



Short communication

Record of *Nemipterus randalli* Russell, 1986 from the southern Aegean Sea (Gökova Bay, Turkey)

By A. Gülşahin¹ and A. Kara²

¹Muğla Sıtkı Kocman University Fisheries Faculty, Muğla, Turkey; ²Ege University Faculty of Fisheries, Bornova, Izmir, Turkey

Introduction

With the opening of the Suez Canal in 1869, many species of Indian Ocean origin migrated through the canal, entering the eastern Mediterranean Sea. A variety of such migrant fish species spread across the Mediterranean to form self-sustaining populations (Erguden et al., 2009). This phenomenon is called Lessepsian migration, named after Ferdinand de Lesseps, the engineer and developer of the canal. One of these Lessepsian species is *Nemipterus randalli* (Nemipteridae). Originally restricted to the Indo-West-Pacific region, the Nemipteridae include five genera consisting of 62 species (Russell, 1990).

Nemipterus randalli is widely spread throughout the Western Indian Ocean region, covering the east and west coasts of India, Pakistan, the Persian Gulf, Red Sea including the Gulf of Aqaba, the Gulf of Aden, East African coasts, the Seychelles and Madagascar (Russell, 1990; Bilecenoglu and Russell, 2008). Lelli et al. (2008) added the Levant of the Mediterranean Sea to the above geographic distributions.

First captured in Haifa Bay, Israel, *N. randalli* was mistakenly identified by Golani and Sonin (2006) as *N. japonicus*. Two years later, Lelli et al. (2008) captured *N. randalli* on the southern Lebanese coast. The first records of the species in Turkey were from Iskenderun Bay (Bilecenoglu and Russell, 2008) and Antalya Bay (Gokoglu et al., 2009). The 2012 recording of this species is from Gökova Bay, in the southeastern Aegean Sea, showing a further spread of *N. randalli* in the Mediterranean Sea.

Materials and methods

On 20 September 2011, three 147–189 mm standard length *N. randalli* specimens were captured using longlines at depths of 10–15 m, north of Sedir Island (37°00'N–28°12'E) in Gökova Bay, province of Muğla, Turkey, coincidentally captured as by-catch over generally sandy and occasionally sandy-muddy vegetated bottoms. The main longline was a monofilament string of 1000 m length with branch lines of 1.5 m and 0.40 m width, placed at intervals of 5 m. The hook was of the J type (size no. 14), and the bait used was sea snails. The longlines were thrown at dusk and soaked for 10–12 h and hauled in again at dawn. The captured fish were packed in a plastic bag and taken to the laboratory for identification, whereby *N. randalli* were found accidentally during this routine procedure. The samples were identified according to Russell (1986) and Lelli et al. (2008).

Meristic and morphometric measurements of the species were made before being preserved in 6% formaldehyde

solution. The specimens were deposited in the fish collection of Muğla University, Fish Museum of the Fisheries Faculty, (MUSUM/PIS/2011 – 4).

Results

The three specimens of *N. randalli* (147–187 mm SL) were captured north of Sedir Island (Gökova Bay, Muğla Province). Diagnostic characteristics of the specimens are presented as minimum and maximum values in Table 1. Numbers in parentheses show mean values of the three samples. These measurements are consistent with those in studies of Bilecenoglu and Russell (2008), Lelli et al. (2008), and Gokoglu et al. (2009).

Discussion

Table 2 summarises the recordings of *N. randalli* showing its spread along the Turkish coasts since the first Mediterranean records in Israel and Lebanon.

Apart from previous records of *N. randalli* in Turkey, there are two additional studies by Erguden et al. (2009, 2010), the former reporting that the TL ranged from 4.6 to 15.3 cm (10 specimens) in *N. randalli* captured by bottom trawl in Iskenderun Bay and the latter that the population increases rapidly, adjusting itself to the new habitats; they also determined the basic age and growth parameters, with a TL range of between 4.8 and 21.5 cm in 379 examples.

Special attention is needed in routine fisheries surveys to detect and record rare and exotic species in order to follow

Table 1
Morphometrics for key body proportions (mm) of three *Nemipterus randalli* specimens captured 20 September 2011 in Gökova Bay, Muğla Province, Turkey

Measurements (mm)	Specimens		
Total length	225	187	179
Fork length	208	172	164
Standard length	189	155	147
Head length	61.5	50	46.6
Body depth	65.4	33.6	22.5
Caudal peduncle depth	21.8	12.8	8.15
Interorbital distance	17	13.1	11.8
Suborbital depth	5.84	44	3.7
Snout length	18.8	12.9	10.5
Pectoral fin length	50.2	20	17
Pelvic fin length	49.7	29.7	22.5
Eye diameter	18.7	14.7	13.6

Table 2
Records of *Nemipterus randalli* specimens from the Mediterranean Sea, showing gradual range extension between 2005 and 2011

Location of record	Capture Day/Month/Year	Number of specimens captured	Size range (mm, SL)	Capture depth (m)	Additional information	Reference
Haifa Bay, Israel	February 2005	1	–	35–50	Bottom trawl	Golani and Sonin (2006)
Tyre Bay, Lebanon	28 February–10 March 2007	30	73–95	50–70	Gillnet	Lelli et al. (2008)
Iskenderun Bay, Turkey	08 July 2008	4	73.8–102.9	50	Bottom trawl	Bilecenoglu and Russell (2008)
Antalya Bay, Turkey	2–9 February 2008	5	96–166	30	Bottom trawl	Gokoglu et al. (2009)
Gökova Bay, Turkey	20 September 2011	3	147–189	10–15	Longline	This study

their range extensions. It is also important that this be accompanied by organised periodic excursions to fisheries ports to conduct interviews and distribute questionnaires to fishermen in order to enhance catch reporting of those species that are not too well known, which may enable us to better understand their roles in new habitats (Golani and Ben-Tuvia, 1989; Lelli et al., 2008; Mavruk and Avşar, 2008).

Acknowledgements

We would like to acknowledge the anonymous referee and the editor of the journal for their helpful contributions to the article. We also thank Mr. Hamza Yentuz, of the Fisheries Cooperative of Akcapinar village, Muğla and a fisherman of the village for their practical help and the use of the longlines, respectively.

References

- Bilecenoglu, M.; Russell, B. C., 2008: Record of *Nemipterus randalli* Russell, 1986 (Nemipteridae) from Iskenderun Bay, Turkey. *Cybius* **32**, 279–280.
- Erguden, D.; Turan, C.; Gurlek, M., 2009: Weight-length relationships for 20 Lessepsian fish species caught by bottom trawl on the coast of Iskenderun Bay (NE Mediterranean Sea, Turkey). *J. Appl. Ichthyol.* **25**, 133–135.
- Erguden, D.; Turan, C.; Gurlek, M.; Yaglioglu, D.; Gungor, M., 2010: Age and growth of the Randall's threadfin bream *Nemipterus randalli* (Russell, 1986), a recent Lessepsian migrant in Iskenderun Bay, northeastern Mediterranean. *J. Appl. Ichthyol.* **26**, 441–444.
- Gokoglu, M.; Guven, O.; Balci, B. A.; Colak, H.; Golani, D. 2009: First records of *Nemichthys scolopaceus* and *Nemipterus randalli* and second record of *Apterichthys caecus* from Antalya Bay, Southern Turkey. *Mar. Biodivers. Rec.* **6234**, 1–3.
- Golani, D.; Ben-Tuvia, A. 1989: Characterization of Lessepsian (Suez Canal) fish migrants. In: Environmental quality and ecosystem stability. E. Spanier, Y. Steinberger and M. Luria (Eds). B. ISEEQS Pub., Jerusalem, Israel, 4-B, pp. 235–243.
- Golani, D.; Sonin, O., 2006: The Japanese threadfin bream *Nemipterus japonicus*, a new Indo-Pacific fish in the Mediterranean Sea. *J. Fish Biol.* **68**, 940–943.
- Lelli, S.; Colloca, F.; Carpentieri, P.; Russell, B. C., 2008: The threadfin bream *Nemipterus randalli* (Perciformes: Nemipteridae) in the eastern Mediterranean Sea. *J. Fish Biol.* **73**, 740–745.
- Mavruk, S.; Avşar, D., 2008: Non-Native Fishes in the Mediterranean from the Red Sea by way of the Suez Canal. *Rev. Fish. Biol. Fish.* **18**, 251–262.
- Russell, B. C., 1986: Review of the western Indian Ocean species of *Nemipterus* Swainson 1839, with description of a new species (Pisces: Nemipteridae). *Senckenb. Biol.* **67**, 19–35.
- Russell, B. C., 1990: FAO Species Catalogue, Vol. 12. Nemipterid Fishes of the World. (Threadfin breams, whiptail breams, monocle breams, dwarf monocle breams, and coral breams), Family Nemipteridae. An annotated and illustrated catalogue of nemipterid species known to date. FAO Fisheries Synopsis. **125**, pp. 149.

Author's address: Anıl Gülşahin, Mugla Sitki Kocman University Fisheries Faculty, Mugla, Turkey.
E-mail: agulsahin@mu.edu.tr