

## *Saurida pseudotumbil*—A New Species of Lizardfish (Teleostei: Synodidae) from Indian Coastal Waters

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A new species of lizardfish: *Saurida pseudotumbil* (Teleostei: Synodidae) is described. In addition, four species of *Saurida* have been recorded for the first time from Indian waters: *S. micropectoralis*, *S. wanieo*, *S. isarankurai* and *S. longimanus*. The salient distinguishing characters of the seven species of *Saurida* from Indian coastal waters are given.

**Key Words:** *Saurida pseudotumbil* sp. nov., Indian waters, Four new records

### Introduction

So far, three species of the genus *Saurida* have been recorded from Indian waters: *Saurida tumbil* (Bloch 1795), *S. gracilis* (Quoy & Gaimard 1824) and *S. undosquamis* (Richardson 1848). *S. tumbil* is considered the most common and widely distributed species, as can be judged from the fact that most of the work carried out to date has been on material which has been identified as representing this species. Dileep (1977) states that all the above three species are common along the southwest coast of India; however, there is no authentic record of *S. gracilis* from the coastal waters of mainland India—it having been recorded only from Lakshadweep (Jones & Kumaran 1980). Fischer and Whitehead (1974) listed 10 species from the East Indian Ocean and West Central Pacific, of which

*Saurida argentea*, *S. elongata*, *S. filamentosa* and *S. gracilis* have not been recorded from mainland India. The other six species listed by them have been recorded during the present study. Of the six species, four are being recorded for the first time from Indian waters: *S. micropectoralis* (Shindo & Yamada 1972), *S. wanieo* (Shindo & Yamada 1972), *S. isarankurai* (Shindo & Yamada 1972) and *S. longimanus* (Norman 1939). *S. tumbil* was not encountered in any of the seven localities on the east coast; only one specimen of *S. tumbil* was observed in the sample from Karwar, the other 64 specimens being of *S. wanieo*. Re-examination of the specimens in the Zoological Survey of India, Calcutta, reveals that *S. tumbil* is represented on the east coast along the Orissa coast, at

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Visakhapatnam and at Pondicherry, and along the west coast at Trivandrum, Karwar and Bombay.

**Material and Methods**

Random samples of species of *Saurida* were collected from the catches of mini-trawlers at the fish harbour at Visakhapatnam (17.42 N, 83.20 E), and from the catches at Puri (19.48 N, 85.52 E), Kakinada (16.57 N, 82.15 E), Machilipatnam (16.09 N, 81.12 E), Madras (13.04 N, 80.17 E), Pondicherry (11.56 N, 79.53 E), within a few hours of capture. After noting the colour and pigmentation in fresh condition, morphometric and meristic data were taken from specimens preserved in 5% formalin. In counting the lateral line scales, all the pored scales including those extending on the caudal were considered. In presenting the meristic data and body proportions of the new species, the data of the holotype are followed (in parentheses) by the range observed in the four paratypes and 60 other specimens from five other samples, all from Visakhapatnam, the type locality.

**Observations**

*Saurida pseudotumbil* sp. nov. (figure 1)

*Material examined*

- (a) holotype, 189 mm SL and 4 paratypes, 162-221 mm SL from Visakhapatnam, collected on 10-2-1981, deposited in the Zoological Survey of India, Calcutta
- (b) 22 fishes, 146-250 mm SL, Visakhapatnam 11-4-1979
- (c) 5 fishes, 136-199 mm SL, Visakhapatnam 8-6-1979
- (d) 9 fishes, 135-208 mm SL, Visakhapatnam 11-6-1979

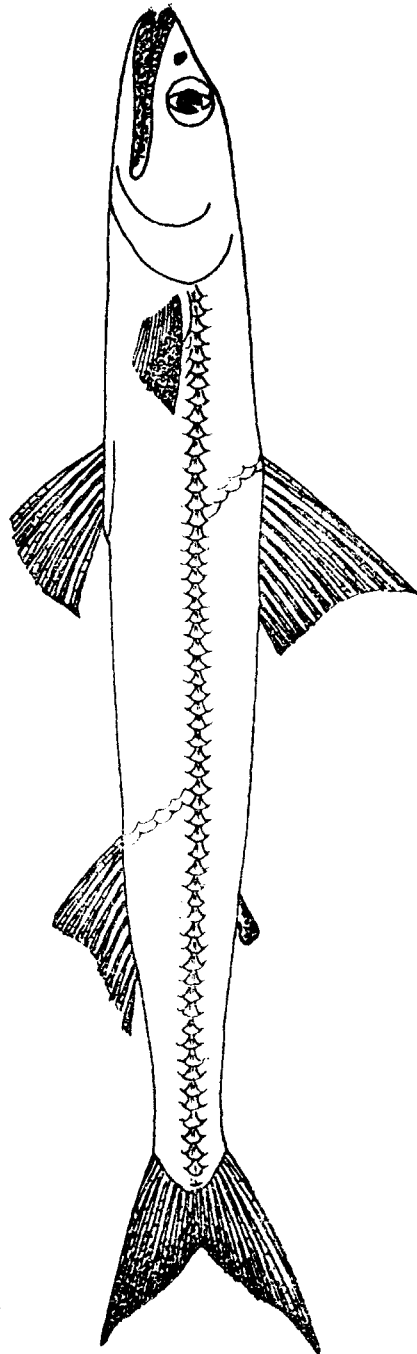


Figure 1 *Saurida pseudotumbil* sp. nov. Holotype 189 mm SL, Visakhapatnam, 10-2-1981

\*The number of branchiostegal rays and vertebrae was not counted in the holotype and paratypes

- (e) 14 fishes, 151–229 mm SL, Visakhapatnam 13-6-1979  
 (f) 10 fishes, 154–205 mm SL, Visakhapatnam 4-9-1979

#### Description

(based on holotype, four paratypes and sixty other specimens from Visakhapatnam).

Br. st. 15–16\*; D 12 (10–12); P 15 (14–15); V 9 (9); A 10 (10–11); L. 1. 56 (55–58); predorsal scales 20 (19–21); vertebrae 51–53\* including urostyle.

As percentage of standard length: total length 116.4 (116.5–119.0); body depth 14.3 (11.7–17.3); head length 22.2 (22.2–25.3); eye diameter 4.2 (3.9–5.6); pectoral fin length 11.9 (10.3–12.4); pelvic fin length 16.9 (16.1–19.4); predorsal distance 40.7 (40.2–43.4); pre-adipose dorsal distance 79.9 (76.9–81.6); prepectoral distance 23.3 (22.7–26.0); prepelvic distance 37.0 (35.1–40.2); pre-anal distance 74.1 (71.5–75.8); caudal peduncle depth 6.6 (5.5–7.1).

As percentage of head length: snout length 21.4 (18.9–24.5); eye diameter 19.0 (15.9–22.2); inter-orbital width 19.0 (17.5–21.3); longest (second) dorsal ray 85.7 (78.7–93.5); pectoral length 53.6 (43.5–54.8); pelvic length 76.2 (66.7–81.5).

Body elongate, subcylindrical, deepest at origin of first dorsal fin. Body depth 7.0 (5.9–8.5), head length 4.5 (3.9–4.5), both in standard length. Snout rounded, its length slightly more than eye diameter. Eye diameter 5.25 (4.5–6.3) in head length. Adipose eyelids relatively less developed than in *tumbil*. Nostrils midway between snout tip and eye.

Both jaws with numerous caniniform teeth in three or four rows with a tendency for increase in size of teeth in inner rows. Palatine teeth in two bands, with a narrow gap between them; the outer band consists of 3–4 rows of teeth anteriorly and 2 rows posteriorly; the inner band is spindle-shaped. There is a small patch of vomerine teeth

between the anterior ends of the two outer palatine bands.

Branchiostegal membrane extends a little beyond the edge of the posteroventral edge of operculum, as in the other recorded species of *Saurida*.

Dorsal origin about midway between snout tip and origin of adipose dorsal; longest (second) dorsal ray 1.16 (1.11–1.28) in head length, becoming relatively longer with growth. Pectoral fins short, not reaching pelvic origin; axillary scale pointed, a little more than half fin length. Pelvics longer than pectorals, extending to below last dorsal ray, their origin anterior to vertical from origin of first dorsal fin, inner rays longer than the outer, eighth ray the longest, axillary scale about half the fin length. Anal fin origin anterior to vertical from origin of adipose dorsal, its base shorter than that of first dorsal.

Pseudobranch exposed, with about forty-one filaments.

#### Colour

Upper flanks brown (sometimes appearing coppery brown), lower flanks paler brown, becoming increasingly silvery white towards ventral side. Body without blotches. In some specimens the first two dorsal rays show a series of indistinct bands, but they are more numerous and shorter than in *S. undosquamis*. The anterior few rays of the dorsal show discrete grey pigmentation and the distal 1/3 to 1/2 of entire fin is slightly darker than the basal part. The posterior half of the fin is less pigmented. The adipose dorsal shows grey pigmentation in anterior half, posterior half being hyaline, as also its upper edge. Base of pectorals hyaline to pale grey, rest of fin grey, becoming darker posteriorly; their inner surface is darker than the outer; the ventralmost rays are hyaline or only barely pigmented. In the ventral fins, the lower half is hyaline; in the distal half, the middle of the fin has a grey blotch, the edges being hyaline. The

Table 1 Salient characters for distinguishing the seven species of Saurida presently recorded from the coastal waters of India

Character	<i>S. pseudotumbil</i> sp. nov.	<i>S. tumbil</i>	<i>S. micro- pectoralis</i>	<i>S. wanieso</i>	<i>S. isarakurai</i>	<i>S. undosquamis</i>	<i>S. longimanus</i>
1. Blotches on flanks	absent	absent	present	present	present	present	present
2. Bars on first two dorsal rays	only in some specimens, indistinct	absent	present	present, indistinct	absent	present	present, indistinct
3. Bars on upper edge of caudal	absent	absent	present	absent	absent	present	a few pale bars some specimens
4. Saddle-shaped bands on back	absent	absent	absent	present	absent	absent	absent
5. Lower jaw visible when viewed from dorsal side	No	No	No	No	Yes	No	No
6. Pectoral reaching pelvic origin	No	Yes	No	Yes	Yes	yes, beyond pelvic origin	yes, well beyond pelvic origin
7. Lower caudal lobe in relation to upper lobe	shorter	shorter	shorter	shorter	longer	shorter	shorter
8. Inner surface of operculum	black	grey	grey	dark grey	unpigmented	dark grey	dark grey
9. Stomach colour	dark grey in anterior 2/3 portion	unpigmented	unpigmented	dark grey in anterior 2/3 portion	black in anterior 2/3 portion	black in anterior 2/3 portion	black in anterior 2/3 portion
10. Pyloric caecae	striped	unpigmented	unpigmented	striped	striped	striped	striped
No. of dorsal fin rays	10-13	11-12	11-13	11-13	11-12	11-13	11-13
No. of pectoral fin rays	14-15	14-15	14-16	14-15	12-13	14-15	14-15
No. of anal fin rays	10-12	10-12	10-11	10-11	11-12	10-12	10-12
No. of predorsal scales	19-21	19-21	19-21	19-20	19	17-19	17-20
No. of lateral line scales	55-58	55-58	57-59	55-57	48-49	48-51	46-50
Localities from where recorded	Puri, Visakhapatnam, Kakinada, Machilipatnam, Madras, Rameswaram	Karwar	Visakhapatnam, Kakinada, Machilipatnam, Madras, Pondicherry, Rameswaram	Karwar	Visakhapatnam, Kakinada	Visakhapatnam, Kakinada, Machilipatnam, Madras, Pondicherry	Visakhapatnam

anal is hyaline. Upper caudal lobe grey, lower dusky, both lobes being darker towards posterior edge. The upper caudal edge is not barred.

**Etymology**

The name *pseudotumbil* is given to this new species because it would appear to have been misidentified as *tumbil* and because it is most closely related to it.

**Discussion**

Norman (1935) in his revision of the lizardfishes recognised nine species in *Saurida*, of which *S. tumbil*, *S. undosquamis*, *gracilis*, *elongata* and *filamentosa* are from the Indo-Pacific. Later, Norman (1939) erected a new species *Saurida longimanus* from the Gulf of Oman. Matsubara and Iwai (1951) made a comparative study of three species of *Saurida*: *undosquamis*, *tumbil* and *elongata* from Japan and the East China Sea; according to them, if their identification of *S. tumbil* is correct, then *S. filamentosa*, "...naturally falls into this species." (p. 29). Anderson et al. (1966) studied the Atlantic lizardfishes and reviewed the genus *Saurida*. They synonymised *filamentosa* with *tumbil*. Shindo and Yamada (1972) recognised *filamentosa* as a valid species and described three new species: *isarankurai* (Gulf of Thailand), *wanieso* (East China Sea) and *micropectoralis* (Gulf of Thailand).

During the present study, a total of seven species including *S. pseudotumbil* sp. nov. were recorded from seven localities on the east coast and one locality on the west coast (table 1). *S. gracilis* was not encountered in any of the samples from the eight localities.

*Saurida pseudotumbil* sp. nov. was recorded from five localities on the east coast (table 1). The salient characters for distinguishing the seven species of *Saurida* presently recorded from Indian waters are presented in table 1.

The present study again pinpoints the need

for extreme care in the identification of the many closely related species (in many of the various genera and families) which are represented in the catches in Indian waters. There has been a general tendency to identify species on the basis of cursory examination of specimens under study (vide tables 2 & 3), by superficial reference to the descriptions and figures given in Day (1877).

**Note**

*Saurida pseudotumbil* sp. nov. recorded from five localities on the east coast; Visakhapatnam (type locality) and Puri, Kakinada, Machilipatnam and Madras, superficially resembles *S. tumbil* and has apparently been misidentified as the latter species. The similarities and differences between them are tabled below:

Character	<i>S. pseudotumbil</i>	<i>S. tumbil</i>
Blotches on body	absent	absent
Bars on upper edge of caudal	absent	absent
Pectorals	do not reach pelvic origin	reach pelvic origin
Longest dorsal ray	75.40-93.30% in head length	75.00-94.10% in head length (in 13 specimens in ZSI and 1 specimen from Karwar)
No. of lateral line scales	55-58	53-64 (Day 1877); 50-53 (Norman 1935); 56-60 (Matsubara & Iwai 1951)
No. of vertebrae	51-53	53 (Day 1877)
Colour of stomach	anterior 3/4 dark grey, posterior 1/4 unpigmented	white (Fischer & Whitehead 1974)
Pyloric caecae	striped black and white	white (Fischer & Whitehead 1974)

**Table 2** *Specimens of Saurida pseudotumbil sp. nov. from Indian coasts in ZSI, based on re-examination of specimens*

Name on label	Locality	Regd. No.	No. of specimens in collection	Identification
<b>EAST COAST</b>				
<i>Saurida tumbil</i>	19.41 N, 86.96 E; (1951)	F 604/2	one	<i>S. pseudotumbil</i>
<i>S. tumbil</i>	Sandheads (6-11-27)	F 7216/2	two	<i>S. pseudotumbil</i>
<i>S. tumbil</i>	Puri	F 6411/2	one	<i>S. pseudotumbil</i>
<i>Saurida</i> sp.	Puri	F 1600/1	two	<i>S. pseudotumbil</i>
<i>S. gracilis</i>	Vizagpatam (1947)	F 5201/2	three	1. <i>S. pseudotumbil</i> 2. <i>S. tumbil</i>
<i>S. tumbil</i>	Madras, Station 9	F 7214/2	two; one badly damaged, not identifiable	<i>S. pseudotumbil</i>
<b>WEST COAST</b>				
<i>S. tumbil</i>	Kali river (23-8-56)	F 1874/2	four	<i>S. pseudotumbil</i>
<i>S. tumbil</i>	Calangute (30-3-66)	F 6871/2	one	<i>S. pseudotumbil</i>
<i>S. longimanus</i>	Karwar (18-5-56)	F 1781/2	three	<i>S. pseudotumbil</i>

**Table 3** *Record of Saurida tumbil (Bloch 1795) from the east and west coasts of India, based on re-examination of specimens in ZSI*

Name on label	Locality	Regd. No.	No. of specimens in collection	Identification
<b>EAST COAST</b>				
<i>Saurida tumbil</i>	Long Island	F 3068/2	1	<i>S. tumbil</i>
<i>Saurida tumbil</i>	Orissa	12236/1 112500	1	<i>S. tumbil</i>
<i>Saurida tumbil</i>	Orissa	F 12376	1	<i>S. tumbil</i>
<i>Saurida tumbil</i>	Danda	F 5090/2	1	<i>S. tumbil</i>
<i>Saurida gracilis</i>	Visakhapatnam	F 5201/2	3	1. <i>S. tumbil</i> ; 2. <i>S. pseudotumbil</i>
<i>Saurida tumbil</i>	Veerampatnam, near Pondicherry	F 1341/2	2	<i>S. tumbil</i>
<b>WEST COAST</b>				
<i>Saurida tumbil</i>	Trivandrum	F 2610/2	2	1. <i>S. tumbil</i> 2. <i>S. undosquamis</i>
<i>Saurus myops</i>	Karwar	F 1839/2	3	<i>S. tumbil</i>
<i>Saurida tumbil</i>	Bombay	F 11027/1	1	<i>S. tumbil</i>

Table 1 reveals that, because of overlap, none of the meristic characters are useful for distinguishing the two species. Day (1877) gave the lateral line scale count in *tumbil* as 53–64 and Weber and de Beaufort gave it as 54–63, but the range appears to be rather wide.

The similarities and differences between this species and the other six species presently recorded from Indian waters are presented in table 1.

*Saurida pseudotumbil* sp. nov. can be distinguished from *wanieso*, *isarankurci*, *undosquamis* and *longimanus* (table 1) by its shorter pectorals (not reaching pelvic origin) and absence of blotches on flanks. Though

*pseudotumbil* resembles *micropeptoralis* in having short pectorals (not reaching pelvic origin), it differs from *micropeptoralis* in (a) not having blotches on flanks and bars on the upper edge of caudal, (b) palatine dentition, and (c) anterior 2/3 to 3/4 of stomach being dark grey (white in *micropeptoralis*) and pyloric caecae being striped black and white (white in *micropeptoralis*).

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