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Short Communication

NOTES ON FREE-LIVING CILIATES IN FRESHWATER PONDS OF KOLKATA

INTRODUCTION

Freeliving ciliates play an important role in the aquatic ecosystem and form an important component of the environment monitoring surveillance. These ciliophorans show their significance as biological indicators and occupy an important position in the aquatic foodchain. In West Bengal, in all 152 species of ciliates, belonging to 2 classes, 16 orders, 52 families and 75 genera have been recorded by several investigators since 1840s. (Das *et al.*, 1993; Piyali and Das, 1997). But no serious survey was conducted for the ciliates of Kolkata wetlands, and hence a survey was conducted from April 2006 to July 2007 in Kolkata wetlands for the exploration of the freeliving ciliate fauna including Rabindra Sarovar, a National lake, representing an important freshwater wetland in the heart of the metrocity of Kolkata.

MATERIAL AND METHODS

Water samples were collected from five water bodies *viz.*, Rabindra Sarobar (RS), Indian Museum Tank (IMT), Brace Bridge Jheel (BBJ), Pond in Lakegarden (LGP) and pond near Saltlake (SLP) along with some algae, water weeds, flocculent matter and bottom oozes and were kept in the laboratory for subsequent study. Those samples were examined under the microscope from time to time for about 15 days. The free-living ciliates occurring in them were isolated, processed and stained following standard fixation and preservation methods (Mandal *et al.*, 1990; Das *et al.*, 1993).

RESULTS AND DISCUSSION

A total of 15 species were identified of which 5 species were not reported earlier from Kolkata wetlands *viz.*, *Dileptus monilatus, Loxophyllum levigatum, L. undulatum, Loxodes vorax* and *Leptopharynx torpens.* These 15 species belong to 6 orders and 9 families. Of the 6 orders

prostomatid ciliates represent 4 species followed by 3 species each of pleurostomatids and karyostomatids (Table-1). Among them, 5 species such as *Holophrya bengalensis, Litonotus fasciola, Colpoda cucullus, Nassula ornata, and Paramecium caudatum* were recorded from other states in India (Das *et al.*, 1987, 2004 and Mahajan, 1971).

Table-1. Systematic list of ciliate species recorded from Kolkata wetlands (Classification according to Levine *et al.*, 1980)

Systematic list of species	**Occurrence in Kolkata wetlands**	**Earlier records in India (Ref.)**
Phylum CILIOPHORA		
Class KINETOFRAGMINOPHORA		
Subclass GYMNOSTOMATA		
Order PROSTOMATIDA		
Family HOLOPHRYIDAE		
1. *Holophrya bengalensis* Ghosh	RS, BBJ, SLP	Kol, Raj (Das *et al.*, 1993; Mahajan, 1971)
Family PRORODONTIDAE		
2. *Prorodon discolor* (Ehrenberg)	RS, BBJ, LGP	Kol (Das *et al.*, 1993)
3. *Prorodon teres* Ehrenberg	IMT, LGP, SLP	Kol (Das *et al.*, 1993)
Family TRACHELIIDAE		
4. *Dileptus monilatus* (Stokes)	IMT	Hg, Kol (Das *et al.*, 1993)
Order PLEUROSTOMATIDA		
Family AMPHILEPTIDAE		
5. *Loxophyllum levigatum* Sauerby	RS	S. 24, P. Kol (Das *et al.*, 1993)
6. *Loxophyllum undulatum* Sauerby	RB	Hwh. Kol (Das *et al.*, 1993)
7. *Litonotus fasciola* (Ehrenberg)	BBJ	Kol, Raj (Das *et al.*, 1993; Mahajan, 1971; Piyali and Das, 1977)
Order KARYORELICTIDA		
Family LOXODIDAE		
8. *Loxodes vorax* Stokes	RS	N. 24. P. Kol (Das *et al.*, 1993)
9. *Loxodes magnus* Stokes	RS, IMT	Kol, K. Bhr (Das *et al.*, 1993)
10. *Loxodes striatus* (Engelmann)	RS, IMT, BBJ	Kol, Bnk, Pur (Das *et al.*, 1993)

Systematic list of species	Occurrence in Kolkata wetlands	Earlier records in India (Ref.)
Order COLPODIDA		
Family COLPODIDAE		
11. *Colpoda aspera* Kahl	RS, IMT, LGP	Kol, Mbd (Das *et al.*, 1993)
12. *Colpoda cucullus* Muller	BBJ	Kol, A. P (Das *et al.*, 1993; 2004)
Order NASSULIDA		
Family NASSULIDAE		
13. *Nassula ornata* Ehrenberg	RS, BBJ, LGP	Kol, Darj, Raj (Das *et al.*, 1993; Mahajan, 1971)
Family LEPTOPHARYNGIDAE		
14. *Leptopharynx torpens* (Kahl)	RS, LGP	Kol, Hg (Das *et al.*, 1993)
Order HYMENOSTOMATIDA		
Family PARAMECIDAE		
15. *Paramecium caudatum* Ehrenberg	RS, IMT, BBJ, LGP, SLP	W.B. (all 17 districts), Osa, Raj (Das *et al.*, 1987, 1993; Mahajan, 1971; Piyali and Das, 1977)

(RS-Rabindra Sarovar, IMT-Indian Museum Tank, BBJ-Brace bridge Jheel, LGP-Pond in Lakegarden, SLP-Saltlake pond; Kol-Kolkata, Raj-Rajasthan, HG-Hugli, S. 24. P-South 24 Pargas, Hwh-Howrah, K.Bhr-Kuch Bihar, Bnk-Bankura, Pur-Purulia, Mbd-Murshidabad, A.P.-Andhra Pradesh, Darj-Darjiling, W.B.-West Bengal, Osa-Orissa).

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REFERENCES

Das, A.K., and Nair, K.N. 1987. Freeliving Protozoa. *Zool. Surv. India, Fauna of Orissa, State Fauna Series,* **1**(Part-1) : 25-52.

Das, A.K., Mandal, A.K. and Sarkar, N.C. 1993. Freeliving Protozoa, *Zool. Surv. India, Fauna of West Bengal, State Fauna Series,* **3**(Part-12) : 1-133.

Das, A.K., Tiwari, D.N., Nandi, R., Sarkar, N.C. and Saha, D. 2004. Freeliving and symbiotic Protozoa. *Zool. Surv. India, Fauna of Andhra Pradesh, State Fauna Series,* **5**(Part-6) : 423-466.

Levine, N.D., Corliss, J.O., Cox, G. E. F., Deroux, G., Grain, J., Honigberg, B.M., Leedsle, G.E., Loeblich, A.R., Lom. J., Lynn. D., Merinfelds, G.E., Page, F.C., Polijansky, G., Sprague, V., Vavra, J. and Wallace, F.G. 1980. A newly revised classification of Protozoa. *J. Protozool.,* **27** : 37-58.

Mahajan, K.K. and Nair, K.N. 1971. On some freshwater ciliates (Protozoa) from Calcutta and its enviros. *Records of the Zoological Survey of India,* **63**(1-4) : 1-229.

Mandal, A.K., Das, A.K. and Nandi, N.C. 1990. Collection and Preservation of Animals : Protozoa and Mesozoa. In : *Handbook of Zoological Collections, ZSI,* pp. 1-17.

Piyali Chatterjee and Das, A.K. 1997. Role of protozoa in Environmental Biomonitoring, *Proc. zool. Soc. Calcutta,* **50**(1) : 19-22.

Bindu, L.
Zoological Survey of India,
M-Block, New Alipore,
Kolkata-700 053