

Ilisha whiteheadi, a New Species of Clupeid Fish from the Bay of Bengal

B. V. SESHAGIRI RAO

A new species of Indian Ocean clupeid fish, *Ilisha whiteheadi*, is described from Kakinada, Bay of Bengal, and compared with its close relatives *I. megaloptera* and *I. melastoma*.

DURING investigations on clupeid fishes I have discovered a species of *Ilisha* which is described herein as new to science. It was not included in Whitehead's (1970) key to the genus, nor in other studies on *Ilisha* (Norman, 1923; Fowler, 1941; Dutt, 1967).

MATERIAL AND METHODS

Ninety-five specimens of *Ilisha*, measuring 72-148 mm SL, were collected at Kakinada, Andhra Pradesh, Bay of Bengal, on 11 June 1970. Standard length was measured from tip of snout to mid-base of caudal fin; body depth was taken at the origin of dorsal fin.

Ilisha whiteheadi n. sp.

Fig. 1

Types.—Holotype, a fish 147 mm SL, (197 mm total length); paratypes, 11 fish, 80-148 mm SL, taken along with the holotype. Holotype and ten paratypes are deposited in

the British Museum (Natural History), London. All the remaining specimens are in the Museum, Department of Zoology, D. N. R. College, Bhimavaram.

Description of holotype and paratypes.—First number for holotype, those in parentheses for paratypes. Branchiostegals 6; D 17(16-18); P₁ 15(14-16); P₂ 7(7); A 44(42-45); gill rakers 10 + 22(10-11 + 21-23[25]); scutes 20 + 8(18-20 + 8-9) (total, 26-28); scales in median lateral series 38-40.

In percentages of SL: body depth 28.5 (26.2-29.5), head length 25.8(25.8-27.6), snout length 7.4(6.9-8.7), eye diameter 7.4 (6.9-8.7), length of upper jaw 13.6(12.5-14.2), length of lower jaw 14.2(12.5-14.9); pectoral fin length 15.6(14.8-17.1), pelvic fin length 5.4(5.4-6.5), length of anal fin base 34.0(34.0-38.0); predorsal distance 48.2(45.2-49.2), prepectoral distance 23.1(20.9-24.2), prepelvic distance 39.4(37.0-41.2), preanal distance 55.1(48.5-55.4); pectoral-pelvic in-

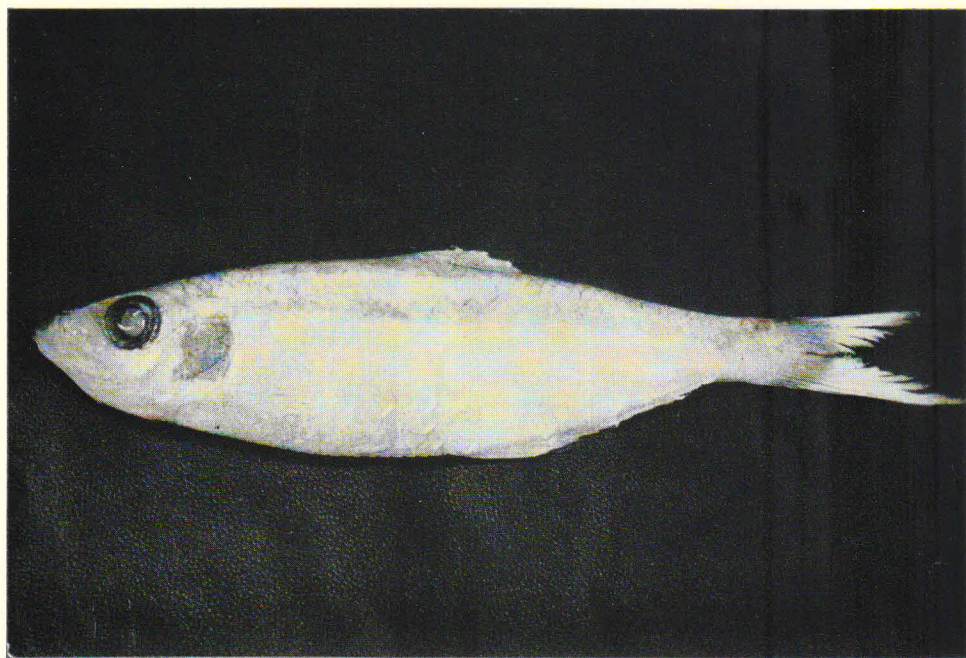


Fig. 1. *Ilisha whiteheadi* new species, holotype, 147 mm SL, Kakinada, Bay of Bengal.

terspace 17.0(17.0–18.7), pelvic-anal interspace 15.6(14.0–18.1).

Body compressed, its width $3\frac{1}{2}$ times in its depth, deepest under dorsal origin. Belly keeled, scutes beginning at isthmus, not as trenchant and prominent as in *megaloptera* in post-pelvic region. Head length equal to or less than body depth. Snout about equal to eye. Lower jaw projecting beyond upper jaw. Maxilla reaching to below middle of eye, lower edge with fine serrae. No hypomaxilla. Two supramaxillae, the first (anterior) slender, the second expanded posteriorly and tapering to a slender shaft anteriorly. Teeth present in single series in

both jaws, those of lower jaw curved back, of premaxilla prominent, but median portion of upper jaw without teeth.

Frontals with prominent ridges of the *megaloptera* pattern. A pair of ridges arising on median line before anterior border of eye, passing posteriorly, gradually diverging from each other; another pair of ridges parallel to and in close association with the former, the two joining at hind end of skull (Seshagiri Rao, 1972, 1973). In addition to the above, a short median ridge extends from anterior end to a level above middle of eye, and each pair of ridges is widely separated when compared with *mega-*

TABLE 1. DEPTH (IN % OF SL) AND NUMBER OF VENTRAL SCUTES, BY CENTIMETER LENGTH GROUPS, OF 93 SPECIMENS (TYPES INCLUDED) OF *Ilisha whiteheadi* FROM KAKINADA, INDIA.

Number of specimens	cm length group	Depth in % of SL	Pre-pelvic scutes	Post-pelvic scutes	Total no. of scutes
10	7	26.5–29.1	(17)19–20	7–9	(25)27–29
36	8	26.1–29.5	(17)18–20	7–9	(25)26–29
25	9	26.0–29.4	18–20	7–9	(26)27–29
9	10	26.4–29.2	18–20	8–9	(26)27–29
1	12	28.5	20	9	29
6	13	28.8–29.5	(17)18–20	7–9	(24)(26)28–29
6	14	26.2–29.3	19–20	8–9	28–29

TABLE 2. FREQUENCY DISTRIBUTION OF VENTRAL SCUTES IN 90 SPECIMENS (TYPES INCLUDED) OF *Ilisha whiteheadi*.

Total number of scutes	24	25	26	27	28	29
Number of specimens	1	2	7	16	35	29

loptera. The ridge pattern described here is a modified *megaloptera* type.

Pseudobranch present, basal half covered by a thin membrane unlike that in other species, about $\frac{1}{2}$ eye diameter, with about 17–19 filaments. Gill rakers slender, as long as longest gill filaments, much less than eye diameter.

Dorsal origin a little nearer to snout tip than to caudal base. Pectorals almost reaching pelvic base or failing to reach pelvic base by $\frac{1}{2}$ eye diameter. Axillary scale present, about $\frac{3}{4}$ length of fin. Pelvic fins small, position variable, base usually nearer to anal origin than to pectoral base by $\frac{1}{6}$ to $\frac{1}{2}$ eye diameter. Pelvic axillary scale present. Distance between pelvic tip and anal origin 1–1 $\frac{1}{2}$ diameter of eye. Anal origin below 8–10th branched dorsal ray.

Scales with single unbroken vertical striation on exposed portion; none to about 6 interrupted striations on unexposed portion.

Color.—Dorsal profile dark grey, upper $\frac{1}{3}$ of flanks light brown with greenish tinge, remainder of flanks silvery white. Posterior half of dorsal fin dark grey at its tip. Pectorals, ventrals and anal hyaline. Margin of caudal dark.

Etymology.—This species is named after P. J. P. Whitehead, British Museum (Natural History), London, in recognition of his extensive contributions to clupeoid systematics.



Fig. 2. Pseudobranch of *I. megaloptera* (left) and *I. whiteheadi* n. sp. (right).

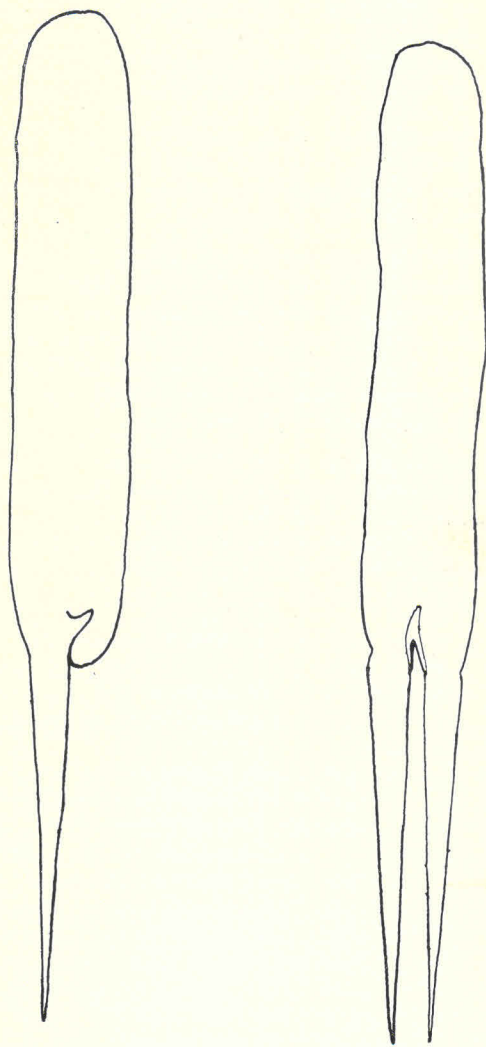


Fig. 3. Swimbladder in *I. megaloptera* (left) and *I. whiteheadi* n. sp. (right). Swimbladder in *I. melastoma* resembles that of *whiteheadi*.

RELATIONSHIPS

In Whitehead's (1970) key, the position of the new species would be between *Ilisha indica* (= *melastoma*) and *I. megaloptera*. In body depth and nature of the pseudobranch, *I. whiteheadi* differs from both; it differs from *melastoma* in ridge pattern and from *megaloptera* in total number of scutes, pigmentation of pectorals and form of swimbladder. Body depth and number of abdominal scutes do not alter significantly with size (Tables 1 and 2). *I. whiteheadi* differs from the slender bodied *I. elongata* (depth

24–28% of SL), as that species has a high number of scutes, 22–27 + 10–14 (Whitehead, 1972), its swimbladder is different and the dorsal fin is situated more posteriorly.

Pseudobranch.—The pseudobranch is exposed in *I. melastoma* and *I. megaloptera*, but the basal half is covered by a membrane in *I. whiteheadi* (Fig. 2).

Swimbladder.—Whitehead (1970) drew attention to the form of the swim bladder in *I. melastoma*. The swimbladder has paired post-coelomic extensions in *whiteheadi* and *melastoma* but in *megaloptera* and *elongata* the post-coelomic extension is single, present on right side of body (Fig. 3).

Pigmentation.—*I. Megaloptera* has distinct black-tipped pectorals; they are hyaline in *I. melastoma* and the present species.

The following key to Indian species is adapted from Whitehead (1970) to include the new species.

- I. Pre-pelvic scutes 18–20, post-pelvic scutes 7–9.
 - a. Swim bladder with paired post-coelomic extensions. Pectorals hyaline.
 - i. Body depth 37–41% SL; pseudobranch exposed; frontal ridges of *indica* pattern
..... *I. melastoma* Schneider, 1801
 - ii. Body depth 26–29.5% SL; basal half of pseudobranch covered by a thin membrane; frontal ridges modified *megaloptera* type
..... *I. whiteheadi* n. sp.
 - b. Swim bladder with a single post-coelomic extension on right side of body, body depth 32–34% SL, pectorals black-tipped
..... *I. megaloptera* Swainson, 1839

Distribution.—Whitehead (1970) states that 13 specimens of this species are present in the collections of the British Museum (Nat-

ural History), of which 12 (nos. 1970.10.21.1–10 and 1969.11.6.13–14) are from Porto Novo and one (1889.8.17.24) is from Madras. This extends the range of the new species from Kakinada to Madras on the east coast of India.

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DEPARTMENT OF ZOOLOGY, D. N. R. COLLEGE, BHIMAVARAM 534202, ANDHRA PRADESH, INDIA.