

Kentucky Algae. II¹

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ABSTRACT

This paper lists 176 species and varieties of algae previously unreported or infrequently reported as occurring in Kentucky. Included are first records for species of the genera *Spondylomorum*, *Eremosphaera*, *Tetrastrum*, *Tetragoniella*, *Phaeoplaca*, and *Cystodinium*.

INTRODUCTION

Reviews on the history of Kentucky phycological studies (Dillard and Crider 1970) and the known algal flora of the state (Dillard 1974) have appeared previously. As a contribution to a continuing effort to expand knowledge of the state's algal flora, the present report lists, in annotated form, 176 species and varieties of which 57 were previously unreported as occurring in Kentucky. Included are first records for the genera *Spondylomorum*, *Eremosphaera*, *Tetrastrum*, *Tetragoniella*, *Phaeoplaca*, and *Cystodinium*.

Collection Locales

All reports are based on at least monthly collections from Foster's Pond and Sloan's Crossing Pond, on the farm of C. L. Foster, Allen County, about 7 km from the damsite of Barren River Reservoir via county roads 252 and 1533 and in Mammoth Cave National Park, Edmonson County.

ANNOTATED CHECKLIST

Nomenclature follows that of Prescott (1962), West and West (1904-1912), and West et al. (1923). Entries preceded by a double asterisk represent new generic reports for the state; those preceded by a single asterisk represent new reports of lesser rank. Others represent taxa infrequently reported as occurring in Kentucky.

The annotations include reference to the time(s) of occurrence and principal subcommunity in which each taxon was collected. The freshwater subcommunities

used are among those described by Round (1965), e.g., euplankton [P], neuston [N], epipelagic [EP], epilithic [EL], epiphytic [ET], and epizooic [EZ]. Metaphyton [M] is used in the sense of Behre (1956) for those algae, commonly flagellates, chlorococcalean forms, desmids, and diatoms, which are neither euplanktonic nor attached. Rather, they are found intermingled with macroscopic algae and other aquatic plants.

CHLOROPHYCEAE

Volvocales

**Chlamydomonas patellaria* Whitford. Sloan's Crossing Pond; [M], November.

Phacotus lenticularis (Ehr.) Stein. Foster's Pond; [M], October-December.

Pandorina morum (Muell.) Bory. Foster and Sloan's Crossing ponds; [P], July-September.

Eudorina elegans Ehrenberg. Sloan's Crossing Pond; [P], April-June, September-October.

Volvox aureus Ehrenberg. Foster and Sloan's Crossing ponds; [P], March-May, October-January.

***Spondylomorum quaternarium* Ehrenberg. Sloan's Crossing Pond; [P], June-July.

Tetrasporales

Gloeocystis gigas (Kuetz.) Lagerheim. Sloan's Crossing Pond; [M], September-November.

Palmodictyon varium (Naeg.) Lemmermann. Foster's Pond; [M], January-April.

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Tetraspora gelatinosa (Vauch.) Desvaux. Foster and Sloan's Crossing ponds; [ET,P], January–March.

Chaetophorales

**Stigeoclonium flagelliferum* Kuetzing. Foster's Pond; [ET], February–March.

**S. lubricum* (Dillw.) Kuetzing. Foster and Sloan's Crossing ponds; [ET,EP], January–February.

Draparnaldia acuta (Ag.) Kuetzing. Foster's Pond; [ET], November–March.

Aphanochaete repens Braun. Foster and Sloan's Crossing ponds; [ET], September–March.

**A. vermiculoides* Wolle. Sloan's Crossing Pond; [ET], October–November.

Coleochaete orbicularis Prinsheim. Foster and Sloan's Crossing ponds; [ET], September–November.

Cladophorales

**Basycladia chelonum* (Coll.) Hoffman et Tilden. Sloan's Crossing Pond; [EZ], June–July, common on turtle carapaces.

Oedogoniales

Oedogonium crassiusculum Wittrock. Foster's Pond; [ET], March–September, mature oospores present in April.

O. suecicum Wittrock. Foster's Pond; [ET], March–November, mature oospores present in March and April.

**Bulbochaete varians* Wittrock. Foster's Pond; [ET], April–December, mature oospores present in May.

Chlorococcales

**Characium rostratum* Reinhard. Foster's Pond; [ET], February–March.

Pediastrum boryanum (Turp.) Meneghini. Foster's Pond; [P,M], April–November.

P. duplex Meyen. Sloan's Crossing Pond; [P,M], June–September.

P. duplex var. *clathratum* (Braun) Lagerheim. Foster's Pond; [M], February–December.

P. duplex var. *cohaerens* Bohlin. Foster's Pond; [M,P], February–November.

P. tetras (Ehr.) Ralfs. Foster and Sloan's Crossing ponds; [P,M], May–December.

Sorastrum spinulosum Naegeli. Foster's Pond; [M], June–January.

Coelastrum cambricum Archer. Foster and Sloan's Crossing ponds; [P,M], April–November.

C. microporum Naegeli. Foster and Sloan's Crossing ponds; [M], April–November.

Botryococcus braunii Kuetzing. Foster and Sloan's Crossing ponds; [P], February–December.

Westella botryoides (West) de Wildemann. Foster's Pond; [P], May–December.

Dictyosphaerium ehrenbergianum Naegeli. Sloan's Crossing Pond; [P], March–September.

Planktosphaeria gelatinosa G. M. Smith. Foster and Sloan's Crossing ponds; [P], February–July.

***Eremosphaera viridis* DeBary. Sloan's Crossing Pond; [P], March–October.

Pachycladon umbrinus G. M. Smith. Foster's Pond; [P], June–September.

Oocystis elliptica West. Foster's Pond; [P], July–September.

O. parva West et West. Sloan's Crossing Pond; [P,M], May–October.

Ankistrodesmus falcatus (Corda) Ralfs. Sloan's Crossing Pond; [M], February–November.

A. falcatus var. *mirabilis* (West et West) G. S. West. Foster's Pond; [M], February–December.

A. spiralis (Turn.) Lemmermann. Foster's Pond; [M,P], March–December.

Closteriopsis longissima Lemmermann. Sloan's Crossing Pond; [P], April–December.

**C. longissima* var. *tropica* West et West. Foster's Pond; [P], May–December.

Selenastrum minutum (Naeg.) Collins. Foster's Pond; [P], November–December.

Kirchneriella lunaris (Kirchn.) Moebius. Sloan's Crossing Pond; [P,M], March-January.

Tetraedron caudatum (Corda) Hansgirg. Foster's Pond; [M], July-November.

T. minimum (Braun) Hansgirg. Foster's Pond; [M,P], November-December.

**T. muticum* (Braun) Hansgirg. Foster's Pond; [M], October-March.

T. planctonicum G. M. Smith. Foster and Sloan's Crossing ponds; [P], February-March.

T. regulare Kuetzing. Foster and Sloan's Crossing ponds; [P], June-October.

T. trigonum (Naeg.) Hansgirg var. *gracile* (Reinsch) DeToni. Foster's Pond; [P], July-October.

Scenedesmus abundans (Kirchn.) Chodat. Foster's Pond; [P], July-October.

S. arcuatus Lemmermann var. *platydisca* G. M. Smith. Foster's Pond; [M], September-December.

S. bijuga (Turp.) Lagerheim. Foster and Sloan's Crossing ponds; [M], July-February.

S. brasiliensis Bohlin. Foster's Pond; [P,M], June-March.

S. dimorphus (Turp.) Kuetzing. Foster's Pond; [P], October-December.

S. quadricauda (Turp.) Brebisson. Foster's Pond; [M,P], May-January.

***Tetrastrum heterocanthum* (Nordst.) Chodat. Foster's Pond; [M], July-September.

Crucigenia tetrapedia (Kirchn.) West et West. Foster's Pond; [M,P], June-September.

Zygnematales

**Spirogyra cleveana* Transeau. Foster's Pond; [M], February-April, mature zygospores present in March.

S. decimina (Muell.) Kuetzing. Foster's Pond; [M], January-May, mature zygospores present in May.

**S. suecica* Transeau. Foster's Pond; [M], February-June, mature zygospores present in April.

Netrium digitus (Ehr.) Itzigsohn et Rothe. Foster and Sloan's Crossing ponds; [M,P], January-December.

Penium margaritaceum (Ehr.) Brebisson. Foster and Sloan's Crossing ponds; [M], January-December.

Closterium gracile Brebisson. Sloan's Crossing Pond; [M], August-November.

C. intermedium Ralfs. Foster and Sloan's Crossing ponds; [P,M], January-December.

C. lunula Nitzsch. Foster's Pond; [M], January-December.

C. macilentum Brebisson. Foster's Pond; [P], March-January.

C. pritchardianum Archer. Foster's Pond; [P], May-March.

C. setaceum Ehrenberg. Sloan's Crossing Pond; [P], January-December.

C. turgidum Ehrenberg var. *giganteum* Nordstedt. Foster and Sloan's Crossing ponds; [P], January-December.

C. venus Kuetzing. Foster's Pond; [M], March-December.

Pleurotaenium trabecula (Ehr.) Naegeli. Foster and Sloan's Crossing ponds; [M], January-December.

**Euastrum abruptum* Nordstedt f. *minor* West et West. Sloan's Crossing Pond; [M], January-December.

E. ansatum Ralfs. Foster's Pond; [M,P], August-December.

E. binale (Turp.) Ehrenberg. Foster's Pond; [P], May-October.

E. elegans Brebisson. Sloan's Crossing Pond; [P], January-December.

**E. evolutum* (Nordst.) West et West var. *integrius* West et West. Sloan's Crossing Pond; [P,M], March-October.

E. pulchellum Brebisson. Foster's Pond; [P], April-January.

- E. verrucosum* Ehrenberg var. *alatum* Wolle. Foster's Pond; [M], March–December.
- Micrasterias denticulata* Brebisson. Sloan's Crossing Pond; [M], March–November.
- **M. fimbriata* Ralfs. Sloan's Crossing Pond; [P], April–October.
- M. laticeps* Nordstedt. Sloan's Crossing Pond; [P,M], January–December.
- M. pinnatifida* (Kuetz.) Ralfs. Sloan's Crossing Pond; [M], June–November.
- M. radiata* Hassall. Foster and Sloan's Crossing ponds; [M,P], March–December.
- **Cosmarium alpestre* Roy et Bissett. Foster's Pond; [M], August–October.
- C. amoenum* Ralfs. Sloan's Crossing Pond; [M], January–December.
- C. binum* Nordstedt. Foster's Pond; [M], March–December.
- **C. blyttii* Wille. Foster's Pond; [M], March–December.
- C. circulare* Reinsch. Foster and Sloan's Crossing ponds; [M,P], October–November.
- **C. cyclicum* Lund. Sloan's Crossing Pond; [M], September–November.
- **C. globosum* Bulnheim f. *minor* Boldt. Sloan's Crossing Pond; [P], August–December.
- C. granatum* Brebisson. Foster and Sloan's Crossing ponds; [P,M], March–January.
- C. margaritatum* (Lund.) Roy et Bissett. Sloan's Crossing Pond; [M], January–December.
- C. ovale* Ralfs. Foster and Sloan's Crossing ponds; [M], July–November.
- C. portianum* Archer. Foster's Pond; [P], March–December.
- C. pyramidatum* Brebisson. Sloan's Crossing Pond; [M], February–July.
- C. regnellii* Wille. Foster and Sloan's Crossing ponds; [P,M], February–October.
- **C. trilobulatum* Reinsch. Foster and Sloan's Crossing ponds; [M], August–December.
- C. turpinii* Brebisson var. *eximium* West. Foster's Pond; [M], August–November.
- **Xanthidium cristatum* Brebisson var. *leiodermum* West et West. Sloan's Crossing Pond; [M], January–December.
- Staurostrum alternans* Brebisson. Foster's Pond; [P], January–December.
- **S. cryptocerum* Brebisson. Sloan's Crossing Pond; [M], February–May.
- S. cuspidatum* Brebisson. Foster's Pond; [P], April–January.
- S. gladiosum* Turner. Foster's Pond; [P], August–November.
- **S. lunatum* Ralfs. Sloan's Crossing Pond; [P], January–December.
- **S. margaritaceum* (Ehr.) Meneghini. Foster's Pond; [P], August–March.
- **S. minnesotense* Wolle. Sloan's Crossing Pond; [P], August–October.
- **S. orbiculare* Ralfs. Foster's Pond; [P], January–December.
- S. paradoxum* Meyen var. *parvum* West. Foster's Pond; [P], March–January.
- S. setigerum* Cleve. Sloan's Crossing Pond; [P], January–December.
- Arthrodesmus incus* (Breb.) Hassall var. *extensus* Andersson. Sloan's Crossing Pond; [M], January–December.
- A. octocornis* Ehrenberg. Sloan's Crossing Pond; [M], March–November.
- Desmidium aptogonum* Brebisson. Foster and Sloan's Crossing ponds; [M], February–November.
- Hyalotheca dissiliens* (Smith) Brebisson. Sloan's Crossing Pond; [M], January–December.
- H. mucosa* (Mert.) Ralfs. Sloan's Crossing Pond; [M], March–November.
- **Bambusina brebissonii* Kuetzing. Sloan's Crossing Pond; [M], April–November.

EUGLENOPHYCEAE

Euglenales

Euglena acus Ehrenberg. Foster's Pond; [P], July–September.

E. ehrenbergii Klebs. Foster's Pond; [M], September–October.

**E. elastica* Prescott. Foster's Pond; [M], July–August.

E. fusca (Klebs) Lemmermann. Foster's Pond; [M], July–October.

**E. helicoideus* (Bern.) Lemmermann. Foster's Pond; [P], October–January.

**E. oxyuris* Schmarda var. *minor* Prescott. Foster's Pond; [M], March–December.

E. polymorpha Dangeard. Foster's Pond; [P], December–April.

**E. proxima* Dangeard. Sloan's Crossing Pond; [M], January–December.

E. spirogyra Ehrenberg. Sloan's Crossing Pond; [P], July–November.

E. spiroides Lemmermann. Sloan's Crossing Pond; [M], June–November.

E. tripteris (Duj.) Klebs. Foster's Pond; [M], June–October.

**Lepocinclis acuta* Prescott. Sloan's Crossing Pond; [P,M], May–October.

L. ovum (Ehr.) Lemmermann. Foster's Pond; [M], July–November.

Phacus anacoelus Stokes. Sloan's Crossing Pond; [P,M], July–October.

**P. brevicaudata* (Klebs) Lemmermann. Sloan's Crossing Pond; [M], June–September.

**P. helikoides* Pochmann. Foster and Sloan's Crossing ponds; [P], July–November.

P. longicauda (Ehr.) Dujardin. Foster and Sloan's Crossing ponds; [P,M], September–January.

P. orbicularis Huebner. Sloan's Crossing Pond; [P], July–January.

P. pleuronectes (Muell.) Dujardin. Foster and Sloan's Crossing ponds; [P,M], March–December.

**P. pseudoswirenkoi* Prescott. Sloan's Crossing Pond; [P], August–January.

**P. segretii* Allorge et Lefevre var. *ovum* Prescott. Sloan's Crossing Pond; [P], December–January.

**P. suecicus* Lemmermann. Sloan's Crossing Pond; [P], June–November.

**Trachelomonas allia* Drezepolski. Foster's Pond; [P], August–January.

**T. bernardinensis* Vischer. Foster's Pond; [P], May–August.

**T. cylindrica* Ehrenberg. Foster's Pond; [P], September–March.

**T. ensifera* Daday. Sloan's Crossing Pond; [P], June–October.

T. hispida (Perty) Stein. Foster's Pond; [P], January–December.

**T. playfairii* Deflandre. Sloan's Crossing Pond; [P,M], August–October.

T. robusta Swirenko. Sloan's Crossing Pond; [M,P], January–December.

**T. rugulosa* (Stein) Deflandre. Foster's Pond; [M], September–December.

T. similis Stokes. Foster's Pond; [M,P], May–July.

**T. superba* (Swir.) Deflandre var. *spinosa* Prescott. Foster's Pond; [P,M], October–March.

T. volvocina Ehrenberg. Foster and Sloan's Crossing ponds; [P,M], January–December.

XANTHOPHYCEAE

Heterococcales

***Tetragoniella gigas* Pascher. Sloan's Crossing Pond; [M], August–November.

Ophiocytium capitatum Wolle. Foster's Pond; [M], August–November.

O. parvulum (Perty) Braun. Foster and Sloan's Crossing ponds; January.

Heterotrichales

Tribonema minus (Wille) Hazen. Foster's Pond; [M], September–December.

CHRYSTOPHYCEAE

Phaeoplacales

****Phaeoplaca thallosa** Chodat. Sloan's Crossing Pond; [EL], September–March.

Chrysomonadales

***Mallomonas acaroides** Perty. Sloan's Crossing Pond; [P,M], November–March.

M. caudata Iwanoff. Foster's Pond; [P], September–February.

***Synura sphagnicola** Korschikov. Sloan's Crossing Pond; [P], September–January.

S. uvella Ehrenberg. Foster and Sloan's Crossing ponds; [P], January–December.

Dinobryon sertularia Ehrenberg. Foster and Sloan's Crossing ponds; [P], February–September.

Uroglena volvox Ehrenberg. Sloan's Crossing Pond; [P], March–May, October–January.

Isochrysidales

Rhipidodendron splendidum Stein. Foster and Sloan's Crossing ponds; [M], August–March.

DINOPHYCEAE

Gymnodiniales

***Gymnodinium fuscum** (Ehr.) Stein. Sloan's Crossing Pond; [P,M], January–December.

***G. palustre** Schilling. Sloan's Crossing Pond; [P,M], January–December.

Peridinales

Peridinium cinctum (Muell.) Ehrenberg. Foster's Pond; [P,M], July–September.

***P. willei** Huitfeld-Kaas. Sloan's Crossing Pond; [P], October–April.

***P. wisconsinense** Eddy. Sloan's Crossing Pond; [P,M], January–December.

Ceratium hirundinella (Muell.) Dujardin. Foster and Sloan's Crossing ponds; [P], April–November.

Dinococcales

****Cystodinium iners** Geitler. Sloan's Crossing Pond; [M], April–November.

CRYPTOPHYCEAE

Cryptomonadales

Cryptomonas erosa Ehrenberg. Foster and Sloan's Crossing ponds; [P], October–January.

C. ovata Ehrenberg. Foster's Pond; [P], October–January.

CYANOPHYCEAE

Chroococcales

Coccochloris peniocyctis (Kuetz.) Drouet et Daily. Foster's Pond; [P], January–December.

Agmenellum quadruplicatum Brebisson. Foster's Pond; [M,P], March–October.

Anacystis cyanea (Kuetz.) Drouet et Daily. Foster's Pond; [M], January–December.

Oscillatoriales

***Spirulina subsalsa** Oersted. Foster's Pond; [M], July–November.

Oscillatoria princeps Vaucher. Foster's Pond; [M], January–December.

O. splendida Greville. Foster's Pond; [M], August–November.

***Schizothrix calcicola** (Ag.) Gomont. Foster's Pond; [M], February–April.

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