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NOTE

Range extension of Amberstripe Scad *Decapterus muroadsi* (Teleostei: Carangidae) to the Gulf of Oman

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Abstract

A specimen of Amberstripe Scad *Decapterus muroadsi* was collected from off the city of Muscat, Oman. The fish represents the first confirmed record of the species from the northwestern quadrant of the Indian Ocean. Color patterns as well as meristic and morphometric characters match to those described for the species. *Decapterus muroadsi* is now found generally throughout the Indo-Pacific Ocean and southeastern Atlantic Ocean, extending from the tropics well into the temperate zone.

Key words: fishes, fisheries, biogeography, species range, Indian Ocean, jack, trevally, Arabian Sea, Muscat.

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The members of the family Carangidae are widely distributed in all tropical and subtropical seas. They are considered among the most commercially important coastal pelagic fishes of the world (Lin & Shao 1999). The family Carangidae (jacks, trevallies, pompanos, and their relatives) contains about 140 species included in 32 genera (Nelson 2006).

The genus *Decapterus* Bleeker, 1851 contains 11 valid species, distributed in tropical to temperate areas of the Pacific, Indian, and Atlantic Oceans (Eschmeyer *et al.* 2018): *Decapterus akaadsi* Abe, 1958, western North Pacific; *Decapterus koheru* Hector, 1875, New Zealand; *Decapterus kurroides* Bleeker, 1855, Indo-West Pacific;

Decapterus macarellus (Cuvier in Cuvier & Valenciennes, 1833) circumglobal in tropical and subtropical seas; *Decapterus macrosoma* Bleeker, 1851, Indian and both western and eastern Pacific Oceans; *Decapterus maruadsi* (Temminck & Schlegel, 1843), West Pacific; *Decapterus muroadsi* (Temminck & Schlegel, 1843), eastern Indian Ocean, both western and eastern Pacific Oceans, and southeastern Atlantic Ocean; *Decapterus punctatus* (Cuvier, 1829), western and eastern Atlantic Oceans; *Decapterus russelli* (Rüppell, 1830), Indo-West Pacific; *Decapterus tabl* Berry, 1968 distributed circumglobal in tropical and subtropical seas; and *Decapterus smithvanizi* Kimura, Katahira & Kuriwa, 2013, Indonesia (North Sulawesi, Ambon, and Bali), western Thailand and probably also in the South China Sea (Kimura *et al.* 2013).

All 11 species of the genus are morphologically very similar, making identifications sometimes difficult, despite being common species and often an important part of fisheries (Kimura *et al.* 2013). *Decapterus* can be separated from other carangid species in the following characters: a single finlet behind both the second dorsal and anal fins, no scutes along the anterior curved part of the lateral line, two low papillae on the shoulder girdle, and a well-developed adipose eyelid (Gushiken 1983, Smith-Vaniz 1999).

The Amberstripe Scad *Decapterus muroadsi* is a widespread marine, pelagic-oceanic, oceanodromous species living at a depth range from 1–320 m (Mundy 2005). It is very widely distributed in the tropics and well into the temperate zone everywhere except the western and northern Atlantic Ocean. Until this record, it had not been confirmed in the northwestern Indian Ocean (including the Red Sea) and is not listed for Omani waters (Randall 1995), but now is reported from all quadrants of the Indian and Pacific Oceans, as well as from the southeastern Atlantic Ocean at St. Helena and Bonaparte Seamount (Smith-Vaniz 2016).

The adult specimen of *Decapterus muroadsi* (Fig. 1) was caught off the city of Muscat in the Gulf of Oman in the Sultanate of Oman (23.5789°, 58.6142°) (Fig. 2). The fish measured 334 mm FL and 370 mm TL, within the range reported by Smith-Vaniz & Williams (2015) and Smith-Vaniz (2016). The fish was caught using gillnets from a small trawler on 6 August 2017. The specimen (OMMSFC 1045) was fixed in 10% formalin and later preserved in 70% ethanol for deposit in the fish collection of the Omani Marine Science and Fisheries Centre, Ministry of Agriculture and Fisheries, Muscat, Sultanate of Oman.

Methods for taking measurements and counts follow Smith-Vaniz & Staiger (1973) and Gushiken (1983). Taxonomy and spelling follows Eschmeyer *et al.* (2018). Comparative information follows Smith-Vaniz (1986), Lin & Shao (1999), Kimura *et al.* (2013), Smith-Vaniz & Williams (2015), and Smith-Vaniz (2016).

The morphological and meristic characters of the specimen are in general agreement with those given for the species in the literature and the proportions and meristic values are presented in Table 1. The specimen has an elongated, slender, and rounded body. The eye is moderate size with a well-developed adipose eyelid completely covering the eye except for a vertical slit centered on the pupil. The mouth small is small with a slightly projecting mandible and the upper jaw has a straight upper edge with the end not slanted strongly obliquely; teeth on both



Figure 1. *Decapterus muroadsi*, OMMSFC 1045, 334 mm FL, off Muscat, Oman, Gulf of Oman (J.M. Al-Mamry).

TABLE 1

Morphometric and meristic characters of
Decapterus muroadsi from the Gulf of Oman
(measurements in mm)

Morphometric characters

Total length (TL)	370
Standard length (SL) (% in TL)	305 (82.4)
Fork length (FL) (% in TL)	334 (90.3)
Head length (HL) (% in FL)	80 (24.0)
Head depth (HD) (% in FL)	55 (16.5)
Preorbital length (Pre. O.) (% in HL)	60 (75)
Postorbital length (Post. O.) (% in HL)	23 (28.8)
Eye diameter (ED) (% in HL)	20 (25)
Upper-jaw length (UJL) (% in HL)	88 (11)
Predorsal-fin length (Pre.D.F.L.) (% in FL)	120 (35.9)
Prepectoral-fin length (Pre.P.F.L.) (% in FL)	170 (50.9)
Pectoral-fin length (P.F.L.) (% in FL)	99 (29.6)
Prepelvic-fin length (Pre.Pel.F.L.) (% in FL)	140 (41.9)
Preanal-fin length (Pre.A.F.L.) (% in FL)	186 (55.7)
Caudal-peduncle depth (C.P.D.) (% in FL)	55 (16.5)
Body depth (B.D.) (% in FL, B.D. in FL)	70 (21.0, 4.77)
Caudal-fin length (C.F.L.) (% in FL)	72 (21.6)

Meristic characters

Number of first dorsal-fin spines	VIII
Number of second dorsal-fin spines	I
Number of second dorsal-fin rays	32
Number of anal-fin spines	II
Number of anal-fin rays	29
Number of pectoral-fin rays	21
Number of pelvic-fin rays	8
Total number of scales and scutes	95
Number of scutes	32
Number of scales on curved part of LL	55
Number of scutes on straight part of LL	7
Number of gill rakers on upper arm	13
Number of gill rakers on lower arm	42



Figure 2. Map of Oman with collection location near Muscat indicated by the arrow.

jaws are very small and lie in a single row. The margin of the opercular membrane is smooth. There are two small papillae at the anterior edge of cleithrum, with the lower papilla larger. The two dorsal fins are well separated; two detached anal fin spines; widely separated finlets posterior to the soft rays of dorsal and anal fins. The pectoral fin is short, not reaching the origin of dorsal fin. The body is covered with small cycloid scales; scutes along the rear midline but not on the curved part of the lateral line. The lateral line terminates anteriorly near the end of the head. Scalation on the top of the head extends to the area behind the eyes.

The body is silvery to dark dorsally grading to white ventrally. There is a small dark spot at the margin of the opercle near the upper edge; there are no black spots spaced on the pored scales of the curved part of the lateral line. The membranous oral valve located at the symphysis of the upper jaw is noticeably white; the inside of the gill cover is dusky. The anterior part of the second dorsal fin has a broad dark marginal band. The caudal fin is yellowish grading to reddish anteriorly, especially below the midline, and the tips are dark.

Several other fish species have recently been documented for the first time in the waters of Oman, likely because of increased fishing effort and monitoring (Jawad & Al-Mamry 2009, Jawad *et al.* 2011a, 2011b, 2015, Jawad & Pitassy 2015, Al-Marzouqi *et al.* 2018). This range extension extends the Indian Ocean distribution of *Decapterus muroadsi* to all four quadrants, however there remains no documentation for the occurrence of the species in the Red Sea or Arabian Gulf. A photographic record from off Karachi in Pakistan is presented in FishBase (<http://www.fishbase.org>), but without a specimen, the identification is not confirmed. This species typically occurs in relatively deep waters and it is possible, if not likely, that it is present in the entire region.

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