

SUMMARY

1. Present Ph.D. Thesis deals with the Biology, Captive Maturation and Breeding of Chameleon Dwarf, *Badisbadis* (Hamilton,1822).
2. *Badis badis* an Actinopterygian Perciformes is a very primitive fish belonging to the anabantoid group for a long time was included under the Nandidae family.
3. Eminent world ichthyologists worked very hard for a long time to trace their origin and evolution from Cenozoic –Miocene to Eocene-holocene period in the South – East Asian countries and their major riverian courses, the area of the world's important Biological Diversity.
4. Prof. Dr. G.W. Barlow of California University with K-F Lein and W. Winckler separated the *Badis badis* from the Nandidae group and erected a new family Badidae on 1968 based on behavioural, osteological and developmental evidence.
5. Purpose and prospect of the present thesis is to increase captive breeding process in large scale to release the juveniles in available wetland areas of West Bengal to restore the battered population.
6. Updated Materials and Methods were adopted to record the morphometric measurements of the sexually dimorphic *B. badis* to determine their length-weight relationship, fecundity of female gonads at maturity, and Gonado-Somatic Index have been recorded. In laboratory aquarium culture detailed feeding biology, Gastro-somatic Index, Gut content analysis and Habitat preference of either sex

have been studied in details. Captive breeding, prebreeding sexual behaviour of the male and female partners have been studied in detail.

7. These fishes were collected from Dattafuliya of North 24 Parganas district of West Bengal State and also from Bangladesh border during March, 2017 to February, 2018 and necessary measurements were recorded. The experimental fish species (*Badis badis*) in different size groups were considered for this present investigation.
8. The attainment of first maturity occurs when male is 5+ months old and female is 6+ months old.
9. The minimum number of ova produced was 116 nos. in a female having a length of 27 mm and weight of 0.28g. A maximum of 518 nos. of ova was produced by a female having a length of 29 mm and weight of 0.47g. The average fecundity recorded was 305.3. The number of mature eggs per gram of body weight (fecundity factor) ranged from 414.3 to 1102.1 with an average of 830.
10. The gonad of the fish is small in length and slight yellowish in colour. 50% of all female specimen attaining a length of 75-85mm and weight of 6.50-7.75g was matured. The breeding season of the fish extends from late July to December. The GSI of gravid females ranged from 0.037 to 0.15 with the average of 0.077.
11. Post fertilization laying of eggs by females were carefully recorded which varied from 30 to 100. In *Badis badis* after males take care of the fertilized eggs till hatching.

12. After hatching larva with prominent yolk sac called ichthyoplankton leaves static attached to some substratum for 3-4 days without feeding; post larva juveniles of *B. badis* start moving and feed according to their preference.
13. The fish prefers slightly acidic water but can tolerate slightly alkaline conditions also. The temperature likely to be around 22-25 ° C (72-77 °F) and pH should be 6.5 – 7.5 to keep these fish healthy and active.