Notes on Zygnemataceae

Transeau, Edgar Nelson
NOTES ON ZYGNEMATACEAE

E. N. TRANSEAU
The Ohio State University
Columbus, Ohio

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

**Spirogyra bichromatophora** (Randhawa) comb. nov.
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  = *S. gallica* var. *bichromatophora* Randhawa 1938.
  Proc. Indian Acad. Sci. 8: 353.

**Spirogyra minor** (Schmidle) comb. nov.
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  = *S. malmeana* var. *minor* Schmidle 1901.
  Hedwigia 40: 47.

**Spirogyra prescottii** (Prescott) comb. nov.
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  = *Spirogyra collinsii* var. *minor* Prescott 1942.
  Amer. Midland Naturalist, 27: 673, Pl. 4, Fig. 15–17.

**Spirogyra regularis** (Cedercreutz) comb. nov.
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  = *Spirogyra reticulata* var. *regularis* Cedercreutz 1924.

**Spirogyra taftiana** sp. nov.
- Vegetative cells 18–25μ x 50–96μ 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 24–34μ x 42–80μ, median wall yellow, distinctly and densely punctate, pits more or less angular.
  Huntsville, Texas (C. E. Taft Collection).

**Spirogyra visenda** sp. nov.
- Vegetative cells 40–45μ x 130–150μ, 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 60–80μ; zygospores ellipsoid, sometimes ovoid 55–65μ x 92–124μ, median spore wall yellow, smooth.
  Columbus, Missippi, April 14, 1925.
  Both gametangia are reflexed and the conjugating pairs are separated by vegetative cells.

**Sirogonium melanosporum** (Randhawa) comb. nov.
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**Sirogonium pseudofloridanum** (Prescott) comb. nov.
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  = *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 hui (Li) comb. nov.

Zygnema cylindrospermum comb. nov.
  = Z. stellinum var. cylindrospermum W. & G. S. West 1905.

Zygnemopsis orientalis comb. nov.
  = Debarya desmidioides var. orientalis Carter 1926.

Zygnemopsis tiffaniana comb. nov.
  Also Zygnemopsis cruciata (Price) Transeau 1934, and Mougeotia cruciata (Price) Czurda 1932.

Debarya ackleyana sp. nov.
  Vegetative cells 12–15μ x 90–140μ 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, 50–54μ x 52–65μ, 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 10μ 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 8–12μ x 30–120μ, chromatophore with 4 to 8 pyrenoids in a row; reproduction by aplanospores which are formed mostly outside the recurved sporiferous cells; aplanospores globose 16–20μ in diameter, median wall gray-brown and smooth.
  U. S.: Mississippi, Starkville; Louisiana, Alexandria (Hicks Coll.); Texas, Austin (Taft Coll.).
  This species resembles M. calicarea, but differs in being aplanosporic and having gray-brown spores.