



Note

First record of the Annular sole, *Synaptura annularis* (Fowler, 1933) (Pleuronectiformes: Soleidae) from India

Rekha J. Nair

Central Marine Fisheries Research Institute, P.B.No. 1603, Ernakulam North P.O., Cochin 682 018, India

Email-rekhajair@rediffmail.com

Abstract

The Annular sole, *Synaptura annularis* (Fowler, 1933) has been recorded for the first time from Indian waters. This fish is distinguished from other congeneric species occurring in this area (*S. commersoniana* and *S. albomaculata*) by the presence of large annular patches on the body and an unbranched pectoral fin. Comparative statement with the holotype and paratype of the species are given.

During a routine deep-sea trawl operation for shrimps by private trawlers off Cochin, a soleid flatfish measuring 145.7 mm in total length, with annular patches on the body was caught by a fishing vessel in May 2001. The specimen was later identified as the Annular sole, *Synaptura annularis* (Fowler, 1933). This is the first record of the species from Indian waters.

Distribution: The species has been earlier recorded from China Sea (Fowler, 1933), Taiwan (Chen and Weng, 1935; Shen and Lee, 1981), Australia (Keith *et al.*, 1985) and Japan (Gonzales *et al.*, 1994).

Since the present specimen is from a new locality, descriptions, comments and figure are given herein. Measurements were taken after Norman (1934). Institutional abbreviations follow Leviton *et al.* (1981).

Synaptura annularis (Fowler, 1933). Annular sole

Brachirus annularis Fowler, 1933: 346, fig 99, China Sea, Vicinity of Formosa

Synaptura nebulosa Chen and Weng 1965: 76 -77, fig 52, Tungkong.

Synaptura annularis Shen and Lee, 1981: 35, fig 11, Taiwan.

Synaptura annularis Keith *et al.*, 1985: 292 -293, N.W Australia.

Diagnosis: Description is based on a single specimen. An elongated sole with distinct brown annular patches with a dark black margin on fawn colour body, including six large and six small patches. (Fig.1). Fins dark brown on ocular and blind side with black on tips. Blind-side white in colour. In preserved specimen, body colour is light brown. Colour of annular patches remains the same. Pectoral fins small, with unbranched elements.

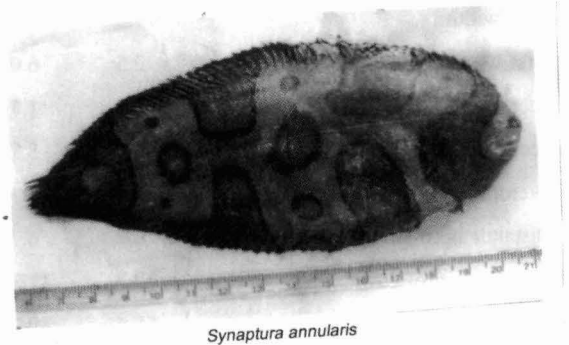


Fig. 1. *Synaptura annularis*

Description: D 76; A 56; P 9 on ocular side, 8 on blind side; V 5 on both sides; C13; LL 106; scales above lateral line (SAL) 33; scales below lateral line (SBL) 28; body depth 2.7 times in SL; head length 4.4 times in SL. Measurements are given to the nearest mm. Snout to lower orbit 8.65; snout to upper orbit 7.42; upper eye diameter 3.14, lower eye diameter 2.43; interorbital width 4.97; upper jaw 5.84 on ocular side, 7.53 on blind side; lower jaw 6.65 on ocular and 5.83 on blind side; pectoral fin (P) 11.2 on ocular, 11.35 on blind side; pelvic fin (V) 5.08 on ocular, 4.85 on blind side; longest dorsal fin ray 15.24; longest anal fin ray 9.9, longest caudal fin ray 12.6, longest pectoral fin ray on ocular side 4.61 and on blind side 4.20.

Eyes on the right side, separated by a wide scaly interorbital area with ctenoid scales in 9 rows. Upper eye slightly in advance of the lower. Anterior nostril is elongated, tubular, immediately above upper jaw, posterior nostril slit like, covered by a small tubular fleshy papilla

Table 1. Comparison of samples of *S. annularis* recorded from different localities

Author	Fowler (1933)		Chen and Weng (1965)	Shen and Lee (1981)		Keith <i>et al.</i> (1985)	Gonzales <i>et al.</i> (1994)	Present study (2003)
Locality	China Sea		Tungkong	Tungkong		Australia	Japan	India
Cat. No.	USNM 93095	USNM 93206	THUP 02768	NTUM 05173	THUP 02768	AMS 462014	BSKU 81384	CMFRI Reg. No. 1027
	holotype	paratype						
Body length (mm)	151	*	137 SL	139 SL	137 SL	130 TL	122 SL	145.7 TL 132.6 SL
Dorsal fin rays	70	*	71	70	71	*	70	76
Anal fin rays	57	*	59	57	59	*	57	56
Pectoral fin rays (O/B)	9/8	9/9	6/6	6/7	6/7	Short	9/10	9/8
Pelvic fin rays (O/B)	5/5	5/5	5/5	5/5	5/5	*	5/5	5/5
Caudal fin rays	*	*	18	18	18	*	18	13
Lateral line scales	104	105	85	85	89	*	100	106
Scales above LL (SAL)	29	*	*	*	*	*	32	33
Scales below LL (SBL)	37	*	*	*	*	*	35	28
Large annular patches	7	*	5	5	*	6-7	6	6

* data not available

in front of the lower eye. Four rows of fleshy papillae on the blind side, below the lower jaw, extending upto base of head and onto ocular side margin; they are white on the blind side and dark brown on ocular side. Lateral line straight on both sides.

Dorsal, anal and caudal fin rays branched. Opercular membrane joined to upper rays of pectoral fins to form a pocket. First and last elements of the pectoral fin on the ocular side are elongated to form small fleshy pointed lobes like horns. Pectoral fin on the blind side has 7 rays covered by a flap of white skin. Caudal fin rounded, confluent with dorsal and anal fins. Origin of pelvic fin on the ocular side is at junction of head and operculum. Five rays on pelvic fin joined by a flap of skin; pelvic fin on blind side slightly smaller than ocular. Fin bases scaled, all fin rays joined by flap of skin.

Scale: Scales on lateral line are tubular and in the interorbital region ctenoid, with 6 ctenii, central one being the longest.

Discussion

This species was first described by Fowler (1933) based on the specimens from Station D.5315, China Sea, vicinity of Formosa in 148 fathoms. In the original de-

scription, Fowler noted that this species has no pectoral fin on the left side; however in the present specimen, 9 pectoral fin rays are present on the ocular side and 8 on the blind side, covered by a flap of skin. Dr. Kunio Sasaki, who re-examined the holotype (USNM 93095) and one paratype (USSNM 93206) of *S. annularis*, noted 9 pectoral fin rays on the ocular side of both and 8 and 9 on the blind side of the holotype and paratype respectively (Gonzales *et al.*, 1994). The pectoral fin counts and pelvic fin counts of the present specimen of *S. annularis* agree well with that of the holotype and those by given by earlier authors (Table 1).

S. annularis is distinguished from other congeneric species occurring in this area (*S. commersoniana* and *S. albomaculata*) by the presence of large annular patches on the body and an unbranched pectoral fin. This specimen represents the first record of the annular sole from India. The specimen has been deposited in the Reference Museum of CMFRI. (CMFRI Reg. No. 1027)

Acknowledgements

The author wishes to thank Prof. (Dr.) Mohan Joseph Modayil, Director, CMFRI for his critical comments and Head, Demersal Fisheries Division for the facilities provided. Thanks are also due to Ms. Rosalie Shaffer, Tech-

nical Information Specialist, Panama City Laboratory, Florida for her constant encouragement and support in obtaining many valuable references. The help rendered by Shri. Jossy Palliparambil in procuring the specimen is gratefully acknowledged.

References

- Chen, J.T.F and H.T.C Weng. 1965. *Tunghai Univ. Biol. Bull.*, 27: 76 - 77.
- Fowler, H.W. 1933. *Proc. Acad. Nat. Sci. Philad.*, 85:233-367.
- Gonzales, B.J., O. Okamura, K. Nakamura and H. Miyahara. 1994. *Japan. J. Ichthyol.*, 40 : 491 - 494.
- Keith, S.J., P.J. Kailola and G.G. Leyland. 1985. Continental shelf fishes of northern and northwestern Australia. *CSIRO Div. Res., Canberra*, viii. 375 pp.
- Leviton, A.E., R.H. Gibbs, Jr, E. Heal and C.E. Dawson. 1985. *Copeia*, 1985: 802 - 832.
- Norman, J.R. 1934. A systematic monograph of the flat-fishes (Heterosomata). *Brit. Mus. Nat. Hist. London*, viii, 459 pp.
- Shen, S.C and C.H. Lee. 1981. *Bull. Inst. Zool. Academia Sinica*, 20: 29 - 39.

Accepted : 30 May 2006