NEMIPTERUS MESOPRION (BLEEKER 1853) (NEMIPTERIDAE PISCES) A NEW RECORD FROM THE SEAS AROUND INDIA

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ABSTRACT

Nemipterus mesoprion (Bleeker) is reported for the first time from the Indian seas. This species resembles *N. japonicus* (Bloch) closely but differs from it in colour, snout length, head length, height of suborbital bone and pelvic fin length. A description of the species is presented.

INTRODUCTION

During the course of investigations on the fishery and biology of nemipterid fishes in the trawler catches off Kakinada, the author collected specimens of *Nemipterus tolu* (Valenciennes), *N. japonicus* (Bloch) and *N. mesoprion* (Bleeker). The last named species has hitherto not been reported from the seas around India (*vide*: Day 1878, Weber and De Beaufort 1936, Munro 1955). Since the present report of *N. mesoprion* is the first from the Indian seas, a description of the same is presented here.

It is observed that *N. mesoprion* resembles *N. japonicus* very closely and in preserved condition it is difficult to distinguish between the two species with reasonable accuracy. An attempt is made in this paper to bring out those characters that would help distinguish these species.

MATERIAL AND METHODS

Specimens under study were collected from trawl catches off Kakinada from depths of 15-70 m. Colour and pigmentation were noted in fresh specimens, but detailed observations were made on specimens preserved in 5% formalin. The morphometric data are presented as percentage of standard length or head length. Frequency distribution of meristic characters is given in paranthesis following the range: eg. p. 16-18 (16 in 20, ...etc.) meaning 16 rays in 20 specimens and so on. Total length is measured from tip of snout to tip of lower caudal lobe.

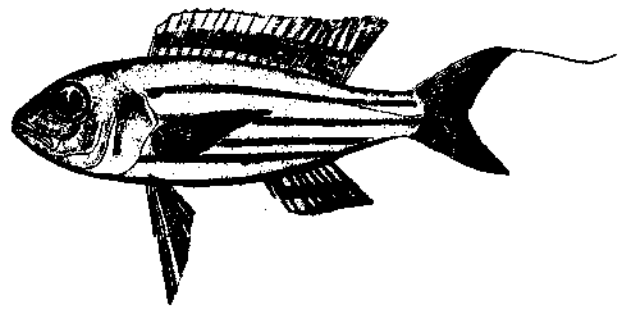

FIG. 1. *Nemipterus mesoprion* (Bleeker) 175 mm x 1½

NEMIPTERUS MESOPRION (Bleeker)

(Figure 1)

Dentex mesoprion Bleeker, Nat, Tijdschr. Ned. Indie, 1853, IV, 255 (Priaman)

Material examined: 30 specimens (18 males, 12 females) ranging from 101 to 185 mm total length.

Meristic Data:

D. X, 9; P. 16-18 (16 in 20, 17 in 9, 18 in 1); V. I, 5; A. III, 7; C. 17; Ll. 45-49 (45 in 3, 46 in 6, 47 in 11, 48 in 9, 49 in 1) L.tr. 3-3½|1|9.

Body Proportions:

a) *As percentage of standard length*: Total length 127.6-134.6 (131.8*), body depth 31.6-37.5 (33.6), head length 34.5-40.0 (37.5), predorsal length 31.5-36.4 (33.6), prepelvic length 32.5-36.9 (35.1), preanal length 62.5-70.5 (65.8), dorsal fin base length 50.0-57.3 (52.9), anal fin base length 16.9-21.8 (18.8), Pectoral length 32.4-39.0 (34.5), pelvic length 27.6-37.8 (31.6), least height of caudal peduncle 9.6-11.5 (10.3).

b) *As percentage of head length*: Head height (measured behind preopercular border) 71.1-85.2 (77.0), eye diameter 27.6-37.5 (32.1), snout length 20.8-28.3 (24.4), interorbital length 18.8-24.4 (21.6), height of suborbital bone 10.0-17.0 (13.3).

Other Characters

Mouth oblique, maxillary reaching to below anterior border of pupil, Teeth in jaws in several rows, pointed; upper jaw with 3-4 caniniform teeth anteriorly in each ramus, but such teeth are absent in lower jaw. Scales ctenoid; three rows of scales on preopercle. Height of suborbital nearly half of vertical diameter of eye. Hind border of preoperculum crenulate. Dorsal spines strong, first spine shortest, fourth to tenth more or less of same length; soft dorsal deeper than spinous one. First anal spine shortest, third longest. Soft anal less deep

* Figures in parantheses are mean values.

than soft dorsal; the last two rays of anal longer than the preceeding ones. Pectorals falcate, extend to above first or second anal ray. Pelvics with the first ray produced, reaching to first or second anal rays. The second branched ray of upper caudal lobe produced into a long filament the length of which is more than the caudal fin itself.

Colour (fresh): Body pink dorsally and on upper half of flanks, lower flanks and belly silvery. 3-4 longitudinal yellow bands on sides below lateral line; thick yellow longitudinal bands on the ventrolateral borders. Dorsal fin with closely packed yellow pigment dots on the lower threefourths of the fin forming a longitudinal yellow band which divides into 3 small bands on the last few rays; upper margin pink. A reddish blotch below lateral line near its origin. Pectoral pink; pelvic pink but with the first ray whitish all along its length. Anal whitish with a distinct narrow longitudinal yellow band in the middle. Caudal pink including the elongated filament on the upper lobe.

Distribution

Known from Sumatra (east and west coasts) and Singapore. The present report extends the range of distribution westwards towards the east coast of India.

Remarks

The present specimens agree well with the original description by Bleeker (1853), with the holotype and also with the description of Weber and De Beaufort (1936) in several characters (Table 1) but differ in the following: According to Bleeker (1853) and Weber and De Beaufort (1936) the height of suborbital is equal to vertical diameter of eye, whereas in the holotype and the specimens examined by the present author it is about half vertical diameter of eye. According to Weber and De Beaufort the hind border of preoperculum is denticulate but in the holotype and the present specimens it is crenulate. The tip of upper caudal lobe appears to be broken in the holotype (Dr. Boeseman in litt., *vide* Table 1); in the original description of this species Bleeker (1953) described the caudal fin as mutilated, presumably with the tips broken off ["valde emarginata lobis (ex parte abruptis)]. Therefore, in the subsequent descriptions (1873, 1977) Bleeker did not describe a produced upper caudal lobe in this species. Weber and De Beaufort (1936) stated that they examined "typical specimens" in Leiden Museum and that "In three specimens from Malacca the upper caudal lobe is produced into a long filament." These authors did not however state whether the upper caudal lobe is *not* produced in other specimens they examined (if at all). As stated above in all the present specimens, the second branched ray of the upper caudal lobe is produced into a filament. The description and figues of *N. mesoprion* presented by FAO (1974) clearly show that the upper caudal lobe is produced into a filament which is short; in the

TABLE 1. Nemipterus masoprion: *Comparison of specimens from Kakinada with the holotype and with the description by Weber and De Beaufort (1936).*

Sl.No.	Character	Specimens from Kakinada	* Holotype	Description of Weber and De Beaufort
1.	Dorsal fin count	x, 9	x, 9	x, 9
2.	Anal fin count	III, 7	III,7	III, 7
3.	Pectoral fin rays	16-18	16	16
4.	Lateral line scales	45-49	45	45-47
5.	L. tr.	3-3½|1-|9	3½|1|8 or 9	3-3½|1|11
6.	Standard length/head length	2.5-2.9	3.0	3.2-3.5
7.	Standard length/body depth	2.8-3.1	3.3	3.2-3.5
8.	Head length/eye	2.7-3.4	3.3	3.1-3.4
9.	Eye/Interorbital length	1.2-1.7	2.2	1.5-1.6
10.	Hind border of preopercle	Crenulate	Crenulate	Denticulate
11.	Canines	in upper jaw only	in upper jaw only	in upper Jaw only
12.	Suborbital height	equal to half of vertical diameter of eye orslightly less.	Slightly more than half of vertical diameter of eye.	Equal to vertical diameter of eye
13.	Upper caudal lobe produced	Produced in all specimens	Doubtful	Produced in three specimens from Malacca.

* Holotype No. 5684 of Leiden Museum, 94.5 mm Standard length; type locality: Priaman (Sumatra).

present specimens the filament is long and longer than the caudal fin. There is no difference in the length of caudal filament between sexes in the present specimens.

Colour is the most important character in distinguishing species of Nemipteridae (Eggleston 1973). The colour of *N. mesoprion* is described (FAO 1974) among other things as: head with yellow streaks from eye to middle of upper jaw, dorsal fin with a broad median yellow longitudinal band which sub-

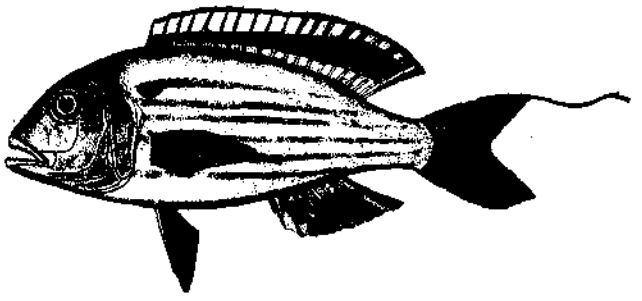

FIG. 2. *Nemipterus japonicus* (Bloch) 271 mm x 1.

divides towards tail into three yellow bands separated by blue lines. Pelvic fins pink with elongated first ray deep red; caudal fin reddish, median rays yellow, outer rays and filament red. In the present specimens yellow streaks on head absent, the median band on dorsal fin narrow anteriorly and broad posteriorly, it divides posteriorly into three bands; pelvic fin pink except the first elongated ray which is white; caudal fin pink including the median rays and the filament. The differences in the colour pattern may be due to differences in the habitat.

TABLE 2. *Distinguishing characters of* N. japonicus *and* N. mesoprion

Sl.No.	Characters	*N. japonicus*	*N. mesoprion*
1.	Head length	Equal to or less than body depth.	More than body depth
2.	Snout length	Equal to or more than horizontal eye diameter	Less than horizontal eye diameter
3.	Suborbital height	Equal to or slightly less than vertical eye diameter	About half of vertical eye diameter
4.	First pelvic ray	Not produced and does not reach anal origin.	Produced and reaches beyond anal origin up to 2nd anal ray.
5.	Colour:		
	a) on anal fin	A longitudinal yellow band near base with three irregular or broken yellow bands below.	Only one longitudinal yellow band in the middle.
	b) On upper caudal obel	Tip of upper caudal lobe and filament yellow.	Tip of upper caudal lobe and filament pink.

Among Indian Nemipteridae *N. mesoprion* resembles *N. japonicus* (Bloch) (fig. 2) in several characters and differs mainly in colour, but when preserved specimens are examined, colour is not of any value and one has to necessarily depend upon other characters most of which show overlap in distinguishing between the two species. The available description of these two species do not help in distinguishing them satisfactorily. An examination of 30 specimens of *N. japonicus* ranging from 92 to 280 mm in total length and comparison of these specimens with those of *N. mesoprion*, both collected from the trawler catches off Kakinada, have revealed differences in certain characters (Table 2) which are of use in distinguishing these species in fresh or in preserved condition.

To show the extent of variation in the relative proportions of head length, snout length, height of suborbital bone and pelivc fin length in each of these two species and to show differences in these characters between them, head length and pelvic fin length expressed as percentages of standard length are plotted against standard length and height of suborbital bone and snout length expressed as percentages of head length, against head length (figure 3). Though

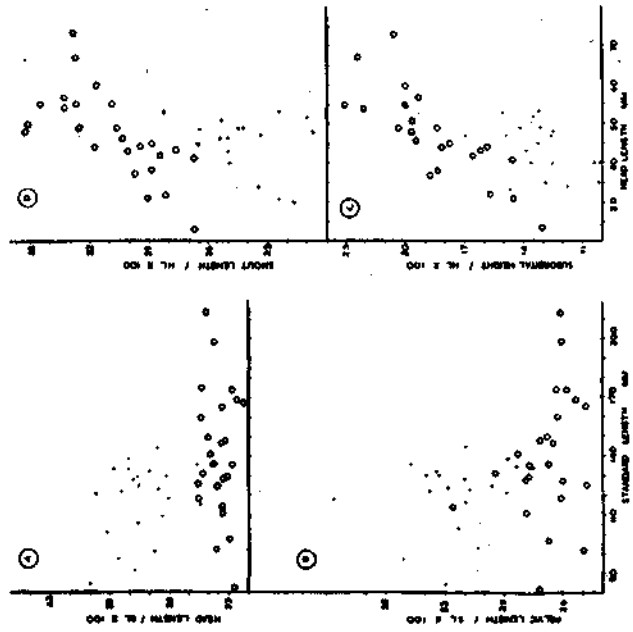

FIG. 3. A. Relationship between head length expressed as percentage of standard length and standard length; B. Relationship between pelvic fin length expressed as percentage of standard length and standard length; C. Relationship between height of suborbital bone expressed as percentage of head length and head length; D. Relationship between snout length expressed as percentage of head length and head length. *N. mesoprion* ● *N. japonicus* ○

a definite relationship in the different body proportions with standard length or head length is not perceptible, it may be seen that:

1. head is relatively shorter in *N. japonicus* and relatively longer in *N. mesoprion.*
2. pelvic fin is relatively shorter in *N. japonicus* and relatively longer in *N. mesoprion,*
3. height of suborbital is relatively more in *N. japonicus* and relatively less in *N. mesoprion,* and
4. snout is relatively longer in *N. japonicus* and relatively shorter in *N. mesoprion.*

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