Two New Taxa of Spirogyra

by

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During extensive collections of conjugalean forms in the course of cytotaxonomic studies on Zygnemaceae, a number of new taxa were collected. It is proposed to record and describe these in due course. One new species and a new variety of Spirogyra are being described here.

1. Spirogyra varshaii spec. nov. (Figs. 1, 2, 3, 6 & 7)

Vegetative cells 105—118 (—130) μ latae, 88—118 μ longae, parietibus apicalibus planis, chloroplastis 7—10 efficientibus 0.5—1 spiram in singulis cellulis. Conjugatio scalariformis, tubulis efformatis ab utroque gametangio; gametangia mascula 105—118 μ lata, 90—120 μ longa; gametangia feminea 108—118 μ lata, 95—130 μ longa; cellulis femineis cylindraceis, non tumescentibus, conjugationis canal 28—38 μ lato; zygosporae ellipsoideae, 80—92 μ latae, 118—145 μ longae; exosporio levii, tenui, incolori; mesosporio denticeoli, crasso, aureo; endosporio levii, tenui, incolori.

Habitat in a pool near Teli Bagh, on the outskirts of Lucknow, lect. 16 Sept. 1967, et positus in Algarum collection in Univ. Lucknow sub numero 175.

Spirogyra varshaii spec. nov. (Figs. 1, 2, 3, 6 & 7)

Vegetative cells 105—118 (—130) μ broad, 88—118 μ long, with plane end-walls; chloroplasts 7—10, making 0.5—1 turn in each cell. Conjugation scalariform, tubes formed by both gametangia; male gametangia 105—118 μ broad, 90—120 μ long; female gametangia 108—118 μ broad, 95—130 μ long; female cells cylindrical, unswollen, conjugation canal 28—38 μ broad, zygosporae ellipsoidae, 80—92 μ longae, exosporium smooth, thin, colourless, mesosporium subdenticulate to denticulate, thick, golden-yellow, endosporium smooth, thin, colourless.

Habitat in a pool near Teli Bagh, on the outskirts of Lucknow,
dated 16th Sept. 1967. The material is deposited under No. 175 in the Algal Collections, Lucknow University.

The species can be compared with Spirogyra verruculosa JAO and Spirogyra chakiense KOLKWITZ & KRIEGER (cf. TRANSEAU 1951, RANDHAWA 1959). It agrees with Spirogyra verruculosa in width of the filament, in the shape of the zygospore and in having unswollen female gametangia. But it differs from S. verruculosa in having higher number of chloroplasts, smaller zygospores and in the colour and ornamentation of the mesospore.

With S. chakiense it resembles in the number of chloroplasts, in possessing unswollen female gametangia and in the shape of the zygospore, but differs from it in having broader filaments and bigger zygospores. The colour and ornamentation of the mesospore is also quite different.

It, therefore, is distinctly a new species of the genus to be named Spirogyra varshaii as it grows in the ‘Varsha’ (rainy) season.

2. Spirogyra chakiense KOLKWITZ & KRIEGER var. lucknowense var. nov. (Figs. 4, 5)
Cellulæ vegetativæ 88 — 90 µ latae, 75 — 159 µ longæ, parie-

Figs. 1—3. Spirogyra varshaii spec. nov. Fig. 1. A vegetative cell showing chloroplasts. Fig. 2. Two conjugating cells showing early stage in scalariform conjugation. Fig. 3. Portion of conjugating filaments with an ellipsoid zygospore in the female cell and the corresponding empty male cell.
Figs. 4 & 5. Spirogyra chakiense KOLKWITZ & KRIEGER var. lucknowense var. nov. Fig. 4. Two conjugating cells showing the empty male cell and the female cell containing the zygospore. Fig. 5. Zygospore wall showing type of ornamentation. (Magnifications; Figs. 1—4, x 125; Fig. 5, x 840).