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

T. tenuispinis which forms the major cat-fish fishery along the Andhra and Orissa coasts (Sekharan, 1968). Information on the biology of marine cat-fishes is meagre. Sekharan (1968) has dealt wih the cat-fish resources of the north-east coast of India and Rao (1967) has studied their food. Mojumder (1972) has given an account of food and feeding habits of *T. thalassinus*. The present account deals with the length-weight relationship in this species.

The material of this study, consisting of 206 males and 174 females of *T. thallassinus*, was collected during the years 1964-66 from the catches obtained off the Andhra and Orissa coasts. Samples were taken either at the time of fishing on board the trawlers, or at the time of unloading of the catches at the jetty. Total length, standard length, total weight, sex and maturity *etc.*, of individual specimens were recorded in fresh condition.

A scatter diagram each for males and females was obtained by plotting the length against the weight of each individual fish (Fig. 1). From the closeness of
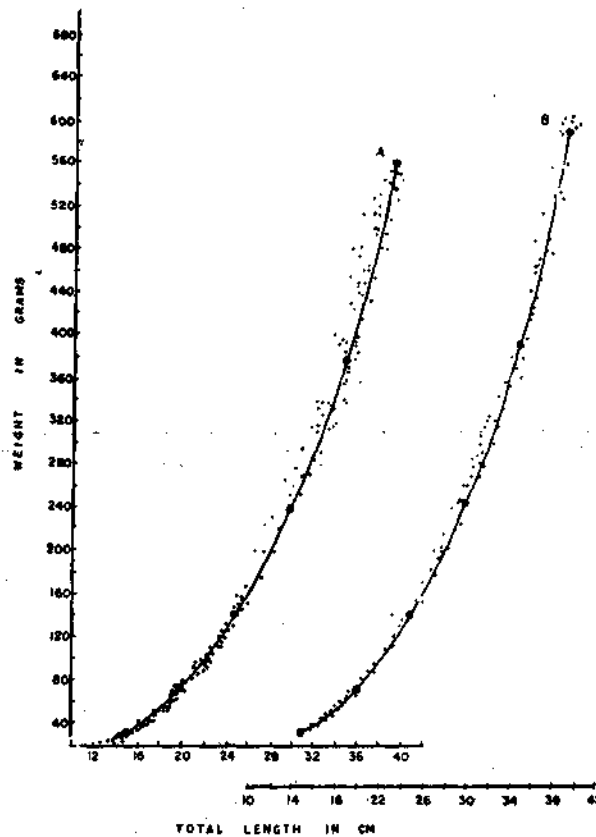

FIG. 1   Length - weight relationship in *T. thalassinus:* A - Males; B - Females.

the scatter and from the parabolic nature of the plot, it was clear that there existed a good relation between length and weight, as also the suitability of fitting the exponential formula, $W=aL^n$, to the data, where 'W' is the weight, 'L' the length and 'a' and 'n' two constants.

The extent of association between the measures length and weight, separately for the males and the females, was gauged from the coefficient of correlation (r) obtained from a statistical analysis of the data. The coefficient of correlation 'r' for the males was 0.9823 and for the females 0.9874, which were nearly equal to 1, indicating that a perfect relationship existed between the two measures in both the sexes. Having thus determined the intensity of association, the data were further analysed to enumerate the values of the two constants 'a' and 'n' in the formula $W=aL^n$ by the least square method. The equations obtained were

$$\text{Males} \quad : \quad W = 0.\ 01393\ L^{2.9400}$$
$$\text{Females} \quad : \quad W = 0.007638\ L^{3.0454}$$

and their logarithmic transformations respectively were

$$\text{Log } W = 2.9400\ \log L - 1.9621$$
$$\text{Log } W = 3.0454\ \log L - 2.1079.$$

An analysis of covariance by the method of Snedecor (1961) was conducted to test the significance of variation between the regression coefficients and the adjusted means obtained for the males and females (Table 1). It was found that

TABLE 1. *Analysis of covariance*

Source	d. f.	Regression coefficient (b)	Deviation from regression			F value
			d.f.	S.S.	M.S	
Males	205	2.939964	204	1.4432		
Females	173	3.045380	172	0.4468		
Within			376	1.8900	0.005026	3.65
						F 1,376
Diff. due to Reg. coef.			1	0.0192	0. 0192	
Common	378		377	1.9092	0.005077	2.33
						F 1,377
Adjusted means			1	0.1181	0. 1181	
Total	379		378	2.0273		

the regression coefficients of the males and the females and the adjusted means were not significant at 5% leavel of significance. Hence a length-weight equation common to both males and females of *T. thalassinus* is justified and is as follows:

$$W=0.009361\ L^{2.9889}$$

and its logarithmic transformation is

Log W = 2.9889 log L - 2.0287.

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SOME BIOLOGICAL NOTES ON *BARILIUS BENDELISIS* (HAMILTON)

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Barilius bendelisis of the Doon waters has been observed to be a surface and column
feeder. The breeding season extends from July to December. Descriptions of different
developmental stages up to the adult have been given.

Barilius bendelisis (Hamilton) is a fish highly known for its food value in
Dehra Dun, Uttar Pradesh. The survey work done by Hora and Mukerjee
(1936), Lal and Chatterjee (1962), Singh (1964) and Grover (1970) in the Doon waters
did not include any ecological studies of the existing ichthyofauna. Observations
of the author on the food, breeding and development of *B. bendelisis* in the Doon
waters are presented in this short communication.

Observations were made every three days from March 1970 in the Suswa
River at Mothrowala which lies between 78° 2'E. longitude and 30° 16' N. latitude.
Suswa River is perennial with a sandy bed and has its origin partly from a local
Banjarwala village and partly from a local spring at the spot. It joins with the
seasonal river Suswa near Doiwala (Kurkiwala village), at a distance of 18 km from
Mothrowala. It is 7 m wide with a depth of 30 to 60 cm. During rains the depth
ranges between 90 cm and 1.25 m. Its banks are devoid of trees.

Barilius bendelisis is a surface and column feeder. The food items included
Cladophora sp., *Spirogyra* sp., *Sphaerocytis* sp., *Volvox* colonies, verticellids, larval
worms, insect larvae, parts of insects, daphnids and copepods. Sand particles were
also observed in the gut.