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Zygnemataceae of Banshelki Dam, in Marathwada Region of Maharashtra

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Abstract: While working on algal taxonomy of Banshelki dam Udgir in the Marathwada region of Maharashtra during March 2016 to February 2017 the author came across some interesting members of zygnemataceae i.e.*Mougeotia* (06), *Zygnema* (04) and *Spirogyara* (07).

Key words: Zygnemataceae, Mougeotia, Zygnema, Spirogyara Marathwada.

INTRODUCTION

Review of literature reveals that, studies on algal taxonomy in abroad and in India have been done extensively by many research workers. India has a very rich and diversified algal flora. In the present century great advances have been made in the investigations of fresh water algae, marine algae and soil algae in many parts of the world and particular attention has been paid to their taxonomy, ecology and applied aspects. In Maharashtra tremendous work has been done on algal taxonomy by various workers. In Marathwada region of Maharashtra except few reports (Ashtekar 1980, Kamble 2008, Andhale 2008, Talekar 2009, Yadav 2010) very rare attention has been paid towards algal taxonomy, although the climatic conditions of Marathwada region are most suitable to grow algae luxuriantly and in diverse form, therefore to fulfil this lacuna, it has been decided to work on algal taxonomy of Udgir tehsil in Latur district Marathwada region of Maharashtra.

MATERIALS AND METHODS

The Banshelki dam is mainly constructed for the purpose of drinking water to the peoples of Udgir tehsil and also has a major source for irrigation. The dam is just 10kms away from the Udgir tehsil.The algal samples were collected for the period of one year from March 2016 to February 2017. The algal collections were made regularly from various sites dam water. Acid washed collection bottles were used for the collection of algal samples. On return to the laboratory from field, the collections were carefully observed under the microscope and important points were noted. All collections were preserved in 4% commercial formalin added with 5% glycerin. Identification of algal taxa was performed by referring to the standard literature on algae. Smith (1951, 1955), Prescott (1951), Randhawa (1959), Tiffany and Britton (1952), Scott and Prescott (1961).

SYSTEMATIC ENUMURATION

***Mougeotia bangalorensis* Iyengar (**Randhawa 1959, P. 171, F. 107A, a-b ;.)
Vegetative cells 15-18.5 µ in diameter, 80-102.5 µ long; chloroplast single, with 5-7 pyrenoids in a row; conjugation scalariform; conjugating cells straight; zygospores oblong elliptic in the enlarged conjugating tube and extending into one of the gametangia and slightly extending into the other gametangia, 30-34.8 µ in diameter, 20-22.5 µ long; spore wall yellow brown, smooth and obscured by the granular membranous residue left after conjugation in the gametangia.

***Mougeotia floridana* Transeau**
(Prescott 1951, P. 301; Tiffany and Britton 1952, P. 134; Randhawa 1959, P. 154, F. 74a,b.)
Vegetative cells 15-17.5 µ in diameter, 80-90 µ long; chloroplast with 6-8 pyrenoids in a single row; conjugation scalariform; zygospores occupying the middle of the receptive gametangium and partly in the conjugating tube, triangular, 32-34 µ in diameter, 36-40 µ long; spore wall yellow, smoth.

***Mougeotia jogensis* Iyenga (**Randhawa, 1959, P. 130, F. 22)
Vegetative cells 9-10.2 µ in diameter, 120-130 µ long; chloroplast with 5-7 pyrenoids in a single row; conjugation scalariform; zygospores formed in the greatly enlarged conjugating tubes; zygospores globose to ellipsoid, 20-23 µ in diameter; spore wall brown, smooth.

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Mougeotia punctata **Wittrock (**Randhawa 1959, P. 167, F. 99)
Vegetative cells 9.8-10 in diameter, 60-72.5 µ long; cells cylindrical, chloroplast with 4-6 pyrenoids in a row; conjugation scalariform; zygospores formed in the tube, dividing both the gametangia; zygospores quadrate with retuse margins, outer spore wall coarsely punctate or pitted; zygospores 20-24.8 µ in diameter, 20-27 µ long.

Mougeotia quadrangulata **Hassall (** Randhawa 1959, P. 165, F. 96.)
Vegetative cells 13-14.5 µ in diameter, 60-75a µ long, cylindrical, chloroplast with 8-9 pyrenoids in a row; conjugation scalariform, zygospores formed in the tube, dividing both the gametangia, zygospores quadrate 30-32 µ in diameter, 35-37 µ long, with straight or slightly retuse margins, spore wall finely scorbiculate or punctate, colourless

Mougeotia scalaris **Hassall**
(Czurda 1932, P. 67, F. 42a. b; Randhawa 1959, P. 133, F. 28; Prescott 1951, P. 304, P1. 71, F. 6,7; Tiffany and Britton 1952, P. 132, P1. 40, F. 419; kolkwitz and Krieger 1944, P. 128, F. 6,8.)
Vegetative cells 14-15.5 µ in diameter, 60-65 µ long; chloroplast with 4- 7 pyrenoids in a single row; conjugation scalariform; zygospores wholy formed in conjugating tubes, not dividing the gametangia; zygospores globose or broadly ovate, 26-30 µ in diameter, spore wall yellow-brown, smooth.

Mougeotia tumidula **Transeau (**Prescott1951, P.305, P1.71, F.2; Randhawa1959, P.163-164).
Vegetative cells 8-9.8 µ in diameter, 70-87 µ long; cells cylindrical, chloroplast with 6-8 pyrenoids in a single series; conjugation scalariform; zygospores formed in a conjugating tube, dividing both the gametangia; zygospores quadrangular, 25-29.2 µ in diameter, 28-32.5 µ long; both inner and outer spore walls minutely scorbiculate, cornors with two tumids.

Zygnema cyanosporum **Cleve**
(Czurda 1932, P. 106, F. 104; kolkwitz and Krieger 1944, P. 217, F. 220; Transeau 1951, P. 27; Prescott 1951, P. 325;Randhawa 1959, P. 225, F. 159.)
Vegetative cells 20-24.8 µ in diameter, 60-64.8 µ long; chloroplasts two, star shaped, conjugation scalariform; zygospores, globose, in the conjugation canal, 22-24.8 µ in diameter; zygospore wall composed of two layers, a thick, hyaline exospore and a bluish and smooth mesopore.

Zygnema melanosporum **Lagerheim (**Randhawa 1959, P. 246, F. 203)
Vegetative cells 20-22.5 µ in diameter, 47-50.5 µ long; chloroplasts two, star shaped; conjugation scalariform; zygosepores in one of the gametangia; receptive gametangia cylindric or slightly enlarged; zygospores ovoid to cylindric-ovoid, 15-19.8 µ diameter, 20-27.5 µ long.

Zygnema mucigenum **Randhawa (**Randhawa 1959. P. 243,244, F. 199a,b.)
Vegetative cells 13-14.8 µ in diameter, 35-50 µ long; chloroplasts two, more or less globose; conjugation scalariform; the conjugation canals are very much elongated, and zygospores are found in one of the gametangia; zygospores dark bluish green in colour, oval in shape, 14-15 µ in diameter, 25-27.5 µ long; mesospore thick, greenish bluish and prominently pitted.

Zygnema pectinatum **(Vaucher) Agardh (**Randhawa, 1959, P. 223, F. 155)
Vegetative cells 20-24.8 µ in diameter, 35-41.8 µ long; chloroplasts two, star shaped; conjugation scalariform; zygospores formed in the conjugating canals, globose to ovoid, 30-32 µ in diameter, 35-37.8 µ long; median spore wall brown.

Spirogyra biformis **Jao (**Randhawa 1959, P. 317, F. 293.)
Vegetative cells 30-35.2 µ in diameter, 100-115 µ long, with plane end walls; chloroplast 2, making 2.5-3 turns; conjugation scalariform; conjugation tube formed by both gametangia; fertile cells cylindric; zygospores ellipsoid with rounded ends, 25-28.5 µ in diameter, 40-43.2 µ long; median spore wall yellow, smooth.

Spirogyra fluviatilis **Hilse (**Prescott 1951, P. 314, P1. 73, F. 4,5;)
Vegetative cells 30-34.8µ in diameter, 100-110 µ long; with plane end walls, chloroplast 3-5 making 2-2.5 turns; conjugation scalariform; conjugation tube formed by both gametangia, fertile cells inflated; zygospores ovate; 20-24.8 µ in diameter, 35-39.8 µ long; mediam spore wall wrinkled, irregularly pitted.

Sprirogyra gibberosa **Jao**
(Randhawa 1959, P. 295,F. 252; Transeau 1951, P. 155, P1. 22, f. 10,11; Kolkwitz and Krieger 1944, P. 326, F. 438.)

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Vegetative cells 18-19 µ in diameter, 128-132 µ long; with plane end walls; chloroplast single, conjugation scalariform; conjugation tubes formed by the male gametangia; fertile cells inflated; zygospores ellipsoid, with more or less pointed ends, 20-30 µ in diameter, 37-43 µ long; median spore wall yellow, smooth.

Spirogyra micropunctata **Transeau (**Prescott 1951, P. 317, P1. 73, F.9;)
Vegetative cells 28-30 µ diameter, 100-107 µ long; with plane end walls; chloroplast single, conjugation scalariform, conjugation bube formed by the male gametangium; fertile cells slightly inflated; zygospores ellipsoid with broadly rounded ends, median spore wall punctate; zygospore 27-32 µ in diameter, 50-57.5 µ long.

Spirogyra neglecta **(Hassall) Kuetzing**
(Czurda 1932, P. 190, F. 200a,b; Kolkwitz and Krieger 1944, P. 351, F. 491; Transeau 1951, P. 175, P1. 27, F. 14, 15; Tiffany and Britton 1952, P. 152, P1. 45, F. 476, 477; Randhawa 1959, P. 324, F. 308.)
Vegetative cells 48-52.5 µ in diameter, 83.8-92 µ long; with plane end walls; chloroplast 3, making 2-3 turns; conjugation scalariform; conjugation tube formed by the both gametangia; fertile cells slightly swollen; zygospores oval, 42-45 µ in diameter, 62.5-64.8µ long; median spore wall brown, smooth.

Spirogyra subsalsa **Kuetzing (**Prescott 1951, P. 321, P1. 73, F. 1-3.)
Vegetative cells 20-23.8 µ diameter, 80-97.5 µ long, with plane end walls; chloroplast 2; conjugation scalariform; conjugation tubes formed by both the gametangia; fertile cells swollen; zygospores ellipsoid; 30-34.8 µ in diameter, 38-42.2 µ long; median spore wall smooth, brown, reticulate.

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