

Oedogoniales from Dhule and Nandurbar district, Maharashtra (India)

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ABSTRACT

During the study of systematic account *Oedogoniales* of Sakri and Navapur Taluka, district Dhule and Nandurbar, respectively, Maharashtra, the author collected 23 taxa belonging to three genera. *Oedogonium* Hirn. is a dominant genus followed by *Bulbochaete* Hirn. while *Oedocladium* Hirn. is monotypic. Out of 23 taxa, *Oedogonium orientale* Jao and *Bulbochaete borealis* Hirn. are first time recorded from India. Four taxa are new record for Maharashtra and 12 taxa were recorded second time from Maharashtra. The *Oedogoniales* of this region has not been studied earlier. This is the first ever attempt to explore, enumerate, and taxonomically evaluate the algal components of the area. Distribution of the taxa in India has been discussed. The quantitative availability of species is also noted.

KEY WORDS: Navapur, *Oedogoniales*, Sakri, Systematic account

INTRODUCTION

The good deal of literature is now available on Indian *Oedogoniales* - Ashtekar and Kamat (1978), Barhate and Tarar (1985), Chaturvedi and Pandey (1980), Dixit (1937), Gonzalves (1981), Gonzalves and Jain (1968; 1970), Gonzalves and Sonnad (1961), Gonzalves and Yalavigi (1956), Hirn (1900), Kamat (1963; 1965; 1967; 1972; 1974); Kant and Gupta (1998), Khan and Kukreti (1977), Prescott (1951), Randhawa (1938; 1939; 1940; 1941), Smith (1950), Somashekar (1984), etc. No information exists on the *Oedogoniales* of Sakri and Navapur Taluka. 23 taxa belonging to three genera were collected from different places. Out of 23 taxa, two are reported for the first time from India, five taxa are new to Maharashtra, and 12 taxa have been reported second time from Maharashtra.

MATERIALS AND METHODS

During the study of algal flora of this region, the survey of *Oedogoniales* was carried out from December 1990 to January 1992 and March 1998 to March 1999. The collections were made at every fortnight from all possible places. The materials were preserved in 4% formaldehyde.

The *Oedogoniales* were identified with the help of available publications and monograph, i.e., Ashtekar and Kamat

(1978), Dixit (1937), Gonzalves (1981), Gonzalves and Jain (1968; 1970), Gonzalves and Sonnad (1961), Gonzalves and Yalavigi (1956), Hirn (1900), Kamat (1963; 1965; 1967; 1972; 1974), Kant and Gupta (1998), Prescott (1951), Randhawa (1938; 1939; 1940; 1941), Singh (1938), Smith (1950), Somashekar (1984).

Distribution of the taxa in India has been discussed. The quantitative availability of species is also noted. For quantitative abundance, abbreviations are used as follows: C - Common; RC - Rather common; VC - Very common; R - Rare; RR - Rather rare; VVR - Very very rare; VVVR - Very very very rare.

Systematic Account

- *Oedogoniales* G.S.West
- *Oedogoniaceae* Hirn.

Oedogonium Hirn

Oedogonium intermedium Hirn. var. *intermedium* Hirn. form *intermedium* Hirn. (Plate 1 - 1)

- Habitat: Gently adhered on the submerged rock in small pond on stream bank (RC), Dusane.
- Distribution: Maharashtra - Borivali (Dixit, 1937), Kolhapur (Kamat, 1963); Uttar Pradesh - Varanasi, Gorakhpur, Mirzapur, Basti; Andhra Pradesh - Kachiguda (Gonzalves, 1981).

***Oedogonium oviforme* (Lew) Hirn. var. *oviforme* Lew. (Plate 1 - 2)**

- Habitat: On river bank (C), Nagzari Dam
- Distribution: Maharashtra - Bombay: Thana (Gonzalves and Jain, 1970).

***Oedogonium robustum* (West and West) Tiff. (Plate 1 - 3)**

- Habitat: On submerged twig in roadside pond (C), Nizampur
- Distribution: Maharashtra - Kolhapur (Kamat, 1963), Bombay: Thana (Gonzalves and Jain, 1970).

***Oedogonium macharastrense* Kam. (Plate 1 - 4)**

- Habitat: On muddy soil, attached to small stone (RR), Kondaibari
- Distribution: Maharashtra - Kolhapur (Kamat, 1963), Khandesh: Velhala talao (Barhate and Tarar, 1985).

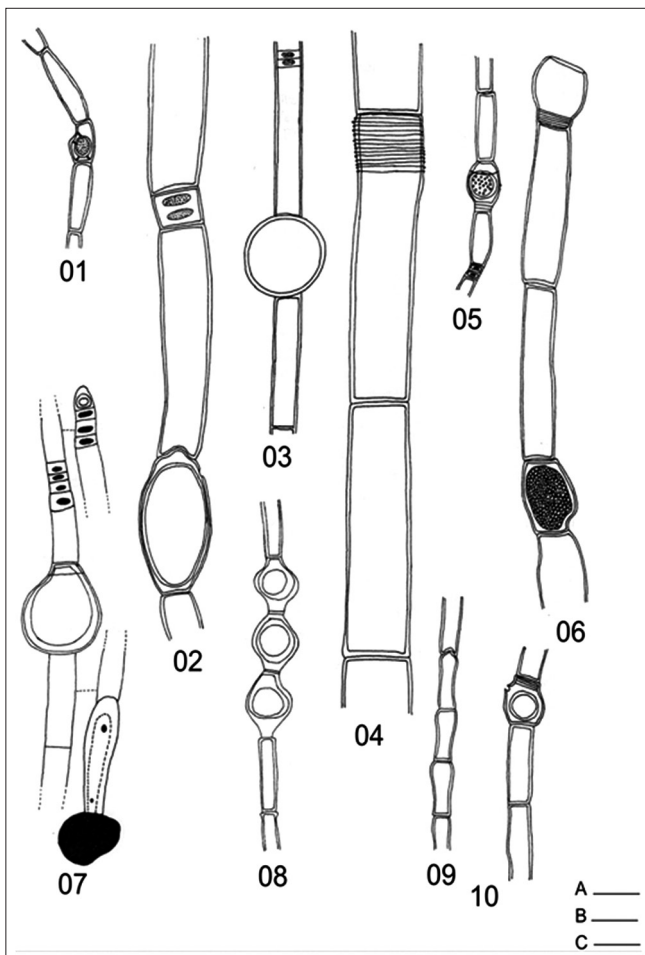


Plate 1: (Fig. 01) *Oedogonium intermedium* Hirn. var. *intermedium* Hirn. form *intermedium* Hirn. (Fig. 02) *Oedogonium oviforme* (Lew) Hirn. var. *oviforme* Lew. (Fig. 03) *Oedogonium robustum* (West & West) Tiff. (Fig. 04) *Oedogonium macharastrense* Kam. (Fig. 05) *Oedogonium mysorensense* Gonz. (Fig. 06) *Oedogonium oblongellum* Kirch ex. Hirn. var. *oblongellum* Hirn. (Fig. 07) *Oedogonium terrestris* Randhawa (Fig. 08) *Oedogonium hatei* Kamat (Fig. 09) *Oedogonium kolhapurensense* Kamat (Fig. 10) *Oedogonium anomalum* Hirn.

***Oedogonium mysorensense* Gonz. (Plate 1 - 5)**

- Habitat: Submerged in a small pond (RC), Dahewl
- Distribution: Karnataka - Desur (Gonzalves and Sonnad, 1961).

***Oedogonium oblongellum* Kirch ex. Hirn. var. *oblongellum* Hirn. (Plate 1 - 6)**

- Habitat: In a small pond (C), Cahranmal
- Distribution: Maharashtra - Bombay: Thana, Asangaon (Gonzalves and Jain, 1970), Karnataka - Naglavi (Gonzalves, 1981); Punjab - Hoshiarpur (Randhawa, 1938).

***Oedogonium terrestris* Randhawa (Plate 1 - 7)**

- Habitat: On grass blade and on moist rock (VVVR), Kondaibari

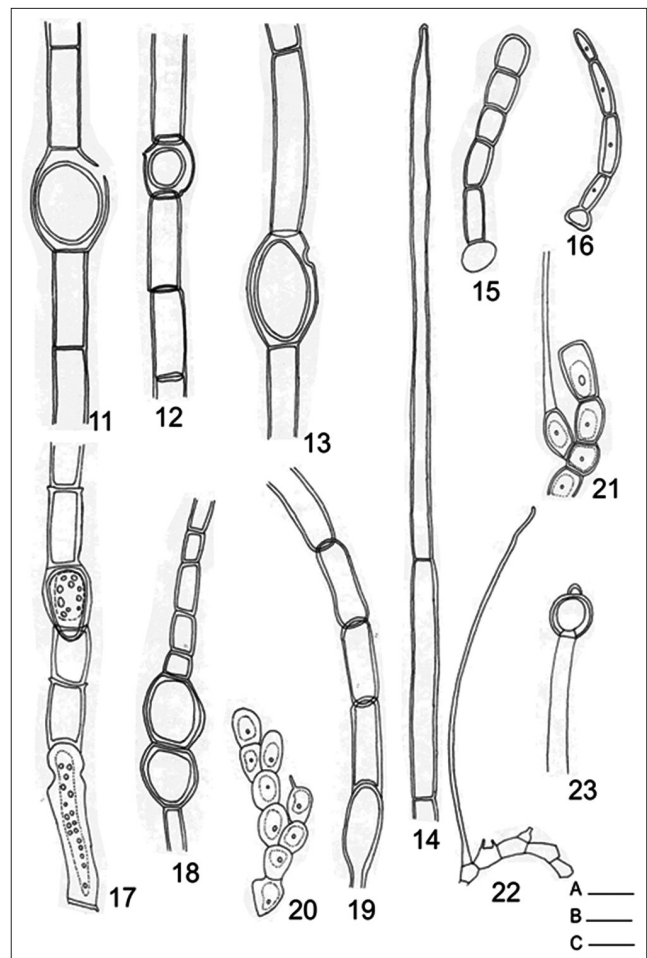


Plate 2: (Fig. 11) *Oedogonium glabrum* Hallas form *maharastrense* Kamat. (Fig. 12) *Oedogonium hindustanense* var. *minus* Gonz. & Jain (Fig. 13) *Oedogonium sociale* Hirn form *kanwaense* Singh (Fig. 14) *Oedogonium orientale* Jao (Fig. 15) *Oedogonium welwitschii* West et. West (Fig. 16) *Oedogonium welwitschii* West et. West var. *welwitschii* Tiffany form *welwitschii* Tiffany (Fig. 17) *Oedogonium repens* Kamat (Fig. 18) *Oedogonium tapeinosporum* Wittrock et. Hirn. (Fig. 19) *Oedogonium entirecticulosporum* Gonz. & Jain (Fig. 20) *Bulbochaete nana* Hirn. var. *nana* Hirn. (Fig. 21) *Bulbochaete borealis* Hirn. (Fig. 22) *Bulbochaete gigantea* Hirn. (Fig. 23) *Oedocladium operculatum* Tiffany

- Distribution: Uttar Pradesh - Fyzabad (Randhawa, 1939), Bareilly (Chaturvedi and Pandey, 1980); Karnataka - River Kapila (Somashekar, 1984).

***Oedogonium hatei* Kamat (Plate 1 - 8)**

- Habitat: On a submerged twig, in small pond (RC), Wasdare
- Distribution: Maharashtra - Kolhapur (Kamat, 1963).

***Oedogonium kolhapurensis* Kamat (Plate 1 - 9)**

- Habitat: Stream near Gangapur (RR), Gokul Nala
- Distribution: Maharashtra - Kolhapur (Kamat, 1963).

***Oedogonium anomalum* Hirn. (Plate 1 - 10)**

- Habitat: Attached to submerged vegetation (RC), Vesarwadi
- Distribution: Maharashtra - Neral, Alibag (Kamat, 1968).

***Oedogonium glabrum* Hallas form *maharastrense* Kamat. (Plate 2 - 11)**

- Habitat: On a submerged twig (C), Chincpada
- Distribution: Maharashtra - Kolhapur (Kamat, 1963).

***Oedogonium hindustanense* var. *minus* Gonz. and Jain (Plate 2 - 12)**

- Habitat: On a submerged twig in a small pond (RC), Sukwel
- Distribution: Maharashtra - Bombay:Thana (Gonzalves and Jain, 1970); Uttarakhand - Dehradun (Khan and Kukreti, 1977).

***Oedogonium sociale* Hirn form *kanwaense* Singh (Plate 2 - 13)**

- Habitat: On stream bank (RR), Ukalapani
- Distribution: Maharashtra - Bombay: Thana, Saphala (Gonzalves and Jain, 1970); Uttar Pradesh – Banaras (Singh, 1938); Uttarakhand - Dehradun (Khan and Kukreti, 1977).

***Oedogonium orientale* Jao (Plate 2 - 14)**

- Habitat: In a small pond, on a submerged twig (R), Ukalapani
- Distribution: Not recorded.

***Oedogonium welwitschii* West et. West (Plate 2 - 15)**

- Habitat: Attached to the floating stem of *Ipomea fistulosa* (C), Navagaon
- Distribution: Maharashtra - Harsool (Ashtekar and Kamat, 1978).

***O. welwitschii* West et. West var. *welwitschii* Tiffany form *welwitschii* Tiffany (Plate 2 - 16)**

- Habitat: On river bank and in waste water passage (VC), Borkekhadi

- Distribution: Andhra Pradesh - Hyderabad; Karnataka - Dharwar (Gonzalves, 1981).

***Oedogonium repens* Kamat (Plate 2 - 17)**

- Habitat: On a river bank, attached to submerged vegetation (C), Sukapur
- Distribution: Maharashtra - Kolhapur (Kamat, 1963).

***Oedogonium tapeinosporum* Wittrock et. Hirn. (Plate 2 - 18)**

- Habitat: Attached to rock near stream (C), Kudashe
- Distribution: Rajasthan - Mount Abu (Kamat, 1967); Maharashtra - Kolhapur (Kamat, 1965), Alibag (Kamat, 1968), Amravati, Tiroda (Kamat, 1972), Aurangabad (Kamat, 1974), Harsool, Mhaismal Aurangabad, Chowka (Ashtekar and Kamat, 1978); Uttarkhand - Deharadun (Khan and Kukreti, 1977); Jammu and Kashmir - Ladakh (Kant and Gupta, 1998).

***Oedogonium dentireticulosporum* Gonz. and Jain (Plate 2 - 19)**

- Habitat: On river bank (VC), Shrawani
- Distribution: Maharashtra - Bombay:Thana (Gonzalves and Jain, 1968).

***Bulbochaete* Hirn.**

***Bulbochaete nana* Hirn. var. *nana* Hirn. (Plate 2 - 20)**

- Habitat: On a submerged twig in a small pond. Growing with *Oedogonium* sp. (R) Navapur
- Distribution: Uttar Pradesh - Ballia (Gonzalves, 1981).

***Bulbochaete borealis* Hirn. (Plate 2 - 21)**

- Habitat: On a submerged twig in a small pond. Growing with *Oedogonium* sp. (R) Rayangan
- Distribution: Not recorded.

***Bulbochaete gigantea* Hirn. (Plate 2 - 22)**

- Habitat: On a submerged twig in small pond (R) Rangawali
- Distribution: Jammu and Kashmir - Ladakh (Kant and Gupta, 1998); Karnataka - Alnavar (Gonzalves, 1981).

***Oedocladium* Hirn.**

***Oedocladium operculatum* Tiffany (Plate 2 - 23)**

- Habitat: On moist soil of river bank (VVR), Navapur
- Distribution: Maharashtra - Bombay: Mokhada Vada (Gonzalves and Jain, 1970); Uttar Pradesh - Almora (Randhawa, 1940); Karnataka - Dharwar (Gonzalves and Yalavigi, 1956); Himalayan range - Kumaon (Randhawa, 1941).

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