

COMPARITIVE STUDY OF LENGTH-WEIGHT RELATIONSHIP OF *Parreysia corrugata* (MULLER), AND *Lamellidens marginalis* (LAMARK), FROM NANDED REGION, MAHARASHTRA (INDIA)

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ABSTRACT

Comparative study of length - weight relationship of fresh water mussels, *Parreysia corrugata* and *Lamellidens marginalis* is the important aspects of biological study of both. The length and weight is having mathematical relationship in between them. If one factor is known the other may be estimated from it and vice versa. For the study 241 specimen of *Parreysia corrugata* and 169 specimen of *Lamellidens marginalis* were collected from Naigaon tank, Nanded region, and kept in laboratory for acclimatization. length and weight relationship of both the species was estimated by using Cube-Law.

KEYWORDS : Length - Weight relationship, *Parreysia corrugata*, *Lamellidens marginalis*

The fresh water bivalves, *Parreysia corrugata* and *Lamellidens marginalis* are commonly found in fresh water resources like reservoirs, dam, rivers in Nanded region of Maharashtra. The comparative study of Length-Weight relationship of these is important because it describes mathematical relationship between length and weight. changes in the length and weight are according to their habitat and life cycle, (La-Cren, 1951); Size of shell is more affected than their shape by fluctuation of ambient environment (Seed, 1968); Wilbur and Owen, 1964); Nagbhusanam and Lomte, 1971); Narian, 1972 : Nagbhusanam and Lohgaonkar, 1978: Lomte and Jadhav, 1980 and Moorthy et al ., 1983. have studied the length weight relationship in fresh water mussels. Similar observation are also made by Desai and Borker, 1989. reported a non linear relationship in *Lamellidens corrianus* inhabiting Khandepar river, Goa.

Fresh water mussels plays a very significant role in benthic ecosystem, Tribal people consume them. *Parreysia corrugata* and *Lamellidens marginalis* also support small fishery in different parts of India. *Parreysia corrugata* is also known to have medicinal value (Dey, 2008). and also used for pearl culture. Considering the importance of fresh water mussels in aquatic ecosystem present work was undertaken to study comparative study of relationship between length weight

MATERIALS AND METHODS

Fresh water bivalves *Parreysia corrugata* and *Lamellidens marginalis* were collected from Naigoan tank Nanded district, Maharashtra in December 2012 and kept in laboratory for acclimatization. Length and weight relationship was calculated separately for both species. Total length was measured in centimeter and weight in grams by using scale and monopan digital balance.

Length of *Parreysia corrugata* were ranged from 4.5cm to 6.7 cm and weight from 10.98 to 46.98 grams. length of *Lamellidens marginalis* were ranged from 3.5 cm to 7.3 cm and weight from 4.71 to 36.35 grams. Length was measured from maximum antero-posterior distance and weight was taken individual; after measurement, length-weight relationship of each species was determined by Cub-Law, $W=aL^b$ of (Le-Cren 1951). The constant 'a' and expand 'b' was also calculated, graph was drawn to show comparative study of Length-Weight relationship between *Parreysia corrugata* and *Lamellidens marginalis*. (Graph 1 & table 1).

RESULTS AND DISCUSSION

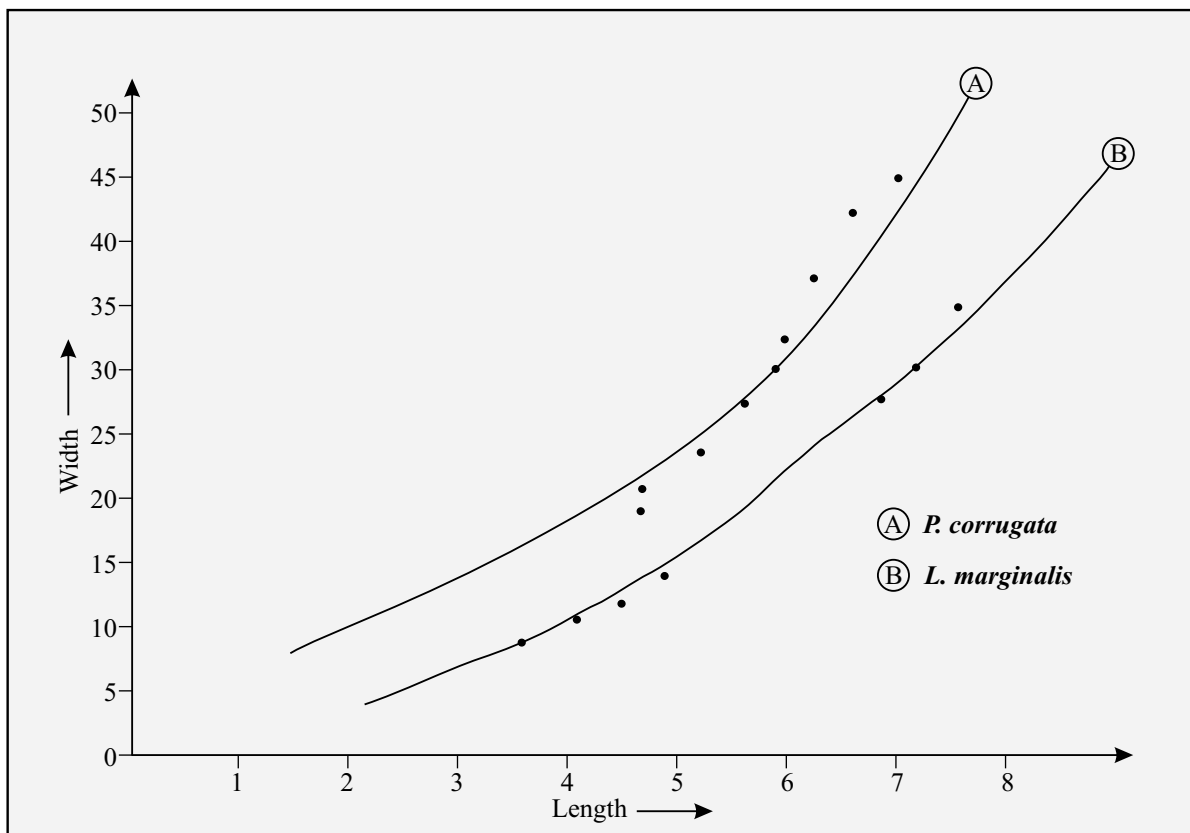
241 specimens of species *Parreysia corrugata* were ranged 4.5 cm to 6.7 cm in Length and 10.98 gm to 46.98 gm in weight. And 169 specimen of *Lamellidens marginalis* ranged 3.5 cm to 7.3 cm in

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Table 1 : Shows the Comparative Study of Length Weight Relationship of *Parreysia corrugata* and *Lamellidens marginalis*

Size in gm	No. of P.c (A)	No. of L. m (B)		Av. wt & Length of (A)		Av. wt & Length of (B)		Log of (A)		Log of (B)		A ²		B ²		A (YX)	B (YX)	Calculated wt of A B	
		W (Y)	L (X)	W (Y)	L (X)	Y	X	Y	X	Y ²	X ²	Y ²	X ²	Y ²	X ²				
1-5	8	---	---	5.50	3.65	---	---	0.7403	---	0.5622	---	---	0.5480	0.3160	---	0.4161	---	0.7692	
6-10	73	10.98	4.7	8.44	4.13	1.0406	0.6720	0.9263	0.6159	0.6159	0.6159	1.0828	0.4515	0.3793	0.6992	0.5705	---	2.1928	
11-15	32	14.44	4.73	13.24	4.82	1.1595	0.6748	1.1218	0.6830	0.6830	0.6830	1.3444	0.4553	0.4664	0.7824	0.7661	---	1.0843	
16-20	36	19.33	5.09	19.44	5.91	1.2862	0.7067	1.2886	0.7715	0.7715	0.7715	1.6543	0.4994	0.5952	0.9089	0.9941	---	1.2936	
21-25	39	24.04	5.035	23.38	6.28	1.3809	0.7283	1.3688	0.7979	0.7979	0.7979	1.9068	0.5304	0.6366	1.0057	1.0921	---	1.3641	
26-30	49	28.49	5.49	28.36	6.68	1.4546	0.7395	1.4527	0.8247	0.8247	0.8247	2.1158	0.5468	0.6801	1.0756	1.1980	---	1.3840	
31-35	58	33.24	5.79	31.79	6.9	1.5216	0.7626	1.5022	0.8388	0.8388	0.8388	2.3152	0.5815	0.7035	1.1603	1.2600	---	1.4006	
36-40	29	38.61	6.05	36.35	7.3	1.5866	0.7817	1.5605	0.8633	0.8633	0.8633	2.5172	0.6110	0.7452	1.2402	1.3471	---	1.5383	
40-45	12	43.17	6.37	---	---	1.6351	0.8041	---	---	---	---	2.6735	0.6465	---	1.3147	---	---	1.6114	
46-50	1	46.98	6.7	---	---	1.6719	0.8260	---	---	---	---	2.7952	0.6822	---	1.3809	---	---	1.6829	
Total =	241	166.5	50.2	166.5	45.8	12.737	6.6957	9.9612	5.9573	5.9573	5.9573	18.405	5.0082	4.5223	9.5679	---	---	---	
						$\bar{Y} = 1.4152$	$\bar{X} = 0.7439$	$\bar{Y} = 1.2451$	$\bar{X} = 0.7446$	$\bar{Y} = 1.2450$	$\bar{X} = 0.7446$	$\bar{Y}^2 = 2.0450$	$\bar{X}^2 = 0.0532$	$\bar{Y}^2 = 1.6250$	$\bar{X}^2 = 0.5652$				

P.c = *Parreysia corrugata*, L.m = *Lamellidens marginalis*, L=Length, W=weight



Graph 1 : Shows the Comparative Length Weight Relationship of *Parreysia corrugata* and *Lamellidens marginalis*

Length and 4.71 gm to 36.35 gm in weight. weight of *Lamellidens marginalis* is less than *Parreysia corrugata* and length of *Lamellidens marginalis* is more than *Parreysia corrugata*. Relationship of Length Weight of *Parreysia corrugata* was $W=0.0972L=3.2631$ and the Length-Weight Relationship of *Lamellidens marginalis* was $W=0.2008L=2.6084$. Comparative study of Length Weight relationship indicates that value of constant (a) is more in *Lamellidens marginalis* where as value of exponent is more in *Parreysia corrugata*. both the specimen follow the Cube-Law..

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