

NOTES ON THE ALGAL FLORA OF CASS, MORGAN AND PIKE COUNTIES (ILLINOIS), INCLUDING THE BOUNDARY WATERS OF THE MISSISSIPPI RIVER

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ABSTRACT

Two hundred fifty-four species and varieties of algae, including 110 previously unrecorded taxa, are reported in an annotated listing from Cass, Morgan and Pike Counties (Illinois).

INTRODUCTION

The algal flora of Cass, Morgan and Pike Counties is poorly known with only 24, 5 and 12 published records, respectively (Britton, 1944). Although annotated catalogues (Dillard et al., 1963; Dillard and Tindall, 1973; Grady, 1974; Lipsey, 1976; Richer et al., 1964; Weik, 1966; Wunderlin, 1971), checklists (Dillard and Mohlenbrock, 1962; Jones and Grady, 1980; Kothandaraman et al., 1977; Lipsey, 1975, 1980; Wunderlin and Wunderlin, 1968), and notes on new or interesting algae (Ebinger and Vogel, 1977; Lipsey, 1978, 1985; Mohlenbrock and Dillard, 1963; Stotler, 1968; Weik, 1977, 1982; Weik and Mohlenbrock, 1963; Williams and Tindall, 1975) have appeared sporadically during the last four decades, information on the algae of west-central Illinois is generally lacking in the literature.

The present paper treats 254 species and varieties of algae observed in 51 plankton collections obtained from 12 lotic habitats, including the boundary waters

of the Mississippi River. These current records together with those acknowledged earlier (Britton, 1944) now comprise a list of 51 taxa for Cass County, 25 taxa for Morgan County, and 239 taxa for Pike County. Included are reports for 110 taxa previously unrecorded from Illinois.

COLLECTION LOCALES

1. *Bay Creek* — New Salem Township, Section 34, Pike County. Specific Conductance = 344.5 $\mu\text{mhos}/\text{cm}$; pH = 7.6.
2. *Beebe Creek* — Barry Township, Section 16, Pike County. Specific Conductance = 374.5 $\mu\text{mhos}/\text{cm}$; pH = 7.5.
3. *Blue Creek* — Griggsville Township, Section 32, Pike County. Specific Conductance = 518.6 $\mu\text{mhos}/\text{cm}$; pH = 7.8.
4. *Hadley Creek* — Barry Township, Section 14, Pike County. Specific Conductance = 359.2 $\mu\text{mhos}/\text{cm}$; pH = 7.6.
5. *Indian Creek* — Meredosia National Wildlife Refuge, $\frac{1}{4}$ mile west of U.S. Route 67, Cass County. Specific Conductance = 580.0 $\mu\text{mhos}/\text{cm}$; pH = 8.0.
6. *Kise Creek* — Hadley Township, Section 26, Pike County. Specific Conductance = 359.6 $\mu\text{mhos}/\text{cm}$; pH = 7.8.
7. *McCraney Creek* — Kinderhook Township, Section 1, Pike County. Specific Conductance = 437.6 $\mu\text{mhos}/\text{cm}$; pH = 7.6.
8. *Mississippi River* — at river miles 288.5, 293 and 297.3 along the Pike County border. Specific Conductance = 325.0 $\mu\text{mhos}/\text{cm}$; pH = 7.8.
9. *New Pankey Pond Ditch* — Meredosia National Wildlife Refuge, $\frac{1}{2}$ mile east of U.S. Route 67, Cass County. Specific Conductance = 500.0 $\mu\text{mhos}/\text{cm}$; pH = 8.0.
10. *Pigeon Creek* — Kinderhook Township, Sections 8 and 18, Pike County. Specific Conductance = 435.5 $\mu\text{mhos}/\text{cm}$; pH = 7.8.
11. *Unnamed ditch near Meredosia Lake* — Meredosia National Wildlife Refuge, 1 mile west of U.S. Route 67, Cass County. Specific Conductance = 510.0 $\mu\text{mhos}/\text{cm}$; pH = 7.4.
12. *Willow Creek* — Meredosia National Wildlife Refuge, 2 miles west of U.S. Route 67 near Meredosia Lake, Morgan County. Specific Conductance = 600.0 $\mu\text{mhos}/\text{cm}$; pH = 7.5.

ANNOTATED CATALOGUE

Nomenclature in the listing follows that of Fott (1968), Håkansson and Stoermer (1984a, b), Huber-Pestalozzi (1974), Komárek and Fott (1983), Mohlenbrock and Dillard (1963), Patrick and Reimer (1966, 1975), Prescott (1962), Prescott et al. (1982), Stoermer and Håkansson (1984), Taft and Taft (1971), Tynni (1980), Walton (1915), and Weik and Mohlenbrock (1963). Entries preceded by an asterisk represent new Illinois records. In each citation the county in which the species was discovered is indicated in upper case followed by the collection locale(s), month of sampling, and year of procurement. The arrangement of the taxa is according to Smith (1950). Soft algae samples and permanent diatom slides have been deposited in the Chicago Field Museum and Philadelphia Academy of Science (Diatom Herbarium), respectively.

CHLOROPHYTA

Chlorophyceae

Volvocales

- **Carteria globulosa* Pasch. PIKE: Kiser Creek, April, 1985.
- **C. klebsii* (Dang.) Francé emend. Troitz. PIKE: McCraney Creek, May, 1985; Mississippi River at mile 293, August, 1985.
- Chlamydomonas globosa* Snow. PIKE: Bay Creek, April, 1985; Beebe Creek, April, 1985; Hadley Creek, April, 1985.
- C. snowii* Printz. PIKE: Kiser Creek, April, 1985.
- **Chlorobrachis gracillima* Korš. PIKE: Blue Creek, April, 1985.
- Eudorina elegans* Ehrenb. PIKE: Mississippi River at mile 288.5, August, 1985.
- Pandorina morum* (Müll.) Bory. PIKE: Bay Creek, April, 1985; Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, May, 1985.
- **Pyrobotrys gracilis* Korš. PIKE: Blue Creek, April, 1985.

Tetrasporales

- Elakatothrix viridis* (Snow) Printz. PIKE: Mississippi river at miles 288.5 and 297.3, August, 1985.
- Gloeocystis gigas* (Kütz.) Lag. MORGAN: Willow Creek, June, 1982.
- Sphaerocystis schroeteri* Chod. MORGAN: Willow Creek, June, 1982. PIKE: McCraney Creek, May, 1985; Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, May, 1985.

Chlorococcales

- Actinastrum hantzschii* var. *fluviatile* Schröder. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, May, 1985.
- Ankistrodesmus falcatus* (Corda) Ralfs. PIKE: Blue Creek, April, 1985; Hadley Creek, April, 1985; Mississippi River at miles 288.5 and 297.3, August, 1985.
- **Chlorolobium braunii* (Näg.) Kom. CASS: Indian Creek, June, 1982. MORGAN: Willow Creek, June, 1982. PIKE: Blue Creek, April, 1985; Mississippi River at mile 297.3, August, 1985.
- **Closteriopsis acicularis* (G.M. Smith) Belch. & Swale. PIKE: Bay Creek, April, 1985; Pigeon Creek, May, 1985.
- Coelastrum microporum* Näg. CASS: Indian Creek, June, 1982. MORGAN: Willow Creek, June, 1982. PIKE: McCraney Creek, May, 1985; Mississippi River at miles 288.5 and 297.3, August, 1985; Pigeon Creek, May, 1985.
- Dictyosphaerium ehrenbergianum* Näg. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985.
- D. pulchellum* Wood. PIKE: McCraney Creek, May, 1985; Mississippi River at miles 288.5, 293 and 297.3, August, 1985.
- Franceia droescheri* (Lemm.) G.M. Smith. PIKE: Mississippi River at mile 288.5, August, 1985.
- Golenkinia radiata* (Chod.) Wille. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985.
- **Kirchneriella contorta* (Schmidle) Bohlin. CASS: Indian Creek, June, 1982.
- **Lagerheimia ciliata* (Lag.) Chod. PIKE: Mississippi River at mile 288.5, August, 1985.
- **L. genevensis* (Chod.) PIKE: Mississippi River at mile 297.3, August, 1985.

- **L. wratislaviensis* Schröd. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985.
- Micractinium pusillum* Fresenius. PIKE: Mississippi River at mile 288.5, August, 1985; Pigeon Creek, May, 1985.
- **M. pusillum* var. *elegans* G.M. Smith. PIKE: Mississippi River at mile 297.3, August, 1985.
- **Monoraphidium contortum* (Thur.) Kom.-Legn. CASS: Indian Creek, June, 1982; Unnamed ditch near Meredosia Lake, June, 1982. MORGAN: Willow Creek, June, 1982. PIKE: Beebe Creek, April, 1985; McCraney Creek, April and May, 1985; Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, May, 1985.
- **M. irregulare* (G.M. Smith) Kom.-Legn. PIKE: Beebe Creek, April, 1985; Hadley Creek, April, 1985; McCraney Creek, May, 1985.
- **M. minutum* (Näg.) Kom.-Legn. CASS: New Pankey Pond Ditch, June, 1982; Unnamed ditch near Meredosia Lake, June, 1982. MORGAN: Willow Creek, June, 1982. PIKE: Blue Creek, April, 1985; McCraney Creek, May, 1985; Mississippi River at miles 288.5, 293 and 297.3, August, 1985.
- M. mirabile* (W. & G.S. West) Pank. PIKE: Bay Creek, April, 1985; Pigeon Creek, May, 1985.
- **M. tortile* (W. & G.S. West) Kom.-Legn. CASS: India Creek, June, 1982; New Pankey Pond Ditch, June, 1982; Unnamed ditch near Meredosia Lake, June, 1982. MORGAN: Willow Creek, June, 1982. PIKE: Bay Creek, April, 1985; Pigeon Creek, May, 1985.
- **Oocystis lacustris* Chod. CASS: Indian Creek, June, 1982.
- **O. pusilla* Hansg. PIKE: Mississippi River at miles 288.5 and 293, August, 1985.
- Pediastrum boryanum* (Turp.) Menegh. PIKE: Mississippi River at mile 288.5, August, 1985.
- P. duplex* var. *clathratum* (A. Braun) Lag. CASS: Unnamed ditch near Meredosia Lake, June, 1982. MORGAN: Willow Creek, June, 1982. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985.
- P. simplex* (Meyen) Lemm. PIKE: Mississippi River at mile 288.5, August, 1985.
- P. simplex* var. *duodenarium* (Bailey) Rabh. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985.
- P. tetras* (Ehrenb.) Ralfs. PIKE: Mississippi River at mile 288.5, August, 1985.
- **Polyedriopsis spinulosa* (Schmidle) Schmidle. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985.
- Scenedesmus abundans* (Kirch.) Chod. PIKE: McCraney Creek, April and May, 1985; Mississippi River at miles 288.5, 293 and 297.3, August, 1985.
- **S. abundans* var. *brevicauda* G.M. Smith. PIKE: Hadley Creek, April, 1985.
- S. acuminatus* (Lag.) Chod. PIKE: Hadley Creek, April, 1985; McCraney Creek, May, 1985; Mississippi River at miles 288.5 and 297.3, August, 1985; Pigeon Creek, May, 1985.
- **S. acutus* Meyen. PIKE: McCraney Creek, April and May, 1985.
- S. bijuga* (Turp.) Lag. PIKE: McCraney Creek, April and May, 1985.
- S. denticulatus* Lag. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985.
- S. dimorphus* (Turp.) Kütz. CASS: Unnamed ditch near Meredosia Lake, June, 1982. MORGAN: Willow Creek, June, 1982. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985.

- S. opoliensis* P. Richter. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985; Pigeon Creek, May, 1985.
- S. quadricauda* (Turp.) de Bréb. CASS: Indian Creek, June, 1982; Unnamed ditch near Meredosia Lake, June, 1982. PIKE: McCraney Creek, May, 1985; Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, May, 1985.
- Schroederia seigera* (Schröd.) Lemm. CASS: Indian Creek, June, 1982.
- **Tetraedron incus* (Teil.) G.M. Smith. PIKE: Mississippi River at mile 288.5, August, 1985.
- T. muticum* (A. Braun) Hansg. PIKE: McCraney Creek, May, 1985; Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, May, 1985.
- **T. pentaedricum* W. & G.S. West, PIKE: Mississippi River at miles 293 and 297.3, August, 1985.
- **Tetrastrum heteracanthum* (Nordst.) Chod. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985.
- T. staurogeniaeforme* (Schröd.) Lemm. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, May, 1985.
- **Trebaria planctonica* (G.M. Smith) Kors. PIKE: Hadley Creek, April, 1985; Kiser Creek, April, 1985.
- **T. setigera* (Arch.) G.M. Smith. PIKE: Mississippi River at mile 288.5, August, 1985.

Zygnematales

- Cladophora acerosa* (Schrank) Ehrenb. CASS: Indian Creek, June, 1982.
- C. moniliferum* (Bory) Ehrenb. MORGAN: Willow Creek, June, 1982.
- Staurastrum leptocladum* var. *sinuatum* Wolle. CASS: Indian Creek, June, 1982; New Pankey Pond Ditch, June, 1982; Unnamed ditch near Meredosia Lake, June, 1982. MORGAN: Willow Creek, June, 1982

CHYSOPHYTA

Bacillariophyceae

Centrales

- **Coscinodiscus lacustris* Grun. PIKE: Mississippi River at mile 288.5, August, 1985.
- Cyclotella atomus* Hust. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, September and October, 1985.
- C. meneghiniana* Kütz. PIKE: Bay Creek, September, 1985; Beebe Creek, April and October, 1985; Blue Creek, October, 1985; Hadley Creek, April and October, 1985; Kiser Creek, April, September and October, 1985; McCraney Creek, October, 1985; Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, May, September and October, 1985.
- C. ocellata* Pant. PIKE: Mississippi River at mile 297.3, August, 1985; Pigeon Creek, September, 1985.
- C. pseudostelligera* Hust. PIKE: Mississippi River at mile 297.3, August, 1985.
- **C. stelligera* Cl. & Grun. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985.
- **Melosira distans* var. *alpigena* Grun. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985.

- M. granulata* (Ehrenb.) Ralfs. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985.
- M. granulata* var. *angustissima* Müll. PIKE: Bay Creek, September, 1985; Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, October, 1985.
- M. italica* (Ehrenb.) Kütz. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985; Pigeon Creek, September, 1985.
- M. varians* C.A. Ag., PIKE: Hadley Creek, April, 1985; Kiser Creek, October, 1985.
- **Stephanodiscus alpinus* Hust. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985.
- S. hantzschii* Grun. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985; Pigeon Creek, May, 1985.
- **S. hantzschii* f. *tenuis* Håk. & Stoerm. PIKE, Mississippi River at miles 288.5, 293 and 297.3, August, 1985.
- **S. invistitatus* Hohn at Hellerman. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985.
- S. minutulus* (Kütz.) Cleve & Möll. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, September and October, 1985.
- S. niagarae* Ehrenb. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985.
- **S. parvus* Stoerm. & Håk. PIKE: Pigeon Creek, October, 1985.
- **Thalassiosira fluticatilis* Hust. PIKE: Kiser Creek, September, 1985; Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, September, 1985.

Pennales

- **Achnanthes affinis* Grun. PIKE: Beebe Creek, April, 1985.
- A. exigua* Grun. PIKE: Bay Creek, April, 1985; Beebe Creek, April and October, 1985; Kiser Creek, September, 1985; McCraney Creek, October, 1985.
- A. lanceolata* Bréb ex Kütz.. PIKE: Beebe Creek, April and October, 1985; Blue Creek, April, 1985; Kiser Creek, April and September, 1985; McCraney Creek, April and October, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, October, 1985.
- A. lanceolata* var. *dubia* Grun. PIKE: Hadley Creek, April and October, 1985; Kiser Creek, April, September and October, 1985; Pigeon Creek, September and October, 1985.
- **A. linearis* (W. Sm.) Grun. PIKE: Mississippi River at mile 297.3, August, 1985.
- A. microcephala* (Kütz.) Grun. PIKE: Kiser Creek, October, 1985; Mississippi River at mile 297.3, August, 1985.
- A. minutissima* Kütz. PIKE: Beebe Creek, April and September, 1985; Kiser Creek, April and October, 1985; McCraney Creek, September, 1985.
- **Amphora ovalis* var. *affinis* (Kütz.) V.H. ex DeT. PIKE: McCraney Creek, April, 1985.
- **A. perpusilla* (Grun.) Grun. PIKE: Kiser Creek, April, 1985.
- **A. veneta* Kütz. PIKE: Blue Creek, October, 1985; Kiser Creek, September, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, October, 1985.
- Asterionella formosa* Hass. PIKE: Beebe Creek, April and October, 1985; Kiser Creek, September and October, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, October, 1985.

- Bacillaria paradoxa* Gmel. PIKE: Mississippi River at mile 297.3, August, 1985.
- Caloneis amphibaena* (Bory) Cl. PIKE: McCraney Creek, April, 1985.
- C. bacillum* (Grun.) Cl. PIKE: Kiser Creek, April and September, 1985; Pigeon Creek, September, 1985.
- C. ventricosa* (Ehrenb.) Meist. PIKE: Hadley Creek, September, 1985.
- **C. ventricosavar. truncatula* (Grun.) Meist. PIKE: Beebe Creek, April, 1985; Kiser Creek, April, 1985.
- **Cocconeis diminuta* Pant. PIKE: Beebe Creek, April, 1985; Hadley Creek, April, 1985.
- C. pediculus* Ehrenb. PIKE: Beebe Creek, October, 1985; Blue Creek, October, 1985; Hadley Creek, April and October, 1985; Kiser Creek, April and October, 1985.
- **C. placentula* var. *euglypta* (Ehrenb.) Cl. PIKE: Kiser Creek, September, 1985; Mississippi River at mile 297.3, August, 1985.
- C. placentula* var. *lineata* (Ehrenb.) V.H. PIKE: Beebe Creek, October, 1985; Kiser Creek, April, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, October, 1985.
- **Cylindrotheca gracilis* (Bréb.) Grun. PIKE: Pigeon Creek, October, 1985.
- Cymatopleura librile* (Ehrenb.) Pant. PIKE: Beebe Creek, April, 1985; McCraney Creek, April, 1985; Pigeon Creek, May, September and October, 1985.
- Cymbella affinis* Kütz. PIKE: Beebe Creek, April and September, 1985; Hadley Creek, April, 1985; McCraney Creek, April and May, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, May, 1985.
- C. cymbiformis* Ag. PIKE: Beebe Creek, September, 1985.
- **C. grossestriata* O. Müll. PIKE: Blue Creek, April, 1985.
- **C. minuta* var. *pseudogracilis* (Choln.) Reim. PIKE: Beebe Creek, September and October, 1985; Kiser Creek, October, 1985; Pigeon Creek, October, 1985.
- **C. minuta* var. *silesiaca* (Bleisch ex Rabh.) Reim. PIKE: Bay Creek, September, 1985; Beebe Creek, April, 1985; Blue Creek, April, 1985; Hadley Creek, April, September and October, 1985; Kiser Creek, April, September and October, 1985; McCraney Creek, October, 1985; Pigeon Creek, May, September and October, 1985.
- **C. muelleri* f. *ventricosa* (Temp. & Perag.) Reim. PIKE: Hadley Creek, September, 1985.
- C. naviculiformis* Auersw. ex Heib. PIKE: Pigeon Creek, October, 1985.
- C. triangulum* (Ehrenb.) Cl. PIKE: Kiser Creek, September, 1985.
- C. tumida* (Bréb. ex Kütz.) V.H. PIKE: Hadley Creek, April, September and October, 1985; Kiser Creek, April and September, 1985; McCraney Creek, September, 1985; Pigeon Creek, September, 1985.
- Diatoma vulgare* Bory. PIKE: McCraney Creek, May, 1985.
- **Fragilaria construens* var. *venter* (Ehrenb.) Grun. PIKE: McCraney Creek, September, 1985; Mississippi River at mile 288.5, August, 1985.
- F. crotensis* Kitton. PIKE: Beebe Creek, April and October, 1985; Kiser Creek, September and October, 1985; Mississippi River at mile 288.5, August, 1985.
- F. pinnata* Ehrenb. PIKE: Pigeon Creek, October, 1985.
- Gomphonema acuminatum* Ehrenb. PIKE: Beebe Creek, April, 1985; Hadley Creek, October, 1985.
- **G. acuminatum* var. *pusilla* Grun. PIKE: Beebe Creek, September, 1985.

- G. angustatum* (Kütz.) Rabh. PIKE: Bay Creek, April, 1985; Beebe Creek, April, 1985; Blue Creek, April, September and October, 1985; Hadley Creek, April, 1985; Kiser Creek, April and October, 1985; McCraney Creek, April, 1985.
- **G. gracile* Ehrenb. PIKE: Kiser Creek, October, 1985.
- G. intricatum* var. *vibrio* (Ehrenb.) Cl. PIKE: Beebe Creek, September, 1985.
- G. olivaceum* (Lyngb.) Kütz. PIKE: Bay Creek, April, 1985; Beebe Creek, April and September, 1985; Blue Creek, April, 1985; Hadley Creek, April, 1985; Kiser Creek, April, 1985; McCraney Creek, April, 1985; Pigeon Creek, May and October, 1985.
- G. parvulum* Kütz. PIKE: Beebe Creek, April, September and October, 1985; Blue Creek, September and October, 1985; Hadley Creek, April, September and October, 1985; Kiser Creek, April and September, 1985; McCraney Creek, September, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, September and October, 1985.
- G. sphaerophorum* Ehrenb. PIKE: Hadley Creek, October, 1985.
- **G. tenellum* Kütz. PIKE: Bay Creek, September, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, October, 1985.
- **G. tergestinum* (Grun.) Fricke. PIKE: Bay Creek, October, 1985; Beebe Creek, April and October, 1985; Blue Creek, October, 1985; Hadley Creek, October, 1985; Kiser Creek, September, 1985; McCraney Creek, October, 1985.
- G. truncatum* Ehrenb. PIKE: Hadley Creek, April, 1985; McCraney Creek, April, 1985.
- G. truncatum* var. *capitatum* (Ehrenb.) Patr. PIKE: Beebe Creek, October, 1985; Hadley Creek, April, 1985.
- **G. ventricosum* Greg. PIKE: Kiser Creek, September, 1985.
- Gyrosigma scalpoides* (Rabh.) Cl. PIKE: Beebe Creek, September and October, 1985; Hadley Creek, September, 1985; Kiser Creek, September and October, 1985; Pigeon Creek, October, 1985.
- G. spencerii* (Quek.) Griff. & Henfr. PIKE: Beebe Creek, September and October, 1985; Hadley Creek, October, 1985; McCraney Creek, September, 1985; Mississippi River at mile 288.5, August, 1985; Pigeon Creek, September and October, 1985.
- Meridion circulare* (Grev.) Ag. PIKE: Bay Creek, April, 1985.
- Navicula capitata* Ehrenb. PIKE: Bay Creek, September, 1985; Blue Creek, September and October, 1985; Hadley Creek, October, 1985; Kiser Creek, April, September and October, 1985; McCraney Creek, May, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, October, 1985.
- **N. cincta* (Ehrenb.) Ralfs. PIKE: Bay Creek, September, 1985; Beebe Creek, April and September, 1985; Kiser Creek, April, September and October, 1985; McCraney Creek, September, 1985; Pigeon Creek, September, 1985.
- **N. circumtexta* Meist. ex Hust. PIKE: Mississippi River at mile 297.3, August, 1985.
- N. cryptocephala* Kütz. PIKE: Beebe Creek, April, 1985; Hadley Creek, April and October, 1985; Kiser Creek, April, September and October, 1985; Pigeon Creek, October, 1985.
- N. cryptocephala* var. *veneta* (Kütz.) Rabh. PIKE: Beebe Creek, April and October, 1985.
- N. cuspidata* (Kütz.) Kütz. PIKE: Bay Creek, September, 1985; Hadley Creek, October, 1985; Kiser Creek, April and September, 1985; Pigeon Creek, May, 1985.

- N. decussis* ostr. PIKE: Bay Creek, April, September and October, 1985; Beebe Creek, April, September and October, 1985; Blue Creek, September, 1985; Hadley Creek, April, September and October, 1985; Kiser Creek, April, September and October, 1985; McCraney Creek, April, September and October, 1985; Mississippi River at miles 288.5 and 297.3, August, 1985; Pigeon Creek, May, September and October, 1985.
- **N. heuferi* Grun. PIKE: Bay Creek, April, 1985.
- N. graciloides* A. Mayer, PIKE: Beebe Creek, October, 1985; Hadley Creek, September, 1985.
- **N. gregaria* Donkin. PIKE: Bay Creek, October, 1985; Beebe Creek, October, 1985; Hadley Creek, October, 1985; Kiser Creek, September and October, 1985; McCraney Creek, October, 1985; Pigeon Creek, October, 1985.
- **N. integra* (W. Sm.) Ralfs. PIKE: Hadley Creek, April, 1985; Kiser Creek, April, 1985.
- **N. lanceolata* (Ag.) Ehrenb. PIKE: Kiser Creek, October, 1985.
- **N. menisculus* var. *upsaliensis* (Grun.). PIKE: Bay Creek, October, 1985; Beebe Creek, October, 1985; Hadley Creek, April and October, 1985; Kiser Creek, April and October, 1985; McCraney Creek, September and October, 1985; Pigeon Creek, October, 1985.
- **N. minuscula* Grun. PIKE: Bay Creek, April, 1985; Beebe Creek, April, 1985; Hadley Creek, April, 1985; Kiser Creek, April, 1985; McCraney Creek, April, 1985.
- **N. minuscula* var. *muralis* (Grun.) Lange-Bert. PIKE: Blue Creek, September, 1985; Kiser Creek, October, 1985; Pigeon Creek, October, 1985.
- N. mutica* Kütz. PIKE: Beebe Creek, September, 1985; Pigeon Creek, October, 1985.
- **N. mutica* var. *cohnii* (Hilse) Grun. PIKE: Beebe Creek, September, 1985.
- **N. phyllepta* Kütz. PIKE: Bay Creek, April and September, 1985; Beebe Creek, April and September, 1985; Hadley Creek, April, 1985; Kiser Creek, April, 1985; McCraney Creek, May, 1985; Mississippi River at mile 288.5, August, 1985; Pigeon Creek, May, 1985.
- **N. placentula* (Ehrenb.) Kütz. PIKE: Mississippi River at mile 297.3, August, 1985.
- N. protracta* Grun. PIKE: Beebe Creek, April, 1985; Kiser Creek, April, 1985.
- N. pupula* Kütz. PIKE: Bay Creek, September, 1985; Beebe Creek, April, 1985; Blue Creek, September and October, 1985; Kiser Creek, September, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, May, September and October, 1985.
- **N. pygmaea* Kütz. PIKE: Bay Creek, September, 1985; Blue Creek, September, 1985; Kiser Creek, September and October, 1985; Pigeon Creek, October, 1985.
- N. radiosua* Kütz. PIKE: Hadley Creek, April, 1985.
- N. rhyncocephala* Kütz. PIKE: Beebe Creek, April, 1985.
- N. salinarum* var. *intermedia* (Grun.) Cl. PIKE: Bay Creek, April, 1985; Beebe Creek, April and October, 1985; Hadley Creek, April and October, 1985; Kiser Creek, October, 1985; McCraney Creek, April, 1985; Pigeon Creek, May and October, 1985.
- **N. secreta* var. *apiculata* Patr. PIKE: Mississippi River at mile 297.3, August, 1985.
- **N. symmetrica* Patr. PIKE: Beebe Creek, September, 1985.
- N. tripunctata* (O.F. Müll.) Bory. PIKE: Beebe Creek, April, 1985; Hadley Creek, April, 1985; Kiser Creek, October, 1985; Pigeon Creek, October, 1985.

- **N. trivialis* Lange-Bert. PIKE: Bay Creek, April, 1985; Beebe Creek, April, 1985; Blue Creek, April, September and October, 1985; Hadley Creek, April, 1985; Kiser Creek, April, 1985; McCraney Creek, April and May, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, May, September and October, 1985.
- N. viridula* (Kütz) Kütz. *emend.* V.H. PIKE: Bay Creek, September, 1985; Beebe Creek, September, 1985; Hadley Creek, October, 1985; Kiser Creek, October, 1985; McCraney Creek, September and October, 1985; Pigeon Creek, September and October, 1985.
- **N. viridula* var. *linearis* Hust. PIKE: Bay Creek, April and September, 1985; Beebe Creek, April, September and October, 1985; Hadley Creek, April, 1985; Kiser Creek, April and September, 1985; McCraney Creek, September and October, 1985; Pigeon Creek, May, September and October, 1985.
- **N. viridula* var. *rostellata* (Kütz.) C.L. PIKE: Bay Creek, October, 1985; Hadley Creek, September and October, 1985; Kiser Creek, October, 1985; McCraney Creek, October, 1985; Pigeon Creek, September and October, 1985.
- **N. zanoni* Hust. PIKE: Beebe Creek, September, 1985.
- **Neidium affine* var. *amphirhynchus* (Ehrenb.) C.L. PIKE: Mississippi River at mile 297.3, August, 1985.
- **N. affine* var. *humerus* Reim. PIKE: Hadley Creek, September, 1985.
- N. dubium* (Ehrenb.) C.L. PIKE: Hadley Creek, April, 1985; Kiser Creek, April, 1985.
- Nitzschia acicularis* W. Sm. PIKE: Bay Creek, April, 1985; Beebe Creek, April, September and October, 1985; Blue Creek, April, 1985; Hadley Creek, April, 1985; Kiser Creek, April, September and October, 1985; McCraney Creek, May and October, 1985; Mississippi River at mile 288.5, August, 1985; Pigeon Creek, May, September and October, 1985.
- N. amphibia* Grun. PIKE: Beebe Creek, September and October, 1985; Hadley Creek, October, 1985; Kiser Creek, October, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, September, 1985.
- N. angustata* (W. Sm.) Grun. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985.
- **N. angustata* var. *acuta* Grun. PIKE: Hadley Creek, October, 1985.
- N. apiculata* (Greg.) Grun. PIKE: Bay Creek, September, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, October, 1985.
- **N. brevissima* Grun. in V.H. PIKE: Pigeon Creek, May, 1985.
- **N. communis* Rabh. PIKE: Pigeon Creek, October, 1985.
- N. commutata* Grun. PIKE: Pigeon Creek, October, 1985.
- N. dissipata* (Kütz.) Grun. PIKE: Bay Creek, April, 1985; Beebe Creek, April and October, 1985; Blue Creek, April, 1985; Hadley Creek, April and October, 1985; Kiser Creek, April, September and October, 1985; McCraney Creek, May and October, 1985; Pigeon Creek, May and October, 1985.
- **N. epiphytica* Hust. PIKE: Pigeon Creek, October, 1985.
- **N. fonticola* Grun. PIKE: Mississippi River at mile 297.3, August, 1985; Pigeon Creek, October, 1985.
- **N. frustulum* (Kütz.) Grun. PIKE: Bay Creek, April and September, 1985; Beebe Creek, September and October, 1985; Blue Creek, September and October, 1985; Hadley Creek, April, 1985; Kiser Creek, April, September and October,

- 1985; Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, October, 1985.
- **N. gandersheimensis* Krasske. PIKE: Bay Creek, April and October, 1985; Beebe Creek, April and October, 1985; Blue Creek, April and October, 1985; Hadley Creek, April, 1985; Kiser Creek, April, September and October, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, May and October, 1985.
- **N. gracilis* Hantz. PIKE: Bay Creek, April, 1985; Beebe Creek, April, 1985.
- **N. hantzschiana* Rabh. PIKE: Mississippi River at mile 288.5, August, 1985.
- N. hungarica* Grun. PIKE: Bay Creek, April, 1985; Blue Creek, October, 1985; Hadley Creek, October, 1985; Mississippi River at mile 297.3, August, 1985.
- N. linearis* W. Sm. PIKE: Bay Creek, April, 1985; Beebe Creek, April and October, 1985; Blue Creek, April, 1985; Hadley Creek, April and October, 1985; Kiser Creek, April and October, 1985; McCraney Creek, May and October, 1985; Pigeon Creek, May and October, 1985.
- **N. microcephala* Grun. PIKE: Mississippi River at mile 297.3, August, 1985.
- **N. minutula* Grun. PIKE: Mississippi River at mile 297.3, August, 1985.
- N. palea* (Kütz.) W. Sm. PIKE: Bay Creek, April, September and October, 1985; Beebe Creek, April, September and October, 1985; Blue Creek, April, September and October, 1985; Hadley Creek, April, September and October, 1985; Kiser Creek, April, September and October, 1985; McCraney Creek, May and October, 1985; Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, May, September and October, 1985.
- **N. paleacea* Grun. PIKE: Bay Creek, April, 1985.
- **N. parvula* Lewis. PIKE: Beebe Creek, September, 1985; Hadley Creek, October, 1985; Kiser Creek, September and October, 1985.
- **N. recta* Hantz. PIKE: Hadley Creek, October, 1985; Mississippi River at mile 297.3, August, 1985.
- **N. romana* Grunn. PIKE: Hadley Creek, October, 1985; Mississippi River at mile 288.5, August, 1985.
- **N. rostellata* Hust. PIKE: Mississippi River at mile 288.5, August, 1985.
- N. sinuata* var. *tabellaria* Grun. PIKE: Pigeon Creek, October, 1985.
- **N. tryblionella* Hantz. PIKE: Bay Creek, September, 1985.
- **N. tryblionella* var. *debilis* (Arn.) A. Mayer. PIKE: Beebe Creek, October, 1985; Kiser Creek, October, 1985.
- **N. tryblionella* var. *victoriae* Grun. PIKE: Bay Creek, April, 1985; Kiser Creek, September, 1985; Mississippi River at mile 297.3, August, 1985.
- **Pinnularia mesogongyla* Ehrenb. PIKE: Hadley Creek, September, 1985.
- Rhoicosphenia curvata* (Kütz.) Grun. ex Rabh. PIKE: Mississippi River at mile 297.3, August, 1985.
- Surirella angustata* Kütz. PIKE: Bay Creek, April, 1985; Beebe Creek, October, 1985; Hadley Creek, April, 1985; Kiser Creek, April and September, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, October, 1985.
- S. ovata* Kütz. PIKE: Bay Creek, April and September, 1985; Beebe Creek, April and October, 1985; Blue Creek, April, September and October, 1985; Hadley Creek, April and October, 1985; Kiser Creek, April, September and October, 1985; McCraney Creek, April, May and October, 1985; Pigeon Creek, May and October, 1985.
- S. ovata* var. *pinnata* (W. Sm.) Rabh. PIKE: Kiser Creek, October, 1985.

- **S. ovata* var. *pinnata* f. *gibbosa* Tynni. PIKE: Pigeon Creek, October, 1985.
- S. spiralis* Kütz. PIKE: Hadley Creek, October, 1985.
- S. tenera* Greg. PIKE: Pigeon Creek, October, 1985.
- Synedra acus* Kütz. PIKE: Hadley Creek, April and October, 1985; Kiser Creek, April, 1985; McCraney Creek, May, 1985; Pigeon Creek, May, 1985.
- S. delicatissima* var. *angustissima* Grun. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985.
- S. rumpens* Kütz. PIKE: Beebe Creek, September, 1985.
- **S. rumpens* var. *familiaris* (Kütz.) Hust. PIKE: Bay Creek, April, 1985; Hadley Creek, April, 1985; Kiser Creek, April and October, 1985; Pigeon Creek, May, 1985.
- S. ulna* (Nitz.) Ehrenb. PIKE: Blue Creek, April, 1985; Hadley Creek, April, 1985.
- Tabellaria fenestrata* (Lyngb.) Kütz. PIKE: Beebe Creek, April, 1985; Hadley Creek, April, 1985; Kiser Creek, October, 1985; McCraney Creek, October, 1985.

Chrysophyceae

Chrysomonadales

- Dinobryon divergens* Imhof. CASS: Indian Creek, June, 1982; New Pankey Pond Ditch, June, 1982; Unnamed ditch near Meredosia Lake, June, 1982. MORGAN: Willow Creek, June, 1982.

Xanthophyceae

Heterococcales

- **Ophiocytium capitatum* var. *longispinum* (Moebius) Lemm. PIKE: Mississippi River at mile 288.5, August, 1985.
- Peroniella planctonica* G.M. Smith. PIKE: Kiser Creek, April, 1985.

Heterotrichales

- Tribonema minus* (Wille) Hazen. MORGAN: Willow Creek, June, 1982.

CRYPTOPHYTA

Cryptophyceae

Cryptomonadales

- **Chilomonas paramecium* Ehrenb. CASS: Unnamed ditch near Meredosia Lake, June, 1982.
- **Chroomonas coerulea* (Geitl.) Skuja. PIKE: Kiser Creek, April, 1985.
- **Cryptomonas erosa* Ehrenb. CASS: Indian Creek, June, 1982; New Pankey Pond Ditch, June, 1982. MORGAN: Willow Creek, June, 1982. PIKE: Pigeon Creek, May, 1985.
- **C. marssonii* Skuja. MORGAN: Willow Creek, June, 1982.
- **C. ovata* Ehrenb. CASS: Unnamed ditch near Meredosia Lake, June, 1982. MORGAN: Willow Creek, June, 1982. PIKE: Hadley Creek, April, 1985; Kiser Creek, April, 1985; Pigeon Creek, May, 1985.
- **C. pyrenoidifera* Geitl. MORGAN: Willow Creek, June, 1982. PIKE: Mississippi River at mile 288.5, August, 1985.

**C. rostriformis* Skuja. CASS: New Pankey Pond Ditch, June, 1982; Unnamed ditch near Meredosia Lake, June, 1982.

**Rhodomonas minuta* var. *nannoplancitca* Skuja. CASS: Indian Creek, June, 1982. MORGAN: Willow Creek, June, 1982. PIKE: Mississippi River at mile 288.5, August, 1985.

CYANOPHYTA

Myxophyceac

Chroococcales

**Chroococcus disperus* (Keissl.) Lemm. PIKE: Bay Creek, April, 1985.

**C. disperus* var. *minor* G.M. Smith. CASS: Unnamed ditch near Meredosia Lake, June, 1982.

C. minutus (Kütz.) Nág. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985.

**Marssonella elegans* Lemm. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985.

Merismopedia glauca (Ehrenb.) Nág. CASS: New Pankey Pond Ditch, June, 1982. PIKE: Mississippi River at mile 297.3, August, 1985.

**M. punctata* Meyen. PIKE: Mississippi River at mile 297.3, August, 1985.

M. tenuissima Lemm. PIKE: Mississippi River at miles 288.5, 293 and 297.3, August, 1985.

Microcystis aeruginosa Kütz. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985.

Hormogonales

Anabaena circinalis (Kütz.) Rabh. MORGAN: Willow Creek, June, 1982. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985.

Aphanizomenon flos-aquae (L.) Ralfs. MORGAN: Willow Creek, June, 1982. PIKE: Mississippi River at miles 288.5 and 293, August, 1985.

**Oscillatoria limnetica* Lemm. CASS: New Pankey Pond Ditch, June, 1982; Unnamed ditch near Meredosia Lake, June, 1982. PIKE: Bay Creek, April, 1985; Blue Creek, April, 1985; Hadley Creek, April, 1985; McCraney Creek, April and May, 1985; Mississippi River at miles 288.5, 293 and 297.3, August, 1985; Pigeon Creek, May, 1985.

O. subbrevis Schmidle. CASS: Indian Creek, June, 1982; New Pankey Pond Ditch, June, 1982. PIKE: Bay Creek, April, 1985; Hadley Creek, April, 1985; Kiser Creek, April, 1985; Pigeon Creek, May, 1985.

O. tenuis C.A. Ag. CASS: Unnamed ditch near Meredosia Lake, June, 1982. PIKE: Beebe Creek, April, 1985; Blue Creek, April, 1985; Hadley Creek, April, 1985; Kiser Creek, April, 1985; Mississippi River at mile 297.3, August, 1985; Pigeon Creek, May, 1985.

**Pseudoanabaena galeata* Bocher. CASS: Indian Creek, June, 1982; Unnamed ditch near Meredosia Lake, June, 1982. PIKE: Bay Creek, April, 1985; Kiser Creek, April, 1985; McCraney Creek, May, 1985; Mississippi River at mile 297.3, August, 1985.

Spirulina major Kütz. CASS: New Pankey Pond Ditch, June, 1982.

**S. meneghiniana* Zanard ex Gomont. PIKE: Mississippi River at mile 288.5, August, 1985.

EUGLENOPHYTA

Euglenophyceae

Euglenales

Euglena acus Ehrenb. CASS: Indian Creek, June, 1982. PIKE: Pigeon Creek, May,

1982.

E. acutissima Lemm. CASS: Unnamed ditch near Meredosia Lake, June, 1982.

E. gracilis Klebs. PIKE: Bay Creek, April, 1985; Beebe Creek, April, 1985; McCraneys Creek, April and May, 1985; Pigeon Creek, May, 1985.

E. proxima Dang. CASS: Unnamed ditch near Meredosia Lake, June, 1982.

E. spirogyra Ehrenb. CASS: Indian Creek, June, 1982; New Pankey Pond Ditch, June, 1982.

E. viridis Ehrenb. PIKE: Blue Creek, April, 1985; Hadley Creek, April, 1985; Pigeon Creek, May, 1985.

Phacus acuminata Stokes. CASS: Indian Creek, June, 1982.

**Phacus anacoelus* Stokes. PIKE: Pigeon Creek, May, 1985.

P. longicauda (Ehrenb.) Duj. CASS: New Pankey Pond Ditch, June, 1982. MORGAN: Willow Creek, June, 1982. PIKE: Mississippi River at mile 297.3, August, 1985.

P. pleuronectes (Müll.) Duj. CASS: Indian Creek, June, 1982; New Pankey Pond Ditch, June, 1982. PIKE: Mississippi River at miles 288.5 and 297.3, August, 1985; Pigeon Creek, May, 1985.

P. pyrum (Ehrenb.) Stein. PIKE: Pigeon Creek, May, 1985.

Trachelomonas acanthostoma (Stokes) Defl. PIKE: Pigeon Creek, May, 1985.

T. crebea (Kell.) Defl. PIKE: Bay Creek, April, 1985; Pigeon Creek, May, 1985.

T. globularis (Aver.) Lemm. PIKE: Pigeon Creek, May, 1985.

T. intermedia Dang. PIKE: Blue Creek, April, 1985; Kiser Creek, April, 1985; Mississippi River at mile 288.5, August, 1985.

T. tambowika Swirensko. PIKE: Pigeon Creek, May, 1985.

T. volvocina Ehrenb. PIKE: Pigeon Creek, May, 1985.

PYRROPHYTA

Dinophyceae

Peridiniales

**Peridinium limbatum* (Stokes) Lemm. MORGAN: Willow Creek, June, 1982.

ACKNOWLEDGMENT

The contents of this paper was supported in part by the National Science Foundation, grant #BSR81-14563, "Structure and Function of Illinois Large Rivers."

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