

The sparid fishes of Pakistan, with new distribution records

PIRZADA JAMAL SIDDIQUI¹, SHABIR ALI AMIR^{1,2} & RAFAQAT MASROOR²

¹Centre of Excellence in Marine Biology, University of Karachi, Karachi, Pakistan

²Pakistan Museum of Natural History, Garden Avenue, Shakarparian, Islamabad-44000, Pakistan

Corresponding author Shabir Ali Amir, email: shabiramir@yahoo.com

Abstract

The family sparidae is represented in Pakistan by 14 species belonging to eight genera: the genus *Acanthopagrus* with four species, *A. berda*, *A. arabicus*, *A. sheim*, and *A. catenula*; *Rhabdosargus*, *Sparidentex* and *Diplodus* are each represented by two species, *R. sarba* and *R. haaffara*, *Sparidentex hasta* and *S. jamalensis*, and *Diplodus capensis* and *D. omanensis*, and the remaining four genera are represented by single species, *Crenidens indicus*, *Argyrops spinifer*, *Pagellus affinis*, and *Cheimerius nufar*. Five species, *Acanthopagrus arabicus*, *A. sheim*, *A. catenula*, *Diplodus capensis* and *Rhabdosargus haaffara* are reported for the first time from Pakistani coastal waters. The Arabian Yellowfin Seabream *Acanthopagrus arabicus* and Spotted Yellowfin Seabream *Acanthopagrus sheim* have only recently been described from Pakistani waters, while *Diplodus omanensis* and *Pagellus affinis* are newly identified from Pakistan. *Acanthopagrus catenula* has long been incorrectly identified as *A. bifasciatus*, a species which has not been recorded from Pakistan. All species are briefly described and a key is provided for them.

Key words: *Acanthopagrus*, *Rhabdosargus*, *Sparidentex*, *Diplodus*, *Crenidens*, *Argyrops*, *Pagellus*, *Cheimerius*, Sparidae, Karachi, Pakistan

Introduction

The fishes belonging to family Sparidae, commonly known as porgies and seabreams, are widely distributed in tropical to temperate seas (Froese & Pauly, 2013). They are demersal inhabitants found from shallow coastal waters to relatively deeper waters; a few species also occur in brackish habitats (Randall, 1995). Juveniles of some sparid species are common in creeks and estuaries, sometimes forming schools, while the adults are mostly solitary in deeper waters (Verdiell-Cubedo *et al.*, 2007). Sparids are small to medium-sized fishes, diverse in general form, varying in shape from elongate to deep-bodied, with a dorsal profile from very steep to gentle sloping. They are highly variable in color, from silvery to blackish, yellowish with golden reflections, pinkish to reddish; some species have bars, stripes and spots. Generally, the species of family Sparidae are very important commercially and constitute an important part of the artisanal and industrial fisheries (Al Mamry *et al.*, 2009). Some species are used in aquaculture, and a few are also targeted in sports-fishing. All the sparid fishes are good tasting, and are not only consumed locally in Pakistan but also exported internationally and fetch high prices in local as well as in international markets.

As sparid species are commercially important, their biology and taxonomy have been well studied. Age, growth and reproductive biology of almost all sparid species have been done in many countries by different researchers (e.g. El-Agamy, 1989; Radebe *et al.*, 2002; Kailola *et al.*, 1993; Willis *et al.*, 2003; Hughes *et al.*, 2008; Al Mamry *et al.*, 2009; Kraljević *et al.*, 1996). The taxonomy and phylogeny of the family Sparidae has been revised several times (de la Herran *et al.*, 2001; Chiba *et al.*, 2009; Hanel & Sturmbauer, 2000), but remains controversial. Morphological characters such as body shape, arrangement of fins, color and identification marks (blotches, bars, etc.), dentition, scalation, spinous and soft fin-rays are all used in sparid fish identification. In all, dentition has been a key character to differentiate between different genera and species (Chiba *et al.*, 2009; Orrell *et al.*, 2002; Day, 2002). Molecular techniques have been proved useful in resolving most of the issues of the classification of the species of family sparidae (Chiba *et al.*, 2009).

- 12a First two dorsal spines short, 3rd and 7th elongated, filamentous (especially in juveniles and subadults) *Cheimerius nufar*
 12b Dorsal spines normally graduated, not filamentous; scales on head not reaching forward to level of vertical diameter of eye 13
 13a Scale rows between fifth dorsal-fin spine base and lateral line 5½; 2nd anal-fin is subequal to 3rd anal-fin spine
 *Sparidentex hasta*
 13b Scale rows between fifth dorsal-fin spine base and lateral line 3½; 2nd anal-fin is distinctly stouter and longer than 3rd anal-fin spine *Sparidentex jamalensis*

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Appendix: Comparative material examined

- Acanthopagrus catenula*: PMNH 53001–53002 (2, 200–221 mm SL), WWFH, Karachi; CEMB- P2012–0568 –0569 (2 specimens), 160–325 mm SL, WWFH, Karachi.
- Acanthopagrus berda*: MUFS39775 (formerly CEMB- P201200137) (133.6 mm SL), Keti Bunder, Thatta, Sindh; PMNH 53018–53019 (2, 137–213 mm SL), Keti Bunder, Thatta, Sindh; CEMB- P2012–0570, 183 mm SL, Ibrahim Heydri, Karachi.
- Acanthopagrus arabicus*: PMNH 53006–53007 (2, 172–182 mm SL), WWFH, Karachi; CEMB- P2012–0571–0572 (2 specimens), 183–251 mm SL, WWFH, Karachi.
- Acanthopagrus sheim*: PMNH 53008, 196 mm, WWFH, Karachi; CEMB- P2012–0573–0576 (4, 127–174 mm SL), Ibrahim Heydri, Karachi.
- Sparidentex hasta*: PMNH 50412–50414 (3, 209–300 mm SL), WWFH, Karachi; CEMB- P2012–0565 to CEMB- P2012–0567 (3 specimens), 224–300 mm SL, Korangi Creek, Karachi.
- Sparidentex jamalensis*: PMNH 52062–52063 (2, 186–206 mm SL), WWFH, Karachi; CEMB- P2012–0555–0563 (9, 148–224 mm SL), Keti Bunder, Sindh.
- Crenidens indicus*: PMNH 53003, 163mm, WWFH, Karachi; CEMB- P2012–0577–0579 (3, 178–198 mm SL), WWFH, Karachi.
- Diplodus capensis*: PMNH 53004–53005 (2, 178–175 mm SL), WWFH, Karachi; CEMB- P2012–0580–0583 (4, 182–229 mm SL), WWFH, Karachi.
- Diplodus omanensis*: CEMB- P.2012–00077 (formerly MUFS 39722) (310 mm SL), WWFH, Karachi.
- Rhabdosargus sarba*: MUFS39628 (167.3 mm SL), Ibrahim Heydri, Karachi; PMNH 53012–53015 (4, 167–240 mm SL), WWFH, Karachi; CEMB- P2012–0584–0585 (2, 229–272 mm SL), WWFH, Karachi.
- Rhabdosargus haffara*: PMNH. 53009–53011 (3, 245–331 mm SL), WWFH, Karachi.
- Argyrops spinifer*: MUFS39739 (formerly CEMB- P201200102) (199.4 mm SL), WWFH, Karachi; PMNH. 50416 –50417 (2, 98 –142 mm SL,) Karachi; CEMB- P2012–0586–0588 (3, 191–218 mm SL), WWFH, Karachi.
- Cheimerius nufar*: MUFS39834 (297.5 mm SL), WWFH, Karachi; CEMB- P2012–0589–0590 (2, 323–337 mm SL), WWFH, Karachi.
- Pagellus affinis*: CEMB- P.2012–00078 (formerly MUFS 39720) (183 mm SL), WWFH, Karachi.