

NOTES ON ZYGNEMATACEAE¹

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During the past year an effort has been made to revise my keys to the genera and species of the Zygnemataceae. Many old specimens have been re-examined and many new collections have been studied. As a result of these investigations the following changes in specific designations are proposed, and four new species are described.

Spirogyra triplicata (Collins) comb. nov.

= *S. decimina* var. *triplicata* Collins 1912.

Phycotheca Bor.-Amer. No. 960; also Green Algae of North America, p. 110.

Spirogyra tropica (G. S. West) comb. nov.

= *S. decimina* var. *tropica* W. & G. S. West 1901.

Flora of Koh Chang, Bot. Tidsskr. 24: 161.

Spirogyra bichromatophora (Randhawa) comb. nov.

= *S. gallica* var. *bichromatophora* Randhawa 1938.

Proc. Indian Acad. Sci. 8: 353.

Spirogyra minor (Schmidle) comb. nov.

= *S. malmeana* var. *minor* Schmidle 1901.

Hedwigia 40: 47.

Spirogyra prescottii (Prescott) comb. nov.

= *Spirogyra collinsii* var. *minor* Prescott 1942.

Amer. Midland Naturalist, 27: 673, Pl. 4, Fig. 15-17.

Spirogyra regularis (Cedercreutz) comb. nov.

= *Spirogyra reticulata* var. *regularis* Cedercreutz 1924.

Acta. Soc. pro Fauna et Flora Fennica 55, No. 2, p. 3.

Spirogyra taftiana sp. nov.

Vegetative cells 18-25 μ x 50-96 μ with plane end walls, one chromatophore making 2-4 turns in the cell; conjugation scalariform, tubes formed by both gametangia; receptive gametangia enlarged or fusiform inflated; sterile cells often bulliform; zygospores ellipsoid 24-34 μ x 42-80 μ , median wall yellow, distinctly and densely punctate, pits more or less angular.

Huntsville, Texas (C. E. Taft Collection).

Spirogyra visenda sp. nov.

Vegetative cells 40-45 μ x 130-150 μ , with plane end walls; one narrow chromatophore making 4-9 turns in the cell; conjugation scalariform, with broad tubes formed wholly by the male gametangia; receptive gametangia inflated to 60-80 μ ; zygospores ellipsoid, sometimes ovoid 55-65 μ x 92-124 μ , median spore wall yellow, smooth.

Columbus, Mississippi, April 14, 1925.

Both gametangia are reflexed and the conjugating pairs are separated by vegetative cells.

Sirogonium melanosporum (Randhawa) comb. nov.

= *Sirogonium ventersicum* var. *melanosporum* Randhawa 1938, Proc. Indian Acad. Sci. 8: 364.

Sirogonium pseudofloridanum (Prescott) comb. nov.

= *Spirogyra pseudofloridanum* Prescott 1944, Farlowia 1: 360-361, Fig. 1.

¹Papers from the Department of Botany of the Ohio State University No. 472.

Sirogonium megasporum (Jao) comb. nov.

= *Sirogonium sticticum* var. *megasporum* Jao 1935, Sinensia 6: 645, Pl. 12.

Sirogonium hui (Li) comb. nov.

= *Spirogyra hui* Li 1938, Bull. Fan Inst. Biol., Bot. Ser. 8: 91.

Zygnema cylindrospermum comb. nov.

= *Z. stellinum* var. *cylindrospermum* W. & G. S. West 1905.

Transac. & Proc. Bot. Soc. Edinburgh 23: 3-40, Pl. 1, Fig. 2-5.

Zygnemopsis orientalis comb. nov.

= *Debarya desmidioides* var. *orientalis* Carter 1926.

Records Bot. Survey of India 9: 281.

Zygnemopsis tiffaniana comb. nov.

= *Debarya cruciata* Price 1911. New Phytologist 10: 87; idem 11: 60.

Also *Zygnemopsis cruciata* (Price) Transeau 1934, and *Mougeotia cruciata* (Price) Czurda 1932.

Debarya ackleyana sp. nov.

Vegetative cells 12-15 μ x 90-140 μ with a single ribbon-like axile chromatophore with about 8 pyrenoids; conjugation scalariform, tubes long and slender at first, later the median spore wall becomes rounded and the sporangium wall is perfectly distinct; zygospore golden yellow mostly compressed globose, sometimes ovoid, 50-54 μ x 52-65 μ , median wall tricarinate, the lateral keels finely ruffled and very distinct, with corresponding corrugations between the keels; the middle keel thin, radially striate and up to 10 μ wide; polar walls obscurely pitted and without a "hub."

U. S.: Michigan (Ackley Coll.), Massachusetts (Bullard Coll.).

Named for Dr. Alma Ackley of Wayne University who collected the type specimens near Douglas Lake, Michigan.

Mougeotia africana comb. nov.

= *Debarya africana* G. S. West 1907. Jour. Linn. Soc. Bot. 38 104, Pl. 5, Fig. 3.

Mougeotia rava sp. nov.

Vegetative cells 8-12 μ x 30-120 μ , chromatophore with 4 to 8 pyrenoids in a row; reproduction by aplanospores which are formed mostly outside the recurved sporiferous cells; aplanospores globose 16-20 μ in diameter, median wall gray-brown and smooth.

U. S.: Mississippi, Starkville; Louisiana, Alexandria (Hicks Coll.); Texas, Austin (Taft Coll.).

This species resembles *M. calcarea*, but differs in being aplanosporic and having gray-brown spores.