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## A STUDY ON CERTAIN SECONDARY SEXUAL CHARACTERS OF A MARINE PERCH, *PRIACANTHUS HAMRUR* (CUV & VAL)

### ABSTRACT

A clear sexual dimorphism is present in *Priacanthus hamrur* (Cuv & Val.). Females are more than two times larger and heavier than the males of the same age group. Lateral line in male is curved downward in front like a hook: while it is straight in female. Opercular spine is more sharply marked in males. The dorsal anterior profile of the head in female has a more downward slope. The soft rays in the posterior half of the dorsal fin in female are more filamentous and they protrude out from the upper margin of the fin. Inter orbital diameter is wider in female.

STUDY on the sexual dimorphism in fish species is of great significance in fisheries and related research works. The study is also very important in taxonomy. The present work deals with the

sexual dimorphism of *Priacanthus hamrur*, (Cuv & Val), an edible perch. Thobias (1974) worked out the sexual dimorphism of a filament barb, *Puntius filamentosus* (Val). Inasu (1993) worked

out the sexual dimorphism of a freshwater puffer fish *Tetraodon travancoricus* Hora & Nair. Sexual dimorphism is worked out in very few species of fishes out of the vast number of fish species.

Day (1958) described the Genus *Priacanthus* with a single species (*P. blochi*). Later four species of *Priacanthus* were described by F.A.O. (1974). Sexual dimorphism is worked out in none of these species.

Authors are thankful to Rev. Fr. Jose Chittilappilly, C.M.I. Principal, Christ College, Irinjalakuda, Kerala for giving the legal sanction to carry out our research in the research lab of Zoology department of the college. We are

greatful to Sri. Xavier Thanippilly, Marine Exporter Munampam for providing necessary assistance in the Munampam Harbour for collecting specimens.

#### MATERIAL AND METHODS

About 27 adult specimens of *Priacanthus hamrur* (Cuv & Val) were collected during the months February-March 1997 in fresh condition from Munampam (Trichur District, Kerala). Total length, head length, caudal peduncle length, maximum width, inter orbital diameter and total weight of each specimen were recorded separately. The body cavity of each specimens was cut open and the gonad was exposed and examined. The specimens with male gonad

TABLE 1. Comparative study on Morphological Measurements in Female and Male

FEMALE							MALE					
Sl. No.	Total Length (cm)	Head Length (cm)	Caudal Peduncle Length (cm)	Maximum width (cm)	Inter Orbital Distance (cm)	Total Weight (gm)	Total Length (cm)	Head Length (cm)	Caudal Peduncle Length (cm)	Maximum Width (cm)	Inter Orbital Distance (cm)	Total Weight (gm)
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	30.4	6.7	8.6	8.4	1.8	260	19.8	4.9	6.2	5.6	1.2	100
2.	21.8	5.1	6.6	6.6	1.7	120	20.8	5.1	6.6	5.8	1.3	110
3.	23.4	6	7.5	6.8	1.8	140	20.0	5.0	6.2	5.4	1.2	95
4.	26.8	6.4	8.2	7.1	1.8	230	20.2	5.1	6.1	5.8	1.3	100
5.	29.8	6.6	8.4	8.5	1.8	310	20.6	5.3	6.1	5.8	1.3	100
6.	24.5	5.6	7.4	6.8	1.8	180	21.4	5.4	6.6	6.0	1.3	110
7.	23.8	5.4	7.2	6.6	1.7	160	24.4	5.6	7.4	6.8	1.8	160
8.	26.8	6.8	8	7.2	1.7	220	20.2	5.6	5.8	5.4	1.1	100
9.	27.2	6.2	7.2	7.3	1.8	200	19.1	4.5	6.1	5.0	1.3	80
10.	29.8	6.8	8.5	8.2	1.8	310	20.4	4.8	5.8	5.5	1.3	90
11.	26.5	6.2	7.2	6.9	1.7	220	19.4	4.6	6.1	5.2	1.2	70
12.	25.5	5.8	7.8	6.8	1.7	240	20.4	5.2	5.8	5.6	1.2	100
13.							20.6	5.4	6.4	5.8	1.3	100
14.							20.6	5.4	6.3	5.8	1.2	100
Ave rage	26.3	6.13	7.71	7.26	1.76	215.8	20.57	5.1	6.26	5.67	1.28	101.07

(testis) were arranged in one group and the specimens with female gonad (ovary) were arranged in another group. The fine morphological differences between these two groups were studied and compared.

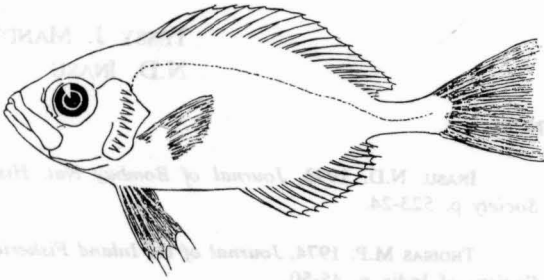


FIG. 1a. Male

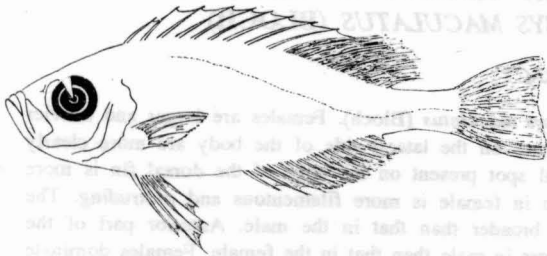


FIG. 1b. Female

#### RESULTS AND DISCUSSION

A clear cut sexual dimorphism is noted in *Priacanthus hamrur* (Cuv & Val). Females are very much larger and heavier than the males of the same length. Clear morphological differences are also distinguished between the males and females.

The lateral line become arched downwardly in front end of the body in male specimens. This hook like downward bend of the lateral line in front end is not so conspicuous in female. The lateral line in female specimen is less arched in front. (Fig. 1a & b) The soft rays in the posterior half of dorsal fin are more filamentous and protrude out from the upper margin of the fin in female specimens. While

the soft rays in the posterior half of the dorsal fin are less filamentous in male specimens and these do not protrude out from the upper margin of the fin. Dorsal anterior profile of the head has a downward slope in female. But this downward slope is absent in male. The opercular spine is sharply marked in male. But it is feeble in female specimen. The inter orbital space is wide in female (1.76 cm). But it is less wide in male (1.28 cm).

The female dominate in all dimensions of the body. The average total length of the female is 26.3 cm; while that of the male is 20.57 cm. The average head length of the female is 6.13 cm; while that of the male is 5.1 cm. The average caudal peduncle length in female is 7.71 cm; while that in the male is 6.26 cm. The average maximum width of the female body is 7.26 cm; while that in the male is 5.67 cm. The average total weight of the female specimen is 215.8 gm; while that in the male specimen is 101.07 gm. The average body weight of the female is more than two times the male. This clearly indicates that the females are two times larger than the males of the same age group. Females also dominate the males in all other body measurements.

#### Comparison of Morphological features in Males and Females of the species *Priacanthus Hamrur* Cuv & Val.

1. Lateral line is more arched and curved like a hook in front. Lateral line is less arched and curved like a hook in front.
2. The dorsal anterior profile of the head has no downward slope. The dorsal anterior profile of the head has a downward slope.
3. Opercular spine is sharply marked. Opercular spine is feebly marked.
4. The soft rays of the posterior half of the dorsal fin are less filamentous and do not project out from the upper margin of the fin. The soft rays of the posterior half of the dorsal fin are filamentous and project out from the upper margin of the fin.
5. Narrow inter orbital space (1.28 cm). Wide inter orbital space (1.76 cm).

- |  |   |  |  |
|--|---|--|--|
| 6. Males are smaller than the females. | Females are more than two times larger than male. | 9. Average caudal peduncle length 6.26 cm. | Average caudal peduncle length 7.26 cm.. |
| 7. Average total length 20.57 cm.      | Average total length 26.3 cm.                     | 10. Average maximum width 5.67 cm.         | Average maximum width 7.26 cm.           |
| 8. Average head length 5.1 cm.         | Average head length 6.13 cm.                      | 11. Average total weight 101.07 gm.        | Average total weight 215.8 gm..          |

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### NOTES ON CERTAIN SECONDARY SEXUAL FEATURES OF AN EDIBLE PERCH, *POMADASYS MACULATUS* (BLOCH)

#### ABSTRACT

A clear sexual dimorphism is present in *Pomadasys maculatus* (Bloch). Females are larger and heavier than the males of the same age group. The black blotches on the lateral side of the body are more clearly imprinted in males than in the females. The black basal spot present on the edge of the dorsal fin is more prominent in males than in the females. The dorsal fin in female is more filamentous and protruding. The width of the anterior rim of the opercle in female is broader than that in the male. Anterior part of the upper-jaw is broader in females. Caudal peduncle is longer in male than that in the female. Females dominate the males in all morphological measurements.

STUDY on the sexual dimorphism is very important in taxonomy, fisheries and other research works. The present work deals with the sexual dimorphism of *Pomadasys maculatus* (Bloch), a marine perch. Day (1958) describes the genus *Pristipoma* with nine number of species. Later the genus *Pristipoma* was renamed as *Pomadasys* and four species of *Pomadasys* were described by W. Fischer (1974 F.A.O.). Sexual dimorphism was worked out in none of these species.

Authors are thankful to Rev. Fr. Jose Chittilappilly C.M.I. Principal, Christ College, Irinjalakuda, Kerala for giving the legal sanction to carry out our research in the research lab of Zoology Department of the college. We are

greatful to Sri. Xavier Thanipilly, Marine Exporter, Munampam for providing necessary assistance in the Munampam Harbour for collecting specimens.

#### MATERIAL AND METHODS

About 100 specimens of adult *Pomadasys maculatus* (Bloch) were collected during the months January to December 1997 in fresh conditions from Munampam (Trichur district, Kerala). Total length, head length, caudal peduncle length, maximum width inter orbital space, diameter of the eye, inter nostril diameter and total weight of 60 specimen were recorded separately. The specimens were preserved in 7% formaldehyde solution.

Later the body cavity of each specimen was cut open and gonad was exposed and