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Short communication

A new record of Lessepsian migrant *Etrumeus teres* (DeKay, 1842) (Osteichthyes: Clupeidae) from the northern Aegean Sea

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The east coast of the Aegean Sea is characterized by a large number of bays and islands and a dynamic seabed relief. Whereas the climate is both warm and nutrient-rich in the South Aegean, the oceanographic conditions are quite different in the northern part (Stergiou et al., 1997). The North Aegean is colder (11°C in spring) and more saline (annual mean 37‰) and the southern part is hotter (14.4°C) and less saline (38.91 ‰) (Benli et al., 2000; Türker Çakır, 2004). The north-east coast has strong upwelling systems, affecting the biodiversity (Türker Çakır, 2004).

Large numbers of Lessepsian migrants have become established in the Mediterranean and the southern Aegean seas. However, they are less frequent in the North Aegean, and even a single specimen of such species is worth reporting.

This is the first record of the *Etrumeus teres* off Cylades Bay, northern Aegean Sea. *E. teres* (round herring) is a pelagic, mainly inshore clupeid fish, found in the Red Sea, eastern Africa, Japan, southern Australia, eastern Pacific and western Atlantic (Golani et al., 2002). In the Mediterranean it was first recorded in Haifa Bay, Israel in 1961 (Whitehead, 1963), and successively observed in Egypt (El-Sayed, 1994), Iskenderun, Turkey, (1994–1996, Başusta et al., 1997), Antalya, Turkey (1997, Yılmaz and Hoşsucu, 2003), Cyprus (1999, Golani, 2000), Rhodes (2003, Corsini et al., 2005), Cyclades (2004, Kallianiotis and Lekkas, 2005), Chania Bay, Crete (2004, Kasapidis et al., 2007), Malia Bay, Crete (2004, Kasapidis et al., 2007), Lampedousa (2005, Falautano et al., 2006) and north-eastern Hydra Island (central Aegean) (2005, Zenetos et al., 2007).

In February 2009 a single specimen was caught in a purse seine by a commercial fisherman off the Dikili coast (northern part of the Aegean Sea, coast of Turkey) (39°14′15′N; 26°40′31′E) (Fig. 1) at a depth of 40–50 m on a sandy bottom covered by algae. The specimen was deposited in the collection of the Zoological Museum of Balıkesir University (ZDBAU / PM 104).

The typical morphological and habitus characteristics are well defined in the common systematic literature, particularly in text books on fishes of the native region of this Lessepsian migrant. For comparative purposes, however, we present here

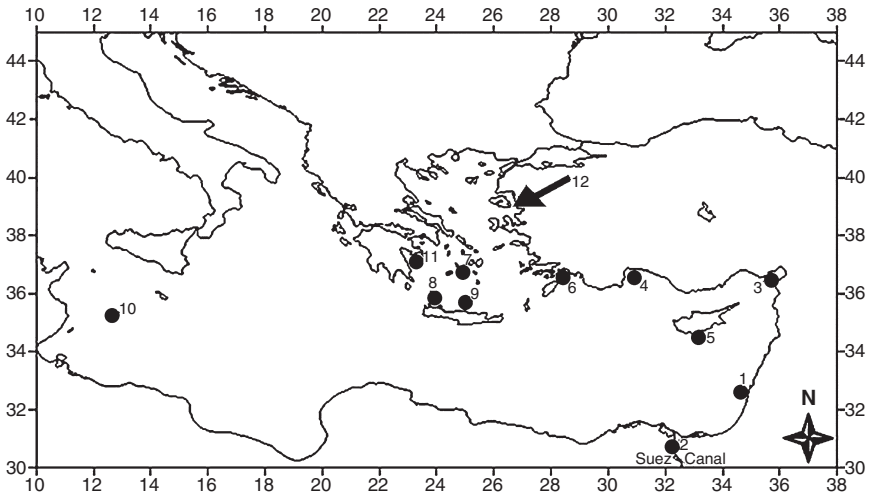

Fig. 1. Triangle = *Etrumeus teres* (DeKay, 1842) capture location, Aegean Sea (Dikili) (record no. **12**). Station numbers: **1.** Haifa Bay (Whitehead, 1963), **2.** Egypt (El-Sayed, 1994), **3.** Iskenderun Turkey (Başusta et al., 1997), **4.** Antalya, Turkey (Yılmaz and Hoşsucu, 2003), **5.** Cyprus (Golani, 2000), **6.** Rhodes (Corsini et al., 2005), **7.** Cyclades (Kallianiotis and Lekkas, 2005), **8.** Chania Bay, Crete (Kasapidis et al., 2007), **9.** Malia Bay, Crete (Kasapidis et al., 2007), **10.** Lampedousa (Falautano et al., 2006), **11.** North-eastern Hydra Island (central Aegean) (Zenetos et al., 2007). The typical morphological and habitus characteristics are well-defined in the common systematic literature and particularly in text books on fishes of the native region of this Lessepsian migrant. However, we are presenting here all morphometrical and meristic measure of all specimens described so far from the Mediterranean Basin for comparative purposes (Table 1). Most of these measurements are in agreement with previous descriptions of the species (Golani, 2000; Kallianiotis and Lekkas, 2005; Falautano et al., 2006). Apperently, most of the individuals caught so far were relatively large adults except those from the Cretese coasts which seem to represent juveniles. It is suggested that these specimens represent long-distance immigrants which have apparently not yet established self-sustaining populations. → Table 1

Table 1
Morphometric measurements and meristic counts of the single specimen of *Etrumeus teres* (DeKay, 1842) captured in northern Aegean Sea (Strait of Dikili) and comparisons with those captured in other areas

Min-Max	3	4	5	6	7	8	9	10	11	12
	İskenderun Turkey 1994–1996 Başusta et al. (1997)	Antalya, Turkey 1997 Yılmaz and Hoşsucu (2003)	Limassol, Cyprus 1999 Golani (2000)	Rhodes 2003 Corsini et al. (2005)	Cyclades 2004 Kallianiotis and Lekkas (2005)	Chania Bay, Crete 2004 Kasapidis et al. (2007)	Malia Bay, Crete 2005 Kasapidis et al. (2007)	Lampedousa 2005 Falautano et al. (2006)	Hydra Island 2005 Zenetos et al. (2007)	Dikili Strait, Turkey 2009 This study
Morphometric characters										
Total length	166–193	–	–	–	197–233	83–110	83–110	231	212	149
Fork length	–	–	–	–	179–216	–	–	211	–	138
Standard length	–	103–227	138–213	135–170	168–201	–	–	202	–	127
Body depth	–	–	20.6–42.4	–	30–38	–	–	35.6	–	25
Head length	–	–	31–53.5	–	37.48–44.0	–	–	45	–	29
Head height	–	–	–	–	20.92–27.55	–	–	–	–	19
Eye diameter	–	–	9.3–18.6	–	10.91–12.68	–	–	12.4	–	9
Predorsal length	–	–	–	–	74–93	–	–	88	–	59
Length of dorsal fin base	–	–	–	–	21.8–29.4	–	–	26.6	–	17
Length of anal fin base	–	–	–	–	8.13–11.52	–	–	9.4	–	9
Length of pectoral fin	–	–	–	–	23.62–28.36	–	–	13.2	–	*
Length of pelvic fin	–	–	–	–	11.07–15.74	–	–	4.2	–	7
Height of dorsal fin	–	–	–	–	20.02–26.52	–	–	–	–	19
Weight	–	14.60–168.60	–	26.9–63.7	64.58–120.06	–	–	–	–	27.11
Meristic characters										
Dorsal fin rays	18–19	–	17–20	20	14–18	–	–	18	–	18
Pelvic fin rays	7	–	8–10	8	7–11	–	–	8	–	7
Anal fin rays	11–12	–	9–10	10–13	24–30	–	–	12	–	9
Pectoral fin rays	16	–	15–17	15–17	14–18	–	–	15	–	16
	6	438	2	19	30	50	360	1	1	1

all morphometrical and meristic measurements of all specimens described thus far from the Mediterranean Basin (Table 1). Most of these measurements are in agreement with previous descriptions of the species (Golani, 2000; Kallianiotis and Lekkas, 2005; Falautano et al., 2006). Apparently most individuals caught so far have been relatively large adults except those from the Cretese coasts which seem to represent juveniles. It is suggested that these specimens represent long-distance immigrants which have apparently not yet established self-sustaining populations.

Our findings together with past information (Başusta et al., 1997; Golani, 2000; Yılmaz and Hoşsucu, 2003; Corsini et al., 2005; Kallianiotis and Lekkas, 2005; Falautano et al., 2006; Kasapidis et al., 2007; Zenetos et al., 2007) suggest that the spread of this species to the northern Aegean Sea is not a single event and may re-occur. It can be speculated that the species may have the potential to successfully adapt to the changing environmental conditions and that perhaps recruits will be seen more frequently from the nearby, established populations.

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