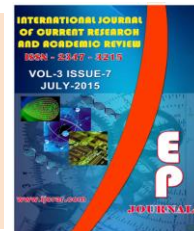




International Journal of Current Research and Academic Review

ISSN: 2347-3215 Volume 3 Number 7 (July-2015) pp. 46-49

www.ijcrar.com



Freshwater Ciliophora from Tabriz province

A. Shayestehfar^{1*}, G. Najafdukht² and S. Nasri²

¹Department of Biology, Faculty of Science, Arak University, Arak-38156-8-8349, Iran

²Department of Biology, Faculty of Science, Payamnoor University, Teheran East, Iran

*Corresponding author

KEYWORDS

Ciliophora,
Freshwater,
Tabriz
Province

A B S T R A C T

Ciliophora is a group of protozoans. Most ciliophora are free living, but some are commercial or parasitic, they have a great tolerance capacity of environmental pollutants and that's way many scientists consider them as water indicator. They are distributed all over of the world and generally range from 10 μm to 3mm long. The free living ciliates are characterized as zooplankton, and are consider as fish consumption. In this study two sampling sites were selected during 15th August 2011. The selected sampling stations were Gori Gol Lake and El-Göl Lake. The sampling was carried out 15 Cm below the surface of water. In the present investigation 12 species from 9 genus were recognized. The maximum population density was recorded for *Vorticella microstoma*, *Vorticella striata* and *paramecium caudatum* respectively in Gori Gol Lake. While in the El-Göl Lake, the maximum population density was belonging to *Coleps hirtus*. It seems that the El- Gol lake is more polluted than Gori Gol lake.

Introduction

Ciliophora are one of the biggest and oldest known groups of protozoans, Leeuwenhoek in 1635 observed the genus vorticela with the help of a very simple light microscope (Ahmed, 1990). Most Ciliophora are free living, but some are commercial or parasitic, they have a great tolerance capacity of environmental pollutants (Bick, 1972). These small creatures are distributed all over of the world and can be observing in all fresh and marine waters on the earth (Shirazi, 2000).

They are generally range from 10 μm to

3mm long (Hickman *et al.* 1986). The free living ciliates are characterized as zooplankton, and are consider as fish consumption (Shayestehfar *et al.*, 2012). The ciliates are characterized by numerous cilia on the cell surface and possessing two kinds of nucleus, that is; macronucleus and micronucleus (Marshal and Williams, 1972).

Materials and Methods

Up to present, few works regarding fresh water protozoan and particularly ciliates, takes place in Iran. In this study two sampling sites were selected during 15th

August 2011. The selected sampling stations are as follows:

Gori Gol Lake (Fig. 2A): which is 30 Km, to south east Tabriz city; a small fresh water lake in the uplands of east Azarbaijan province in northwest of Iran (Fig. 1). Together with the adjacent reed marshes it is an important breeding area for waterfowl. A 1.2 km² site was designated as a Ramsar Convention wetland protection site on 23 June 1975, It is situated between 37°49'59.9"N and 46°40'00"E (Encyclopedia).

El-Göl Lake (Fig. 2B), also known as Shah Guli, is the name of a large park in Tabriz, Azerbaijan, province. It has a square artificial lake surrounded by side walk in four sides (Iran.ir, 2013). There is also a building in the middle of the lake. In did, El-Golii is a big, Square shape pool with a gross storage capacity of 2000 M cum (Khamach, 1988).

The sampling was carried out 15 Cm below the surface of water. Collections were made with a dip net of no. 10 mesh aperture. The collected samples kept in clean bottles, labeled and were transferred to research laboratory for further study. The water samples were kept in room temperature for 24 Hours, 1 cc of water samples (from Bottles) transferred to different cavity

blocks randomly. Under the stereo microscope the different Ciliophora were selected and transferred to Eppendorf bottles including 7% glico-alcohol. With the help of dropper the samples were introduced to a clean lam and then dissected and studied under light microscope (Olympus-BX51). The procedure was repeated many times. The shape was drowning with the help of camera Lucida. The method of preservation and identification was based on Bick (1972) and Ward and Whipple (1959).

Results and Discussion

In the present study 12 species belonging to 4 class, 3 order, 3 sub order, 8 family and 9 genus were recognized (Table 1).

All the species named in table 1, were present in both sampling stations. In Gori Gol Lake (Fig. 2A) the maximum population density was recorded for *Vorticella microstoma*, *Vorticella striata* and *paramecium caudatum* respectively. In El-Göl Lake (Fig. 2B) maximum population density was belonging to *Coleps hirtus* and the minimum population was recorded for *Urostyla weissei* respectively. As free living ciliates are consider as water pollutant, the maximum presence of *Coleps hirtus* may indicated as more water polluted (Bick, 1972) in El-Göl Lake radar than Gori Gol Lake.

Fig.1 The map of Tabriz city, showing the situation of sampling site (Google.com)

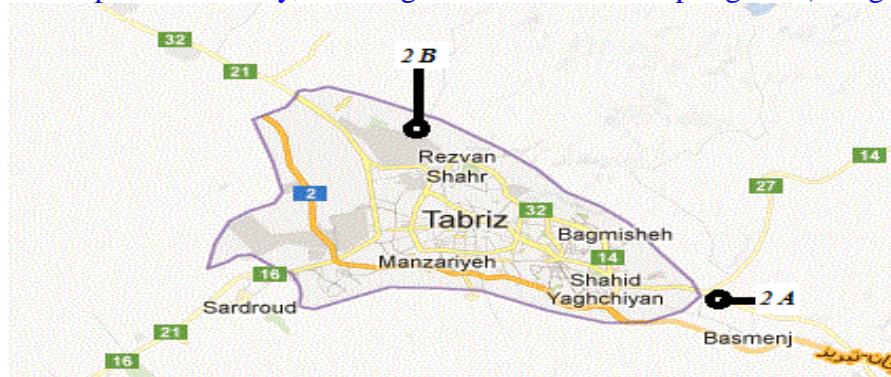


Table.1 Classification of Ciliophora found in two water bodies studied of Tabriz province (15th August 2011)

Phylum	Class	Order	Sub order	Family	Genus	Species
Ciliophora	Holotrichia	Gymnostomatida	Rhabdophorina	Colepidae	Coleps	<i>hirtus</i>
				Amphileptidae	Litonotus	<i>fasciola</i>
				Didinidae	Didinium	<i>nasutum</i>
		Hymenostomatida	Peniculina	Paramecidae	Paramecium	<i>trichium</i>
						<i>bursaria</i>
						<i>caudatum</i>
	Peritrichia	Peritrichida	Sessilina	Vorticellidae	Vorticella	<i>microstoma</i>
						<i>striata</i>
					Carchesium	<i>polypinum</i>
	Suctorina			Podophryidae	Sphaerophrya	<i>soliformis</i>
	Spirotrichia	Hypotrichida		Aspidiscidae	Aspidisca	<i>costata</i>
				Oxytrichidae	Urostyla	<i>weissei</i>

Fig.2 Sampling site. A: Gori Gol Lake and B: El-Göl Lake



References

- Ahmed, M. 1990. Hydrobiological studies of Woher reservoir Aurangabad (Maharashtra State), *India. J. Environ. Biol.*, 11: 355–343.
- Bick, H. 1972. Ciliated protozoa. An illustrated guide to the species used as biological indicators in fresh

water biology, World Health Organization. 195 Pp.

- Hickman, C.P., Roberts, L.S., Larson, L.A. 1986 Integrated principles of zoology, 11th edn, McGraw-Hill Company. USA, 899 Pp.
- <http://www.Encyclopædia: Tabriz, 2012>
 Britannica.

- Khamach, B. 1988. My city Tabriz, 2nd edn. Nedaei Shams Publication, 496 Pp.
- Marshall, A.J., Williams, W.D. 1972. In: J. Parker and W. Haswell. Text book of zoology, 7th edn, Vol. 1. CBS Publication and Distributors, India. 874 Pp.
- Shayestehfar, A., Hamta, A., Shirazi, F., Azimi, R. 2012. Free living Ciliophora from Gharekahrize (Dray) River of Markazi province. *Iran. J. Biol.*, 25(3): 72–79.
- Shirazi, F. 2000. Biological study of free living Ciliophora from Parishan (Fammur) lake of Fars province. Thesis submitted for the award of M.Sc. Degree. Azad University of Kazeroun. 130 Pp.
- Ward, Whipple, 1959. Fresh water biology, 2nd edn. John Wiley and Sons, INC, USA. 248 Pp.