

A REDESCRIPTION OF *SARDINELLA MELANURA* (CUVIER)
(CLUPEIDAE : PISCES) WITH REMARKS ON THE SPECIES
SARDINELLA NIGRICAUDATA CHAN

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ABSTRACT

The paper gives a brief description of *Sardinella melanura* (Cuvier) collected from Agathi Island in the Arabian Sea. This study provides a supporting evidence to Whitehead's (1967) question on the validity of Chan's (1965) new species, *S. nigricaudata*.

While studying the taxonomy of the group *Sardinella*, the author came across specimens of *Sardinella melanura* having 26-31 gillrakers on the upper and 49-56 on the lower limb. Since this observation provides a supporting evidence to Whitehead's (1967) question on Chan's (1965) *S. nigricaudata* and the descriptions seen in many of the Indian works do not appear to have been based on examination of correctly identified material, a brief redescription of the species is felt necessary.

Material for this study was collected* from the lagoon area of Agathi Island, Lakshadweep. The methods of measurements and counts are the same as those described by Chan (1965). To make the gillraker count more accurate the method employed by Dharmamba (1967) is also used. The specimens were preserved in 5% formalin. In the description of the species given below, the range is given first followed by mean (in paranthesis).

Description

Based on 9 specimens ranging from 144 to 158 mm total length (112 to 124 mm SL); D. 15-18 (16); A. 17-19 (18); P. 14-15 (15); V. 8. Lateral line scales 38-42 (40); Lateral scale rows 11-12 (11); Pre-dorsal scales 14-16 (15). Ventral scutes 16-17 (17) + 12-13 (12). Gillrakers 26-31 (28) + 49-56 (52).

In percentages of standard length: head 24.79-25.89 (25.19); snout 7.08-8.48 (7.64); upper jaw 9.68-11.11 (10.40); lower jaw 11.29-12.38

* By Shri D. Kojan Koya, Field Man of the CMFRI, on request.

(11.81); eye diameter 7.26-7.96 (7.41); post-orbital 9.27-10.26 (9.75); pectoral 16.13-17.70 (16.80); ventral 10.71-12.38 (11.38); depth at dorsal origin 25.66-27.43 (26.58); depth at anal origin 19.47-20.56 (20.00); least depth of caudal peduncle 9.73-10.48 (9.88); pre-dorsal 44.25-46.77 (45.61); pre-ventral 50.82-53.10 (51.47); pre-anal 74.36-79.84 (77.81); pre-pectoral 23.93-25.89 (24.75) and caudal lower lobe 26.02-29.03 (27.50).

Elongate, oblong, and moderately compressed body. Belly sharply keeled with pointed scutes. Upper jaw extending to the vertical through the anterior margin of pupil. The expanded portion of the second supra-maxillary bone more or less rounded ventrally but somewhat flattened dorsally. Gillrakers slender, a little longer than the longest gillfilaments. Pseudobranch without ventral ridge. Operculum narrow. Sub-operculum rather rhombic. Minute teeth on jaws and middle of tongue. Eye covered by adipose tissue, leaving a vertical slit at the pupil. Head bones covered with dermal sheath, without hollow venules under it.

Origin of dorsal nearer to snout than to caudal base. Anal origin nearer to caudal base than to pelvic base. Pectorals nearly as long as head without snout.

Thin, deciduous cycloid scales found all over the body. Midlateral scales with one continuous transverse groove preceded by a set of two to five interrupted grooves with a wide interspace between the discontinuous parts. Scale margin partly irregularly crenulated. Bases of dorsal and anal covered by scale sheaths. Axillar scales at the ventral present. No pectoral axillary scale. An elongated, enlarged scale on each caudal lobe near the fork also present.

In formalin preserved material on the dorsal part of the body the scale pockets are pale grey posteriorly and bluish grey anteriorly. Mediolateral part pale brownish. Belly silvery but yellowish tinge present near the anal. Shoulder spot pale dark. Pectorals, ventrals and anal whitish. Minute dark spots present on the dorsal rays. Tips of caudal lobes distinctly black.

Remarks

A comparison of the meristic counts and body proportions of the two species *S. melanura* (Cuvier) and *S. nigricaudata* Chan from the published accounts (Day, 1878; Weber and De Beaufort, 1913; Regan, 1917; Fowler, 1941; Munro, 1955; Chu & Tsai, 1958; Misra, 1959; Kuthalingam, 1961; Chan, 1965; Whitehead *et al*, 1966; Whitehead, 1967 and Whitehead, 1972) together with the present author's observations reveals a very close similarity between the two species. Moreover on the upper limb hitherto recorded gillraker counts are between 16-26 (Fowler, 1941; Munro, 1955; Chu and Tsai, 1958 and Chan, 1965) for *Sardinella melanura* and 31 (Chan, 1965) for *S. nigricaudata*, whereas the present materials show a gillraker count range of 26-31 in the upper limb. Similarly the accounts that appeared earlier to Chan, 1965 (Weber and

de Beaufort, 1913; Regan, 1917; Fowler, 1941; Munro, 1955; Chu and Tsai, 1958 and Misra, 1959) all showed a gillraker count for *S. melanura* from 35-44 on the lower limb. A sudden rise in number from 44 to 68 in Chan's material might have made him to consider that particular specimen (with 68 gillraker) as a new species (*S. nigricaudata*). The present observation and the observation made by Whitehead (1967) show the possibility of this species (*S. melanura*) having more gillraker (up to 61) on the ventral limb. So it is concluded that Chan's *Sardinella nigricaudata* is only *S. melanura* having more number of gillrakers and the increased number of gillrakers on its lower limb may be 'an extreme variant' as Whitehead (1967) opines. If that is the case *S. nigricaudata* (Chan) can only become a junior synonym of *S. melanura* (Cuv.) as Whitehead (1972) states and not a separate species. It is also suggested for *S. melanura* that the colour of the caudal lobes only has to be considered as the main identifying character rather than gillrakers which are generally considered to be the main criterion for clupeid classification.

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* Not referred to in original.