Chapter -II

REVIEW OF LITERATURE

In India, hydrobiological conditions of lakes and pond were initially intentioned by Prasad (1916) and Prythi (1933). The bio-contamination suggests complete knowledge of fresh water area including its Physico chemical and biological aspects (Knight 1970). The studies covered the water with ecological variation, water quality controls and sewage water utilization. It was followed by Ganapati and Chacko (1951), Ganapati and Sreenivasan (1968, 1970, 1974, 1976) on the south Indian almost all the fresh water reservoirs.

The social development faces the problem of environmental pollution. Various sources such as industrialization, urbanization, domestic and human wastes are functionally toxic for the growth of fauna of the water bodies.


Nayar (1968) observed ecology of rotifer pollutions of two ponds at Pilani, Rajasthan. Moitra and Bhomik (1968) have reported the three groups of zooplanktons rotifers, cladocerans and copepods as dominating groups in a freshwater pond in Kalyani West Bengal. Kant and Kachroo (1975) reported the diurnal changes in the temperature and pH of water and diurnal movements of plankton in Dal lake Srinagar. Qadri and Yousuf (1978, 1979) have described the seasonal hydrobiological conditions of many freshwater bodies. Seasonal variations in the density of rotifer population and physico-chemical parameters of Matyal Panna (M.P.) have been studied by Nayak et.al (1982) Rao et.al (1987,1988,1989) studied various aspects of the Gandhisagar reservoir. The work of Arora et.al (1965) Dhaneshwar et.al (1965), Douglas (1965), Richard (1966), and Bhowmic et al (1985) on the storage and the ecology of lentic and latic water are also important.

Vijverberg and Boersma (1997) observed that the biomass of the large bodied cladocerans increase with increasing chlorophyll content, Wetzel (1975), Mar Galef (1984) documented vertical distribution of zooplanktons and is great ecological complexity since it is related to various environmental, physical and chemical factors.


Bini et.al (1997) by using statistical tools, were reported the special variation of zooplanktonic groups (cladocerans, rotifers, nauplius and adult (Copepods) in the Boro reservoir. The temporary pond in military area of south Germany was studied by Maier et.al (1998) as a physical, chemical conditions and crustacean communities. The pond was turbid, without higher aquatic plant but contained unique crustacean community with endangered species such as Branchipus schaefferi, the copepods, Cyclops crucifer and Metacyclops minutus and the cladocerans Moina brachiata and Macrothrix hirsuticornis, Branchipus was only present in ponds which dried out the where drying occurred.

The cladocerans from 13 Northern German Lakes of different tropic levels were analyzed using the bosminid and chydorid remains in the superficial sediment as an integrated sample of the total lake faunas by Hofmann (1996), Adarian (1987).
They examined the interactions between calanoid and cyclpoid copepods in the 11 years field study of an eutrophic lake in Germany.

Bandu Amarasinghe et.al (1997) was carried out the production biology of Copepds and Cladocerans in three low land reservoirs of south east Srilanka and its comparison to other tropical freshwater bodies. Arnott et.al (1998) assessed crustacean zooplankton richness in eight Canadian Shield lakes as different temporal and spatial scales using three months of estimation cumulative, asymptotic and chaos index.

Limnological studies on two ecologically different water bodies at Dumka (Bihar) with special reference to their chemistry and Primary productivity for a period of one year during different seasons were carried out by Kumar et.al (1996). The study showed that the primary productivity of the water bodies depended mainly upon the intensity and quality of light, the carbon supply, and the availability of nutrients as well as the biomass. The primary productivity was found to be more in sewage-fed water bodies due to presence of adequate nutrients and carbon dioxide. The presence of high rates of primary productivity further indicated that the eutrophication had been at a faster rate in singhra pokhar pond which received domestic sewage. The Barabandh pond where there was only bathing and washing of cloths activities were predominant.


Rotifers are generally been considered to indicate tropic status of the water body Pegler 1957, Arora 1961, 1966. Radwan 1976 . The abundance of Brachionus
species in tropical rotifer has been pointed by Green (1972), Chengalath et.al (1974), Peyler (1977b) and Fernando (1980 a,b) Sharma and Michael (1980)


The occurrences of Rotifers in large numbers are related with abiotic factors such as temperature, pH, dissolved oxygen, alkalinity, chloride etc. High temperature, less nutrients and low oxygen content of water favors the growth of rotifer as observed by Arora (1966). Dhanapathi (1997). Yousuf and quadri attributed it to temperature, which is the main factor for appearance of rotifers. Davis (1955) started that pH is the important parameter in controlling the rotifer populations Balkhi et.al (1984) pointed out that temperature and dissolved oxygen have their influence on the abundance of species composition of Rotifers in Anchor Lake. Campbell (1941) attributed it to three factor like dissolved oxygen, CO$_2$ and pH in fresh water plankton when the alkalinity and temperature is high the abundance of rotifer stated by Byars (1960) Rotifer responses to increased acidity was studied by frost et.al (1978). Many species decreased in abundance under reduced pH conditions but other rotifers increased at the same time such that there was ultimately an increase with acidification in total rotifer biomass

The species of Rotifer Keratella valga appear to be indicative of Mesotrophic environment (Leenta Vaar 1980). Pajler (1957) Stated that this species is distributed in Northern region and related it to low temperature. Segres et.al (1998) was investigated diversity and zoogeography of rotifer in a food plain lake of the Lehilo river. Bolivia Devetter (1998) was evaluated the influence of 46 different environmental factors on the rotifer assemblage in an artificial lake. This study showed that the rotifers in the reservoir were controlled by biotic and abiotic factors.