broader ecological drivers and geomorphological process which substance their habitat & food sources.

Material and Methods


Thus, Peerkalyan dam is a medium irrigation project constructed by irrigation department of Maharashtra, on river kalyani, village peerkalyan, taluka Jalna, District Jalna (Maharashtra) India. The dam was constructed in the year 1984. The pond shaped is perennial earthen dam, maximum height is 16.9 m. and length of dam is 1426 m water spreading area is 124 Sq. Km.
the gross storage area is 12.98 Mcum. Net storage of water 11.84 Mcum. Irrigation of peerkalyan dam was 2,020 hectares and total irrigation is 3,383 hectares.

The pond is flooded during, monsoon, generally from July to December and water level is considerably reduced and the level of water comes own mostly in May- June. The pond has algae, weeds and grass round the year. The local cattle’s graze in this area.

**Environmental parameters:**

For the water sample from the dam were drawn for each season from monsoon July to summer June physico-chemical analysis of water two liter water samples were collected from the animal bed were measured on the same day animal collection. The physico-chemical parameter like pH, calcium, phosphate, Total hardness alkalinity, chloride, nitrates, sulphate, magnesium, dissolved oxygen, Free CO2 were analyzed by standard methods of APHA (2001). The results are expressed on the bases of triplicate determination on each sample. The calculated values recorded in Table no.1.indicate values during the sampling.

**Physiological experiment:**

Twenty (20) animals, *Lammellia dens marginalis* (size 80-85 mm) and 20 animal *Parresiya corrugata* (50-55 mm) were collected from a fix
location from collection site (Peerkalyan Dam) between 10.30 to 11.30 am and brought to research lab, Department of Zoology, Dr. B.A.M.University, Aurangabad for further experiments. Immediately after bringing to the laboratory, the shells of the bivalves were brushed and washed with freshwater in order to remove the algal biomass, mud and other waste materials. The cleaned animals were than allowed for defecation or depuration for hrs. in laboratory conditions under constant aeration, the animals were divided into two groups, each group contain 10 animals respectively. During this period the animals were opened the shell valves and protruded their mantle edges and siphons outside the shells to remove waste materials from the viscera, thus cleaning the gills and mantle cavity. One or the primary endogenous factor affecting the oxygen uptake in the bivalves is shell-valve movement and the factors which affects the degree to which the shell-valves are remain closed will affect the rate of oxygen consumption (Shumway, 1982).

In the present study animals upon the specific habited were maintained in constant aeration and those which opened the valves and extended the organs to the maximum as suggested by Goltstoff (1964) were selected for experimentation. The animals under constant valves opening could regulate the ventilation during this period, maintained normal
respiratory rates. The rate of oxygen consumption of individual animal was
determine in specially prepared brown colored respiratory jar of 500 ml
capacity (1/2 litre of water. The jars were fitted with rubber cork having an
inlet and outlet of glass tubers connected with rubber tubes and clips.
Individual animal was placed in each jar and constant flow of water was
given through the inlet to the flow of water was given through the inlet to the
flow through the outlet for 2-3 minutes through inlet and outlet rubber tube
was pinched tightly without leaving any air bubble in the jar. Soon after
opening the valves the time counted till 1 hour.

After an hour, water form the respiratory jars was carefully siphoned
out in a Stoppar reagent bottle of 300 ml capacity and oxygen content was
determined according to the Golterman et. al. 1978. By alkaline-iodine–
azide method of Winkler’s modified technique. (Golterman et. al., 1978).
The flesh of the individual animal was then taken out carefully from the
shell and blotted on the filter paper to remove excess water. This flesh was
then weighted to obtain the wet-weight of the individual. The oxygen
consumed by each animal was then calculated and expressed as oxygen
mg/gm/l/h. Wet-weight of the flesh. In this way, the respiration of 15
animals was determined and the average values are taken out with standard
deviations. This body weight individuals used in each set of experiment was
pulled to obtain the fortnightly variations in their weights. The adult bivalves were placed individually in respiratory jars with 500 ml water the rate of ammonia excretion was determined after 1 hour by drawing water sample from each jar. The rate of ammonia excretion was measured according to phenol hypochlorite method (Solorzano, 1969).

Every time 4 individual animal of each group were used and mean of triplicate of water sample were estimated for each group. The statistical analysis was done, to express final data. The atomic equivalent values of oxygen and nitrogen were calculated on the basis of values of oxygen consumption and ammonia excretion obtained for the same individual.

**Histological study of Gonad and Hepatopancreas:**

Other 10 individuals from the second group of animals of similar sizes range were also collected for the histological study of gonad and hepatopanceras. Immediately after each collection, shell valves were removed and animals were socked carefully with the help of filter paper and fixed in Bouins Hollande fixative for 24 hours. The fixative was renewed for next 24 hours to facilitate better fixation of tissues.

During each season gonad tissues were then removed and processed for preparation of paraffin blocks. Dehydration of gondadal tissue was done through serial grades of ethyl alcohol and tertialry butanal while xylene was
replaced by toluene during the processes the tissues were embedded in paraffin wax at 58 0C to 60 0C and the sections of gonad and hepatopancreas were cut out at 6.0 to 7.0 µm thickness using Spence-rotary-microtome the gonad and hepatopancreas were stained with haematoxyline-eosin as well as Mallory trilple stain, for histomorphology. The sections of hepatopancreas and gonads were observed under the research binocular microscope and the measurements were made before photomicrography. As the samples were collected during each seasons the quantitative examination of changes in the digestive tubules and various gonadal stages is co-relate with all the groups during different seasons and also impact of change in environment on the hepatic tubules and gonad follicles. Since the samples were collected during 2.00 to 4.00 p.m. of every season over a period of two years cycle.Fish samples were collected during the study period July 2007-June 2008 from the fish landing centers with the help of skilled local fishermen by various fishing crafts, gears with variable mesh size.

Identification of fishes was done up to species level at fish landing center with the help of standard literature by Datta Munshi and Srivastava, (1988); Hamilton (1822); Talwar and Jhingran, (1991); Francis Day vol I &II, (1986); Jayaram (1981); Jayaram, (1991); Jayaram, (1999).