



## A study on algal genus *Lepocinclis* perty of euglenophyceae in the area of north Maharashtra, India

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### Abstract

The algal collections have been made during June 2016 – May 2017 from polluted & unpolluted water of North Maharashtra region. This paper contains description, illustration & photographs of thirteen taxa of euglenophyceae belonging to genus *Lepocinclis* Perty (1852). viz. *Lepocinclis elongata* (Swir.) Conrd., *L. fusiformis* (Carter) Lemm., *L. fusiformis* (Carter) Lemm. var. *minor* Chu., *L. marassonii* Lemm., *L. ovum* (Ehr.) Lemm. var. *butschlii* (Lemm.) Conrd., *L. ovum* (Ehr.) Lemm. var. *dimidio-minor* Delf., *L. ovum* (Ehr.) Lemm. var. *forminii* Roll., *L. ovum* var. *palatina* Lemm., *L. ovum* f. *minor* Christen., *L. playfairiana* Delf., *L. salina* Fritsch., *L. spirogyra* Korsch., *L. lata* (Roll) Popova. Of these nine taxa are to be found in freshwater & two to in polluted water, while *L. spirogyra* & *L. ovum* are to be found in extreme water condition (P<sup>H</sup> near about 3.) One taxa such as *L. salina* has been observed in large number in a brackish water at a P<sup>H</sup> 8 – 9.1

**Keywords:** euglenoids, *Lepocinclis*, Maharashtra

### Introduction

Algae are the most beautiful flora of the microscopic world. The systematic survey of Euglenophyceae of the class of polluted and unpolluted environment. The present paper describes thirteen taxa of euglenophyceae genus *Lepocinclis* Perty. The study area selected for present investigation include Dhule, Nandurbar and Jalgaon districts of North Maharashtra. There are very few report on Suxena 1955, Pandey and Pandey 1980<sup>[1]</sup>, Philipose 1980, Kumawat and Jawale 2003, 2004<sup>[8]</sup>. Identification is based on Monographs of Gojdics (1953)<sup>[4]</sup>, Huber-Pestalozzi (1955)<sup>[6]</sup>, Asaul (1975)<sup>[1]</sup>, Waghodekar 1980.

### Material and methods

**Study area:** North Maharashtra region (Jalgaon, Dhule & Nandurbar Districts) lies between 20° 38' to 21° 32', North latitude and 73° 15' to 70° 28' east longitude

**Study period:** June 2016 – May 2017

**Climate:** Subtropical with three distinct seasons

Hot and dry summer (March – June)

Warm and wet rainy (July- Oct.)

Cool and dry winter (Nov. – Feb.)

**Temp:** 9.3 c in cold season (Jan) to 49.8 c in hot season (May)

**Annual rain fall:** 740-1034

**Soil:** Light and deep black with P<sup>H</sup> 7.2- 9.2

**Study of taxa by:** Camera lucida drawings and photomicrographs.

**Preservation:** 3% Formaldehyde

**Identification:** Huber-Pestalozzi (1955), Asaul (1975) and available publications on the subject.

### Systematic position

Genus *Lepocinclis* Perty, 1852 Cells ovoid, ovate-elliptical, fusiform or spherical with rigid and spirally striated pellicle. Chloroplast small, discoid, with no pyrenoids. Two large paramylum rings in many species, peripheral, lying opposite one another in the anterior half of the cell.

**1. *L. elongata*** (Swir.) Conrd. (Pl.1, Fig. 1; Pl. 2, Fig. 4)

Z.I. Asaul, 1975<sup>[1]</sup>, p.216, pl. 122, fig. 1.

Cell spindle shaped with a long tail, 55.7 x 21.1 µm.

**Habitat:** Slow running water Adulterated with sewage, Raipur, Nov. 2016,

**2. *L. fusiformis*** (Carter) Lemm. (Pl.1, Fig. 2; Pl. 2, Fig. 6)

Waghodekar, V. 1980, pl. 15, fig. 9,15

Cells broadly fusiform to pyriform, 26.4-52.8 x 16.4-34.5 µm.

**Habitat:** Among clumps of floating algae, Idgaon, Apr. 2017,

**3. *L. fusiformis*** (Carter) Lemm. var. *minor* Chu. (Pl.1, Fig. 3; Pl. 2, Fig. 11)

Z.I. Asaul, 1975<sup>[1]</sup>, p.209, pl. 114, fig. 8.

Cell broadly fusiform; 35.4 x 23.7 µm.

**Habitat:** Polluted pond, Amurkheda, Mar. 2017,

**4. *L. marassonii*** Lemm. (Pl.1, Fig. 4; Pl. 2, Fig. 2)

Waghodekar, V. 1980, p.119-120, pl. 15, fig. 7

Cell elongate, fusiform, 35.6-36.4 x 11.5- 13.2 µm.

**Habitat:** Collected along sandy banks, Hingone, Jan. 2017,

**5. *L. lata*** (Roll) Popova (Pl.1, Fig. 5; Pl. 2, Fig. 5)

Z.I. Asaul, 1975<sup>[1]</sup>, p.216-217, pl. 122, fig. 2-4.

Cells elongate broadly elliptical with a long tail posteriorly; 54.6 x 20.6 µm.

**Habitat:** Present in typha growing region have fishery smell near Amurkhede, Sep.2016.

**6. *L. ovum*** (Ehr.) Lemm. var. *butschlii* (Lemm.) Conrad. (Pl.1, Fig.6;Pl.2, Fig. 7)  
Z.I.Asaul, 1975 <sup>[1]</sup>, p.206, pl. 112, fig. 7-8.  
Cell ellipsoidal, 33.1 x 17.9 µm.

**Habitat:** Small tiny polluted pool, Idgaon, Oct. 2016,

**7. *L. ovum*** (Ehr.) Lemm. var. *dimidio-minor* Delf. (Pl.1, Fig.7; Pl.2, Fig. 10)  
Z.I.Asaul, 1975 <sup>[1]</sup>, p.202, pl. 110, fig. 1-8.  
Cell ovate with steep; striae spiral. Paramylum two large rings, 25.3 x 19.1 µm.

**Habitat:** In a small stream, Tandalwadi, August, 2016,

**8. *L. ovum*** var. *forminii* Roll (Pl.1, Fig. 8; Pl. 2, Fig. 8)  
Waghodekar, V. 1980, p.128, pl. 15, fig. 28; Z.I.Asaul, 1975 <sup>[1]</sup>, p.202, pl. 110, fig. 9-10.  
Present variety differs from the type in having ovoid-suborbicular to almost rounded shaped cell. 27.2 x 24µm.

**Habitat:** In turbid water in near cemetery, Anjale, Oct. 2016,

**9. *L. ovum*** f. *minor* Christen (Pl.1, Fig. 9; Pl. 2, Fig. 9)  
Waghodekar, V. 1980, p.132, pl. 15, fig. 24  
If differs from the type in being small in size and broadly ovoid in shape; posterior end with short tail and paramylum single large ring. 17.7- 21.8 x 11.8- 12.3µm.

**Habitat:** Fresh water, from mixture of algae, Udali, Jul. 2016,

**10. *L. ovum*** var. *palatina* Lemm. (Pl.1, Fig. 10; Pl. 2, Fig. 13)  
Z.I.Asaul, 1975 <sup>[1]</sup>, p.203, pl. 111, fig. 2-5.  
Cell ovoid, rounded at both ends; posteriorly with a short, blunt projection; striae spiral. Paramylum two elliptic rings. 33.5 x 25.7 µm.

**Habitat:** Planktonic in a pond near water melon garden, Bhusawal, Dec. 2016,

**11. *L. playfairiana*** Delf. (Pl.1, Fig. 11; Pl. 2, Fig. 3)  
Z.I.Asaul, 1975 <sup>[1]</sup>, p.209-210, pl. 115, fig. 4-5.  
Cell broadly elliptical with a long tail, 42.9 x 21.8 µm.

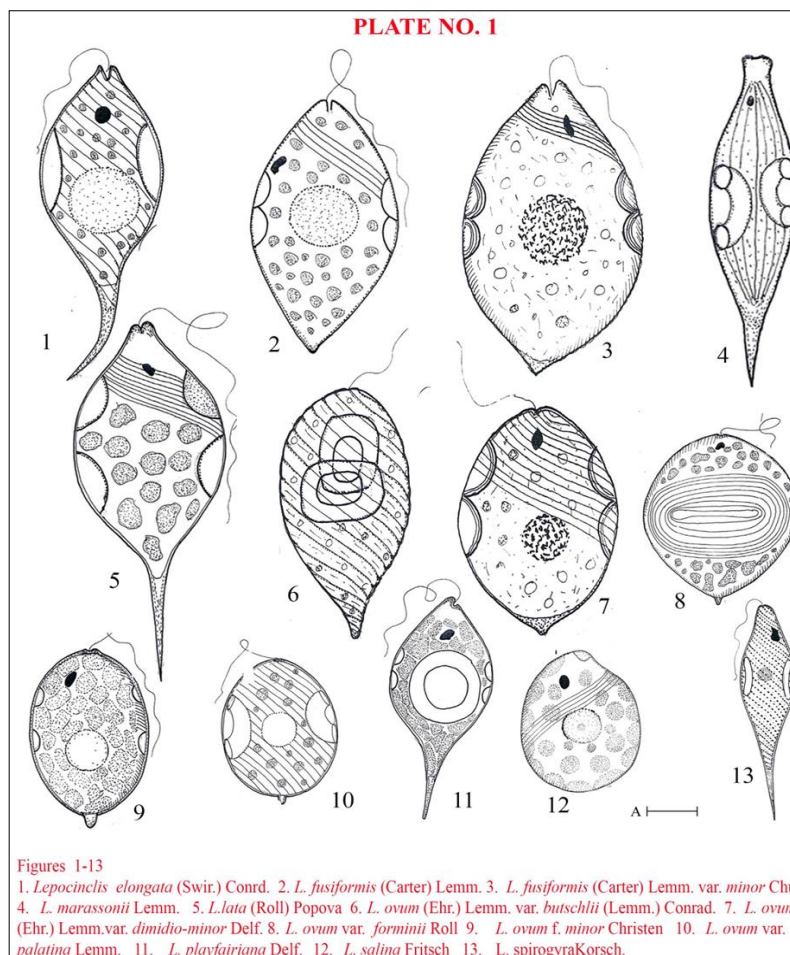
**Habitat:** Rare taxa, polluted tiny pool, Kolambi, Feb. 2017,

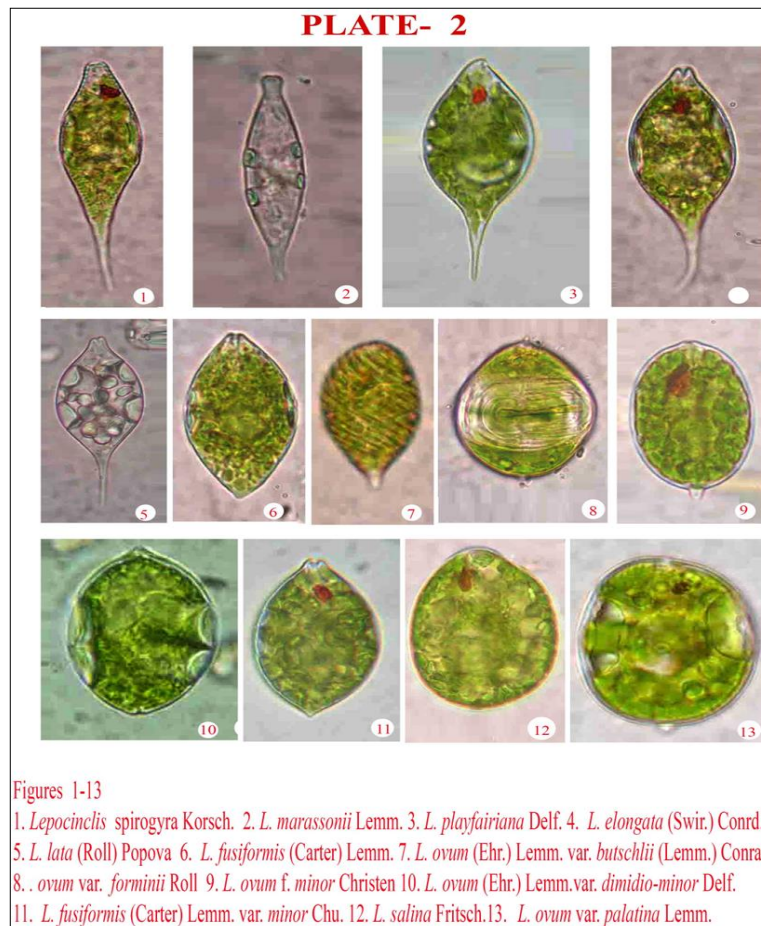
**12. *L. salina*** Fritsch (Pl.1, Fig. 12; Pl. 2, Fig. 12)  
Waghodekar, V. 1980, p.137-138, pl. 15, fig. 26  
Cell broadly ovate in outline, somewhat flattened; 32.7-47.2 x 20- 34.7 µm.

**Habitat:** Planktonic with other algae, Tandalwadi, Apr. 2017,

**13. *L. spirogyra*** Korsch. (Pl.1, Fig. 13; Pl. 2, Fig. 1)  
Z.I. Asaul, 1975 <sup>[1]</sup>, p.215, pl. 120, fig. 1-4.  
Cell elongate bearing a sharp, 62.4 x 15.2 µm.

**Habitat:** Rain pool in the river near dam wall, Hatnur, Mar. 2017, Coll.No.544





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