

Vaucheria undulata Jao from Srinagar, J&K

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SUMMARY

Vaucheria undulata Jao of the section corniculatae of class Xanthophyceae has been collected from flower beds of one of the resident's house near Bhagat Barzulla, Srinagar (the summer capital of J&K state) during Nov., 2003. The present alga exhibited prominent features. *i.e.* spiralled siphons with lamellose oospore wall. Ecologically it preferred to grow in highly alkaline (pH 9.2), sand silty soil with 14 per cent of moisture and temperature ranging from 15-20^o C. The present alga has been collected for the first time from India *i.e.* Srinagar, J&K state and constitutes a new record.

Key words : Vaucheria, Xanthophyceae, Spiralled siphons and Lamellose oospore Wall.

Family Vaucheriaceae represented by 9 sections (Woronina, Tubuligerae, Globiferae, Corniculatae, Anomalae, Androphorae, Piloboloidae, Contortae and Pseudoanomalae) of which only Corniculatae has been extensively studied from India (Randhawa, 1939; Saxena, 1962; Venkataraman, 1961; Patel, 1969; Santra and Adhya, 1976). As far as J&K state is concerned, no work on Vaucheriaceae has been done except for some stray references (Venkataraman, 1961; Saxena, 1962; Anand, 1977). Keeping this in mind, a survey on Vaucheriaceae of the State was conducted and collections were made from different habitats. During these explorations *Vaucheria undulata* Jao has been collected from flower beds of one of the resident's house near Bhagat Barzulla, Srinagar, summer capital of J&K state.

MATERIALS AND METHODS

V. undulata Jao forms yellowish green, soft filaments mat on the soil. Material, thus collected was kept under observations in the culture room with photoperiod of 16L:8D of inflorescence light of 464 lux, in Bold's Basal medium. Development of sex organs occurred after 2-3 weeks.

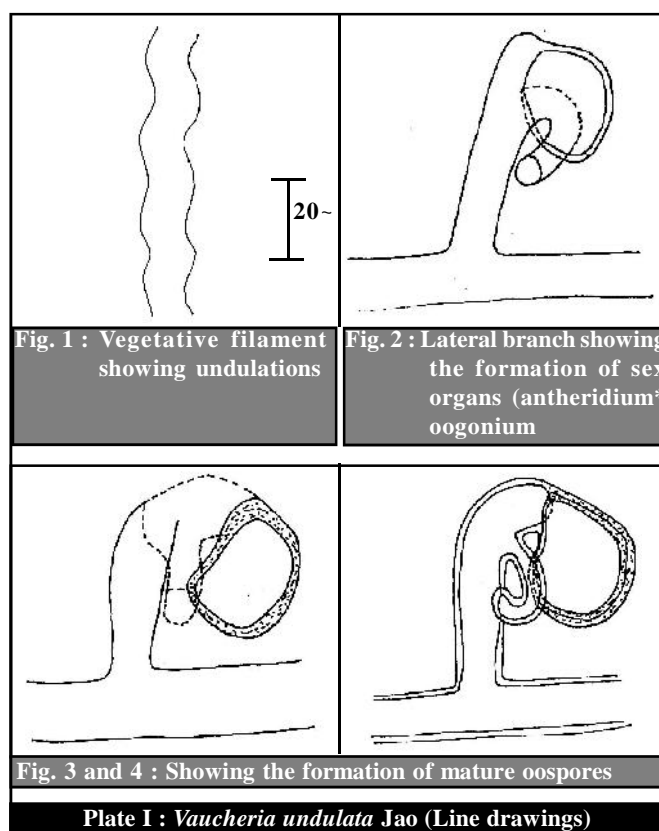
Filaments 26-46 μ broad, commonly spiraling especially thinner ones; oogonia one per fruiting branch, hemispherical, beak distinct, 50-58 μ broad and 60-70 μ long, antheridium single, pedicelled and circinate, opening by a terminal pore, 16-22 μ broad, oospore filling the oogonium, 60-70 μ broad and 80-90 μ long, membrane thick and lamellose (Pl. I, Fig. 1, 2, 3, 4; Pl. II Figs. 5, 6, 7, 8, 9, 10).

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RESULTS AND DISCUSSION

Present alga coincides with the description given by Venkataraman (1961) especially spiralled siphon and lamellose nature of oospore wall except for some variations in the size of oogonia. The present specimen possesses smaller oogonia (50-58 x 60-70 μ) than those described by Venkataraman, 1961 (62-71 x 80-84 μ). However, dimensions smaller (44-47 x 52-55 μ) than the present material have been recorded by Sarma, (1974). Sarma (1974) emphasized that the size should be given less importance since such variations are ecological than

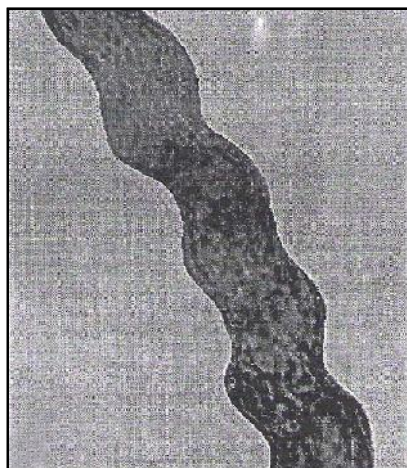


Fig. 5 : Vegetative filament showing undulations (x 400)

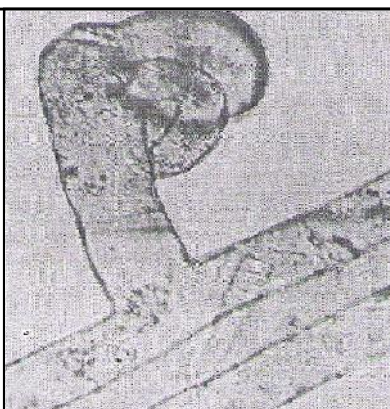


Fig. 6 : Lateral branch showing the formation of sex organs (antheridium* oogonium) (x400)

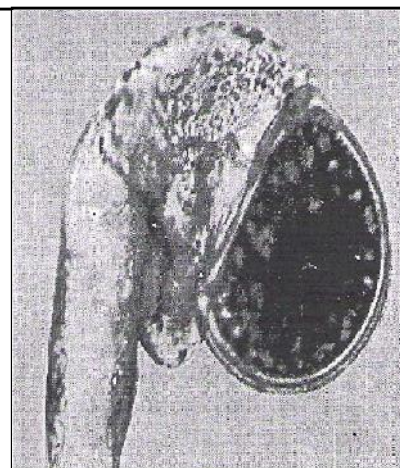


Fig. 7 : Showing the formation of mature oospores (x 400)

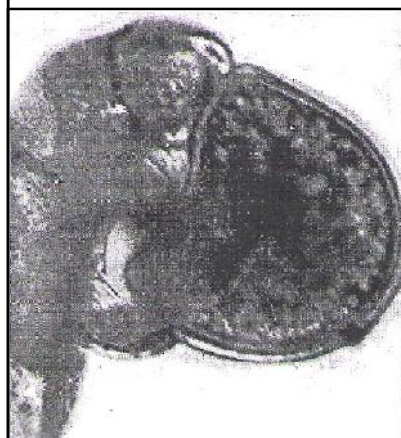


Fig. 8 : Showing the formation of mature oospores (x 400)



Fig. 9 and 10 : Showing the lamelattted wall layers of mature oospores (x1000)



Plate II : *Vaucheria undulata* Jao (Microphotographs)

genetical whereas shape of antheridia and oogonia are more significant taxonomically.

Geographically species of *Vaucheria* exhibit remarkable variations *i.e.* American specimens being larger than those of Chinese specimens which otherwise agree with those of African specimens (Sarma, 1974). However, specimens from sleeper Island (Newzealand) are of much smaller dimensions than those described from Africa, America and China.

The prominent features *i.e.* spiraled siphons and lamellose oospore wall of present studied alga confirms to the description of *V. undulata*.

Ecologically, it prefers to grow in highly alkaline (pH-9.2) sand –silty soil with 14 per cent of moisture contents and temperature ranging from 15-20°C. Variations in the oogonia dimensions are ecological and are effected by

temperature, light period and moisture content which needs to be studied further in detail and work is under progress.

Present alga has been recorded for the first time from India and J&K state in particular. Specimens marked as NS0031 have been deposited in the Herbarium Section of the Department of Botany, University of Jammu, Jammu.

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