it is a higher order carnivore (see Stergiou and Karpouzi 2002).

According to Golani et al. (2002), with the addition made by Corsini et al. (2002), of the 59 Indo-Pacific fish species occurring in the Mediterranean Sea, only 16 have expanded their distribution up to the Aegean Sea. Of those, goldband goatfish, *Upeneus moluccensis* (Bleeker, 1855) was reported in 1947 from both Israeli waters and Rhodes Island, and Half-smooth golden pufferfish, *Lagocephalus spadiceus* (Richardson, 1845) was reported for the first time in the Dodecanese Islands in 1930, and later from Turkish and Israeli waters (in 1950 and 1953, respectively; Golani et al. 2002), indicating that most probably they were introduced in the Mediterranean from the Red Sea much earlier than the dates indicated above.

Table 1

Feeding habits and trophic levels of *Fistularia commersonii*, from various areas of its distribution

Area	Year	Food items	Trophic Level ($\bar{x} \pm s$)	Reference
Thailand waters	1985	Fish, mysids, shrimps/prawns, other benthic crustaceans	4.30 ± 0.74	Froese and Pauly (2003) (Ref. No. 26908)
Southern Japanese waters	1997–2000	Fish, shrimps, crabs, mysids, euphasiids, stomatopods	4.47 ± 0.79*	Takeuchi et al. (2002)
East China Sea	1999–2001	Fish, mysids, harpacticoid copepods	4.14 ± 0.72*	Nakamura et al. (2003)
SE Aegean Sea	2001	Fish (fish fry, *Mullus surmuletus*, *Spicara smaris*, others)	4.50 ± 0.80*	Corsini et al. (2002)
NW Aegean Sea	2003	Fish (unidentified)	4.50 ± 0.80*	present study

* trophic level values were estimated by the authors, based on all reported feeding items, using TrophLab (Pauly et al. 2000).

For the remaining 14 species (Fig. 1) the time between the first recorded case in the Mediterranean and the first one in the Aegean (in years; i.e. rate of northward expansion) ranged from 1 to 84 years (mean and median: 19.5 and 9 years, respectively). From those only *Leiognathus klunzingeri* (Steindachner, 1898) expanded up to the North Aegean, being recorded there in 1980, 49 years after its first record in Syrian waters in 1931 (Golani et al. 2002). *F. commersonii* has a rate of 3 years (Fig. 1). Redcoat, S*argocentron rubrum* (Forsskål, 1775) and African sailfin flyingfish, *Parexocoetus mento* (Valenciennes, 1847) also have a high rate of northward expansion (1 and 3 years, respectively; Fig. 1) and, despite the fact that they had invaded the Mediterranean Sea more than half a century ago, they have only expanded their distribution from Israeli waters up to Rhodes Island (1947 to 1948 and 1935 to 1938, respectively; Golani et al. 2002). No relationship was found between the rate of northward expansion and body size or trophic level (data from Froese and Pauly 2003, $r < 0.34$, $P > 0.1$ for both cases).

Although our results are based on a single specimen, indicating that the study area is not fully colonized, the fast rate of northward expansion of *F. commersonii* and the very high abundance that it has attained the past 2 years in the waters surrounding Rhodes Island (Corsini et al. 2002, Margies P. personal communication) implies that such a colonization might take place in the near future, with important effects on the local communities.

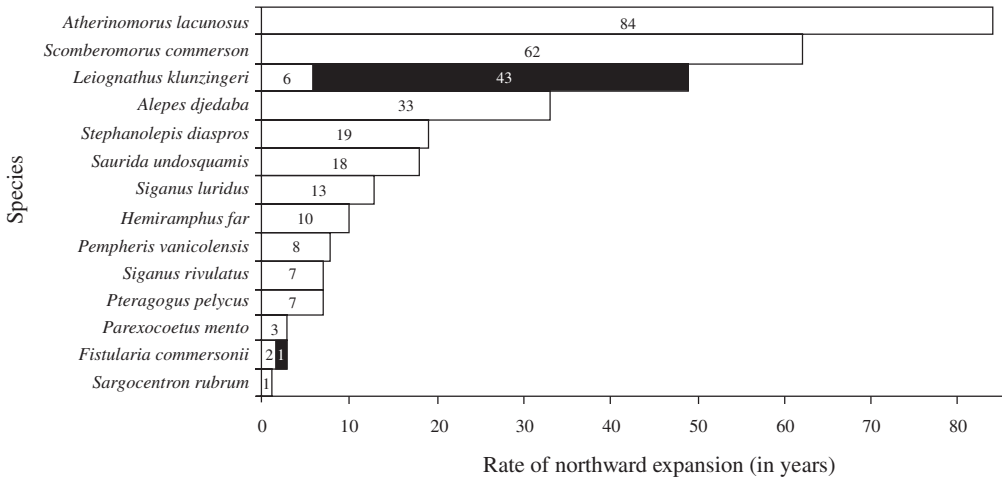

Fig. 1. Lessepsian fish species reported from the Mediterranean that expanded their distribution up to the Aegean Sea (data from: Golani et al. 2002); white bars: rate of northward expansion (i.e. time between the first recorded case in the Mediterranean and the first one in the South Aegean) black bars: time between the first recorded case in the South Aegean and the first one in the North Aegean Sea; numbers in bars indicate the rate of northward expansion (in years)

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