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STUDIES ON SOME FREE LIVING PROTOZOANS FROM DIFFERENT LAKES IN AURANGABAD (MAHARASHTRA)

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ABSTRACT
Protozoa are unicellular animals. The bodies of protozoan are morphologically a single cell and manifest all characteristics common to the living thing. The various activate which make up the phenomena of life are carried on by parts within the body or cell. These parts are comparable in function with the organ of metazoan which is composed of a large number of cells grouped into tissues and therefore called organelle. The biodiversity of protozoa changes from place to place and time to time, because of environmental make-up. Their presence, absence classifies the water quality. Protozoans are free living as well as parasitic. Free living protozoan are present in vast number in nature and in great variety of habitats. The minute size, multiplication condition.

KEYWORDS: Percentage of Protozoa, Various lakes, Aurangabad.(M.S).

INTRODUCTION

The protozoa is Greek word which mean Proto=first, Zoon=animals. As the name indicates, is the first phylum of the animal. Protozoa are microscopic unicellular eukaryotes that have a relatively complex internal structure and carry out complex metabolic activity. More than 65,000 species have been described, most of which are free living organism: protozoa are found in almost every possible habitat. The protozoa stand apart from the rest of the animal kingdom in being the lowest microscopic and unicellular or single-celled organisms possessing typical cellular structure & generally reproduce by means of fission. Thus, a typical Protozoan represents the first level because it is merely a specialized bit of protoplasm surrounded by a membrane and not divided in to separate cellular unit. Some protozoa have structure for propulsion or other types of movement. Protozoa are efficient at gathering microbes as food, and they are sufficiently small to have generation times that are similar to those of the food particles on which they feed. Virtually all humans have protozoa living in or on their body at some time, and many people are infected with one or more species throughout their life. They are in quantitative terms, the most important grazers of microbes in aquatic environments, and they probably control the abundance of bacteria. The heterotrophic flagellates alone can probably consume all bacterial production in the aquatic environment. In geographic areas of high prevalence, well-tolerated infections are often not treated to eradicate the parasite because eradication would lower the individual's immunity to the parasite and result in high likelihood of re–infection. The organelle of protozoa has function similar to the organ of higher animal. The plasma membrane enclosing the cytoplasm also cover the projecting locomotory structures such as pseudopodia, cilia and flagella. Their early appearance as living organism, their adaptability to various habitats and their capacity to remain viable in the encysted condition, probably account for the wide distribution of the protozoa throughout the world.

MATERIAL AND METHODS

The water samples were collected from three different water bodies of Aurangabad city during the academic year (2013-2014). Water samples were collected in plastic bottles & plastic bags. And care was taken that taken water must be collected along with submerged plants, decaying leaves, surface scum, Ooze and bottom water sample were collected mostly in the morning because temperature also affects the abundance of ciliates in water samples (Jagtap *et al.,* (2010). It was immediately examining under the microscope rapid movement of ciliates unable to Identified them; to immobilize their movement methyl cellulose (2%) is added on slide containing ciliates. A drop of methyl cellulose was added to one adge of preparation so that it seeps under the cover sleep & defuses across. This will be setup across the slight & usually the ciliates in one area will be slowed or immobilized without immediate death of or bursting. Free living Protozoan was cultured in Hay infusion, Wheat infusion and Rice infusion.

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RESULT AND DISCUSSION

The distribution and abundance of fresh water ciliates is guided like to other microbial communities by a variety of ecological factors.

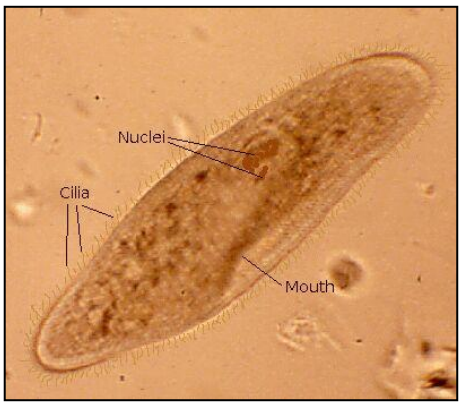
Paramecium Caudatum

Traidinum Caudatum

Vorticella

Figure 1. Free living protozoa from water bodies of Salim Ali Lake, Harsul Lake and, Ditches of Himayat Bagh, Aurangabad. Salim Ali Lake

Tetrahymena



Paramecium Caudatum

Colep

Figure 2. Free living protozoa from water bodies of Salim Ali Lake, Harsul Lake and, Ditches of Himayat Bagh, Aurangabad. Harsul Lake

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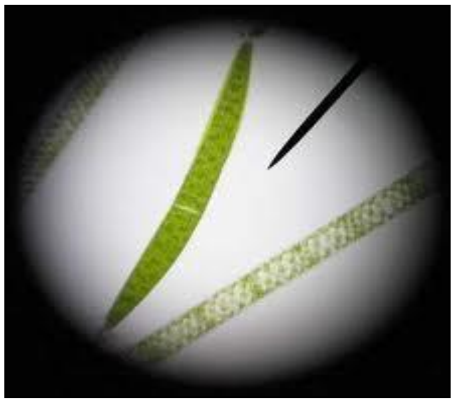
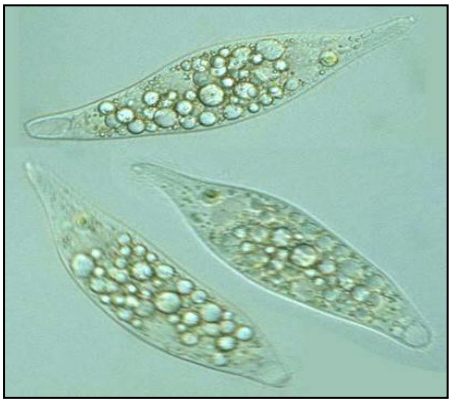
Paramecium

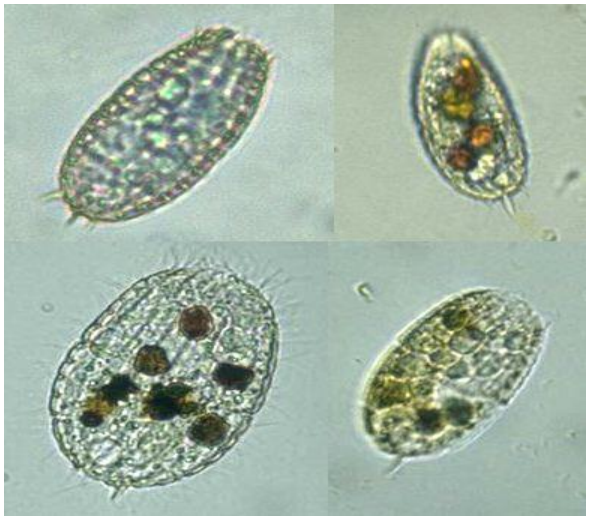


Dilepterus gigas



Lacrymaria

Figure 3. Free living protozoa from water bodies of Salim Ali Lake, Harsul Lake and, Ditches of Himayat Bagh, Aurangabad. Himayat Bagh



Lacrymaria

Paramecium Caudatum

Figure 4. Free living protozoa from water bodies of Salim Ali Lake, Harsul Lake and, Ditches of Himayat Bagh, Aurangabad. Himayat Bagh

Table 1. Free Living Protozoan From Aurangabad.

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Sr.No.	Location	Protozoan's free living Protozoans
01	Salim Ali Lake	*a) Paramecium caudatum* *b) Triadinum caudatum.* *c) Vorticella.*
02	Harsul Lake	*a) Paramecium caudatum* *b) Tetrahymena* *c) Colep*
03	Ditches of Himayat Bagh	*a) Paramecium* *b) Dilepterus gigas.* *c) Lacrymaria.*

However some of the factors show great variability from place to place and time to time. The environmental conditions in which ciliate can live and multiply, there is always an optimum range for each group. Bick (1972) made an-extensive study of several environmental factors on more than sixty five species of fresh water ciliates and come to conclusion that the nature and the quantity of available food was more important than other single factors. The present research work covers prevalence of free living protozoa from water bodies of Salim Ali Lake, Harsul Lake and, Ditches of Himayat Bagh, Aurangabad (Figure 1-4). During the study total number of 09 species of ciliates has been reported from water bodies. During the year Apri-2013 March-2014, total 95 water samples were collected, of which 43 samples were found to be positive for protozoa and total percentage of prevalence was 45.00. The maximum percentage of prevalence was recorded in the month of March (80.00%) which gradually decreases up to May (20.00%). In the month of June and July there was no protozoa recorded from the samples and hence the prevalence reaches to zero. Then it again gradually increase from August (40.00%) to October (60.00%) and gradually decrease in the month of November (37.00%).

Table 2. Percentage of prevalence (%) of fresh water free living Protozoa during the period Aril 2013 to March 2014

Month	Total No of Samples Collected	Total No of Samples Positives	Percentage of prevalence (%)
April	06	02	33.00
May	05	01	20.06
June	05	00	00.00
July	06	00	00.00
Aug	10	04	40.03
Sept	08	04	50.00
Oct	10	06	60.05
Nov	08	03	37.07
Dec	10	04	40.04
Jan	08	05	62.07
Feb	09	06	66.00
March	10	08	80.00
Total	**95**	**43**	**45.00**

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