



CENTRIC DIATOMS FROM KABRAYA-KHADAK DAM OF DHULE DISTRICT (M.S.)

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Abstract:

The Diatoms are characterized by number of features, they are most easily recognized by their siliceous (opaline) cell walls. The size, shape and sculpturing of diatoms cell walls are taxonomically diagnostic, (Werner, 1977) Diatoms are important group in aquatic ecosystem and very important link in the food cycle, diatoms may contribute 20 to 25 percent World net primary production. The present paper deals with the taxonomic considerations seven taxa of freshwater centric diatoms from Kabraya-Khadak dam of Dhule district Maharashtra.

Keywords: Diversity, Freshwater, Centric-Diatoms Dam

Introduction:

Biodiversity of various groups of algae were studied in India, but very few workers (Ghandhi 1958, 1959a, 1959b, 1960; Venkataraman, 1939; Sarode and Kamat 1980a, 1983, 1984; Bharate and Tarar, 1983; Nandan, and Mahajan, 2006.) have paid attention on Diatom. The present account were carried out by selecting freshwater habitats of Kabraya-Khadak dam (71° 01' N latitude, 21° 42' E longitude) in Dhule District of North Maharashtra region. Diatoms are ubiquitous and form quite importance group in the aquatic ecosystem and are also important in polluted. The most characteristic feature of the diatom cell is its ability to secrete an external skeleton of silica called the frustules. The size, shape and sculpturing of diatoms cell walls are taxonomically diagnostic.

Materials and Method:

Monthly algal samples were collected during November 2006 to October 2007. From six different sites of Kabraya - Khadak dam. (Viz. KKDS - I; KKDS - II; KKDS - III; KKDS - IV; KKDS - V and KKDS - VI.) the collections were preserved in 4% formalin added with glycerin. For identification of the diatoms were cleaned according to the Brun's method (Sarode and Kamat 1984). The sample were treated with concentrated acids. to remove carbonates and organic material. The cleaned material was preserved in 75% alcohol. The identification of the taxa has been done with the help of standardized and other relevant and recent literature Cleve-Eruter 1951- 53, Sarode and Kamat 1984; Ghandi 1956, 1960; Hustedt, F. (1933)

SYSTEMATIC ENUMERATION:

1) *Melosira granulata* (Ehr.) Ralfs, Var. *mazzanensis* Meister

Pl. I, Fig. 1

Filaments with narrow, long cells, frustules 12.2-15 µm diameter, semicells 8.5-11.1 µm high, end cells with spine and furrows of areoles 8-9 µm semicells, spirally disposed.

This diatom was found in brownish filamentous mass on submerged aquatic plant in dam site KKDS - I, KKDS - III, and KKDS - V.

2) *Melosira distance* (Ehr.) Kutz. Var. *alpigena* Grun.

Pl. I, Fig. 2

Frustules 4-20 µm in diameter, short cylindrical, united in chains, semicells 4-8.5 µm in height, areoles 3-8 µm in 10 µm.

This diatom was collected from dam site KKDS - I, KKDS - III, and KKDS - VI

3) *Melosira islandica* O.muell. Var. *helvetica* O.muell.

Frustules 8-10 µm in diameter cylindrical, united in chains, semicells, 11.5-14 µm high; rows of areoles 13-14 in 10 µm straight

This diatom was collected from dam site KKDS - I, KKDS - III, KKDS - V and KKDS - VI.

4) *Cyclotella meneghiniana* Kutz.

Pl. I, Fig. 4.

Frustules rectangular in girdle view. With undulate valves, valves discoid, 11-18 µm in diameter, margins strong; central field large and finally punctate, striae 8-10 in 10 µm thick.

This diatom was found on bank soil in dam site KKDS - I, KKDS - III, and KKDS - VI.

5) *Cyclotella striata* (Kutz.) Grun.

Pl. I, Fig. 5

Valves with strong wavy margins in the girdle view and more or less broad evenly striated border, valves discoid 14.5-25µm. in diameter, central field with flexes striae and coarsely punctuate, striate 7-9 in 10µm.

This diatom was collected from dame site in KKDS – III , KKDS – V, and KKDS – VI

6) *Cyclotella operculata* (Ag.)Kutz.

PL. I. fig. 6

Valves with thin margins in the girdle view evenly striated border, valves discoid, 6-30µm. in diameter central field with flexes striae 13-15 in 10µm. fine.

This diatom was collected from dame site in KKDS – I, and KKDS – V .

7) *Cyclotella catenata* Brun.

PL.I Fig. 7.

Frustules found in chains; valves 17.4µm. in diameter arched, convex surface slightly depressed in the middle; middle field radially punctatae form radial striae strong 11-12 in 10µm.

This diatom was collected from dame site in KKDS – III.

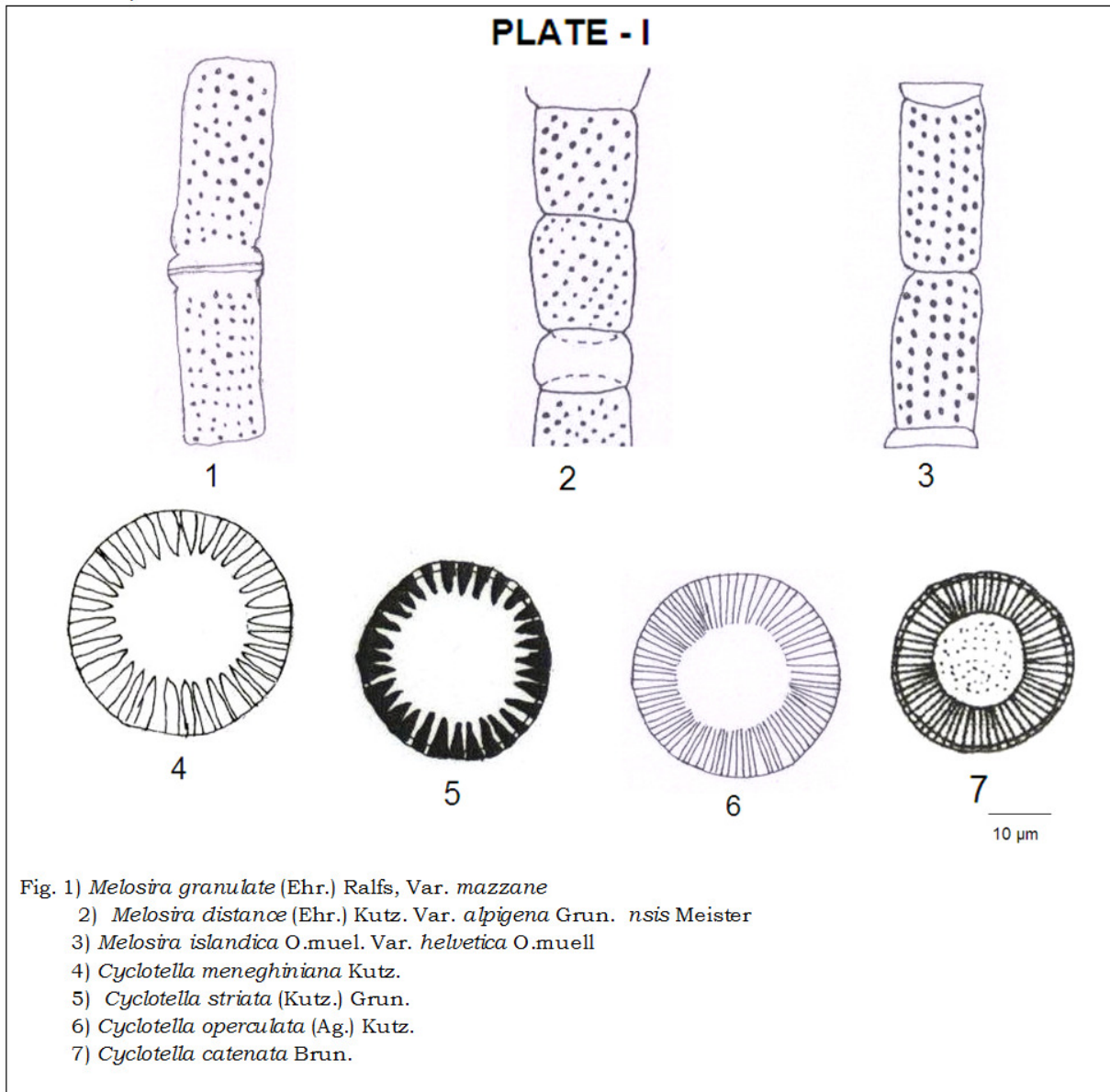


Fig. 1) *Melosira granulate* (Ehr.) Ralfs, Var. *mazzane*
 2) *Melosira distance* (Ehr.) Kutz. Var. *alpigena* Grun. *nsis* Meister
 3) *Melosira islandica* O.muel. Var. *helvetica* O.muell
 4) *Cyclotella meneghiniana* Kutz.
 5) *Cyclotella striata* (Kutz.) Grun.
 6) *Cyclotella operculata* (Ag.) Kutz.
 7) *Cyclotella catenata* Brun.

Result and Discussion

In present study only seven taxa of the centric diatoms were recorded from four site of dam viz.

KKDS - I; KKDS – III ; KKDS – V' and KKDS – VI.
 The genus *Melosira* represents three species *Melosira granulate* (Ehr.) Ralfs, Var. *mazzanensis* Meister;) *Meosira distance*

(Ehr.) Kutz. Var. *alpigena* Grun. *Melosira islandica* O.muell. Var. *helvetica* O.muell. and the genus ***Cyclotella*** represented by four species viz. ***Cyclotella meneghiniana* Kutz; *Cyclotella striata* (Kutz.) Grun.; *Cyclotella operculata* (Ag.)Kutz; *Cyclotella catenata* Brun** All the centric diatoms were observed epiphytic and benthic on aquatic plants and rocks .

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