

A DESCRIPTION OF A NEW SPECIES OF *SIROGONIUM* (CHLOROPHYCEAE, ZYGNEMATALES), A GENUS NOT PREVIOUSLY REPORTED FROM PAKISTAN

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Abstract

Occurrence of the genus *Sirogonium* Kütz., is a new record from Pakistan and a new species, *S. khoriensis* Masud-.et Nizam. *sp. nov.* has been described. This species is characterized by having a constant number of 3 chloroplasts and also in thickness of the exine.

Introduction

In an endeavour to collect algal flora from various water-bodies around Lahore (Punjab-Pakistan) Khori, near Murredeke was visited by the senior author in March 1987. It was found that members of the order Zygnematales were dominant i.e., *Spirogyra* Link, *Zygogonium* Kütz., *Zygnemopsis* (Skuja) Trans. and Desmids. In the collection *Spirogyra*-like filaments were detected which turned out to be *Sirogonium* Kütz., a genus previously un-reported from Pakistan. A thorough examination of these filaments proved to be a new species, *S. khoriensis* Masud-. and Nizam., and is being described in detail.

Materials and Methods

Materials were fixed in 4% formalin-water solution for detail study and some were mounted on herbarium sheets which were deposited in the Herbarium, Botany Department, Govt. College, Lahore.

Description of the Species

Sirogonium khoriensis Masud-. et Nizam. *sp. nov.*

Descriptio: Cellulis vegetativis (45-) 55-70 x (90-) 150-170 (-200) μm , septis planis; chromatophoris 3, directis; conjugationis directis; cellulalis geneculatis et abbreviatis; gametangia masculis (40-) 50-60 x (60-) 90-95 μm , reflexis; gametangia feminis reflexis, inflatis, 45-60 (-70) x (115-) 120-140 (-150) μm ; zygosporis ellipsoidis e globosis (45-) 60-75 x (80-) 115-130 μm , sporam paries 4-6 μm latis; mesosporis laevis 2-3 μm latis.

Holotypus: No. 1006, Khori, 30 km Lahoras borealis (Leg. Masud-ul-Hassan, 7-3-1987).

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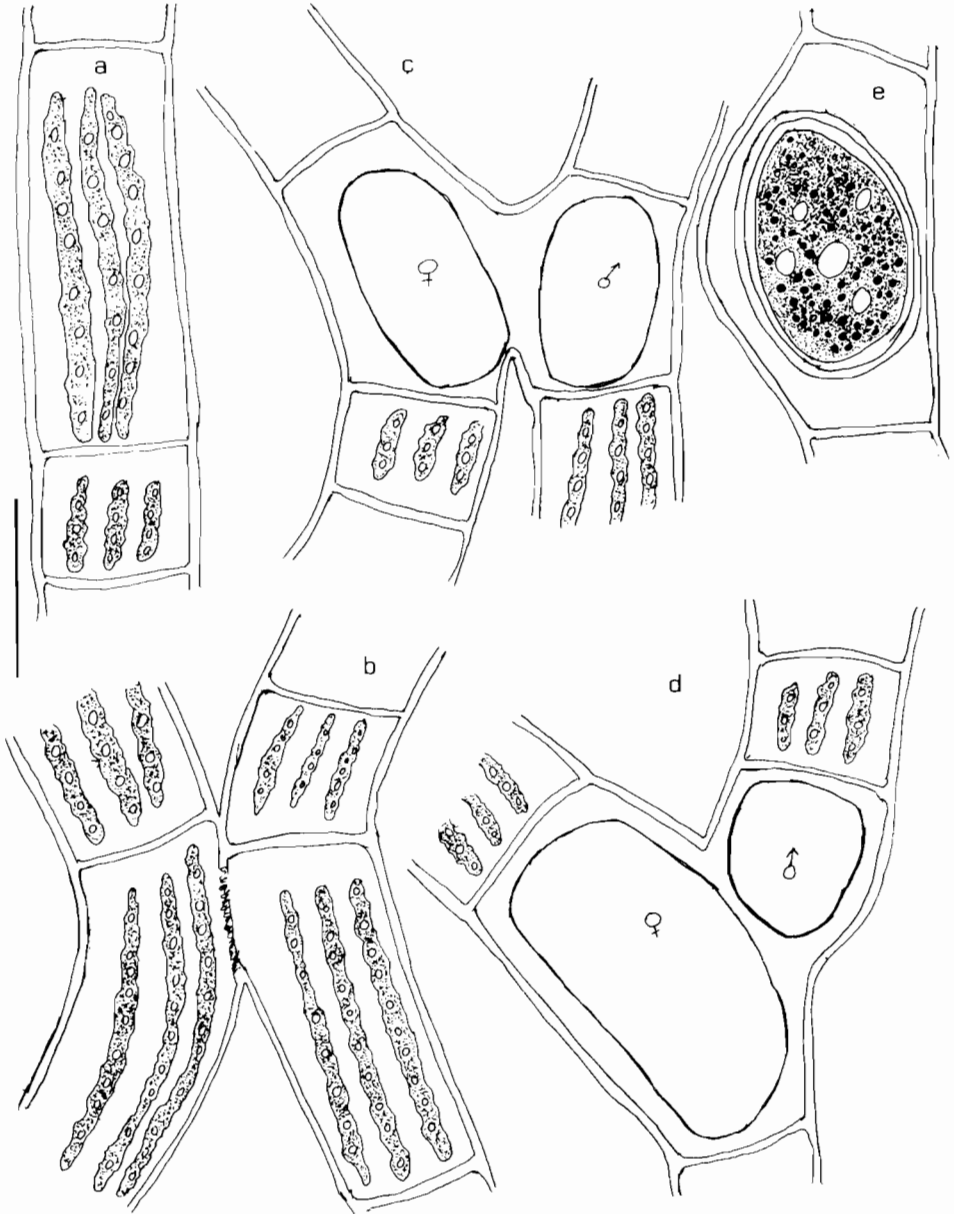


Fig.1. *Sirogonium khoriensis* Masud-.et Nizam. *sp. nov.* (a) A vegetative cell. (b) Early stage in conjugation with a pectic ring around adhesive disc. (c) Conjugation pattern. (d) Conjugation through end-wall of gametangial filament. (e) A zygospore, Scale 50 μ m.

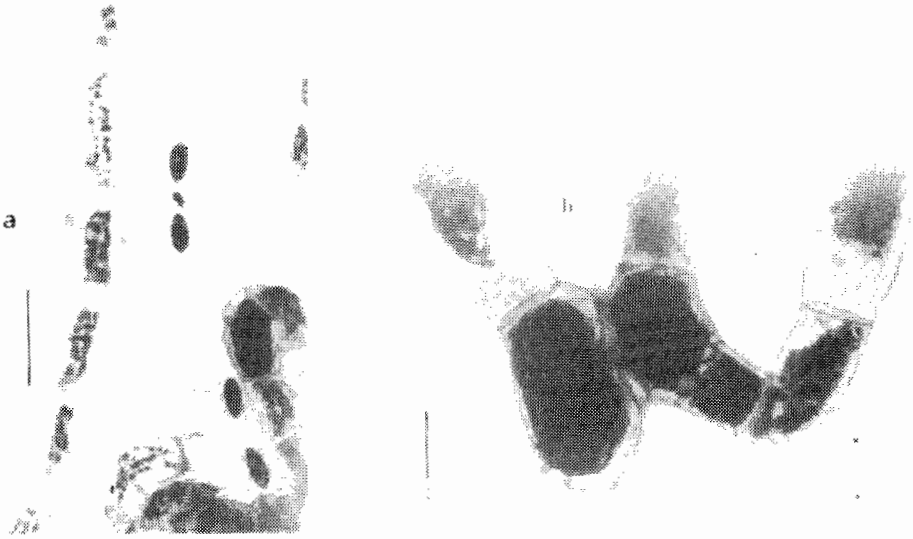


Fig.2. *Sirogonium khoriensis* Masud-.et Nizam. sp. nov. (a) A vegetative filament showing chloroplasts. Scale 100 μm (b) Conjugation pattern. Scale 25 μm .

Vegetative cells (45-) 55-70 x (90-) 150-170 (-200) μm ; septa plane; chloroplasts 3, nearly straight, conjugation direct; cells geniculate and shortened; male gametangia (40-) 50-60 x (60-) 90-95 μm , reflex; female gametangia reflex, inflated, 45-60 (-70) x (115-) 120-140 (-150) μm ; zygospores ellipsoid or globose (45-) 60-75 x (80-) 115-130 μm , spore wall 4-6 μm thick, median spore wall smooth, 2-3 μm thick.

Holotype: No.1006 Khor-Murredke, 30km North of Lahore (Leg. Masud-ul-Hassan, 7-3-1987). Collected from freshwater ponds or pools along the Grand Trunk Road.

Sirogonium khoriensis Masud-. et. Nizam., resembles *S. sticticum* (J.E. Smith) Kütz., in having a smooth median spore wall but differs from it in diameter of the vegetative filaments and having a constant number of 3 chloroplasts throughout the filament unlike in the latter species where the number of chloroplasts varies from 3-6. *S. khoriensis* is related to *S. reticulatum* Randhwa (1958) from which it differs in the diameter of the vegetative filament, number of chloroplasts and having a smooth median spore wall. *S. khoriensis* also resembles *S. phacosporum* Skuja in diameter of vegetative filaments and in the thickness of median spore wall, but differs in number of chloroplasts, shape and size of zygospore and in the ornamentation of median spore wall i.e., finely reticulate-scribulate.

Acknowledgements

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