DISCUSSION
Bearing the need of aquaculture an analysis of zooplanton was undertaken in the three stations of river Kaveri. This study also deals with the understanding the faunal composition and biodiversity of zooplankton in relation to the hydrological parameters of the river.

Qualitative analysis of zooplankton recorded about 38 species, of which 14 species belong to Cladocera, 10 species to Rotifera, 8 species to Ostracoda and 6 species of Copepoda. Species of Cladocera and Rotifera were predominant groups in the zooplankton of River Kaveri. The cladoceran recorded in the present study belonged to four different families namely Daphnidae, Moinidae, Marothricidae and Chydoridae of the four families. Chydoridae are more abundant than the other three families. It was represented by 6 species and other three families were represented by 2 or 3 species only. Mushthaq (1990), Hameed (1992), recorded a similar pattern of cladoceran population in the Kaveri River system. Michael (1973) described seven genera of cladoceran belonging to four different families (Daphnidae, Sidedae, Moinidae and Macrothricidae) from freshwater ponds in and around Madurai. In the present study the members of sididae family were not observed. Patil and Gouder (1989) reported as many as 40 species of cladoceran from Dharwad environments.

Number of rotifers recorded in the present study was limited to 10. They belonged to the following families namely Brachionidae and Lecanidae. The predominant forms belonged to the Brachionidae are *Brachionus*
calyciflorus, B. quadridentatus, B. patulus and Platyias quadricornis. Family Lecanidae was represented by lecane species. Predominance of Brachionid rotifer in the zooplankton of River Kaveri was also reported by Kakkassery (1990) and Hameed (1992). Hameed recorded 33 species of rotifers from Kaveri (from Karur to Grand Anicut) and Sampath et al. (1979) has recorded 35 species from River Kaveri. One species which was not previously recorded by Sampath et al. (1979) and Hameed (1992) was identified from all the three stations in the present study namely Keratella tropica. The decrease in the number of Rotifers in all the stations was due to the predation of rotifers by the cladocerans (Williamson, 1983).

Ahstrom (1940) strongly suggested that Brachionus is limited to almost alkaline water. Hutchinson (1967) stated that family Brachionidae is of great importance in planktonic community which are found in slight to high alkaline water. In the present investigations this was observed and the pH was 7.85.

Sampath et al. (1979) observed that increase in the values of total alkalinity and hardness during winter and summer seasons favour the rotifers in the Kaveri River.

Number of copepod species recorded in the present study was limited to six and all belonged to the order cyclopoida. They are Mesocyclops leuckarti, Mesocyclops hyalinus, Paracyclops poppei, Eucyclops agilis, Eucyclops speratus and Tropocyclops sp. Of the species collected Mesocyclops leuckarti and Mesocyclops hyalinus were predominant.
8 species of Ostracods recorded in the present investigation. They belonged to the family cypridinae which possess three sub families namely cypridininae, stenocyprinae and Cypridopsinae. The subfamily cypridininae included *Cypris protubera, C. dravidensis, Strandesia indica* and *Strandesia parva*. The subfamily stenocyprinae included *Stenocypris major, Stenocypris hislopi* and *Parastenocypris sp*. The sub family cypridopsinae included *Cypridopsi angularis*.

The number of zooplankton present in one cubic meter of water in the measure of population density. The zooplankton density was found to be higher in station 3 (244.8 ± 36.7 m$^{-3}$) and in station 1 and 2 the zooplankton density were 154 ± 20 m$^{-3}$ and 152 ± 27 m$^{-3}$ respectively. Zooplankton production may depend on hydrological factors such as temperature, pH, dissolved oxygen, phosphate, salinity, turbidity and total solids. In the present investigation except dissolved oxygen, phosphate, turbidity and total solids, all other parameters did not show any drastic difference between the three stations. Station 3 maintained a higher level of phosphate, turbidity and total solids and this may be due to the mixing wastes water from hospital and discharge of corportion sewage. Diversity was higher in station 3. This might be attributed to the higher turbidity and phosphate due to influx of sevage discharge from Tiruchirappalli Corporation. Turbidity acts as a disturbic factor promoting diversity. The intermediate disturbance hypothesis (connel, 1978 and Huston, 1979) suggests that moderate physical disturbances promote diversity.
Occurrence of certain plankton species in relative abundance may reflect the quality of water. These indicator animals are classified into two groups. a) pollution sensitive species b) pollution tolerant species. Pollution sensitive species are indicators of pollution free zone. For eg. rotifers like Lecane sp. and Ostracods namely *Cypris protubera, Cypris dravidensis, Strandesia indica* and *Stenocypris major* are considered to be pollution sensitive species. They are predominantly present in the station 2 than in station 1. Pollution tolerant species were represented mainly be cladoderans which was followed by rotifers, copepods and ostracods. Cladoderans such *Ceriodaphnia cornuta, Ceriodaphnia reticulata, Alona pulchella, Alona rectangula* and *Macrothrix hirusticornis*, rotifers such *Brachionus caly whole*, *Brachionus patulus*, Copepods such as *Mesocyclops hyalinus* and *Mesocyclops leuckartii*. Ostracods such as *Stenocypris hislopi, Parastenocypris Sp. Cypridopsis angularis* were constantly recorded in large number in Station 3. Station 2 and station 1 were relatively unpolluted. The increased number of zooplankton in station 3 than other two stations was mainly due to the increase of organic pollutant from the Sewage (Hameed et al., 1992).

The percentage similarity and dissimilarity co-efficient of the zooplankton of River Kaveri analysed. The highest (55) similarity was observed in the cladocerans which indicates that cladocerans of the three stations are more similar. This is followed by Rotifers (53), Copepods (50) and relatively lesser similarity index (33) was noticed with Ostracods. Similar studies were carried in Ganga River in Patna by Ahamed & Singh (1989).