

## ON THE COLLECTION OF YOUNG BILLFISHES FROM VIZHINGAM

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Young billfishes collected at Vizhingam have been assigned to the genus *Tetrapturus*, but their specific identity could not be established. A general description of the specimens has been given.

During 1960-62 many young billfishes were encountered in the fishery at Vizhingam on the south-west coast of India. They were caught by drift nets from a distance of not more than 25 km from shore. They occurred along with young specimens of the sailfish, *Istiophorus gladius*. From external appearance the young billfishes were tentatively identified as belonging to the genus *Tetrapturus* Rafinesque.

In their review on the systematics of the scombroid fishes of India, Jones and Silas (1962) have pointed out the difficulty in correctly identifying young billfishes of the genus *Tetrapturus* from the Tuticorin coast. Recent works of Robins and De Sylva (1960), Silas and Rajagopalan (1962), Smith (1962), Whitley (1962), Morrow (1962) and others helped only partly in identifying the young billfishes.

All the specimens were small, measuring from 53.7 cm to 120.5 cm. body length. The descriptions of the specimens are as follows: Body colour devoid of any vertical bands; but, faint vertical vermiculate maculations present on the sides in fresh condition. Body slender and compressed from side to side, greatest depth varying from 4.7 to 8.0 times in body length from tip of mandible to caudal fork.

Head, 3.9 to 4.1 times in the length of body. Dorsal profile gently sloping from the origin of the first dorsal, equal to the ventral profile. Snout long, about half the length of the head. Bill fairly long and tapering, more than 1.75 times the length of snout and about 0.6 to 1.1 times in the length of head. Pre-mandibular length of bill equals pre-orbital distance only in three specimens. In others it is greater than pre-orbital distance. Eyes moderately large, diameter from 7.3 to 10.6 times in head length.

First dorsal without distinct anterior lobe in the smaller fishes (53.7-79.0 cm body length); in others a well-developed anterior lobe, with rays slightly higher than

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the middle rays, is present. The first dorsal itself does not taper from the anterior lobe backwards. Anterior height of first dorsal more than greatest body depth (at dorsal fin origin) in specimens 4, 5 and 6 (Table 1). In all the other specimens anterior height of first dorsal is less than body depth. Mid-dorsal rays are fairly long. Total count for the first dorsal varies from 37 to 41. Dorsal fins dusky with three or four dark blotches.

Pectoral fin shorter than greatest body depth, contained from 5.9 to 10.1 times in body length, not rigid and lie flat against the sides of the body. Pelvic fin considerably longer than pectoral.

TABLE I. *Measurements (in cm) of a few specimens of bill fish caught off vizhingam*

Fish number	1	2	3	4	5	6	7
Date	28-10-60	2-11-60	7-6-62	7-6-62	12-6-62	26-6-62	2-12-61
Sex	all sexually indeterminate						
Weight (k. g.)		10.5	2.3	1.8	0.9	0.9	
Body length	115.0	113.0	79.0	76.0	54.0	53.7	120.5
I Pre-dorsal length	23.0	27.5	15.7	15.4	11.3	11.2	26.0
II Pre-dorsal length	89.0	88.3	60.3	59.2	43.3	41.8	94.0
Pre-pectoral length	28.0	27.7	15.5	19.0	14.0	13.5	28.0
Pre-pelvic length	30.0	31.0	20.6	19.3	14.4	13.8	30.0
I Pre-anal length	67.5	69.5	46.3	43.2	32.2	31.6	70.0
II Pre-anal length	89.0	90.0	61.2	59.0	42.1	41.5	93.0
Origin of D(1) to origin of P (1)	15.5	17.0	9.0	8.7	5.6	5.4	19.0
Origin of D (1) to origin of P (2)	22.5	21.5	12.0	11.8	8.1	7.5	26.0
Origin of D(2) to origin of A (2)	13.5	12.0	7.0	7.0	4.6	4.2	15.5
Origin of P (2) to vent	30.0	30.5	20.5	20.3	15.2	14.5	40.0
Greatest depth of body	22.5	21.0	11.7	11.4	7.6	6.7	24.5
Depth of body at origin of D (1)	19.0	20.0	10.7	10.1	7.5	6.1	23.5
Depth of body at origin of A(1)	16.5	16.5	9.0	9.0	6.1	5.3	22.0
Head length	27.5	27.5	19.2	18.3	13.3	13.1	29.0
Snout length	13.0	13.0	8.9	8.4	6.1	6.3	15.0
Bill length	27.5	28.3	29.0	18.8	13.0	14.1	27.0
Maxillary length	17.0	17.8	11.6	11.3	8.4	8.1	18.5
Orbit diameter	3.1	2.9	2.1	2.3	1.8	1.7	3.2
Tip of mandible to tip of bill	14.5	15.3	10.7	10.5	7.0	8.3	14.5
Anterior height of D(1)	16.8	18.4	11.2	12.3	8.0	8.6	17.5
Length of middle dorsal spine	13.0	12.0	11.7	11.8	10.8	9.8	10.0
Length of P (1)	18.6	20.1	9.7	9.6	6.0	5.3	19.0
Length of P (2)	25.0	25.6	20.0	18.6	12.1	13.3	24.0
Caudal spread	45.0	40.2	29.0	26.0	14.8	10.4	47.5

No definite conclusions could be derived regarding the systematic status of the specimens examined. All of them are young juveniles and the distinguishing characters agree in detail to those of more than one species of *Tetrapturus*. It is felt that the systematic position may become clearer after the osteology and visceral morphology of the specimens are studied. Hence, for the present, the specimens have not been assigned to any species of *Tetrapturus*.

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### LENGTH-WEIGHT RELATIONSHIP IN THE CAT-FISH, *TACHYSURUS THALASSINUS* (RUPPELL)

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The length-weight relationship in *Tachysurus thalassinus* has been worked out. There was no significant difference between the relationships in males and females and hence a common equation for both the sexes has been arrived at.

The cat-fishes, *Tachysurus thalassinus*, *T. tenuispinis* and *T. coelatus*, together forming more than 20% of the demersal fish landings of the exploratory trawlers, are important elements in the commercial fisheries at Visakhapatnam. Among the above three species, *T. thalassinus* is, perhaps, next in importance to