

CONTRIBUTION TO THE DESMID FLORA OF INDIA. II : GENUS *CYLINDROCYSTIS* MENEGHINI FROM WEST BENGAL

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ABSTRACT

The present communication deals with nine taxa of *Cylindrocystis* Meneghini. Seven taxa viz. *C. brebissonii* Meneghini var. *brebissonii*, *C. crassa* de Bary var. *crassa*, *C. brebissonii* var. *jenneri* (Ralfs) Reinsch & Kirchner, *C. brebissonii* var. *turgida* Schmidle, *C. crassa* var. *elliptica* West & West, *C. cyanosperma* Lagerh., *C. obesa* West & West are reported for the first time from West Bengal, the last two being recorded probably for the first time from India. Two taxa viz. *C. brebissonii* var. *turgida* f. *indica* f. nov. and *C. crassa* var. *crassa* f. *minor* f. nov. are proposed as new to science.

Key words : *Cylindrocystis*, Desmid, India, West Bengal

Introduction

Very little information is available on the desmids of West Bengal. There is no record of the genus *Cylindrocystis* from West Bengal excepting the earlier work of Turner (1892). The report on the genus *Cylindrocystis* Meneghini in India have been made by Bharati & Pai (1972), Gurudeva *et al* (1983), Hegde and Isaacs (1988), Prasad & Misra (1992) and Panikkar & Krishnan (2006). We have collected 320 taxa of desmid from different districts of West Bengal during a systematic investigation on the Desmids. Out of 26 taxa of saccoderms, 9 taxa belonging to the genus *Cylindrocystis* are described in the present communication. Of these two taxa are proposed as new to science.

Holotypes of the new taxa have been deposited in the algal herbarium of the department of Botany, the University of

Burdwan, West Bengal, India (BURD). For identification of the taxa some standard literature have been consulted viz. Turner (1892), Prescott *et al* (1972), Krieger (1937), Dillard (1990), Wehr & Sheath (2003) The following abbreviation are used in the text, Length (L), Width (W)

Material and Methods

The specimens are collected from Bankura and Purulia districts of West Bengal. Specimens were preserved in 4% formalin; pH, temperature and details ecological notes were recorded simultaneously. Camera lucida drawing and photography were made using GWF (Bando 1988) as mountant from both preserved and live specimens. Holotypes of the new taxa have been deposited in the algal herbarium of the department of Botany, the University of Burdwan, West Bengal, India (BURD).

Result and Discussion

1. *C. brebissonii* Meneghini var. *brebissonii*

Prescott *et al.* 1972, p. 20, pl. II, figs. 1-5; Dillard 1990, p. 65, pl. 24, fig. 4.

[Plate I, Fig. 6]

Cells more than 4 times longer than broad; cylindric, unstricted, apices broadly rounded, chloroplast with radiating ridges, pyrenoid central.

L. 66-68 μm , W. 13-14 μm .

Field No. 190.

Distribution: Karnataka (Bharati & Pai 1972, Hegde & Isaacs 1988),

This is the new record of the species for West Bengal.

2. *C. brebissonii* var. *jenneri* (Ralfs) Reinsch & Kirchner

Prescott *et al.* 1972, p. 21, pl. II, figs. 6-8; Dillard 1990, p. 66, pl. 24, fig. 5.

[Plate I, Fig. 4]

Cells 2-3 times longer than broad; cylindric, apices broadly rounded, wall smooth; chloroplast axial.

L. 67-104 μm , W. 26-46 μm .

Field No. 1054.

Distribution: Probably this is the first record of the variety from India

3. *C. brebissonii* var. *turgida* Schmidle

Prescott *et al.* 1972, p. 21, pl. II, figs. 17-18; Dillard 1990, p. 66, pl. 24, fig. 7.

[Plate I, Fig. 5]

Cells 1.5 times longer than broad; stoutly cylindrical, the poles rounded or somewhat truncate.

L. 45-48 μm , W. 28-32 μm .

Field No. 44, 364

Distribution: Probably this is the first record of the variety from India

4. *C. brebissonii* var. *turgida* f. *indica* f. nov.

[Plate I, Fig. 1]

Cells 1.5 times longer than broad; barrel shaped, poles round or somewhat

truncate width is much, pyrenoids 2 centrally located.

L. 94-98 μm , W. 56-58 μm .

Field No. 190

Holotype : No. PM 190,

The present specimen is much longer than the type, therefore treated as a new form

Latin diagnosis - Cellulae 1.5 plo longiores quam latiores, doliiformae polis rotundatis vol subtruncatis, pyrenoides 2 centraliter locatae.

L. 94-98 μm , W. 56-58 μm .

5. *C. crassa* de Bary var. *crassa*

Prescott *et al.* 1972, p. 22, pl. II, figs. 24,26; Dillard 1990, p. 66, pl. 24, fig. 8.

[Plate I, Fig. 3]

Cells 1.5-2 times longer than broad; elliptic to oblong, the poles broadly rounded; chloroplast with a central pyrenoid and numerous plates.

L. 30-63 μm , W. 16-30 μm .

The present specimen is shorter and broader than the type.

Field Nos. 44, 1118.

Distribution: Karnataka (Bharati & Pai 1972, Gurudeva *et al.* 1983),

This is the new record of the species for West Bengal.

6. *C. crassa* var. *elliptica* West & West

Prescott *et al.* 1972, p. 22, pl. II, figs. 27-28; Dillard 1990, p. 66, pl. 24, fig. 9.

[Plate I, Fig. 2]

Cells broadly ovoid, short, sometimes also spherical, chloroplast crenulate.

L. 26-34 μm , W. 11-25 μm .

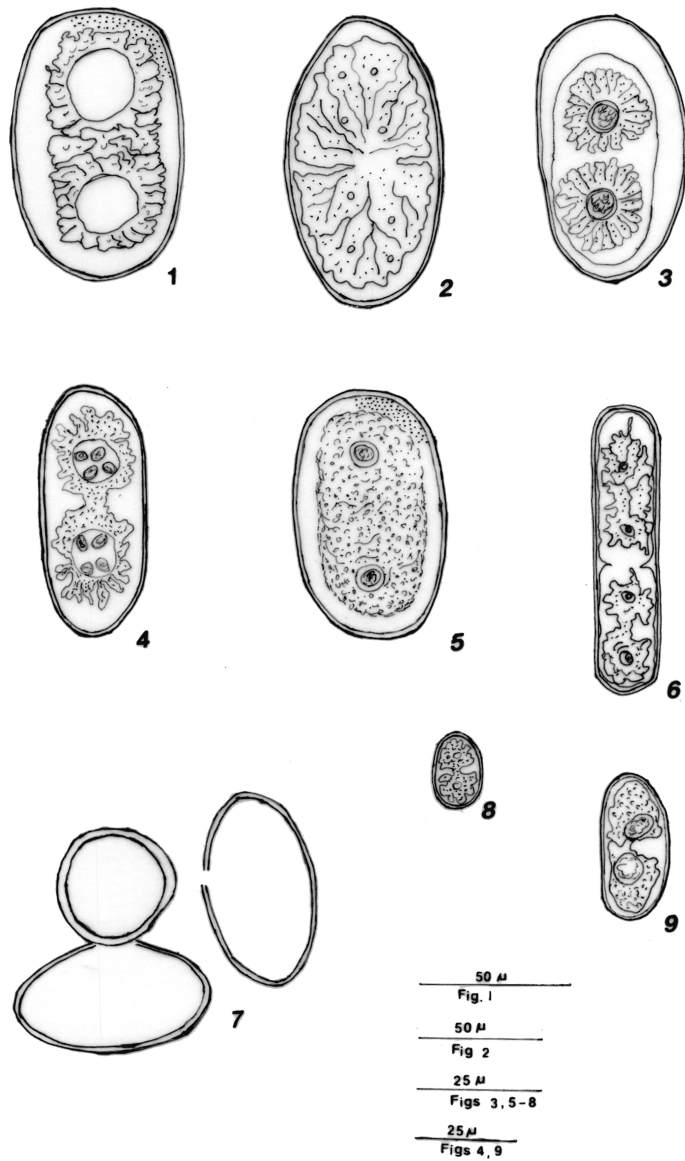
Field No. 1054.

Distribution: Probably this is the first record of the variety from India.

7. *C. crassa* var. *crassa* f. *minor* f. nov.

[Plate I, Fig. 8]

Cells slightly longer than broad; elliptic or spherical, poles broadly rounded, chloroplast stellate with centrally located single pyrenoid.



Legend to the plate

Plate I

1. *Cylandrocystis brebissonii* var. *turgida* f. *indica* f. nov.
2. *C. crassa* var. *elliptica*
3. *C. crassa* var. *crassa*
4. *C. brebissonii* var. *jenneri*
5. *C. brebissonii* var. *turgida*
6. *C. brebissonii* var. *brebissonii*
7. *C. obesa*
8. *C. crassa* var. *crassa* f. *minor* f. nov.
9. *C. cyanosperma*

L. 13-15 μm , W.8-9 μm .

Field No. 190

Holotype : No. PM 190, the present specimen is smaller than the type. Cells shape is also more or less elliptic and not ovoid.

Latin diagnosis - Cellulae parum longiores quam latiores, ellipticae vel sphaericae, polis late rotundatis, chloroplastus stellatus cum pyrenoide singulo centraliter locatae.

L. 13-15 μm , W.8-9 μm .

8. *C. cyanosperma* Lagerh.

Krieger 1937, p. 211, pl. 6, figs. 14, 15.

[Plate I, Fig. 9]

Cells 3 times longer than broad, cylindrical, pole rounded or somewhat truncate, chloroplast axial.

L. 22 μm , W. 7 μm .

Field No. 1054.

Distribution: Probably this is the first record of the species from India.

9. *C. obesa* West & West

Prescott *et al.* 1972, p. 22, pl. II, fig. 30; Dillard 1990, p. 67, pl. 24, fig. 10.

[Plate I, Fig. 7]

Cells nearly 2 times longer than broad, fusiform, distinctly narrowed toward the poles; cell wall colourless; zygospore thick walled, blackish in colour.

L. 42 μm , W. 24 μm , Zygospore diameter is 24 μm .

The present specimen is however smaller than the type. Zygospore has been observed in our sample. This is a new observation.

Field No. 606.

Distribution: Probably this is the first record of the species from India.

Ecological Notes of samples worked out

Field Number	Date	Locality	pH	Temp.	Ecological Notes
44	Nov. 19. 2000	Birshingha, Bankura,	5.5	26°C	Orange yellow colour algal mass attached on <i>Scirpus articulatus</i> Linn.
190	Sept. 11. 2001	Birshingha, Bankura	6	30°C	Green and whitish colour patch attached on <i>Hydrilla verticillata</i> Casp.
364	Oct. 17, 2001	Raghunathpur, Purulia	6	33°C	Green filament with some algal mass attached on the aquatic stem of <i>Jussiaea repens</i> Linn.
606	Nov. 29, 2001	Raghunathpur, Purulia	6	22.5°C	Blackish colour assemblages lodged on <i>Trapa bispinosa</i> Roxb.
1054	Oct. 22, 2002	Bishnupur, Bankura	6	30°C	Deep brown colour mass attached on rotting <i>Hydrilla verticillata</i> Casp.
1118	Dec. 31, 2002	Raipur, Bankura	6	19°C	Brown colour mass attached on <i>Hydrilla verticillata</i> Casp.

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