



---

---

## STUDY OF MORPHOMETRIC CHARACTER OF EXOTIC TELEOST FISH *Oreochromis mossambicus* (Tilapia)

**Dr. Ranju Gupta<sup>1</sup> and Dr. L.P. Miri<sup>2</sup>**

<sup>1</sup>Asstt. Prof. In Zoology, Govt. J.P. Verma PG Art/Comm. Collage, Bilaspur (C.G.)

<sup>2</sup>Asstt. Prof. In Zoology, Govt. J.P. Verma PG Art/Comm. Collage, Bilaspur (C.G.)

### ABSTRACT:

*Oreochromis mossambicus* is the exotic teleost fish. In India the first consignment was brought by Central Marine fisheries Research Institute Mandapam in August 7, 1952 from Bangkok.

The Morphometric measurement have been used with considerable success to inter population differences. Morphometry is the backbone of taxonomic Studies.

**KEY WORDS:** *Oreochromis mossambicus* (Tilapia), morphometry parameter.



### INTRODUCTION

Fishes are very important for human being from ancient time because of their food value. The systematic description of fishes was however given by Gunther A. (1980). In vertebrate series fishes do not follow the growth pattern of other vertebrates. Most of the vertebrate attain adult size in definite time but the growth of fishes is of indeterminate type. This is the basic fact that a maximum length and maximum weight probably characterises fishes.

The morphometric measurements have been used with considerable success to inter population differences. The important contribution in this field are nemipterus japonicus (Acharya P. 1980), Singh (1992), Soni (1997) Mashi S. (2000), Shrivastava, N. (2004)

### MATERIAL AND METHODS:-

For the purpose of Morphological and Morphometric study, fishes were collected from Dipupara Pond in Bilaspur (C.G.) Cooperation of local fishermen was taken during collection.

The fishes were preserved in 10% formalin, fishes were brought to laboratory and following observation were taken with the help of simple mathematical instruments as per the guideline given by Shrivastava (1980). All the mathematical formula was adopted from N.T.J. Bailey (1959).

### OBSERVATIONS:-

Observations on morphometric parameters have been shown in the table. Observations were taken on 20 specimens of different size of fishes.

Following morphological features of *Oreochromis mossambicus* were observed.

1. Body short, more or less elongate.
2. Abdomen rounded, head compressed.
3. Mouth terminal, snout rounded, eyes large.
4. Lips thin, jaws equal, teeth in 2 or more series
5. Dorsal fin inserted above base of Pectoral
6. Scales are cycloid, Lateral line interrupted.
7. Caudal fin rounded
8. Dull brownish olive or blackish in colour.

During course of observation fin formula recorded as follows

D xv-XVI/10-12, P 14-15, V 1/5, A III-IV/9-10, L. I. 29-33

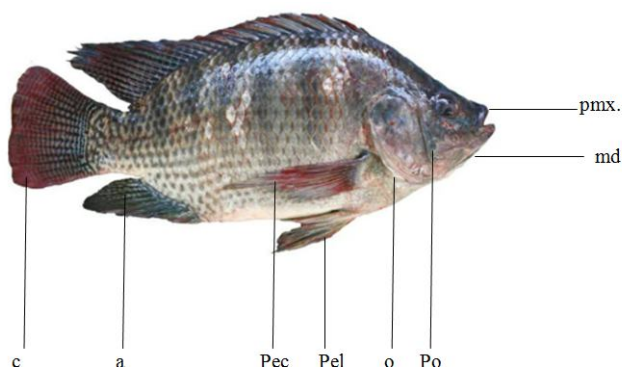


Figure -1 *Oreochromis mossambicus* (Tilapia)

Table 1: Showing Morphometry of *Oreochromis mossambicus* (in cm)

| Sr. No. | Total Length | Standard Length | Length of Head | Hight of Depth of body | Length of Caudle Peduncle | Length of head excluding snout | Interorbital width | Diameter of the eyes | Snout | Predorsal Length |
|---------|--------------|-----------------|----------------|------------------------|---------------------------|--------------------------------|--------------------|----------------------|-------|------------------|
| 1       | 11.8         | 9.8             | 3.1            | 5.0                    | 1.2                       | 1.9                            | 1.1                | 0.5                  | 1.0   | 4.5              |
| 2       | 11.6         | 8.9             | 2.9            | 4.9                    | 1.4                       | 2.1                            | 1.0                | 0.4                  | 0.8   | 3.9              |
| 3       | 11.3         | 9.7             | 2.7            | 5.1                    | 1.3                       | 1.8                            | 1.2                | 0.5                  | 1.0   | 4.5              |
| 4       | 10.5         | 9.4             | 3.0            | 4.8                    | 1.5                       | 1.9                            | 1.2                | 0.6                  | 1.0   | 4.6              |
| 5       | 10.8         | 8.8             | 2.8            | 4.7                    | 1.4                       | 1.7                            | 1.1                | 0.4                  | 0.9   | 4.0              |
| 6       | 11.2         | 9.1             | 3.2            | 4.9                    | 1.5                       | 1.6                            | 0.9                | 0.4                  | 0.8   | 3.4              |
| 7       | 11.4         | 9.5             | 2.5            | 4.6                    | 1.3                       | 1.5                            | 0.9                | 0.4                  | 0.8   | 3.4              |
| 8       | 11.2         | 9.2             | 2.6            | 4.3                    | 1.5                       | 1.6                            | 0.9                | 0.4                  | 0.8   | 3.3              |
| 9       | 10.9         | 8.8             | 2.4            | 4.6                    | 1.3                       | 1.8                            | 0.9                | 0.4                  | 0.8   | 3.2              |
| 10      | 11.0         | 9.3             | 3.0            | 4.5                    | 1.6                       | 1.5                            | 0.8                | 0.4                  | 0.7   | 3.0              |
| 11      | 11.8         | 9.5             | 2.8            | 4.8                    | 1.3                       | 1.4                            | 0.9                | 0.4                  | 0.8   | 3.2              |
| 12      | 12.1         | 10.2            | 2.9            | 4.9                    | 1.2                       | 1.8                            | 0.9                | 0.4                  | 0.7   | 3.1              |

|                           |               |               |               |               |               |               |               |               |               |               |
|---------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 13                        | 10.2          | 9.3           | 2.5           | 4.7           | 1.6           | 2.1           | 1.0           | 0.4           | 0.9           | 3.8           |
| 14                        | 10.8          | 8.1           | 2.4           | 4.3           | 1.3           | 2.0           | 1.0           | 0.4           | 0.8           | 3.2           |
| 15                        | 9.6           | 8.5           | 2.3           | 4.2           | 1.5           | 1.9           | 0.9           | 0.4           | 0.6           | 3.2           |
| 16                        | 10.8          | 7.4           | 2.7           | 4.6           | 1.2           | 1.8           | 0.9           | 0.4           | 0.7           | 3.1           |
| 17                        | 10.6          | 7.6           | 3.0           | 4.5           | 1.4           | 1.7           | 1.0           | 0.4           | 0.8           | 3.5           |
| 18                        | 9.5           | 7.7           | 3.1           | 4.3           | 1.2           | 2.0           | 0.8           | 0.4           | 0.6           | 3.1           |
| 19                        | 10.7          | 7.8           | 2.6           | 4.8           | 1.1           | 2.2           | 0.9           | 0.4           | 0.8           | 3.2           |
| 20                        | 12.5          | 10.9          | 3.2           | 4.9           | 1.4           | 2.1           | 1.3           | 0.6           | 1.1           | 4.6           |
| <b>Mean Value</b>         | <b>11.0</b>   | <b>9.0</b>    | <b>2.8</b>    | <b>4.9</b>    | <b>1.3</b>    | <b>1.8</b>    | <b>1.0</b>    | <b>0.4</b>    | <b>0.8</b>    | <b>3.5</b>    |
| <b>Standard Daviation</b> | <b>0.9321</b> | <b>0.6342</b> | <b>0.4621</b> | <b>0.2048</b> | <b>0.0243</b> | <b>0.0156</b> | <b>0.0024</b> | <b>0.0034</b> | <b>0.0052</b> | <b>0.3256</b> |
| <b>Standard Error</b>     | <b>0.208</b>  | <b>0.125</b>  | <b>0.0246</b> | <b>0.0152</b> | <b>0.0035</b> | <b>0.0043</b> | <b>0.0003</b> | <b>0.0002</b> | <b>0.0006</b> | <b>0.0267</b> |

**BIBLIOGRAPHY:-**

1. Acharya – P. (1980) Morphometry and biology of *Nemipterus japonicus* Bloch of Bombay Coast.
2. Ali – Mukheisin Atalla (1985) – Morphometric characteristics of *Barbus lutens cyprinidae* from trater Reservoir and the Gigris river Irag VOPR, IKHTIOL, 25 (5) 867-870 (in RUSS).
3. Bahuguna – A.K. (1989) "Morphometric Characters and their relationship in the Carp *puntius*."
4. Bailey – N.T.J. (1959) – Statical method in Biology, The English Universities Press LTD. London 200 pp.
5. Gunther – A. (1980), An introduction to the study of Fishes (Eargh) 220.
6. Zakaria. – Moh. D. Malay (1988). Morphometric analysis of the *Cyprinidae* fish. Peninsular, Malasia, Nat. J. 42 (1); 21-28.
7. MOHSIN – M.D. (1962) A comparative morphology in certain groups of Indian Teleost fishes, Usmania University, Hyderabad (deccan)