

Milk sole fish *Aseraggodes kobensis* (Pleuronectiformes: Soleidae) – a new record from the Western Indian Ocean

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Milkfish sole *Aseraggodes kobensis* (76.23 mm standard length) is recorded for the first time from the Western Indian Ocean. Sample was collected off the west coast of India at a depth of about 200 m during the cruise of FORV Sagar Sampada. Detailed morphometric measurements and meristic counts of the specimen are presented.

[**Key words:** Milk sole fish, morphometric measurements, meristic counts, Western Indian Ocean].

Introduction

The family Soleidae of the order Pleuronectiformes contains 31 genera and 165 species distributed mainly in the tropical to temperate seas of all oceans, from near shore to deep sea, while several species are known from freshwater also. *Aseraggodes* is one of the largest genera in Soleidae and the distribution is confined to the Indo–West Pacific region except for two species, one from Southern Australia and one from eastern Pacific. The genus *Aseraggodes* is represented by eight species in the Western Indian Ocean and Red Sea – *Aseraggodes brevirostris*, described from Comoro Islands, *A. diringeri* from Reunion Islands, *A. heemstrai* from Kwa Zulu, Natal, *A. jenny* from Mauritius, *A. sinusarabici* from Gulf of Suez, *A. steinitzi* from southern Red Sea and *A. umbratilis* from Bay of Bengal and Arabian Sea.^{1,2} *Aseraggodes kobensis* has been previously recorded only from the areas around Japan, Solomon Islands, Korea, China Sea, and Tungkong, Tainan¹. Although Norman³ had described eight genera of Soleidae - *Solea*, *Brachirus*, *Soleichthys*, *Zebrias*, *Aesopia*, *Pardachirus*, *Aseraggodes* and *Heteromycteris* from Indian waters, *Aseraggodes* was represented only by *A. umbratilis*. Present study is the first record of the species *A. kobensis* from the Western Indian Ocean.

Materials and Methods

The fish measuring 76.23 mm in standard length was collected by the FORV Sagar Sampada from

Station 5, Cruise 165 on the West coast of India on 16 May 1998 at a depth of about 200 m (Fig. 1). The specimen is deposited in the Marine Biodiversity Referral Museum of Central Marine Fisheries Research Institute, Kochi, India. (GB.33.14.3.12). Methods for making meristic counts and Fig. 2 morphometric measurements followed were - all ray elements were counted as individual rays; all length measurements were along the antero-posterior straight axis; all morphometric measurements were made with dial calipers to the nearest 0.01 mm.

Results and Discussion

Aseraggodes kobensis Steindachner 1896

Description: Body oval, fleshy, laterally compressed, the depth 2.5 in SL. Head small with small eyes separated by a scaly interspace which is not concave, head length 3.5 in SL. Upper eye a little in advance of the lower eye which is placed at the posterior margin of the mouth, eye diameter 7.2 in HL. Snout slightly hooked, slightly in advance of tip of mandible and on the same level as lower eye; snout length 4.2 in HL. Nostril two on eyed side, first one with round aperture, the second tubular. Mouth small, curved downwards, ending at the middle point of lower eye; fine villiform teeth in a broad band on both jaws on blind side only. Upper jaw 3 times in HL, lower jaw 3.5 times in HL. Gill rakers rudimentary. Dorsal fin origin anteriorly on snout, first ray not

prolonged, fin length shorter than anal; pelvic fin on eyed side slightly longer than pelvic fin on blind side; caudal fin free, not connected to dorsal fin and anal fin by membrane; pelvic fins placed on ventral side of body, close together, not joined to anal. Pectoral fins absent. Lateral line straight from operculum, lateral line scale count 65.

Colour in fresh condition: Brownish on ocular side with three symmetrical pair of brown spots on either profile of body on ocular side. Caudal fin brownish yellow; dorsal fin and anal fin tips yellowish.

Morphometric measurements and meristic characters are given in Table 1. The morphometric measurements and meristic counts of this specimen agree with the original descriptions for the species from Taiwan and from Japan^{4,5,6}. This species has not been reported from elsewhere. *A. kobensis* can be clearly distinguished from *A. umbratilis* in having smaller eyes, no cirri on front of snout, longer caudal peduncle length, and smaller caudal fin length. Body pigmentation of *A. kobensis* also shows much variation from *A. umbratilis*. *A. kobensis* has two series of dots on the body compared to three series in

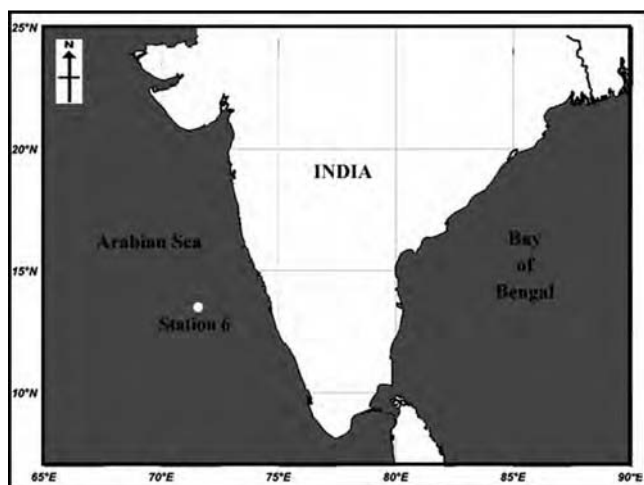


Fig. 1—Details of Station 6 (locality) of collection



Fig. 2—*A. kobensis*

Table 1—Meristic counts and morphometric measurements of *Aseraggodes kobensis*.

Sl No.	Present specimen	GB.33.14.3.12	(as % SL)	(as % HL)	In SL	In HL
1.	Dorsal fin	67				
2.	Anal fin	48				
3.	Pelvic (O) fin	5				
4.	Pelvic (B) fin	5				
5.	Caudal fin	2 +14+ 2				
6.	Total Length	(measurements in mm) 88.61				
7.	Standard Length (SL)	76.23				
8.	Head length (HL)	21.59	28.3		3.53	
9.	Head width	28.51	37.4	132.1	2.67	0.8
10.	Head depth	15.1	19.8	69.9	5.05	1.4
11.	Eye diameter (U)	2.98	3.9	13.8	25.58	7.2
12.	Eye diameter (L)	2.98	3.9	13.8	25.58	7.2
13.	Snout (U)	5.19	6.8	24.0	14.69	4.2
14.	Snout (L)	7.05	9.2	32.7	10.81	3.1
15.	Inter-orbital space	2.59	3.4	12.0	29.43	8.3
16.	Chin depth	4.53	5.9	21.0	16.83	4.8
17.	Upper jaw	6.94	9.1	32.1	10.98	3.1
18.	Lower jaw	6.24	8.2	28.9	12.22	3.5

(Contd.)

Table 1—Meristic counts and morphometric measurements of *Aseraggodes kobensis*.(Contd.)

Sl No.	Present specimen	GB.33.14.3.12	(as % SL)	(as % HL)	In SL	In HL
19	Dorsal fin length	6.69	8.8		11.39	3.2
20	Anal fin length	7.18	9.4		10.62	3.0
21	Pelvic fin length(O)	5.56	7.3		13.71	3.9
22	Pelvic fin length (B)	7.05	9.2		10.81	3.1
23	Caudal fin length	13.95	18.3		5.46	1.5
24	Dorsal fin base	71.2	93.4		1.07	0.3
25	Anal fin base	51.18	67.1		1.49	0.4
26	Pelvic fin base (O)	1.51	2.0		50.48	14.3
27	Pelvic fin base (B)	1.51	2.0		50.48	14.3
28	Caudal peduncle base	9.4	12.3		8.11	2.3
29	Body depth 1	30.1	39.5		2.53	0.7
30	Body depth 2	30.41	39.9		2.51	0.7
31	Pre dorsal	6.04	7.9		12.62	3.6
32	Pre anal	27.67	36.3		2.75	0.8
33	Pre pelvic (O)	21.74	28.5		3.51	1.0
34	Pre pelvic (B)	21.74	28.5		3.51	1.0

U-Upper-eye

L-Lower-eye

O-Eyed-side

B-Blind-side

A. umbratilis. *A. kobensis* has ornamental value due to the presence of the small dots on the body as well as its fins. During the past two years, new records of fishes known only from Mediterranean Sea, Red Sea, and Japan and have been reported from the Indian waters^{7,8}. The occurrence of the fishes point to the requirement of an in depth study of the fish biodiversity of the western waters of the Indian coast.

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