

**FIRST RECORDS OF THE SLENDER SNIPE EEL, *NEMICHTHYS SCOLOPACEUS* (NEMICHTHYIDAE), AND THE ROBUST CUSK-EEL, *BENTHOCOMETES ROBUSTUS* (OPHIDIIDAE), FROM THE AEGEAN SEA**

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**Abstract.** Two species previously unrecorded from the Aegean Sea, *Nemichthys scolopaceus* Richardson, 1848 and *Benthocometes robustus* (Goode et Bean, 1886), were captured during a bottom trawl off the Marmaris coasts (Turkey). These new records represent respectively the easternmost occurrence of *N. scolopaceus* and the second record of *B. robustus* from the eastern Mediterranean Basin.

**Keywords:** fish, zoogeography, *Nemichthys scolopaceus*, Nemichthyidae, *Benthocometes robustus*, Ophidiidae, Aegean Sea, new record

The southern Aegean Sea is an area zoogeographically distinct from rest of the Aegean Sea (eastern Mediterranean), due to presence of numerous islands, and unique bathymetrical and topographical features (Papaconstantinou 1988). The local ichthyofaunal diversity has increased within the last decade, primarily as a result of the establishment of exotic species and new records of deep-sea fishes (Bilecenoglu et al. 2002). Although there are several reasons for the increased number of alien fish, i.e., erythrean intrusion, shipping, mariculture, global warming, etc. (Galil and Zenetos 2002), enrichment of the Aegean Sea fauna by new deepwater fish is mostly as a result of modern trawling vessels, more extensive fishing effort, exploration of deeper areas, and intensified deep water studies (Papaconstantinou 1988, Kaya and Bilecenoglu 2000).

In this paper, we report the finding of two species—*Nemichthys scolopaceus* Richardson, 1848 and *Benthocometes robustus* (Goode et Bean, 1886)—previously unreported from the Aegean Sea and the Turkish coasts. Two specimens (one per species) were captured during the same bottom trawl by the commercial fishing vessel *FET-TAHIN MEHMET*, at depths ranging from 550 to 600 m off the Marmaris coasts (southern Aegean Sea, Turkey, Fig. 1). Fish were fixed in 70% ethanol and preserved at Zoological Museum of Adnan Menderes University

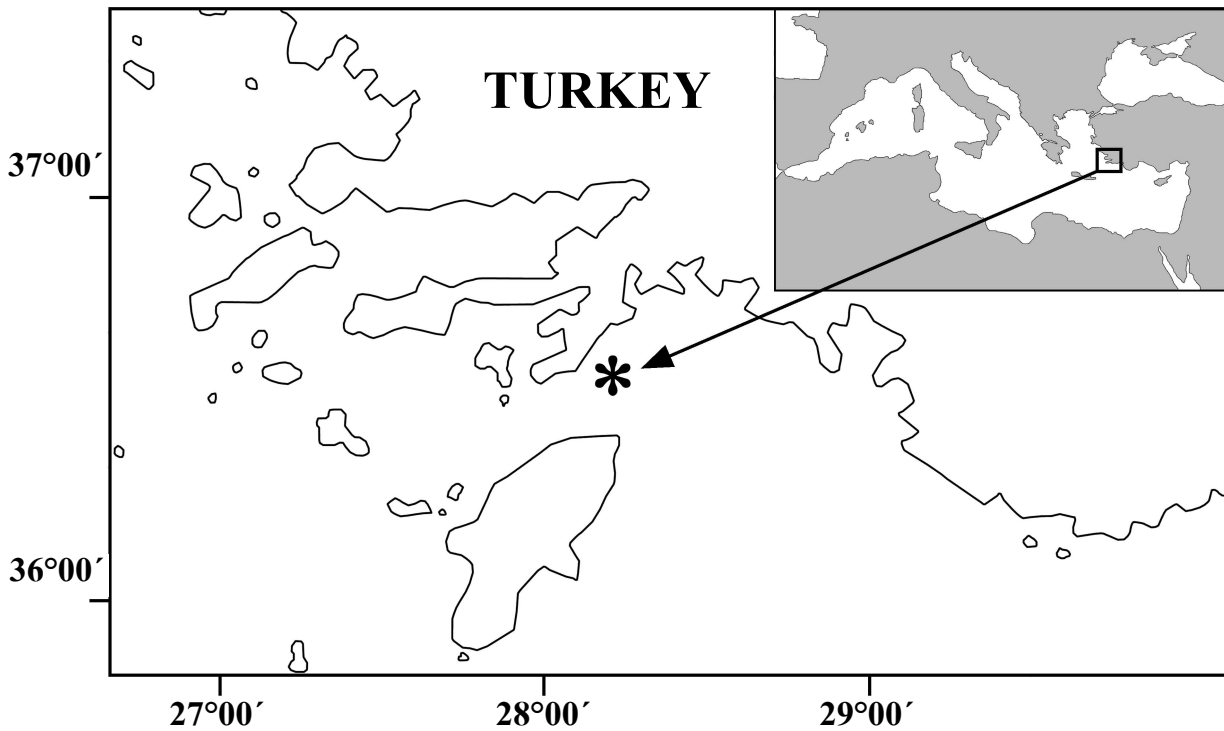
(ZMADU). Measurements were carried out to the nearest 0.1 mm by a caliper, and meristic counts were made under the reflected light of a stereomicroscope. For the species identification, Nielsen (1984, 1986) and Nielsen et al. (1999) were used.

*Nemichthys scolopaceus* Richardson, 1848

**Material examined:** ZMADU-P/051, 820.5 mm SL, 12 April 2005, Marmaris coasts (southern Aegean Sea), lat 36°36'57"N, long 28°19'48"E, 550–600 m depth.

**Diagnosis.** Body extremely long, with caudal fin ending as filament (Fig. 2A). Anus located below pectoral fins. Dorsal-, caudal-, and anal fins confluent; base of dorsal fin rays at midbody strong and spine-like (Fig. 2B). Non-tubular anterior nostril indicating unripe female specimen (Fig. 2C). Maximum body depth 0.98% of SL; head length 9.15% of SL; snout length 66.67% of head length; eye diameter 8.27% of head length. Dorsal fin origin located in front of pectoral fins, close to nape. Several irregular rows of pores on head: preopercular pores 9, sub-orbital pores 16 and postorbital pores 11. Jaws with several small acute teeth, directed posteriorly. Teeth almost equal in size in lower jaw. Some larger teeth located on midline of upper jaw, with largest ones below anterior nos-

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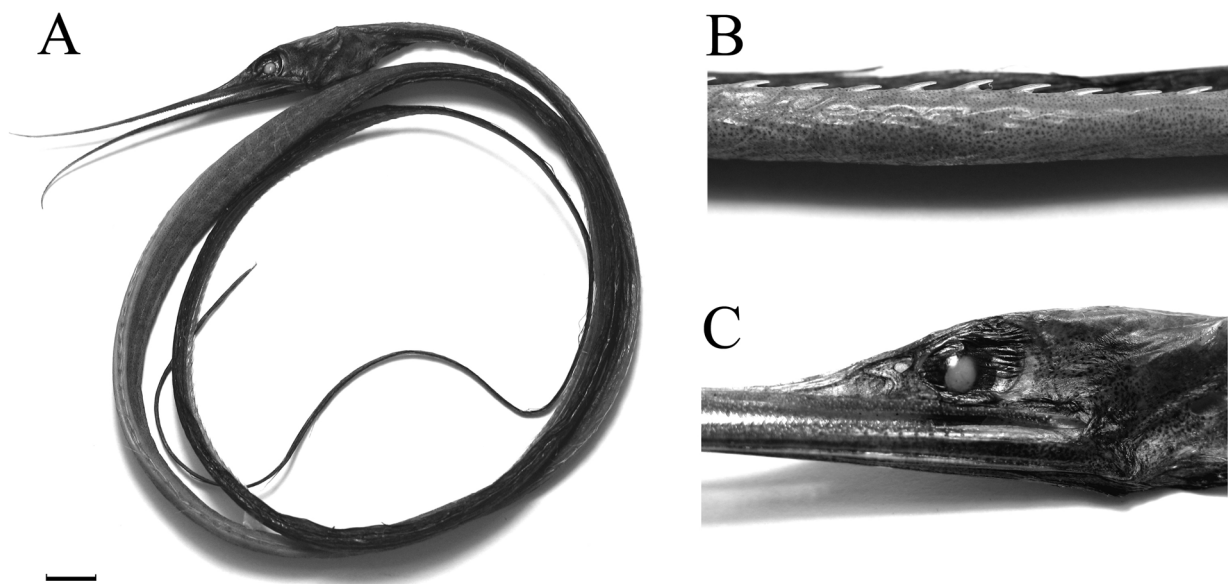


**Fig. 1.** Map showing the capture locality (indicated by an asterisk) of *Nemichthys scolopaceus* and *Benthocometes robustus* in the southern Aegean Sea

tril origin. Body pigmented on whole, but clearly darker below lateral line. Bases of dorsal- and anal fins dusky. Meristic counts and morphometric measurements in agreement with Nielsen (1984).

**Distribution.** Cosmopolitan in tropical and temperate seas; western Atlantic, from Nova Scotia to Brasil (Froese and Pauly 2006); eastern Atlantic from Iceland, Skagerrak,

and Spain to southern Africa, including the western Mediterranean (Nielsen 1984, Froese and Pauly 2006); common in the Ligurian Sea, off Algerian and northern Sicilian coasts (Relini-Orsi and Relini 1973); occurring also in the Strait of Messina (Berdar et al. 1977), in southern Sardinian waters (Cau 1979), and in the eastern Ionian Sea (Mytilineou et al. 2005); reports available from northwest and eastern Pacific (Froese and Pauly 2006). *N. scolopa-*



**Fig. 2.** *Nemichthys scolopaceus*, 820.5 mm TL, captured from southern Aegean Sea; (A) general view (scale bar = 1 cm); (B) spine-like dorsal fin rays at the midbody; (C) head view

*ceus* is an oceanic species, which may be encountered pelagically from surface to depths down to 2000 m (Nielsen 1984). Juveniles do not perform a vertical migration, which generally occur at depths down to 100 m, but larger specimens (>80 mm) exhibit diurnal migration (Castonguay and McCleave 1987). According to Wippelhauser et al. (1996), small leptocephali (6–15 mm) of *N. scolopaceus* are abundant between February and April, and spawning occurs on both sides of thermal fronts throughout the western subtropical convergence zone of the Sargasso Sea. Maximum known size for this fish is 130 cm (Nielsen 1984). The species is recorded for the first time from both the eastern Mediterranean Basin and the Aegean Sea.

***Benthocometes robustus*** (Goode et Bean, 1886)

**Material examined:** ZMADU-P/052, 110.9 mm SL (120.3 mm TL), 12 April 2005, Marmaris coasts (southern Aegean Sea), lat 36°36'57"N, long 28°19'48"E, 550–600 m depth.

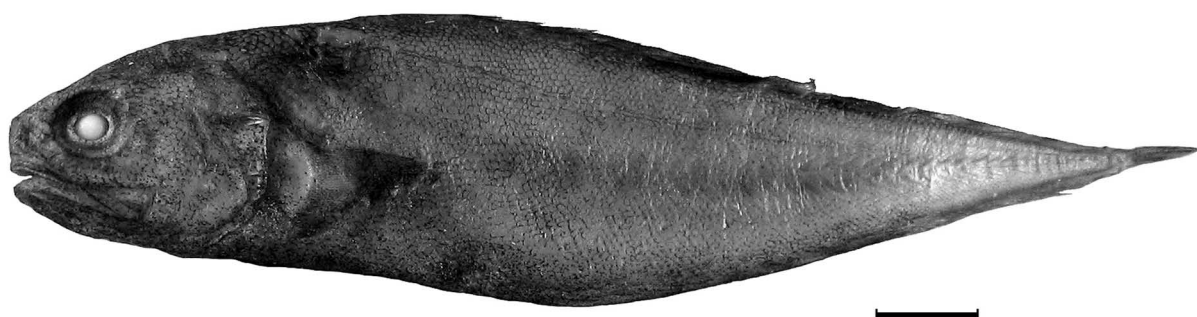
**Diagnosis.** Body short and stubby, tapering towards caudal fin (Fig.3). Head length 19.83% of SL; eye diameter 31.82% of head length, interorbital distance 85.71% of eye diameter; snout short and blunt, its length 13.60% of head length; predorsal length 28.85% of SL; preanal length 40.58% of SL; maximum body depth 23.44% of SL. Dorsal and anal fins united to caudal fin. A precise dorsal and anal fin-ray count could not be made; pectoral rays 29, pelvic rays 2, and caudal rays 15. One of two pelvic rays elongate, its length 9.9% of SL. Operculum with two posteriorly directed spines; upper spine longer and pointed, lower spine relatively shorter and triangular in shape. Lateral line with ca. 100 scales, becoming indistinct towards caudal fin. Total of 12 transverse scales present above lateral line to origin of first dorsal fin. Jaws with numerous minute canine teeth; larger sized teeth only at outer margin of upper jaw, in uniserial band. Body covered with small cycloid scales; head, nape and operculum scaled. Body light brown in color; chin, snout, and pelvic areas much darker. Dorsal and fins dusky. Meristic counts and metric measurements in agreement with Nielsen et al. (1999).

**Distribution.** Tropical West Atlantic, off north-western Africa, western Mediterranean (Nielsen et al. 1999); Ba-

learic Sea (D'Onghia et al. 2004); southern Sardinia (Cau 1979); Adriatic (Bello and Rizzi 1988); eastern Ionian Sea (Mytilineou et al. 2005); and Cyprus (Golani 1996). *B. robustus* is an uncommon benthopelagic species, distributing at depths ranging from 385 to 1200 m (Bello and Rizzi 1988, D'Onghia et al. 2004), but occurring mainly between 500 and 1000 m (Nielsen et al. 1999). Maximum total length reported for *B. robustus* is 15 cm (Froese and Pauly 2006). The species lacks a common name (see Nielsen 1986, Nielsen et al. 1999, Froese and Pauly 2006), therefore, a new name (robust cusk-eel) is proposed herewith. *B. robustus* is added for the first time to the Aegean Sea ichthyofauna.

**REFERENCES**

- Bello G., Rizzi E.** 1988. I Teleostei raccolti nell'Adriatico meridionale nelle campagne sperimentali di pesca a strascico 1985–1987. [Teleost fishes collected from southern Adriatic Sea during a survey on demersal fishes within 1985–1987.] Quaderni dell'Istituto Ricerche Pesca Marittima **5**: 77–90. [In Italian.]
- Berdar A., Cavallaro G. Giuffre G., Potoschi A.** 1977. Contributo alla conoscenza dei pesci spiaggiati lungo il litorale Siciliano dello stretto di Messina. [A contribution to the knowledge on the fishes occurring along the coast of Sicilia, along the Messina Strait.] Memorie di Biologia Marina e di Oceanografia **7**: 77–87. [In Italian.]
- Bilecenoglu M., Taskavak E., Mater S., Kaya M.** 2002. Checklist of the marine fishes of Turkey. Zootaxa **113**: 1–194.
- Castonguay M., McCleave J.D.** 1987. Vertical distribution, diel and ontogenetic vertical migration and net avoidance of leptocephali of *Anguilla* and other common species in the Sargasso Sea. Journal of Plankton Research **9**: 195–214.
- Cau A.** 1979. Primo contributo alla conoscenza dell'ittiofauna batiale dei mari della Sardegna meridionale. [First contribution to the knowledge of the deep-water ichthyofauna of southern Sardinia.] Rendiconti del Seminario della Facoltà di Scienze dell'Università di Cagliari **49**: 585–595. [In Italian.]
- D'Onghia G., Lloris D., Politou C.Y., Sion L., Dokos J.** 2004. New records of deep-water teleost fishes in the Balearic Sea and Ionian Sea (Mediterranean Sea). Scientia Marina **68** (Supp. 3): 171–183.
- Froese R., Pauly D.** (eds.) 2006. Fishbase. World Wide Web electronic publication. <http://www.fishbase.org>



**Fig. 3.** *Benthocometes robustus*, 110.9 mm SL, captured from southern Aegean Sea (scale bar = 1 cm)

- Galil B.S., Zenetos A.** 2002. A sea change—Exotics in the eastern Mediterranean Sea. Pp. 325–336. *In*: Leppäkoski E., Olenin S., Gollasch S. (eds.) *Invasive aquatic species of Europe: Distributions, impacts and management*. Kluwer Academic Publishers, Dordrecht.
- Golani D.** 1996. The marine ichthyofauna of the eastern Levant—history, inventory and characterization. *Israel Journal of Zoology* **42**: 15–55.
- Kaya M., Bilecenoglu M.** 2000. New records of deep-sea fish in Turkish seas and the eastern Mediterranean. *Journal of Ichthyology* **7**: 543–548.
- Mytilineou C., Politou C.-Y., Papaconstantinou C., Kavadas S., D’Onghia G., Sion L.** 2005. Deep-water fish fauna in the eastern Ionian Sea. *Belgian Journal of Zoology* **135** (Suppl. 1): 229–233.
- Nielsen J.G.** 1984. Nemichthyidae. Pp. 551–554. *In*: Whitehead P.J.P., Bauchot M.-L., Hureau J.-C., Nielsen J., Tortonese E. (eds.) *Fishes of the north-eastern Atlantic and the Mediterranean*. Vol. 2. UNESCO, Paris.
- Nielsen J.G.** 1986. Ophidiidae. Pp. 1158–1166. *In*: Whitehead P.J.P., Bauchot M.-L., Hureau J.-C., Nielsen J., Tortonese E. (eds.) *Fishes of the north-eastern Atlantic and the Mediterranean*. Vol. 3. UNESCO, Paris.
- Nielsen J.G., Cohen D.M., Markle D.F., Robins C.R.** 1999. *FAO species catalogue*. Vol. 18. Ophidiiform fishes of the world (Order Ophidiiformes). An annotated and illustrated catalogue of pearlfishes, cusk-eels, brotulids and other ophidiiform fishes known to date. *FAO Fisheries Synopsis No.* 125: 1–178.
- Papaconstantinou C.** 1988. Check-list of marine fishes of Greece. *Fauna Graeciae IV*. Hellenic Zoological Society, Athens.
- Relini-Orsi L., Relini G.** 1973. Nuove segnalazioni di pesci nel mar Ligure e composizione dell’ittiofauna (Osteitti) dei fondi batiali strascicabili. [New records of fishes from the Ligurian Sea and the composition of demersal, deep-water ichthyofauna (bony fishes).] *Bolletino dei Musei e degli Istituti Biologici dell’Università di Genova* **41**: 51–62. [In Italian.]
- Wippelhauser G.S., Miller M.J., McCleave J.D.** 1996. Evidence of spawning and the larval distributions of snipe eels (family Nemichthyidae) in the Sargasso Sea. *Bulletin of Marine Science* **59**: 298–309.

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