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PLANKTON DIATOM ASSEMBLAGES IN LAKE MICHIGAN

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On Cover:

Sunfish	*Lepomis gibbosus*
Bullfrog	*Rana catesbeiana*
Spotted salamander	*Ambystoma maculatum*

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PLANKTON DIATOM ASSEMBLAGES IN LAKE MICHIGAN

by

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for the

FEDERAL WATER QUALITY ADMINISTRATION

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TABLE OF CONTENTS

INTRODUCTION. 1

PREVIOUS INVESTIGATIONS 2

SAMPLING. 3

PREPARATION AND ANALYSIS PROCEDURES 4

SYSTEMATIC RESULTS. 5

CONCLUSIONS 208

SUMMARY 214

ACKNOWLEDGMENTS 215

LITERATURE CITED. 216

APPENDIX A. 221

INTRODUCTION

The flora of the Laurention Great Lakes has lain before the scientific public as an unaccepted challenge for nearly 300 years. Until relatively recent times the very size of these bodies of water has discouraged their investigation, as the average investigator lacked the necessary physical resources to mount an effective attack upon the problem. As a result, what knowledge we now have at hand has largely been gathered either through short-term studies of the nearshore flora, often conducted by interested amateurs, or as an adjunct to practically oriented research in fisheries and water quality. With the increasingly apparent necessity to deal with the ecology of the lakes if they are to be preserved in a condition useful to man, this lack of orderly progress, if compared to such thoroughly investigated areas as the terrestrial flora, begins to bear bitter fruit.

The dominant organisms in all of the Great Lakes, at least in their pristine condition, are the diatoms. The investigation reported here is an attempt to more fully document the plankton diatom flora of one of the Great Lakes, Lake Michigan. Over the past three years about 1000 collections, both of the modern flora and of preserved collections dating back to about 1880, have been examined. Although the primary emphasis has been the determination of the species present, considerable effort has been devoted to determining the relative abundance of the various elements of the flora, their seasonal cycles, and the history of the changes in the flora during the period of record. Patently none of these objectives will be fulfilled by any single investigation. It is hoped, however, that the results of this research will stimulate others to carry on this general area of research to fruitful conclusions and that the conclusions reached will prove useful to researchers in other ancillary fields.

PREVIOUS INVESTIGATIONS

Probably the earliest traceable collections from the Great Lakes area that have been preserved to the present day are those of Ehrenberg (1854-56). The earliest reports dealing with Lake Michigan phytoplankton are the lists published by Briggs (1872) and Thomas and Chase (1887). All of these persons were more or less amateur diatomists although they published extensively in the finest tradition of the gentleman amateur scientist of that day.

Further records of the Lake Michigan flora are contained in the voluably reported results of the fisheries investigations of Forbes (1882a, 1882b, 1882c, 1883), Ward (1896) and Thompson (1896).

In 1904 Chase published a list of Michigan diatoms including many from Lake Michigan. Some records of the flora of the extreme southern end of Lake Michigan are included in the reports of the water quality investigations of Leighton (1907) and Baylis and Gerstein (1929). Although containing no records of the algal flora, the report of a similar investigation by Crohurst and Veldee (1927) gives an excellent account of the general conditions in the Chicago area at the time.

In 1927 Eddy published his investigations of the plankton of Lake Michigan, and further records are contained in his later general work (1934). Ahlstrom's (1936) report contains the first account of systematic collections of the offshore plankton. On the other hand, Skvortzow's (1937) never-completed account of the Lake Michigan diatoms is entirely based on material from the water supply of the city of Chicago. In 1944 Lackey published an account of the phytoplankton of the southern end of Lake Michigan.

A number of reports (Daily 1938; Damann 1941; Griffith 1955) have emanated from the botanical laboratories of Northwestern University. The work of Daily and Damann are of particular interest in that their collections are carefully preserved and available for study. Damann later (1945, 1960) published reports based on the plankton collections of the Chicago filtration plant. Although not effectively published, numerous records are available from this installation. Of particular interest to this investigation are the reports of Vaughn (1961, 1962).

Records of the Lake Michigan plankton at two locations have been gathered by the National Water Quality Network (1960, 1961, 1962) and are reported in publications by Williams (1962, 1964) and Williams and Scott (1962). Other recent publications include those of Stoermer and Kopczynska (1967), Stoermer (1967, 1968), and Holland (1968, 1969).

Patrick and Reimer's treatise on the diatoms of the United States (1966) also contains numerous records from Lake Michigan, although their practice of recording distributions from broad geographic areas makes it difficult to determine the exact distribution of the species in question.

SAMPLING

The majority of samples reported in this study were taken by means of a 1/2 meter #20 plankton net. Where water depths permitted, the sampling procedure was a vertical haul from approximately 2 m off the bottom to the surface. In nearshore areas and channels it was necessary to resort to oblique tows. While the limitations of this sampling method are well known and recognized, it is the only method that allows direct comparison between modern samples with the previously gathered samples available from Lake Michigan. It is perhaps important to emphasize that, even in this limited context, complete uniformity was not achieved. The samples of Thomas and Chase were, in most instances, taken directly from the water supply of the city of Chicago by placing several layers of muslin directly over a water tap and thus straining out sufficient quantities of algae for the preparation of permanent slides. The absolute efficiency of this sampling method remains unknown and is not amenable to modern testing. The samples of Daily, Damann and Ford were apparently taken nearshore by means of a horizontal tow of a small diameter, hand cast net.

All material examined is listed in appendix "A." The modern collections, presently housed in the author's collection at the Great Lakes Research Division, University of Michigan, consist of a preserved sample of uncleaned material, a sample of cleaned material, and duplicate prepared slides. In most instances similar material of the historic collections is available at the Academy of Natural Sciences, Philadelphia. In some cases, particularly with the older samples, only prepared slides exist, the older material having been lost or not preserved by the original investigator.

PREPARATION AND ANALYSIS PROCEDURES

All material gathered in the present investigation was preserved in the field, immediately after collection, in buffered formalin. After being received in the laboratory the samples were split and one subsample was set aside, without further treatment as a reference collection. The other subsample was cleaned, by standard methods for diatom taxonomy (Patrick and Reimer 1966). Duplicate prepared slides were made from each cleaned subsample and the remaining material was preserved in ethanol and set aside as a reference collection of cleaned material. The prepared slides are strewn mounts, care being taken that the specimens are evenly distributed and present in appropriate density to facilitate subsequent identification and counting.

After preparation, all slides were examined to determine that processing had been satisfactory and to determine the species present. All entities reported are represented by at least one specimen, marked by a circle engraved on the cover of the appropriate permanent slide, included in the author's concept of the taxon. In order to facilitate systematic treatment, photographic illustrations were made of each entity discovered in the course of the investigation and these illustrations, together with a short description of the taxon and the slide number and location coordinates of voucher specimens, are maintained in a permanent file. In all instances optical equipment used for examination of the slides and for taxonomic determinations consisted of a Leitz Ortholux microscope fitted with a full oil immersion system giving a N. A. of at least 1.30.

In the case of slides selected for detailed population analysis, counts were made, using the same optical equipment, either of the entire slide, in the case of the offshore samples, or of 1/2 of the slide, in the case of harbor or nearshore samples. The distribution information given in the systematic results are based on these counts, except in the case of entities which did not occur on the slides counted, in which case the number of a slide known to contain the entity in question is given.

Computor generated listing of the absolute frequency, the relative frequency and the contribution to diversity of each taxon in the slides counted, which cost considerations prohibit reproducing in this report, are available. The calculated diversity estimates for each assemblage investigated are given in Appendix "A."

SYSTEMATIC RESULTS

In the following section a tabulation of the entities encountered in the investigation is given. The genera are listed in alphabetical order and the species of each genus are listed in alphabetical order following. Short descriptions are given for the species of the major plankton genera, including the morphological measurements of specimens in populations from Lake Michigan. Similar description of the range of variation of other populations awaits thorough investigation of the benthic flora.

Because of the time limitations on the completion of this project, it was necessary to proceed with population analyses before reasonably complete systematic treatment of the assemblages could be completed. For this reason a large number of morphologically distinct entities which could not be identified with a recognized taxon were set aside and given a numerical designation. Further research during the course of the investigation has allowed us to determine the relationships of the majority of these, but there remains a significant number which we have not been able to identify. These entities are treated as species *incertae sedis* and are listed at the end of each genus. In some instances further research will show these entities to belong to recognized taxa. Some of them undoubtedly belong to undescribed species. These eventually will be described in the appropriate literature. In many instances determinations await investigation of the benthic flora in order that sufficient specimens be obtained to allow determination of the range of variation of the taxon. Finally a certain number probably are abnormal specimens which can never be satisfactorily determined.

Following the systematic information, a list of occurrences of the species in question in the populations counted is given. This information is presented in the following format: 1) the collection number, 2) the station designation, 3) the date of collection, 4) the proportion of the entity in question in the collection. In cases where a particular entity did not occur in the collections subjected to detailed population analysis, the number of a voucher slide known to contain the entity is given.

Genus *Achnanthes* Bory

Bory, Dict. Class. Hist. Nat., 1:79-80. 1822.

The majority of species of the genus *Achnanthes* find their primary habitat in periphyton communities. Most of the specimens observed in plankton collections from Lake Michigan are probably derived from such communities and their occurrence in the plankton is accidental. Certain species are, however, secondarily planktonic in that they regularly grow attached to some of the larger species of euplanktonic algae. A notable example of this tendency is *A. clevei*, which is regularly noted in plankton collections. It is probable that many of the smaller members of the genus adopt this habit of growth under certain conditions.

Achnanthes affinis Grun.

Achnanthes affinis Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):20. 1880.

1 ACAFFINI TOT NO OF STATIONS 101

(60973	CH	1876	0.02362)	(46510	CH	0C1945	0.00109)	(46917	CH	12JA1946	0.00055)
(46914	CH	19AP1946	0.00107)	(46523	CH	22NO1946	0.00219)	(46909	CH	MR1947	0.00455)
(46916	CH	4MY1947	0.03698)	(46519	CH	5JN1947	15.09082)	(46907	CH	JL1947	0.00049)
(46913	CH	6AU1947	0.07321)	(46922	CH	21AU1947	0.01842)	(46758	EV	5JN1937	0.01070)
(46770	EV	9JL1937	0.00596)	(46764	EV	17JL1937	0.00806)	(46757	EV	25JL1937	0.01444)
(46747	EV	1AU1937	0.00990)	(46763	EV	23AU1937	0.04058)	(46760	EV	22SE1937	0.00492)
(46750	EV	24SE1937	0.00943)	(46748	EV	13OC1937	0.08540)	(46767	EV	27OC1937	0.05416)
(46749	EV	12MR1938	0.01214)	(46768	EV	16MR1938	0.05880)	(46762	EV	18MR1938	0.08822)
(46766	EV	14DE1938	0.01584)	(1226	C 7	16MY1964	0.01522)	(1240	D 6	10JN1964	0.00153)
(1243	E 6	13JN1964	0.00209)	(1244	F 1	11JN1964	0.00219)	(1245	F 2	11JN1964	0.00692)
(1255	D 5	15JL1964	0.00257)	(1258	F 1	6JL1964	0.16518)	(1259	F 2	6JL1964	0.01859)
(1260	F 3	6JL1964	0.00764)	(1443	B 6	16AU1964	0.00198)	(1267	D 6	18AU1964	0.00216)
(1268	E 2	15AU1964	0.04103)	(1270	F 1	10AU1964	0.63717)	(1272	C' 1	10SE1964	0.00410)
(1279	E 1	16SE1964	0.03534)	(1280	E 2	16SE1964	0.00681)	(1285	F 1	15SE1964	1.22299)
(1286	F 2	15SE1964	0.01095)	(1287	F 3	15SE1964	0.01001)	(1302	E 5	13OC1964	0.00405)
(1303	E 6	13OC1964	0.00560)	(1304	F 1	11OC1964	0.01729)	(1305	F 2	11OC1964	0.02933)
(1306	F 3	11OC1964	0.01940)	(1308	C 7	6NO1964	0.00608)	(1322	E 6	7NO1964	0.00333)
(1344	C 3	25AP1967	0.00165)	(1452	E 2	14JL1967	0.03619)	(1505	A 4	28AU1967	0.00515)
(1512	E 3	1SE1967	0.00393)	(1535	C 7	20SE1967	0.00322)	(1536	E 2	24SE1967	0.01091)
(1537	E 3	24SE1967	0.00431)	(1538	E 5	23SE1967	0.01657)	(1540	C 5	4OC1967	0.00496)
(1541	E 2	11OC1967	0.00532)	(1542	E 3	11OC1967	0.00509)	(1543	E 5	10OC1967	0.02155)
(1381	GS 5	10MY1967	0.00239)	(1384	GS 8	10MY1967	0.00370)	(1387	GS11	12MY1967	0.03169)
(1389	GS13	12MY1967	0.01031)	(1390	GS14	12MY1967	0.00587)	(1391	GS15	12MY1967	0.00479)
(1392	GS16	12MY1967	0.00616)	(1394	GS18	13MY1967	0.00344)	(1554	GS 1	3OC1967	0.01067)
(1555	GS 2	3OC1967	0.01766)	(1557	GS 4	3OC1967	0.02616)	(1559	GS 7	4OC1967	0.00350)
(1560	GS 8	4OC1967	0.00945)	(1562	GS10	5OC1967	0.00247)	(1565	GS13	5OC1967	0.01521)
(1567	GS15	5OC1967	0.00318)	(1569	GS17	5OC1967	0.00297)	(1571	GS19	6OC1967	0.00234)
(1573	GS21	6OC1967	0.00560)	(1574	GS22	6OC1967	0.14094)	(1575	GS28	6OC1967	0.00516)
(1524	MI 1	20SE1967	0.02189)	(1546	LU 1	2OC1967	0.08003)	(1521	SH 1	18SE1967	0.00577)
(1523	RA 1	19SE1967	0.01845)	(1526	MO 1	20SE1967	0.01707)	(1530	FR 1	24SE1967	0.03000)
(1545	WL 1	2OC1967	0.00676)	(1549	MO 1	4OC1967	0.02741)	(1552	SM 1	6OC1967	0.00660)
(1550	MR 1	5OC1967	0.02478)	(1426	MS 2	29MY1967	0.05249)	(1350	BH 2	19AP1967	0.00220)
(1402	TR 2	6MY1967	0.01083)	(1352	KW 2	21AP1967	0.00859)	(1403	CA 2	10MY1967	1.42540)
(1404	MO 2	10MY1967	0.02541)	(1405	ES 2	12MY1967	0.01290)	(			

Achnanthes biasolettiana (Kütz.) Grun.

Synedra biasolettiana Kützing, Bacill., p. 63, pl. 3, fig. 22. 1844.
Achnanthes biasolettiana (Kütz.) Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):22. 1880.

2 ACBIASOL TOT NO OF STATIONS 8

(46743	EV	20JN1937	0.00428)	(46762	EV	18MR1938	0.04411)	(1285	F 1	15SE1964	0.01165)
(1389	GS13	12MY1967	0.00258)	(1565	GS13	5OC1967	0.04056)	(1574	GS22	6OC1967	0.00863)
(1405	ES 2	12MY1967	0.01290)	(1407	SM 2	14MY1967	0.00597)	(			

Achnanthes calcar Cleve

Achnanthes calcar Cleve, Acta Fauna Fl. Fennica, 8(2):51, pl. 3, fig. 8. 1891.

3 ACCALCAR TOT NO OF STATIONS 4

(1560	GS 8	4OC1967	0.00472)	(1565	GS13	5OC1967	0.00507)	(1527	TR 1	2OSE1967	0.00629)
(1550	MR 1	5OC1967	0.01239)	(							

Achnanthes clevei Grun.

Achnanthes clevei Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):21. 1880.

This species is quite common in plankton collections from Lake Michigan. As previously noted, it is often observed growing attached to some of the larger euplanktonic algae.

4 ACCLEVEI TOT NO OF STATIONS 58

(3540	CH	11MY1879	0.00466)	(46770	EV	9JL1937	0.00596)	(46750	EV	24SE1937	0.00471)
(46762	EV	18MR1938	0.02206)	(1240	D 6	10JN1964	0.00153)	(1258	F 1	6JL1964	0.00236)
(1268	E 2	15AU1964	0.00274)	(1270	F 1	10AU1964	0.00272)	(1279	E 1	16SE1964	0.00393)
(1285	F 1	15SE1964	0.04659)	(1300	E 3	13OC1964	0.00358)	(1306	F 3	11OC1964	0.00277)
(1316	D 6	9NO1964	0.00378)	(1320	E 4	7NO1964	0.00207)	(1323	F 1	6NO1964	0.00139)
(1340	C 7	28MR1967	0.00145)	(1343	A 6	19AP1967	0.00069)	(1346	C 7	21AP1967	0.00134)
(1435	C 7	13JN1967	0.00316)	(1512	E 3	1SE1967	0.00393)	(1536	E 2	24SE1967	0.00273)
(1542	E 3	11OC1967	0.00509)	(1388	GS12	12MY1967	0.00603)	(1389	GS13	12MY1967	0.00258)
(1392	GS16	12MY1967	0.00308)	(1394	GS18	13MY1967	0.00172)	(1395	GS19	13MY1967	0.00117)
(1554	GS 1	3OC1967	0.00712)	(1555	GS 2	3OC1967	0.00353)	(1557	GS 4	3OC1967	0.01495)
(1565	GS13	5OC1967	0.06592)	(1566	GS14	5OC1967	0.00183)	(1567	GS15	5OC1967	0.00953)
(1569	GS17	5OC1967	0.00149)	(1571	GS19	6OC1967	0.00059)	(1572	GS20	6OC1967	0.00090)
(1573	GS21	6OC1967	0.00224)	(1574	GS22	6OC1967	0.05753)	(1575	GS28	6OC1967	0.00129)
(1544	MU 1	2OC1967	0.00238)	(1546	LU 1	2OC1967	0.05002)	(1526	MO 1	2OSE1967	0.01138)
(1527	TR 1	2OSE1967	0.11321)	(1528	SB 1	2OSE1967	0.02888)	(1529	KW 1	2OSE1967	0.08394)
(1530	FR 1	24SE1967	0.07001)	(1545	WL 1	2OC1967	0.04730)	(1548	CA 1	3OC1967	0.01272)
(1551	ES 1	5OC1967	0.02396)	(1550	MR 1	5OC1967	1.58592)	(1553	SG 1	6OC1967	0.02203)
(1426	MS 2	29MY1967	0.16798)	(1417	HO 2	22MY1967	0.00748)	(1350	BH 2	19AP1967	0.07929)
(1399	PW 2	5MY1967	0.00680)	(1354	GH 2	25AP1967	0.00173)	(1404	MQ 2	10MY1967	0.05081)
(1407	SM 2	14MY1967	0.00597)	(							

Achnanthes clevei var. *rostrata* Hust.

Achnanthes clevei var. *rostrata* Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 204, fig. 295. 1930.

This entity has the same growth habit as the nominate variety. Specimens from Lake Michigan are usually in the upper size range according to descriptions given by most authors (see Patrick and Reimer 1966).

5 ACCLEVVR TOT NO OF STATIONS 74

(60973	CH	1876	0.04724)	(3540	CH	11MY1879	0.00466)	(3541	CH	1FE1881	0.00978)
(46921	CH	23NO1945	0.00065)	(46917	CH	12JA1946	0.00083)	(46915	CH	20FE1946	0.01138)
(46914	CH	19AP1946	0.00107)	(46924	CH	10MY1946	0.00071)	(46923	CH	22NO1946	0.00437)
(46920	CH	20DE1946	0.00062)	(46905	CH	JA1947	0.00245)	(46909	CH	MR1947	0.02732)
(46906	CH	MY1947	0.00398)	(46919	CH	5JN1947	0.00303)	(46907	CH	JL1947	0.00099)
(46922	CH	21AU1947	0.00097)	(46758	EV	5JN1937	0.00713)	(46757	EV	25JL1937	0.00481)
(46747	EV	1AU1937	0.00248)	(46763	EV	23AU1937	0.02029)	(46752	EV	15SE1937	0.06530)
(46760	EV	22SE1937	0.00492)	(46744	EV	6OC1937	0.00975)	(46748	EV	13OC1937	0.06405)
(46767	EV	27OC1937	0.00387)	(46749	EV	12MR1938	0.01214)	(46768	EV	16MR1938	0.02940)
(46762	EV	18MR1938	0.08822)	(1244	F 1	11JN1964	0.00219)	(1245	F 2	11JN1964	0.00346)
(1246	F 3	11JN1964	0.00598)	(1258	F 1	6JL1964	0.00708)	(1268	E 2	15AU1964	0.00547)
(1270	F 1	1OAU1964	0.00272)	(1285	F 1	15SE1964	0.01165)	(1303	E 6	13OC1964	0.00560)
(1305	F 2	11OC1964	0.00173)	(1511	E 2	1SE1967	0.00307)	(1512	E 3	1SE1967	0.00785)
(1536	E 2	24SE1967	0.00273)	(1541	E 2	11OC1967	0.00532)	(1542	E 3	11OC1967	0.01526)
(1385	GS 9	10MY1967	0.00235)	(1387	GS11	12MY1967	0.00792)	(1388	GS12	12MY1967	0.01810)
(1389	GS13	12MY1967	0.00516)	(1390	GS14	12MY1967	0.01174)	(1392	GS16	12MY1967	0.00308)
(1393	GS17	13MY1967	0.00548)	(1394	GS18	13MY1967	0.00516)	(1396	GS20	13MY1967	0.00074)
(1554	GS 1	3OC1967	0.00356)	(1557	GS 4	3OC1967	0.00374)	(1565	GS13	5OC1967	0.20789)
(1567	GS15	5OC1967	0.01270)	(1568	GS16	5OC1967	0.00144)	(1569	GS17	5OC1967	0.00297)
(1570	GS18	5OC1967	0.00992)	(1571	GS19	6OC1967	0.00176)	(1572	GS20	6OC1967	0.00090)
(1574	GS22	6OC1967	0.05753)	(1544	MU 1	2OC1967	0.00238)	(1546	LU 1	2OC1967	0.06502)
(1527	TR 1	2OSE1967	0.03774)	(1529	KW 1	2OSE1967	0.01199)	(1530	FR 1	24SE1967	0.03000)
(1545	WL 1	2OC1967	0.05406)	(1550	MR 1	5OC1967	0.04956)	(1553	SG 1	6OC1967	0.02938)
(1426	MS 2	29MY1967	0.01050)	(1402	TR 2	6MY1967	0.00541)	(1354	GH 2	25AP1967	0.00345)
(1404	MQ 2	10MY1967	0.01270)	(1405	ES 2	12MY1967	0.00645)	(			

Achnanthes conspicua A. Mayer

Achnanthes conspicua A. Mayer, Bayrisch Kryptog. Forsch., 1:198, pl. 6, fig. 9, 10. 1919.

6 ACCONSPI TOT NO OF STATIONS 14

(46921	CH	23NO1945	0.00065)	(46768	EV	16MR1938	0.01470)	(1279	E 1	16SE1964	0.00393)
(1511	E 2	1SE1967	0.00307)	(1565	GS13	5OC1967	0.00507)	(1569	GS17	5OC1967	0.00149)
(1574	GS22	6OC1967	0.00288)	(1547	MS 1	2OC1967	0.00798)	(1526	MO 1	2OSE1967	0.00569)
(1527	TR 1	2OSE1967	0.00629)	(1530	FR 1	24SE1967	0.01000)	(1550	MR 1	5OC1967	0.23541)
(1426	MS 2	29MY1967	0.01050)	(1350	BH 2	19AP1967	0.02863)	(			

Achnanthes conspicua var. *brevistriata* Hust.

Achnanthes conspicua var. *brevistriata* Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 10, p. 202, fig. 292. 1930.

Coll: 983

Achnanthes deflexa Reim.

Achnanthes deflexa Reimer *in*: Patrick and Reimer, Acad. Nat. Sci. Philadelphia Monogr., 13:256, pl. 16, figs. 16-20. 1966.

7 ACDEFLEX TOT NO OF STATIONS 29

(46758	EV	5JN1937	0.04993)	(46743	EV	20JN1937	0.00428)	(46764	EV	17JL1937	0.00806)
(46757	EV	25JL1937	0.02407)	(46763	EV	23AU1937	0.08117)	(46767	EV	27OC1937	0.00774)
(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	0.02206)	(1244	F 1	11JN1964	0.00110)
(1245	F 2	11JN1964	0.00346)	(1258	F 1	6JL1964	0.00472)	(1260	F 3	6JL1964	0.00191)
(1285	F 1	15SE1964	0.00582)	(1387	GS11	12MY1967	0.01188)	(1398	GS22	14MY1967	0.00304)
(1562	GS10	5OC1967	0.00247)	(1527	TR 1	2OSE1967	0.01887)	(1530	FR 1	24SE1967	0.01000)
(1545	WL 1	2OC1967	0.01351)	(1550	MR 1	5OC1967	0.14868)	(1553	SG 1	6OC1967	0.00734)
(1428	MU 2	29MY1967	0.00301)	(1426	MS 2	29MY1967	0.04199)	(1350	BH 2	19AP1967	0.00881)
(1401	MO 2	6MY1967	0.00588)	(1403	CA 2	10MY1967	0.02615)	(1404	MO 2	10MY1967	0.03811)
(1405	ES 2	12MY1967	0.01935)	(1407	SM 2	14MY1967	0.00597)	(			

Achnanthes delicatula (Kütz.) Grun.

Achnanthidium delicatulum Kützing, Bacill., p. 75, pl. 3, fig. 21. 1844.
Achnanthes delicatula Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):22. 1880.

8 ACDELICG TOT NO OF STATIONS 1

(1550	MR 1	5OC1967	0.03717)	(

Achnanthes detha Hohn and Hellerm.

Achnanthes detha Hohn and Hellerman, Trans. Amer. Micr. Soc., 82(3):274, pl. 2, figs. 7-8. 1963.

9 ACDETHAQ TOT NO OF STATIONS 2

(1550	MR 1	5OC1967	0.02478)	(1404	MO 2	10MY1967	0.01270)	(

Achnanthes dispar Cleve

Achnanthes dispar Cleve, Acta Soc. Fauna Fl. Fennica, 8(2):52, pl. 3, figs. 2-3. 1891.

10 ACDISPAR TOT NO OF STATIONS 1

(1388	GS12	12MY1967	0.00603)	(	

Achnanthes exigua Grun.

Achnanthes exigua Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):21. 1880.

11 ACEXIGUA TOT NO OF STATIONS 23

(46767	EV	27DC1937	0.00387)	(46762	EV	18MR1938	0.02206)	(1258	F 1	6JL1964	0.00236)
(1268	E 2	15AU1964	0.00274)	(1341	A 3	19AP1967	0.00108)	(1541	E 2	11OC1967	0.01064)
(1392	GS16	12MY1967	0.00308)	(1397	GS21	13MY1967	0.00065)	(1555	GS 2	3OC1967	0.00353)
(1565	GS13	5OC1967	0.01521)	(1571	GS19	6OC1967	0.00059)	(1573	GS21	6OC1967	0.00112)
(1575	GS28	6OC1967	0.00129)	(1546	LU 1	2OC1967	0.00500)	(1529	KW 1	20SE1967	0.03598)
(1551	ES 1	5OC1967	0.02396)	(1550	MR 1	5OC1967	0.07434)	(1553	SG 1	6OC1967	0.02203)
(1351	MI 2	21AP1967	0.00310)	(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.00441)
(1404	MO 2	10MY1967	0.06352)	(1407	SM 2	14MY1967	0.00597)	(			

Achnanthes exigua var. *heterovalva* Krasske

Achnanthes exigua var. *heterovalva* Krasske, Bot. Arch., 3(4):193, figs. 9a-b. 1923.

12 ACEXIGVH TOT NO OF STATIONS 6

(1544	MU 1	2OC1967	0.00238)	(1522	BH 1	18SE1967	0.00365)	(1545	WL 1	2OC1967	0.00676)
(1549	MO 1	4OC1967	0.01370)	(1550	MR 1	5OC1967	1.35051)	(1350	BH 2	19AP1967	0.02863)

Achnanthes exigua var. *heterovalva* fo. *semiaperta* Guer.

Achnanthes exigua var. *heterovalva* fo. *semiaperta* Guermeur, Cat. Inst. Français d'Afrique Noire, 12:32, pl. 2, figs. 3c, 3i, 3j. 1954.

13 ACEXVHFS TOT NO OF STATIONS 3

(46906	CH	MY1947	0.00066)	(1571	GS19	6OC1967	0.00117)	(1575	GS28	6OC1967	0.00129)

Achnanthes hauckiana Grun.

Achnanthes hauckiana Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):21. 1880.

14 ACHAUCKI TOT NO OF STATIONS 5

(1376	E 5	6MY1967	0.00281)	(1544	MU 1	2OC1967	0.00477)	(1417	HO 2	22MY1967	0.00374)
(1350	BH 2	19AP1967	0.01101)	(1354	GH 2	25AP1967	0.00345)	(			

15 ACHAUCKO TOT NO OF STATIONS 1

(1305	F 2	11OC1964	0.00173)	(

Achnanthes hauckiana var. *rostrata* Schulz

Achnanthes hauckiana var. *rostrata* Schulz, Bot. Arch., 13:191, fig. 40. 1926.

16 ACHAUCVR TOT NO OF STATIONS 7

(1377	GS 1	9MY1967	0.00356)	(1544	MU 1	2OC1967	0.00238)	(1547	MS 1	2OC1967	0.00798)
(1520	HO 1	18SE1967	0.00471)	(1545	WL 1	2OC1967	0.00676)	(1426	MS 2	29MY1967	0.02100)
(1350	BH 2	19AP1967	0.02203)	(							

Achnanthes hungarica (Grun.) Grun.

Achnanthidium hungaricum Grunow, Verh. Zool.-Bot. Ges. Wien, 13:146, pl. 4, figs. 8a-c. 1863.
Achnanthes hungarica (Grun.) Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):20. 1880.

18 ACHUNGAR TOT NO OF STATIONS 4

(1342	A 4	19AP1967	0.00180)	(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.01322)
(1406	GB 2	13MY1967	0.00270)	(							

Achnanthes lanceolata (Bréb.) Grun.

Achnanthidium lanceolatum de Brébisson *ex* Kützing, Sp. Alg. p. 54. 1849.
Achnanthes lanceolata (Bréb. *ex* Kütz.) Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):23. 1880.

19 ACLANCEO TOT NO OF STATIONS 41

(46905	CH	JA1947	0.00123)	(46764	EV	17JL1937	0.01612)	(46757	EV	25JL1937	0.00481)
(1317	E 1	6NO1964	0.00191)	(1408	A 3	23MY1967	0.00447)	(1410	A 6	24MY1967	0.00564)
(1416	E 5	28MY1967	0.00219)	(1452	E 2	14JL1967	0.00213)	(1542	E 3	11OC1967	0.00509)
(1555	GS 2	3OC1967	0.00353)	(1559	GS 7	4OC1967	0.00350)	(1571	GS19	6OC1967	0.00059)
(1572	GS20	6OC1967	0.00090)	(1574	GS22	6OC1967	0.00288)	(1575	GS28	6OC1967	0.00258)
(1544	MU 1	2OC1967	0.00238)	(1546	LU 1	2OC1967	0.01501)	(1521	SH 1	18SE1967	0.01154)
(1522	BH 1	18SE1967	0.00365)	(1526	MO 1	20SE1967	0.01138)	(1527	TR 1	20SE1967	0.03774)
(1529	KW 1	20SE1967	0.01199)	(1530	FR 1	24SE1967	0.01000)	(1545	WL 1	2OC1967	0.01351)
(1549	MQ 1	4OC1967	0.01370)	(1551	ES 1	5OC1967	0.00799)	(1550	MR 1	5OC1967	1.44963)
(1426	MS 2	29MY1967	0.08399)	(1427	LU 2	29MY1967	0.02421)	(1417	HO 2	22MY1967	0.00748)
(1418	SH 2	22MY1967	0.01555)	(1350	BH 2	19AP1967	0.17621)	(1402	TR 2	6MY1967	0.01083)
(1400	SB 2	6MY1967	0.01191)	(1352	KW 2	21AP1967	0.00859)	(1354	GH 2	25AP1967	0.00690)
(1403	CA 2	10MY1967	0.01308)	(1404	MQ 2	10MY1967	0.02541)	(1405	ES 2	12MY1967	0.01290)
(1406	GB 2	13MY1967	0.00539)	(1423	WA 2	25MY1967	0.00428)	(			

Achnanthes lanceolata var. *dubia* Grun.

Achnanthes lanceolata var. *dubia* Grunow *in*: Cleve and Grunow, K. Sven Vet.-Akad. Handl., Ny Följd, 17(2):23. 1880.

21 ACLANCVD TOT NO OF STATIONS 34

(1272	C* 1	1OSE1964	0.00410)	(1274	D 1	17SE1964	0.00469)	(1279	E 1	16SE1964	0.01178)
(1341	A 3	19AP1967	0.00325)	(1342	A 4	19AP1967	0.00361)	(1348	E 5	23AP1967	0.00137)
(1449	C 3	16JL1967	0.00382)	(1532	A 3	18SE1967	0.00329)	(1538	E 5	23SE1967	0.00552)
(1540	C 5	4OC1967	0.00993)	(1541	E 2	11OC1967	0.01064)	(1542	E 3	11OC1967	0.01526)
(1398	GS22	14MY1967	0.00304)	(1554	GS 1	3OC1967	0.01779)	(1558	GS 5	4OC1967	0.00793)
(1559	GS 7	4OC1967	0.00350)	(1571	GS19	6OC1967	0.00293)	(1574	GS22	6OC1967	0.00288)
(1544	MU 1	2OC1967	0.00477)	(1547	MS 1	2OC1967	0.03194)	(1546	LU 1	2OC1967	0.02501)
(1522	BH 1	18SE1967	0.00547)	(1526	MO 1	20SE1967	0.00569)	(1527	TR 1	20SE1967	0.00629)
(1529	KW 1	20SE1967	0.02398)	(1530	FR 1	24SE1967	0.02000)	(1545	WL 1	2OC1967	0.02703)
(1550	MR 1	5OC1967	2.37889)	(1553	SG 1	6OC1967	0.00734)	(1426	MS 2	29MY1967	0.39895)
(1417	HO 2	22MY1967	0.02243)	(1350	BH 2	19AP1967	0.38766)	(1354	GH 2	25AP1967	0.00173)
(1404	MQ 2	10MY1967	0.10163)	(							

25 ACLANCVR TOT NO OF STATIONS 4

(1264	C* 1	10AU1964	0.00193)	(1301	E 4	13OC1964	0.00442)	(1306	F 3	11OC1964	0.00277)
(1404	MQ 2	10MY1967	0.02541)	(							

Achnanthes lanceolata var. *elliptica* Cleve

Achnanthes lanceolata var. *elliptica* Cleve, Acta Soc. Fauna Fl. Fennica, 8(2):51, pl. 3, figs. 10, 11. 1891.

22 ACLANCVE TOT NO OF STATIONS 10

(1342	A 4	19AP1967	0.00180)	(1449	C 3	16JL1967	0.00764)	(1452	E 2	14JL1967	0.00426)
(1533	A 4	19SE1967	0.00464)	(1538	E 5	23SE1967	0.00552)	(1384	GS 8	10MY1967	0.00185)
(1554	GS 1	3OC1967	0.00712)	(1571	GS19	6OC1967	0.00059)	(1573	GS21	6OC1967	0.00112)
(1404	MQ 2	10MY1967	0.01270)	(							

Achnanthes lanecolata var. *haynaldii* (Schaarsch.) Cleve

Achnanthes haynaldii Schaarschmidt, Magyar Növenytani Lapok, 5(50):20. 1881.
Achnanthes lanceolata var. *haynaldii* (Schaarsch.) Cleve, Diatomiste, 2(17): 99, pl. 7, figs. 14a-b. 1894.

23 ACLANCVH TOT NO OF STATIONS 1

(1565	GS13	5OC1967	0.00507)	(	

Achnanthes lanceolata var. *omissa* Reim.

Achnanthes lanceolata var. *omissa* Reimer *in*: Patrick and Reimer, Acad. Nat. Sci. Philadelphia Monogr., 13:272, pl. 18, figs. 16, 17. 1966.

24 ACLANCVO TOT NO OF STATIONS 20

(1305	F 2	11OC1964	0.00173)	(1565	GS13	5OC1967	0.44620)	(1566	GS14	5OC1967	0.00367)
(1567	GS15	5OC1967	0.00159)	(1569	GS17	5OC1967	0.00149)	(1573	GS21	6OC1967	0.00112)
(1574	GS22	6OC1967	0.00575)	(1575	GS28	6OC1967	0.00129)	(1544	MU 1	2OC1967	0.00238)
(1547	MS 1	2OC1967	0.01597)	(1524	MI 1	2OSE1967	0.02189)	(1521	SH 1	18SE1967	0.00577)
(1550	MR 1	5OC1967	0.79296)	(1553	SG 1	6OC1967	0.00734)	(1428	MU 2	29MY1967	0.00301)
(1427	LU 2	29MY1967	0.01211)	(1350	BH 2	19AP1967	0.01762)	(1402	TR 2	6MY1967	0.00541)
(1354	GH 2	25AP1967	0.00173)	(1404	MQ 2	10MY1967	0.02541)	(			

Achnanthes lanceolata var. *robusta* Hust.

Achnanthes lanceolata var. *robusta* Hustedt, Arch. Hydrobiol., Suppl. 15:202, pl. 13, figs. 47-49. 1938.

20 ACLANCVB TOT NO OF STATIONS 2

(1550	MR 1	5OC1967	0.30975)	(1426	MS 2	29MY1967	0.03150) (

Achnanthes lanceolatoides Sov.

Achnanthes lanceolatoides Sovereign, Trans. American Micr. Soc., 77(2): 115, pl. 2, figs. 18, 19. 1958.

26 ACLANTOO TOT NO OF STATIONS 1

(1567	GS15	5OC1967	0.00159)	(

Achnanthes laterostrata Hust.

Achnanthes laterostrata Hustedt *in*: Rabenhorst, Kryptog.-Fl. Deutschland, 7(2)3:392, fig. 840. 1933.

28 ACLATERO TOT NO OF STATIONS 1

(1574	GS22	6OC1967	0.00575)	(

Achnanthes lauenburgiana Hust.

Achnanthes lauenburgiana Hustedt, Abh. Naturw. Ver. Bremen, 33(3):451, figs. 1-6. 1944.

29 ACLAUENB TOT NO OF STATIONS 9

(1268	E 2	15AU1964	0.00274)	(1305	F 2	11OC1964	0.00173)	(1383	GS 7	10MY1967	0.00267)
(1572	GS20	6OC1967	0.00090)	(1574	GS22	6OC1967	0.00288)	(1544	MU 1	2OC1967	0.00238)
(1546	LU 1	2OC1967	0.00500)	(1527	TR 1	2OSE1967	0.00629)	(1530	FR 1	24SE1967	0.01000)

Achnanthes lemmermanni Hust.

Achnanthes lemmermanni Hustedt *in*: Rabenhorst, Kryptog.-Fl. Deutschland, 7(2)3:390, fig. 837. 1933.

30 ACLEMMER TOT NO OF STATIONS 2

(1426	MS 2	29MY1967	0.07349)	(1350	BH 2	19AP1967	0.00220)	(			

31 ACLEMMEC TOT NO OF STATIONS 1

(1547	MS 1	20OC1967	0.00798)	(							

Achnanthes linearis (Wm. Smith) Grun.

Achnanthidium lineare Wm. Smith, Ann. Mag. Nat. Hist., Ser. 2, 15:8, pl. 1, fig. 9. 1855.
Achnanthes linearis (Wm. Smith) Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):23. 1880.

32 ACLINEAR TOT NO OF STATIONS 55

(46909	CH	MR1947	0.00455)	(46906	CH	MY1947	0.00199)	(46919	CH	5JN1947	0.02428)
(46907	CH	JL1947	0.00049)	(46922	CH	21AU1947	0.00194)	(46743	EV	20JN1937	0.00428)
(46770	EV	9JL1937	0.00596)	(46764	EV	17JL1937	0.02417)	(46757	EV	25JL1937	0.01444)
(46747	EV	1AU1937	0.00248)	(46763	EV	23AU1937	0.14205)	(46765	EV	30AU1937	0.00558)
(46752	EV	15SE1937	0.26121)	(46767	EV	27OC1937	0.01934)	(46768	EV	16MR1938	0.10290)
(46762	EV	18MR1938	0.08822)	(46751	EV	30MR1938	0.02233)	(1243	E 6	13JN1964	0.00626)
(1258	F 1	6JL1964	0.00236)	(1260	F 3	6JL1964	0.00191)	(1285	F 1	15SE1964	0.02912)
(1304	F 1	11OC1964	0.00494)	(1343	A 6	19AP1967	0.00069)	(1512	E 3	1SE1967	0.00393)
(1536	E 2	24SE1967	0.00273)	(1392	GS16	12MY1967	0.00308)	(1554	GS 1	30OC1967	0.00356)
(1555	GS 2	3OC1967	0.00353)	(1558	GS 5	4OC1967	0.00396)	(1561	GS 9	4OC1967	0.00587)
(1565	GS13	5OC1967	0.01014)	(1569	GS17	5OC1967	0.00149)	(1570	GS18	5OC1967	0.03967)
(1571	GS19	6OC1967	0.00059)	(1573	GS21	6OC1967	0.00112)	(1574	GS22	6OC1967	0.00288)
(1575	GS28	6OC1967	0.00129)	(1544	MU 1	2OC1967	0.00238)	(1546	LU 1	2OC1967	0.01000)
(1521	SH 1	18SE1967	0.00577)	(1523	RA 1	19SE1967	0.00923)	(1527	TR 1	20SE1967	0.03774)
(1528	SB 1	20SE1967	0.01444)	(1529	KW 1	20SE1967	0.02398)	(1548	CA 1	3OC1967	0.01272)
(1551	ES 1	5OC1967	0.04793)	(1552	SM 1	6OC1967	0.01981)	(1550	MR 1	5OC1967	0.49560)
(1553	SG 1	6OC1967	0.00734)	(1426	MS 2	29MY1967	0.01050)	(1350	BH 2	19AP1967	0.17621)
(1352	KW 2	21AP1967	0.00859)	(1404	MO 2	10MY1967	0.03811)	(1405	ES 2	12MY1967	0.00645)
(1349	CI 2	15AP1967	0.00359)	(							

Achnanthes linearis fo. *curta* H. L. Smith

Achnanthes linearis fo. *curta* H. L. Smith *in*: Boyer, Diat. Philadelphia, p. 59, figs. 16-17. 1916.

33 ACLINEFC TOT NO OF STATIONS 3

(46919	CH	5JN1947	0.00303)	(46758	EV	5JN1937	0.01426)	(1305	F 2	11OC1964	0.00518)

Achnanthes marginulata Grun.

Achnanthes marginulata Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):21. 1880.

34 ACMARGIN TOT NO OF STATIONS 2

(1565	GS13	5OC1967	0.01014)	(1553	SG 1	6OC1967	0.01469)	(			

Achnanthes microcephala (Kütz.) Grun.

Achnanthidium microcephalum Kützing, Bacill., p. 75, pl. 3, figs. 13, 19. 1844.
Achnanthes microcephala (Kütz.) Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):22. 1880.

35 ACMICROC TOT NO OF STATIONS 2

(1244	F 1	11JN1964	0.00658)	(1403	CA 2	10MY1967	0.34000)	(			

50 ACSPECOL TOT NO OF STATIONS 7

(1258	F 1	6JL1964	0.03304)	(1260	F 3	6JL1964	0.00382)	(1270	F 1	10AU1964	0.03812)
(1304	F 1	11OC1964	0.00494)	(1305	F 2	11OC1964	0.00173)	(1306	F 3	11OC1964	0.00277)
(1381	GS 5	10MY1967	0.00477)	(							

Achnanthes minutissima Kütz.

Achnanthes minutissima Kützing, Linnaea, 8:578, pl. 16, fig. 54. 1833.

36 ACMINUTI TOT NO OF STATIONS 59

(46924	CH	10MY1946	0.00141)	(46923	CH	22NO1946	0.00219)	(46920	CH	20DE1946	0.00154)
(46909	CH	MR1947	0.00455)	(46916	CH	4MY1947	0.00034)	(46919	CH	5JN1947	1.47949)
(46913	CH	6AU1947	0.03138)	(46758	EV	5JN1937	0.14264)	(46770	EV	9JL1937	0.08946)
(46764	EV	17JL1937	0.82192)	(46757	EV	25JL1937	0.22146)	(46747	EV	1AU1937	0.02228)
(46763	EV	23AU1937	2.27273)	(46752	EV	15SE1937	0.26121)	(46760	EV	22SE1937	0.01477)
(46748	EV	13OC1937	0.04270)	(46767	EV	27OC1937	0.00774)	(46749	EV	12MR1938	0.02427)
(46768	EV	16MR1938	0.07350)	(46762	EV	18MR1938	0.17644)	(46756	EV	27AP1938	0.00168)
(46766	EV	14DE1938	0.03165)	(1244	F 1	11JN1964	0.00219)	(1256	E 2	14JL1964	0.00183)
(1258	F 1	6JL1964	0.00708)	(1262	B 3	17AU1964	0.00210)	(1322	E 6	7NO1964	0.00333)
(1323	F 1	6NO1964	0.00279)	(1341	A 3	19AP1967	0.00108)	(1554	GS 1	3OC1967	0.00712)
(1555	GS 2	3OC1967	0.00353)	(1570	GS18	5OC1967	0.01983)	(1574	GS22	6OC1967	0.00575)
(1575	GS28	6OC1967	0.00129)	(1546	LU 1	2OC1967	0.09503)	(1523	RA 1	19SE1967	0.00923)
(1525	PW 1	20SE1967	0.01393)	(1526	MO 1	20SE1967	0.00569)	(1527	TR 1	20SE1967	0.05031)
(1528	SB 1	20SE1967	0.02888)	(1529	KW 1	20SE1967	0.57561)	(1530	FR 1	24SE1967	0.20002)
(1545	WL 1	2OC1967	0.05406)	(1549	MQ 1	4OC1967	0.12334)	(1551	ES 1	5OC1967	0.01598)
(1552	SM 1	6OC1967	0.00660)	(1550	MR 1	5OC1967	1.09032)	(1553	SG 1	6OC1967	0.02203)
(1426	MS 2	29MY1967	0.05249)	(1427	LU 2	29MY1967	0.01211)	(1350	BH 2	19AP1967	0.11674)
(1352	KW 2	21AP1967	0.01718)	(1354	GH 2	25AP1967	0.00345)	(1403	CA 2	10MY1967	0.09154)
(1404	MQ 2	10MY1967	0.02541)	(1405	ES 2	12MY1967	0.00645)	(1407	SM 2	14MY1967	0.00597)
(1406	GB 2	13MY1967	0.00270)	(1423	WA 2	25MY1967	0.00428)	(			

Achnanthes minutissima var. *cryptocephala* Grun.

Achnanthes minutissima var. *cryptocephala* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 27, figs. 41-44. 1880.

37 ACMINLVC TOT NO OF STATIONS 13

(46758	EV	5JN1937	0.00357)	(46757	EV	25JL1937	0.00963)	(46763	EV	23AU1937	0.02029)
(1260	F 3	6JL1964	0.00191)	(1542	E 3	11OC1967	0.01017)	(1387	GS11	12MY1967	0.00396)
(1389	GS13	12MY1967	0.00258)	(1394	GS18	13MY1967	0.00172)	(1568	GS16	5OC1967	0.00144)
(1549	MQ 1	4OC1967	0.02741)	(1551	ES 1	5OC1967	0.01598)	(1403	CA 2	10MY1967	0.06539)
(1404	MQ 2	10MY1967	0.03811)	(							

Achnanthes nollii Bock

Achnanthes nollii Bock, Nachr. Naturw. Mus. Aschaffenburg, 38:54, pl. 2, figs. 1-2; pl. 5, figs. 7-9. 1953.

38 ACNOLLII TOT NO OF STATIONS 4

(1549	MQ 1	4OC1967	0.01370)	(1403	CA 2	10MY1967	0.03923)	(1404	MQ 2	10MY1967	0.01270
(1405	ES 2	12MY1967	0.00645)	(							

47 ACSPECCI TOT NO OF STATIONS 3

(1258	F 1	6JL1964	0.00236)	(1285	F 1	15SE1964	0.10483)	(1287	F 3	15SE1964	0.00500)

Achnanthes oestrupi (A. Cl.) Hust.

Achnanthes lanceolata var. *östrupi* A. Cleve-Euler, Acta Forest. Fennica, 22:53, pl. 1, fig. 1. 1922.
Achnanthes östrupi (A. Cl.) Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 207, fig. 301. 1930.

39 ACOESTRU TOT NO OF STATIONS 4

(1388	GS12	12MY1967	0.01207)	(1389	GS13	12MY1967	0.00258)	(1558	GS 5	4OC1967	0.00396)
(1404	MQ 2	10MY1967	0.02541)	(							

Achnanthes peragalli Brun

Achnanthes peragalli Brun *in*: Héribaud, Diat. Auvergne, p. 50, pl. 1, fig. 4. 1893.

40 ACPERAGA TOT NO OF STATIONS 2

(1550	MR 1	5OC1967	0.02478)	(1404	MQ 2	10MY1967	0.01270)	(

Achnanthes peragalli var. *fossilis* Temp. and Perag.

Achnanthes peragalli var. *fossilis* Tempere and Peragallo, Diat. Monde Entier, 2nd. ed., p. 113. 1909.

Coll: 982.

Achnanthes pinnata Hust.

Achnanthes pinnata Hustedt *in*: Hedin, Southern Tibet, vol. 6, pt. 3, p. 123, pl. 9, figs. 15-18. 1922.

41 ACPINNAT TOT NO OF STATIONS 7

(46752	EV	15SE1937	0.02177)	(1439	B 6	5JN1964	C.00200)	(1279	E 1	16SE1964	0.00393)
(1285	F 1	15SE1964	0.00582)	(1533	A 4	19SE1967	0.00464)	(1550	MR 1	5OC1967	0.01239)
(1350	BH 2	19AP1967	0.00220)	(							

Achnanthes ploenensis Hust.

Achnanthes ploenensis Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 199, fig. 280. 1930.

42 ACPLONEG TOT NO OF STATIONS 1

(1550	MR 1	5OC1967	0.16107)	(

Achnanthes sublaevis Hust.

Achnanthes sublaevis Hustedt, Bot. Archiv. 38:180, figs. 15-16. 1937.

49 ACSPECOK TOT NO OF STATIONS 3

(1565	GS13	5OC1967	0.00507)	(1549	MQ 1	4OC1967	0.01370)	(1405	ES 2	12MY1967	0.00645)

Species *incertae sedis*

Achnanthes sp. #1.

43 ACSPECOA TOT NO OF STATIONS 1

(1547	MS 1	2OC1967	0.00798)	(

Achnanthes sp. #6.

44 ACSPECOF TOT NO OF STATIONS 2

(1265	C' 2	10AU1964	0.00224)	(1350	BH 2	19AP1967	0.00441)	(

Achnanthes sp. #7.

45 ACSPECOG TOT NO OF STATIONS 4

(1259	F 2	6JL1964	0.00310)	(1260	F 3	6JL1964	0.00191)	(1270	F 1	10AU1964	0.00272)
(1403	CA 2	10MY1967	0.02615)	(							

Achnanthes sp. #10.

48 ACSPECOJ TOT NO OF STATIONS 2

(1285	F 1	15SE1964	0.00582)	(1565	GS13	5OC1967	0.00507)	(

Achnanthes sp. #13.

51	ACSPECCM	TOT NO OF STATIONS	2								
(46915	CH	20FE1946	0.00565)	(46914	CH	19AP1946	0.00107)	(			

Achnanthes sp. #14.

52	ACSPECON	TOT NO OF STATIONS	1								
(1380	GS 4	9MY1967	0.00168)	(							

Achnanthes sp. #15.

53	ACSPECOO	TOT NO OF STATIONS	2								
(1394	GS18	13MY1967	0.00172)	(1397	GS21	13MY1967	0.00065)	(			

Achnanthes sp. #16.

54	ACSPECOP	TOT NO OF STATIONS	2								
(1571	GS19	6DC1967	0.00117)	(1550	MR 1	5DC1967	0.08673)	(			

Achnanthes sp. #17.

55	ACSPECOQ	TOT NO OF STATIONS	1								
(1550	MR 1	5DC1967	0.16107)	(							

Achnanthes sp. #18.

56	ACSPECOR	TOT NO OF STATIONS	1								
(1350	BH 2	19AP1967	0.00220)	(							

Genus *Amphipleura* Kütz.
Kützing, Bacill., p. 103. 1844.

Most freshwater species of the genus *Amphipleura* find their primary habitat in periphyton communities. The two members of the genus that occur in our collections usually grow enclosed in gelatinous tubes. In eutrophied portions of Lake Michigan sizable populations of *A. pellucida* are often taken in plankton collections and these cells seem to be entirely free-living.

Amphipleura artica Patr. and Freese

Amphipleura artica Patrick and Freese, Proc. Acad. Nat. Sci. Philadelphia, 112:170, pl. 1, fig. 14. 1960.

57	APARTICA	TOT NO OF STATIONS	5								
(46921	CH	23NO1945	0.00065)	(46515	CH	20FE1946	0 38)	(46923	CH	22NO1946	0.00437)
(46919	CH	5JN1947	0.00910)	(46768	EV	16MR1938	0.[illegible])	(			

Amphipleura pellucida (Kütz.) Kütz.

Frustulia pellucida Kützing, Linnaea, 8:543, pl. 13, fig. 11. 1833.
Amphipleura pellucida (Kütz.) Kützing, Bacill., p. 103, pl. 3, fig. 52. 1844.

78 APPELLUC TCT NC CF STATICNS 209

(60973	CH	1876	0.09447)	(46521	CH	23NO1945	C.00388)	(46968	CH	DE1945	C.01007)
(46915	CH	20FE1946	0.01707)	(46914	CH	19AP1946	0.00107)	(46923	CH	22NO1946	0.01530)
(46920	CH	20DE1946	0.00031)	(46512	CH	AP1947	C.01150)	(46919	CH	5JN1947	C.00910)
(46922	CH	21AU1947	0.00048)	(46764	EV	17JL1937	0.01612)	(46747	EV	1AU1937	C.00495)
(46752	EV	15SE1937	0.02177)	(46762	EV	18MR1938	0.02206)	(46766	EV	14DE1938	C.03169)
(1223	B 3	18MY1964	C.01250)	(1224	B 4	18MY1964	0.01372)	(1225	C 6	15MY1964	C.01568)
(1226	C 7	16MY1964	0.00381)	(1227	C' 2	13MY1964	0.00548)	(1228	D 2	14MY1964	0.00973)
(1229	D 5	14MY1964	0.13322)	(1230	E 2	16MY1964	0.02371)	(1231	E 3	16MY1964	C.03180)
(1232	E 5	16MY1964	0.03131)	(1233	B 3	5JN2964	0.02143)	(1234	B 3	18JN1964	C.02812)
(1235	C 7	16JN1964	0.00847)	(1439	B 6	5JN1964	0.01399)	(1236	C' 1	8JN1964	C.02625)
(1237	C' 2	8JN1964	C.05672)	(1238	D 3	11JN1964	0.01200)	(1239	D 4	11JN1964	C.01741)
(1240	D 6	10JN1964	0.04295)	(1241	E 2	13JN1964	0.01183)	(1242	E 3	13JN1964	C.00450)
(1243	E 6	13JN1964	0.03550)	(1244	F 1	11JN1964	0.02193)	(1245	F 2	11JN1964	C.06915)
(1246	F 3	11JN1964	0.12550)	(1247	B 3	14JL1964	0.00854)	(1440	B 6	11JL1964	C.00369)
(1441	B 6	24JL1964	0.00441)	(1250	C 6	10JL1964	0.01644)	(1251	C 7	16JL1964	0.00290)
(1253	C' 2	16JL1964	C.01598)	(1254	C 2	15JL1964	0.01724)	(1255	D 5	15JL1964	C.03850)
(1256	E 2	14JL1964	0.02565)	(1257	E 3	14JL1964	0.01436)	(1258	F 1	6JL1964	C.03540)
(1259	F 2	6JL1964	0.09916)	(1260	F 3	6JL1964	0.07449)	(1264	C' 1	10AU1964	C.00193)
(1266	D 3	18AU1964	0.01754)	(1267	D 6	18AU1964	0.00216)	(1268	E 2	15AU1964	C.02462)
(1269	E 3	15AU1964	0.00822)	(1271	C 7	22SE1964	C.00653)	(1272	C' 1	10SE1964	0.00410)
(1274	D 1	17SE1964	0.01408)	(1275	D 2	17SE1964	0.00645)	(1276	D 3	18SE1964	C.01118)
(1277	D 4	18SE1964	0.00620)	(1278	D 6	18SE1964	C.00384)	(1279	E 1	16SE1964	C.01571)
(1280	E 2	16SE1964	0.00681)	(1283	E 5	16SE1964	0.01839)	(1284	E 6	17SE1964	0.04766)
(1285	F 1	15SE1964	0.04659)	(1286	F 2	15SE1964	0.01095)	(1287	F 3	15SE1964	C.02502)
(1445	B 6	14OC1964	0.02283)	(1289	C 7	14OC1964	0.00879)	(1290	C' 1	16OC1964	C.00379)
(1293	D 2	15OC1964	0.00472)	(1294	D 3	15OC1964	0.01978)	(1295	D 4	15OC1964	C.00595)
(1296	D 5	14OC1964	0.00393)	(1297	D 6	14OC1964	C.00952)	(1298	E 1	12OC1964	C.00539)
(1299	E 2	12OC1964	0.00314)	(1301	E 4	13OC1964	C.02208)	(1302	E 5	13OC1964	C.10932)
(1303	E 6	13OC1964	0.02799)	(1304	F 1	11CC1964	0.00988)	(1305	F 2	11OC1964	C.00345)
(1306	F 3	11OC1964	0.01663)	(1307	B 6	NO1964	0.01082)	(1308	C 7	6NO1964	C.01825)
(1316	D 6	9NO1964	0.00378)	(1317	E 1	6NO1964	C.00191)	(1318	E 2	7NO1964	C.00190)
(1319	E 3	7NO1964	0.01309)	(1320	E 4	7NO1964	0.00207)	(1321	E 5	7NO1964	C.00319)
(1322	E 6	7NO1964	0.02999)	(1323	F 1	6NO1964	C.00418)	(1324	F 2	6NC1964	C.00466)
(1325	F 3	6NO1964	0.00252)	(1336	C 3	27JA1967	0.00578)	(1337	C 3	2MR1967	0.01911)
(1338	C 3	28MR1967	0.01851)	(1339	C 5	28MR1967	0.02494)	(1340	C 7	28MR1967	C.00509)
(1341	A 3	19AP1967	0.01193)	(1342	A 4	19AP1967	0.02346)	(1343	A 6	19AP1967	C.00139)
(1344	C 3	25AP1967	0.00331)	(1345	C 5	25AP1967	C.07017)	(1346	C 7	21AP1967	C.00534)
(1347	E 2	23AP1967	0.01301)	(1348	E 5	23AP1967	0.02056)	(1368	A 3	4MY1967	C.00943)
(1369	A 4	4MY1967	0.00373)	(1370	A 6	3MY1967	0.01611)	(1372	C 5	5MY1967	C.01773)
(1374	E 2	7MY1967	0.00598)	(1375	E 3	7MY1967	0.00962)	(1376	E 5	6MY1967	C.01124)
(1410	A 6	24MY1967	0.00564)	(1411	C 3	31MY1967	0.00821)	(1412	C 5	31MY1967	C.04209)
(1414	E 2	28MY1967	0.01343)	(1415	E 3	28MY1967	0.00225)	(1416	E 5	28MY1967	C.00219)
(1431	A 3	12JN1967	0.01030)	(1432	A 4	13JN1967	0.03576)	(1433	C 3	17JN1967	C.05167)
(1434	C 5	17JN1967	0.05084)	(1435	C 7	13JN1967	0.00947)	(1436	E 2	15JN1967	C.00362)
(1437	E 3	15JN1967	0.00269)	(1438	E 5	14JN1967	0.01452)	(1446	A 3	11JL1967	C.01712)
(1447	A 4	11JL1967	0.03275)	(1448	A 6	10JL1967	0.00354)	(1449	C 3	16JL1967	C.01911)
(1450	C 5	16JL1967	0.15424)	(1452	E 2	14JL1967	0.01277)	(1453	E 3	15JL1967	C.01517)
(1509	C 5	2SE1967	0.00505)	(1511	E 2	1SE1967	C.01228)	(1512	E 3	1SE1967	0.00785)
(1513	E 5	31AU1967	0.00507)	(1536	E 2	24SE1967	0.00818)	(1542	E 3	11OC1967	C.00509)
(1378	GS 2	9MY1967	0.00421)	(1379	GS 3	9MY1967	C.00928)	(1380	GS 4	9MY1967	0.00336)
(1381	GS 5	10MY1967	0.00477)	(1383	GS 7	10MY1967	0.00267)	(1384	GS 8	10MY1967	C.00370)
(1385	GS 9	10MY1967	0.01177)	(1386	GS10	12MY1967	0.00862)	(1387	GS11	12MY1967	C.05149)
(1388	GS12	12MY1967	0.00603)	(1389	GS13	12MY1967	0.01547)	(1390	GS14	12MY1967	0.00587)
(1391	GS15	12MY1967	0.02394)	(1392	GS16	12MY1967	0.00616)	(1393	GS17	13MY1967	C.01918)
(1394	GS18	13MY1967	0.18578)	(1395	GS19	13MY1967	0.04932)	(1396	GS20	13MY1967	C.00148)
(1397	GS21	13MY1967	0.00458)	(1398	GS22	14MY1967	0.03947)	(1554	GS 1	3OC1967	C.02846)
(1555	GS 2	3OC1967	C.01059)	(1557	GS 4	3OC1967	0.00374)	(1559	GS 7	4OC1967	C.00350)
(1562	GS10	5OC1967	0.01234)	(1563	GS11	5OC1967	C.09821)	(1566	GS14	5OC1967	C.00183)
(1567	GS15	5OC1967	0.00635)	(1568	GS16	5OC1967	0.11255)	(1569	GS17	5OC1967	C.34784)
(1570	GS18	5OC1967	0.30742)	(1571	GS19	6OC1967	C.09074)	(1572	GS20	6OC1967	C.02794)
(1573	GS21	6OC1967	0.17359)	(1574	GS22	6CC1967	0.00863)	(1575	GS28	6OC1967	C.36125)
(1521	SH 1	18SE1967	0.00577)	(1523	RA 1	19SE1967	0.00923)	(1526	MO 1	20SE1967	C.01707)
(1551	ES 1	5OC1967	0.15177)	(1552	SM 1	6OC1967	0.02641)	(1550	MR 1	5OC1967	C.43365)
(1553	SG 1	6OC1967	0.11751)	(1426	MS 2	29MY1967	0.02100)	(1351	MI 2	21AP1967	C.00310)
(1427	LU 2	29MY1967	0.08475)	(1417	HD 2	22MY1967	0.00374)	(1425	RA 2	25MY1967	C.00884)
(1401	MO 2	6MY1967	0.00588)	(1402	TR 2	6MY1967	C.01083)	(1352	KW 2	21AP1967	C.01718)
(1353	FR 2	23AP1967	0.02110)	(1354	GH 2	25AP1967	0.00173)	(1429	WL 2	29MY1967	C.01062)
(1403	CA 2	10MY1967	0.02615)	(1405	ES 2	12MY1967	0.05805)	(1407	SM 2	14MY1967	C.04777)
(1349	CI 2	19AP1967	0.00359)	(1419	BU 2	23MY1967	0.05492)	(1422	GA 2	23MY1967	C.00511)
(1423	WA 2	25MY1967	0.00856)	(1424	KN 2	25MY1967	0.02665)	(			

Genus *Amphiprora* Ehr.

Ehrenberg, Ber. Akad. Wiss. Berlin, 1840:10. 1841.

The single species of the genus *Amphiprora* that occurs in our collections finds it primary habitat in the epipelic community. It is, however, a successful facultative planktont and a few specimens can be found in many plankton collections from the Great Lakes. Because of its striking morphology it is easily identified and is more widely reported than many more abundant euplanktonic species.

Amphiprora ornata Bailey

Amphiprora ornata Bailey, Smithson. Cont. Knowl., 2:38, pl. 2, figs. 15, 23. 1851.

79 ARORNATA TOT NO OF STATICNS 115

(60973	CH	1876	0.07085)	(3540	CH	11MY1879	0.02330)	(3541	CH	1FE1881	C.1C760)
(46910	CH	0C1945	0.00109)	(46921	CH	23NO1945	0.02975)	(46908	CH	DE1945	C.C2014)
(46917	CH	12JA1946	0.00638)	(46914	CH	19AP1946	0.04378)	(46924	CH	10MY1946	0.06349)
(46923	CH	22NO1946	0.20326)	(46920	CH	20DE1946	C.01356)	(46905	CH	JA1947	C.C2696)
(46909	CH	MR1947	0.03643)	(46912	CH	AP1947	0.01150)	(46916	CH	4MY1947	C.CC509)
(46906	CH	MY1947	0.01460)	(46919	CH	5JN1947	C.00455)	(46907	CH	JL1947	C.C2219)
(46922	CH	21AU1947	0.0C872)	(46758	EV	5JN1937	0.02496)	(46771	EV	11JN1937	C.0C551)
(46743	EV	20JN1937	0.02141)	(46745	EV	3JL1937	C.08359)	(46770	EV	9JL1937	C.03578)
(46764	EV	17JL1937	0.12893)	(46757	EV	25JL1937	0.00963)	(46747	EV	1AU1937	C.02971)
(46763	EV	23AU1937	C.02029)	(46765	EV	30AU1937	0.08366)	(46752	EV	15SE1937	C.C2177)
(46760	EV	22SE1937	0.01970)	(46750	EV	24SE1937	0.00471)	(46744	EV	6OC1937	C.01463)
(46748	EV	13OC1937	0.02135)	(46767	EV	27OC1937	C.01934)	(46768	EV	16MR1938	C.C147C)
(46756	EV	27AP1938	0.0C336)	(46759	EV	19MY1938	0.00338)	(46761	EV	27MY1938	C.01635)
(1225	C 6	15MY1964	0.0C392)	(1228	D 2	14MY1964	C.00195)	(1229	D 5	14MY1964	C.CC211)
(1230	E 2	16MY1964	0.00593)	(1231	E 3	16MY1964	0.00245)	(1232	E 5	16MY1964	0.0C348)
(1234	B 3	18JN1964	0.00843)	(1240	D 6	10JN1964	0.00153)	(1244	F 1	11JN1964	C.CC219)
(1248	B 3	24JL1964	0.00197)	(1440	B 6	11JL1964	C.00369)	(1249	C 3	8JL1964	0.00272)
(1254	D 2	15JL1964	C.0C383)	(1256	E 2	14JL1964	0.00366)	(1257	E 3	14JL1964	C.CC239)
(1258	F 1	6JL1964	0.00944)	(1260	F 3	6JL1964	0.00382)	(1285	F 1	15SE1964	0.01165)
(1297	D 6	14OC1964	0.00381)	(1306	F 3	11OC1964	0.00277)	(1310	C* 2	10NO1964	C.CC227)
(1313	D 3	9NO1964	0.00193)	(1318	E 2	7NO1964	C.00190)	(1320	E 4	7NO1964	C.CC207)
(1321	E 5	7NO1964	0.0C319)	(1339	C 5	28MR1967	0.00312)	(1344	C 3	25AP1967	C.00165)
(1371	C 3	4MY1967	C.00231)	(1376	E 5	6MY1967	0.00281)	(1409	A 4	23MY1967	C.CC298)
(1410	A 6	24MY1967	0.00564)	(1412	C 5	31MY1967	C.00421)	(1413	C 7	25MY1967	C.00632)
(1432	A 4	13JN1967	0.00255)	(1436	E 2	15JN1967	0.00362)	(1446	A 3	11JL1967	C.0C245)
(1447	A 4	11JL1967	0.00234)	(1450	C 5	16JL1967	0.00762)	(1379	GS 3	9MY1967	C.0C309)
(1382	GS 6	10MY1967	0.0C278)	(1383	GS 7	10MY1967	0.00267)	(1387	GS11	12MY1967	C.C1188)
(1388	GS12	12MY1967	0.10256)	(1389	GS13	12MY1967	0.00258)	(1390	GS14	12MY1967	0.01174)
(1391	GS15	12MY1967	0.03352)	(1392	GS16	12MY1967	0.01849)	(1393	GS17	13MY1967	C.03561)
(1394	GS18	13MY1967	0.07741)	(1395	GS19	13MY1967	C.01996)	(1396	GS20	13MY1967	C.00222)
(1397	GS21	13MY1967	0.00589)	(1398	GS22	14MY1967	C.00607)	(1567	GS15	5OC1967	C.00953)
(1568	GS16	5OC1967	0.00433)	(1569	GS17	5OC1967	0.02230)	(1570	GS18	5OC1967	0.C2967)
(1571	GS19	6CC1967	0.00059)	(1572	GS20	6OC1967	C.00090)	(1573	GS21	6OC1967	C.C0112)
(1574	GS22	6OC1967	0.00863)	(1575	GS28	6OC1967	0.00516)	(1526	MO 1	20SE1967	C.0C569)
(1550	MR 1	5OC1967	0.01239)	(1553	SG 1	6CC1967	0.02938)	(1417	HO 2	22MY1967	C.0C748)
(1350	BH 2	19AP1967	0.00661)	(1400	SB 2	6MY1967	0.01191)	(1352	KW 2	21AP1967	C.00859)
(1403	CA 2	10MY1967	0.01308)	(1404	MG 2	10MY1967	0.02541)	(1405	ES 2	12MY1967	C.01935)
(1407	SM 2	14MY1967	0.03583)	(1349	CI 2	19AP1967	0.00359)	(1406	GB 2	13MY1967	C.C0270)
(1422	GA 2	23MY1967	0.00511)	(							

Genus *Amphora* Ehr.

Ehrenberg, Ber. Akad. Wiss. Berlin, 1840:205. 1841.

Most members of the genus *Amphora* find their primary habitat in periphyton communities where they grow attached to filamentous algae or to aquatic vascular plants. Some species grow attached to the larger forms of euplanktonic algae and are occasionally found in abundance in plankton collections. Although attached growth is usual in the genus it is not obligate and many, particularly the larger, species are found in abundance in epipelic communities. A number of unusual and apparently undescribed forms occur in our collections. This highly diverse flora appears to have its closest counterpart in the Siberian flora, particularly that associated with ancient Lake Baikal. It is suspected that this apparent disjunct distribution is more the result of lack of sufficient collection stations from large boreal lakes than from a truly disjunct distribution.

Amphora calumetica (Thomas) Per.

Amphiprora calumetica Thomas, Notarisia, 2:328. 1887.
Amphora calumetica (Thomas) Peragallo, Cat. Gen. Diat. 1897. (fide Mills, 1933; original reference not available).

58 AMCALUME TOT NO OF STATIONS 36

(46921	CH	23NO1945	0.00129)	(46517	CH	12JA1946	0.00028)	(46920	CH	20DE1946	0.00031)
(46905	CH	JA1947	0.00123)	(46516	CH	4MY1947	0.00068)	(46906	CH	MY1947	0.00133)
(46919	CH	5JN1947	0.00152)	(46507	CH	JL1947	0.00099)	(46922	CH	21AU1947	0.00145)
(46758	EV	5JN1937	0.05349)	(46771	EV	11JN1937	0.00238)	(46770	EV	9JL1937	0.00596)
(46764	EV	17JL1937	0.12892)	(46757	EV	25JL1937	0.02407)	(46747	EV	1AU1937	0.02228)
(46765	EV	30AU1937	0.00558)	(46752	EV	15SE1937	0.02177)	(46760	EV	22SE1937	0.01477)
(46750	EV	24SE1937	0.00471)	(46748	EV	13OC1937	0.04270)	(46767	EV	27OC1937	0.00387)
(46749	EV	12MR1938	0.02427)	(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	0.11028)
(46756	EV	27AP1938	0.00504)	(46759	EV	19MY1938	0.00675)	(1279	E 1	16SE1964	0.00393)
(1341	A 3	19AP1967	0.00108)	(1542	E 3	11OC1967	0.00509)	(1574	GS22	6OC1967	0.00575)
(1526	MO 1	20SE1967	0.00569)	(1527	TR 1	20SE1967	0.01887)	(1530	FR 1	24SE1967	0.01000)
(1545	WL 1	2OC1967	0.00676)	(1426	MS 2	29MY1967	0.01050)	(1423	WA 2	25MY1967	0.00428)

Amphora crucifera A. Cleve

Amphora crucifera A. Cleve, Acta Forest. Fennica, 22:53. 1922.

59 AMCRUCIO TOT NO OF STATIONS 4

(1520	MO 1	18SE1967	0.00471)	(1401	MO 2	6MY1967	0.00588)	(1402	TR 2	6MY1967	0.00541)
(1400	SB 2	6MY1967	0.00596)	(							

Amphora montana Krasske

Amphora montana Krasske, Hedwigia, 72(3):119, pl. 2, fig. 27. 1932.

60 AMMONTAN TOT NO OF STATIONS 4

(1522	BH 1	18SE1967	0.00182)	(1523	RA 1	19SE1967	0.00923)	(1550	PR 1	5OC1967	0.01239)
(1350	BH 2	19AP1967	0.01762)	(							

Amphora normani Rabh.

Amphora normani Rabenhorst, Fl. Europaea Alg., p. 88. 1864.

61 AMNORMAN TOT NO OF STATIONS 1

(1350	BH 2	19AP1967	0.00220)	(

Amphora ovalis (Kütz.) Kütz.

Frustulia ovalis Kützing, Linnaea, 8:539, pl. 13, fig. 5. 1833.
Amphora ovalis (Kütz.) Kützing, Bacill., p. 107, pl. 5, figs. 35, 39. 1844.

62 AMOVALIS TOT NO OF STATIONS 37

(60973	CH	1876	0.04724)	(3541	CH	1FE1881	0.01956)	(46921	CH	23NO1945	0.00065)
(46917	CH	12JA1946	0.00028)	(46524	CH	10MY1946	0.00141)	(46920	CH	20DE1946	0.00185)
(46909	CH	MR1947	0.00455)	(46916	CH	4MY1947	0.00034)	(46906	CH	MY1947	0.00066)
(46919	CH	5JN1947	0.00152)	(46522	CH	21AU1947	0.00145)	(46747	EV	1AU1937	0.01238)
(46752	EV	15SE1937	0.02177)	(46762	EV	18MR1938	0.02206)	(46756	EV	27AP1938	0.00168)
(1240	D 6	10JN1964	0.00307)	(1270	F 1	10AU1964	0.00272)	(1279	E 1	16SE1964	0.00393)
(1284	E 6	17SE1964	0.00318)	(1297	D 6	14OC1964	0.00190)	(1305	F 2	11OC1964	0.00173)
(1346	C 7	21AP1967	0.00134)	(1388	GS12	12MY1967	0.00603)	(1389	GS13	12MY1967	0.00258)
(1392	GS16	12MY1967	0.00925)	(1393	GS17	13MY1967	0.00274)	(1565	GS13	5OC1967	0.00507)
(1567	GS15	5OC1967	0.00635)	(1568	GS16	5OC1967	0.00144)	(1573	GS21	6OC1967	0.00112)
(1574	GS22	6OC1967	0.02013)	(1546	LU 1	2OC1967	0.00500)	(1520	MO 1	18SE1967	0.00943)
(1527	TR 1	20SE1967	0.00625)	(1545	WL 1	2OC1967	0.06081)	(1350	BH 2	19AP1967	0.00220)
(1402	TR 2	6MY1967	0.00541)	(							

Amphora ovalis var. *gracilis* (Ehr.) V. H.

Amphora gracilis Ehrenberg, Abh. Akad. Wiss. Berlin, 1841:410, pl. 3 (I), fig. 43. 1843.
Amphora ovalis var. *gracilis* (Ehr.) Van Heurck, Syn. Diat. Belgique, p. 59. 1885.

Coll: 1193.

Amphora ovalis var. *libyca* (Ehr.) Cleve

Amphora libyca Ehrenberg, Ber. Akad. Wiss. Berlin, 1840:205. 1841.
Amphora ovalis var. *libyca* (Ehr.) Cleve, K. Svenska Vet.-Akad. Handl., Ser. 2, 27(3):104. 1895.

63 AMOVALVL TOT NC CF STATICNS 107

(3540	CH	11MY1879	0.00466)	(3541	CH	1FE1881	0.05869)	(3507	CH	19FE1881	0.01132)
(46910	CH	0C1945	0.00546)	(46921	CH	23NO1945	0.03363)	(46917	CH	12JA1946	0.00998)
(46915	CH	20FE1946	0.01707)	(46914	CH	19AP1946	0.01708)	(46924	CH	10MY1946	0.00423)
(46923	CH	22NO1946	0.03497)	(46920	CH	20DE1946	0.01541)	(46905	CH	JA1947	0.00735)
(46909	CH	MR1947	0.04098)	(46916	CH	4MY1947	0.00407)	(46906	CH	MY1947	0.01062)
(46919	CH	5JN1947	0.01214)	(46907	CH	JL1947	0.00296)	(46922	CH	21AU1947	0.04943)
(46758	EV	5JN1937	0.12481)	(46771	EV	11JN1937	0.01426)	(46743	EV	20JN1937	0.02141)
(46764	EV	17JL1937	0.13695)	(46757	EV	25JL1937	0.03852)	(46747	EV	1AU1937	0.07674)
(46763	EV	23AU1937	0.56818)	(46765	EV	30AU1937	0.00558)	(46769	EV	7SE1937	0.02171)
(46752	EV	15SE1937	0.34828)	(46760	EV	22SE1937	0.00492)	(46750	EV	24SE1937	0.03299)
(46744	EV	6OC1937	0.02439)	(46748	EV	13OC1937	0.02135)	(46767	EV	27OC1937	0.03481)
(46749	EV	12MR1938	0.02427)	(46768	EV	16MR1938	0.19109)	(46762	EV	18MR1938	0.26467)
(46751	EV	3OMR1938	0.02233)	(46756	EV	27AP1938	0.00336)	(46759	EV	19MY1938	0.00338)
(46761	EV	27MY1938	0.02180)	(46766	EV	14DE1938	0.07921)	(1240	D 6	10JN1964	0.00460)
(1258	F 1	6JL1964	0.00472)	(1259	F 2	6JL1964	0.00620)	(1260	F 3	6JL1964	0.00191)
(1270	F 1	10AU1964	0.00545)	(1275	D 2	17SE1964	0.01290)	(1278	D 6	18SE1964	0.00384)
(1279	E 1	16SE1964	0.02356)	(1285	F 1	15SE1964	0.01165)	(1286	F 2	15SE1964	0.01095)
(1306	F 3	11OC1964	0.00277)	(1337	C 3	2MR1967	0.00147)	(1340	C 7	28MR1967	0.00073)
(1341	A 3	19AP1967	0.00108)	(1343	A 6	19AP1967	0.00069)	(1536	E 2	24SE1967	0.00818)
(1541	E 2	11OC1967	0.00532)	(1382	GS 6	10MY1967	0.00278)	(1385	GS 9	10MY1967	0.00235)
(1387	GS11	12MY1967	0.03961)	(1388	GS12	12MY1967	0.07843)	(1389	GS13	12MY1967	0.01547)
(1390	GS14	12MY1967	0.03523)	(1391	GS15	12MY1967	0.00479)	(1392	GS16	12MY1967	0.01233)
(1394	GS18	13MY1967	0.00860)	(1397	GS21	13MY1967	0.00131)	(1398	GS22	14MY1967	0.01214)
(1554	GS 1	3OC1967	0.01067)	(1557	GS 4	3OC1967	0.00747)	(1558	GS 5	4OC1967	0.00396)
(1560	GS 8	4OC1967	0.00472)	(1564	GS12	5OC1967	0.00494)	(1565	GS13	5OC1967	0.13690)
(1566	GS14	5OC1967	0.00367)	(1567	GS15	5OC1967	0.08891)	(1569	GS17	5OC1967	0.00446)
(1572	GS20	6OC1967	0.00180)	(1573	GS21	6OC1967	0.00112)	(1574	GS22	6OC1967	0.18409)
(1544	MU 1	2OC1967	0.00477)	(1547	MS 1	2OC1967	0.01597)	(1524	MI 1	2OSE1967	0.02189)
(1546	LU 1	2OC1967	0.04502)	(1520	HO 1	18SE1967	0.00943)	(1526	MO 1	2OSE1967	0.02276)
(1527	TR 1	2OSE1967	0.13208)	(1528	SB 1	2OSE1967	0.02888)	(1529	KW 1	2OSE1967	0.03598)
(1530	FR 1	24SE1967	0.05001)	(1545	WL 1	2OC1967	0.07433)	(1549	MQ 1	4OC1967	0.02741)
(1552	SM 1	6OC1967	0.00660)	(1553	SG 1	6OC1967	0.02203)	(1428	MU 2	29MY1967	0.00301)
(1351	MI 2	21AP1967	0.00310)	(1417	HO 2	22MY1967	0.01122)	(1350	BH 2	19AP1967	0.01542)
(1399	PW 2	5MY1967	0.00680)	(1401	MO 2	6MY1967	0.02940)	(1402	TR 2	6MY1967	0.02166)
(1400	SB 2	6MY1967	0.01191)	(1354	GH 2	25AP1967	0.00173)	(1404	MQ 2	10MY1967	0.02541)
(1349	CI 2	19AP1967	0.00359)	(1406	GB 2	13MY1967	0.00270)	(			

Amphora ovalis var. *pediculus* (Kütz.) V. H.

Cymbella ? pediculus Kützing, Bacill., p. 80, pl. 5, fig. 8; pl. 6, fig. 7. 1844.
Amphora ovalis var. *pediculus* (Kütz.) Van Heurck, Syn. Diat. Belgique, p. 59. 1885.

64 AMOVALVP TOT NO OF STATIONS 139

(60973	CH	1876	0.18895)	(3541	CH	1FE1881	0.01956)	(46910	CH	0C1945	0.00328)
(46921	CH	23NO1945	0.00129)	(46517	CH	12JA1946	0.00083)	(46915	CH	20FE1946	0.02276)
(46914	CH	19AP1946	0.00107)	(46524	CH	10MY1946	0.00282)	(46923	CH	22NO1946	0.01093)
(46905	CH	JA1947	0.00490)	(46509	CH	MR1947	0.02277)	(46916	CH	4MY1947	0.00068)
(46906	CH	MY1947	0.00332)	(46519	CH	5JN1947	0.00759)	(46907	CH	JL1947	0.00049)
(46922	CH	21AU1947	0.00194)	(46758	EV	5JN1937	0.06062)	(46770	EV	9JL1937	0.00596)
(46764	EV	17JL1937	0.14504)	(46757	EV	25JL1937	0.03370)	(46747	EV	1AU1937	0.03713)
(46763	EV	23AU1937	0.54789)	(46769	EV	7SE1937	0.02171)	(46752	EV	15SE1937	0.34828)
(46760	EV	22SE1937	0.00492)	(46750	EV	24SE1937	0.02357)	(46744	EV	6OC1937	0.00975)
(46748	EV	13OC1937	0.44833)	(46767	EV	27OC1937	0.01547)	(46749	EV	12MR1938	0.04855)
(46768	EV	16MR1938	0.23519)	(46762	EV	18MR1938	0.39700)	(46751	EV	30MR1938	0.02233)
(46759	EV	19MY1938	0.00675)	(1241	E 2	13JN1964	0.00148)	(1243	E 6	13JN1964	0.00418)
(1244	F 1	11JN1964	0.00329)	(1245	F 2	11JN1964	0.00346)	(1258	F 1	6JL1964	0.01416)
(1260	F 3	6JL1964	0.00191)	(1265	C' 2	10AU1964	0.00224)	(1268	E 2	15AU1964	0.02188)
(1270	F 1	10AU1964	0.01634)	(1272	C' 1	10SE1964	0.00410)	(1274	D 1	17SE1964	0.00938)
(1275	D 2	17SE1964	0.00645)	(1279	E 1	16SE1964	0.02749)	(1282	E 4	16SE1964	0.01108)
(1284	E 6	17SE1964	0.00635)	(1285	F 1	15SE1964	0.32031)	(1297	D 6	14OC1964	0.00190)
(1300	E 3	13OC1964	0.00358)	(1303	E 6	13OC1964	0.00560)	(1304	F 1	11OC1964	0.03457)
(1305	F 2	11OC1964	0.03105)	(1306	F 3	11OC1964	0.01109)	(1317	E 1	6NO1964	0.00191)
(1323	F 1	6NO1964	0.00139)	(1346	C 7	21AP1967	0.00134)	(1450	C 5	16JL1967	0.00190)
(1452	E 2	14JL1967	0.00426)	(1511	E 2	1SE1967	0.00307)	(1512	E 3	1SE1967	0.00393)
(1537	E 3	24SE1967	0.00431)	(1538	E 5	23SE1967	0.02762)	(1541	E 2	11OC1967	0.00532)
(1542	E 3	11OC1967	0.00509)	(1543	E 5	10OC1967	0.00718)	(1380	GS 4	9MY1967	0.00168)
(1383	GS 7	10MY1967	0.00267)	(1384	GS 8	10MY1967	0.00185)	(1386	GS10	12MY1967	0.00575)
(1388	GS12	12MY1967	0.04827)	(1389	GS13	12MY1967	0.01289)	(1390	GS14	12MY1967	0.01174)
(1392	GS16	12MY1967	0.00616)	(1393	GS17	13MY1967	0.00548)	(1394	GS18	13MY1967	0.00516)
(1395	GS19	13MY1967	0.00235)	(1396	GS20	13MY1967	0.00592)	(1397	GS21	13MY1967	0.00196)
(1398	GS22	14MY1967	0.02429)	(1554	GS 1	3OC1967	0.00712)	(1555	GS 2	3OC1967	0.01412)
(1556	GS 3	3OC1967	0.01043)	(1557	GS 4	3OC1967	0.00747)	(1558	GS 5	4OC1967	0.01586)
(1559	GS 7	4OC1967	0.00350)	(1560	GS 8	4OC1967	0.00945)	(1562	GS10	5OC1967	0.00247)
(1565	GS13	5OC1967	5.32400)	(1566	GS14	5OC1967	0.00367)	(1567	GS15	5OC1967	0.10161)
(1568	GS16	5OC1967	0.00144)	(1571	GS19	6OC1967	0.00293)	(1572	GS20	6OC1967	0.01262)
(1573	GS21	6OC1967	0.01904)	(1574	GS22	6OC1967	0.67307)	(1575	GS28	6OC1967	0.00774)
(1544	MU 1	2OC1967	0.03336)	(1547	MS 1	2OC1967	0.03194)	(1546	LU 1	2OC1967	0.50518)
(1520	HO 1	18SE1967	0.01414)	(1521	SH 1	18SE1967	0.03462)	(1522	BH 1	18SE1967	0.00365)
(1523	RA 1	19SE1967	0.01845)	(1526	MO 1	20SE1967	0.32429)	(1527	TR 1	20SE1967	1.00629)
(1528	SB 1	20SE1967	0.07219)	(1529	KW 1	20SE1967	1.00731)	(1530	FR 1	24SE1967	0.21002)
(1545	WL 1	2OC1967	1.83796)	(1548	CA 1	3OC1967	0.01272)	(1549	PQ 1	4OC1967	0.06852)
(1551	ES 1	5OC1967	0.03195)	(1552	SM 1	6OC1967	0.05282)	(1550	MR 1	5OC1967	1.98241)
(1553	SG 1	6OC1967	0.10282)	(1428	MU 2	29MY1967	0.00301)	(1426	MS 2	29MY1967	0.88189)
(1351	MI 2	21AP1967	0.00621)	(1427	LU 2	29MY1967	0.01211)	(1417	HO 2	22MY1967	0.01869)
(1350	BH 2	19AP1967	0.38766)	(1399	PW 2	5MY1967	0.00680)	(1401	MO 2	6MY1967	0.05292)
(1402	TR 2	6MY1967	0.03249)	(1400	SB 2	6MY1967	0.00596)	(1352	KW 2	21AP1967	0.00859)
(1353	FR 2	23AP1967	0.02110)	(1354	GH 2	25AP1967	0.01381)	(1429	WL 2	29MY1967	0.01062)
(1403	CA 2	1OMY1967	0.02615)	(1404	MC 2	10MY1967	0.26677)	(1405	ES 2	12MY1967	0.00645)
(1407	SM 2	14MY1967	0.22691)	(1349	CI 2	19AP1967	0.01437)	(1422	GA 2	23MY1967	0.00511)
(1423	WA 2	25MY1967	0.00428)	(							

Amphora rotunda Skv.

Amphora rotunda Skvortzow, Phillipine J. Sci., 62(3):342, pl. 12, fig. 18. 1937.

65 AMROTUND TOT NO OF STATIONS 1

(1520	HO 1	18SE1967	0.00471)	(

Amphora siberica Skv. and Meyer

Amphora siberica Skvortzow and Meyer, Proc. Sungaree River Biol. Sta., 1(5):36, pl. 3, fig. 168. 1928.

66 AMSIBIRI TOT NO OF STATIONS 13

(46758	EV	5JN1937	0.01426)	(46743	EV	20JN1937	0.00856)	(46747	EV	1AU1937	0.00495)
(46752	EV	15SE1937	0.04354)	(46744	EV	6OC1937	0.00488)	(46762	EV	18MR1938	0.02206)
(1258	F 1	6JL1964	0.00236)	(1546	LU 1	2OC1967	0.01501)	(1545	WL 1	2OC1967	0.02703)
(1427	LU 2	29MY1967	0.01211)	(1402	TR 2	6MY1967	0.01083)	(1400	SB 2	6MY1967	0.00596)
(1354	GH 2	25AP1967	0.00173)	(							

Amphora veneta Kützing.

Amphora veneta Kützing, Bacill., p. 108, pl. 3, fig. 24. 1844.

67 AMVENETA TOT NO OF STATIONS 4

(46916	CH	4MY1947	0.00136)	(1240	D 6	10JN1964	0.00153)	(1350	BH 2	19AP1967	0.00441)
(1406	GB 2	13MY1967	0.00270)	(							

Species *incertae sedis*

Amphora "veneta var. angularis" (not published)

68 AMVENEVA TOT NO OF STATIONS 6

(46770	EV	9JL1937	0.00596)	(1254	D 2	15JL1964	0.00192)	(1268	E 2	15AU1964	0.00274)
(1557	GS 4	30C1967	0.00374)	(1565	GS13	50C1967	0.00507)	(1574	GS22	60C1967	0.00288)

Amphora sp. #1.

69 AMSPECOA TOT NO OF STATIONS 4

(1258	F 1	6JL1964	0.00236)	(1285	F 1	15SE1964	0.00582)	(1393	GS17	13MY1967	0.00274)
(1574	GS22	60C1967	0.00288)	(							

Amphora sp. #3.

70 AMSPECOC TOT NO OF STATIONS 10

(1258	F 1	6JL1964	0.00236)	(1279	E 1	16SE1964	0.00393)	(1543	E 5	10OC1967	0.00718)
(1393	GS17	13MY1967	0.00274)	(1554	GS 1	30C1967	0.00356)	(1565	GS13	50C1967	0.05578)
(1546	LU 1	2CC1967	0.00500)	(1526	MO 1	20SE1967	0.00569)	(1545	WL 1	20C1967	0.07433)
(1550	MR 1	5CC1967	0.01239)	(							

Amphora sp. #4.

71 AMSPECOD TOT NO OF STATIONS 12

(46917	CH	12JA1946	0.00028)	(46914	CH	19AP1946	0.00107)	(46919	CH	5JN1947	0.00152)
(46747	EV	1AU1937	0.00248)	(46752	EV	15SE1937	0.02177)	(46748	EV	13OC1937	0.04270)
(46767	EV	27OC1937	0.00774)	(1285	F 1	15SE1964	0.02330)	(1411	C 3	31MY1967	0.00410)
(1388	GS12	12MY1967	0.00603)	(1566	GS14	50C1967	0.00183)	(1573	GS21	60C1967	0.00112)

Amphora sp. #6.

72 AMSPECOF TOT NO OF STATIONS 8

(1346	C 7	21AP1967	0.00134)	(1521	SH 1	18SE1967	0.00577)	(1527	TR 1	20SE1967	0.04403)
(1545	WL 1	20C1967	0.08109)	(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.00220)
(1400	SB 2	6MY1967	0.01787)	(1421	CH 2	23MY1967	0.01735)	(			

Amphora sp. #7.

73 AMSPECOG TOT NO OF STATIONS 1

(1285	F 1	15SE1964	0.02330)	(

Amphora sp. #8.

74 AMSPECOH TOT NO OF STATIONS 3

(1389	GS13	12MY1967	0.00258)	(1565	GS13	50C1967	0.00507)	(1350	BH 2	19AP1967	0.00220)

Amphora sp. #9.

75 AMSPECOI TOT NO OF STATIONS 1

(1565	GS13	5OC1967	C.OC507)	(

Amphora sp. #10.

76 AMSPECOJ TOT NO OF STATIONS 2

(1574	GS22	6OC1967	C.CC863)	(1404	MC 2	10MY1967	0.01270)	(

Amphora sp. #11.

77 AMSPECOK TOT NO OF STATIONS 1

(1520	HO 1	18SE1967	0.00471)	(

Genus *Anomoeoneis* Pfitz.

Pfitzer, Bot. Abh. Geb. Morph. Physiol., 1(2):77. 1871.

Members of the genus *Anomoeoneis* find their primary habitat in periphyton and epipelic communities. The few specimens that we have taken in plankton collections from Lake Michigan are most likely accidental occurences being derived from other habitats.

Anomoeoneis serians var. *brachysira* (Bréb. *ex* Kütz.) Hust.

Navicula aponina var. *brachysira* de Brébisson *ex* Kützing, Sp. Alg., p. 69. 1849.
Anomoeoneis serians var. *brachysira* (Bréb. *ex* Kütz.) Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 264, fig. 427. 1930.

80 ANSERVBQ TOT NO OF STATIONS 1

1285	F 1	15SE1964	0.00582)	(

Anomoeoneis vitrea (Grun.) Ross

Gomphonema vitreum Grunow *in*: Schneider, Naturw. Beitr. Kenntn. Kaukasusländer, p. 110. 1878.
Anomoeoneis vitrea (Grun.) Ross *ex* Reimer *in*: Patrick and Reimer, Acad. Nat. Sci. Philadelphia Monogr., 13:380, pl. 33, figs. 12-13. 1966.

81 ANVITREA TOT NO OF STATIONS 33

(46924	CH	10MY1946	0.00071)	(46905	CH	JA1947	0.00123)	(46916	CH	4MY1947	C.OC17C)
(46919	CH	5JN1947	0.24582)	(46913	CH	6AU1947	0.03138)	(46922	CH	21AU1947	C.OC048)
(46764	EV	17JL1937	0.03223)	(46757	EV	25JL1937	0.02889)	(46747	EV	1AU1937	C.OC495)
(46763	EV	23AU1937	0.06088)	(46752	EV	15SE1937	0.04354)	(46750	EV	24SE1937	C.OC471)
(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	0.02206)	(46751	EV	30MR1938	C.01117)
(1245	F 2	11JN1964	0.00346)	(1258	F 1	6JL1964	0.00944)	(1260	F 3	6JL1964	C.OC191)
(1268	E 2	15AU1964	0.00274)	(1270	F 1	10AU1964	C.01906)	(1285	F 1	15SE1964	C.C5241)
(1452	E 2	14JL1967	0.00426)	(1380	GS 4	9MY1967	0.00168)	(1394	GS18	13MY1967	C.OC172)
(1554	GS 1	30C1967	0.00356)	(1565	GS13	5OC1967	C.00507)	(1546	LU 1	2OC1967	C.OC500)
(1545	WL 1	20C1967	0.00676)	(1549	MQ 1	4OC1967	C.01370)	(1551	ES 1	5OC1967	C.OC799)
(1550	MR 1	5OC1967	0.02478)	(1403	CA 2	10MY1967	0.06539)	(1404	MQ 2	10MY1967	C.02541)

Species *incertae sedis*

Anomoeoneis vitrea var. 1.

82 ANVITRVA TOT NC OF STATIONS 5

(46913	CH	6AU1947	0.01046)	(1285	F 1	15SE1964	0.02912)	(1575	GS28	6OC1967	0.00129
(1403	CA 2	10MY1967	0.01308)	(1404	MC 2	10MY1967	0.01270)	(			

Genus *Asterionella* Hass.

Hassall, Micr. Exam. Water, p. 10, pl. 2(2), fig. 5. 1850.

Asterionella bleakeleyi Wm. Smith

Asterionella bleakeleyi Wm. Smith, Syn. British Diat., vol. 2, p. 82. 1856.

Cells asymmetric to the transverse axis, in life attached by the broader end to 4-16 other cells, forming a stellate colony. Valves of specimens from Lake Michigan 35-67μ long, 4-5μ broad at widest extremity. In this taxon the valves taper slightly from the much expanded, often asymmetric, "headpole" to the less expanded "footpole." The width of the midpoint of the valve is always greater than one-half the width of the widest extremity. The margins of the valve are usually slightly convex near middle and are suddenly and sharply constricted just before the capitate "footpole." Striae fine and inconspicuous, without visible substructure, 26-30 in 10μ. Axial area narrow, central area lacking.

This entity is common in some polluted harbors bordering Lake Michigan. We have not, as yet, found it in appreciable quantities in the plankton of the open lake. It is difficult to distinguish from *A. formosa* in the living condition, although its broader, blunter valves which are somewhat expanded in the middle allow it to be recognized if populations of the two entities are compared. Cleaned preparations are required for certain identification.

86 ASBLEAKL TOT NC OF STATIONS 1

(1522	BH 1	18SE1967	11.29629)	(

Asterionella formosa Hass.

Asterionella formosa Hassall, Micr. Exam. Water, p. 10, pl. 2(2), fig. 21. 1850.

Cells asymmetric to the transverse axis, in life attached by the broader end to 4-16 other cells, forming a stellate colony. Valves of specimens from Lake Michigan 42-120μ long, 4-5μ broad at the widest extremity. In this taxon the ends of the valve are suddenly and sharply expanded and the body of the valve is very narrow (1.5-2μ) with parallel sides in the large individuals and a slight taper towards the smaller end in smaller individuals. The width of the midpoint of the valve is always less then one-half that of the widest extremity. Striae fine and inconspicuous, without visible substructure, 24-28 in 10μ. The axial area is very narrow and filiform, central area entirely lacking. In specimens from Lake Michigan very small spines often occur on the margins of the valves.

This species is abundant in collections from all areas of Lake Michigan. Populations from the open are usually composed mostly of individuals with less robust structure and apparently lighter silicification than nearshore populations. Although it is tempting to separate these, our observations indicate that they represent a growth form and cannot be distinguished on the basis of morphology. In areas of the lake that have been eutrophied, both the relative abundance and the seasonal dominance of this species are increased.

84 ASFORMCS TCT NC OF STATICNS 316

(60973	CH	1876	1.86585)	(46510	CH	0C1945	2.87499)	(46921	CH	23N01945	6.01116)
(46908	CH	DE1945	7.53273)	(46517	CH	12JA1946	4.63131)	(46915	CH	20FE1946	5.54828)
(46914	CH	19AP1946	2.49858)	(46524	CH	10MY1946	0.68782)	(46923	CH	22N01946	3.33741)
(46920	CH	20DE1946	1.98263)	(46505	CH	JA1947	0.59811)	(46909	CH	MR1947	2.36783)
(46912	CH	AP1947	9.71599)	(46516	CH	4MY1947	26.39847)	(46906	CH	MY1947	18.72278)
(46919	CH	5JN1947	20.36691)	(46507	CH	JL1947	18.10959)	(46913	CH	6AU1947	C.42883)
(46922	CH	21AU1947	1.57509)	(46758	EV	5JN1937	6.78981)	(46771	EV	11JN1937	12.78113)
(46743	EV	20JN1937	21.10130)	(46745	EV	3JL1937	2.92581)	(46770	EV	9JL1937	1.83683)
(46764	EV	17JL1937	3.60995)	(46757	EV	25JL1937	1.34803)	(46747	EV	1AU1937	C.46043)
(46763	EV	23AU1937	1.78571)	(46765	EV	30AU1937	0.52426)	(46769	EV	7SE1937	C.28224)
(46752	EV	15SE1937	0.93600)	(46760	EV	22SE1937	1.10296)	(46750	EV	24SE1937	2.11151)
(46744	EV	6OC1937	1.50215)	(46748	EV	13OC1937	3.97096)	(46767	EV	27OC1937	11.04793)
(46749	EV	12MR1938	13.25403)	(46768	EV	16MR1938	11.11274)	(46762	EV	18MR1938	5.33745)
(46751	EV	30MR1938	7.81599)	(46772	EV	18AP1938	10.92974)	(46756	EV	27AP1938	22.00244)
(46759	EV	19MY1938	0.81702)	(46761	EV	27MY1938	2.74719)	(46766	EV	14DE1938	19.51837)
(1223	B 3	18MY1964	C.CC938)	(1224	B 4	18MY1964	0.04313)	(1225	C 6	15MY1964	C.75657)
(1226	C 7	16MY1964	0.53272)	(1227	C' 2	13MY1964	0.01645)	(1228	D 2	14MY1964	C.06617)
(1229	D 5	14MY1964	0.54133)	(1230	E 2	16MY1964	0.05334)	(1231	E 3	16MY1964	C.31553)
(1232	E 5	16MY1964	0.14087)	(1233	B 3	5JN2964	0.11907)	(1234	B 3	18JN1964	C.14901)
(1235	C 7	16JN1964	0.19770)	(1439	B 6	5JN1964	2.23776)	(1236	C' 1	8JN1964	C.13478)
(1237	C' 2	8JN1964	0.24233)	(1238	D 3	11JN1964	0.11800)	(1239	D 4	11JN1964	0.01741)
(1240	D 6	10JN1964	C.53688)	(1241	E 2	13JN1964	0.56924)	(1242	E 3	13JN1964	C.C6894)
(1243	E 6	13JN1964	0.58465)	(1244	F 1	11JN1964	0.38376)	(1245	F 2	11JN1964	0.06224)
(1246	F 3	11JN1964	0.25100)	(1247	B 3	14JL1964	0.99885)	(1248	B 3	24JL1964	1.37936)
(1440	B 6	11JL1964	3.35335)	(1441	B 6	24JL1964	2.46701)	(1249	C 3	8JL1964	0.34221)
(1250	C 6	10JL1964	0.52210)	(1251	C 7	16JL1964	0.74164)	(1252	C' 1	16JL1964	C.90934)
(1253	C' 2	16JL1964	0.53405)	(1254	D 2	15JL1964	1.27370)	(1255	D 5	15JL1964	3.55324)
(1256	E 2	14JL1964	0.83352)	(1257	E 3	14JL1964	C.72736)	(1258	F 1	6JL1964	4.79033)
(1259	F 2	6JL1964	4.12122)	(1260	F 3	6JL1964	4.94681)	(1261	B 3	2AU1964	2.C6060)
(1262	B 3	17AU1964	8.37883)	(1442	B 6	2AU1964	2.62709)	(1443	B 6	16AU1964	C.65185)
(1263	C 7	15AU1964	0.56045)	(1264	C' 1	10AU1964	1.89218)	(1265	C' 2	10AU1964	6.88530)
(1266	D 3	18AU1964	7.36635)	(1267	D 6	18AU1964	6.05274)	(1268	E 2	15AU1964	6.51056)
(1269	E 3	15AU1964	4.98821)	(1270	F 1	10AU1964	15.05786)	(1444	B 6	19SE1964	4.24384)
(1271	C 7	22SE1964	0.91402)	(1272	C' 1	10SE1964	9.76891)	(1273	C' 2	10SE1964	14.30184)
(1274	D 1	17SE1964	3.61282)	(1275	D 2	17SE1964	13.09593)	(1276	D 3	18SE1964	2.61511)
(1277	D 4	18SE1964	2.16879)	(1278	D 6	18SE1964	1.34517)	(1279	E 1	16SE1964	7.69623)
(1280	E 2	16SE1964	2.38274)	(1281	E 3	16SE1964	2.74693)	(1282	E 4	16SE1964	3.87812)
(1283	E 5	16SE1964	2.78901)	(1284	E 6	17SE1964	11.34306)	(1285	F 1	15SE1964	6.52262)
(1286	F 2	15SE1964	3.83100)	(1287	F 3	15SE1964	8.05645)	(1288	B 3	15OC1964	11.73320)
(1445	B 6	14OC1964	10.27397)	(1289	C 7	14OC1964	5.84847)	(1290	C' 1	16OC1964	11.53860)
(1291	C' 2	16OC1964	5.13673)	(1292	D 1	15OC1964	8.34824)	(1293	D 2	15OC1964	10.89520)
(1294	D 3	15OC1964	7.84521)	(1295	D 4	15OC1964	8.74063)	(1296	D 5	14OC1964	5.78353)
(1297	D 6	14OC1964	5.59765)	(1298	E 1	12OC1964	13.57174)	(1299	E 2	12OC1964	9.01665)
(1300	E 3	13OC1964	9.77269)	(1301	E 4	13OC1964	6.49121)	(1302	E 5	13OC1964	11.33695)
(1303	E 6	13OC1964	9.79514)	(1304	F 1	11OC1964	4.32184)	(1305	F 2	11OC1964	4.34738)
(1306	F 3	11OC1964	3.10438)	(1307	B 6	N01964	10.60759)	(1308	C 7	6N01964	6.81286)
(1309	C' 1	10N01964	17.44597)	(1310	C' 2	10N01964	18.09523)	(1311	D 1	8N01964	16.79478)
(1312	D 2	8N01964	17.38319)	(1313	D 3	9N01964	10.54054)	(1314	D 4	9N01964	8.84219)
(1315	D 5	9N01964	6.05095)	(1316	D 6	9N01964	8.46177)	(1317	E 1	6N01964	14.60902)
(1318	E 2	7N01964	12.25196)	(1319	E 3	7N01964	13.74597)	(1320	E 4	7N01964	16.50464)
(1321	E 5	7N01964	16.98270)	(1322	E 6	7N01964	13.53018)	(1323	F 1	6N01964	11.12195)
(1324	F 2	6N01964	8.31528)	(1325	F 3	6N01964	2.46858)	(1336	C 3	27JA1967	1.48268)
(1337	C 3	2MR1967	7.51040)	(1338	C 3	28MR1967	5.73862)	(1339	C 5	28MR1967	C.37102)
(1340	C 7	28MR1967	11.30026)	(1341	A 3	19AP1967	1.74653)	(1342	A 4	19AP1967	2.27383)
(1343	A 6	19AP1967	2.67474)	(1344	C 3	25AP1967	2.20035)	(1345	C 5	25AP1967	2.18311)
(1346	C 7	21AP1967	2.33667)	(1347	E 2	23AP1967	2.39005)	(1348	E 5	23AP1967	1.43934)
(1368	A 3	4MY1967	0.04713)	(1369	A 4	4MY1967	C.02982)	(1370	A 6	3MY1967	C.16112)
(1371	C 3	4MY1967	0.00693)	(1372	C 5	5MY1967	C.00709)	(1373	C 7	5MY1967	C.C1426)
(1374	E 2	7MY1967	1.25523)	(1375	E 3	7MY1967	0.03609)	(1376	E 5	6MY1967	0.12930)
(1408	A 3	23MY1967	0.37115)	(1409	A 4	23MY1967	1.14563)	(1410	A 6	24MY1967	C.11840)
(1411	C 3	31MY1967	0.41850)	(1412	C 5	31MY1967	1.62051)	(1413	C 7	25MY1967	C.04422)
(1414	E 2	28MY1967	0.76574)	(1415	E 3	28MY1967	0.31479)	(1416	E 5	28MY1967	C.38269)
(1431	A 3	12JN1967	1.98265)	(1432	A 4	13JN1967	C.98345)	(1433	C 3	17JN1967	4.52138)
(1434	C 5	17JN1967	0.57722)	(1435	C 7	13JN1967	0.19891)	(1436	E 2	15JN1967	C.43060)
(1437	E 3	15JN1967	0.62983)	(1438	E 5	14JN1967	0.40668)	(1446	A 3	11JL1967	6.84898)
(1447	A 4	11JL1967	18.33832)	(1448	A 6	10JL1967	0.59416)	(1449	C 3	16JL1967	5.61733)
(1450	C 5	16JL1967	8.39760)	(1451	C 7	16JL1967	5.37380)	(1452	E 2	14JL1967	12.51756)
(1453	E 3	15JL1967	4.77719)	(1454	E 5	15JL1967	21.00420)	(1504	A 3	28AU1967	1.72818)
(1505	A 4	28AU1967	24.88921)	(1506	A 6	29AU1967	5.49249)	(1508	C 3	2SE1967	19.56276)
(1509	C 5	2SE1967	19.43069)	(1510	C 7	29AU1967	13.27853)	(1511	E 2	1SE1967	32.01645)
(1512	E 3	1SE1967	10.44448)	(1513	E 5	31AU1967	4.25661)	(1532	A 3	18SE1967	4.82901)
(1533	A 4	19SE1967	12.02302)	(1534	A 6	19SE1967	7.16657)	(1535	C 7	20SE1967	3.37979)
(1536	E 2	24SE1967	19.08708)	(1537	E 3	24SE1967	6.03813)	(1538	E 5	23SE1967	3.28675)
(1539	C 3	4OC1967	16.55429)	(1540	C 5	4OC1967	5.55914)	(1541	E 2	11OC1967	10.43052)
(1542	E 3	11OC1967	13.17128)	(1543	E 5	10OC1967	7.03922)	(1377	GS 1	9MY1967	C.00396)
(1378	GS 2	9MY1967	0.03364)	(1379	GS 3	9MY1967	0.01547)	(1380	GS 4	9MY1967	C.15806)
(1381	GS 5	10MY1967	0.19797)	(1382	GS 6	10MY1967	0.00278)	(1383	GS 7	10MY1967	C.08287)
(1384	GS 8	10MY1967	0.02588)	(1385	GS 9	10MY1967	0.04709)	(1386	GS10	12MY1967	C.16087)
(1387	GS11	12MY1967	0.11090)	(1390	GS14	12MY1967	0.01762)	(1391	GS15	12MY1967	C.06225)
(1392	GS16	12MY1967	0.04315)	(1393	GS17	13MY1967	0.25751)	(1394	GS18	13MY1967	C.84288)
(1395	GS19	13MY1967	0.45212)	(1396	GS20	13MY1967	0.05771)	(1397	GS21	13MY1967	C.91567)
(1398	GS22	14MY1967	0.13662)	(1554	GS 1	3OC1967	8.46794)	(1555	GS 2	3OC1967	8.15678)
(1556	GS 3	3OC1967	7.66543)	(1557	GS 4	3OC1967	6.53961)	(1558	GS 5	4OC1967	8.6C155)
(1559	GS 7	4OC1967	6.12016)	(1560	GS 8	4OC1967	6.28158)	(1561	GS 9	4OC1967	4.51957)
(1562	GS10	5OC1967	12.60670)	(1563	GS11	5OC1967	6.71094)	(1564	GS12	5OC1967	4.95424)

(1565	GS13	50C1967	10.64801)	(1566	GS14	50C1967	3.21042)	(1567	GS15	50C1967	1.22253)
(1568	GS16	50C1967	15.55533)	(1569	GS17	50C1967	3.53782)	(1570	GS18	50C1967	3.81793)
(1571	GS19	60C1967	2.41765)	(1572	GS2C	60C1967	2.39743)	(1573	GS21	60C1967	8.7C169)
(1574	GS22	60C1967	10.47000)	(1575	GS28	60C1967	3.97378)	(1544	MU 1	20C1967	1.86813)
(1547	MS 1	20C1967	1.07784)	(1524	MI 1	20SE1967	0.10946)	(1546	LU 1	20C1967	C.31511)
(1520	HO 1	18SE1967	0.43849)	(1521	SH 1	18SE1967	1.93861)	(1523	RA 1	19SE1967	5.31365)
(1525	PW 1	20SE1967	3.11934)	(1526	MC 1	20SE1967	4.64243)	(1527	TR 1	20SE1967	1.10692)
(1528	SB 1	20SE1967	4.85128)	(1529	KW 1	20SE1967	6.52356)	(1530	FR 1	24SE1967	3.2C032)
(1531	GH 1	25SE1967	0.02536)	(1545	WL 1	20C1967	0.56761)	(1548	CA 1	3CC1967	1.28482)
(1549	MQ 1	40C1967	14.25243)	(1551	ES 1	50C1967	24.15527)	(1552	SM 1	60C1967	32.32750)
(1550	MR 1	50C1967	9.91203)	(1553	SG 1	60C1967	35.37015)	(1428	MU 2	29MY1967	1.06059)
(1426	MS 2	25MY1967	4.19947)	(1351	MI 2	21AP1967	13.15749)	(1427	LU 2	29MY1967	C.69007)
(1417	HO 2	22MY1967	2.39270)	(1418	SH 2	22MY1967	0.01555)	(1350	BH 2	19AP1967	C.59911)
(1425	RA 2	25MY1967	0.02652)	(1399	PW 2	5MY1967	1.41458)	(1401	MO 2	6MY1967	C.49389)
(1402	TR 2	6MY1967	0.45484)	(1400	SB 2	6MY1967	2.09674)	(1352	KW 2	21AP1967	15.52998)
(1353	FR 2	23AP1967	2.36287)	(1354	GH 2	25AP1967	2.95504)	(1429	WL 2	29MY1967	1.69869)
(1403	CA 2	10MY1967	0.28769)	(1404	MC 2	10MY1967	0.19055)	(1405	ES 2	12MY1967	1.34159)
(1407	SM 2	14MY1967	2.77065)	(1349	CI 2	19AP1967	4.65551)	(14C6	GB 2	13MY1967	C.43132)
(1419	BU 2	23MY1967	0.40278)	(1420	IH 2	23MY1967	0.13595)	(1421	CH 2	23MY1967	C.10409)
(1422	GA 2	23MY1967	0.04087)	(1423	WA 2	25MY1967	C.14987)	(1424	KN 2	25MY1967	C.29310)
(1430	MC 2	12JN1967	0.04935)	(							

Asterionella gracillima (Hantz.) Heib.

Diatoma gracillimum Hantzsch *in*: Rabenhorst, Alg. Sachens resp. Mitteleuropas, No. 1104. 1861.
Asterionella gracillima (Hantz.) Heiberg, Consp. Crit. Diat. Danicarum, p. 68, pl. 6, fig. 19. 1863.

Cells nearly symmetric, in life attached at one end to form stellate colonies of 4-16 cells. Valves of specimens from Lake Michigan 35-60μ long, 3-4μ broad at the widest extremity. In this taxon the valves are sublinear with capitate ends of nearly equal size. Striae fine and inconspicuous, 24-28 in 10μ, without visible substructure. Axial area very narrow and filiform, central area entirely lacking. Specimens from Lake Michigan often have very delicate spines on the margins of the valves.

Numerous authors have commented on the difficulty of establishing the identity and range of morphologic variation in this taxon. Contrary to some previous reports we have found it to be relatively rare in Lake Michigan. It is tempting to treat it as a growth form or variety of *A. formosa*, but our observations lead us to believe that the two taxa are distinct.

85 ASFCRMVG TCT NO OF STATIONS 19

(46917	CH	12JA1946	0.25229)	(46915	CH	20FE1946	0.01138)	(46914	CH	19AP1946	0.00427)
(46924	CH	10MY1946	0.00353)	(46916	CH	4MY1947	1.43350)	(46919	CH	5JN1947	C.74050)
(46743	EV	20JN1937	0.0C428)	(46749	EV	12MR1938	C.03641)	(46751	EV	30MR1938	C.01117)
(46756	EV	27AP1938	0.00336)	(1225	C 6	15MY1964	0.00392)	(1341	A 3	19AP1967	0.11716)
(1342	A 4	19AP1967	0.03068)	(1343	A 6	19AP1967	0.01251)	(1344	C 3	25AP1967	C.0C496)
(1372	C 5	5MY1967	0.00355)	(1453	E 3	15JL1967	0.00758)	(1513	E 5	31AU1967	C.01520)
(1522	BH 1	18SE1967	0.26258)	(							

Genus *Bacillaria* Gmel.

Gmelin *in*: Linneaeus, Syst. Nat., ed. 13, Vol. 1, Part 6, p. 3903. 1788.

The only commonly recognized member of this genus occurs in periphyton communities and occasionally in the plankton of brackish and nearshore marine habitats. It is also found in saline springs and lakes and other waters containing high levels of total dissolved solids in inland regions. The few specimens noted in our collections were undoubtedly derived from such habitats.

Bacillaria paxillifer (O. F. Müll.) Hendy

Vibrio paxillifer O. F. Müller, Animal. Infus., p. 54. 1786.
Bacillaria paxillifer (O. F. Müll.) Hendy, Fish. Invest. (London), Ser. 4, Part 5, p. 274, pl. 21, fig. 5. 1964.

Coll: 1366.

Genus *Caloneis* Cleve

Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):46. 1894.

Members of the genus *Caloneis* find their primary habitats in periphyton or epipelic communities. The occasional representatives of the genus taken in plankton collections from Lake Michigan are undoubtedly derived from such habitats.

Caloneis alpestris (Grun.) Cleve

Navicula alpestris Grunow, Verh. Zool.-Bot. Ges. Wien, 10:545, pl. 5, fig. 4. 1860.
Caloneis alpestris (Grun.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):53. 1894.

87 CAALPEST TCT NO OF STATIONS 4

(46917	CH	12JA1946	0.00028)	(1504	A 3	28AU1967	0.00247)	(1388	GS12	12MY1967	0.00603)
(1552	SM 1	6OC1967	0.00660)	(							

Caloneis amphisbaena (Bory) Cleve

Navicula amphisbaena Bory, Encyclop. Method., p. 565. 1824.
Caloneis amphisbaena (Bory) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):58. 1894.

88 CAAMPHIS TCT NO OF STATIONS 3

(1520	HO 1	18SE1967	0.00471)	(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.00220)

Caloneis bacillaris var. *thermalis* (Grun.) A. Cleve

Navicula bacillaris var. *thermalis* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 12, fig. 27. 1880.
Caloneis bacillaris var. *thermalis* (Grun.) A. Cleve, Bih. K. Svenska Vet.-Akad. Handl., 21, Afd. 3(2):16. 1895.

91 CABACIVT TCT NO OF STATIONS 8

(46919	CH	5JN1947	0.00152)	(46758	EV	5JN1937	0.00357)	(46764	EV	17JL1937	0.03223)
(46757	EV	25JL1937	0.00481)	(46747	EV	1AU1937	0.00248)	(46760	EV	22SE1937	0.00492)
(1567	GS15	5OC1967	0.00159)	(1574	GS22	6OC1967	0.00288)	(			

Caloneis bacillum (Grun.) Cleve

Stauroneis bacillum Grunow, Verh. Zool.-Bot. Ges. Wien, 13:155, pl. 4, figs. 16a-b. 1863.
Caloneis bacillum (Grunow) Cleve, Diatomiste, 2(17):99. 1894.

89 CABACILL TCT NO OF STATIONS 17

(46921	CH	23NO1945	0.00065)	(46920	CH	20DE1946	0.00031)	(46916	CH	4MY1947	0.00068)
(46747	EV	1AU1937	0.00495)	(46768	EV	16MR1938	0.01470)	(1245	F 2	11JN1964	0.00346)
(1258	F 1	6JL1964	0.00236)	(1284	E 6	17SE1964	0.00318)	(1285	F 1	15SE1964	0.01165)
(1304	F 1	11OC1964	0.00247)	(1389	GS13	12MY1967	0.00258)	(1565	GS13	5OC1967	0.03042)
(1567	GS15	5OC1967	0.00159)	(1574	GS22	6OC1967	0.01438)	(1546	LU 1	20C1967	0.00500)
(1550	MR 1	5OC1967	0.01239)	(1350	BH 2	19AP1967	0.00441)	(			

Caloneis bacillum var. *lancettula* (Schulz) Hust.

Caloneis bacillum var. *lancettula* (Schulz) Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 236, fig. 361. 1930.

90 CABACIVL TOT NO OF STATIONS 13

(46764	EV	17JL1937	0.00806)	(46747	EV	1AU1937	0.00248)	(46763	EV	23AU1937	0.08117)
(46768	EV	16MR1938	0.02940)	(1272	C' 1	10SE1964	0.00410)	(1285	F 1	15SE1964	0.00582)
(1306	F 3	11OC1964	0.00277)	(1387	GS11	12MY1967	0.00396)	(1388	GS12	12MY1967	0.01207)
(1546	LU 1	20C1967	0.00500)	(1526	MO 1	20SE1967	0.00569)	(1529	KW 1	20SE1967	0.04797)
(1530	FR 1	24SE1967	0.02000)	(							

Caloneis clevei (Lagerst.) Cleve

Navicula clevei Lagerstedt, Bih. K. Svenska Vet.-Akad. Handl., 1:34, pl. 1, fig. 10. 1873.
Caloneis clevei (Lagerst.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):51. 1894.

92 CACLEVEI TOT NO OF STATIONS 1

(1564	GS12	50C1967	0.00165)	(	

Caloneis lewisii Patr.

Caloneis lewisii Patrick, Farlowia, 2(2):172. 1945.

93 CALEWISI TOT NO OF STATIONS 2

(60973	CH	1876	0.02362)	(1565	GS13	50C1967	0.00507)	(	

Caloneis limosa (Kütz.) Patr.

Navicula limosa Kützing, Bacill., p. 101, pl. 3, fig. 50. 1844.
Caloneis limosa (Kütz.) Patrick *in*: Patrick and Reimer, Acad. Nat. Sci. Philadelphia Monogr., 13:587, pl. 54, fig. 10. 1966.

94 CALIMOSA TOT NO OF STATIONS 1

(3541	CH	1FE1881	0.00578)	(	

Caloneis ventricosa (Ehr.) Meist.

Navicula ventricosa Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1838:130, pl. 4, fig. 10i. 1839.
Caloneis ventricosa (Ehr.) Meister, Beitr. Kryptog.-Fl. Schweiz, 4(1)116, pl. 17, fig. 4. 1912.

Coll: 1157

Caloneis ventricosa var. *minuta* (Grun.) Patr.

Navicula ventricosa var. *minuta* Grunow *in*: Van Heurck, Syn. Diat. Belgique, p. 103. 1885.
Caloneis ventricosa var. *minuta* (Grun.) Patrick and Reimer, Acad. Nat. Sci. Philadelphia Monogr., 13:584, pl. 54, fig. 2. 1966.

95 CAVENTVM TOT NO OF STATIONS 1

(1521	SH 1	18SE1967	0.00577)	(	

Caloneis ventricosa var. *truncatula* (Grun.) Meist.

Navicula ventricosa var. *truncatula* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 12, fig. 25. 1880.
Caloneis ventricosa var. *truncatula* (Grun.) Meister, Beitr. Kryptog.-Fl. Schweiz, 4(1):116, pl. 17, fig. 5. 1912.

96 CAVENTVT TOT NO OF STATIONS 30

(3540	CH	11MY1879	0.00932)	(3541	CH	1FE1881	0.01956)	(46921	CH	23NO1945	C.00129)
(46923	CH	22NO1946	0.00437)	(46920	CH	20DE1946	0.00031)	(46905	CH	JA1947	C.00123)
(46916	CH	4MY1947	0.00102)	(46907	CH	JL1947	C.00049)	(46922	CH	21AU1947	C.00194)
(46758	EV	5JN1937	0.03209)	(46771	EV	11JN1937	0.00238)	(46743	EV	20JN1937	C.02141)
(46770	EV	9JL1937	0.01785)	(46764	EV	17JL1937	0.04835)	(46757	EV	25JL1937	0.02407)
(46747	EV	1AU1937	0.01485)	(46763	EV	23AU1937	C.06088)	(46752	EV	15SE1937	C.04354)
(46760	EV	22SE1937	0.00492)	(46750	EV	24SE1937	0.00471)	(46748	EV	13OC1937	C.02135)
(46767	EV	27OC1937	0.00387)	(46749	EV	12MR1938	C.01214)	(1270	F 1	10AU1964	0.00272)
(1388	GS12	12MY1967	0.00603)	(1392	GS16	12MY1967	0.00308)	(1565	GS13	5OC1967	0.01521)
(1566	GS14	5OC1967	0.00183)	(1574	GS22	6OC1967	C.00575)	(1545	WL 1	20C1967	C.00676)

Species *incertae sedis*

Caloneis sp. #2.

97 CASPECOB TOT NO OF STATIONS 1

(46919	CH	5JN1947	0.00152)	(

Caloneis sp. #3.

98 CASPECOC TOT NO OF STATIONS 10

(46910	CH	OC1945	0.00109)	(46758	EV	5JN1937	C.01070)	(46771	EV	11JN1937	C.00238)
(46770	EV	9JL1937	0.00596)	(46764	EV	17JL1937	C.10475)	(46757	EV	25JL1937	C.03370)
(46747	EV	1AU1937	0.01733)	(46765	EV	30AU1937	C.00558)	(46752	EV	15SE1937	C.04354)
(1388	GS12	12MY1967	0.01207)	(							

Genus *Campylodiscus* Ehr.
Ehrenberg, Ber. Akad. Wiss. Berlin, 1840:207. 1841.

The single species of *Campylodiscus* that occurs in our collections reaches its maximum abundance in epipelic communities in hardwater lakes. In such localities it is occasionally noted in the plankton and is apparently a successful facultative planktont.

Campylodiscus noricus var. *hibernica* (Ehr.) Grun.

Campylodiscus hibernicus Ehrenberg, Ber. Akad. Wiss. Berlin, 1845:154. 1845.
Campylodiscus noricus var. *hibernica* (Ehr.) Grunow, Verh. Zool.-Bot. Ges. Wien, 12:439. 1862.

99 CMNORIVH TOT NO OF STATIONS 1

(60973	CH	1876	0.02362)	(

Genus *Capartogramma* Kuff.
Kufferath, Expl. Hydrobiol. Lake Tanganyika (1946-1947) Res. Sci. 4(3):27. 1956.

Only a single species of *Capartogramma* occurs in our collections. Previous reports of its distribution indicate that it reaches its maximum abundance in brackish water habitats although it is also found in limited abundance in strictly fresh water. In Lake Michigan its distribution appears to be restricted to shallow, eutrophied bays where it probably grows in epipelic or periphyton communities.

Capartogramma crucicula (Grun. *ex* Cleve) Ross

Schizostauron crucicula Grunow *ex* Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 18(5):16, pl. 3, fig. 44. 1881.
Capartogramma crucicula (Grun. *ex* Cleve) Ross, Bull. British Mus. (Nat. His.), 3(2):59, figs. 8-11. 1963.

100 CPSPECOA TOT NO OF STATIONS 3

(1395	GS19	13MY1967	0.00117)	(1571	GS19	6OC1967	C.00059)	(1550	MR 1	5OC1967	C.03717)				

Genus *Cocconeis* Ehr.

Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1835:173. 1837.

Members of the genus *Cocconeis* are particularly adapted to epiphytic growth on larger algae or on aquatic vascular plants. Plankton collections from Lake Michigan often contain at least a few representatives of the genus. Most of these are probably derived from communities other than the plankton but it appears that at least some of the smaller species are secondarily planktonic in that they attach to larger euplanktonic algae.

Cocconeis diminuta Pant.

Cocconeis diminuta Pantocsek, Res. Wiss. Erforsch. Balatonsees, Vol. 2. Pt. 2, Sec. 1, p. 67, pl. 7, fig. 181. 1902.

101 CCDIMINU TOT NO OF STATIONS 63

(46766	EV	14DE1938	0.01584)	(1244	F 1	11JN1964	0.00110)	(1258	F 1	6JL1964	C.CC236)				
(1268	E 2	15AU1964	0.00274)	(1270	F 1	10AU1964	C.00272)	(1279	E 1	16SE1964	C.00393)				
(1300	E 3	13OC1964	0.00358)	(1431	A 3	12JN1967	0.00257)	(1537	E 3	24SE1967	C.00431)				
(1541	E 2	11OC1967	C.02129)	(1542	E 3	11OC1967	C.01526)	(1383	GS 7	10MY1967	C.CC267)				
(1386	GS10	12MY1967	0.00287)	(1387	GS11	12MY1967	C.01188)	(1388	GS12	12MY1967	C.00603)				
(1391	GS15	12MY1967	0.00479)	(1392	GS16	12MY1967	C.01233)	(1393	GS17	13MY1967	C.CC548)				
(1394	GS18	13MY1967	0.00516)	(1395	GS19	13MY1967	C.00117)	(1396	GS20	13MY1967	C.00074)				
(1398	GS22	14MY1967	0.00304)	(1554	GS 1	3OC1967	C.01067)	(1556	GS 3	3OC1967	C.01564)				
(1557	GS 4	3OC1967	0.00374)	(1558	GS 5	4OC1967	0.00793)	(1559	GS 7	4OC1967	C.CC699)				
(1560	GS 8	4OC1967	0.00472)	(1561	GS 9	4OC1967	0.00587)	(1565	GS13	5OC1967	C.24845)				
(1566	GS14	5OC1967	0.00183)	(1567	GS15	5OC1967	0.00318)	(1571	GS19	6OC1967	0.00234)				
(1572	GS20	6CC1967	0.00180)	(1573	GS21	6OC1967	0.00112)	(1574	GS22	6OC1967	C.02013)				
(1575	GS28	6OC1967	0.00129)	(1544	MU 1	2OC1967	0.00238)	(1547	MS 1	2OC1967	0.00798)				
(1546	LU 1	2CC1967	0.03001)	(1522	BH 1	18SE1967	0.00182)	(1523	RA 1	19SE1967	C.00923)				
(1525	PW 1	2OSE1967	0.04178)	(1526	MO 1	2OSE1967	0.00569)	(1527	TR 1	2OSE1967	C.02516)				
(1529	KW 1	2CSE1967	0.03598)	(1530	FR 1	24SE1967	C.06001)	(1545	WL 1	2OC1967	C.08109)				
(1548	CA 1	3OC1967	0.01272)	(1549	MC 1	4OC1967	0.02741)	(1551	ES 1	5OC1967	C.02396)				
(1550	MR 1	5OC1967	1.84612)	(1553	SG 1	6CC1967	C.03672)	(1426	MS 2	29MY1967	C.18898)				
(1427	LU 2	29MY1967	0.07264)	(1417	HO 2	22MY1967	0.00748)	(1350	BH 2	19AP1967	C.04185)				
(1401	MO 2	6MY1967	0.00588)	(1354	GH 2	25AP1967	0.00690)	(1429	WL 2	29MY1967	C.01062)				
(1404	MO 2	1OMY1967	0.02541)	(1405	ES 2	12MY1967	0.01290)	(1407	SM 2	14MY1967	C.01791)				

Cocconeis disculus (Schum.) Cleve

Navicula disculus Schumann, Schrift. Phys.-Ökon. Ges. Königsburg, 5:21, pl. 2, fig. 23. 1864.
Cocconeis disculus (Schum.) Cleve *in*: Cleve and Jentzsch, Schrift. Phys.-Ökon. Ges. Königsburg, 22:129. 1882.

102 CODISCUL TOT NO OF STATIONS 18

(60973	CH	1876	0.02362)	(3541	CH	1FE1881	0.00978)	(1279	E 1	16SE1964	C.CC393)				
(1541	E 2	11OC1967	0.00532)	(1394	GS18	13MY1967	0.00172)	(1396	GS20	13MY1967	C.00074)				
(1554	GS 1	3OC1967	C.00356)	(1557	GS 4	3OC1967	0.00374)	(1559	GS 7	4OC1967	C.CC350)				
(1561	GS 9	4OC1967	0.00587)	(1567	GS15	5OC1967	0.00159)	(1573	GS21	6OC1967	0.00112)				
(1574	GS22	6OC1967	0.00288)	(1545	WL 1	2OC1967	0.01351)	(1550	MR 1	5OC1967	C.02478)				
(1553	SG 1	6OC1967	0.00734)	(1426	MS 2	29MY1967	0.03150)	(1354	GH 2	25AP1967	C.00173)				

Cocconeis pediculus Ehr.

Cocconeis pediculus Ehrenberg, Infusionsthierchen, p. 194, pl. 21, fig. 11. 1838.

103 COPECICU TOT NO OF STATICNS 100

(3540	CH	11MY1879	0.03261)	(35C7	CH	19FE1881	0.01132)	(46917	CH	12JA1946	C.00083)
(46914	CH	19AP1946	0.00107)	(46523	CH	22NO1946	0.00656)	(46920	CH	20DE1946	C.00062)
(46916	CH	4MY1947	0.00068)	(46519	CH	5JN1947	0.00303)	(46907	CH	JL1947	C.00099)
(46922	CH	21AU1947	0.00194)	(46758	EV	5JN1937	0.02140)	(46770	EV	9JL1937	C.00596)
(46764	EV	17JL1937	0.02417)	(46757	EV	25JL1937	0.02407)	(46747	EV	1AU1937	C.17328)
(46763	EV	23AU1937	3.77435)	(46765	EV	30AU1937	0.02231)	(46752	EV	15SE1937	4.04876)
(46760	EV	22SE1937	0.07878)	(46750	EV	24SE1937	0.07070)	(46744	EV	6OC1937	C.03414)
(46748	EV	13OC1937	0.74722)	(46767	EV	27OC1937	0.03095)	(46749	EV	12MR1938	C.09710)
(46768	EV	16MR1938	0.10290)	(46762	EV	18MR1938	3.52889)	(46751	EV	30MR1938	0.05583)
(46766	EV	14DE1938	0.03169)	(1272	C' 1	10SE1964	C.00410)	(1278	D 6	18SE1964	C.00384)
(1279	E 1	16SE1964	0.00393)	(1284	E 6	17SE1964	0.00318)	(1300	E 3	13OC1964	0.00358)
(1316	D 6	9NO1964	C.00378)	(1452	E 2	14JL1967	C.00213)	(1533	A 4	19SE1967	C.00464)
(1534	A 6	19SE1967	0.00310)	(1536	E 2	24SE1967	0.02999)	(1537	E 3	24SE1967	C.01725)
(1538	E 5	23SE1967	1.41413)	(1540	C 5	4OC1967	C.00496)	(1542	E 3	11OC1967	C.01526)
(1543	E 5	10OC1967	0.00718)	(1388	GS12	12MY1967	0.00603)	(1395	GS19	13MY1967	C.00117)
(1397	GS21	13MY1967	0.00131)	(1398	GS22	14MY1967	0.00304)	(1557	GS 4	3OC1967	C.00747)
(1559	GS 7	4OC1967	0.00699)	(1561	GS 9	4OC1967	0.01174)	(1563	GS11	5OC1967	C.00935)
(1564	GS12	5OC1967	C.00165)	(1565	GS13	5OC1967	0.01014)	(1566	GS14	5OC1967	C.00550)
(1567	GS15	5OC1967	0.06668)	(1568	GS16	5OC1967	0.00433)	(1569	GS17	5OC1967	C.05351)
(1570	GS18	5OC1967	0.02975)	(1571	GS19	6OC1967	0.00585)	(1572	GS20	6OC1967	C.00180)
(1573	GS21	6OC1967	0.01232)	(1574	GS22	6OC1967	0.68745)	(1575	GS28	6OC1967	C.00387)
(1547	MS 1	2OC1967	0.01597)	(1524	MI 1	20SE1967	0.13135)	(1546	LU 1	2OC1967	C.10504)
(1520	HO 1	18SE1967	0.05658)	(1521	SH 1	18SE1967	C.04616)	(1522	BH 1	18SE1967	C.00182)
(1523	RA 1	19SE1967	0.03690)	(1525	PW 1	20SE1967	0.38992)	(1526	MO 1	20SE1967	2.73084)
(1527	TR 1	20SE1967	4.12579)	(1528	SB 1	20SE1967	0.69304)	(1529	KW 1	20SE1967	6.52356)
(1530	FR 1	24SE1967	C.38004)	(1531	GH 1	25SE1967	0.00845)	(1545	WL 1	2OC1967	1.62173)
(1548	CA 1	3OC1967	0.26714)	(1552	SM 1	6OC1967	0.03301)	(1550	MR 1	5OC1967	C.23541)
(1553	SG 1	6OC1967	0.00734)	(1426	MS 2	29MY1967	C.01050)	(1351	MI 2	21AP1967	C.00310)
(1427	LU 2	29MY1967	0.02421)	(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	C.07048)
(1401	MO 2	6MY1967	0.14699)	(1402	TR 2	6MY1967	C.05956)	(1400	SB 2	6MY1967	C.02383)
(1353	FR 2	23AP1967	0.01055)	(1354	GH 2	25AP1967	0.00345)	(1429	WL 2	29MY1967	C.01062)
(1404	MO 2	10MY1967	0.01270)	(1407	SM 2	14MY1967	0.00597)	(1349	CI 2	19AP1967	C.01078)
(1406	GB 2	13MY1967	0.01617)	(1419	BU 2	23MY1967	0.01831)	(1420	IH 2	23MY1967	C.01511)
(1423	WA 2	25MY1967	0.00428)	(							

Cocconeis placentula Ehr.

Cocconeis placentula Ehrenberg, Infusionsthierchen, p. 194. 1838.

104 COPLACEN TOT NO OF STATICNS 27

(46751	EV	30MR1938	0.02233)	(1244	F 1	11JN1964	C.00110)	(1278	D 6	18SE1964	C.00384)
(1304	F 1	11OC1964	0.00247)	(1324	F 2	6NO1964	0.00233)	(1504	A 3	28AU1967	C.00247)
(1537	E 3	24SE1967	0.00863)	(1538	E 5	23SE1967	0.00552)	(1539	C 3	4OC1967	C.00503)
(1540	C 5	4OC1967	0.01985)	(1541	E 2	11OC1967	0.00532)	(1542	E 3	11OC1967	C.01526)
(1555	GS 2	3OC1967	0.01059)	(1559	GS 7	4OC1967	0.00350)	(1562	GS10	5OC1967	C.00247)
(1567	GS15	5OC1967	0.00635)	(1569	GS17	5OC1967	0.00149)	(1572	GS20	6OC1967	C.00090)
(1574	GS22	6OC1967	0.01151)	(1544	MU 1	2OC1967	0.00715)	(1522	BH 1	18SE1967	C.00182)
(1531	GH 1	25SE1967	0.00845)	(1545	WL 1	2OC1967	0.02027)	(1428	MU 2	29MY1967	C.00904)
(1350	BH 2	19AP1967	0.01322)	(1404	MO 2	10MY1967	0.01270)	(1407	SM 2	14MY1967	C.00597)

Cocconeis placentula var. *euglypta* (Ehr.) Cleve

Cocconeis euglypta Ehrenberg, Mikrogeol., pl. 34(6A), fig. 2. 1854.
Cocconeis placentula var. *euglypta* (Ehr.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 27(3):170. 1896.

105 COPLACVE TOT NO OF STATICNS 127

(60973	CH	1876	0.02362)	(3541	CH	1FE1881	0.01956)	(46910	CH	0C1945	C.00109)
(46921	CH	23NO1945	0.00065)	(46917	CH	12JA1946	0.00028)	(46923	CH	22NO1946	0.00656)
(46907	CH	JL1947	C.00099)	(46922	CH	21AU1947	0.00048)	(46743	EV	20JN1937	C.00428)
(46747	EV	1AU1937	0.00248)	(46752	EV	15SE1937	0.04354)	(46760	EV	22SE1937	0.00492)
(46768	EV	16MR1938	0.01470)	(46766	EV	14DE1938	0.01584)	(1229	D 5	14MY1964	C.00423)
(1236	C' 1	8JN1964	0.00175)	(1240	D 6	10JN1964	0.00153)	(1243	E 6	13JN1964	C.00209)
(1244	F 1	11JN1964	0.00219)	(1245	F 2	11JN1964	0.00346)	(1258	F 1	6JL1964	C.01416)
(1259	F 2	6JL1964	0.01239)	(1260	F 3	6JL1964	0.00191)	(1264	C' 1	10AU1964	C.00579)
(1267	D 6	18AU1964	0.00216)	(1268	E 2	15AU1964	C.01094)	(1270	F 1	10AU1964	C.01089)
(1279	E 1	16SE1964	0.01178)	(1280	E 2	16SE1964	0.00681)	(1284	E 6	17SE1964	0.01271)
(1285	F 1	15SE1964	0.11648)	(1286	F 2	15SE1964	0.01095)	(1287	F 3	15SE1964	0.00500)
(1289	C 7	14OC1964	0.00440)	(1291	C' 2	16OC1964	0.00245)	(1297	D 6	14OC1964	C.00190)
(1299	E 2	12OC1964	0.00314)	(1302	E 5	13OC1964	0.00405)	(1303	E 6	13OC1964	C.00560)
(1304	F 1	11OC1964	0.00247)	(1305	F 2	11OC1964	0.00173)	(1306	F 3	11OC1964	C.00277)
(1341	A 3	19AP1967	0.01410)	(1370	A 6	3MY1967	0.00230)	(1373	C 7	5MY1967	0.00285)
(1374	E 2	7MY1967	0.00299)	(1416	E 5	28MY1967	C.01093)	(1446	A 3	11JL1967	C.00245)
(1448	A 6	10JL1967	0.00354)	(1511	E 2	1SE1967	0.00614)	(1533	A 4	19SE1967	C.00464)
(1536	E 2	24SE1967	0.00545)	(1538	E 5	23SE1967	0.01657)	(1540	C 5	4OC1967	C.00496)
(1542	E 3	11OC1967	0.07628)	(1543	E 5	10OC1967	0.01437)	(1377	GS 1	9MY1967	C.00396)
(1380	GS 4	9MY1967	0.00168)	(1383	GS 7	10MY1967	0.00535)	(1385	GS 9	10MY1967	0.00235)
(1386	GS10	12MY1967	0.00575)	(1387	GS11	12MY1967	0.02772)	(1388	GS12	12MY1967	C.03620)
(1390	GS14	12MY1967	0.01174)	(1392	GS16	12MY1967	0.02157)	(1393	GS17	13MY1967	C.00274)
(1394	GS18	13MY1967	0.00172)	(1395	GS19	13MY1967	0.00470)	(1398	GS22	14MY1967	C.00304)
(1554	GS 1	3OC1967	0.02846)	(1555	GS 2	3OC1967	0.39901)	(1556	GS 3	3OC1967	C.10429)
(1557	GS 4	3OC1967	0.07474)	(1558	GS 5	4OC1967	0.05549)	(1559	GS 7	4OC1967	C.16087)
(1560	GS 8	4OC1967	0.06140)	(1561	GS 9	4OC1967	0.01174)	(1562	GS10	5OC1967	C.00740)
(1563	GS11	5OC1967	0.01871)	(1564	GS12	5OC1967	0.00329)	(1565	GS13	5OC1967	C.05578)
(1566	GS14	5OC1967	0.01101)	(1567	GS15	5OC1967	0.04287)	(1568	GS16	5OC1967	C.00577)
(1569	GS17	5OC1967	0.00297)	(1570	GS18	5OC1967	0.03967)	(1571	GS19	6OC1967	C.08195)

(1572	GS20	6OC1967	C.00361)	(1573	GS21	6OC1967	C.00896)	(1574	GS22	6OC1967	C.36530)
(1575	GS28	6OC1967	0.01677)	(1544	MU 1	2OC1967	C.01430)	(1547	MS 1	2OC1967	C.06387)
(1524	MI 1	2OSE1967	0.76620)	(1546	LU 1	2OC1967	C.09003)	(1520	HO 1	18SE1967	C.CC943)
(1521	SH 1	18SE1967	0.02885)	(1522	BH 1	18SE1967	0.03100)	(1526	MO 1	2OSE1967	C.C4551)
(1527	TR 1	2OSE1967	0.11321)	(1529	KW 1	2OSE1967	0.04797)	(1530	FR 1	24SE1967	C.11001)
(1531	GH 1	25SE1967	0.02536)	(1545	WL 1	2OC1967	C.29732)	(1548	CA 1	3OC1967	C.C1272)
(1549	MQ 1	4OC1967	0.45224)	(1551	ES 1	5OC1967	0.27957)	(1552	SM 1	6OC1967	C.03962)
(1550	MR 1	5OC1967	15.85925)	(1553	SG 1	6OC1967	C.08079)	(1428	MU 2	29MY1967	C.02109)
(1426	MS 2	29MY1967	0.02100)	(1427	LU 2	29MY1967	0.02421)	(1417	HO 2	22MY1967	C.02243)
(1418	SH 2	22MY1967	0.01555)	(1350	BH 2	19AP1967	1.33918)	(1401	MO 2	6MY1967	C.04116)
(1402	TR 2	6MY1967	0.02707)	(1400	SB 2	6MY1967	0.01787)	(1352	KW 2	21AP1967	0.01718)
(1354	GH 2	25AP1967	0.00345)	(1403	CA 2	10MY1967	0.01308)	(1404	MQ 2	10MY1967	C.10163)
(1405	ES 2	12MY1967	0.03225)	(1407	SM 2	14MY1967	0.04777)	(1406	GB 2	13MY1967	0.01348)
(1422	GA 2	23MY1967	0.00511)	(							

Cocconeis placentula var. *lineata* (Ehr.) V. H.

Cocconeis lineata Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1847, pl. 5(1), fig. 10. 1849.
Cocconeis placentula var. *lineata* (Ehr.) Van Heurck, Syn. Diat. Belgique, p. 133. 1885.

106 COPLACVL TOT NO OF STATIONS 49

(1396	GS20	13MY1967	0.00074)	(1397	GS21	13MY1967	0.00065)	(1554	GS 1	3OC1967	C.00712)
(1555	GS 2	3OC1967	0.09887)	(1556	GS 3	3OC1967	0.05736)	(1557	GS 4	3OC1967	C.00374)
(1558	GS 5	4OC1967	0.01189)	(1559	GS 7	4CC1967	C.02098)	(1561	GS 9	4OC1967	C.0C587)
(1563	GS11	5OC1967	0.00468)	(1565	GS13	5OC1967	C.02028)	(1566	GS14	5OC1967	0.00183)
(1567	GS15	5OC1967	0.01746)	(1569	GS17	5OC1967	0.00446)	(1570	GS18	5OC1967	C.42642)
(1571	GS19	6OC1967	0.00995)	(1573	GS21	6OC1967	0.00224)	(1575	GS28	6OC1967	C.01032)
(1544	MU 1	2OC1967	0.01668)	(1547	MS 1	2OC1967	0.07984)	(1524	MI 1	2OSE1967	C.54729)
(1546	LU 1	2OC1967	0.05502)	(1520	HO 1	18SE1967	0.02357)	(1521	SH 1	18SE1967	C.01154)
(1522	BH 1	18SE1967	0.01276)	(1527	TR 1	2OSE1967	0.05660)	(1529	KW 1	2OSE1967	C.04797)
(1530	FR 1	24SE1967	0.02000)	(1531	GH 1	25SE1967	0.00845)	(1545	WL 1	2OC1967	0.29732)
(1548	CA 1	3OC1967	0.08905)	(1549	MQ 1	4OC1967	C.12334)	(1551	ES 1	5OC1967	C.03994)
(1552	SM 1	6OC1967	0.01321)	(1550	MR 1	5OC1967	3.56833)	(1553	SG 1	6OC1967	C.02203)
(1428	MU 2	29MY1967	0.01808)	(1426	MS 2	29MY1967	C.43045)	(1351	MI 2	21AP1967	C.0C621)
(1427	LU 2	29MY1967	0.07264)	(1417	HO 2	22MY1967	C.01122)	(1350	BH 2	19AP1967	C.25330)
(1354	GH 2	25AP1967	0.03452)	(1429	WL 2	29MY1967	0.05308)	(1404	MQ 2	10MY1967	C.12703)
(1405	ES 2	12MY1967	0.02580)	(1407	SM 2	14MY1967	0.04777)	(1349	CI 2	19AP1967	C.00718)
(1406	GB 2	13MY1967	0.02157)	(							

Cocconeis thumensis A. Mayer

Cocconeis thumensis A. Mayer, Bayerisch Kryptog. Forsch., 1:199, pl. 6, fig. 24. 1919.

107 COTHUMEN TOT NO OF STATIONS 21

(60973	CH	1876	0.02362)	(46916	CH	4MY1947	C.00034)	(1255	D 5	15JL1964	C.00257)
(1256	E 2	14JL1964	0.00183)	(1259	F 2	6JL1964	0.00310)	(1268	E 2	15AU1964	C.00274)
(1279	E 1	16SE1964	0.00393)	(1285	F 1	15SE1964	0.01165)	(1291	C' 2	16OC1964	0.0C245)
(1294	D 3	15OC1964	0.00330)	(1311	D 1	8NO1964	0.00258)	(1344	C 3	25AP1967	C.CC165)
(1347	E 2	23AP1967	0.00163)	(1370	A 6	3MY1967	0.00230)	(1375	E 3	7MY1967	C.0C241)
(1543	E 5	10OC1967	0.00718)	(1382	GS 6	10MY1967	0.00278)	(1392	GS16	12MY1967	C.CC308)
(1394	GS18	13MY1967	0.00172)	(1555	GS 2	3OC1967	0.01059)	(1557	GS 4	3OC1967	C.0C374)

Species *incertae sedis*

Cocconeis sp. #2.

108 COSPECCB TOT NO OF STATIONS 17

(46909	CH	MR1947	0.00455)	(1258	F 1	6JL1964	0.00236)	(1279	E 1	16SE1964	C.CC393)
(1285	F 1	15SE1964	0.01165)	(1541	E 2	11OC1967	0.00532)	(1395	GS19	13MY1967	C.00117)
(1554	GS 1	3OC1967	0.00356)	(1555	GS 2	3OC1967	0.00353)	(1556	GS 3	3OC1967	C.00521)
(1562	GS10	5OC1967	0.00247)	(1573	GS21	6OC1967	0.00112)	(1574	GS22	6OC1967	C.01151)
(1527	TR 1	2OSE1967	0.01258)	(1530	FR 1	24SE1967	0.01000)	(1545	WL 1	2OC1967	0.00676)
(1550	MR 1	5OC1967	0.02478)	(1350	BH 2	19AP1967	0.00441)	(			

Cocconeis sp. #3.

109 COSPECCC TOT NO OF STATIONS 9

(3540	CH	11MY1879	0.0C466)	(1268	E 2	15AU1964	0.00274)	(1270	F 1	10AU1964	C.01089)
(1303	E 6	13OC1964	0.00560)	(1304	F 1	11OC1964	0.00247)	(1313	D 3	9NC1964	C.00193)
(1345	C 5	25AP1967	0.0C195)	(1541	E 2	11CC1967	C.01064)	(1543	E 5	10OC1967	C.0C718)

Cocconeis sp. #4.

110 COSPECCD TCT NO OF STATIONS 11

(46768	EV	16MR1938	0.01470)	(1305	F 2	11OC1964	0.00173)	(1452	E 2	14JL1967	C.00213)
(1392	GS16	12MY1967	0.00308)	(1396	GS20	13MY1967	0.00074)	(1398	GS22	14MY1967	C.00304)
(1558	GS 5	4OC1967	0.00396)	(1565	GS13	5OC1967	0.02535)	(1526	MO 1	20SE1967	0.00569)
(1527	TR 1	20SE1967	0.00629)	(1350	BH 2	19AP1967	0.00661)	(			

Cocconeis sp. #5.

111 COSPECOE TCT NO OF STATIONS 3

(1279	E 1	16SE1964	0.00393)	(1530	FR 1	24SE1967	C.01000)	(1545	WL 1	2OC1967	0.00676)

Cocconeis sp. #6.

112 COSPECOF TOT NC OF STATICNS 2

(1449	C 3	16JL1967	0.00382)	(1557	GS 4	3OC1967	0.00374)	(

Genus *Coscinodiscus* Ehrenberg
Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1838:128. 1840.

Coscinodiscus subsalsa Juhl.-Dannf.

Coscinodiscus subsalsa Juhlin-Dannfelt, Bih. K. Svenska Vet.-Akad. Handl., 6(21):47, pl. 3, fig. 33. 1882.

Cells circular in valve view and rectangular in girdle view. Vegetative cells occur singly or in short colonies of up to 10 cells. Valves of specimens from Lake Michigan 16-42μ in diameter. The valve surface may be either simply concave or concave near the margins and convex in the middle. Ornamentation of the valve surface is composed of conspicuous areolae which are circular in surface focus and more or less hexagonal in deep focus. Areolae in the central portion of the valve coarse, about 10 in 10μ, becoming much finer, about 20 in 10μ, near the margins. Near the periphery of the valve there are several (usually 4-6) slime pores each subtended by a fungiform projection into the interior of the frustule. In living cells long, gelatinous strands extend from these pores. The ornamentation of the valve surface tends to be arranged in loose fascicles that focus on the pores giving a stellate appearance.

The systematic position of this entity is somewhat uncertain. Many authorities consider it to be a variety or form of either *C. rothii* or *C. subtilis*. Its recorded distribution indicates a preference for brackish water or waters of high total dissolved solids in inland regions. At the present time it is established in polluted harbors and nearshore waters of Lake Michigan and has become one of the dominant species in the summer plankton of Lake Erie.

113 CSROTHVS TOT NO OF STATIONS 13

(1230	E 2	16MY1964	0.00296)	(1259	F 2	6JL1964	0.00310)	(1264	C' 1	10AU1964	0.01545)
(1265	C' 2	10AU1964	0.00224)	(1272	C' 1	10SE1964	0.01231)	(1279	E 1	16SE1964	0.00393)
(1298	E 1	12OC1964	0.00269)	(1302	E 5	13OC1964	0.00405)	(1408	A 3	23MY1967	0.00447)
(1416	E 5	28MY1967	0.00219)	(1536	E 2	24SE1967	0.00273)	(1539	C 3	4OC1967	0.00503)
(1568	GS16	5OC1967	0.00144)	(							

Species *incertae sedis*

Coscinodiscus sp. (aff. *C. tuberculatus*).

114 CSTUBEVQ TOT NO OF STATIONS 1

(1264	C' 1	10AU1964	0.00386)	(

Genus *Cyclotella* Kütz.
Kützing, Syn. Diat. p. 7. 1834.

Cyclotella antiqua Wm. Smith

Cyclotella antiqua Wm. Smith, Syn. British Diat., p. 28, pl. 5, fig. 49. 1853.

Cells cylindrical with concentrically undulate valves, either concave or convex in the center. Specimens from Lake Michigan from 12-30μ in diameter. The marginal zone is narrow, only about one-third the radius of the valve. The marginal striae are about 16-18 in 10μ at the margin, without visible substructure and irregular in length. Regularly spaced thickened ribs, below the plane of focus of the striae, appear as "shadow lines" near the margin of the valve, about 5-7 in 10μ. The margin of the central area of the valve is ornamented with conspicuous conical depressions of the surface whose surface is covered with fine, irregularly arranged puncta. The base of the conical depression is toward the valve margin and the apex toward the center. The number of these depressions is variable, depending on the size of the valve, but usually 6-8 are present. The rest of the central surface of the valve may be without ornamentation or may have a greater or lesser number of randomly arranged punctae of varying sizes.

This species is very distinctive in appearance and is not easily confused with any other member of the genus occurring in Lake Michigan. It is never a numerically important part of the plankton populations of the lake but numerous examples have been found, particularly in samples from the northern portion of the lake. Previous reports of its distribution indicate that it reaches its greatest abundance in northern and alpine oligotrophic lakes.

115 CYANTIQU TCT NC CF STATICNS 13

(1270	F 1	1CAU1964	0.03812)	(1285	F 1	15SE1964	0.04077)	(1291	C' 2	16OC1964	C.CC245)
(1387	GS11	12MY1967	0.00396)	(1397	GS21	13MY1967	0.00065)	(1557	GS 4	30C1967	0.00374)
(1558	GS 5	40C1967	0.01189)	(1559	GS 7	40C1967	0.00699)	(1560	GS 8	40C1967	C.C1417)
(1561	GS 9	40C1967	0.00587)	(1562	GS10	50C1967	0.01727)	(1548	CA 1	30C1967	C.01272)
(1549	MQ 1	40C1967	0.02741)	(							

Cyclotella atomus Hust.

Cyclotella atomus Hust., Archiv f. Hydrobiol., Suppl. Bd. 15:143, pl. 9, figs. 1-4. 1938.

Cells cylindrical with excentrically undulate valves. Specimens from Lake Michigan 2.5-5μ in diameter. The marginal zone is narrow, only one-quarter the radius of the valve. The marginal striae are about 16-18 in 10μ, without visible substructure. The striae appear as thickened ribs under the light microscope and every fourth or fifth one appears to be more thickened than the others. The only visible ornamentation in the central portion of the valve is a single, rather large, puncta. This structure is usually located about one-half the distance from the center of the valve to inner edge of the marginal striae. Because of the uniformly small size of this species the undulation of the valve can only be seen from the girdle view. The cells are rectangular in girdle view with the length of the pervalvar axis being about one-half the valve diameter.

Although this species was originally described from the tropics, its distinctive morphology leaves little doubt of the correct assignment of the specimens from Lake Michigan to it. At present it is quite rare in the flora of the lake. Our records come from inshore areas that receive appreciable chloride contamination. Previous reports from Lake Michigan are lacking.

116 CYATOMUS TOT NO OF STATIONS 8

(1240	D 6	10JN1964	0.00153)	(1255	D 5	15JL1964	0.00257)	(1273	C' 2	10SE1964	0.00538)		
(1446	A 3	11JL1967	0.00245)	(1451	C 7	16JL1967	0.00394)	(1520	HO 1	18SE1967	0.00943)		
(1521	SH 1	18SE1967	0.01154)	(1350	BH 2	19AP1967	0.42290)	(					

Cyclotella comta (Ehr.) Kütz.

Discoplea comta Ehr., Ber. Akad. Wiss. Berlin, 1842:267. 1844.
Cyclotella comta (Ehr.) Kütz., Sp. Alg., p. 20. 1849.

Cells cylindrical with concentrically undulate valves, either concave or convex in the center. Specimens from Lake Michigan 7.5-55μ in diameter. Marginal zone about one-half the radius of the valve. Striae in the marginal zone about 13-18 in 10μ at the valve margin, with barely visible substructure composed of two rows of fine puncta. This feature can be resolved with certainty only in the larger individuals. Most of the striae are of the same length and form an even inner margin, but numerous shortened striae of irregular length are interposed between them and there are often 1-6 more or less conspicuous slime pores at the margin of the zone that are subtended by shortened striae. At the outer margin of the valve a row of chambers occurs below the level of the striae. One of these chambers usually subtends the base of two striae and appears as a "shadow line" between the striae pairs at high focus. In the smaller individuals these chambers appear as thickenings near the margin of the valve. The ornamentation of the central area is highly irregular in this taxon. In the larger individuals the central area is ornamented with randomly arranged small puncta. In the smaller individuals the puncta become compressed and may assume a more or less regular appearance. Many authorities distinguish several varieties on the basis of the arrangement of the central punctae. While this segregation appears feasible when working with isolated populations, our observations lead us to believe that the cited variations grade into one another so that no morphologic distinction can be made.

117 CYCCMTA TOT NO OF STATIONS 302

(60973	CH	1876	2.92867)	(3540	CH	11MY1879	0.13978)	(3541	CH	1FE1881	1.54553)
(3507	CH	19FE1881	0.05660)	(46910	CH	OC1945	0.02403)	(46921	CH	23NO1945	0.12611)
(46908	CH	DE1945	0.03021)	(46917	CH	12JA1946	0.09898)	(46915	CH	20FE1946	0.06829)
(46914	CH	19AP1946	0.03097)	(46924	CH	10MY1946	0.02681)	(46923	CH	22NO1946	0.71032)
(46920	CH	20DE1946	0.24032)	(46905	CH	JA1947	0.10173)	(46909	CH	MR1947	0.17303)
(46912	CH	AP1947	0.01150)	(46916	CH	4MY1947	0.00441)	(46906	CH	MY1947	0.01858)
(46919	CH	5JN1947	0.01062)	(46907	CH	JL1947	0.10651)	(46913	CH	6AU1947	0.05230)
(46922	CH	21AU1947	2.58315)	(46758	EV	5JN1937	0.00357)	(46771	EV	11JN1937	0.01426)
(46743	EV	20JN1937	0.00856)	(46770	EV	9JL1937	0.01193)	(46764	EV	17JL1937	0.01612)
(46757	EV	25JL1937	0.06259)	(46747	EV	1AU1937	0.07674)	(46763	EV	23AU1937	0.36526)
(46765	EV	30AU1937	0.93698)	(46769	EV	7SE1937	1.34607)	(46752	EV	15SE1937	1.61080)
(46760	EV	22SE1937	2.48166)	(46750	EV	24SE1937	0.29222)	(46744	EV	6OC1937	0.12193)
(46748	EV	13OC1937	0.17079)	(46767	EV	27OC1937	0.05802)	(46749	EV	12MR1938	0.03641)
(46768	EV	16MR1938	0.02940)	(46762	EV	18MR1938	0.30878)	(46756	EV	27AP1938	0.01007)
(46759	EV	19MY1938	0.01013)	(46761	EV	27MY1938	0.00273)	(46766	EV	14DE1938	0.03169)
(1223	B 3	18MY1964	0.00156)	(1225	C 6	15MY1964	0.00392)	(1226	C 7	16MY1964	0.00381)
(1227	C' 2	13MY1964	0.00219)	(1228	D 2	14MY1964	0.00584)	(1229	D 5	14MY1964	0.01480)
(1230	E 2	16MY1964	0.00593)	(1231	E 3	16MY1964	0.00978)	(1232	E 5	16MY1964	0.04348)
(1233	B 3	5JN2964	0.00714)	(1439	B 6	5JN1964	0.00200)	(1236	C' 1	8JN1964	0.00350)
(1237	C' 2	8JN1964	0.00258)	(1238	D 3	11JN1964	0.01600)	(1239	D 4	11JN1964	0.00116)
(1240	D 6	10JN1964	0.00460)	(1242	E 3	13JN1964	0.00150)	(1243	E 6	13JN1964	0.01462)
(1244	F 1	11JN1964	0.00548)	(1245	F 2	11JN1964	0.00692)	(1246	F 3	11JN1964	0.04781)
(1247	B 3	14JL1964	0.19209)	(1248	B 3	24JL1964	2.06905)	(1440	B 6	11JL1964	0.05528)
(1441	B 6	24JL1964	0.30838)	(1249	C 3	8JL1964	0.00815)	(1250	C 6	10JL1964	0.14388)
(1251	C 7	16JL1964	0.09271)	(1252	C' 1	16JL1964	0.01674)	(1253	C' 2	16JL1964	0.23279)
(1254	D 2	15JL1964	0.01532)	(1255	D 5	15JL1964	0.17966)	(1256	E 2	14JL1964	0.01466)
(1257	E 3	14JL1964	0.02153)	(1258	F 1	6JL1964	0.12507)	(1259	F 2	6JL1964	0.15493)
(1260	F 3	6JL1964	0.13370)	(1261	B 3	2AU1964	0.75555)	(1262	B 3	17AU1964	1.10248)
(1442	B 6	2AU1964	0.12282)	(1443	B 6	16AU1964	0.46258)	(1263	C 7	15AU1964	1.54123)
(1264	C' 1	10AU1964	0.81094)	(1265	C' 2	10AU1964	0.31297)	(1266	D 3	18AU1964	1.06637)
(1267	D 6	18AU1964	0.15132)	(1268	E 2	15AU1964	1.43615)	(1269	E 3	15AU1964	1.15113)
(1270	F 1	10AU1964	5.33696)	(1444	B 6	19SE1964	2.97069)	(1271	C 7	22SE1964	0.20892)
(1272	C' 1	10SE1964	0.57464)	(1273	C' 2	10SE1964	0.60218)	(1274	D 1	17SE1964	0.47858)
(1275	D 2	17SE1964	0.90317)	(1276	D 3	18SE1964	0.32409)	(1277	D 4	18SE1964	1.38803)
(1278	D 6	18SE1964	0.08455)	(1279	E 1	16SE1964	0.20419)	(1280	E 2	16SE1964	0.24508)

(1281	E 3	16SE1964	0.29039)	(1282	E 4	16SE1964	0.55402)	(1283	E 5	16SE1964	2.78901)
(1284	E 6	17SE1964	0.81340)	(1285	F 1	15SE1964	3.05748)	(1286	F 2	15SE1964	1.53240)
(1287	F 3	15SE1964	2.27682)	(1288	B 3	15OC1964	0.01088)	(1445	B 6	14OC1964	0.74364)
(1289	C 7	14OC1964	0.12313)	(1290	C' 1	16OC1964	0.23877)	(1291	C' 2	16OC1964	0.04403)
(1292	D 1	15OC1964	0.30933)	(1293	D 2	15OC1964	0.08490)	(1294	D 3	15OC1964	0.57685)
(1295	D 4	15OC1964	1.04055)	(1296	D 5	14OC1964	0.68852)	(1297	D 6	14OC1964	0.02475)
(1298	E 1	12OC1964	0.05924)	(1299	E 2	12OC1964	0.24191)	(1300	E 3	13OC1964	0.62645)
(1301	E 4	13OC1964	0.30911)	(1302	E 5	13OC1964	2.55081)	(1303	E 6	13OC1964	0.29106)
(1304	F 1	11OC1964	0.11113)	(1305	F 2	11OC1964	0.04658)	(1306	F 3	11OC1964	0.10533)
(1307	B 6	NO1964	0.15514)	(1308	C 7	6NO1964	0.02737)	(1309	C' 1	10NO1964	0.10130)
(1310	C' 2	10NO1964	0.29252)	(1311	D 1	8NO1964	0.10577)	(1313	D 3	9NO1964	0.08687)
(1314	D 4	9NO1964	0.10048)	(1315	D 5	9NO1964	0.02730)	(1316	D 6	9NO1964	0.00378)
(1317	E 1	6NO1964	0.20679)	(1318	E 2	7NO1964	0.13317)	(1319	E 3	7NO1964	0.20161)
(1320	E 4	7NO1964	0.08687)	(1321	E 5	7NO1964	0.03511)	(1322	E 6	7NO1964	0.00667)
(1323	F 1	6NO1964	0.08223)	(1324	F 2	6NO1964	0.13975)	(1325	F 3	6NO1964	0.00756)
(1336	C 3	27JA1967	0.00578)	(1337	C 3	2MR1967	0.02205)	(1338	C 3	28MR1967	0.01454)
(1339	C 5	28MR1967	0.02182)	(1340	C 7	28MR1967	0.00145)	(1341	A 3	19AP1967	0.01193)
(1342	A 4	19AP1967	0.06136)	(1343	A 6	19AP1967	0.00208)	(1344	C 3	25AP1967	0.00165)
(1345	C 5	25AP1967	0.01559)	(1346	C 7	21AP1967	0.00267)	(1347	E 2	23AP1967	0.00325)
(1348	E 5	23AP1967	0.00685)	(1368	A 3	4MY1967	0.00628)	(1370	A 6	3MY1967	0.01611)
(1371	C 3	4MY1967	0.00231)	(1372	C 5	5MY1967	0.00355)	(1373	C 7	5MY1967	0.01426)
(1374	E 2	7MY1967	0.00299)	(1375	E 3	7MY1967	0.00722)	(1376	E 5	6MY1967	0.00562)
(1408	A 3	23MY1967	0.00447)	(1410	A 6	24MY1967	0.01128)	(1411	C 3	31MY1967	0.05334)
(1412	C 5	31MY1967	0.00842)	(1413	C 7	25MY1967	0.00632)	(1431	A 3	12JN1967	0.00515)
(1432	A 4	13JN1967	0.00766)	(1433	C 3	17JN1967	0.02584)	(1434	C 5	17JN1967	0.00598)
(1436	E 2	15JN1967	0.00724)	(1446	A 3	11JL1967	0.01223)	(1447	A 4	11JL1967	0.00468)
(1449	C 3	16JL1967	0.20253)	(1450	C 5	16JL1967	0.08569)	(1451	C 7	16JL1967	0.00197)
(1452	E 2	14JL1967	0.00213)	(1453	E 3	15JL1967	0.01769)	(1454	E 5	15JL1967	0.04001)
(1504	A 3	28AU1967	2.07382)	(1505	A 4	28AU1967	1.80357)	(1506	A 6	29AU1967	0.07846)
(1508	C 3	2SE1967	0.27975)	(1509	C 5	2SE1967	3.53286)	(1510	C 7	29AU1967	0.48688)
(1511	E 2	1SE1967	2.14876)	(1512	E 3	1SE1967	0.82456)	(1513	E 5	31AU1967	1.29725)
(1532	A 3	18SE1967	0.04599)	(1533	A 4	19SE1967	0.15783)	(1534	A 6	19SE1967	0.15512)
(1535	C 7	20SE1967	0.17060)	(1536	E 2	24SE1967	0.41992)	(1537	E 3	24SE1967	9.66100)
(1538	E 5	23SE1967	1.41413)	(1539	C 3	4OC1967	0.20630)	(1540	C 5	4OC1967	3.82191)
(1541	E 2	11OC1967	0.74504)	(1542	E 3	11OC1967	12.10334)	(1543	E 5	10OC1967	0.85476)
(1377	GS 1	9MY1967	0.00792)	(1378	GS 2	9MY1967	0.00421)	(1379	GS 3	9MY1967	0.04642)
(1380	GS 4	9MY1967	0.01009)	(1381	GS 5	10MY1967	0.01193)	(1382	GS 6	10MY1967	0.01943)
(1383	GS 7	10MY1967	0.03743)	(1384	GS 8	10MY1967	0.05731)	(1385	GS 9	10MY1967	0.04709)
(1386	GS10	12MY1967	0.08044)	(1387	GS11	12MY1967	1.06543)	(1388	GS12	12MY1967	6.16591)
(1389	GS13	12MY1967	0.84057)	(1390	GS14	12MY1967	1.00411)	(1391	GS15	12MY1967	1.17320)
(1392	GS16	12MY1967	0.67803)	(1393	GS17	13MY1967	1.24644)	(1394	GS18	13MY1967	0.52293)
(1395	GS19	13MY1967	0.12683)	(1396	GS20	13MY1967	0.04143)	(1397	GS21	13MY1967	0.01177)
(1398	GS22	14MY1967	0.02732)	(1554	GS 1	3OC1967	0.16011)	(1555	GS 2	3OC1967	2.96610)
(1556	GS 3	3OC1967	5.84033)	(1557	GS 4	3OC1967	3.13901)	(1558	GS 5	4OC1967	8.04661)
(1559	GS 7	4OC1967	4.16171)	(1560	GS 8	4OC1967	13.88561)	(1561	GS 9	4OC1967	5.34132)
(1562	GS10	5OC1967	2.59042)	(1563	GS11	5OC1967	1.80050)	(1564	GS12	5OC1967	0.39338)
(1565	GS13	5OC1967	0.21296)	(1566	GS14	5OC1967	0.28068)	(1567	GS15	5OC1967	3.11190)
(1568	GS16	5OC1967	0.67243)	(1569	GS17	5OC1967	4.16214)	(1570	GS18	5OC1967	2.71088)
(1571	GS19	6OC1967	0.02400)	(1572	GS20	6OC1967	0.00631)	(1573	GS21	6OC1967	0.19150)
(1574	GS22	6OC1967	0.34229)	(1575	GS28	6OC1967	0.18063)	(1544	MU 1	2OC1967	0.02621)
(1547	MS 1	2OC1967	0.19960)	(1524	MI 1	2OSE1967	0.08757)	(1546	LU 1	2OC1967	0.10004)
(1520	HO 1	18SE1967	0.20274)	(1521	SH 1	18SE1967	0.05193)	(1523	RA 1	19SE1967	0.04613)
(1525	PW 1	2OSE1967	0.06963)	(1526	MO 1	2OSE1967	0.15930)	(1527	TR 1	2OSE1967	0.07547)
(1528	SB 1	2OSE1967	3.92723)	(1529	KW 1	2OSE1967	1.00731)	(1530	FR 1	24SE1967	0.22002)
(1531	GH 1	25SE1967	0.01691)	(1545	WL 1	2OC1967	0.79735)	(1548	CA 1	3OC1967	1.50108)
(1549	MQ 1	4OC1967	2.08305)	(1551	ES 1	5OC1967	5.36784)	(1552	SM 1	6OC1967	0.41598)
(1550	MR 1	5OC1967	0.28497)	(1553	SG 1	6OC1967	1.99765)	(1428	MU 2	29MY1967	0.01507)
(1426	MS 2	29MY1967	0.01050)	(1351	MI 2	21AP1967	0.01552)	(1427	LU 2	29MY1967	0.26634)
(1417	HO 2	22MY1967	0.01122)	(1418	SH 2	22MY1967	0.03110)	(1350	BH 2	19AP1967	0.00441)
(1425	RA 2	25MY1967	0.01768)	(1399	PW 2	5MY1967	0.00680)	(1401	MO 2	6MY1967	0.02352)
(1402	TR 2	6MY1967	0.01624)	(1400	SB 2	6MY1967	0.02978)	(1352	KW 2	21AP1967	0.06872)
(1353	FR 2	23AP1967	0.01055)	(1354	GH 2	25AP1967	0.00173)	(1429	WL 2	29MY1967	0.04247)
(1403	CA 2	10MY1967	0.28769)	(1404	MQ 2	10MY1967	0.17785)	(1405	ES 2	12MY1967	0.40635)
(1407	SM 2	14MY1967	0.07165)	(1349	CI 2	19AP1967	0.00359)	(1419	BU 2	23MY1967	0.12816)
(1420	IH 2	23MY1967	0.03021)	(1421	CH 2	23MY1967	0.15614)	(1422	GA 2	23MY1967	0.02555)
(1423	WA 2	25MY1967	0.02569)	(1424	KN 2	25MY1967	0.02665)	(			

118 CYCOMTVB TCT NO OF STATIONS 107

(60973	CH	1876	0.73217)	(3540	CH	11MY1875	0.00466)	(3541	CH	1FE1881	0.17607)
(46921	CH	23NO1945	0.00065)	(46517	CH	12JA1946	0.00083)	(46914	CH	19AP1946	0.00107)
(46923	CH	22NO1946	0.10928)	(46920	CH	20DE1946	0.04344)	(46905	CH	JA1947	0.01348)
(46906	CH	MY1947	0.00066)	(46907	CH	JL1947	0.00099)	(46922	CH	21AU1947	0.02617)
(46745	EV	3JL1937	0.02090)	(46747	EV	1AU1937	0.00495)	(46763	EV	23AU1937	0.10146)
(46765	EV	30AU1937	0.07250)	(46769	EV	7SE1937	0.06513)	(46752	EV	15SE1937	0.13061)
(46760	EV	22SE1937	0.39391)	(46750	EV	24SE1937	0.03299)	(46744	EV	6OC1937	0.01463)
(46748	EV	13OC1937	0.02135)	(46767	EV	27OC1937	0.00774)	(46768	EV	16MR1938	0.01470)
(46762	EV	18MR1938	0.04411)	(46772	EV	18AP1938	0.00710)	(46756	EV	27AP1938	0.00168)
(1244	F 1	11JN1964	0.00110)	(1246	F 3	11JN1964	0.00598)	(1247	B 3	14JL1964	0.02134)
(1248	B 3	24JL1964	0.01773)	(1440	B 6	11JL1964	0.00737)	(1441	B 6	24JL1964	0.00220)
(1252	C' 1	16JL1964	0.00279)	(1253	C' 2	16JL1964	0.00228)	(1255	D 5	15JL1964	0.00770)
(1256	E 2	14JL1964	0.00183)	(1258	F 1	6JL1964	0.00944)	(1260	F 3	6JL1964	0.01719)
(1262	B 3	17AU1964	0.01260)	(1442	B 6	2AU1964	0.00341)	(1263	C 7	15AU1964	0.01201)
(1264	C' 1	10AU1964	0.00772)	(1265	C' 2	10AU1964	0.00894)	(1266	D 3	18AU1964	0.02105)
(1268	E 2	15AU1964	0.00821)	(1269	E 3	15AU1964	0.03563)	(1270	F 1	10AU1964	0.03812)
(1444	B 6	19SE1964	0.00606)	(1272	C' 1	10SE1964	0.01642)	(1274	D 1	17SE1964	0.00469)
(1275	D 2	17SE1964	0.00645)	(1277	D 4	18SE1964	0.03098)	(1278	D 6	18SE1964	0.00384)
(1279	E 1	16SE1964	0.00393)	(1281	E 3	16SE1964	0.01570)	(1283	E 5	16SE1964	0.03065)
(1284	E 6	17SE1964	0.00318)	(1285	F 1	15SE1964	0.01165)	(1287	F 3	15SE1964	0.01001)
(1445	B 6	14OC1964	0.02935)	(1289	C 7	14OC1964	0.00440)	(1293	D 2	15OC1964	0.00472)
(1294	D 3	15OC1964	0.00330)	(1295	D 4	15OC1964	0.01784)	(1296	D 5	14OC1964	0.01180)
(1297	D 6	14OC1964	0.00190)	(1298	E 1	12OC1964	0.00808)	(1299	E 2	12OC1964	0.00314)
(1300	E 3	13OC1964	0.00716)	(1301	E 4	13OC1964	0.00883)	(1302	E 5	13OC1964	0.03644)
(1303	E 6	13OC1964	0.00560)	(1305	F 2	11OC1964	0.00173)	(1306	F 3	11OC1964	0.00554)
(1309	C' 1	10NO1964	0.00161)	(1311	D 1	8NO1964	0.00258)	(1320	E 4	7NO1964	0.00414)
(1322	E 6	7NO1964	0.00667)	(1323	F 1	6NO1964	0.00418)	(1324	F 2	6NO1964	0.00699)
(1341	A 3	19AP1967	0.00434)	(1342	A 4	19AP1967	0.00180)	(1343	A 6	19AP1967	0.00069)
(1346	C 7	21AP1967	0.00134)	(1348	E 5	23AP1967	0.00137)	(1373	C 7	5MY1967	0.00285)
(1431	A 3	12JN1967	0.00257)	(1435	C 7	13JN1967	0.00316)	(1449	C 3	16JL1967	0.01146)
(1450	C 5	16JL1967	0.00381)	(1451	C 7	16JL1967	0.00197)	(1454	E 5	15JL1967	0.00400)
(1504	A 3	28AU1967	0.01481)	(1505	A 4	28AU1967	0.03092)	(1509	C 5	2SE1967	0.07066)
(1510	C 7	29AU1967	0.01265)	(1511	E 2	1SE1967	0.04604)	(1512	E 3	1SE1967	0.02356)
(1513	E 5	31AU1967	0.01520)	(1536	E 2	24SE1967	0.00545)	(1537	E 3	24SE1967	0.17683)
(1538	E 5	23SE1967	0.01657)	(1540	C 5	4OC1967	0.00993)	(1541	E 2	11OC1967	0.02129)
(1542	E 3	11OC1967	0.16273)	(1543	E 5	10OC1967	0.02155)	(			

Cyclotella cryptica Reimann, Lewin and Guillard

Cyclotella cryptica Reimann, Lewin and Guillard, Phycologia, 3:82, figs. 4-6. 1963.

Cells cylindrical with slightly concentrically undulate, nearly flat, valves. Cells always occur singly. Specimens from Lake Michigan 8-16μ in diameter. Ornamentation of the marginal zone consists of rather broad, chambered, striae, without substructure visible under the light microscope, separated by radiate costae. Striae and costae about 6-9 in 10μ at the margin of the valves. A rather inconspicuous spine occurs at the marginal end of each of the costae. The chambers of the costae grade into the surface of the central area so that the central area has no well defined border. The striae are also somewhat variable in length, especially in the larger individuals. The only visible ornamentation of the central area is one or more (usually less than 5) distinct puncta. These puncta are somewhat random in arrangement, but are never central and are most often confined to one side of the central area.

This species resembles *C. meneghiniana* and several of its described varieties. Evidence begins to accumulate that entities described as *C. meneghiniana* include a number of species of superficially similar morphology that are difficult to distinguish under the light microscope.

According to our evidence *C. cryptica* is quite rare in the Lake Michigan flora and the majority of our records come from harbors and from inshore areas subject to appreciable chloride contamination. Its distribution in this respect is quite similar to that of *C. meneghiniana* and some of its described varieties. With adequate optical equipment, determination of the two entities is not especially difficult but care must be taken and previous records, especially those derived from observations of living material, should be treated with caution.

119 CYCRYPTI TOT NO OF STATIONS 18											
(1269	E 3	15AU1964	0.00274)	(1273	C' 2	10SE1964	0.00538)	(1274	D 1	17SE1964	0.00469)
(1282	E 4	16SE1964	0.01108)	(1284	E 6	17SE1964	0.00318)	(1348	E 5	23AP1967	0.00137)
(1451	C 7	16JL1967	0.00394)	(1452	E 2	14JL1967	0.01490)	(1504	A 3	28AU1967	0.00741)
(1533	A 4	19SE1967	0.03714)	(1534	A 6	19SE1967	0.00310)	(1536	E 2	24SE1967	0.07362)
(1537	E 3	24SE1967	0.03450)	(1538	E 5	23SE1967	0.00552)	(1541	E 2	11OC1967	0.20755)
(1542	E 3	11OC1967	0.07628)	(1543	E 5	10OC1967	0.03591)	(1575	ES28	6OC1967	0.00129)

Cyclotella kuetzingiana Thwaites

Cyclotella kützingiana Thwaites, Ann. Mag. Nat. Hist., ser. 2, 1:169. 1848.

Cells cylindrical with slightly excentrically undulate valves. Specimens from Lake Michigan 7-32μ in diameter, always occurring singly. Marginal zone somewhat variable in width, about one-quarter--one-half the radius of the valve. Ornamentation of the marginal zone composed of nonpunctate striae, 12-14 in 10μ at the margin of the valve. The striae are of variable length, especially in the smaller individuals. In the larger individuals the inner border of the marginal zone is regular due to the

fact that the longer striae are all of approximately the same length. In the smaller individuals the border between the two zones appears less regular due to the fewer number of striae present. The ornamentation of the central area is highly variable in this taxon. A number of distinct puncta are present in all individuals. These may be of larger or smaller size and may be either randomly arranged or disposed radially. Other structures such as chambers or thickenings of the valve surface are lacking.

A number of varieties of this species have been described on the basis of the various patterns of ornamentation of the central area. Individual specimens can be found in the collections from Lake Michigan that are identical to nearly all of these. When populations are considered, these variations grade into one another so completely that no such distinctions can be made.

120 CYKUTZIN TCT NC CF STATIONS 135

(3540	CH	11MY1879	0.00932)	(3541	CH	1FE1881	0.06847)	(3507	CH	19FE1881	C.01132)
(46905	CH	JA1947	0.00123)	(46907	CH	JL1947	C.00099)	(46922	CH	21AU1947	C.00048)
(46747	EV	1AU1937	0.00248)	(46744	EV	6OC1937	C.00488)	(1232	E 5	16MY1964	C.00174)
(1440	B 6	11JL1964	C.00369)	(1441	B 6	24JL1964	0.01762)	(1253	C' 2	16JL1964	C.00228)
(1259	F 2	6JL1964	0.00310)	(1260	F 3	6JL1964	C.00191)	(1264	C' 1	10AU1964	C.00193)
(1265	C' 2	10AU1964	0.00894)	(1266	D 3	18AU1964	C.22099)	(1268	E 2	15AU1964	C.00274)
(1270	F 1	10AU1964	0.00817)	(1272	C' 1	10SE1964	0.03694)	(1279	E 1	16SE1964	C.00393)
(1280	E 2	16SE1964	0.01362)	(1281	E 3	16SE1964	0.01570)	(1282	E 4	16SE1964	0.04432)
(1283	E 5	16SE1964	0.03065)	(1284	E 6	17SE1964	0.04766)	(1285	F 1	15SE1964	0.01165)
(1292	D 1	15OC1964	0.00745)	(1293	D 2	15OC1964	0.00472)	(1294	D 3	15OC1964	C.00659)
(1295	D 4	15OC1964	0.03568)	(1296	D 5	14OC1964	0.00393)	(1298	E 1	12OC1964	0.00539)
(1299	E 2	12OC1964	0.00628)	(1300	E 3	13OC1964	0.02148)	(1301	E 4	13OC1964	C.03091)
(1302	E 5	13OC1964	0.03239)	(1303	E 6	13OC1964	0.01679)	(1306	F 3	11OC1964	C.00832)
(1307	B 6	NO1964	0.00361)	(1309	C' 1	10NO1964	C.00643)	(1317	E 1	6NO1964	C.00191)
(1319	E 3	7NO1964	0.01833)	(1320	E 4	7NO1964	C.00620)	(1321	E 5	7NO1964	C.00638)
(1322	E 6	7NO1964	0.00333)	(1339	C 5	28MR1967	C.00312)	(1340	C 7	28MR1967	C.00073)
(1345	C 5	25AP1967	0.00585)	(1346	C 7	21AP1967	C.00401)	(1375	E 3	7MY1967	C.00241)
(1376	E 5	6MY1967	0.00562)	(1410	A 6	24MY1967	0.00564)	(1449	C 3	16JL1967	C.02293)
(1504	A 3	28AU1967	0.00247)	(1509	C 5	2SE1967	C.01009)	(1510	C 7	29AU1967	C.00632)
(1511	E 2	1SE1967	0.53719)	(1512	E 3	1SE1967	1.37427)	(1513	E 5	31AU1967	1.77359)
(1532	A 3	18SE1967	0.00329)	(1533	A 4	19SE1967	0.00464)	(1534	A 6	19SE1967	C.00931)
(1535	C 7	20SE1967	0.00322)	(1536	E 2	24SE1967	0.11452)	(1537	E 3	24SE1967	5.73622)
(1538	E 5	23SE1967	0.59659)	(1539	C 3	4OC1967	C.02013)	(1540	C 5	4OC1967	C.20350)
(1541	E 2	11OC1967	0.40977)	(1542	E 3	11OC1967	12.81530)	(1543	E 5	10OC1967	1.10616)
(1379	GS 3	9MY1967	0.00309)	(1380	GS 4	9MY1967	C.00168)	(1381	GS 5	10MY1967	C.00239)
(1382	GS 6	10MY1967	0.00278)	(1383	GS 7	10MY1967	0.01871)	(1384	GS 8	10MY1967	C.01479)
(1387	GS11	12MY1967	0.10694)	(1388	GS12	12MY1967	0.56712)	(1389	GS13	12MY1967	0.10056)
(1390	GS14	12MY1967	0.05285)	(1391	GS15	12MY1967	0.01915)	(1392	GS16	12MY1967	C.05548)
(1393	GS17	13MY1967	0.02192)	(1394	GS18	13MY1967	C.03096)	(1395	GS19	13MY1967	C.00822)
(1396	GS20	13MY1967	0.00222)	(1398	GS22	14MY1967	0.00607)	(1554	GS 1	3OC1967	C.31310)
(1555	GS 2	3OC1967	0.74153)	(1556	GS 3	3OC1967	C.49017)	(1557	GS 4	3OC1967	C.32885)
(1558	GS 5	4OC1967	0.61440)	(1559	GS 7	4OC1967	0.35672)	(1560	GS 8	4OC1967	1.20909)
(1561	GS 5	4OC1967	1.17391)	(1562	GS10	5OC1967	1.55425)	(1563	GS11	5OC1967	C.59627)
(1564	GS12	5OC1967	0.38515)	(1565	GS13	5OC1967	C.64395)	(1566	GS14	5OC1967	0.42928)
(1567	GS15	5OC1967	0.73987)	(1568	GS16	5OC1967	0.13564)	(1569	GS17	5OC1967	C.38054)
(1570	GS18	5OC1967	0.93217)	(1571	GS19	6OC1967	C.00351)	(1573	GS21	6OC1967	C.01680)
(1574	GS22	6OC1967	0.11218)	(1575	GS28	6OC1967	0.01032)	(1547	MS 1	2OC1967	C.00798)
(1520	HO 1	18SE1967	0.00943)	(1522	BH 1	16SE1967	0.00182)	(1523	RA 1	19SE1967	C.00923)
(1526	MO 1	20SE1967	0.06827)	(1527	TR 1	20SE1967	0.01258)	(1528	SB 1	20SE1967	1.57378)
(1529	KW 1	20SE1967	0.25183)	(1530	FR 1	24SE1967	C.02000)	(1531	GH 1	25SE1967	C.00845)
(1548	CA 1	3OC1967	0.36891)	(1549	MQ 1	4OC1967	0.21927)	(1551	ES 1	5OC1967	3.96198)
(1552	SM 1	6OC1967	0.01981)	(1550	MR 1	5OC1967	C.16107)	(1553	SG 1	6OC1967	C.31580)
(1428	MU 2	29MY1967	0.00301)	(1427	LU 2	29MY1967	0.01211)	(1399	PW 2	5MY1967	C.00680)
(1401	MQ 2	6MY1967	0.00588)	(1402	TR 2	6MY1967	C.01083)	(1400	SB 2	6MY1967	C.00596)
(1352	KW 2	21AP1967	0.00859)	(1405	ES 2	12MY1967	C.07095)	(1407	SM 2	14MY1967	C.03583)

Cyclotella meneghiniana Kützing.

Cyclotella meneghiniana Kützing, Bacill., p. 50, pl. 30, fig. 68. 1844.

Cells cylindrical with strongly excentrically undulate valves. Cells usually occur singly. Specimens from Lake Michigan 7-30μ in diameter. Ornamentation of the marginal zone consists of broad, chambered striae separated by radiate costae. Striae and costae 6-9 (usually 7 or 8) in 10μ at the margin of the valve. The striae are all of equal length and have no substructure visible under the light microscope. The width of the marginal

zone is about one-half the radius of the valve. The border between the two zones of the valve surface is very well marked and regular. The ornamentation of the central area consists of very fine and indistinct radiating striae occasionally with one or more larger isolated puncta. In some specimens the central area has no visible structure.

As noted in the discussion of *C. cryptica*, the reports of this species probably include several taxa of similar morphology. In Lake Michigan the nominate variety of *C. meneghiniana* is much rarer than *C. meneghiniana* var. *plana* described below. Our limited observations indicate that differences between these two taxa are great enough so that further study may prove them to be separate species. Final determination of the status of the numerous described taxa that are included in *C. meneghiniana* by most authorities awaits the patient research of the monographer.

123 CYMENEGH TOT NO OF STATIONS 52

(3540	CH	11MY1879	0.00466)	(3507	CH	19FE1881	0.01132)	(46920	CH	20DE1946	0.00031)
(46905	CH	JA1947	0.00368)	(46916	CH	4MY1947	0.00034)	(46922	CH	21AU1947	0.00145)
(1226	C 7	16MY1964	0.00761)	(1252	C' 1	16JL1964	0.00279)	(1264	C' 1	10AU1964	0.00965)
(1266	D 3	18AU1964	1.35050)	(1271	C 7	22SE1964	0.00653)	(1272	C' 1	10SE1964	0.06157)
(1274	D 1	17SE1964	0.00469)	(1276	D 3	18SE1964	0.01118)	(1279	E 1	16SE1964	0.00393)
(1280	E 2	16SE1964	0.00681)	(1286	F 2	15SE1964	0.03284)	(1287	F 3	15SE1964	0.00500)
(1306	F 3	11OC1964	0.00554)	(1311	D 1	8NO1964	0.00774)	(1315	D 5	9NO1964	0.00455)
(1316	D 6	9NO1964	0.00378)	(1320	E 4	7NO1964	0.00207)	(1323	F 1	6NO1964	0.00139)
(1324	F 2	6NO1964	0.00233)	(1341	A 3	19AP1967	0.00542)	(1342	A 4	19AP1967	0.00541)
(1343	A 6	19AP1967	0.00069)	(1348	E 5	23AP1967	0.00137)	(1370	A 6	3MY1967	0.00230)
(1409	A 4	23MY1967	0.00298)	(1411	C 3	31MY1967	0.00410)	(1416	E 5	28MY1967	0.01749)
(1431	A 3	12JN1967	0.00515)	(1432	A 4	13JN1967	0.00255)	(1434	C 5	17JN1967	0.00299)
(1448	A 6	10JL1967	0.00354)	(1450	C 5	16JL1967	0.00381)	(1451	C 7	16JL1967	0.00197)
(1508	C 3	2SE1967	0.00400)	(1511	E 2	1SE1967	0.00921)	(1532	A 3	18SE1967	0.01971)
(1533	A 4	19SE1967	0.00464)	(1534	A 6	19SE1967	0.00620)	(1535	C 7	20SE1967	0.00966)
(1537	E 3	24SE1967	0.01294)	(1538	E 5	23SE1967	0.03867)	(1539	C 3	4OC1967	0.00503)
(1540	C 5	4OC1967	0.00496)	(1541	E 2	11OC1967	0.07983)	(1542	E 3	11OC1967	0.03560)
(1543	E 5	10OC1967	0.05746)	(							

Cyclotella meneghiniana var. *plana* Fricke

Cyclotella meneghiniana var. *plana* Fricke, A. Schmidt's Atlas Diat., pl. 222, fig. 32. 1900.

Cells cylindrical with slightly concentrically undulate, nearly flat, valves. Cells occur singly. Specimens from Lake Michigan 8-38μ in diameter. Ornamentation of the marginal zone consists of rather broad chambered striae separated by rather wide and only slightly thickened radial ribs. Radial striae and costae 7-9 in 10μ, all of the same length, forming a smooth border with the central area. The striae and costae occupy about one-half the radius of the valve. At the distal end of each of the costae there is a more or less conspicuous spine. The ornamentation of the central area consists of very fine and indistinct striae that radiate about a central point. In addition one or more large distinct, isolated puncta usually occur on one side of the central area about equidistant between the center of the valve and the outer margin of the central area.

As noted above, this taxon could be afforded specific status on the basis of our observations from Lake Michigan because of its constant unique morphology and distribution pattern. We, however, choose to retain the established usage until more evidence is available from other habitats.

124 CYMENEEP TOT NO OF STATIONS 163

(3540	CH	11MY1879	0.00466)	(46924	CH	10MY1946	0.00071)	(46922	CH	21AU1947	0.00145)
(46760	EV	22SE1937	0.00492)	(46744	EV	6OC1937	0.00488)	(46767	EV	27OC1937	0.00387)

(1230	E 2	16MY1964	0.00296)	(1232	E 5	16MY1964	0.00348)	(1236	C' 1	8JN1964	0.10327)
(1237	C' 2	8JN1964	0.01289)	(1239	D 4	11JN1964	0.00116)	(1240	D 6	10JN1964	0.00307)
(1243	E 6	13JN1964	0.00209)	(1248	B 3	24JL1964	0.00394)	(1253	C' 2	16JL1964	0.00228)
(1254	D 2	15JL1964	0.00192)	(1256	E 2	14JL1964	0.00366)	(1257	E 3	14JL1964	0.00239)
(1259	F 2	6JL1964	0.00310)	(1264	C' 1	10AU1964	0.01545)	(1265	C' 2	10AU1964	0.01118)
(1266	D 3	18AU1964	0.00351)	(1269	E 3	15AU1964	0.00822)	(1272	C' 1	10SE1964	0.44330)
(1273	C' 2	10SE1964	0.01613)	(1274	D 1	17SE1964	0.00938)	(1275	D 2	17SE1964	0.01935)
(1278	D 6	18SE1964	0.00769)	(1281	E 3	16SE1964	0.00785)	(1282	E 4	16SE1964	0.01108)
(1283	E 5	16SE1964	0.00613)	(1285	F 1	15SE1964	0.02912)	(1286	F 2	15SE1964	0.02189)
(1287	F 3	15SE1964	0.01001)	(1291	C' 2	16OC1964	0.00489)	(1294	D 3	15OC1964	0.00330)
(1298	E 1	12OC1964	0.00808)	(1299	E 2	12OC1964	0.00314)	(1300	E 3	13OC1964	0.00358)
(1301	E 4	13OC1964	0.00442)	(1303	E 6	13OC1964	0.00560)	(1304	F 1	11OC1964	0.00494)
(1305	F 2	11OC1964	0.00863)	(1311	D 1	8NO1964	0.00516)	(1313	D 3	9NO1964	0.00193)
(1316	D 6	9NO1964	0.00378)	(1317	E 1	6NO1964	0.00191)	(1318	E 2	7NO1964	0.00380)
(1321	E 5	7NO1964	0.00319)	(1341	A 3	19AP1967	0.03037)	(1342	A 4	19AP1967	0.00902)
(1343	A 6	19AP1967	0.00208)	(1346	C 7	21AP1967	0.00401)	(1369	A 4	4MY1967	0.01118)
(1370	A 6	3MY1967	0.00230)	(1371	C 3	4MY1967	0.00231)	(1374	E 2	7MY1967	0.00598)
(1376	E 5	6MY1967	0.00281)	(1409	A 4	23MY1967	0.00595)	(1411	C 3	31MY1967	0.00410)
(1416	E 5	28MY1967	0.03936)	(1432	A 4	13JN1967	0.00511)	(1446	A 3	11JL1967	0.00489)
(1447	A 4	11JL1967	0.00702)	(1448	A 6	10JL1967	0.01061)	(1449	C 3	16JL1967	0.00382)
(1451	C 7	16JL1967	0.00394)	(1452	E 2	14JL1967	0.01703)	(1453	E 3	15JL1967	0.01264)
(1454	E 5	15JL1967	0.00600)	(1504	A 3	28AU1967	0.19010)	(1505	A 4	28AU1967	0.00515)
(1508	C 3	2SE1967	0.00400)	(1511	E 2	1SE1967	0.00307)	(1512	E 3	1SE1967	0.00785)
(1513	E 5	31AU1967	0.00507)	(1532	A 3	18SE1967	0.08870)	(1533	A 4	19SE1967	0.22282)
(1534	A 6	19SE1967	0.15512)	(1535	C 7	20SE1967	0.05472)	(1536	E 2	24SE1967	0.03545)
(1537	E 3	24SE1967	0.05607)	(1538	E 5	23SE1967	0.07181)	(1539	C 3	4OC1967	0.01006)
(1540	C 5	4OC1967	0.00496)	(1541	E 2	11OC1967	0.44170)	(1542	E 3	11OC1967	0.10679)
(1543	E 5	10OC1967	0.05746)	(1377	GS 1	9MY1967	0.00792)	(1381	GS 5	10MY1967	0.00477)
(1382	GS 6	10MY1967	0.00278)	(1388	GS12	12MY1967	0.02413)	(1389	GS13	12MY1967	0.00516)
(1390	GS14	12MY1967	0.01174)	(1391	GS15	12MY1967	0.00479)	(1392	GS16	12MY1967	0.00308)
(1394	GS18	13MY1967	0.00344)	(1396	GS20	13MY1967	0.00518)	(1397	GS21	13MY1967	0.00196)
(1398	GS22	14MY1967	0.00304)	(1554	GS 1	3OC1967	0.26329)	(1555	GS 2	3OC1967	0.59322)
(1556	GS 3	3OC1967	0.86041)	(1557	GS 4	3OC1967	0.45964)	(1558	GS 5	4OC1967	0.43999)
(1559	GS 7	4OC1967	0.83584)	(1560	GS 8	4OC1967	0.53370)	(1561	GS 9	4OC1967	0.19957)
(1562	GS10	5OC1967	0.06661)	(1563	GS11	5OC1967	0.11692)	(1564	GS12	5OC1967	0.09382)
(1565	GS13	5OC1967	0.28395)	(1566	GS14	5OC1967	0.15410)	(1567	GS15	5OC1967	0.22228)
(1568	GS16	5OC1967	0.01876)	(1569	GS17	5OC1967	0.16054)	(1571	GS19	6OC1967	0.09074)
(1572	GS20	6OC1967	0.01352)	(1573	GS21	6OC1967	0.05040)	(1574	GS22	6OC1967	0.07191)
(1575	GS28	6OC1967	0.11354)	(1544	MU 1	2OC1967	0.28117)	(1547	MS 1	2OC1967	0.08782)
(1524	MI 1	20SE1967	0.13135)	(1546	LU 1	2OC1967	0.09503)	(1520	HO 1	18SE1967	0.67424)
(1521	SH 1	18SE1967	0.05193)	(1522	BH 1	18SE1967	1.22536)	(1523	RA 1	19SE1967	0.38745)
(1525	PW 1	20SE1967	0.01393)	(1526	MO 1	20SE1967	0.04551)	(1527	TR 1	20SE1967	0.03774)
(1529	KW 1	20SE1967	0.05996)	(1530	FR 1	24SE1967	0.02000)	(1531	GH 1	25SE1967	23.53339)
(1545	WL 1	2OC1967	0.07433)	(1548	CA 1	3OC1967	0.03816)	(1549	MQ 1	4OC1967	1.15116)
(1551	ES 1	5OC1967	0.14378)	(1550	MR 1	5OC1967	0.56994)	(1553	SG 1	6OC1967	0.00734)
(1428	MU 2	29MY1967	0.22297)	(1426	MS 2	29MY1967	0.13648)	(1351	MI 2	21AP1967	0.00621)
(1427	LU 2	29MY1967	0.07264)	(1417	HO 2	22MY1967	0.59818)	(1418	SH 2	22MY1967	0.01555)
(1350	BH 2	19AP1967	1.05725)	(1425	RA 2	25MY1967	0.03536)	(1399	PW 2	5MY1967	0.02040)
(1401	MO 2	6MY1967	0.69379)	(1402	TR 2	6MY1967	0.23284)	(1400	SB 2	6MY1967	0.08415)
(1352	KW 2	21AP1967	0.00859)	(1353	FR 2	23AP1967	0.05274)	(1354	GH 2	25AP1967	0.07422)
(1429	WL 2	29MY1967	0.55208)	(1407	SM 2	14MY1967	0.00597)	(1406	GB 2	13MY1967	0.01617)
(1420	IH 2	23MY1967	0.03021)	(1421	CH 2	23MY1967	0.03470)	(1422	CA 2	23MY1967	0.03576)
(1423	WA 2	25MY1967	0.00856)	(							

Cyclotella michiganiana Skv.

Cyclotella michiganiana Skvortzow, Amer. Midland Nat., 18:658, pl. 1, figs. 3, 10, 18. 1937.

Cells cylindrical with strongly excentrically undulate valves. Cells always occur singly. Specimens from Lake Michigan 5-22μ in diameter. Width of marginal zone variable, usually about one-half the radius of the valve. Ornamentation of the marginal zone composed of radial striae of slightly irregular length and without visible substructure. Radial striae 14-18 in 10μ at the margin of the valve. Central area of the valves strongly undulate, usually with a number of large, randomly arranged, puncta on the raised portion. The sunken portion of the central area may be without visible ornamentation or may have a few puncta similar to those on the raised portion.

This species is abundant in some collections from Lake Michigan. It apparently is cyclical in occurrence, being common or dominant in the plankton in some years and very rare or lacking in collections from the same area and season in other years. The taxonomic position of this entity is difficult to determine with certainty. Skvortzow (l.c.) has pointed out its affinities to *C. striata* (Kütz.) Grun. and *C. caspia* Grun. Both of these species find their primary habitat in brackish water and, although they resemble this species in general morphology, sufficient differences exist to separate them with little doubt.

125 CYMICHIG TCT NC OF STATIONS 267

(60973	CH	1876	1.65328)	(3540	CH	11MY1879	0.02330)	(3541	CH	1FE1881	0.04891)
(3507	CH	19FE1881	0.01132)	(46910	CH	0C1945	0.07100)	(46921	CH	23NO1945	0.06596)
(46908	CH	DE1945	0.06042)	(46917	CH	12JA1946	0.23427)	(46915	CH	20FE1946	0.28453)
(46914	CH	19AP1946	0.01602)	(46924	CH	10MY1946	0.01834)	(46923	CH	22NO1946	0.39122)
(46920	CH	20DE1946	0.13033)	(46905	CH	JA1947	0.11398)	(46909	CH	MR1947	0.20946)
(46912	CH	AP1947	0.01150)	(46916	CH	4MY1947	0.00136)	(46906	CH	MY1947	0.00465)
(46919	CH	5JN1947	0.00607)	(46907	CH	JL1947	0.00444)	(46913	CH	6AU1947	0.01046)
(46922	CH	21AU1947	2.20513)	(46758	EV	5JN1937	0.00713)	(46764	EV	17JL1937	0.24980)
(46757	EV	25JL1937	0.22146)	(46763	EV	23AU1937	0.40584)	(46765	EV	30AU1937	0.20636)
(46769	EV	7SE1937	0.06513)	(46752	EV	15SE1937	0.10884)	(46760	EV	22SE1937	0.13787)
(46750	EV	24SE1937	0.44304)	(46744	EV	6OC1937	0.10730)	(46748	EV	13OC1937	0.04270)
(46767	EV	27OC1937	0.06963)	(46749	EV	12MR1938	0.01214)	(46768	EV	16MR1938	0.07350)
(46762	EV	18MR1938	1.01456)	(46759	EV	19MY1938	0.00338)	(46761	EV	27MY1938	0.00545)
(46766	EV	14DE1938	0.06337)	(1229	D 5	14MY1964	0.00846)	(1230	E 2	16MY1964	0.01482)
(1231	E 3	16MY1964	0.01223)	(1232	E 5	16MY1964	0.08000)	(1233	B 3	5JN2964	0.00476)
(1234	B 3	18JN1964	0.00843)	(1235	C 7	16JN1964	0.00282)	(1439	B 6	5JN1964	0.00799)
(1236	C' 1	8JN1964	0.00175)	(1237	C' 2	8JN1964	0.00258)	(1238	D 3	11JN1964	0.00400)
(1239	D 4	11JN1964	0.00116)	(1240	D 6	10JN1964	0.00153)	(1241	E 2	13JN1964	0.00148)
(1244	F 1	11JN1964	0.00548)	(1245	F 2	11JN1964	0.10027)	(1246	F 3	11JN1964	0.01793)
(1248	B 3	24JL1964	0.01182)	(1441	B 6	24JL1964	0.00661)	(1250	C 6	10JL1964	0.00822)
(1251	C 7	16JL1964	0.00290)	(1252	C' 1	16JL1964	0.00837)	(1254	D 2	15JL1964	0.01532)
(1255	D 5	15JL1964	0.00513)	(1256	E 2	14JL1964	0.00550)	(1257	E 3	14JL1964	0.00479)
(1258	F 1	6JL1964	0.03068)	(1259	F 2	6JL1964	0.08366)	(1260	F 3	6JL1964	0.02865)
(1261	B 3	2AU1964	0.12364)	(1262	B 3	17AU1964	0.58799)	(1442	B 6	2AU1964	0.05118)
(1443	B 6	16AU1964	2.49081)	(1263	C 7	15AU1964	1.68134)	(1265	C' 2	10AU1964	0.07154)
(1267	D 6	18AU1964	0.03243)	(1268	E 2	15AU1964	0.42127)	(1269	E 3	15AU1964	0.95927)
(1270	F 1	10AU1964	3.04969)	(1444	B 6	19SE1964	1.37925)	(1271	C 7	22SE1964	0.13057)
(1272	C' 1	10SE1964	0.57464)	(1273	C' 2	10SE1964	1.37642)	(1274	D 1	17SE1964	0.12668)
(1275	D 2	17SE1964	0.49674)	(1276	D 3	18SE1964	0.30174)	(1277	D 4	18SE1964	0.32842)
(1278	D 6	18SE1964	0.04996)	(1279	E 1	16SE1964	0.11387)	(1280	E 2	16SE1964	0.10212)
(1281	E 3	16SE1964	0.19621)	(1282	E 4	16SE1964	0.23269)	(1283	E 5	16SE1964	0.50877)
(1284	E 6	17SE1964	0.66724)	(1285	F 1	15SE1964	5.29963)	(1286	F 2	15SE1964	2.80210)
(1287	F 3	15SE1964	2.45196)	(1288	B 3	15OC1964	0.03701)	(1289	C 7	14OC1964	0.07475)
(1290	C' 1	16OC1964	0.02653)	(1291	C' 2	16OC1964	0.03180)	(1292	D 1	15OC1964	0.18634)
(1293	D 2	15OC1964	0.11791)	(1294	D 3	15OC1964	0.35600)	(1295	D 4	15OC1964	1.14758)
(1296	D 5	14OC1964	0.64917)	(1297	D 6	14OC1964	0.00952)	(1298	E 1	12OC1964	0.03770)
(1299	E 2	12OC1964	0.21992)	(1300	E 3	13OC1964	1.25291)	(1301	E 4	13OC1964	1.13044)
(1302	E 5	13OC1964	1.23087)	(1303	E 6	13OC1964	0.17911)	(1304	F 1	11OC1964	0.60506)
(1305	F 2	11OC1964	0.60380)	(1306	F 3	11OC1964	1.06713)	(1307	B 6	NO1964	0.14071)
(1308	C 7	6NO1964	0.02129)	(1309	C' 1	10NO1964	0.03216)	(1310	C' 2	10NO1964	0.14286)
(1311	D 1	8NO1964	0.03612)	(1312	D 2	8NO1964	0.05277)	(1313	D 3	9NO1964	0.09459)
(1314	D 4	9NO1964	0.11770)	(1315	D 5	9NO1964	0.06824)	(1316	D 6	9NO1964	0.00756)
(1317	E 1	6NO1964	0.02872)	(1318	E 2	7NO1964	0.15791)	(1319	E 3	7NO1964	0.46605)
(1320	E 4	7NO1964	0.31851)	(1321	E 5	7NO1964	0.44691)	(1322	E 6	7NO1964	0.12664)
(1323	F 1	6NO1964	0.58537)	(1324	F 2	6NO1964	0.25155)	(1325	F 3	6NO1964	0.13350)
(1336	C 3	27JA1967	0.00963)	(1337	C 3	2MR1967	0.08084)	(1338	C 3	28MR1967	0.09785)
(1339	C 5	28MR1967	0.04053)	(1340	C 7	28MR1967	0.00364)	(1341	A 3	19AP1967	0.00976)
(1342	A 4	19AP1967	0.08662)	(1343	A 6	19AP1967	0.00069)	(1344	C 3	25AP1967	0.00662)
(1345	C 5	25AP1967	0.18323)	(1346	C 7	21AP1967	0.06142)	(1347	E 2	23AP1967	0.01301)
(1348	E 5	23AP1967	0.00822)	(1368	A 3	4MY1967	0.00943)	(1372	C 5	5MY1967	0.02128)
(1373	C 7	5MY1967	0.02282)	(1374	E 2	7MY1967	0.00299)	(1375	E 3	7MY1967	0.01203)
(1376	E 5	6MY1967	0.00562)	(1408	A 3	23MY1967	0.00447)	(1410	A 6	24MY1967	0.00564)
(1411	C 3	31MY1967	0.02462)	(1413	C 7	25MY1967	0.00316)	(1414	E 2	28MY1967	0.00336)
(1416	E 5	28MY1967	0.00437)	(1431	A 3	12JN1967	0.00257)	(1433	C 3	17JN1967	0.01292)
(1434	C 5	17JN1967	0.00598)	(1435	C 7	13JN1967	0.00316)	(1436	E 2	15JN1967	0.00724)
(1446	A 3	11JL1967	0.00489)	(1449	C 3	16JL1967	0.17196)	(1450	C 5	16JL1967	0.01333)
(1451	C 7	16JL1967	0.00394)	(1452	E 2	14JL1967	0.01277)	(1453	E 3	15JL1967	0.00506)
(1454	E 5	15JL1967	0.01000)	(1504	A 3	28AU1967	0.31354)	(1505	A 4	28AU1967	0.39678)
(1506	A 6	29AU1967	0.01046)	(1508	C 3	2SE1967	0.08792)	(1509	C 5	2SE1967	1.32734)
(1510	C 7	29AU1967	0.55327)	(1511	E 2	1SE1967	1.18182)	(1512	E 3	1SE1967	1.00518)
(1513	E 5	31AU1967	1.77359)	(1532	A 3	18SE1967	0.04599)	(1533	A 4	19SE1967	0.03249)
(1534	A 6	19SE1967	0.01551)	(1535	C 7	20SE1967	0.05472)	(1536	E 2	24SE1967	0.14452)
(1537	E 3	24SE1967	1.10411)	(1538	E 5	23SE1967	0.32591)	(1539	C 3	4OC1967	0.31700)
(1540	C 5	4OC1967	0.59066)	(1541	E 2	11OC1967	0.74504)	(1542	E 3	11OC1967	6.40765)
(1543	E 5	10OC1967	1.50840)	(1379	GS 3	9MY1967	0.00928)	(1380	GS 4	9MY1967	0.01513)
(1381	GS 5	10MY1967	0.00954)	(1382	GS 6	10MY1967	0.03608)	(1383	GS 7	10MY1967	0.01069)
(1384	GS 8	10MY1967	0.01109)	(1385	GS 9	10MY1967	0.00942)	(1386	GS10	12MY1967	0.00575)
(1387	GS11	12MY1967	0.01980)	(1388	GS12	12MY1967	0.04827)	(1389	GS13	12MY1967	0.01031)
(1390	GS14	12MY1967	0.01174)	(1391	GS15	12MY1967	0.00479)	(1392	GS16	12MY1967	0.02157)
(1393	GS17	13MY1967	0.00548)	(1394	GS18	13MY1967	0.01204)	(1395	GS19	13MY1967	0.00470)
(1396	GS20	13MY1967	0.00148)	(1554	GS 1	3OC1967	0.06404)	(1555	GS 2	3OC1967	0.92867)
(1556	GS 3	3OC1967	2.55514)	(1557	GS 4	3OC1967	3.13901)	(1558	GS 5	4OC1967	3.32963)
(1559	GS 7	4OC1967	1.34644)	(1560	GS 8	4OC1967	1.65305)	(1561	GS 9	4OC1967	1.17391)
(1562	GS10	5OC1967	0.30098)	(1566	GS14	5OC1967	0.02752)	(1567	GS15	5OC1967	0.13972)
(1568	GS16	5OC1967	0.01154)	(1569	GS17	5OC1967	0.23040)	(1570	GS18	5OC1967	0.14875)
(1571	GS19	6OC1967	0.00293)	(1573	GS21	6OC1967	0.00448)	(1574	GS22	6OC1967	0.02589)
(1575	GS28	6OC1967	0.00258)	(1544	MU 1	2OC1967	0.00238)	(1547	MS 1	2OC1967	0.03194)
(1524	MI 1	20SE1967	0.02189)	(1546	LU 1	2OC1967	0.03001)	(1520	HO 1	18SE1967	0.02357)
(1521	SH 1	18SE1967	0.02885)	(1522	BH 1	18SE1967	0.00365)	(1523	RA 1	19SE1967	0.04613)
(1526	MO 1	20SE1967	0.03982)	(1527	TR 1	20SE1967	0.03145)	(1528	SB 1	20SE1967	0.02888)
(1529	KW 1	20SE1967	0.09593)	(1530	FR 1	24SE1967	0.08001)	(1531	CH 1	25SE1967	0.00845)
(1545	WL 1	2OC1967	0.42570)	(1548	CA 1	3OC1967	4.47780)	(1549	MQ 1	4OC1967	1.72674)
(1551	ES 1	5OC1967	1.66147)	(1552	SM 1	6OC1967	0.02641)	(1550	MR 1	5OC1967	0.21063)
(1553	SG 1	6OC1967	0.03672)	(1351	MI 2	21AP1967	0.00310)	(1417	HO 2	22MY1967	0.01122)
(1350	BH 2	19AP1967	0.00220)	(1399	PW 2	5MY1967	0.00680)	(1401	MO 2	6MY1967	0.00588)
(1400	SB 2	6MY1967	0.00596)	(1352	KW 2	21AP1967	0.00859)	(1429	WL 2	29MY1967	0.01062)
(1403	CA 2	10MY1967	0.32693)	(1404	MC 2	10MY1967	0.05081)	(1405	ES 2	12MY1967	0.05160)
(1407	SM 2	14MY1967	0.01791)	(1349	CI 2	19AP1967	0.01437)	(1420	IH 2	23MY1967	0.01511)
(1421	CH 2	23MY1967	0.05205)	(1422	GA 2	23MY1967	0.00511)	(1423	WA 2	25MY1967	0.00856)

Cyclotella ocellata Pant.

Cyclotella ocellata Pantocsek, Res. Wiss. Erforsh. Balatonsees, Sec. I., p. 104, fig. 318. 1902.

Cells cylindrical, surface of the valves flat or only slightly concave. Cells always occur singly. Specimens from Lake Michigan 6-22μ in diameter. Marginal zone narrow, less than one-half the radius of the valve. Radial striae in the marginal zone irregular in length, without visible substructure, about 14-16 in 10μ at the margin of the valve. Ornamentation of the marginal zone other than the striae is lacking in this species. Two types of structure are present in the central area. Several distinct puncta, either randomly or radially arranged, are present in most specimens. The most distinctive characteristic of this species is the presence of several large (about 1μ diameter) circular silicious structures. In valve view these appear as thickenings on the valve surface. In girdle view they appear as fungiform papillae. These structures, like the puncta, may be randomly arranged or, more usually, radially disposed.

Although previous reports indicate that this species reaches its greatest abundance in littoral habitats, it is apparently also adapted to euplanktonic growth as it is quite common in offshore collections from the Great Lakes. It reaches its greatest abundance in Lake Huron but is also found in abundance in Lake Superior and in some collections from northern Lake Michigan. The morphology of this taxon is very similar to the *C. kuetzingiana* complex, but the presence of the fungiform papillae makes their separation relatively easy.

127 CYOCELLA TOT NO OF STATIONS 270

(6C973	CH	1876	0.4C151)	(3540	CH	11MY1875	0.23296)	(3541	CH	1FE1881	0.29346)
(3507	CH	19FE1881	0.16980)	(46910	CH	0C1945	C.00109)	(46921	CH	23NO1945	0.00582)
(46917	CH	12JA1946	0.01275)	(46915	CH	20FE1946	0.02845)	(46914	CH	19AP1946	C.C1922)
(46924	CH	10MY1946	0.01411)	(46923	CH	22NO1946	0.00437)	(46920	CH	20DE1946	C.00031)
(46905	CH	JA1947	0.01961)	(46909	CH	MR1947	0.00455)	(46916	CH	4MY1947	C.00780)
(46906	CH	MY1947	0.21570)	(46919	CH	5JN1947	0.05463)	(46907	CH	JL1947	C.07052)
(46922	CH	21AU1947	0.56703)	(46758	EV	5JN1937	0.01426)	(46771	EV	11JN1937	C.CC475)
(46743	EV	20JN1937	0.01713)	(46745	EV	3JL1937	C.02090)	(46764	EV	17JL1937	C.16116)
(46757	EV	25JL1937	0.18295)	(46747	EV	1AU1937	C.02723)	(46763	EV	23AU1937	C.1C146)
(46765	EV	30AU1937	0.02231)	(46752	EV	15SE1937	0.02177)	(46750	EV	24SE1937	0.00471)
(46744	EV	6OC1937	0.01463)	(46748	EV	13OC1937	C.02135)	(46749	EV	12MR1938	C.C6069)
(46762	EV	18MR1938	0.04411)	(46751	EV	30MR1938	0.03350)	(46756	EV	27AP1938	C.0C168)
(46759	EV	19MY1938	0.01688)	(46761	EV	27MY1938	C.C1090)	(1226	C 7	16MY1964	0.00381)
(1227	C' 2	13MY1964	0.00219)	(1228	D 2	14MY1964	0.00584)	(1229	D 5	14MY1964	C.02749)
(1230	E 2	16MY1964	0.00889)	(1231	E 3	16MY1964	C.01223)	(1232	E 5	16MY1964	C.01044)
(1234	B 3	18JN1964	0.00562)	(1439	B 6	5JN1964	C.C0400)	(1237	C' 2	8JN1964	0.00516)
(1238	D 3	11JN1964	0.01600)	(1239	D 4	11JN1964	0.00116)	(1240	D 6	10JN1964	0.0C767)
(1241	E 2	13JN1964	0.00739)	(1242	E 3	13JN1964	0.00599)	(1243	E 6	13JN1964	0.01879)
(1244	F 1	11JN1964	0.0C877)	(1245	F 2	11JN1964	C.01037)	(1246	F 3	11JN1964	0.C2390)
(1247	B 3	14JL1964	0.01707)	(1248	B 3	24JL1964	0.00591)	(1440	B 6	11JL1964	C.05159)
(1441	B 6	24JL1964	0.09251)	(1249	C 3	8JL1964	0.00272)	(1250	C 6	10JL1964	C.08222)
(1251	C 7	16JL1964	0.01159)	(1252	C' 1	16JL1964	0.00279)	(1253	C' 2	16JL1964	0.03423)
(1254	D 2	15JL1964	0.12067)	(1255	D 5	15JL1964	0.39526)	(1256	E 2	14JL1964	C.C8244)
(1257	E 3	14JL1964	0.07656)	(1258	F 1	6JL1964	0.08259)	(1259	F 2	6JL1964	C.13014)
(1260	F 3	6JL1964	0.07831)	(1261	B 3	2AU1964	0.00589)	(1442	B 6	2AU1964	C.13306)
(1443	B 6	16AU1964	0.01186)	(1263	C 7	15AU1964	C.00400)	(1264	C' 1	10AU1964	C.01545)
(1265	C' 2	10AU1964	0.09389)	(1266	D 3	18AU1964	0.49109)	(1267	D 6	18AU1964	C.01081)
(1268	E 2	15AU1964	0.38297)	(1269	E 3	15AU1964	0.25763)	(1270	F 1	10AU1964	C.47651)
(1444	B 6	19SE1964	0.00606)	(1271	C 7	22SE1964	0.01306)	(1273	C' 2	10SE1964	0.01075)
(1275	D 2	17SE1964	0.01290)	(1276	D 3	18SE1964	0.01118)	(1278	D 6	18SE1964	C.00384)
(1279	E 1	16SE1964	0.00393)	(1280	E 2	16SE1964	0.01362)	(1281	E 3	16SE1964	0.02747)
(1282	E 4	16SE1964	0.01108)	(1283	E 5	16SE1964	0.08582)	(1284	E 6	17SE1964	0.04766)
(1285	F 1	15SE1964	0.11648)	(1287	F 3	15SE1964	0.06505)	(1445	B 6	14OC1964	0.00652)
(1289	C 7	14OC1964	0.00440)	(1290	C' 1	16OC1964	C.00379)	(1293	D 2	15OC1964	C.03302)
(1294	D 3	15OC1964	0.04615)	(1295	D 4	15OC1964	C.07730)	(1296	D 5	14OC1964	C.C2361)
(1297	D 6	14OC1964	0.00571)	(1298	E 1	12OC1964	0.00269)	(1299	E 2	12OC1964	C.0C943)
(1300	E 3	13OC1964	0.02148)	(1301	E 4	13OC1964	0.06624)	(1302	E 5	13OC1964	C.17005)
(1303	E 6	13OC1964	0.04478)	(1304	F 1	11OC1964	0.02223)	(1305	F 2	11OC1964	C.00518)
(1306	F 3	11OC1964	0.00832)	(1307	B 6	NO1964	C.00722)	(1309	C' 1	10NO1964	C.CC322)
(1311	D 1	8NO1964	0.00516)	(1312	D 2	8NO1964	C.00621)	(1313	D 3	9NO1964	0.01737)
(1314	D 4	9NO1964	0.00287)	(1315	D 5	9NO1964	0.00910)	(1316	D 6	9NC1964	C.0C756)

(1317	E 1	6NO1964	0.00766)	(1318	E 2	7NO1964	0.02854)	(1319	E 3	7NO1964	0.22255)
(1320	E 4	7NO1964	0.03723)	(1321	E 5	7NO1964	0.02235)	(1322	E 6	7NO1964	0.00667)
(1323	F 1	6NO1964	0.00697)	(1324	F 2	6NO1964	0.00699)	(1336	C 3	27JA1967	0.00193)
(1337	C 3	2MR1967	0.01029)	(1338	C 3	28MR1967	0.04496)	(1339	C 5	28MR1967	0.02806)
(1340	C 7	28MR1967	0.02327)	(1341	A 3	19AP1967	0.02170)	(1342	A 4	19AP1967	0.05233)
(1343	A 6	19AP1967	0.00069)	(1344	C 3	25AP1967	0.00496)	(1345	C 5	25AP1967	0.07407)
(1346	C 7	21AP1967	0.02804)	(1347	E 2	23AP1967	0.02439)	(1348	E 5	23AP1967	0.00548)
(1368	A 3	4MY1967	0.00943)	(1369	A 4	4MY1967	0.01118)	(1370	A 6	3MY1967	0.00921)
(1371	C 3	4MY1967	0.00693)	(1372	C 5	5MY1967	0.01064)	(1373	C 7	5MY1967	0.18255)
(1374	E 2	7MY1967	0.01793)	(1375	E 3	7MY1967	0.08181)	(1376	E 5	6MY1967	0.04779)
(1409	A 4	23MY1967	0.00595)	(1410	A 6	24MY1967	0.01128)	(1411	C 3	31MY1967	0.01231)
(1412	C 5	31MY1967	0.00421)	(1413	C 7	25MY1967	0.00948)	(1414	E 2	28MY1967	0.00672)
(1415	E 3	28MY1967	0.00225)	(1416	E 5	28MY1967	0.00656)	(1431	A 3	12JN1967	0.01802)
(1432	A 4	13JN1967	0.01788)	(1433	C 3	17JN1967	0.08397)	(1434	C 5	17JN1967	0.02393)
(1435	C 7	13JN1967	0.02210)	(1436	E 2	15JN1967	0.03257)	(1437	E 3	15JN1967	0.00269)
(1438	E 5	14JN1967	0.01089)	(1446	A 3	11JL1967	0.10273)	(1447	A 4	11JL1967	0.01871)
(1448	A 6	10JL1967	0.00354)	(1449	C 3	16JL1967	0.16050)	(1450	C 5	16JL1967	0.19804)
(1451	C 7	16JL1967	0.00394)	(1452	E 2	14JL1967	0.03193)	(1453	E 3	15JL1967	0.13902)
(1454	E 5	15JL1967	0.09202)	(1504	A 3	28AU1967	0.00741)	(1505	A 4	28AU1967	0.01031)
(1508	C 3	2SE1967	0.00400)	(1509	C 5	2SE1967	0.70657)	(1510	C 7	29AU1967	0.02845)
(1511	E 2	1SE1967	2.57851)	(1512	E 3	1SE1967	0.27485)	(1513	E 5	31AU1967	0.60302)
(1532	A 3	18SE1967	0.00986)	(1533	A 4	19SE1967	0.03714)	(1536	E 2	24SE1967	0.22632)
(1537	E 3	24SE1967	1.50953)	(1538	E 5	23SE1967	0.09391)	(1540	C 5	4OC1967	0.26307)
(1541	E 2	11OC1967	0.28205)	(1542	E 3	11OC1967	3.38181)	(1543	E 5	10OC1967	0.10056)
(1378	GS 2	9MY1967	0.00421)	(1379	GS 3	9MY1967	0.05571)	(1380	GS 4	9MY1967	0.01513)
(1381	GS 5	10MY1967	0.01431)	(1382	GS 6	10MY1967	0.09714)	(1383	GS 7	10MY1967	0.04544)
(1384	GS 8	10MY1967	0.08319)	(1385	GS 9	10MY1967	0.00471)	(1386	GS10	12MY1967	0.11204)
(1387	GS11	12MY1967	0.07129)	(1388	GS12	12MY1967	0.04223)	(1389	GS13	12MY1967	0.01547)
(1390	GS14	12MY1967	0.04110)	(1391	GS15	12MY1967	0.06225)	(1392	GS16	12MY1967	0.04623)
(1393	GS17	13MY1967	0.12601)	(1394	GS18	13MY1967	0.03096)	(1395	GS19	13MY1967	0.00822)
(1398	GS22	14MY1967	0.02125)	(1554	GS 1	3OC1967	0.08895)	(1555	GS 2	3OC1967	0.44845)
(1556	GS 3	3OC1967	0.23987)	(1557	GS 4	3OC1967	0.36248)	(1558	GS 5	4OC1967	0.30918)
(1559	GS 7	4OC1967	0.32874)	(1560	GS 8	4OC1967	0.41562)	(1561	GS 9	4OC1967	0.10565)
(1562	GS10	5OC1967	0.15789)	(1563	GS11	5OC1967	0.01169)	(1564	GS12	5OC1967	0.00165)
(1565	GS13	5OC1967	0.00507)	(1566	GS14	5OC1967	0.00183)	(1567	GS15	5OC1967	0.03969)
(1568	GS16	5OC1967	0.00433)	(1569	GS17	5OC1967	0.02676)	(1570	GS18	5OC1967	0.08925)
(1573	GS21	6OC1967	0.00112)	(1574	GS22	6OC1967	0.00575)	(1575	GS28	6OC1967	0.00129)
(1544	MU 1	2OC1967	0.00238)	(1547	MS 1	2OC1967	0.01597)	(1520	HO 1	18SE1967	0.00471)
(1521	SH 1	18SE1967	0.00577)	(1526	MO 1	20SE1967	0.01707)	(1527	TR 1	20SE1967	0.00629)
(1528	SB 1	2OSE1967	0.04332)	(1529	KW 1	20SE1967	0.02398)	(1530	FR 1	24SE1967	0.03000)
(1531	GH 1	25SE1967	0.00845)	(1545	WL 1	2OC1967	0.10136)	(1548	CA 1	3OC1967	0.02544)
(1549	MQ 1	4OC1967	0.04111)	(1551	ES 1	5OC1967	0.19171)	(1550	MR 1	5OC1967	0.08673)
(1553	SG 1	6OC1967	0.05141)	(1351	MI 2	21AP1967	0.01241)	(1427	LU 2	29MY1967	0.13317)
(1417	HO 2	22MY1967	0.01495)	(1425	RA 2	25MY1967	0.02652)	(1399	PW 2	5MY1967	0.04761)
(1401	MO 2	6MY1967	0.02352)	(1402	TR 2	6MY1967	0.02707)	(1400	SB 2	6MY1967	0.02383)
(1352	KW 2	21AP1967	0.02577)	(1354	GH 2	25AP1967	0.00173)	(1429	WL 2	29MY1967	0.01062)
(1403	CA 2	10MY1967	0.10462)	(1404	MC 2	10MY1967	0.03811)	(1405	ES 2	12MY1967	0.03870)
(1349	CI 2	19AP1967	0.00359)	(1420	IH 2	23MY1967	0.01511)	(1421	CH 2	23MY1967	0.06540)
(1423	WA 2	25MY1967	0.02141)	(1424	KN 2	25MY1967	0.01332)	(1430	MC 2	12JN1967	0.02467)

Cyclotella operculata (Agardh) Kütz.

Frustulia operculata Agardh, Bot. Zeitschr., 1827:627. 1827.
Cyclotella operculata (Agardh) Kützing, Syn. Diat., p. 7. 1834.

Cells cylindrical with slightly excentrically undulate valves. Cells always occur singly. Specimens from Lake Michigan 8-32μ in diameter.. Ornamentation of the marginal zone consists of narrow striae chambers separated by very poorly developed radial costae. Near the margin of the valve the striae chambers open to the interior of the frustule by a series of foramina that appear as a series of bright or dark spots under the light microscope, depending on the level of focus. Striae 15-18 in 10μ near the margin of the valve. The external surface of the striae chambers has a double row of very fine punctae. These are very difficult to resolve and can be seen only with ideal specimens and the best optical equipment. The central area in this species is without visible ornamentation and is usually slightly excentric. In some specimens one or more shortened striae of peculiar structure occur at the margin of the valve.

This species apparently belongs to the complex of described entities with affinities to *C. striata*. It in some respect resembles *C. michiganiana* but is easily differentiated from that taxon by the lack of ornamentation of the central area and its only slightly undulate valves. This species occurrence in Lake Michigan is highly irregular and only occasional collections have it in abundance. It appears that its primary habitat may be in the phytobenthos and that it is only opportunistically planktonic. It is also found in some inland lakes in Michigan. Specimens from these habitats tend to be larger in average size and to have more robust structure than those from Lake Michigan.

128 CYPLANKT TOT NC OF STATIONS 170

(46910	CH	0C1945	C.00874)	(46921	CH	23N01945	C.01293)	(46917	CH	12JA1946	C.C1275)
(46915	CH	20FE1946	0.01138)	(46914	CH	19AP1946	0.00320)	(46924	CH	10MY1946	0.00141)
(46923	CH	22N01946	0.01748)	(46920	CH	20DE1946	0.00555)	(46905	CH	JA1947	C.CC981)
(46922	CH	21AU1947	0.00242)	(1228	D 2	14MY1964	0.00389)	(1229	D 5	14MY1964	C.C1057)
(1230	E 2	16MY1964	0.00296)	(1231	E 3	16MY1964	0.00489)	(1232	E 5	16MY1964	0.03131)
(1234	B 3	18JN1964	0.00281)	(1235	C 7	16JN1964	0.00282)	(1439	B 6	5JN1964	C.CC400)
(1237	C' 2	8JN1964	0.00258)	(1238	D 3	11JN1964	C.00200)	(1240	D 6	10JN1964	C.00307)
(1244	F 1	11JN1964	0.05811)	(1245	F 2	11JN1964	0.06224)	(1246	F 3	11JN1964	C.C5379)
(1255	D 5	15JL1964	0.00257)	(1258	F 1	6JL1964	0.01180)	(1259	F 2	6JL1964	C.04028)
(1260	F 3	6JL1964	0.01146)	(1442	B 6	2AU1964	0.00341)	(1264	C' 1	10AU1964	C.CC579)
(1265	C' 2	10AU1964	0.00224)	(1266	D 3	18AU1964	1.22773)	(1267	D 6	18AU1964	0.00649)
(1268	E 2	15AU1964	0.04924)	(1269	E 3	15AU1964	0.57556)	(1270	F 1	10AU1964	C.14159)
(1272	C' 1	10SE1964	0.63211)	(1273	C' 2	10SE1964	0.30647)	(1274	D 1	17SE1964	0.32844)
(1275	D 2	17SE1964	0.45158)	(1276	D 3	18SE1964	C.08941)	(1277	D 4	18SE1964	C.05577)
(1278	D 6	18SE1964	0.41508)	(1279	E 1	16SE1964	0.65968)	(1280	E 2	16SE1964	C.95309)
(1281	E 3	16SE1964	1.19295)	(1282	E 4	16SE1964	2.32687)	(1283	E 5	16SE1964	3.43263)
(1284	E 6	17SE1964	2.44654)	(1285	F 1	15SE1964	4.89197)	(1286	F 2	15SE1964	2.68170)
(1287	F 3	15SE1964	1.92654)	(1288	B 3	15OC1964	C.01306)	(1289	C 7	14OC1964	C.01759)
(1290	C' 1	16OC1964	0.05306)	(1291	C' 2	16OC1964	C.01957)	(1292	D 1	15OC1964	0.07454)
(1293	D 2	15OC1964	0.08018)	(1294	D 3	15OC1964	0.46148)	(1295	D 4	15OC1964	C.83244)
(1296	D 5	14OC1964	0.03541)	(1297	D 6	14OC1964	C.02666)	(1298	E 1	12OC1964	C.13195)
(1299	E 2	12OC1964	0.43984)	(1300	E 3	13OC1964	1.08824)	(1301	E 4	13OC1964	4.63658)
(1302	E 5	13OC1964	8.21929)	(1303	E 6	13OC1964	1.08026)	(1304	F 1	11OC1964	1.72874)
(1305	F 2	11OC1964	0.72456)	(1306	F 3	11OC1964	2.23128)	(1307	B 6	N01964	0.01443)
(1308	C 7	6N01964	0.00608)	(1309	C' 1	10N01964	0.02412)	(1310	C' 2	10N01964	C.C2041)
(1311	D 1	8N01964	0.01290)	(1312	D 2	8N01964	0.02483)	(1313	D 3	9N01964	0.09459)
(1314	D 4	9N01964	0.08038)	(1315	D 5	9N01964	C.01820)	(1316	D 6	9NC1964	C.05289)
(1317	E 1	6N01964	0.04021)	(1318	E 2	7N01964	0.17313)	(1319	E 3	7N01964	C.91640)
(1320	E 4	7N01964	0.34747)	(1321	E 5	7N01964	C.53630)	(1322	E 6	7N01964	C.58320)
(1323	F 1	6N01964	0.63415)	(1324	F 2	6N01964	0.42392)	(1325	F 3	6N01964	C.61714)
(1337	C 3	2MR1967	0.00147)	(1338	C 3	28MR1967	0.00264)	(1339	C 5	28MR1967	C.00624)
(1340	C 7	28MR1967	0.00073)	(1341	A 3	19AP1967	0.00108)	(1345	C 5	25AP1967	C.00195)
(1346	C 7	21AP1967	0.00267)	(1369	A 4	4MY1967	0.00373)	(1373	C 7	5MY1967	0.00285)
(1374	E 2	7MY1967	0.00299)	(1375	E 3	7MY1967	0.00481)	(1410	A 6	24MY1967	C.CC564)
(1411	C 3	31MY1967	0.00410)	(1449	C 3	16JL1967	0.00382)	(1504	A 3	28AU1967	0.04444)
(1512	E 3	1SE1967	0.00785)	(1536	E 2	24SE1967	0.00545)	(1537	E 3	24SE1967	C.03019)
(1538	E 5	23SE1967	0.09943)	(1541	E 2	11OC1967	0.00532)	(1542	E 3	11OC1967	C.35598)
(1543	E 5	10OC1967	0.00718)	(1379	GS 3	9MY1967	C.00928)	(1380	GS 4	9MY1967	C.10762)
(1381	GS 5	10MY1967	0.00716)	(1382	GS 6	10MY1967	0.03053)	(1383	GS 7	10MY1967	C.04544)
(1384	GS 8	10MY1967	0.02773)	(1385	GS 9	10MY1967	C.00706)	(1386	GS10	12MY1967	C.01724)
(1387	GS11	12MY1967	0.07129)	(1388	GS12	12MY1967	0.02413)	(1389	GS13	12MY1967	C.01805)
(1390	GS14	12MY1967	0.05285)	(1391	GS15	12MY1967	C.01915)	(1392	GS16	12MY1967	C.04623)
(1393	GS17	13MY1967	0.00822)	(1394	GS18	13MY1967	0.01204)	(1395	GS19	13MY1967	C.00587)
(1398	GS22	14MY1967	C.00304)	(1554	GS 1	3OC1967	C.02491)	(1555	GS 2	3OC1967	C.38489)
(1556	GS 3	3OC1967	0.36502)	(1557	GS 4	3OC1967	1.70030)	(1558	GS 5	4OC1967	1.80355)
(1559	GS 7	4OC1967	1.22403)	(1560	GS 8	4OC1967	1.98366)	(1561	GS 9	4OC1967	0.59870)
(1562	GS10	5OC1967	0.10115)	(1563	GS11	5OC1967	0.16368)	(1564	GS12	5OC1967	C.25512)
(1565	GS13	5OC1967	C.39550)	(1566	GS14	5OC1967	C.77050)	(1567	GS15	5OC1967	C.21754)
(1568	GS16	5OC1967	0.01876)	(1569	GS17	5OC1967	0.13973)	(1570	GS18	5OC1967	C.06942)
(1571	GS19	6OC1967	0.00117)	(1573	GS21	6OC1967	C.00112)	(1574	GS22	6OC1967	C.01438)
(1575	GS28	6OC1967	0.00129)	(1522	BH 1	18SE1967	0.00365)	(1548	CA 1	7OC1967	0.86503)
(1549	MQ 1	4OC1967	C.93189)	(1551	ES 1	5OC1967	C.17573)	(1553	SG 1	[illegible]1967	C.01469)
(1428	MU 2	29MY1967	0.00301)	(1426	MS 2	29MY1967	C.01050)	(1418	SH 2	[illegible]	C.01555)
(1350	BH 2	19AP1967	0.00661)	(1399	PW 2	5MY1967	C.00680)	(1402	TR 2	[illegible]	[illegible]0541)
(1352	KW 2	21AP1967	C.00859)	(1403	CA 2	10MY1967	0.23539)	(1404	MQ 2	[illegible]	[illegible]
(1405	ES 2	12MY1967	0.04515)	(1407	SM 2	14MY1967	0.01791)	(1420	IH 2	23MY1967	[illegible])
(1422	GA 2	23MY1967	0.00511)	(1423	WA 2	25MY1967	0.00428)	(			

Cyclotella pseudostelligera Hust.

Cyclotella pseudostelligera Hustedt *in*: Huber-Pestalozzi, Binnengew., 16(2):397, fig. 485. 1942.

Cells cylindrical with slightly concentrically undulate valves. Specimens from Lake Michigan 5-9μ in diameter. Cells always occur singly. Marginal zone narrow, usually less than one-half the radius of the valve. Ornamentation of the marginal zone consists of fine radial striae, without visible substructure, about 18 in 10μ at the margin of the valve and a marginal co-

rona of short, stout spines with somewhat expanded bases. The central area of the valve is ornamented with a stellate group of short striae radiating around a central puncta. In occasional specimens the ornamentation of the central area is poorly developed or lacking. In most specimens a distinct, structureless, hyaline space separates the two areas of ornamentation on the valve surface.

With the exception of the marginal spines, the morphologic characteristics of this species are quite similar to *C. stelligera*. The structures of the frustule of *C. pseudostelligera* are somewhat finer and its distribution tends to be more restricted than *C. stelligera*. It is abundant only in eutrophied inshore waters and in estuaries of the main lake.

129 CYPSTELL TCT NO OF STATIONS 156

(46915	CH	20FE1946	0.01707)	(46923	CH	22NO1946	0.01093)	(46920	CH	20DE1946	C.00031)
(46905	CH	JA1947	0.00123)	(46906	CH	MY1947	0.01394)	(46907	CH	JL1947	C.00247)
(46913	CH	6AU1947	C.01046)	(46922	CH	21AU1947	C.47253)	(46771	EV	11JN1937	C.0C238)
(46764	EV	17JL1937	0.06446)	(46757	EV	25JL1937	0.29849)	(46747	EV	1AU1937	C.01238)
(46763	EV	23AU1937	C.02029)	(46765	EV	30AU1937	0.13943)	(46760	EV	22SE1937	C.02462)
(46744	EV	6OC1937	0.00488)	(46767	EV	27OC1937	0.00774)	(46768	EV	16MR1938	0.01470)
(46756	EV	27AP1938	0.00504)	(46759	EV	19MY1938	0.00675)	(46761	EV	27MY1938	C.00545)
(1439	B 6	5JN1964	0.01399)	(1440	B 6	11JL1964	0.03317)	(1441	B 6	24JL1964	0.01542)
(1250	C 6	10JL1964	0.00411)	(1252	C' 1	16JL1964	0.00279)	(1254	D 2	15JL1964	C.00383)
(1255	D 5	15JL1964	0.01540)	(1256	E 2	14JL1964	0.00183)	(1257	E 3	14JL1964	0.00479)
(1258	F 1	6JL1964	0.01180)	(1259	F 2	6JL1964	0.00310)	(1262	B 3	17AU1964	C.CC210)
(1442	B 6	2AU1964	0.00682)	(1443	B 6	16AU1964	0.00395)	(1264	C' 1	10AU1964	0.0C193)
(1265	C' 2	10AU1964	0.01118)	(1266	D 3	18AU1964	1.47327)	(1267	D 6	18AU1964	C.CC432)
(1268	E 2	15AU1964	0.21064)	(1269	E 3	15AU1964	C.04933)	(1270	F 1	10AU1964	0.02178)
(1273	C' 2	10SE1964	0.02688)	(1275	D 2	17SE1964	0.02580)	(1277	D 4	18SE1964	0.01859)
(1278	D 6	18SE1964	0.00384)	(1279	E 1	16SE1964	0.00785)	(1280	E 2	16SE1964	0.00681)
(1281	E 3	16SE1964	0.02355)	(1282	E 4	16SE1964	0.02216)	(1283	E 5	16SE1964	0.CC613)
(1284	E 6	17SE1964	0.00318)	(1285	F 1	15SE1964	0.08153)	(1287	F 3	15SE1964	C.03002)
(1288	B 3	15OC1964	0.00435)	(1445	B 6	14OC1964	0.00652)	(1289	C 7	14OC1964	C.01319)
(1291	C' 2	16OC1964	0.00489)	(1292	D 1	15OC1964	C.00745)	(1293	D 2	15OC1964	C.01415)
(1295	D 4	15OC1964	0.02973)	(1296	C 5	14OC1964	C.01180)	(1297	D 6	14OC1964	0.CC381)
(1298	E 1	12OC1964	0.01346)	(1299	E 2	12OC1964	0.02199)	(1300	E 3	13OC1964	C.05012)
(1301	E 4	13CC1964	0.06182)	(1302	E 5	13OC1964	0.00810)	(1304	F 1	11OC1964	0.00741)
(1305	F 2	11OC1964	0.01380)	(1306	F 3	11OC1964	0.01386)	(1307	B 6	NO1964	C.00722)
(1308	C 7	6NO1964	0.00912)	(1309	C' 1	10NO1964	0.01126)	(1310	C' 2	10NO1964	C.02041)
(1311	D 1	8NO1964	0.00774)	(1312	D 2	8NO1964	C.02483)	(1313	D 3	9NO1964	0.02703)
(1314	D 4	9NO1964	0.01148)	(1315	D 5	9NO1964	0.01365)	(1316	D 6	9NO1964	C.C1889)
(1317	E 1	6NO1964	0.01340)	(1318	E 2	7NO1964	C.02663)	(1319	E 3	7NO1964	0.08117)
(1320	E 4	7NO1964	0.15305)	(1321	E 5	7NO1964	C.04469)	(1322	E 6	7NO1964	C.C1000)
(1323	F 1	6NO1964	0.01115)	(1324	F 2	6NO1964	C.01398)	(1325	F 3	6NC1964	C.00252)
(1336	C 3	27JA1967	0.00385)	(1337	C 3	2MR1967	0.00588)	(1338	C 3	28MR1967	C.CC926)
(1340	C 7	28MR1967	0.01018)	(1341	A 3	19AP1967	0.00542)	(1342	A 4	19AP1967	C.0C902)
(1343	A 6	19AP1967	0.00069)	(1345	C 5	25AP1967	0.00195)	(1346	C 7	21AP1967	C.22432)
(1347	F 2	23AP1967	0.00813)	(1348	E 5	23AP1967	0.01234)	(1374	E 2	7MY1967	C.0C299)
(1408	A 3	23MY1967	0.00447)	(1416	E 5	28MY1967	C.01093)	(1437	E 3	15JN1967	C.CC269)
(1446	A 3	11JL1967	0.00489)	(1447	A 4	11JL1967	0.00936)	(1449	C 3	16JL1967	C.11082)
(1450	C 5	16JL1967	0.29135)	(1451	C 7	16JL1967	0.00591)	(1452	E 2	14JL1967	C.07664)
(1453	E 3	15JL1967	0.01517)	(1454	E 5	15JL1967	C.01000)	(1508	C 3	2SE1967	0.00400)
(1509	C 5	2SE1967	0.00505)	(1511	E 2	1SE1967	C.04604)	(1512	E 3	1SE1967	C.01571)
(1513	E 5	31AU1967	0.00507)	(1532	A 3	18SE1967	0.00657)	(1533	A 4	19SE1967	C.00928)
(1534	A 6	19SE1967	0.00310)	(1536	E 2	24SE1967	0.01363)	(1538	E 5	23SE1967	C.01105)
(1540	C 5	4OC1967	0.00993)	(1541	E 2	11OC1967	0.06918)	(1542	E 3	11OC1967	C.04068)
(1543	E 5	10OC1967	0.02873)	(1380	GS 4	9MY1967	0.00168)	(1384	GS 8	10MY1967	C.00185)
(1394	GS18	13MY1967	0.00172)	(1555	GS 2	3OC1967	C.01059)	(1557	GS 4	3OC1967	C.00374)
(1561	GS 9	4OC1967	0.00587)	(1562	GS10	5OC1967	C.00247)	(1573	GS21	6OC1967	C.CC112)
(1544	MU 1	20C1967	0.00715)	(1547	MS 1	20C1967	0.00798)	(1521	SH 1	18SE1967	C.00577)
(1522	BH 1	18SE1967	0.11670)	(1523	RA 1	19SE1967	0.13838)	(1526	MO 1	20SE1967	0.00569)
(1529	KW 1	20SE1967	0.02398)	(1545	WL 1	20C1967	C.02027)	(1549	PQ 1	4OC1967	0.06852)
(1551	ES 1	5OC1967	0.00799)	(1552	SM 1	6OC1967	0.00660)	(1550	PR 1	5OC1967	0.44604)
(1428	MU 2	29MY1967	0.01507)	(1426	MS 2	29MY1967	0.02100)	(1351	PI 2	21AP1967	0.02483)
(1417	HO 2	22MY1967	0.71781)	(1350	3H 2	19AP1967	0.25770)	(1400	SB 2	6MY1967	C.20848)
(1352	KW 2	21AP1967	0.02577)	(1403	CA 2	10MY1967	C.03923)	(1349	CI 2	19AP1967	0.00359)

Cyclotella stelligera (Cleve and Grun.) V. H.

Cyclotella meneghiniana var.? *stelligera* Cleve and Grun., Kongl. Sven. Vet.-Akad. Handl., 18(5):22, pl. 5, fig. 63. 1881.
Cyclotella stelligera (Cleve and Grun.) V. H., Syn. Diat. Belgique, pl. 94, fig. 22-27. 1882.

Cells cylindrical with slightly concentrically undulate valves. Cells always occur singly. Specimens from Lake Michigan 3-24μ in diameter. Marginal zone narrow, only about one-fourth the radius of the valve. Ornamentation of the marginal zone composed of striae without visible substructure. Striae quite coarse, about 11-14 in 10μ, all of approximately equal length. Other structures, such as ribs, chambers, or slime pores are lacking. Ornamentation of the central area is quite variable. Usually a single large puncta is present in the center of the valve. A number of irregular ribs radiate around the center giving a stellate central structure. Smaller, isolated puncta or thickenings may occur between the major structures. In the smaller cells this entire central ornamentation is reduced to a stellate cluster of dots. In some specimens the entire central area is covered by very fine puncta which may be either radially or randomly distributed.

130 CYSTELLI TCT NO OF STATIONS 121

												19FE1881	0.01132)
(60973	CH	1876	0.11809)	(3541	CH								
(46910	CH	0C1945	0.02294)	(46921	CH	23N01945	0.01229)	(46908	CH			DE1945	0.04028)
(46917	CH	12JA1946	0.00582)	(46915	CH	20FE1946	0.15364)	(46914	CH			19AP1946	0.01815)
(46924	CH	10MY1946	0.00564)	(46923	CH	22N01946	0.06775)	(46920	CH			20DE1946	0.00893)
(46905	CH	JA1947	0.02206)	(46909	CH	MR1947	0.07286)	(46912	CH			AP1947	0.01150)
(46916	CH	4MY1947	0.00238)	(46906	CH	MY1947	0.04779)	(46919	CH			5JN1947	0.12291)
(46907	CH	JL1947	0.00296)	(46922	CH	21AU1947	8.91503)	(46758	EV			5JN1937	0.01070)
(46764	EV	17JL1937	0.02417)	(46757	EV	25JL1937	0.08184)	(46747	EV			1AU1937	0.21784)
(46763	EV	23AU1937	0.71023)	(46765	EV	30AU1937	0.68600)	(46769	EV			7SE1937	0.06513)
(46752	EV	15SE1937	0.10884)	(46760	EV	22SE1937	0.03939)	(46750	EV			24SE1937	0.06127)
(46744	EV	6OC1937	0.10730)	(46767	EV	27OC1937	0.01160)	(46749	EV			12MR1938	0.07282)
(46768	EV	16MR1938	0.04410)	(46762	EV	18MR1938	0.22056)	(46756	EV			27AP1938	0.00336)
(46759	EV	19MY1938	0.00338)	(46761	EV	27MY1938	0.00818)	(1226	C 7			16MY1964	0.00381)
(1228	D 2	14MY1964	0.00779)	(1229	D 5	14MY1964	0.00423)	(1231	E 3			16MY1964	0.01223)
(1232	E 5	16MY1964	0.00174)	(1236	C' 1	8JN1964	0.00175)	(1237	C' 2			8JN1964	0.00258)
(1250	C 6	10JL1964	0.00822)	(1255	D 5	15JL1964	0.00513)	(1256	E 2			14JL1964	0.00183)
(1257	E 3	14JL1964	0.00957)	(1258	F 1	6JL1964	0.00236)	(1260	F 3			6JL1964	0.00955)
(1265	C' 2	10AU1964	0.00224)	(1444	B 6	19SE1964	0.02122)	(1272	C' 1			10SE1964	0.05336)
(1273	C' 2	10SE1964	0.01613)	(1275	D 2	17SE1964	0.01290)	(1276	D 3			18SE1964	0.01118)
(1279	E 1	16SE1964	0.01571)	(1280	E 2	16SE1964	0.00681)	(1286	F 2			15SE1964	0.02189)
(1287	F 3	15SE1964	0.02502)	(1445	B 6	14OC1964	0.00326)	(1338	C 3			28MR1967	0.00529)
(1339	C 5	28MR1967	0.00312)	(1340	C 7	28MR1967	0.00145)	(1342	A 4			19AP1967	0.00361)
(1343	A 6	19AP1967	0.00139)	(1344	C 3	25AP1967	0.00331)	(1346	C 7			21AP1967	0.00668)
(1347	E 2	23AP1967	0.00325)	(1348	E 5	23AP1967	0.00685)	(1373	C 7			5MY1967	0.00285)
(1374	E 2	7MY1967	0.00598)	(1376	E 5	6MY1967	0.00281)	(1408	A 3			23MY1967	0.00447)
(1433	C 3	17JN1967	0.00646)	(1446	A 3	11JL1967	0.00245)	(1447	A 4			11JL1967	0.01170)
(1449	C 3	16JL1967	0.00764)	(1450	C 5	16JL1967	0.00190)	(1451	C 7			16JL1967	0.00591)
(1452	E 2	14JL1967	0.01490)	(1453	E 3	15JL1967	0.01264)	(1454	E 5			15JL1967	0.00400)
(1504	A 3	28AU1967	0.00247)	(1509	C 5	2SE1967	0.00505)	(1511	E 2			1SE1967	0.01535)
(1512	E 3	1SE1967	0.01178)	(1513	E 5	31AU1967	0.00507)	(1532	A 3			18SE1967	0.00986)
(1533	A 4	19SE1967	0.00464)	(1539	C 3	4OC1967	0.01510)	(1541	E 2			11OC1967	0.01064)
(1542	E 3	11OC1967	0.01017)	(1543	E 5	10OC1967	0.00718)	(1382	GS 6			10MY1967	0.00278)
(1383	GS 7	10MY1967	0.00267)	(1554	GS 1	3OC1967	0.00712)	(1555	GS 2			3OC1967	0.00353)
(1556	GS 3	3OC1967	0.01564)	(1558	GS 5	4OC1967	0.00396)	(1559	GS 7			4OC1967	0.01049)
(1560	GS 8	4OC1967	0.00472)	(1562	GS10	5OC1967	0.00740)	(1570	GS18			5OC1967	0.00992)
(1571	GS19	6OC1967	0.00059)	(1574	GS22	6OC1967	0.00575)	(1524	MI 1			20SE1967	0.02189)
(1546	LU 1	20OC1967	0.01000)	(1527	TR 1	20SE1967	0.01258)	(1545	WL 1			20OC1967	0.00676)
(1550	MR 1	5OC1967	0.06195)	(1351	MI 2	21AP1967	0.02793)	(1399	PW 2			5MY1967	0.01360)
(1400	SB 2	6MY1967	0.01191)	(1352	KW 2	21AP1967	0.06013)	(1403	CA 2			10MY1967	0.03923)
(1404	MQ 2	10MY1967	0.01270)	(1405	ES 2	12MY1967	0.00645)	(1349	CI 2			19AP1967	0.00718)
(1423	WA 2	25MY1967	0.00428)	(									

Cyclotella temperei M. Per. and Héribaud.

Cyclotella temperei M. Peragallo and Héribaud *in*: Héribaud, Foss. Diat. Auvergne, Vol. I, p. 35, pl. 8, fig. 23. 1902.

Cells cylindrical, surface of the valves flat or only slightly concave. Cells occur singly. Specimens from Lake Michigan 8-12μ in diameter. Marginal zone of the valves very broad about three-fourths the diameter of the valve. Ornamentation of the marginal zone consists of anastomosing striae of varying length, somewhat sinuous and without visible substructure. The longest of the striae are of equal length, forming an even border to the central area. A series of marginal spines are present. Striae 14-18 in 10μ at the margin of the valve. Spines widely but regularly spaced, about 4 in 10μ. The central area is small and circular. Its only ornamentation is a rosette of quite small but conspicuous puncta surrounding the center of the valve.

Specimens of this species are very rare in collections from Lake Michigan. It was originally described from fossil material and it is entirely possible that the specimens we have observed are not of recent origin. It is also possible that this species belongs to the group of "pleistocene relicts" that survive in benthic communities in relatively deep water in the upper Great Lakes. The only other taxon found in Lake Michigan that resembles *C. temperei* in morphology is *C. wolterecki* Hust. Although Hustedt (1942) points this out in his discussion of *C. wolterecki*, he does not alude to *Cladogramma cebuense* Grun., which, although larger and more coarsely structured, is remarkably similar to the two entities discussed above in structure and which, like *C. wolterecki*, was described from the western Pacific Islands.

132 CYTEMPER TOT NO OF STATIONS 7

(1544	MU 1	20C1967	0.00238)	(1522	BH 1	18SE1967	1.60464)	(1550	MR 1	50C1967	0.39648)
(1350	BH 2	19AP1967	1.23345)	(1400	SB 2	6MY1967	0.00596)	(1353	FR 2	23AP1967	0.01055)
(1422	GA 2	23MY1967	0.00511)	(							

Cyclotella wolterecki Hust.

Cyclotella wolterecki Hustedt, Internat. Rev. Hydrobiol., 42;16, text fig. 11-13. 1942.

Cells cylindrical with slightly concentrically undulate valves, usually sunken in the center. Cells occur singly. Specimens from Lake Michigan 4-9μ in diameter. The main visible ornamentation on the valve surface is a series of radiate striae of varying lengths and without visible substructure. The longest of these striae reach nearly to the center of the valve so that the central area is reduced to a small, circular area only 1-2μ in diameter. This area usually contains a single, large puncta. The striae are fine, about 22 in 10μ at the margin of the valve, and somewhat difficult to resolve to the thinness of the valve and to their highly irregular length. A series of more or less well developed spines, with thickened and expanded bases, are usually visible at the margin of the valves. The spines are randomly arranged and appear to have no special orientation to the striae or to one another.

This species, like *C. atomus* Hust., was originally described from the tropics. Although this distribution is quite unusual, the forms from Lake Michigan appear to be morphologically identical with the specimens described and figured by Hustedt (1. c.). Indeed the morphology of this taxon is almost unique. The only species that resembles it in general structure of the valve and arrangement of ornamentation is *C. temperei*, which, according to published descriptions and illustrations, is a considerably larger and more coarsely structured form.

133 CYWOLTER TOT NO OF STATIONS 4

(1243	E 6	13JN1964	0.00418)	(1446	A 3	11JL1967	0.00245)	(1557	GS 4	30C1967	0.00374)
(1550	MR 1	50C1967	0.01239)	(							

Species *incertae sedis*

Cyclotella sp. #1.

134 CYSPECOA TOT NO OF STATIONS 1

(1245	F 2	11JN1964	0.00692)	(

Cyclotella sp. #2.

135 CYSPECOB TOT NO OF STATIONS 10

(1284	E 6	17SE1964	0.00953)	(1285	F 1	15SE1964	0.01165)	(1320	E 4	7NO1964	0.00827)
(1321	E 5	7NO1964	0.00638)	(1322	E 6	7NO1964	0.01666)	(1323	F 1	6NO1964	0.00279)
(1324	F 2	6NO1964	0.01165)	(1325	F 3	6NO1964	0.00504)	(1536	E 2	24SE1967	0.00273)
(1541	E 2	11OC1967	0.01597)	(							

Cyclotella sp. (aff. *C. striata* var. *bipunctata* Fricke).

131 CYSTRIVB TOT NO OF STATIONS 3

(1240	D 6	10JN1964	0.00920)	(1243	E 6	13JN1964	0.00209)	(1504	A 3	28AU1967	0.00247)

Genus *Cymatopleura* Wm. Smith

Wm. Smith, Annals Mag. Nat. Hist., 7(2):13. 1851.

Freshwater members of the genus *Cymatopleura* find their primary habitat in epipelic communities. They are, however, also successful facultative planktonts and occur in low to moderate numbers in plankton collections.

Cymatopleura cochlea J. Brun.

Cymatopleura cochlea J. Brun, Mem. Soc. Phys. Hist. Nat. Geneve, 31:25, pl. 276, fig. 6. 1911.

136 CTCOCHLE TCT NO OF STATIONS 16

(3541	CH	1FE1881	0.01956)	(46917	CH	12JA1946	0.00055)	(46914	CH	19AP1946	0.00107)
(46916	CH	4MY1947	0.00034)	(46922	CH	21AU1947	0.00194)	(46764	EV	17JL1937	0.00806)
(46763	EV	23AU1937	0.02029)	(46752	EV	15SE1937	0.02177)	(46767	EV	27OC1937	0.00387)
(46762	EV	18MR1938	0.08822)	(1391	GS15	12MY1967	0.00479)	(1394	GS18	13MY1967	0.00172)
(1395	GS19	13MY1967	0.00117)	(1396	GS20	13MY1967	0.00074)	(1568	GS16	5OC1967	0.00433)
(1569	GS17	5OC1967	0.00149)	(							

Cymatopleura elliptica (Bréb. and Godey) Wm. Smith

Surirella elliptica de Brébisson and Godey, Consid. Diat., p. 17. 1838.
Cymatopleura elliptica (Bréb. and Godey) Wm. Smith, Annals Mag. Nat. Hist., Ser. 2, 7:13, pl. 7, fig. 10-11. 1851.

137 CTELLIPT TCT NO OF STATIONS 5

(46758	EV	5JN1937	0.00357)	(46743	EV	20JN1937	0.00856)	(46757	EV	25JL1937	0.00481)
(46747	EV	1AU1937	0.00495)	(46765	EV	30AU1937	0.00558)	(			

Cymatopleura solea (Bréb. and Godey) Wm. Smith

Cymbella solea de Brébisson and Godey, Mem. Soc. Acad. Sci. Falaise, 1:51, pl. 7. 1835.
Cymatopleura solea (Bréb. and Godey) Wm. Smith, Annals Mag. Nat. Hist., Ser. 2, 7:12, pl. 3, figs. 8-9. 1851.

138 CTSOLEA TCT NO OF STATIONS 144

(60973	CH	1876	0.04724)	(3540	CH	11MY1879	0.00932)	(3541	CH	1FE1881	0.26411)
(3507	CH	19FE1881	0.02264)	(46910	CH	0C1945	0.00546)	(46921	CH	23N01945	0.04204)
(46917	CH	12JA1946	0.01275)	(46914	CH	19AP1946	0.03097)	(46924	CH	10MY1946	0.22927)
(46923	CH	22N01946	0.15736)	(46920	CH	20DE1946	0.01232)	(46905	CH	JA1947	0.01103)
(46909	CH	MR1947	0.02277)	(46916	CH	4MY1947	0.01561)	(46906	CH	MY1947	0.01062)
(46919	CH	5JN1947	0.01214)	(46907	CH	JL1947	0.05375)	(46922	CH	21AU1947	0.01163)
(46758	EV	5JN1937	0.03923)	(46743	EV	20JN1937	0.05138)	(46745	EV	3JL1937	0.08359)
(46764	EV	17JL1937	0.05641)	(46757	EV	25JL1937	0.03852)	(46747	EV	1AU1937	0.02228)
(46765	EV	30AU1937	0.01673)	(46752	EV	15SE1937	0.02177)	(46760	EV	22SE1937	0.00985)
(46750	EV	24SE1937	0.01414)	(46744	EV	6OC1937	0.00975)	(46748	EV	13OC1937	0.06405)
(46767	EV	27OC1937	0.00774)	(46749	EV	12MR1938	0.01214)	(46768	EV	16MR1938	0.01470)
(46762	EV	18MR1938	0.08822)	(46751	EV	30MR1938	0.02233)	(46756	EV	27AP1938	0.00504)
(46759	EV	19MY1938	0.00675)	(46761	EV	27MY1938	0.03543)	(46766	EV	14DE1938	0.03169)
(1225	C 6	15MY1964	0.00392)	(1228	D 2	14MY1964	0.00584)	(1229	D 5	14MY1964	0.00423)
(1230	E 2	16MY1964	0.00593)	(1231	E 3	16MY1964	0.01223)	(1232	E 5	16MY1964	0.01391)
(1233	B 3	5JN2964	0.00238)	(1439	B 6	5JN1964	0.00200)	(1237	C' 2	8JN1964	0.00516)
(1238	D 3	11JN1964	0.00400)	(1241	E 2	13JN1964	0.00148)	(1242	E 3	13JN1964	0.00300)
(1243	E 6	13JN1964	0.00209)	(1244	F 1	11JN1964	0.00439)	(1245	F 2	11JN1964	0.01037)
(1246	F 3	11JN1964	0.01195)	(1248	B 3	24JL1964	0.00197)	(1252	C' 1	16JL1964	0.00558)
(1254	D 2	15JL1964	0.00383)	(1257	E 3	14JL1964	0.00239)	(1259	F 2	6JL1964	0.00310)
(1260	F 3	6JL1964	0.00191)	(1269	E 3	15AU1964	0.00274)	(1285	F 1	15SE1964	0.00582)
(1304	F 1	11OC1964	0.00741)	(1307	B 6	N01964	0.00361)	(1313	D 3	9N01964	0.00193)
(1323	F 1	6N01964	0.00139)	(1325	F 3	6N01964	0.00252)	(1338	C 3	28MR1967	0.00397)
(1339	C 5	28MR1967	0.00624)	(1340	C 7	28MR1967	0.00073)	(1342	A 4	19AP1967	0.00180)
(1343	A 6	19AP1967	0.00486)	(1344	C 3	25AP1967	0.00165)	(1345	C 5	25AP1967	0.01170)
(1346	C 7	21AP1967	0.00134)	(1347	E 2	23AP1967	0.00325)	(1348	E 5	23AP1967	0.00137)
(1368	A 3	4MY1967	0.02828)	(1370	A 6	3MY1967	0.01381)	(1371	C 3	4MY1967	0.00693)
(1372	C 5	5MY1967	0.01419)	(1373	C 7	5MY1967	0.00856)	(1374	E 2	7MY1967	0.00598)
(1375	E 3	7MY1967	0.01203)	(1376	E 5	6MY1967	0.00281)	(1410	A 6	24MY1967	0.01691)
(1411	C 3	31MY1967	0.00410)	(1412	C 5	31MY1967	0.00842)	(1413	C 7	25MY1967	0.00632)
(1414	E 2	28MY1967	0.00336)	(1416	E 5	28MY1967	0.00219)	(1432	A 4	13JN1967	0.00255)
(1433	C 3	17JN1967	0.00646)	(1434	C 5	17JN1967	0.00598)	(1436	E 2	15JN1967	0.00724)
(1437	E 3	15JN1967	0.00538)	(1448	A 6	10JL1967	0.00354)	(1449	C 3	16JL1967	0.00382)
(1453	E 3	15JL1967	0.00253)	(1511	E 2	1SE1967	0.00307)	(1379	GS 3	9MY1967	0.00309)
(1380	GS 4	9MY1967	0.00336)	(1381	GS 5	10MY1967	0.00239)	(1382	GS 6	10MY1967	0.00278)
(1384	GS 8	10MY1967	0.00924)	(1387	GS11	12MY1967	0.01188)	(1388	GS12	12MY1967	0.14480)
(1389	GS13	12MY1967	0.01289)	(1390	GS14	12MY1967	0.02349)	(1391	GS15	12MY1967	0.04310)

(1392	GS16	12MY1967	0.01233)	(1393	GS17	13MY1967	0.02192)	(1394	GS18	13MY1967	C.08429)
(1395	GS19	13MY1967	0.02114)	(1396	GS20	13MY1967	C.00074)	(1397	GS21	13MY1967	C.00327)
(1566	GS14	5CC1967	0.00367)	(1567	GS15	5OC1967	C.00635)	(1568	GS16	5OC1967	C.00144)
(1569	GS17	5OC1967	0.01338)	(1570	GS18	5CC1967	0.00992)	(1572	GS20	6OC1967	C.00090)
(1575	GS28	6OC1967	0.00516)	(1546	LU 1	2OC1967	C.00500)	(1520	PO 1	18SE1967	C.00471)
(1552	SM 1	6OC1967	0.01981)	(1553	SG 1	6OC1967	0.00734)	(1428	PU 2	29MY1967	C.00301)
(1426	MS 2	29MY1967	0.05249)	(1351	MI 2	21AP1967	0.00621)	(1417	PO 2	22MY1967	C.01495)
(1350	BH 2	19AP1967	0.00661)	(1401	MO 2	6MY1967	0.01176)	(1402	TR 2	6MY1967	C.01083)
(1400	SB 2	6MY1967	0.02383)	(1354	GH 2	25AP1967	0.00173)	(1429	WL 2	29MY1967	C.01062)
(1403	CA 2	10MY1967	0.02615)	(1349	CI 2	19AP1967	0.00359)	(1419	BU 2	23MY1967	C.05492)
(1422	GA 2	23MY1967	0.02555)	(1423	WA 2	25MY1967	0.01713)	(1424	KN 2	25MY1967	0.01332)

Cymatopleura solea var. *apiculata* (Wm. Smith) Ralfs

Cymatopleura apiculata Wm. Smith, Syn. British Diat., Vol. 1, p. 37, pl. 10, fig. 79. 1853.
Cymatopleura solea var. *apiculata* (Wm. Smith) Ralfs *in*: Pritchard, Hist. Infus., p. 793. 1861.

139 CTSOLEVA TOT NO OF STATIONS 39

(60973	CH	1876	0.04724)	(3541	CH	1FE1881	C.00578)	(46921	CH	23NC1945	C.0C065)
(46917	CH	12JA1946	0.00083)	(46914	CH	19AP1946	0.00107)	(46924	CH	10MY1946	0.00282)
(46905	CH	JA1947	0.00123)	(46916	CH	4MY1947	0.00136)	(46907	CH	JL1947	C.0C247)
(46922	CH	21AU1947	C.00048)	(46758	EV	5JN1937	C.01070)	(46743	EV	20JN1937	0.0C856)
(46744	EV	6OC1937	0.00975)	(46749	EV	12MR1938	C.01214)	(46751	EV	30MR1938	C.02233)
(46759	EV	19MY1938	0.0C675)	(1230	E 2	16MY1964	0.00296)	(1289	C 7	14OC1964	0.0044C)
(1343	A 6	19AP1967	0.00069)	(1345	C 5	25AP1967	0.00195)	(1376	E 5	6MY1967	C.00281)
(1408	A 3	23MY1967	0.0C894)	(1414	E 2	28MY1967	0.00672)	(1415	E 3	28MY1967	C.00450)
(1432	A 4	13JN1967	0.00255)	(1434	C 5	17JN1967	C.00299)	(1435	C 7	13JN1967	C.00316)
(1377	GS 1	9MY1967	0.00396)	(1381	GS 5	10MY1967	0.00239)	(1386	GS10	12MY1967	C.00287)
(1388	GS12	12MY1967	0.00603)	(1390	GS14	12MY1967	0.00587)	(1391	GS15	12MY1967	C.CC95E)
(1394	GS18	13MY1967	0.00172)	(1573	GS21	6OC1967	C.00112)	(1550	MR 1	5OC1967	C.01239)
(1399	PW 2	5MY1967	0.01360)	(1401	MO 2	6MY1967	0.00588)	(1422	GA 2	23MY1967	C.00511)

Cymatopleura solea var. *clavata* O. Müll.

Cymatopleura solea var. *clavata* O. Müller, Bot. Jahrb., 34(1):22, fig. 1. 1903.

140 CTSOLEVC TOT NO OF STATIONS 1

(46747	EV	1AU1937	0.00248)	(

Cymatopleura solea var. *regula* (Ehr.) Grun.

Surirella regula Ehrenberg, Ber. Akad. Wiss. Berlin, 1841:136. 1841.
Cymatopleura regula Ralfs *in*: Pritchard, Hist. Infus., p. 793. 1861.
Cymatopleura solea var. *regula* (Ehr.) Grunow, Verh. Zool.-Bot. Ges. Wien, 12:466. 1862.

141 CTSOLEVR TOT NO OF STATIONS 6

(60973	CH	1876	0.11809)	(3541	CH	1FE1881	0.00578)	(46914	CH	19AP1946	C.CC107)
(46919	CH	5JN1947	0.00303)	(46907	CH	JL1947	0.00197)	(46922	CH	21AU1947	C.00048)

Genus *Cymbella* Agardh

Agardh, Consp. Crit. Diat., p. 1. 1830.

Members of the genus *Cymbella* find their primary habitat in periphyton or epipelic communities. The specimens that occur in our collections are most likely derived from such habitats in most instances.

Cymbella acutiuscula Cleve

Cymbella acutiuscula Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2): 164, pl. 4, fig. 26. 1894.

Coll: 1404.

Cymbella aequalis Wm. Smith

Cymbella aequalis Wm. Smith *in*: Greville, Annals Mag. Nat. Hist., Ser. 2, 16:255, pl. 9, fig. 4. 1855.

185 CBSPECCE TCT NC CF STATICNS 2

(46917	CH	12JA1946	0.0CC28)	(1258	F 1	6JL1964	0.00236)	(			

Cymbella affinis Kütz.

Cymbella affinis Kützing, Bacill., p. 80, pl. 6, fig. 15. 1844.

142 CBAFFINI TCT NC CF STATICNS 35

(46917	CH	12JA1946	0.00028)	(46924	CH	10MY1946	C.00071)	(46906	CH	MY1947	C.CC133)
(46919	CH	5JN1947	0.00152)	(46922	CH	21AU1947	C.00048)	(46758	EV	5JN1937	C.22110)
(46743	EV	20JN1937	0.00428)	(46764	EV	17JL1937	C.00806)	(46757	EV	25JL1937	C.CC481)
(46763	EV	23AU1937	0.02029)	(46769	EV	7SE1937	0.02171)	(46760	EV	22SE1937	C.CC492)
(46750	EV	24SE1937	C.CC943)	(1229	D 5	14MY1964	0.00211)	(1240	D 6	10JN1964	C.CC153)
(1244	F 1	11JN1964	C.00110)	(1245	F 2	11JN1964	0.00346)	(1256	E 2	14JL1964	C.CC183)
(1270	F 1	10AU1964	0.00545)	(1279	E 1	16SE1964	0.00785)	(1287	F 3	15SE1964	0.00500)
(1346	C 7	21AP1967	0.00134)	(1388	GS12	12MY1967	0.02413)	(1389	GS13	12MY1967	C.CC258)
(1392	GS16	12MY1967	0.00616)	(1565	GS13	5OC1967	C.01014)	(1567	GS15	5OC1967	C.CC318)
(1569	GS17	5OC1967	0.00297)	(1571	GS19	6OC1967	C.00176)	(1574	GS22	6OC1967	C.CC575)
(1350	BH 2	19AP1967	0.00881)	(14C1	MO 2	6MY1967	C.00588)	(1403	CA 2	10MY1967	C.C3923)
(1407	SM 2	14MY1967	C.00597)	(1406	GB 2	13MY1967	0.00270)	(			

Cymbella amphicephala Naeg. *ex* Kütz.

Cymbella amphicephala Naegli *ex* Kützing, Sp. Alg., p. 890. 1849.

143 CBAMPHIC TCT NC OF STATICNS 3

(46764	EV	17JL1937	C.CC806)	(1389	GS13	12MY1967	C.00258)	(1530	FR 1	24SE1967	C.01000)

Cymbella angustata (Wm. Smith) Cleve

Navicula angustata Wm. Smith, Syn. British Diat., Vol. I, p. 52, pl. 17, fig. 156. 1853.
Cymbella angustata (Wm. Smith) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):161. 1895.

144 CBANGUST TCT NC OF STATICNS 3

(46764	EV	17JL1937	0.0C806)	(46757	EV	25JL1937	0.00481)	(46747	EV	1AU1937	C.CC248)

Cymbella aspera (Ehr.) Hérib.

Cocconema asperum Ehrenberg, Ber. Akad. Wiss. Berlin, 1839:30. 1839.
Cymbella aspera Héribaud, Diat. Auvergne, p. 99, pl. 3, fig. 10. 1893.

145 CBASPERA TCT NC CF STATICNS 3

(1512	E 3	1SE1967	0.00393)	(1390	GS14	12MY1967	C.00587)	(1404	MO 2	10MY1967	C.C1270)

Cymbella cesatii Grun.

Cymbella cesatii Grunow *in*: A. Schmidt, Atlas Diat., pl. 71, figs. 48-49. 1881.

146 CBCESATI TOT NO OF STATIONS 14

(46919	CH	5JN1947	0.00455)	(1244	F 1	11JN1964	0.00219)	(1245	F 2	11JN1964	0.00346)
(1246	F 3	11JN1964	0.00598)	(1258	F 1	6JL1964	0.00708)	(1259	F 2	6JL1964	0.00310)
(1260	F 3	6JL1964	0.00191)	(1285	F 1	15SE1964	0.02330)	(1305	F 2	11OC1964	0.00173)
(1388	GS12	12MY1967	0.00603)	(1350	GS14	12MY1967	0.00587)	(1394	GS18	13MY1967	0.00172)
(1403	CA 2	10MY1967	0.03923)	(1404	MQ 2	10MY1967	0.02541)	(			

Cymbella cistula (Ehr.) Kirchn.

Bacillaria cistula Ehrenberg *in*: Ehrenberg and Hemprich, Symbolae physicae, Vol. 4, pl. 2(4), fig. 10. 1828.
Cymbella cistula (Ehr.) Kirchner *in*: Cohn, Kryptog.-Fl. Schlesien, Vol. 2, p. 189. 1878.

147 CBCISTUL TOT NO OF STATIONS 43

(46921	CH	23NO1945	0.00065)	(46917	CH	12JA1946	0.00055)	(46914	CH	19AP1946	0.00107)
(46920	CH	20DE1946	0.00092)	(46916	CH	4MY1947	0.00034)	(46906	CH	MY1947	0.00066)
(46919	CH	5JN1947	0.02580)	(46913	CH	6AU1947	0.02092)	(46922	CH	21AU1947	0.00097)
(46764	EV	17JL1937	0.01612)	(46757	EV	25JL1937	0.00963)	(46747	EV	1AU1937	0.00248)
(46765	EV	30AU1937	0.00558)	(1244	F 1	11JN1964	0.00219)	(1258	F 1	6JL1964	0.00472)
(1268	E 2	15AU1964	0.00274)	(1270	F 1	10AU1964	0.00272)	(1285	F 1	15SE1964	0.04077)
(1302	E 5	13OC1964	0.00405)	(1382	GS 6	10MY1967	0.00833)	(1386	GS10	12MY1967	0.00287)
(1387	GS11	12MY1967	0.00792)	(1388	GS12	12MY1967	0.00603)	(1389	GS13	12MY1967	0.00258)
(1392	GS16	12MY1967	0.00616)	(1396	GS20	13MY1967	0.00074)	(1554	GS 1	30C1967	0.00356)
(1557	GS 4	30C1967	0.00374)	(1567	GS15	50C1967	0.00159)	(1569	GS17	50C1967	0.00446)
(1574	GS22	60C1967	0.01438)	(1524	MT 1	20SE1967	0.02189)	(1529	KW 1	20SE1967	0.01199)
(1530	FR 1	24SE1967	0.02000)	(1550	MR 1	50C1967	0.02478)	(1553	SG 1	60C1967	0.01469)
(1426	MS 2	29MY1967	0.02100)	(1350	BH 2	19AP1967	0.00220)	(1403	CA 2	10MY1967	0.27462)
(1404	MQ 2	10MY1967	0.02541)	(1405	ES 2	12MY1967	0.00645)	(1349	CI 2	19AP1967	0.00359)
(1406	GB 2	13MY1967	0.00270)	(							

Cymbella cistula var. *gibbosa* J. Brun

Cymbella cistula var. *gibbosa* J. Brun, Diatomiste, Vol. 2, pl. 14, fig. 27. 1895.

148 CBCISTVG TOT NO OF STATIONS 7

(1240	D 6	10JN1964	0.00153)	(1285	F 1	15SE1964	0.01165)	(1379	GS 3	9MY1967	0.00305)
(1387	GS11	12MY1967	0.01584)	(1566	GS14	50C1967	0.00183)	(1526	MO 1	20SE1967	0.00569)
(1403	CA 2	10MY1967	0.28769)	(							

Cymbella cistula var. *truncata* J. Brun.

Cymbella cistula var. *truncata* J. Brun, Diat. Alps et Jura, p. 58, pl. 3, fig. 2. 1880.

149 CBCISTVT TOT NO OF STATIONS 1

(1403	CA 2	10MY1967	0.02615)	(

Cymbella cuspidata Kütz.

Cymbella cuspidata Kützing, Bacill., p. 79, pl. 3, fig. 40. 1844.

150 CBCUSPID TOT NO OF STATIONS 14

(46917	CH	12JA1946	0.00055)	(46914	CH	19AP1946	0.00107)	(46758	EV	5JN1937	0.00357)
(46764	EV	17JL1937	0.00806)	(46757	EV	25JL1937	0.00963)	(46747	EV	1AU1937	0.00248)
(46769	EV	7SE1937	0.02171)	(46751	EV	30MR1938	0.02233)	(46759	EV	19MY1938	0.00338)
(46761	EV	27MY1938	0.00273)	(1574	GS22	60C1967	0.00575)	(1527	TR 1	20SE1967	0.00629)
(1427	LU 2	29MY1967	0.01211)	(1350	BH 2	19AP1967	0.00220)	(			

Cymbella cuspidata var. *schulzii* A. Cleve

Cymbella cuspidata var. *schulzii* A. Cleve, Soc. Sci. Fennica Comm. Biol., 4(14):75. 1934.

152 CBCUSPVS TOT NO OF STATIONS 1

(1392	GS16	12MY1967	0.00308)	(			

Cymbella delicatula Kütz.

Cymbella delicatula Kützing, Sp. Alg., p. 59. 1849.

153 CBDELICA TOT NO OF STATIONS 41

(46914	CH	19AP1946	0.00107)	(46920	CH	20DE1946	0.00062)	(46916	CH	4MY1947	0.02205)
(46919	CH	5JN1947	1.28223)	(46907	CH	JL1947	0.00099)	(46922	CH	21AU1947	0.00145)
(46758	EV	5JN1937	0.00713)	(46743	EV	20JN1937	0.00428)	(46770	EV	9JL1937	0.01193)
(46764	EV	17JL1937	0.04835)	(46757	EV	25JL1937	0.02407)	(46747	EV	1AU1937	0.00248)
(46763	EV	23AU1937	0.10146)	(46752	EV	15SE1937	0.06530)	(46748	EV	13OC1937	0.02135)
(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	0.02206)	(1243	E 6	13JN1964	0.00209)
(1244	F 1	11JN1964	0.00658)	(1258	F 1	6JL1964	0.00944)	(1259	F 2	6JL1964	0.00310)
(1260	F 3	6JL1964	0.00764)	(1270	F 1	10AU1964	0.00272)	(1285	F 1	15SE1964	0.54743)
(1304	F 1	11OC1964	0.00494)	(1305	F 2	11OC1964	0.00173)	(1379	GS 3	9MY1967	0.00309)
(1384	GS 8	10MY1967	0.00185)	(1387	GS11	12MY1967	0.01980)	(1388	GS12	12MY1967	0.00603)
(1389	GS13	12MY1967	0.01289)	(1390	GS14	12MY1967	0.00587)	(1391	GS15	12MY1967	0.00479)
(1394	GS18	13MY1967	0.00172)	(1555	GS 2	3OC1967	0.00706)	(1574	GS22	6OC1967	0.00863)
(1550	MR 1	5OC1967	0.01239)	(1350	BH 2	19AP1967	0.00220)	(1402	TR 2	6MY1967	0.00541)
(1403	CA 2	10MY1967	0.23535)	(1405	ES 2	12MY1967	0.00645)	(			

Cymbella hebridica (Grun.) Cleve

Encyonema hebridicum Grunow *in*: Cleve and Möller, Diatoms, No. 37. 1877.
Cymbella hebridica (Grun.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):169. 1895.

154 CBHEBRID TOT NO OF STATIONS 1

(3541	CH	1FE1881	0.00978)	(			

Cymbella hustedtii Krasske

Cymbella hustedtii Krasske, Bot. Arch., 3(4):204, fig. 11. 1923.

155 CBHUSTED TOT NO OF STATIONS 19

(46914	CH	19AP1946	0.00107)	(46919	CH	5JN1947	0.00607)	(46764	EV	17JL1937	0.01612)
(46757	EV	25JL1937	0.00481)	(46748	EV	13OC1937	0.02135)	(46767	EV	27OC1937	0.00774)
(46768	EV	16MR1938	0.01470)	(1285	F 1	15SE1964	0.10483)	(1386	GS10	12MY1967	0.00287)
(1388	GS12	12MY1967	0.00603)	(1557	GS 4	3OC1967	0.00374)	(1563	GS11	5OC1967	0.00234)
(1565	GS13	5OC1967	0.01014)	(1569	GS17	5OC1967	0.00149)	(1574	GS22	6OC1967	0.00288)
(1527	TR 1	20SE1967	0.00629)	(1553	SG 1	6OC1967	0.00734)	(1403	CA 2	10MY1967	0.01308)
(1404	MO 2	10MY1967	0.01270)	(							

Cymbella hybrida Grun.

Cymbella hybrida Grunow *ex* Cleve and Möller, Diatoms, No. 161. 1878.

156 CBHYBRID TOT NO OF STATIONS 4

(46921	CH	23NO1945	0.00065)	(46747	EV	1AU1937	0.00248)	(46751	EV	30MR1938	0.01117)
(1268	E 2	15AU1964	0.00274)	(							

Cymbella inaequalis Ross

Cymbella inaequalis Ross, New Phytol., 51(3):381. 1952.

157 CBINAEQU TOT NO OF STATIONS 1

(1268	E 2	15AU1964	0.00274)	(			

Cymbella incerta (Grun.) Cleve

Cymbella pisciculus var. *incerta* Grunow *in*: Cleve and Möller, Diatoms, No. 96. 1878.
Cymbella incerta (Grun.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):170. 1895.

158 CBINCERT TOT NO OF STATIONS 2

(1270	F 1	1CAU1964	0.00272)	(1388	GS12	12MY1967	0.02413)	(			

Cymbella laevis Naeg.

Cymbella laevis Naegeli *ex* Kützing, Sp. Alg., p. 58. 1849.

159 CBLAEVIS TOT NO OF STATIONS 3

(46757	EV	25JL1937	0.00481)	(1285	F 1	15SE1964	0.00582)	(1350	GS14	12MY1967	0.00587)

Cymbella lanceolata (Ehr.) Kirchn.

Cocconema lanceolatum Ehrenberg, Infusionsthierchen, p. 224, pl. 19, fig. 6. 1838.
Cymbella lanceolata Kirchner *in*: Cohn, Kryptog.-Fl. Schlesien, Vol. 2, p. 188. 1878.

160 CBLANCEO TOT NO OF STATIONS 3

(46751	EV	30MR1938	0.01117)	(1545	WL 1	20C1967	0.00676)	(1407	SM 2	14MY1967	0.00597)

161 CBLANCEO TOT NO OF STATIONS 1

(1285	F 1	15SE1964	0.00582)	(

Cymbella lata Grun.

Cymbella lata Grunow *ex* Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):165, pl. 4, fig. 27. 1894.

162 CBLATA TOT NO OF STATIONS 2

(46747	EV	1AU1937	0.00248)	(1285	F 1	15SE1964	0.00582)	(

Cymbella latens Krasske

Cymbella latens Krasske, Arch. Hydrobiol., 31:43, text fig. p. 53. 1937.

182 CBVENTRO TOT NO OF STATIONS 46

(60973	CH	1876	0.04724)	(46770	EV	9JL1937	0.01193)	(46764	EV	17JL1937	0.04835)
(46750	EV	24SE1937	0.00943)	(46768	EV	16MR1938	0.05880)	(1256	E 2	14JL1964	0.00183)
(1258	F 1	6JL1964	0.01180)	(1285	F 1	15SE1964	0.03494)	(1308	C 7	6NO1964	0.00304)
(1316	D 6	9NO1964	0.00378)	(1451	C 7	16JL1967	0.00197)	(1453	E 3	15JL1967	0.00253)
(1541	E 2	11OC1967	0.00532)	(1543	E 5	10OC1967	0.00718)	(1384	GS 8	10MY1967	0.00185)
(1387	GS11	12MY1967	0.22180)	(1388	GS12	12MY1967	0.00603)	(1389	GS13	12MY1967	0.02063)
(1390	GS14	12MY1967	0.02349)	(1391	GS15	12MY1967	0.00479)	(1394	GS18	13MY1967	0.00172)
(1397	GS21	13MY1967	0.00065)	(1398	GS22	14MY1967	0.00607)	(1574	GS22	6OC1967	0.04315)
(1522	BH 1	18SE1967	0.00182)	(1523	RA 1	19SE1967	0.00923)	(1526	MO 1	20SE1967	0.01138)
(1528	SB 1	20SE1967	0.01444)	(1529	KW 1	20SE1967	0.19187)	(1545	WL 1	20C1967	0.00676)
(1549	MQ 1	4OC1967	0.01370)	(1550	MR 1	5OC1967	0.18585)	(1553	SG 1	6OC1967	0.00734)
(1428	MU 2	29MY1967	0.00603)	(1426	MS 2	29MY1967	0.03150)	(1427	LU 2	29MY1967	0.03632)
(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.05066)	(1399	PW 2	5MY1967	0.00680)
(1401	MO 2	6MY1967	0.02352)	(1354	GH 2	25AP1967	0.00173)	(1429	WL 2	29MY1967	0.04247)
(1403	CA 2	10MY1967	1.21616)	(1404	MQ 2	10MY1967	0.12703)	(1407	SM 2	14MY1967	0.01791)
(1406	GB 2	13MY1967	0.00270)	(							

Cymbella leptoceros (Ehr.) Rabenh.

Cocconema leptoceros Ehrenberg, Ber. Akad. Wiss. Berlin, 1841:123, pl. 1 (2), fig. 30. 1843.
Cymbella leptoceros (Ehr.) Rabenhorst, Süssw.-Diat., p. 22, pl. 7, fig. 14a. 1853.

163 CBLEPTOC TOT NO OF STATIONS 3

(1244	F 1	11JN1964	0.00110)	(1270	F 1	10AU1964	0.00817)	(1304	F 1	11OC1964	0.00247)

Cymbella leptoceros var. *rostrata* Hust.

Cymbella leptoceros var. *rostrata* Hustedt, Arch. Hydrobiol., 39:132, figs. 52-54. 1942.

164 CBLEPTVR TOT NO OF STATIONS 7

(46748	EV	13OC1937	0.02135)	(1387	GS11	12MY1967	0.00396)	(1389	GS13	12MY1967	0.00258)
(1426	MS 2	29MY1967	0.01050)	(1350	BH 2	19AP1967	0.00220)	(1403	CA 2	10MY1967	0.01308)
(1407	SM 2	14MY1967	0.00597)	(							

Cymbella mexicana (Ehr.) Cleve

Cocconema mexicanum Ehrenberg, Ber. Akad. Wiss. Berlin, 1844:342. 1844.
Cymbella mexicana (Ehr.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):177. 1894.

165 CBMEXICA TOT NO OF STATIONS 6

(46920	CH	20DE1946	0.00031)	(1384	GS 8	10MY1967	0.00185)	(1530	FR 1	24SE1967	0.01000)
(1550	MR 1	50C1967	0.01239)	(1402	TR 2	6MY1967	0.00541)	(1354	GH 2	25AP1967	0.00173)

Cymbella microcephala Grun.

Cymbella microcephala Grunow *in*: Van Heurck, Syn. Diat. Belgique, p. 63, pl. 8, figs. 36-39. 1885.

166 CBMICROC TOT NO OF STATIONS 64

(60973	CH	1876	0.02362)	(46910	CH	0C1945	0.00109)	(46919	CH	5JN1947	0.02883)
(46913	CH	6AU1947	0.01046)	(46758	EV	5JN1937	0.00357)	(46743	EV	20JN1937	0.00856)
(46770	EV	9JL1937	0.00596)	(46764	EV	17JL1937	0.00806)	(46757	EV	25JL1937	0.01926)
(46747	EV	1AU1937	0.00743)	(46763	EV	23AU1937	0.30438)	(46752	EV	15SE1937	0.08707)
(46748	EV	13OC1937	0.06405)	(46768	EV	16MR1938	0.05880)	(46762	EV	18MR1938	0.04411)
(46751	EV	30MR1938	0.01117)	(1256	E 2	14JL1964	0.00183)	(1258	F 1	6JL1964	0.01888)
(1259	F 2	6JL1964	0.00310)	(1260	F 3	6JL1964	0.00191)	(1268	E 2	15AU1964	0.00547)
(1269	E 3	15AU1964	0.00274)	(1270	F 1	10AU1964	0.02178)	(1279	E 1	16SE1964	0.01178)
(1284	E 6	17SE1964	0.00635)	(1285	F 1	15SE1964	0.59402)	(1287	F 3	15SE1964	0.00500)
(1297	D 6	14OC1964	0.00190)	(1302	E 5	13OC1964	0.00405)	(1304	F 1	11OC1964	0.01482)
(1338	C 3	28MR1967	0.00132)	(1449	C 3	16JL1967	0.00382)	(1506	A 6	29AU1967	0.00523)
(1512	E 3	1SE1967	0.00393)	(1533	A 4	19SE1967	0.00464)	(1536	E 2	24SE1967	0.00273)
(1387	GS11	12MY1967	0.01584)	(1389	GS13	12MY1967	0.00258)	(1554	GS 1	3OC1967	0.00356)
(1555	GS 2	3OC1967	0.01766)	(1556	GS 3	3OC1967	0.00521)	(1558	GS 5	4OC1967	0.01189)
(1560	GS 8	4OC1967	0.00945)	(1565	GS13	5OC1967	0.01014)	(1566	GS14	5OC1967	0.00183)
(1567	GS15	5OC1967	0.00318)	(1569	GS17	5OC1967	0.00149)	(1574	GS22	6OC1967	0.01151)
(1575	GS28	6OC1967	0.00129)	(1546	LU 1	2OC1967	0.01000)	(1522	BH 1	18SE1967	0.00182)
(1523	RA 1	19SE1967	0.00923)	(1526	MQ 1	20SE1967	0.00569)	(1528	SB 1	20SE1967	0.01444)
(1529	KW 1	20SE1967	0.19187)	(1549	MQ 1	4OC1967	0.02741)	(1552	SM 1	6OC1967	0.00660)
(1550	MR 1	5OC1967	0.04956)	(1350	BH 2	19AP1967	0.00881)	(1402	TR 2	6MY1967	0.00541)
(1403	CA 2	10MY1967	0.20923)	(1404	MQ 2	10MY1967	0.01270)	(1407	SM 2	14MY1967	0.01194)
(1423	WA 2	25MY1967	0.00428)	(							

Cymbella naviculaformis (Auersw.) Kirchn.

Cymbella cuspidata var. *naviculaformis* Auerswald *ex* Rabenhorst, Fl. Europaea Alg., Sect. 1, p. 78. 1864.
Cymbella naviculaformis (Auersw.) Kirchner *in*: Cohn, Kryptog.-Fl. Schlesien, Vol. 2, p. 187. 1878.

168 CBNAVICU TOT NO OF STATIONS 10

(46921	CH	23NO1945	0.00065)	(46917	CH	12JA1946	0.00028)	(46924	CH	10MY1946	0.00071)
(46905	CH	JA1947	0.00123)	(46909	CH	MR1947	0.00455)	(46916	CH	4MY1947	0.00034)
(46906	CH	MY1947	0.00066)	(46919	CH	5JN1947	0.00455)	(46922	CH	21AU1947	0.00048)
(46744	EV	6OC1937	0.00488)	(							

Cymbella norvegica Grun.

Cymbella norvegica Grunow *in*: A. Schmidt, Atlas Diat., pl. 10, fig. 41. 1875.

169 CBNORVEG TOT NO OF STATIONS 1

(1403	CA 2	10MY1967	0.01308)	(			

Cymbella obtusiuscula Kütz.

Cymbella obtusiuscula Kützing, Bacill., p. 79, pl. 3, fig. 68. 1844.

170 CBOBTUSI TOT NO OF STATIONS 6

(60973	CH	1876	0.02362)	(46758	EV	5JN1937	0.00357)	(1393	ES17	13MY1967	0.00274)
(1567	GS15	5OC1967	0.00318)	(1520	HO 1	18SE1967	0.00471)	(1405	ES 2	12MY1967	0.00645)

Cymbella parva (Wm. Smith) Cleve

Cocconema parvum Wm. Smith, Syn. British Diat., Vol. 1, p. 76, pl. 23, fig. 222. 1853.
Cymbella parva (Wm. Smith) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):172. 1894.

171 CBPARVA TOT NO OF STATIONS 5

(60973	CH	1876	0.02362)	(1256	E 2	14JL1964	0.00183)	(1285	F 1	15SE1964	0.01747)
(1546	LU 1	20C1967	0.00500)	(1403	CA 2	10MY1967	0.02615)	(			

Cymbella parvula Krasske

Cymbella parvula Krasske, Zeitschr. Geschiebeforsch., 9(2):92, pl. 2, fig. 3. 1933.

172 CBPARVUL TOT NO OF STATIONS 8

(46758	EV	5JN1937	0.00357)	(1258	F 1	6JL1964	0.00236)	(1392	GS16	12MY1967	0.00308)
(1565	GS13	5OC1967	0.01521)	(1574	GS22	6OC1967	0.00288)	(1553	SG 1	6OC1967	0.00734)
(1404	MO 2	10MY1967	0.02541)	(1407	SM 2	14MY1967	0.00597)	(			

Cymbella prostrata (Berk.) Cleve

Monema prostratum Berkeley, Gleanings British Alg., pl. 4, fig. 3. 1832.
Cymbella prostrata (Berk.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2): 167. 1894.

173 CBPROSTR TOT NO OF STATIONS 80

(46921	CH	23NO1945	0.00129)	(46917	CH	12JA1946	0.00083)	(46915	CH	20FE1946	0.00569)
(46924	CH	10MY1946	0.00071)	(46923	CH	22NO1946	0.00437)	(46920	CH	20DE1946	0.00031)
(46916	CH	4MY1947	0.00034)	(46906	CH	MY1947	0.00066)	(46919	CH	5JN1947	0.05463)
(46922	CH	21AU1947	0.00291)	(46758	EV	5JN1937	0.01426)	(46764	EV	17JL1937	0.00806)
(46757	EV	25JL1937	0.00963)	(46747	EV	1AU1937	0.00495)	(46763	EV	23AU1937	0.02029)
(46765	EV	30AU1937	0.00558)	(46752	EV	15SE1937	0.13061)	(46748	EV	13OC1937	0.12810)
(46749	EV	12MR1938	0.03641)	(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	0.06617)
(46766	EV	14DE1938	0.01584)	(1243	E 6	13JN1964	0.00418)	(1245	F 2	11JN1964	0.00346)
(1265	C' 2	10AU1964	0.00224)	(1270	F 1	10AU1964	0.00272)	(1279	E 1	16SE1964	0.00393)
(1285	F 1	15SE1964	0.01165)	(1343	A 6	19AP1967	0.00208)	(1345	C 5	25AP1967	0.00195)
(1369	A 4	4MY1967	0.00745)	(1375	E 3	7MY1967	0.00241)	(1416	E 5	28MY1967	0.00219)
(1504	A 3	28AU1967	0.00247)	(1512	E 3	1SE1967	0.00393)	(1536	E 2	24SE1967	0.01091)
(1538	E 5	23SE1967	0.29277)	(1386	GS10	12MY1967	0.00287)	(1387	GS11	12MY1967	0.00792)
(1394	GS18	13MY1967	0.00172)	(1395	GS19	13MY1967	0.00117)	(1396	GS20	13MY1967	0.00074)
(1397	GS21	13MY1967	0.00392)	(1554	GS 1	30C1967	0.00356)	(1555	GS 2	30C1967	0.00353)
(1556	GS 3	30C1967	0.01043)	(1557	GS 4	30C1967	0.00747)	(1563	GS11	50C1967	0.00234)
(1567	GS15	50C1967	0.00635)	(1568	GS16	50C1967	0.00144)	(1569	GS17	50C1967	0.00149)

(1573	GS21	6OC1967	0.00336)	(1574	GS22	6OC1967	0.03739)	(1544	MU 1	2OC1967	C.OC238)
(1547	MS 1	2OC1967	0.00798)	(1524	MI 1	2OSE1967	0.13135)	(1546	LU 1	2OC1967	C.C6502)
(1521	SH 1	18SE1967	0.00577)	(1523	RA 1	19SE1967	0.02768)	(1525	PW 1	2OSE1967	C.08355)
(1526	MO 1	2OSE1967	0.06258)	(1527	TR 1	2OSE1967	0.06289)	(1528	SB 1	2OSE1967	C.C2888)
(1529	KW 1	2OSE1967	2.68617)	(1530	FR 1	24SE1967	C.16002)	(1545	WL 1	2OC1967	C.OC676)
(1548	CA 1	3OC1967	0.05088)	(1552	SM 1	6OC1967	0.01321)	(1550	MR 1	5OC1967	0.07434)
(1553	SG 1	6OC1967	0.01469)	(1428	MU 2	29MY1967	0.00301)	(1426	MS 2	29MY1967	0.03150)
(1427	LU 2	29MY1967	0.01211)	(1350	BH 2	19AP1967	0.00441)	(1401	MO 2	6MY1967	C.00588)
(1402	TR 2	6MY1967	0.01624)	(1403	CA 2	10MY1967	0.06539)	(1407	SM 2	14MY1967	C.04180)
(1349	CI 2	19AP1967	0.00359)	(1406	GB 2	13MY1967	0.00270)	(			

Cymbella rugosa Hust.

Cymbella rugosa Hustedt, Abh. Naturw. Ver. Bremen, 34(1):67, figs. 29-31. 1955.

179 CBTURGID TOT NO OF STATIONS 3

(3541	CH	1FE1881	0.00978)	(1244	F 1	11JN1964	C.00110)	(1270	F 1	10AU1964	C.OC272)

Cymbella sinuata Greg.

Cymbella sinuata Gregory, Quart. J. Micr. Sci., 4:4, pl. 1, fig. 17. 1856.

175 CBSINUAT TOT NO OF STATIONS 30

(3540	CH	11MY1879	0.00466)	(46758	EV	5JN1937	C.00357)	(46764	EV	17JL1937	C.OC806)
(46763	EV	23AU1937	C.02029)	(46748	EV	13OC1937	0.02135)	(1256	E 2	14JL1964	0.00183)
(1258	F 1	6JL1964	0.00472)	(1263	C 7	15AU1964	0.00400)	(1275	D 2	17SE1964	0.00645)
(1285	E 1	15SE1964	0.00582)	(1372	C 5	5MY1967	0.00355)	(1375	E 3	7MY1967	C.OC241)
(1394	GS18	13MY1967	0.00172)	(1567	GS15	5OC1967	0.00635)	(1568	GS16	5OC1967	C.OC144)
(1569	GS17	5OC1967	0.00149)	(1571	GS19	6OC1967	C.00059)	(1572	GS20	6OC1967	C.00090)
(1573	GS21	6OC1967	0.00112)	(1574	GS22	6OC1967	C.00863)	(1575	GS28	6OC1967	C.00129)
(1546	LU 1	2OC1967	0.00500)	(1526	MO 1	2OSE1967	0.01138)	(1527	TR 1	2OSE1967	C.00629)
(1551	ES 1	5OC1967	0.00799)	(1550	MR 1	5OC1967	C.26019)	(1426	MS 2	29MY1967	C.01050)
(1417	MO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.01762)	(1401	MO 2	6MY1967	C.00588)

Cymbella sinuata fo. *ovata* Hust.

Cymbella sinuata fo. *ovata* Hustedt, Internat. Rev. Hydrobiol., 10:236. 1922.

176 CBSINUFO TOT NO OF STATIONS 1

(1350	BH 2	19AP1967	0.00220)	(

Cymbella sinuata var. *antiqua* (Grun.) Cleve

Cymbella abnormis var. *antiqua* Grunow *in*; Mojsisovics and Neumayer, Beitr. Paläontol. Österreich-Ungarns, Bd. 2, Heft 4, p. 141, pl. 29, fig. 31. 1882.

Coll: 1105.

Cymbella triangulata (Ehr.) Cleve

Gloeonema triangulatum Ehrenberg, Ber. Akad. Wiss. Berlin, 1845:77. 1846.
Cymbella triangulata (Ehr.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):168. 1894.

177 CBTRIANG TOT NO OF STATIONS 36

(3540	CH	11MY1879	0.00466)	(3541	CH	1FE1881	C.03913)	(46921	CH	23NO1945	C.00323)
(46915	CH	20FE1946	0.01707)	(46923	CH	22NO1946	0.02841)	(46920	CH	20DE1946	0.00123)
(46905	CH	JA1947	0.00123)	(46909	CH	MR1947	0.01366)	(46906	CH	MY1947	C.00066)
(46907	CH	JL1947	0.00049)	(46922	CH	21AU1947	0.00533)	(1247	B 3	14JL1964	0.00427)
(1259	F 2	6JL1964	0.00310)	(1275	D 2	17SE1964	0.00645)	(1284	E 6	17SE1964	0.01589)
(1285	F 1	15SE1964	0.01747)	(1302	E 5	13OC1964	0.00405)	(1304	F 1	11OC1964	C.OC741)
(1322	E 6	7NO1964	0.00333)	(1323	F 1	6NO1964	0.00279)	(1324	F 2	6NO1964	0.00233)
(1388	GS12	12MY1967	0.01810)	(1390	GS14	12MY1967	0.00587)	(1557	GS 4	3OC1967	C.OC374)

(1558	GS 5	4DC1967	0.00396)	(1562	GS1C	5OC1967	0.00247)	(1563	GS11	5OC1967	C.CC234)
(1564	GS12	5OC1967	0.00494)	(1566	GS14	5OC1967	0.00183)	(1567	GS15	5OC1967	0.02382)
(1568	GS16	5OC1967	0.00433)	(1569	GS17	5OC1967	0.01635)	(1570	GS18	5OC1967	C.00992)
(1548	CA 1	3DC1967	0.03816)	(1551	ES 1	5CC1967	0.00799)	(1421	CH 2	23MY1967	C.01735)

Cymbella tumida (Bréb.) V. H.

Cocconema tumida de Brébisson *ex* Kützing, Sp. Alg., p. 60. 1849.
Cymbella tumida (Bréb.) Van Heurck, Syn. Diat. Belgique, p. 64, pl. 2, fig. 10. 1885.

178 CBTUMIDA TCT NC OF STATICNS 1

(1544	MU 1	2DC1967	0.0C477)	(

Cymbella turgida Greg.

Cymbella turgida Gregory, Quart. J. Micr. Sci., 4:5, pl. 1, fig. 18. 1856.

180 CBTURGVP TCT NC OF STATICNS 2

(1387	GS11	12MY1967	0.01188)	(1389	GS13	12MY1967	0.00258)	(

Cymbella turgidula Grun.

Cymbella turgidula Grunow *in*: A. Schmidt, Atlas Diat., pl. 9, figs. 23-26. 1875.

Coll: 1244.

Cymbella ventricosa Agardh

Cymbella ventricosa Agardh, Consp. Crit. Diat., part 1, p. 9. 1830.

181 CBVENTRI TOT NC CF STATICNS 42

(46921	CH	23ND1945	C.CC065)	(46924	CH	10MY1946	0.00282)	(46919	CH	5JN1947	C.CC152)
(46922	CH	21AU1947	0.00097)	(46758	EV	5JN1937	0.05706)	(46743	EV	20JN1937	0.0C428)
(46770	EV	9JL1937	C.CC596)	(46764	EV	17JL1937	0.00806)	(46757	EV	25JL1937	C.C1444)
(46747	EV	1AU1937	0.0C990)	(46763	EV	23AU1937	0.10146)	(46765	EV	30AU1937	C.0C558)
(46752	EV	15SE1937	0.13061)	(46760	EV	22SE1937	0.00985)	(46750	EV	24SE1937	C.0C471)
(46748	EV	13DC1937	0.02135)	(46767	EV	27DC1937	0.00387)	(46749	EV	12MR1938	C.C2427)
(46762	EV	18MR1938	0.06617)	(1232	E 5	16MY1964	0.00522)	(1240	D 6	10JN1964	C.CC460)
(1243	E 6	13JN1964	0.01253)	(1244	F 1	11JN1964	0.00548)	(1279	E 1	16SE1964	C.CC393)
(1377	GS 1	9MY1967	0.00396)	(1378	GS 2	9MY1967	0.00421)	(1392	GS16	12MY1967	C.0C308)
(1394	GS18	13MY1967	0.00516)	(1559	GS 7	4DC1967	0.00350)	(1565	GS13	5CC1967	C.CC507)
(1567	GS15	5OC1967	0.00318)	(1569	GS17	5OC1967	0.00149)	(1571	GS19	6DC1967	C.CC176)
(1575	GS28	6DC1967	0.00129)	(1547	MS 1	2DC1967	0.01597)	(1546	LU 1	2DC1967	C.C2001)
(1522	BH 1	18SE1967	0.00547)	(1527	TR 1	20SE1967	0.03774)	(1530	FR 1	24SE1967	C.03000)
(1426	MS 2	29MY1967	0.01050)	(14C2	TR 2	6MY1967	0.01083)	(1405	ES 2	12MY1967	C.CC645)

Species *incertae sedis*

Cymbella sp. (aff. *C. cuspidata* var.?).

151 CBCUSPVC TCT NO OF STATICNS 8

(46758	EV	5JN1937	0.01426)	(46757	EV	25JL1937	0.00963)	(46747	EV	1AU1937	C.01485)
(46763	EV	23AU1937	0.02029)	(46762	EV	18MR1938	0.02206)	(1545	WL 1	2DC1967	C.0C676)
(1354	GH 2	25AP1967	0.00173)	(1404	MC 2	10MY1967	C.02541)	(			

Cymbella sp. (aff. *C. pusilla*).

174 CBPUSILO TCT NO OF STATIONS 10

(46919	CH	5JN1947	0.00303)	(46764	EV	17JL1937	0.02417)	(46747	EV	1AU1937	C.0C495)
(46763	EV	23AU1937	0.02029)	(1242	E 3	13JN1964	0.00150)	(1270	F 1	10AU1964	C.CC545)
(1285	F 1	15SE1964	0.04077)	(1375	E 3	7MY1967	C.00241)	(1566	GS14	5OC1967	C.0C183)
(1404	MO 2	10MY1967	0.01270)	(							

Cymbella sp. #4.

184 CBSPECOD TOT NO OF STATIONS 7

(46752	EV	15SE1937	0.02177)	(46750	EV	24SE1937	0.00471)	(46748	EV	13OC1937	0.02135)
(46768	EV	16MR1938	0.01470)	(46751	EV	30MR1938	1.21706)	(1284	E 6	17SE1964	0.00318)
(1445	B 6	14OC1964	0.00326)	(							

Cymbella sp. #6.

186 CBSPECOF TOT NO OF STATIONS 11

(46919	CH	5JN1947	0.00152)	(46758	EV	5JN1937	0.01070)	(46770	EV	9JL1937	0.00596)
(46764	EV	17JL1937	0.04835)	(46747	EV	1AU1937	0.00248)	(46752	EV	15SE1937	0.02177)
(46744	EV	6OC1937	0.00975)	(46767	EV	27OC1937	0.00387)	(46759	EV	19MY1938	0.00338)
(1565	GS13	5OC1967	0.02028)	(1405	ES 2	12MY1967	0.00645)	(			

Cymbella sp. #7.

187 CBSPECOG TOT NO OF STATIONS 4

(46770	EV	9JL1937	0.01789)	(46764	EV	17JL1937	0.04835)	(46757	EV	25JL1937	0.03370)
(46768	EV	16MR1938	0.01470)	(							

Cymbella sp. #8.

188 CBSPECOH TOT NO OF STATIONS 1

(46764	EV	17JL1937	0.01612)	(

Cymbella sp. #9.

189 CBSPECOI TOT NO OF STATIONS 1

(46770	EV	9JL1937	0.00596)	(

Cymbella sp. #10.

190 CBSPECOJ TOT NO OF STATIONS 1

(1394	GS18	13MY1967	0.00172)	(

Cymbella sp. #11.

191 CBSPECOK TOT NO OF STATIONS 1

(1398	GS22	14MY1967	0.00304)	(

Cymbella sp. #12.

192 CBSPECOL TOT NO OF STATIONS 1

(1565	GS13	5OC1967	0.00507)	(

Cymbella sp. #13.

193 CBSPECOM TOT NO OF STATIONS 1

(1567	GS15	5OC1967	0.00159)	(

Cymbella sp. #14.

194	CBSPECON	TCT NC OF STATICNS	1										
(1573	GS21	60C1967	0.00112)	(									

Genus *Cymbellonitzschia* Hust.
Hustedt *in*: A. Schmidt, Atlas Diat., pl. 352, figs. 12-13. 1924.

Members of the genus *Cymbellonitzschia* usually comprise a minor portion of the flora. Scattered reports of its occurrence indicate that it finds its primary habitat in periphyton and epipelic communities. The only species found in Lake Michigan is most abundant in epipelic communities in relatively deep water. Only isolated accidental occurrences are noted in plankton collections.

Cymbellonitzschia diluviana Hust.

Cymbellonitzschia diluviana Hustedt, Abh. Naturw. Verein Bremen 33(3):453, fig. 23-24. 1954.

195	CNDILIUV	TCT NO OF STATICNS	3												
(1550	MR 1	50C1967	0.02478)	(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	C.0C220)				

Genus *Denticula* Ehr.

Ehrenberg, Infusionsthierschen, p. 207. 1838.

Most freshwater members of the genus *Denticula* are most abundant in communities growing on solid surfaces. This is true of the single representative that occurs in our collections. It is, however, apparently a successful facultative planktont as it is noted in moderate abundance in many plankton collections from Lake Michigan, especially in nearshore collections.

Denticula tenuis var. *crassula* (Naeg.) Hust.

Denticula crassula Naegeli *ex* Kützing, Sp. Alg., p. 889. 1849.
Denticula tenuis var. *crassula* (Naeg.) Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 381, fig. 724. 1930.

196 DETENUVC TOT NO OF STATIONS 98

(60973	CH	1876	0.02362)	(46921	CH	23NO1945	0.00065)	(46914	CH	19AP1946	0.00107)
(46920	CH	20DE1946	0.00031)	(46916	CH	4MY1947	0.00034)	(46906	CH	MY1947	0.00066)
(46919	CH	5JN1947	0.00303)	(46907	CH	JL1947	0.00049)	(46758	EV	5JN1937	0.00357)
(46764	EV	17JL1937	0.01612)	(46763	EV	23AU1937	0.04058)	(46752	EV	15SE1937	0.06530)
(46748	EV	13OC1937	0.04270)	(46767	EV	27OC1937	0.00774)	(46762	EV	18MR1938	0.02206)
(1240	D 6	10JN1964	0.00153)	(1243	E 6	13JN1964	0.01253)	(1244	F 1	11JN1964	0.00877)
(1254	D 2	15JL1964	0.00192)	(1256	E 2	14JL1964	0.00183)	(1258	F 1	6JL1964	0.17462)
(1259	F 2	6JL1964	0.00930)	(1260	F 3	6JL1964	0.01528)	(1267	D 6	18AU1964	0.00432)
(1268	E 2	15AU1964	0.12310)	(1270	F 1	10AU1964	0.05718)	(1444	B 6	19SE1964	0.00303)
(1278	D 6	18SE1964	0.00384)	(1279	E 1	16SE1964	0.05497)	(1284	E 6	17SE1964	0.02224)
(1285	F 1	15SE1964	0.81533)	(1286	F 2	15SE1964	0.01095)	(1287	F 3	15SE1964	0.00500)
(1299	E 2	12OC1964	0.00314)	(1301	E 4	13OC1964	0.00442)	(1302	E 5	13OC1964	0.00405)
(1304	F 1	11OC1964	0.03457)	(1305	F 2	11OC1964	0.00690)	(1306	F 3	11OC1964	0.00554)
(1322	E 6	7NO1964	0.00333)	(1323	F 1	6NO1964	0.00139)	(1340	C 7	28MR1967	0.00145)
(1346	C 7	21AP1967	0.00134)	(1374	E 2	7MY1967	0.00299)	(1449	C 3	16JL1967	0.00382)
(1452	E 2	14JL1967	0.01916)	(1512	E 3	1SE1967	0.00393)	(1533	A 4	19SE1967	0.00464)
(1534	A 6	19SE1967	0.00310)	(1536	E 2	24SE1967	0.01363)	(1537	E 3	24SE1967	0.00431)
(1538	E 5	23SE1967	0.02762)	(1541	E 2	11OC1967	0.00532)	(1542	E 3	11OC1967	0.01526)
(1543	E 5	10OC1967	0.00718)	(1380	GS 4	9MY1967	0.00336)	(1381	GS 5	10MY1967	0.00239)
(1382	GS 6	10MY1967	0.00555)	(1384	GS 8	10MY1967	0.00555)	(1386	GS10	12MY1967	0.00287)
(1387	GS11	12MY1967	0.20596)	(1389	GS13	12MY1967	0.01805)	(1394	GS18	13MY1967	0.00516)
(1398	GS22	14MY1967	0.00911)	(1554	GS 1	3OC1967	0.02846)	(1555	GS 2	3OC1967	0.02472)
(1556	GS 3	3OC1967	0.01564)	(1557	GS 4	3OC1967	0.02242)	(1558	GS 5	4OC1967	0.03171)
(1559	GS 7	4OC1967	0.01049)	(1561	GS 9	4OC1967	0.00587)	(1562	GS10	5OC1967	0.00493)
(1563	GS11	5OC1967	0.00468)	(1564	GS12	5OC1967	0.00165)	(1565	GS13	5OC1967	0.01521)
(1566	GS14	5OC1967	0.00183)	(1567	GS15	5OC1967	0.00318)	(1568	GS16	5OC1967	0.00144)
(1569	GS17	5OC1967	0.00149)	(1574	GS22	6OC1967	0.17834)	(1547	MS 1	2OC1967	0.02395)
(1546	LU 1	2OC1967	0.02501)	(1526	MO 1	2OSE1967	0.05689)	(1527	TR 1	2OSE1967	0.08176)
(1529	KW 1	2OSE1967	0.57561)	(1530	FR 1	24SE1967	0.32003)	(1545	WL 1	2OC1967	0.00676)
(1549	MO 1	4OC1967	0.06852)	(1551	ES 1	5OC1967	0.02396)	(1552	SM 1	6OC1967	0.05943)
(1550	MR 1	5OC1967	0.01239)	(1553	SG 1	6OC1967	0.02203)	(1401	MO 2	6MY1967	0.01764)
(1402	TR 2	6MY1967	0.02166)	(1352	KW 2	21AP1967	0.02577)	(1403	CA 2	10MY1967	0.62770)
(1404	MO 2	10MY1967	0.01270)	(1407	SM 2	14MY1967	0.17317)	(			

Genus *Diatoma* Bory (nom. cons. non Loureiro 1790)

Bory, Dict. Class. Hist. Nat., 5:461. 1824.

Of the members of the genus *Diatoma* occurring in Lake Michigan, only *D. tenue* var. *elongata* and *D. tenue* var. *pachycephala* are abundant in offshore plankton collections. Both of these entities are erratic in occurence but tend to be most abundant in areas that are appreciably eutrophied. During peak bloom years they are taken in collections from the entire basin.

Diatoma ehrenbergii Kütz.

Diatoma ehrenbergii Kützing, Bacill., p. 48, pl. 17, fig. 17(1-3). 1844.

197 DIEHRENB TOT NO OF STATIONS 40

(46921	CH	23NO1945	0.00065)	(46924	CH	10MY1946	0.00141)	(46923	CH	22NO1946	0.00219)
(46920	CH	20DE1946	0.00092)	(46916	CH	4MY1947	0.00170)	(46906	CH	MY1947	0.00066)
(46919	CH	5JN1947	2.41574)	(46907	CH	JL1947	0.00049)	(46922	CH	21AU1947	0.00097)
(46758	EV	5JN1937	1.49775)	(46771	EV	11JN1937	0.00238)	(46770	EV	9JL1937	0.00596)

(46764	EV	17JL1937	0.00806)	(46757	EV	25JL1937	0.00481)	(46767	EV	27OC1937	C.00387)
(46756	EV	27AP1938	0.00168)	(46761	EV	27MY1938	0.00273)	(1226	C 7	16MY1964	0.00381)
(1345	C 5	25AP1967	0.00780)	(1346	C 7	21AP1967	0.00267)	(1348	E 5	23AP1967	C.00822)
(1449	C 3	16JL1967	0.00764)	(1395	GS19	13MY1967	0.00587)	(1397	GS21	13MY1967	0.01112)
(1398	GS22	14MY1967	0.00607)	(1572	GS20	6OC1967	C.00090)	(1574	GS22	6OC1967	C.00288)
(1546	LU 1	2OC1967	0.02001)	(1530	FR 1	24SE1967	C.01000)	(1552	SM 1	6OC1967	0.00660)
(1550	MR 1	5OC1967	0.03717)	(1426	MS 2	29MY1967	C.20997)	(1427	LU 2	29MY1967	0.01211)
(1417	HO 2	22MY1967	0.09346)	(1418	SH 2	22MY1967	0.04666)	(1401	MO 2	6MY1967	C.00588)
(1354	GH 2	25AP1967	0.01208)	(1429	WL 2	29MY1967	0.04247)	(1407	SM 2	14MY1967	C.19108)
(1423	WA 2	25MY1967	0.00856)	(							

204 DIVULGVG TOT NO OF STATIONS 1

(1340	C 7	28MR1967	0.00800) (

Diatoma hiemale var. *mesodon* (Ehr.) Grun.

Fragilaria mesodon Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1838:57, pl. 2(1), fig. 9. 1839.
Diatoma hiemale var. *mesodon* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 51, figs. 3-4. 1881.

198 DIHIEMVM TOT NO OF STATIONS 2

(46758	EV	5JN1937	0.00357)	(1341	A 3	19AP1967	0.00108) (

Diatoma tenue Agardh

Diatoma tenue Argardh, Svenska Bot., Vol. 7, pl. 491, figs. 4-5. 1812.

199 DITENUE TOT NO OF STATIONS 58

(46924	CH	10MY1946	0.01411)	(46909	CH	MR1947	0.02277)	(46912	CH	AP1947	C.C1150)
(46771	EV	11JN1937	0.01189)	(46749	EV	12MR1938	0.03641)	(46761	EV	27MY1938	0.00273)
(46766	EV	14DE1938	0.06337)	(1230	E 2	16MY1964	0.00296)	(1439	B 6	5JN1964	C.00200)
(1239	D 4	11JN1964	0.00116)	(1240	D 6	10JN1964	0.00153)	(1241	E 2	13JN1964	0.00296)
(1244	F 1	11JN1964	0.00329)	(1440	B 6	11JL1964	0.00737)	(1264	C* 1	10AU1964	0.00193)
(1265	C* 2	10AU1964	0.01118)	(1268	E 2	15AU1964	0.00274)	(1269	E 3	15AU1964	0.00548)
(1302	E 5	13OC1964	0.00405)	(1337	C 3	2MR1967	0.68490)	(1338	C 3	28MR1967	C.25520)
(1340	C 7	28MR1967	0.06617)	(1431	A 3	12JN1967	0.00257)	(1432	A 4	13JN1967	0.00511)
(1433	C 3	17JN1967	0.03875)	(1435	C 7	13JN1967	0.00631)	(1446	A 3	11JL1967	C.00489)
(1449	C 3	16JL1967	0.00764)	(1451	C 7	16JL1967	0.08267)	(1452	E 2	14JL1967	C.00426)
(1454	E 5	15JL1967	0.00200)	(1536	E 2	24SE1967	0.01363)	(1395	GS19	13MY1967	C.00235)
(1396	GS20	13MY1967	0.01036)	(1397	GS21	13MY1967	0.41205)	(1398	GS22	14MY1967	C.00304)
(1554	GS 1	3OC1967	0.01067)	(1555	GS 2	3OC1967	0.00353)	(1544	MU 1	2OC1967	0.01191)
(1522	BH 1	18SE1967	0.00365)	(1550	MR 1	5OC1967	0.02478)	(1428	MU 2	29MY1967	1.39805)
(1426	MS 2	29MY1967	0.16798)	(1351	MI 2	21AP1967	0.17688)	(1417	HO 2	22MY1967	0.07103)
(1350	BH 2	19AP1967	0.63435)	(1425	RA 2	25MY1967	0.01768)	(1399	PW 2	5MY1967	0.00680)
(1352	KW 2	21AP1967	0.00859)	(1353	FR 2	23AP1967	0.09494)	(1354	GH 2	25AP1967	1.4C847)
(1429	WL 2	29MY1967	0.03185)	(1405	ES 2	12MY1967	0.00645)	(1407	SM 2	14MY1967	C.50158)
(1406	GB 2	13MY1967	0.00809)	(1421	CH 2	23MY1967	0.06940)	(1422	GA 2	23MY1967	0.03576)
(1423	WA 2	25MY1967	0.03426)	(							

Diatoma tenue var. *elongatum* Lyngb.

Diatoma tenue var. *elongatum* Lyngbye, Tent. Hydrophyt. Danicae, p. 179, pl. 61, figs. E 1-2. 1819.

200 DITENUVE TOT NO OF STATIONS 283

(46910	CH	DC1945	1.63302)	(46921	CH	23ND1945	15.99441)	(46908	CH	DE1945	25.19637)
(46917	CH	12JA1946	36.27559)	(46515	CH	20FE1946	28.11130)	(46914	CH	19AP1946	11.75887)
(46924	CH	10MY1946	5.57170)	(46523	CH	22ND1946	1.70477)	(46920	CH	20DE1946	3.28436)
(46905	CH	JA1947	3.02733)	(46509	CH	MR1947	14.64869)	(46912	CH	AP1947	C.35094)
(46916	CH	4MY1947	27.78786)	(46906	CH	MY1947	18.37766)	(46919	CH	5JN1947	18.09836)
(46907	CH	JL1947	7.17973)	(46913	CH	6AU1947	0.84719)	(46922	CH	21AU1947	2.23663)
(46758	EV	5JN1937	2.09685)	(46771	EV	11JN1937	1.19823)	(46743	EV	20JN1937	0.14987)
(46745	EV	3JL1937	0.02090)	(46770	EV	9JL1937	0.01789)	(46764	EV	17JL1937	C.03223)
(46757	EV	25JL1937	0.18295)	(46747	EV	1AU1937	0.02723)	(46763	EV	23AU1937	0.06088)
(46765	EV	30AU1937	0.03904)	(46752	EV	15SE1937	0.10884)	(46760	EV	22SE1937	C.03939)
(46750	EV	24SE1937	0.02828)	(46744	EV	6OC1937	2.18494)	(46748	EV	13OC1937	0.02135)
(46767	EV	27CC1937	0.05802)	(46749	EV	12MR1938	0.52191)	(46768	EV	16MR1938	C.16169)
(46762	EV	18MR1938	0.08822)	(46751	EV	30MR1938	1.25056)	(46772	EV	18AP1938	C.45681)
(46756	EV	27AP1938	7.42818)	(46759	EV	19MY1938	C.69548)	(46761	EV	27MY1938	C.33522)

(46766	EV	14DE1938	7.98479)	(1223	B 3	18MY1964	0.02344)	(1224	B 4	18MY1964	0.01568)
(1225	C 6	15MY1964	0.20776)	(1226	C 7	16MY1964	0.06849)	(1227	C* 2	13MY1964	0.00219)
(1228	D 2	14MY1964	0.00584)	(1229	D 5	14MY1964	0.00634)	(1230	E 2	16MY1964	0.05334)
(1233	B 3	5JN2964	0.15241)	(1234	B 3	18JN1964	0.23336)	(1235	C 7	16JN1964	0.17793)
(1439	B 6	5JN1964	0.12787)	(1236	C* 1	8JN1964	1.71533)	(1237	C* 2	8JN1964	0.27842)
(1240	D 6	10JN1964	0.17180)	(1241	E 2	13JN1964	0.25875)	(1242	E 3	13JN1964	0.00450)
(1243	E 6	13JN1964	0.21298)	(1244	F 1	11JN1964	0.04934)	(1245	F 2	11JN1964	0.01729)
(1247	B 3	14JL1964	0.29880)	(1248	B 3	24JL1964	0.03547)	(1440	B 6	11JL1964	0.06265)
(1441	B 6	24JL1964	0.01542)	(1249	C 3	8JL1964	1.14068)	(1250	C 6	10JL1964	0.06166)
(1251	C 7	16JL1964	0.13037)	(1252	C* 1	16JL1964	1.07392)	(1253	C* 2	16JL1964	0.63904)
(1254	D 2	15JL1964	0.67037)	(1255	D 5	15JL1964	0.08726)	(1256	E 2	14JL1964	0.23265)
(1257	E 3	14JL1964	0.03589)	(1258	F 1	6JL1964	0.66074)	(1259	F 2	6JL1964	0.15493)
(1260	F 3	6JL1964	0.13370)	(1261	B 3	2AU1964	0.00196)	(1262	B 3	17AU1964	0.00210)
(1442	B 6	2AU1964	0.01706)	(1264	C* 1	10AU1964	0.07337)	(1265	C* 2	10AU1964	0.13189)
(1266	D 3	18AU1964	0.67700)	(1267	D 6	18AU1964	0.16645)	(1268	E 2	15AU1964	0.67020)
(1269	E 3	15AU1964	0.02467)	(1270	F 1	10AU1964	0.17155)	(1444	B 6	19SE1964	0.00606)
(1271	C 7	22SE1964	0.22198)	(1272	C* 1	10SE1964	0.00821)	(1273	C* 2	10SE1964	0.01075)
(1274	D 1	17SE1964	0.04223)	(1275	D 2	17SE1964	0.01935)	(1276	D 3	18SE1964	0.03353)
(1277	D 4	18SE1964	0.03718)	(1278	D 6	18SE1964	0.02690)	(1279	E 1	16SE1964	0.01178)
(1280	E 2	16SE1964	0.04085)	(1281	E 3	16SE1964	0.02355)	(1282	E 4	16SE1964	0.03324)
(1283	E 5	16SE1964	0.03065)	(1284	E 6	17SE1964	0.40352)	(1287	F 3	15SE1964	0.01001)
(1288	B 3	15OC1964	0.00435)	(1445	B 6	14OC1964	0.00578)	(1289	C 7	14OC1964	0.07475)
(1290	C* 1	16OC1964	0.01516)	(1291	C* 2	16OC1964	0.00734)	(1293	D 2	15OC1964	0.01415)
(1294	D 3	15OC1964	0.01648)	(1295	D 4	15OC1964	0.01189)	(1296	D 5	14OC1964	0.01574)
(1297	D 6	14OC1964	0.26655)	(1298	E 1	12OC1964	0.00269)	(1299	E 2	12OC1964	0.01571)
(1300	E 3	13OC1964	0.02148)	(1301	E 4	13OC1964	0.01766)	(1302	E 5	13OC1964	0.14576)
(1303	E 6	13OC1964	1.37132)	(1306	F 3	11OC1964	0.00277)	(1307	B 6	NO1964	0.50512)
(1308	C 7	6NO1964	0.13687)	(1309	C* 1	10NO1964	0.02251)	(1310	C* 2	10NO1964	0.00227)
(1311	D 1	8NO1964	0.00516)	(1312	D 2	8NO1964	0.00621)	(1313	D 3	9NO1964	0.01158)
(1314	D 4	9NO1964	0.01435)	(1315	D 5	9NO1964	0.02730)	(1316	D 6	9NO1964	0.37020)
(1317	E 1	6NO1964	0.00383)	(1318	E 2	7NO1964	0.01332)	(1319	E 3	7NO1964	0.01047)
(1320	E 4	7NO1964	0.01034)	(1321	E 5	7NO1964	0.02873)	(1322	E 6	7NO1964	0.46656)
(1323	F 1	6NO1964	0.00139)	(1336	C 3	27JA1967	0.01348)	(1337	C 3	2MR1967	1.13170)
(1338	C 3	28MR1967	0.80129)	(1339	C 5	28MR1967	0.15589)	(1340	C 7	28MR1967	1.06894)
(1341	A 3	19AP1967	0.91123)	(1342	A 4	19AP1967	0.25265)	(1343	A 6	19AP1967	0.68084)
(1344	C 3	25AP1967	0.21011)	(1345	C 5	25AP1967	0.08187)	(1346	C 7	21AP1967	0.15889)
(1347	E 2	23AP1967	1.25193)	(1348	E 5	23AP1967	0.11378)	(1368	A 3	4MY1967	0.05655)
(1369	A 4	4MY1967	0.00373)	(1370	A 6	3MY1967	0.23478)	(1373	C 7	5MY1967	0.00285)
(1374	E 2	7MY1967	0.01494)	(1375	E 3	7MY1967	0.00241)	(1376	E 5	6MY1967	0.01968)
(1408	A 3	23MY1967	0.00894)	(1409	A 4	23MY1967	0.00298)	(1411	C 3	31MY1967	0.02872)
(1412	C 5	31MY1967	0.00421)	(1413	C 7	25MY1967	0.00316)	(1414	E 2	28MY1967	0.02687)
(1415	E 3	28MY1967	0.00450)	(1416	E 5	28MY1967	0.03280)	(1431	A 3	12JN1967	1.19989)
(1432	A 4	13JN1967	0.12261)	(1433	C 3	17JN1967	0.24545)	(1434	C 5	17JN1967	0.01794)
(1435	C 7	13JN1967	0.73880)	(1436	E 2	15JN1967	1.85989)	(1437	E 3	15JN1967	0.01346)
(1438	E 5	14JN1967	0.00363)	(1446	A 3	11JL1967	1.88347)	(1447	A 4	11JL1967	0.65494)
(1448	A 6	10JL1967	10.64545)	(1449	C 3	16JL1967	0.22546)	(1450	C 5	16JL1967	0.03428)
(1451	C 7	16JL1967	14.19235)	(1452	E 2	14JL1967	20.11751)	(1453	E 3	15JL1967	0.35387)
(1454	E 5	15JL1967	2.38048)	(1510	L 7	29AU1967	0.16756)	(1511	E 2	1SE1967	5.66940)
(1512	E 3	1SE1967	0.49866)	(1513	E 5	31AU1967	0.09121)	(1534	A 6	19SE1967	0.04654)
(1536	E 2	24SE1967	8.78006)	(1537	E 3	24SE1967	3.32097)	(1538	E 5	23SE1967	2.12672)
(1539	C 3	4OC1967	0.00503)	(1541	E 2	11OC1967	1.24528)	(1542	E 3	11OC1967	0.98149)
(1543	E 5	10OC1967	0.10774)	(1377	GS 1	9MY1967	0.00396)	(1378	GS 2	9MY1967	0.02103)
(1379	GS 3	9MY1967	0.00619)	(1380	GS 4	9MY1967	0.02354)	(1382	GS 6	10MY1967	0.00278)
(1384	GS 8	10MY1967	0.00739)	(1385	GS 9	10MY1967	0.00471)	(1386	GS10	12MY1967	0.00287)
(1387	GS11	12MY1967	0.01584)	(1388	GS12	12MY1967	0.01207)	(1389	GS13	12MY1967	0.01547)
(1390	GS14	12MY1967	0.01174)	(1391	GS15	12MY1967	0.00479)	(1392	GS16	12MY1967	0.16334)
(1393	GS17	13MY1967	0.01918)	(1394	GS18	13MY1967	0.16170)	(1395	GS19	13MY1967	0.32882)
(1396	GS20	13MY1967	0.56972)	(1397	GS21	13MY1967	3.29642)	(1398	GS22	14MY1967	0.02125)
(1554	GS 1	3OC1967	6.47548)	(1555	GS 2	3OC1967	7.16808)	(1556	GS 3	3OC1967	0.04172)
(1557	GS 4	3OC1967	0.16069)	(1558	GS 5	4OC1967	0.05549)	(1559	GS 7	4OC1967	0.03148)
(1560	GS 8	4OC1967	0.08501)	(1561	GS 9	4OC1967	0.08217)	(1562	GS10	5OC1967	0.03454)
(1563	GS11	5OC1967	0.00701)	(1568	GS16	5OC1967	0.02453)	(1569	GS17	5OC1967	0.02527)
(1570	GS18	5OC1967	0.01983)	(1571	GS19	6OC1967	0.17796)	(1572	GS20	6OC1967	0.69399)
(1573	GS21	6OC1967	0.10527)	(1574	GS22	6OC1967	0.02301)	(1575	GS28	6OC1967	0.07225)
(1544	MU 1	2OC1967	0.10246)	(1547	MS 1	2OC1967	1.40519)	(1524	MI 1	20SE1967	0.15324)
(1546	LU 1	2OC1967	0.42015)	(1521	SH 1	18SE1967	0.02308)	(1523	RA 1	19SE1967	0.01845)
(1525	PW 1	20SE1967	0.04178)	(1526	MC 1	20SE1967	0.35842)	(1527	TR 1	20SE1967	0.08805)
(1528	SB 1	20SE1967	0.05775)	(1529	KW 1	20SE1967	0.04797)	(1530	FR 1	24SE1967	2.08021)
(1531	GH 1	25SE1967	0.00845)	(1545	WL 1	2OC1967	0.04054)	(1548	CA 1	3OC1967	0.01272)
(1549	MQ 1	4OC1967	0.06852)	(1551	ES 1	5OC1967	0.08787)	(1552	SM 1	6OC1967	0.41598)
(1550	MR 1	5OC1967	0.65667)	(1553	SG 1	6OC1967	0.80053)	(1428	MU 2	29MY1967	3.66386)
(1426	MS 2	29MY1967	18.64566)	(1351	MI 2	21AP1967	3.67417)	(1427	LU 2	29MY1967	5.61743)
(1417	HO 2	22MY1967	14.53567)	(1418	SH 2	22MY1967	0.07776)	(1350	BH 2	19AP1967	0.49338)
(1425	RA 2	25MY1967	1.34382)	(1399	PW 2	5MY1967	3.37323)	(1401	MO 2	6MY1967	2.44591)
(1402	TR 2	6MY1967	0.73099)	(1400	SB 2	6MY1967	1.71551)	(1352	KW 2	21AP1967	4.12300)
(1353	FR 2	23AP1967	4.21941)	(1354	GH 2	25AP1967	6.65573)	(1429	WL 2	29MY1967	22.93236)
(1403	CA 2	10MY1967	0.05231)	(1404	MQ 2	10MY1967	0.05081)	(1405	ES 2	12MY1967	1.19324)
(1407	SM 2	14MY1967	7.35654)	(1349	CI 2	19AP1967	2.01164)	(1406	GB 2	13MY1967	0.02965)
(1419	BU 2	23MY1967	3.51520)	(1420	IH 2	23MY1967	1.78248)	(1421	CH 2	23MY1967	1.75225)
(1422	GA 2	23MY1967	2.86108)	(1423	WA 2	25MY1967	2.53501)	(1424	KN 2	25MY1967	3.62377)
(1430	MC 2	12JN1967	2.49198)	(							

Diatoma tenue var. *pachycephala* Grun.

Diatoma tenue var. *pachycephala* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 50, fig. 15. 1881.

201 DITENUVP TOT NO OF STATIONS 275

(46910	CH	0C1945	0.67506)	(46921	CH	23NO1945	2.73235)	(46908	CH	DE1945	6.87815)
(46917	CH	12JA1946	4.55923)	(46915	CH	20FE1946	1.72993)	(46914	CH	19AP1946	0.41643)
(46924	CH	10MY1946	0.89381)	(46923	CH	22NO1946	0.12895)	(46920	CH	20DE1946	0.03358)
(46909	CH	MR1947	0.09107)	(46912	CH	AP1947	0.02300)	(46916	CH	4MY1947	6.41767)

(46906	CH	MY1947	6.85927)	(46919	CH	5JN1947	3.05762)	(46907	CH	JL1947	0.73720)
(46922	CH	21AU1947	0.03926)	(46758	EV	5JN1937	0.79880)	(46771	EV	11JN1937	1.93048)
(46743	EV	20JN1937	0.13274)	(46745	EV	3JL1937	0.06270)	(46770	EV	9JL1937	0.02982)
(46764	EV	17JL1937	0.16116)	(46757	EV	25JL1937	0.10110)	(46747	EV	1AU1937	0.01980)
(46763	EV	23AU1937	0.02029)	(46765	EV	30AU1937	0.04462)	(46760	EV	22SE1937	0.16249)
(46750	EV	24SE1937	0.29222)	(46744	EV	6OC1937	4.36988)	(46748	EV	13OC1937	0.08540)
(46767	EV	27OC1937	0.14700)	(46749	EV	12MR1938	0.23061)	(46768	EV	16MR1938	0.13229)
(46762	EV	18MR1938	0.08822)	(46751	EV	30MR1938	1.25056)	(46772	EV	18AP1938	2.98084)
(46756	EV	27AP1938	11.61240)	(46759	EV	19MY1938	0.47265)	(46761	EV	27MY1938	0.33522)
(46766	EV	14DE1938	5.32319)	(1225	C 6	15MY1964	0.68601)	(1226	C 7	16MY1964	0.75909)
(1227	C' 2	13MY1964	0.10308)	(1228	D 2	14MY1964	0.03503)	(1229	D 5	14MY1964	0.13533)
(1230	E 2	16MY1964	0.08001)	(1231	E 3	16MY1964	0.01468)	(1232	E 5	16MY1964	0.01565)
(1233	B 3	5JN2964	0.25720)	(1234	B 3	18JN1964	0.23336)	(1235	C 7	16JN1964	0.05084)
(1439	B 6	5JN1964	0.30769)	(1236	C' 1	8JN1964	0.07876)	(1237	C' 2	8JN1964	0.16241)
(1238	D 3	11JN1964	0.02800)	(1239	D 4	11JN1964	0.00812)	(1240	D 6	10JN1964	0.00460)
(1241	E 2	13JN1964	0.04731)	(1242	E 3	13JN1964	0.00300)	(1243	E 6	13JN1964	0.10023)
(1244	F 1	11JN1964	0.11842)	(1245	F 2	11JN1964	0.01037)	(1246	F 3	11JN1964	0.00598)
(1247	B 3	14JL1964	0.31587)	(1248	B 3	24JL1964	0.06306)	(1440	B 6	11JL1964	0.09213)
(1441	B 6	24JL1964	0.30838)	(1249	C 3	8JL1964	0.44813)	(1250	C 6	10JL1964	0.52210)
(1251	C 7	16JL1964	0.40559)	(1252	C' 1	16JL1964	1.26918)	(1253	C' 2	16JL1964	0.23279)
(1254	D 2	15JL1964	0.26815)	(1255	D 5	15JL1964	0.20789)	(1256	E 2	14JL1964	0.28211)
(1257	E 3	14JL1964	0.08135)	(1258	F 1	6JL1964	0.53803)	(1259	F 2	6JL1964	0.59804)
(1260	F 3	6JL1964	0.17954)	(1261	B 3	2AU1964	0.01570)	(1262	B 3	17AU1964	0.01680)
(1442	B 6	2AU1964	0.89730)	(1443	B 6	16AU1964	0.13838)	(1263	C 7	15AU1964	0.01201)
(1264	C' 1	10AU1964	0.15639)	(1265	C' 2	10AU1964	0.04024)	(1266	D 3	18AU1964	0.18591)
(1267	D 6	18AU1964	0.05837)	(1268	E 2	15AU1964	0.17234)	(1269	E 3	15AU1964	0.04659)
(1270	F 1	10AU1964	0.09803)	(1271	C 7	22SE1964	0.03264)	(1272	C' 1	10SE1964	0.00821)
(1273	C' 2	10SE1964	0.07527)	(1274	D 1	17SE1964	0.00469)	(1275	D 2	17SE1964	0.03226)
(1276	D 3	18SE1964	0.03353)	(1277	D 4	18SE1964	0.00620)	(1278	D 6	18SE1964	1.74872)
(1279	E 1	16SE1964	0.02356)	(1280	E 2	16SE1964	0.00681)	(1281	E 3	16SE1964	0.05494)
(1282	E 4	16SE1964	0.07756)	(1283	E 5	16SE1964	0.10420)	(1284	E 6	17SE1964	0.61322)
(1285	F 1	15SE1964	0.03494)	(1286	F 2	15SE1964	0.02189)	(1287	F 3	15SE1964	0.02002)
(1288	B 3	15OC1964	0.00218)	(1445	B 6	14OC1964	0.13372)	(1289	C 7	14OC1964	0.41335)
(1290	C' 1	16OC1964	0.02274)	(1291	C' 2	16OC1964	0.00489)	(1292	D 1	15OC1964	0.01491)
(1293	D 2	15OC1964	0.06603)	(1294	D 3	15OC1964	0.42522)	(1295	D 4	15OC1964	0.10703)
(1296	D 5	14OC1964	0.27541)	(1297	D 6	14OC1964	1.99916)	(1298	E 1	12OC1964	0.01346)
(1299	E 2	12OC1964	0.04084)	(1300	E 3	13OC1964	0.05012)	(1301	E 4	13OC1964	0.27819)
(1302	E 5	13OC1964	0.28342)	(1303	E 6	13OC1964	5.48528)	(1304	F 1	11OC1964	0.00494)
(1305	F 2	11OC1964	0.00173)	(1307	B 6	NO1964	0.38967)	(1308	C 7	6NO1964	1.06451)
(1309	C' 1	10NO1964	0.02251)	(1310	C' 2	10NO1964	0.01361)	(1311	D 1	8NO1964	0.10835)
(1312	D 2	8NO1964	0.21729)	(1313	D 3	9NO1964	0.62934)	(1314	D 4	9NO1964	0.44211)
(1315	D 5	9NO1964	0.60055)	(1316	D 6	9NO1964	0.52886)	(1317	E 1	6NO1964	0.26806)
(1318	E 2	7NO1964	0.29298)	(1319	E 3	7NO1964	0.15448)	(1320	E 4	7NO1964	0.14478)
(1321	E 5	7NO1964	0.74698)	(1322	E 6	7NO1964	0.77982)	(1323	F 1	6NO1964	0.00418)
(1324	F 2	6NO1964	0.00466)	(1325	F 3	6NO1964	0.05290)	(1336	C 3	27JA1967	0.01155)
(1337	C 3	2MR1967	0.82306)	(1338	C 3	28MR1967	0.92558)	(1339	C 5	28MR1967	0.12783)
(1340	C 7	28MR1967	1.83247)	(1341	A 3	19AP1967	1.51872)	(1342	A 4	19AP1967	1.51589)
(1343	A 6	19AP1967	0.92400)	(1344	C 3	25AP1967	0.12904)	(1345	C 5	25AP1967	0.12280)
(1346	C 7	21AP1967	0.70100)	(1347	E 2	23AP1967	0.83570)	(1348	E 5	23AP1967	0.15764)
(1368	A 3	4MY1967	0.04084)	(1369	A 4	4MY1967	0.00373)	(1370	A 6	3MY1967	0.24399)
(1372	C 5	5MY1967	0.00355)	(1373	C 7	5MY1967	0.00856)	(1374	E 2	7MY1967	0.01494)
(1375	E 3	7MY1967	0.00241)	(1376	E 5	6MY1967	0.00843)	(1408	A 3	23MY1967	0.06708)
(1409	A 4	23MY1967	0.00595)	(1410	A 6	24MY1967	0.07330)	(1411	C 3	31MY1967	0.00821)
(1412	C 5	31MY1967	0.00421)	(1413	C 7	25MY1967	0.06318)	(1414	E 2	28MY1967	0.04366)
(1415	E 3	28MY1967	0.00225)	(1416	E 5	28MY1967	0.01093)	(1431	A 3	12JN1967	0.99132)
(1432	A 4	13JN1967	0.17881)	(1433	C 3	17JN1967	0.38109)	(1434	C 5	17JN1967	0.01495)
(1435	C 7	13JN1967	0.24311)	(1436	E 2	15JN1967	0.15198)	(1438	E 5	14JN1967	0.02542)
(1446	A 3	11JL1967	0.62619)	(1447	A 4	11JL1967	0.53331)	(1448	A 6	10JL1967	0.90539)
(1449	C 3	16JL1967	1.33746)	(1450	C 5	16JL1967	0.66648)	(1451	C 7	16JL1967	3.85812)
(1452	E 2	14JL1967	3.12939)	(1453	E 3	15JL1967	0.20979)	(1454	E 5	15JL1967	0.16603)
(1504	A 3	28AU1967	0.00247)	(1509	C 5	2SE1967	0.64096)	(1511	E 2	1SE1967	0.25478)
(1512	E 3	1SE1967	0.02749)	(1513	E 5	31AU1967	0.08615)	(1534	A 6	19SE1967	0.01551)
(1536	E 2	24SE1967	0.09271)	(1537	E 3	24SE1967	0.03019)	(1538	E 5	23SE1967	0.02762)
(1541	F 2	11OC1967	0.03193)	(1542	E 3	11OC1967	0.00509)	(1543	E 5	10OC1967	0.01437)
(1379	GS 3	9MY1967	0.02476)	(1380	GS 4	9MY1967	0.64739)	(1381	GS 5	10MY1967	0.16696)
(1383	GS 7	10MY1967	0.04544)	(1384	GS 8	10MY1967	0.02773)	(1385	GS 9	10MY1967	0.03296)
(1386	GS10	12MY1967	0.02011)	(1387	GS11	12MY1967	0.05545)	(1388	GS12	12MY1967	0.01207)
(1389	GS13	12MY1967	0.00516)	(1390	GS14	12MY1967	0.02349)	(1392	GS16	12MY1967	0.04315)
(1393	GS17	13MY1967	0.01918)	(1394	GS18	13MY1967	0.15653)	(1395	GS19	13MY1967	0.32882)
(1396	GS20	13MY1967	0.00666)	(1397	GS21	13MY1967	0.14389)	(1398	GS22	14MY1967	2.12527)
(1554	GS 1	3OC1967	0.33445)	(1555	GS 2	3OC1967	0.17302)	(1556	GS 3	3OC1967	0.01043)
(1561	GS 9	4OC1967	0.01174)	(1562	GS10	5OC1967	0.01727)	(1563	GS11	5OC1967	0.00701)
(1564	GS12	5OC1967	0.00823)	(1565	GS13	5OC1967	0.00507)	(1568	GS16	5OC1967	0.15584)
(1569	GS17	5OC1967	0.00743)	(1571	GS19	6OC1967	0.02868)	(1572	GS20	6OC1967	0.00180)
(1573	GS21	6OC1967	0.00336)	(1574	GS22	6OC1967	0.00863)	(1544	MU 1	2OC1967	0.00238)
(1547	MS 1	2OC1967	0.03194)	(1526	MO 1	20SE1967	0.01707)	(1527	TR 1	20SE1967	0.01887)
(1528	SB 1	20SE1967	0.01444)	(1529	KW 1	20SE1967	0.02398)	(1530	FR 1	24SE1967	0.04000)
(1545	WL 1	2OC1967	0.00676)	(1549	MQ 1	4OC1967	0.02741)	(1551	ES 1	5OC1967	0.19970)
(1552	SM 1	6OC1967	0.07923)	(1553	SG 1	6OC1967	0.08079)	(1428	MU 2	29MY1967	0.15668)
(1426	MS 2	29MY1967	2.01575)	(1351	MI 2	21AP1967	4.31963)	(1427	LU 2	29MY1967	0.50847)
(1417	HO 2	22MY1967	1.01690)	(1418	SH 2	22MY1967	0.01555)	(1350	BH 2	19AP1967	0.00441)
(1425	RA 2	25MY1967	0.10609)	(1399	PW 2	5MY1967	3.37323)	(1401	MO 2	6MY1967	1.04069)
(1402	TR 2	6MY1967	1.55945)	(1400	SB 2	6MY1967	2.85918)	(1352	KW 2	21AP1967	9.20804)
(1353	FR 2	23AP1967	0.07384)	(1354	GH 2	25AP1967	0.27617)	(1429	WL 2	29MY1967	0.98737)
(1403	CA 2	10MY1967	2.09232)	(1404	MQ 2	10MY1967	0.24136)	(1405	ES 2	12MY1967	0.54180)
(1407	SM 2	14MY1967	2.57957)	(1419	BU 2	23MY1967	0.45771)	(1420	IH 2	23MY1967	1.40483)
(1421	CH 2	23MY1967	1.75225)	(1422	GA 2	23MY1967	1.47141)	(1423	WA 2	25MY1967	0.89068)
(1424	KN 2	25MY1967	0.38636)	(1430	MC 2	12JN1967	0.19738)	(			

Diatoma vulgaris Bory

Diatoma vulgare Bory, Dict. Class. Hist. Nat., 5:461. 1824.

202 DIVULGAR TOT NO OF STATIONS 73

(46921	CH	23NO1945	0.03816)	(46917	CH	12JA1946	0.01137)	(46915	CH	20FE1946	0.00569)
(46914	CH	19AP1946	0.00961)	(46924	CH	10MY1946	0.05079)	(46923	CH	22NO1946	0.03934)
(46920	CH	20DE1946	0.00863)	(46905	CH	JA1947	0.00245)	(46909	CH	MR1947	0.00455)
(46916	CH	4MY1947	0.00136)	(46919	CH	5JN1947	0.01214)	(46758	EV	5JN1937	0.33521)
(46771	EV	11JN1937	0.01426)	(46743	EV	20JN1937	0.11989)	(46770	EV	9JL1937	0.05367)
(46764	EV	17JL1937	0.05641)	(46757	EV	25JL1937	0.00963)	(46747	EV	1AU1937	0.00495)
(46750	EV	24SE1937	0.00471)	(46748	EV	13OC1937	0.02135)	(46767	EV	27OC1937	0.00774)
(46761	EV	27MY1938	0.00273)	(46766	EV	14DE1938	0.01584)	(1300	E 3	13OC1964	0.00358)
(1304	F 1	11OC1964	0.00247)	(1341	A 3	19AP1967	0.00217)	(1348	E 5	23AP1967	0.00137)
(1371	C 3	4MY1967	0.00462)	(1415	E 3	28MY1967	0.00225)	(1432	A 4	13JN1967	0.00255)
(1532	A 3	18SE1967	0.02300)	(1541	E 2	11OC1967	0.00532)	(1382	GS 6	10MY1967	0.00278)
(1387	GS11	12MY1967	0.00396)	(1392	GS16	12MY1967	0.00308)	(1395	GS19	13MY1967	0.00117)
(1554	GS 1	30C1967	0.01779)	(1555	GS 2	3OC1967	0.00353)	(1559	GS 7	4OC1967	0.00350)
(1564	GS12	5OC1967	0.00494)	(1569	GS17	5OC1967	0.00297)	(1570	GS18	5OC1967	0.00992)
(1571	GS19	6OC1967	0.00117)	(1573	GS21	6OC1967	0.00224)	(1574	GS22	6OC1967	0.00288)
(1575	GS28	6OC1967	0.00129)	(1544	MU 1	2OC1967	0.00238)	(1547	MS 1	2OC1967	0.03992)
(1524	MI 1	20SE1967	0.02189)	(1546	LU 1	2OC1967	0.00500)	(1521	SH 1	18SE1967	0.68082)
(1522	BH 1	18SE1967	0.00912)	(1530	FR 1	24SE1967	0.04000)	(1531	GH 1	25SE1967	0.03381)
(1545	WL 1	2OC1967	0.02703)	(1550	MR 1	5OC1967	0.16107)	(1428	MU 2	29MY1967	0.03917)
(1426	MS 2	29MY1967	0.20997)	(1351	MI 2	21AP1967	0.00310)	(1427	LU 2	29MY1967	0.33898)
(1417	HO 2	22MY1967	0.01122)	(1418	SH 2	22MY1967	0.34215)	(1350	BH 2	19AP1967	0.04405)
(1399	PW 2	5MY1967	0.01360)	(1401	MO 2	6MY1967	0.01176)	(1402	TR 2	6MY1967	0.01083)
(1400	SB 2	6MY1967	0.05361)	(1353	FR 2	23AP1967	0.05274)	(1354	GH 2	25AP1967	0.01208)
(1429	WL 2	29MY1967	0.03185)	(1403	CA 2	10MY1967	0.28769)	(1405	ES 2	12MY1967	0.00645)
(1406	GB 2	13MY1967	0.00809)	(							

Diatoma vulgaris var. *brevis* Grun.

Diatoma vulgare var. *breve* Grunow, Verh. Zool.-Bot. Ges. Wien, 12:363. 1862.

203 DIVULGVB TOT NO OF STATIONS 6

(46758	EV	5JN1937	0.00357)	(1236	C' 1	8JN1964	0.00350)	(1264	C' 1	10AU1964	0.00193)
(1341	A 3	19AP1967	0.00217)	(1567	GS15	5OC1967	0.00159)	(1521	SH 1	18SE1967	0.02885)

Diatoma vulgaris var. *linearis* V. H.

Diatoma vulgare var. *linearis* Van Heurck, Syn. Diat. Belgique, pl. 50, figs. 7-8. 1881.

205 DIVULGVL TOT NO OF STATIONS 3

(1392	GS16	12MY1967	0.00616)	(1549	MO 1	4OC1967	0.12334)	(1407	SM 2	14MY1967	0.00597)

Genus *Diploneis* Ehr.

Ehrenberg, Ber. Akad. Wiss. Berlin, 1844:84. 1844.

Members of the genus *Diploneis* find their primary habitat in epipelic communities. Only occasional, isolated specimens are found in our collections.

Diploneis boldtiana Cleve

Diploneis boldtiana Cleve, Acta Soc. Fauna Fl. Fennica, 8(2):43, pl. 2, fig. 12. 1891.

206 DPBOLDTI TOT NO OF STATIONS 18

(60973	CH	1876	0.02362)	(3540	CH	11MY1879	0.00466)	(3541	CH	1FE1881	0.03913)
(46910	CH	0C1945	0.00328)	(46921	CH	23NO1945	0.00065)	(46908	CH	DE1945	0.01007)
(46914	CH	19AP1946	0.00214)	(46916	CH	4MY1947	0.00068)	(46922	CH	21AU1947	0.00194)
(46758	EV	5JN1937	0.00357)	(46764	EV	17JL1937	0.00806)	(46757	EV	25JL1937	0.00481)
(46747	EV	1AU1937	0.00248)	(46768	EV	16MR1938	0.01470)	(1563	GS11	5OC1967	0.00234)
(1565	GS13	5OC1967	0.00507)	(1567	GS15	5OC1967	0.00159)	(1530	FR 1	24SE1967	0.01000)

Diploneis domblittensis (Grun.) Cleve

Navicula expleta var. *domblittensis* Grunow *in*: Mojsisovics and Neumayer, Beitr. Paläontol. Österreich-Ungarns, Bd. 2, Heft 4, p. 156, pl. 30, fig. 60. 1882.
Diploneis domblittensis (Grun.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):91, pl. 2, fig. 2. 1894.

207 DPDOMBLO TOT NO OF STATIONS 1

(1389	GS13	12MY1967	0.00258)	(			

Diploneis elliptica (Kutz.) Cleve

Navicula elliptica Kützing, Bacill., p. 98, pl. 30, fig. 55. 1844.
Diploneis elliptica (Kütz.) Cleve, Acta Soc. Fauna Fl. Fennica, 8(2):42. 1891.

208 DPELLIPT TOT NO OF STATIONS 7

(46909	CH	MR1947	0.00455)	(46516	CH	4MY1947	0.00034)	(46907	CH	JL1947	0.00148)
(1559	GS 7	4OC1967	0.00350)	(1565	GS13	5OC1967	0.01014)	(1567	GS15	5OC1967	0.00476)
(1403	CA 2	10MY1967	0.01308)	(							

Diploneis oblongella (Naeg.) Ross

Navicula oblongella Naeglei *ex* Kützing, Sp. Alg., p. 890. 1849.
Diploneis oblongella (Naeg.) Ross, Natl. Mus. Canada Bull., 97:212. 1947.

Coll: 1405

Diploneis oculata (Bréb.) Cleve

Navicula oculata de Brébisson, J. Quekett Micr. Club, 2:38, fig. 5. 1870.
Diploneis oculata (Bréb.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd 26(2):92. 1894.

209 DPOCULAT TOT NO OF STATIONS 9

(46906	CH	MY1947	0.00066)	(46767	EV	27OC1937	0.00387)	(1245	F 2	11JN1964	0.00346)
(1260	F 3	6JL1964	0.00191)	(1285	F 1	15SE1964	0.00582)	(1389	GS13	12MY1967	0.00258)
(1395	GS19	13MY1967	0.00117)	(1554	GS 1	3OC1967	0.00356)	(1565	GS13	5OC1967	0.03042)

Diploneis ovalis (Hilse) Cleve

Pinnularia ovalis Hilse, Jahres-Ber. Schlesischen Ges. Vaterl. Kult., 36:82. 1860.
Diploneis ovalis (Hilse) Cleve, Acta Soc. Fauna Fl. Fennica, 8(2):44, pl. 2, fig. 13. 1891.

210 DPOVALIS TOT NO OF STATIONS 6

(60973	CH	1876	0.04724)	(46524	CH	10MY1946	0.00071)	(1285	F 1	15SE1964	0.01165)
(1304	F 1	11OC1964	0.00247)	(1389	GS13	12MY1967	0.00774)	(1354	GH 2	25AP1967	0.00173)

Diploneis parma Cleve

Diploneis parma Cleve, Acta Soc. Fauna Fl. Fennica, 8(2):43, pl. 2, fig. 10. 1891.

211 DPPARMA TOT NO OF STATIONS 20

(46910	CH	0C1945	0.00109)	(46917	CH	12JA1946	0.00083)	(46914	CH	19AP1946	0.00107)
(46924	CH	10MY1946	0.00141)	(46920	CH	20DE1946	0.00031)	(46905	CH	JA1947	0.00123)
(46906	CH	MY1947	0.00066)	(46922	CH	21AU1947	0.00145)	(1385	GS 9	10MY1967	0.00235)
(1389	GS13	12MY1967	0.00516)	(1390	GS14	12MY1967	0.01174)	(1393	GS17	13MY1967	0.00274)
(1564	GS12	50C1967	0.00165)	(1565	GS13	50C1967	0.03042)	(1567	GS15	50C1967	0.00635)
(1569	GS17	50C1967	0.00149)	(1574	GS22	60C1967	0.00575)	(1575	GS28	60C1967	0.00258)
(1546	LU 1	20C1967	0.00500)	(1354	GH 2	25AP1967	0.00173)	(			

Diploneis subovalis Cleve

Diploneis subovalis Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):96, pl. 1, fig. 27. 1894.

212 DPSUBOVA TOT NO OF STATIONS 3

(46747	EV	1AU1937	0.00248)	(1388	GS12	12MY1967	0.01207)	(1565	GS13	50C1967	0.02028)

Species *incertae sedis*

Diploneis sp. #1.

213 DPSPECOA TOT NO OF STATIONS 2

(1567	GS15	50C1967	0.00159)	(1568	GS16	50C1967	0.00144)	(

Diploneis sp. #2.

214 DPSPECOB TOT NO OF STATIONS 2

(1545	WL 1	20C1967	0.00676)	(1350	BH 2	19AP1967	0.00220)	(

Genus *Epithemia* Bréb.
de Brébisson and Godey, Consid. Diat., p. 16. 1838.

Members of the genus *Epithemia* are particularly adapted for epiphytic growth, usually on the coarser attached algae or on aquatic higher plants. Only occasional isolated specimens appear in our collections.

Epithemia andrewsii nom. nov.

Epithemia irregularis Andrews, U. S. Geol. Surv. Prof. Paper 523A:22, pl. 3, fig. 22-25. 1966. (non Fritsch and Rich 1925).

215 EPANDREW TOT NO OF STATIONS 2

(60973	CH	1876	0.02362)	(46917	CH	12JA1946	0.00028)	(

Epithemia argus (Ehr.) Kütz.

Eunotia argus Ehrenberg, Ber. Akad. Wiss. Berlin, 1841:125, pl. 2(4), fig. 7. 1843.
Epithemia argus (Ehr.) Kützing, Bacill., p. 35, pl. 29, figs. 55-56. 1844.

Coll: 1092.

Epithemia argus var. *alpestris* (Wm. Smith) Grun.

Epithemia alpestris Wm. Smith, Syn. British Diat., Vol. 1, p. 13, pl. 1, fig. 7. 1853.
Epithemia argus var. *alpestris* (Wm. Smith) Grunow, Verh. Zool.-Bot. Ges. Wien, 12:329, pl. 3, fig. 28. 1862.

216 EPARGUVA TOT NO OF STATIONS 1

(3541	CH	1FE1881	0.00978)	(			

Epithemia argus var. *longicornis* (Ehr.) Grun.

Epithemia longicornis Ehrenberg *ex* Pritchard, Hist. Infus., p. 760, pl. 15, figs. 6-9. 1852.
Epithemia argus var. *longicornis* (Ehr.) Grunow, Verh. Zool.-Bot. Ges. Wien, 12:329. 1862.

Coll: 1092.

Epithemia intermedia Fricke

Epithemia intermedia Fricke *in*: A. Schmidt, Atlas Diat., pl. 249, figs. 14-18. 1904.

217 EPINTERM TOT NO OF STATIONS 5

(60973	CH	1876	0.14171)	(46906	CH	MY1947	C.00066)	(1567	GS15	50C1967	C.00159)
(1552	SM 1	6DC1967	0.00660)	(1401	MD 2	6MY1967	0.00588)	(			

Epithemia smithii Carruthers

Epithemia proboscidea Wm. Smith, Syn. British Diat., Vol. 1, p. 13, pl. 1, fig. 8. 1853. (non Kütz. 1844).
Epithemia smithii Carruthers *in*: Gray, Handb. British Freshw. Weeds, p. 76. 1864.

218 EPSMITHI TOT NO OF STATIONS 6

(60973	CH	1876	0.02362)	(3541	CH	1FE1881	0.00978)	(46924	CH	10MY1946	C.00071)
(46763	EV	23AU1937	0.02029)	(1285	F 1	15SE1964	0.01165)	(1574	GS22	6DC1967	C.00288)

219 EPSOREXO TOT NO OF STATIONS 6

(1389	GS13	12MY1967	0.00258)	(1396	GS20	13MY1967	C.00074)	(1574	GS22	6DC1967	C.00288)
(1531	GH 1	25SE1967	0.00845)	(1545	WL 1	20C1967	0.00676)	(1550	MR 1	5DC1967	0.03717)

Epithemia turgida (Ehr.) Kütz.

Navicula turgida Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1830:64. 1832.
Epithemia turgida (Ehr.) Kützing, Bacill., p. 34, pl. 5, fig. 14. 1844.

220 EPTURGID TOT NO OF STATIONS 9

(3541	CH	1FE1881	0.03913)	(46752	EV	15SE1937	0.02177)	(1279	E 1	16SE1964	C.00393)
(1555	GS 2	3DC1967	0.00353)	(1565	GS13	5DC1967	0.00507)	(1567	GS15	5DC1967	0.00318)
(1574	GS22	6DC1967	0.01151)	(1575	GS28	6DC1967	0.00129)	(1352	KW 2	21AP1967	C.00859)

Epithemia zebra (Ehr.) Kütz.

Navicula zebra Ehrenberg, Abh. Akad. Wiss. Berlin, 1833:262. 1835.
Epithemia zebra (Ehr.) Kützing, Bacill., p. 34, pl. 5, fig. 7(6)a-c. 1844.

222 EPZEBRA TCT NC OF STATIONS 4

(60973	CH	1876	0.04724)	(3541	CH	1FE1881	0.02935)	(1574	GS22	6OC1967	C.CC288)
(1529	KW 1	20SE1967	0.02398)	(							

Epithemia zebra var. *porcellus* (Kütz.) Grun.

Epithemia porcellus Kützing, Bacill., p. 34, pl. 5, figs. 18-19. 1844.
Epithemia zebra var. *porcellus* (Kütz.) Grunow, Verh. Zool.-Bot. Ges. Wien, 12:328, pl. 6, figs. 3-4. 1862.

221 EPZEBRVP TCT NO OF STATIONS 6

(60973	CH	1876	0.02362)	(46757	EV	25JL1937	0.00481)	(1369	A 4	4MY1967	C.CC373)
(1545	WL 1	20C1967	0.00676)	(1550	MR 1	5OC1967	0.01239)	(1401	MO 2	6MY1967	C.01176)

Genus *Eucocconeis* Cleve
Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 27(3):173. 1895.

Members of the genus *Eucocconeis* are most abundant in benthic communities. Only occasional specimens are noted in our collections.

Eucocconeis flexella (Kütz.) Hust.

Cymbella? flexella Kützing, Bacill., p. 80, pl. 4, fig. 14. 1844.
Eucocconeis flexella (Kütz.) Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 193, fig. 270. 1930.

223 EUFLEXEL TCT NC CF STATIONS 22

(46924	CH	10MY1946	0.00071)	(46516	CH	4MY1947	0.02579)	(46906	CH	MY1947	C.CCC66)
(46919	CH	5JN1947	0.02276)	(1258	F 1	6JL1964	0.00472)	(1279	E 1	16SE1964	0.00393)
(1285	F 1	15SE1964	0.02912)	(1286	F 2	15SE1964	C.01C95)	(1387	GS11	12MY1967	C.CC396)
(1388	GS12	12MY1967	0.04223)	(1389	GS13	12MY1967	C.01031)	(1390	GS14	12MY1967	0.01174)
(1392	GS16	12MY1967	0.00308)	(1393	GS17	13MY1967	C.CC274)	(1394	GS18	13MY1967	C.0C172)
(1565	GS13	5OC1967	0.01014)	(1567	GS15	5OC1967	0.00794)	(1569	GS17	5OC1967	C.0C297)
(1574	GS22	6OC1967	C.00575)	(155C	MR 1	5CC1967	C.02478)	(1403	CA 2	10MY1967	C.05231)
(1404	MO 2	10MY1967	0.03811)	(							

Eucocconeis flexella var. *alpestris* (Brun) Hust.

Achnanthes flexella var. *alpestris* Brun, Diat. Alpes et Jura, p. 30, fig. 26. 1880.
Eucocconeis flexella var. *alpestris* (Brun) Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 193, fig. 271. 1930.

224 EUFLEXVA TCT NO OF STATIONS 8

(1565	GS13	.5CC1967	0.03042)	(1551	ES 1	5CC1967	C.00799)	(1550	MR 1	5OC1967	C.06195)
(1426	MS 2	29MY1967	0.01050)	(1417	HO 2	22MY1967	0.01122)	(1350	BH 2	19AP1967	C.00661)
(1405	ES 2	12MY1967	C.01935)	(1407	SM 2	14MY1967	0.01194)	(			

Eucocconeis lapponica Hust.

Eucocconeis lapponica Hustedt, Naturw. Untersuch. Sarekgebirges Schwedisch-Lappland, Bd. 3, Bot. Heft 6, p. 549, pl. 17, figs. 8-9. 1924.

225	EULAPPCN TOT NC OF STATIONS	1		
(46757	EV	25JL1937	0.00481)	(

Eucocconeis lapponica var. *ninckei* (Reim.) Comb. nov.

Achnanthes ninckei Guermeur and Manguin, Österreichische Bot. Zeitschr., 100(4/5):541, pl. 1, figs. 10-11. 1953.
Achnanthes lapponica var. *ninckei* (Guer. and Mang.) Reimer *in*: Patrick and Reimer, Acad. Nat. Sci. Philadelphia Monogr., 13:259, pl. 16, figs. 29-30. 1966.

226	EULAPPVN TCT NC CF STATICNS	26											
(46758	EV	5JN1937	0.00713)	(46757	EV	25JL1937	0.00481)	(46763	EV	23AU1937	C.08117)		
(46752	EV	15SE1937	0.02177)	(46762	EV	18MR1938	0.04411)	(1270	F 1	10AU1964	C.00272)		
(1285	F 1	15SE1964	0.00582)	(1304	F 1	11CC1964	0.00247)	(1394	GS18	13MY1967	C.0C172)		
(1565	GS13	5DC1967	0.01014)	(1567	GS15	5DC1967	0.00159)	(1572	GS20	6DC1967	C.00090)		
(1574	GS22	6DC1967	C.02013)	(1575	GS28	6DC1967	0.00129)	(1527	TR 1	20SE1967	C.CC629)		
(1529	KW 1	20SE1967	0.01199)	(1552	SM 1	6DC1967	C.00660)	(1550	MR 1	5DC1967	C.18585)		
(1426	MS 2	29MY1967	0.01050)	(1350	BH 2	19AP1967	0.00220)	(1400	SB 2	6MY1967	C.0C596)		
(1403	CA 2	10MY1967	0.05231)	(14C4	MQ 2	10MY1967	C.05081)	(14C5	ES 2	12MY1967	C.C129C)		
(1407	SM 2	14MY1967	0.00597)	(1421	CH 2	23MY1967	0.01735)	(					

Genus *Eunotia* Ehr.
Ehrenberg, Ber. Akad. Wiss. Berlin, 1837:44. 1837.

Members of the genus *Eunotia* find their primary habitat in benthic communities. The majority of species are found only in waters of relatively low pH and total dissolved solids. The specimens taken in the Lake Michigan plankton are undoubtedly derived from either benthic habitats in the lake or, more likely, from streams entering the lake,

Eunotia arcus Ehr.

Eunotia arcus Ehrenberg, Ber. Akad. Wiss. Berlin, 1837:45. 1837.

227	ENARCUS TOT NC OF STATICNS	1		
(1565	GS13	5DC1967	0.0C507)	(

Eunotia arcus var. *bidens* Grun.

Eunotia arcus var. *bidens* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 34, fig. 7. 1881.

229	ENARCUVB TOT NC OF STATIONS	3											
(1388	GS12	12MY1967	0.00603)	(1524	MI 1	20SE1967	0.02189)	(14C4	MQ 2	10MY1967	C.02541)		

Eunotia arcus var. *fallax* Hust.

Eunotia arcus var. *fallax* Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 175, fig. 219. 1930.

228	ENARCUVF TCT NC OF STATIONS	1		
(46768	EV	16MR1938	0.C1470)	(

Eunotia curvata (Kütz.) Lagerst.

Synedra lunaris Ehrenberg, Abh. Akad. Wiss. Berlin, 1831:87. 1832.
Exilaria curvata Kützing, Alg. Dec., No. 112. 1834.
Eunotia lunaris (Ehr.) Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 35, figs. 3-4. 1881. (non de Brébisson, 1864).
Eunotia curvata (Kutz.) Lagerstedt, Öfv. K. Svenska Vet.-Akad. Förh., 41(2):61. 1884.

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230  ENCURVAT TOT NO OF STATIONS    2
( 1550    MR 1        50C1967   0.01239 )  ( 1427    LU 2        29MY1967   0.01211 )  (
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Eunotia diodon Ehr.

Eunotia diodon Ehrenberg, Ber. Akad. Wiss. Berlin, 1837:45. 1837.

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231  ENDIODON TOT NO OF STATIONS    1
( 1404    MQ 2        10MY1967   0.01270 )  (
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Eunotia exigua (Bréb.) Rabh.

Himantidium exiguum de Brébisson *ex* Kützing, Sp. Alg., p. 8. 1849.
Eunotia exigua (Bréb.) Rabenhorst, Fl. Europaea Alg., Sect. 1, p. 73. 1864.

Coll: 1404.

Eunotia flexuosa Bréb.

Eunotia flexuosa de Brébisson *ex* Kützing, Sp. Alg., p. 6. 1849.

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232  ENFLEXUO TOT NO OF STATIONS    1
( 1574    GS22        60C1967   0.00288 )  (
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Eunotia incisa Wm. Smith

Eunotia incisa Wm. Smith *ex* Gregory, Quart. J. Micr. Sci., 2:96, pl. 4, fig. 4. 1854.

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233  ENINCISA TOT NO OF STATIONS    1
( 1417    HO 2        22MY1967   0.00374 )  (
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Eunotia naegelii Migula

Eunotia naegelii Migula *in*: Thomé, Fl. Deutschland, 2(1):203. 1907.

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234  ENNAEGEL TOT NO OF STATIONS    1
( 1404    MQ 2        10MY1967   0.06352 )  (
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Eunotia pectinalis (O. F. Müll.) Rabh.

Conferva pectinalis O. F. Müller, Nova Octa Acad. Sci. Petropolitane, 3(Hist.):91, pl. 1, figs. 4-7. 1788.
Eunotia pectinalis (O. F. Müll.) Rabenhorst, Fl. Europaea Alg., Sect. 1, p. 73. 1864.

Coll: 1404.

Eunotia praerupta Ehr.

Eunotia praerupta Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:414. 1843.

235 ENPRAERU TOT NO OF STATIONS 4

(1304	F 1	11OC1964	0.00247)	(1388	GS12	12MY1967	0.00603)	(1569	GS17	5OC1967	C.0C149)		
(1553	SG 1	6OC1967	0.00734)	(									

Eunotia serra Ehr.

Eunotia serra Ehrenberg, Ber. Akad. Wiss. Berlin, 1837:45. 1837.

Coll: 1092.

Eunotia trinacria Krasske

Eunotia trinacria Krasske, Bot. Arch., 27:349, fig. 1. 1929.

236 ENTRINAC TOT NO OF STATIONS 1

(1404	MO 2	10MY1967	0.0127C)	(

Genus *Fragilaria* Lyngb.
Lyngbye, Tent. Hydrophyt. Danicae, p. 182. 1819.

Fragilaria brevistriata Grun.

Fragilaria brevistriata Grunow *in*: Van Heurck, Syn. Diat. Belgique, p. 157, pl. 45, fig. 32. 1885.

Cells rectangular, in life united by the valve faces into band-shaped colonies of varying length. Valves linear with subrostrate apices, specimens from Lake Michigan 10-30μ long, 3-5μ broad. The striae are short, marginal, slightly radiate, about 13-16 in 10μ. Due to the shortening of the striae the pseudoraphe is a broad, linear-lanceolate space, without ornamentation, occupying most of the valve surface.

Most of our records of this taxon come from inshore areas in Lake Michigan. Published records indicate that it reaches its greatest abundance in smaller mesotrophic to eutrophic lakes.

237 FRBREVIS TOT NO OF STATIONS 55

(60973	CH	1876	0.04724)	(46921	CH	23NO1945	0.00129)	(46909	CH	MR1947	C.00455)		
(46906	CH	MY1947	0.00066)	(46763	EV	23AU1937	0.02029)	(1227	C' 2	13MY1964	C.00110)		
(1253	C' 2	16JU1964	0.00228)	(1275	D 2	17SE1964	0.00645)	(1279	E 1	16SE1964	C.01178)		

(1284	E 6	17SE1964	0.00318)	(1285	F 1	15SE1964	0.01747)	(1292	D 1	15OC1964	0.00373)
(1304	F 1	11OC1964	0.00247)	(1342	A 4	19AP1967	0.00361)	(1411	C 3	31MY1967	C.CC410)
(1538	E 5	23SE1967	0.00552)	(1388	GS12	12MY1967	0.01207)	(1389	GS13	12MY1967	C.00258)
(1390	GS14	12MY1967	0.00587)	(1392	GS16	12MY1967	0.01233)	(1394	GS18	13MY1967	C.00344)
(1395	GS19	13MY1967	0.00117)	(1396	GS20	13MY1967	0.00592)	(1397	GS21	13MY1967	C.CC065)
(1398	GS22	14MY1967	0.00304)	(1565	GS13	5OC1967	C.07606)	(1567	GS15	5OC1967	C.00159)
(1569	GS17	5OC1967	0.00149)	(1570	GS18	5OC1967	0.00992)	(1572	GS20	6OC1967	C.01352)
(1573	GS21	6OC1967	C.00672)	(1574	GS22	6OC1967	C.02013)	(1575	GS28	6OC1967	C.CC516)
(1544	MU 1	2CC1967	0.00477)	(1546	LU 1	2OC1967	C.02001)	(1520	HO 1	18SE1967	C.26875)
(1521	SH 1	18SE1967	0.CC577)	(1526	MO 1	20SE1967	C.01138)	(1527	TR 1	20SE1967	C.CC629)
(1531	GH 1	25SE1967	0.01691)	(1545	WL 1	2OC1967	C.04730)	(1552	SM 1	6CC1967	C.02641)
(1550	MR 1	5OC1967	1.98241)	(1553	SG 1	6OC1967	0.03672)	(1428	MU 2	29MY1967	C.CC603)
(1426	MS 2	29MY1967	0.02100)	(1351	MI 2	21AP1967	C.00310)	(1417	HO 2	22MY1967	0.04486)
(1350	BH 2	19AP1967	0.63435)	(1401	MO 2	6MY1967	0.01176)	(1352	KW 2	21AP1967	C.00859)
(1354	GH 2	25AP1967	0.00518)	(1404	MO 2	10MY1967	C.05081)	(1407	SM 2	14MY1967	C.02388)
(1406	GB 2	13MY1967	0.00270)	(							

Fragilaria brevistriata var. *capitata* Hérib.

Fragilaria brevistriata var. *inflata* Héribaud, Foss. Diat. Auvergne, vol. 2, p. 92, pl. 12, fig. 18. 1903.

The valves of this entity are lanceolate with subcapitate to capitate apices. All other features are as in the nominate variety.

Grunow's prior figure of *F. brevistriata* var. *subcapitata* (in Van Heurck 1881) is apparently without standing because of his failure to either figure or describe the nominate variety until 1885 (for discussion see Patrick and Reimer 1966).

Coll: 827.

Fragilaria brevistriata var. *inflata* (Pant.) Hust.

Fragilaria inflata Pantocsek, Res. Wiss. Erforsh. Balatonsees, vol. 2, p. 79, pl. 9, figs. 219-221. 1902.
Fragilaria brevistriata var. *inflata* (Pant.) Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 145, fig. 152. 1930.

The valves of this entity are elliptic-lanceolate with rostrate to subcapitate ends. Other features as in the nominate variety.

238 FRBREVVI TCT NO OF STATIONS ..

(46764	EV	17JL1937	0.01612)	(46767	EV	27CC1937	0.00387)	(1260	F 3	6JL1964	C.CC191)
(1532	A 3	18SE1967	0.00329)	(1396	GS20	13MY1967	0.00370)	(1398	GS22	14MY1967	C.00304)
(1565	GS13	5OC1967	C.07099)	(1569	GS17	5CC1967	0.00149)	(1571	GS19	6OC1967	C.CC117)
(1522	BH 1	18SE1967	0.00182)	(1526	MO 1	20SE1967	0.00569)	(1530	FR 1	24SE1967	C.01000)
(1549	MO 1	4OC1967	0.01370)	(1552	SM 1	6OC1967	C.01321)	(1550	MR 1	5OC1967	C.04956)
(1428	MU 2	29MY1967	0.00603)	(1426	MS 2	29MY1967	C.01050)	(1350	BH 2	19AP1967	C.01542)
(1404	MO 2	10MY1967	0.01270)	(							

Fragilaria capucina Desm.

Fragilaria capucina Desmazieres, Plant. Crypt. Nord France, 1st. ed., Fasc. 10, no. 453. 1825.

Cells rectangular, in life united into closely appressed, band-shaped colonies by the valve faces. Specimens from Lake Michigan 15-80μ long, 2-5μ broad. Valves linear with bluntly rounded, usually more or less cuneate apices. Striae perpendicular to the midline of the valve throughout its length, 14-18 in 10μ, without visible substructure. Pseudoraphe linear, narrow, at the center of the valve expanded into a transverse fascia sometimes extending to the margin of the valve. In specimens in which the fascia does not reach the margin of the valve it is irregularly bordered by indistinct striae.

In Lake Michigan this entity is common in collections from inshore areas, and occasional populations are found in collections from the open lake. Published reports indicate that it reaches its greatest abundance in mesotrophic to eutrophic lakes.

239 FRCAPUCI (OT NO OF STATIONS 318

(60973	CH	1876	0.23618)	(3540	CH	11MY1875	0.04659)	(3541	CH	1FE1881	0.01956)
(3507	CH	19FE1881	0.05660)	(46910	CH	DC1945	0.04806)	(46921	CH	23NO1945	0.04656)
(46908	CH	DE1945	0.65458)	(46917	CH	12JA1946	0.03022)	(46915	CH	20FE1946	0.26177)
(46914	CH	19AP1946	0.07688)	(46924	CH	10MY1946	0.55026)	(46923	CH	22NO1946	1.77689)
(46920	CH	20DE1946	0.86114)	(46905	CH	JA1947	4.30200)	(46909	CH	MR1947	0.09562)
(46912	CH	AP1947	2.74807)	(46916	CH	4MY1947	0.01221)	(46906	CH	MY1947	0.47454)
(46919	CH	5JN1947	0.02124)	(46907	CH	JL1947	1.02568)	(46913	CH	6AU1947	5.10407)
(46922	CH	21AU1947	1.48059)	(46758	EV	5JN1937	0.22110)	(46771	EV	11JN1937	0.13314)
(46743	EV	20JN1937	2.15809)	(46745	EV	3JL1937	7.60711)	(46770	EV	9JL1937	4.50859)
(46764	EV	17JL1937	10.60435)	(46757	EV	25JL1937	2.29166)	(46747	EV	1AU1937	3.46560)
(46763	EV	23AU1937	0.60877)	(46765	EV	30AU1937	0.01115)	(46769	EV	7SE1937	0.08684)
(46752	EV	15SE1937	0.82717)	(46760	EV	22SE1937	1.10296)	(46750	EV	24SE1937	1.45167)
(46744	EV	6OC1937	1.91182)	(46748	EV	13OC1937	0.49103)	(46767	EV	27OC1937	0.43325)
(46749	EV	12MR1938	0.40053)	(46768	EV	16MR1938	0.58798)	(46762	EV	18MR1938	0.02206)
(46751	EV	30MR1938	0.02233)	(46772	EV	18AP1938	0.03549)	(46756	EV	27AP1938	0.01343)
(46759	EV	19MY1938	0.01013)	(46761	EV	27MY1938	0.19078)	(46766	EV	14DE1938	2.94677)
(1223	B 3	18MY1964	0.00938)	(1224	B 4	18MY1964	0.00392)	(1225	C 6	15MY1964	0.14112)
(1226	C 7	16MY1964	0.45282)	(1227	C' 2	13MY1964	0.09102)	(1228	D 2	14MY1964	0.12262)
(1229	D 5	14MY1964	0.11630)	(1230	E 2	16MY1964	0.48896)	(1232	E 5	16MY1964	0.07826)
(1233	B 3	5JN2964	0.04048)	(1234	B 3	18JN1964	0.21649)	(1235	C 7	16JN1964	0.72302)
(1439	B 6	5JN1964	0.10589)	(1236	C' 1	8JN1964	0.49009)	(1237	C' 2	8JN1964	0.16499)
(1238	D 3	11JN1964	0.09000)	(1239	D 4	11JN1964	0.20308)	(1240	D 6	10JN1964	0.08130)
(1241	E 2	13JN1964	0.51749)	(1242	E 3	13JN1964	0.00599)	(1243	E 6	13JN1964	0.07517)
(1244	F 1	11JN1964	0.84427)	(1245	F 2	11JN1964	0.32501)	(1246	F 3	11JN1964	0.05379)
(1247	B 3	14JL1964	0.02561)	(1248	B 3	24JL1964	0.00788)	(1440	B 6	11JL1964	0.27269)
(1441	B 6	24JL1964	0.12996)	(1249	C 3	8JL1964	0.38023)	(1250	C 6	10JL1964	0.37410)
(1251	C 7	16JL1964	0.88070)	(1252	C' 1	16JL1964	0.35425)	(1253	C' 2	16JL1964	0.08673)
(1254	D 2	15JL1964	0.10151)	(1255	D 5	15JL1964	0.01797)	(1256	E 2	14JL1964	0.12823)
(1257	E 3	14JL1964	0.00957)	(1258	F 1	6JL1964	1.65184)	(1259	F 2	6JL1964	0.43381)
(1260	F 3	6JL1964	0.24830)	(1261	B 3	2AU1964	0.02747)	(1262	B 3	17AU1964	0.00840)
(1442	B 6	2AU1964	0.15353)	(1443	B 6	16AU1964	0.01581)	(1263	C 7	15AU1964	0.00801)
(1264	C' 1	10AU1964	0.09654)	(1265	C' 2	10AU1964	0.06483)	(1266	D 3	18AU1964	0.01052)
(1267	D 6	18AU1964	0.03891)	(1268	E 2	15AU1964	0.03556)	(1269	E 3	15AU1964	0.00822)
(1270	F 1	10AU1964	0.08713)	(1444	B 6	19SE1964	0.00303)	(1271	C 7	22SE1964	0.61370)
(1272	C' 1	10SE1964	0.30374)	(1273	C' 2	10SE1964	0.01075)	(1274	D 1	17SE1964	0.03284)
(1275	D 2	17SE1964	0.07096)	(1276	D 3	18SE1964	0.04470)	(1277	D 4	18SE1964	0.03718)
(1278	D 6	18SE1964	0.10377)	(1279	E 1	16SE1964	0.10995)	(1280	E 2	16SE1964	0.00681)
(1281	E 3	16SE1964	0.00785)	(1282	E 4	16SE1964	0.02216)	(1283	E 5	16SE1964	0.07969)
(1284	E 6	17SE1964	3.78102)	(1285	F 1	15SE1964	0.04659)	(1286	F 2	15SE1964	0.04378)
(1287	F 3	15SE1964	0.01501)	(1288	B 3	15OC1964	1.14284)	(1445	B 6	14OC1964	0.05871)
(1289	C 7	14OC1964	0.13632)	(1290	C' 1	16OC1964	2.91832)	(1291	C' 2	16OC1964	1.02735)
(1292	D 1	15OC1964	0.52177)	(1293	D 2	15OC1964	0.01415)	(1294	D 3	15OC1964	0.11867)
(1295	D 4	15OC1964	0.24379)	(1296	D 5	14OC1964	0.03147)	(1297	D 6	14OC1964	0.03998)
(1298	E 1	12OC1964	0.32044)	(1299	E 2	12OC1964	0.43984)	(1300	E 3	13OC1964	0.12529)
(1301	E 4	13OC1964	0.02208)	(1302	E 5	13OC1964	1.41712)	(1303	E 6	13OC1964	1.95903)
(1304	F 1	11OC1964	0.01235)	(1305	F 2	11OC1964	0.02588)	(1306	F 3	11OC1964	0.01109)
(1307	B 6	NO1964	0.06494)	(1308	C 7	6NO1964	0.11558)	(1309	C' 1	10NO1964	0.28139)
(1310	C' 2	10NO1964	0.20635)	(1311	D 1	8NO1964	0.22703)	(1312	D 2	8NO1964	0.43458)
(1313	D 3	9NO1964	0.02703)	(1314	D 4	9NO1964	0.03732)	(1315	D 5	9NO1964	0.02730)
(1316	D 6	9NO1964	0.24176)	(1317	E 1	6NO1964	0.04021)	(1318	E 2	7NO1964	0.03995)
(1319	E 3	7NO1964	0.02356)	(1320	E 4	7NO1964	0.05171)	(1321	E 5	7NO1964	0.44691)
(1322	E 6	7NO1964	0.46656)	(1323	F 1	6NO1964	0.01254)	(1324	F 2	6NO1964	0.03028)
(1325	F 3	6NO1964	0.07053)	(1336	C 3	27JA1967	0.00578)	(1337	C 3	2MR1967	0.41153)
(1338	C 3	28MR1967	0.07405)	(1339	C 5	28MR1967	0.00624)	(1340	C 7	28MR1967	0.20361)
(1341	A 3	19AP1967	0.05424)	(1342	A 4	19AP1967	0.00361)	(1343	A 6	19AP1967	0.15840)
(1344	C 3	25AP1967	0.02316)	(1345	C 5	25AP1967	0.00390)	(1346	C 7	21AP1967	0.11750)
(1347	E 2	23AP1967	0.00976)	(1348	E 5	23AP1967	0.04249)	(1368	A 3	4MY1967	0.06598)
(1369	A 4	4MY1967	0.00745)	(1370	A 6	3MY1967	0.64449)	(1371	C 3	4MY1967	0.02539)
(1373	C 7	5MY1967	0.00570)	(1374	E 2	7MY1967	0.02092)	(1375	E 3	7MY1967	0.00241)
(1376	E 5	6MY1967	0.10962)	(1408	A 3	23MY1967	0.08049)	(1409	A 4	23MY1967	0.00298)
(1410	A 6	24MY1967	0.19734)	(1411	C 3	31MY1967	0.03282)	(1412	C 5	31MY1967	0.00842)
(1413	C 7	25MY1967	0.01895)	(1414	E 2	28MY1967	0.00336)	(1415	E 3	28MY1967	0.00450)
(1416	E 5	28MY1967	0.03718)	(1431	A 3	12JN1967	0.12359)	(1432	A 4	13JN1967	0.01533)
(1433	C 3	17JN1967	0.11626)	(1434	C 5	17JN1967	0.00598)	(1435	C 7	13JN1967	3.31513)
(1436	E 2	15JN1967	0.00724)	(1437	E 3	15JN1967	0.00538)	(1438	E 5	14JN1967	0.14887)
(1446	A 3	11JL1967	0.31065)	(1447	A 4	11JL1967	0.65494)	(1448	A 6	10JL1967	4.85234)
(1449	C 3	16JL1967	0.15667)	(1450	C 5	16JL1967	0.00190)	(1451	C 7	16JL1967	14.74351)
(1452	E 2	14JL1967	4.47056)	(1453	E 3	15JL1967	0.01264)	(1454	E 5	15JL1967	2.80056)
(1504	A 3	28AU1967	0.12344)	(1506	A 6	29AU1967	2.74625)	(1509	C 5	2SE1967	0.01514)

(1510	C 7	29AU1967	0.11065)	(1511	E 2	1SE1967	C.53719)	(1512	E 3	1SE1967	C.24737)
(1513	E 5	31AU1967	1.18577)	(1532	A 3	18SE1967	4.13915)	(1533	A 4	19SE1967	1.20230)
(1534	A 6	19SE1967	4.77771)	(1535	C 7	20SE1967	2.59117)	(1536	E 2	24SE1967	C.35175)
(1537	E 3	24SE1967	0.06038)	(1538	E 5	23SE1967	0.17124)	(1539	C 3	4OC1967	1.72587)
(1540	C 5	4OC1967	C.66015)	(1541	E 2	11OC1967	2.60763)	(1542	E 3	11CC1967	C.C6611)
(1543	E 5	10OC1967	0.35914)	(1377	GS 1	9MY1967	0.05541)	(1378	GS 2	9MY1967	C.18082)
(1379	GS 3	9MY1967	2.38301)	(1380	GS 4	9MY1967	0.58853)	(1381	GS 5	10MY1967	C.61060)
(1382	GS 6	10MY1967	0.38858)	(1383	GS 7	10MY1967	3.18114)	(1384	GS 8	10MY1967	C.64701)
(1385	GS 9	10MY1967	1.64818)	(1386	GS10	12MY1967	1.00546)	(1387	GS11	12MY1967	1C.81274)
(1388	GS12	12MY1967	15.62594)	(1389	GS13	12MY1967	53.24496)	(1390	GS14	12MY1967	43.15912)
(1391	GS15	12MY1967	25.47527)	(1392	GS16	12MY1967	33.22340)	(1393	GS17	13MY1967	28.76396)
(1394	GS18	13MY1567	49.60951)	(1395	GS19	13MY1967	38.47147)	(1396	GS2C	13MY1567	41.C7135)
(1397	GS21	13MY1967	30.90396)	(1398	GS22	14MY1967	6.80086)	(1554	GS 1	3OC1967	C.26329)
(1555	GS 2	3OC1967	0.10946)	(1556	GS 3	3OC1967	C.49017)	(1557	GS 4	3OC1967	C.06353)
(1558	GS 5	4OC1967	0.25369)	(1559	GS 7	4CC1967	0.04896)	(1560	GS 8	4OC1967	C.02834)
(1561	GS 9	4OC1967	0.02935)	(1562	GS10	5OC1967	C.03454)	(1563	GS11	5OC1967	C.C6313)
(1564	GS12	5OC1967	0.32919)	(1565	GS13	5OC1967	0.18254)	(1566	GS14	5OC1967	C.70629)
(1567	GS15	5OC1967	1.11139)	(1568	GS16	5OC1967	1.41412)	(1569	GS17	5OC1967	6.86754)
(1570	GS18	5OC1967	9.71837)	(1571	GS19	6OC1967	44.00943)	(1572	GS20	6OC1967	55.83495)
(1573	GS21	6OC1967	18.50089)	(1574	GS22	6CC1967	0.04890)	(1575	GS28	6OC1967	26.66718)
(1544	MU 1	2OC1967	0.38125)	(1547	MS 1	2OC1967	0.74251)	(1524	MI 1	2OSE1967	28.02101)
(1546	LU 1	2OC1967	0.88031)	(1520	HO 1	18SE1967	0.43849)	(1521	SH 1	18SE1967	C.92315)
(1522	BH 1	18SE1967	0.01276)	(1523	RA 1	19SE1967	23.46863)	(1525	PW 1	2OSE1967	5.79306)
(1526	MO 1	2OSE1967	3.73215)	(1527	TR 1	2OSE1967	1.30818)	(1528	SB 1	2OSE1967	3.23419)
(1529	KW 1	2OSE1967	1.30711)	(1530	FR 1	24SE1967	0.35003)	(1531	GH 1	25SE1967	C.21133)
(1545	WL 1	2OC1567	2.05419)	(1548	CA 1	3OC1967	C.44524)	(1549	MQ 1	4OC1967	C.65780)
(1551	ES 1	5OC1967	8.17957)	(1552	SM 1	6OC1967	7.28953)	(1550	MR 1	5OC1967	5.55074)
(1553	SG 1	6OC1967	8.93067)	(1428	MU 2	29MY1967	1.97656)	(1426	MS 2	29MY1567	5.71129)
(1351	MI 2	21AP1967	0.89372)	(1427	LU 2	29MY1967	1.42857)	(1417	HO 2	22MY1967	8.13519)
(1418	SH 2	22MY1967	27.37169)	(1350	BH 2	19AP1967	1.12773)	(1425	RA 2	25MY1967	13.43825)
(1399	PW 2	5MY1967	5.22307)	(1401	MC 2	6MY1967	3.76293)	(1402	TR 2	6MY1567	5.8C463)
(1400	SB 2	6MY1967	3.43102)	(1352	KW 2	21AP1967	7.69627)	(1353	FR 2	23AP1967	1.85654)
(1354	GH 2	25AP1967	2.37508)	(1429	WL 2	29MY1967	8.49347)	(1403	CA 2	10MY1967	2.51079)
(1404	MQ 2	10MY1967	13.82114)	(1405	ES 2	12MY1967	65.63467)	(1407	SM 2	14MY1967	31.81465)
(1349	CI 2	19AP1967	1.14951)	(1406	GB 2	13MY1967	5.47783)	(1419	BU 2	23MY1967	5.56573)
(1420	TH 2	23MY1967	7.97583)	(1421	CH 2	23MY1967	5.55170)	(1422	GA 2	23MY1967	5.23721)
(1423	WA 2	25MY1967	25.89816)	(1424	KN 2	25MY1967	13.85558)	(1430	PC 2	12JN1967	1.5544C)

Fragilaria capucina var. *lanceolata* Grun.

Fragilaria capucina var. *lanceolata* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 45, fig. 5. 1881.

Valves elongate, lanceolate, evenly narrowed from near the center to the ends. Ends usually slightly capitate. Other features the same as in the nominate variety.

Although this entity has essentially the same distribution as the nominate variety in Lake Michigan, it is usually more abundant in offshore collections. As is true of many taxa in the genus, the shape of the valve is quite variable.

240 FRCAPUVL TOT NO OF STATIONS 142

(46910	CH	0C1945	0.00328)	(46921	CH	23N01945	0.01681)	(46917	CH	12JA1946	0.02246)
(46915	CH	20FE1946	0.18210)	(46914	CH	19AP1946	0.08649)	(46924	CH	10MY1946	0.41269)
(46923	CH	22N01946	2.20090)	(46920	CH	20DE1946	0.68090)	(46905	CH	JA1947	C.02451)
(46909	CH	MR1947	0.02732)	(46912	CH	AP1947	0.05749)	(46916	CH	4MY1947	0.05497)
(46906	CH	MY1947	0.03916)	(46919	CH	5JN1947	0.00607)	(46907	CH	JL1947	C.35258)
(46913	CH	6AU1947	0.09413)	(46922	CH	21AU1947	0.34652)	(46758	EV	5JN1937	0.01426)
(46771	EV	11JN1937	0.12125)	(46743	EV	20JN1937	0.26548)	(46770	EV	9JL1937	C.31011)
(46764	EV	17JL1937	0.03223)	(46757	EV	25JL1937	0.02407)	(46747	EV	1AU1937	0.15348)
(46765	EV	30AU1937	0.34579)	(46769	EV	7SE1937	0.02171)	(46752	EV	15SE1937	0.02177)
(46760	EV	22SE1937	1.19159)	(46750	EV	24SE1937	0.07541)	(46744	EV	6OC1937	0.68279)
(46767	EV	27OC1937	1.40807)	(46749	EV	12MR1938	0.80107)	(46768	EV	16MR1938	0.04410)
(46762	EV	18MR1938	0.26467)	(46751	EV	30MR1938	0.03350)	(46772	EV	18AP1938	C.12775)
(46756	EV	27AP1938	0.02183)	(46759	EV	19MY1938	C.08778)	(46761	EV	27MY1938	0.71405)
(46766	EV	14DE1938	1.15653)	(1234	B 3	18JN1964	0.00843)	(1439	B 6	5JN1964	0.00599)
(1237	C' 2	8JN1964	0.01289)	(1238	C 3	11JN1964	0.00400)	(1239	D 4	11JN1964	C.0C232)
(1241	E 2	13JN1964	0.00296)	(1243	E 6	13JN1964	C.C1670)	(1244	F 1	11JN1964	C.0C548)
(1245	F 2	11JN1964	C.00692)	(1247	B 3	14JL1964	0.01281)	(1248	B 3	24JL1964	C.C1182)
(1440	B 6	11JL1964	0.05528)	(1441	B 6	24JL1964	0.00441)	(1249	C 3	8JL1964	C.00543)
(1250	C 6	10JL1964	0.00822)	(1251	C 7	16JL1964	0.04925)	(1252	C' 1	16JL1964	C.09484)
(1253	C' 2	16JL1964	0.00913)	(1254	D 2	15JL1964	0.01532)	(1255	D 5	15JL1964	C.0C513)
(1256	E 2	14JL1964	0.00550)	(1258	F 1	6JL1964	C.00708)	(1259	F 2	6JL1964	0.CC620)
(1261	B 3	2AU1964	0.00196)	(1442	B 6	2AU1964	0.02047)	(1443	B 6	16AU1964	0.00198)
(1264	C' 1	10AU1964	0.08109)	(1265	C' 2	10AU1964	0.00894)	(1266	D 3	18AU1964	0.0C351)
(1267	D 6	18AU1964	0.00865)	(1268	E 2	15AU1964	C.00547)	(1270	F 1	10AU1964	0.00272)
(1271	C 7	22SE1964	0.01306)	(1272	C' 1	10SE1964	0.00410)	(1282	E 4	16SE1964	0.01108)
(1283	E 5	16SE1964	0.01226)	(1288	B 3	15OC1964	0.01306)	(1445	B 6	14OC1964	0.04566)
(1289	C 7	14OC1964	0.02199)	(1290	C' 1	16OC1964	0.00379)	(1291	C' 2	16OC1964	0.00734)
(1292	D 1	15OC1964	0.00373)	(1293	D 2	15OC1964	0.01415)	(1294	D 3	15OC1964	0.0C659)
(1296	D 5	14OC1964	0.01180)	(1298	E 1	12OC1964	C.00269)	(1299	E 2	12OC1964	C.01885)
(1300	E 3	13OC1964	0.01432)	(1301	E 4	13OC1964	0.00883)	(1302	E 5	13OC1964	0.00810)

(1303	E 6	13OC1964	0.02239)	(1305	F 2	11OC1964	0.00173)	(1308	C 7	6NO1964	C.02433)
(1310	C' 2	10NO1964	0.00227)	(1312	D 2	8NO1964	0.00621)	(1316	D 6	9NO1964	C.00756)
(1317	E 1	6NO1964	0.00766)	(1318	E 2	7NO1964	C.00380)	(1320	E 4	7NO1964	0.00620)
(1321	E 5	7NO1964	C.00638)	(1322	E 6	7NO1964	0.02999)	(1323	F 1	6NO1964	C.00557)
(1324	F 2	6NO1964	0.00699)	(1337	C 3	2MR1967	0.00294)	(1339	C 5	28MR1967	0.00312)
(1340	C 7	28MR1967	0.00073)	(1343	A 6	19AP1967	0.00208)	(1375	E 3	7MY1967	C.00241)
(1414	E 2	28MY1967	0.00336)	(1448	A 6	10JL1967	0.01061)	(1454	E 5	15JL1967	C.00800)
(1512	E 3	1SE1967	0.00393)	(1532	A 3	18SE1967	0.00329)	(1533	A 4	19SE1967	0.00928)
(1535	C 7	20SE1967	0.00322)	(1536	E 2	24SE1967	0.00818)	(1541	E 2	11OC1967	C.00532)
(1542	E 3	11OC1967	0.01017)	(1380	GS 4	9MY1967	C.00504)	(1554	GS 1	3OC1967	C.01067)
(1563	GS11	5OC1967	0.00234)	(1569	GS17	5OC1967	0.00149)	(1571	GS19	6OC1967	0.00410)
(1572	GS20	6OC1967	0.00270)	(1573	GS21	6OC1967	0.00112)	(1547	MS 1	2OC1967	C.03992)
(1522	BH 1	18SE1967	0.00182)	(1526	MO 1	20SE1967	0.01138)	(1529	KW 1	20SE1967	0.01199)
(1548	CA 1	3OC1967	0.05088)	(1552	SM 1	6OC1967	0.03962)	(1553	SG 1	6OC1967	C.00734)
(1428	MU 2	29MY1967	0.02109)	(1417	MO 2	22MY1967	0.01122)	(1418	SH 2	22MY1967	C.07776)
(1350	BH 2	19AP1967	0.11674)	(1352	KW 2	21AP1967	0.24910)	(1354	GH 2	25AP1967	C.00345)
(1429	WL 2	29MY1967	0.19110)	(1407	SM 2	14MY1967	0.04180)	(1349	CI 2	19AP1967	C.00359)
(1406	GB 2	13MY1967	0.02696)	(							

Fragilaria capucina var. *mesolepta* Rabh.

Fragilaria capucina var. *mesolepta* Rabenhorst, Fl. Europaea Alg., Sect. 1, p. 118. 1864.

Valves constricted at the central area, either linear or slightly expanded between the central area and the ends. The central area is usually a hyaline fascia. Ends of the valves rostrate to subcapitate. Size range and ornamentation of the valve the same as in the nominate variety.

The distribution and abundance of this entity in Lake Michigan is essentially the same as for the nominate variety.

241 FRCAPUVM TOT NO OF STATIONS 176

(3540	CH	11MY1879	0.02796)	(3507	CH	19FE1881	0.04528)	(46910	CH	0C1945	C.00218)
(46921	CH	23NO1945	0.00453)	(46908	CH	DE1945	C.01007)	(46917	CH	12JA1946	0.00083)
(46914	CH	19AP1946	0.00214)	(46924	CH	10MY1946	0.00282)	(46923	CH	22NO1946	C.00437)
(46920	CH	20DE1946	0.00092)	(46909	CH	MR1947	0.02277)	(46912	CH	AP1947	C.03449)
(46916	CH	4MY1947	0.00204)	(46906	CH	MY1947	C.00066)	(46919	CH	5JN1947	0.00759)
(46907	CH	JL1947	0.00444)	(46913	CH	6AU1947	C.01046)	(46922	CH	21AU1947	C.00097)
(46758	EV	5JN1937	0.07489)	(46771	EV	11JN1937	0.00238)	(46743	EV	20JN1937	C.26548)
(46745	EV	3JL1937	0.06270)	(46770	EV	9JL1937	C.31011)	(46764	EV	17JL1937	1.49879)
(46757	EV	25JL1937	C.24553)	(46747	EV	1AU1937	0.69312)	(46760	EV	22SE1937	0.00985)
(46748	EV	13OC1937	0.10675)	(46749	EV	12MR1938	0.02427)	(46768	EV	16MR1938	C.01470)
(46756	EV	27AP1938	0.00672)	(46759	EV	19MY1938	0.00338)	(1224	B 4	18MY1964	C.00196)
(1226	C 7	16MY1964	0.01142)	(1227	C' 2	13MY1964	0.00439)	(1228	D 2	14MY1964	C.00584)
(1230	E 2	16MY1964	0.01185)	(1232	E 5	16MY1964	0.00348)	(1233	B 3	5JN2964	C.00238)
(1234	B 3	18JN1964	0.00562)	(1439	B 6	5JN1964	0.00599)	(1236	C' 1	8JN1964	C.12952)
(1237	C' 2	8JN1964	0.00516)	(1239	D 4	11JN1964	0.00232)	(1241	E 2	13JN1964	C.00296)
(1243	E 6	13JN1964	0.01253)	(1244	F 1	11JN1964	C.00877)	(1245	F 2	11JN1964	C.01037)
(1246	F 3	11JN1964	0.00598)	(1441	B 6	24JL1964	0.00220)	(1249	C 3	8JL1964	0.03802)
(1252	C' 1	16JL1964	C.00279)	(1253	C' 2	16JL1964	0.00228)	(1254	D 2	15JL1964	C.00192)
(1258	F 1	6JL1964	0.03540)	(1259	F 2	6JL1964	0.01239)	(1260	F 3	6JL1964	0.01719)
(1262	B 3	17AU1964	0.00210)	(1264	C' 1	10AU1964	0.00579)	(1265	C' 2	10AU1964	C.00224)
(1268	E 2	15AU1964	0.00274)	(1270	F 1	10AU1964	0.00272)	(1279	E 1	16SE1964	0.00785)
(1283	E 5	16SE1964	0.00613)	(1284	E 6	17SE1964	0.00635)	(1288	B 3	15OC1964	C.03701)
(1289	C 7	14OC1964	0.00440)	(1290	C' 1	16OC1964	0.03411)	(1291	C' 2	16OC1964	C.22993)
(1292	D 1	15OC1964	0.02609)	(1294	D 3	15OC1964	0.00659)	(1298	E 1	12OC1964	0.02154)
(1299	E 2	12OC1964	0.09739)	(1300	E 3	13OC1964	0.02148)	(1301	E 4	13OC1964	C.01325)
(1302	E 5	13OC1964	0.02429)	(1303	E 6	13OC1964	0.03918)	(1304	F 1	11OC1964	0.00247)
(1305	F 2	11OC1964	0.00863)	(1306	F 3	11OC1964	0.00277)	(1307	B 6	NO1964	C.01082)
(1308	C 7	6NO1964	0.00912)	(1309	C' 1	10NO1964	0.01286)	(1310	C' 2	10NO1964	0.01134)
(1311	D 1	8NO1964	0.02064)	(1312	D 2	8NO1964	0.01862)	(1313	D 3	9NO1964	C.00386)
(1316	D 6	9NO1964	0.00756)	(1318	E 2	7NO1964	0.00380)	(1320	E 4	7NO1964	0.00414)
(1321	E 5	7NO1964	0.01915)	(1322	E 6	7NO1964	0.01666)	(1324	F 2	6NO1964	C.00466)
(1337	C 3	2MR1967	0.00147)	(1338	C 3	28MR1967	0.00397)	(1341	A 3	19AP1967	C.00217)
(1343	A 6	19AP1967	0.00069)	(1370	A 6	3MY1967	C.00230)	(1375	E 3	7MY1967	C.00241)
(1376	E 5	6MY1967	0.00562)	(1410	A 6	24MY1967	0.00564)	(1416	E 5	28MY1967	C.00219)
(1435	C 7	13JN1967	0.00316)	(1447	A 4	11JL1967	0.00234)	(1448	A 6	10JL1967	C.02122)
(1449	C 3	16JL1967	0.01146)	(1451	C 7	16JL1967	0.03543)	(1452	E 2	14JL1967	0.01277)
(1454	E 5	15JL1967	0.01400)	(1511	E 2	1SE1967	0.00614)	(1532	A 3	18SE1967	C.00657)
(1533	A 4	19SE1967	0.00928)	(1534	A 6	19SE1967	0.01861)	(1535	C 7	20SE1967	C.00644)
(1536	E 2	24SE1967	0.01091)	(1538	E 5	23SE1967	0.00552)	(1541	E 2	11OC1967	C.02661)
(1378	GS 2	9MY1967	0.00841)	(1379	GS 3	9MY1967	0.05261)	(1380	GS 4	9MY1967	C.00841)
(1381	GS 5	10MY1967	0.00477)	(1382	GS 6	10MY1967	0.00555)	(1383	GS 7	10MY1967	C.01069)
(1384	GS 8	10MY1967	0.00185)	(1385	GS 9	10MY1967	0.00471)	(1386	GS10	12MY1967	C.01149)
(1387	GS11	12MY1967	0.01584)	(1388	GS12	12MY1967	0.04223)	(1389	GS13	12MY1967	0.32746)
(1390	GS14	12MY1967	0.20552)	(1391	GS15	12MY1967	0.06704)	(1392	GS16	12MY1967	C.02157)
(1393	GS17	13MY1967	0.17532)	(1394	GS18	13MY1967	0.12041)	(1395	GS19	13MY1967	C.25836)
(1396	GS20	13MY1967	0.12652)	(1397	GS21	13MY1967	0.04578)	(1398	GS22	14MY1967	0.02125)
(1556	GS 3	3OC1967	0.00521)	(1564	GS12	5OC1967	0.00329)	(1567	GS15	5OC1967	C.00318)
(1568	GS16	5OC1967	0.00577)	(1569	GS17	5OC1967	C.00743)	(1570	GS18	5OC1967	0.02975)

(1571	GS15	6OC1967	0.20489)	(1572	GS20	6OC1967	1.13563)	(1573	GS21	6OC1967	C.10527)
(1574	GS22	6OC1967	0.00575)	(1575	GS28	6OC1967	0.12128)	(1544	MU 1	2OC1967	C.02621)
(1547	MS 1	2OC1967	0.01597)	(1524	MI 1	2OSE1967	C.02189)	(1546	LU 1	2OC1967	C.03501)
(1526	MO 1	2OSE1967	0.01707)	(1530	FR 1	24SE1967	0.04000)	(1531	GH 1	25SE1967	C.02536)
(1545	WL 1	2OC1967	0.04730)	(1548	CA 1	3OC1967	0.01272)	(1549	MQ 1	4OC1967	C.21927)
(1551	ES 1	5OC1967	0.03195)	(1550	MR 1	5OC1967	0.09912)	(1553	SG 1	6OC1967	C.02203)
(1428	MU 2	29MY1967	0.22297)	(1426	MS 2	29MY1967	0.16798)	(1427	LU 2	29MY1967	0.06053)
(1417	MO 2	22MY1967	0.07851)	(1418	SH 2	22MY1967	0.17107)	(1350	BH 2	19AP1967	C.08590)
(1401	MO 2	6MY1967	0.01176)	(1353	FR 2	23AP1967	0.02110)	(1354	GH 2	25AP1967	C.05523)
(1429	WL 2	29MY1967	0.55208)	(1404	MQ 2	10MY1967	0.07622)	(1405	ES 2	12MY1967	C.13545)
(1406	GB 2	13MY1967	0.11592)	(1423	WA 2	25MY1967	0.00428)	(			

Fragilaria construens (Ehr.) Grun.

Staurosira construens Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:424. 1843.
Fragilaria construens (Ehr.) Grunow, Verh. Zool. Bot. Ges. Wien, 12:371. 1862.

Cells in girdle view rectangular, joined by the valve faces into long, closely appressed, band-shaped colonies. Specimens from Lake Michigan 5-25μ long, 4-12μ broad. Valves short, lanceolate with strongly inflated central portion and protracted, subcapitate to capitate ends. In girdle view of the colony the sharp expansion of the valve appears as a line, or a double line, depending on the level of focus, running the length of the colony. Striae slightly radiate throughout the length of the valve, in the more robust specimens finely lineate, 14-18 in 10μ. Pseudoraphe variable in shape, in some specimens very narrowly lanceolate and sharply bordered. in others more broadly lanceolate and indistinctly bordered. No specially differentiated central area is present.

Specimens of this taxon from Lake Michigan are highly variable, both in the shape of the valve and in the structure of the striae. Many populations approach closely the form of the smaller size range of *F. inflata* (Heid.) Hust. but specimens of larger size, clearly referrable to that taxon, have never been found in our collections. Further research may show that the specimens treated under this epithet actually represent a complex of similar forms, but such distinctions cannot be made in our material. Large populations are rare in Lake Michigan and the forms present grade into one another so subtly that no distinctions can be made. Published reports indicate that this entity reaches its greatest abundance in eutrophic lakes. Most of our reports come from inshore areas that are appreciably eutrophied.

242 FRCONSTR ICI NC OF STATIONS 48

(60973	CH	1876	0.04724)	(3541	CH	1FE1881	C.00978)	(46923	CH	22NO1946	0.00219)
(46920	CH	20DE1946	0.00185)	(46922	CH	21AU1947	0.00194)	(46758	EV	5JN1937	0.00357)
(46763	EV	23AU1937	0.02029)	(46756	EV	27AP1938	0.00168)	(1236	C' 1	8JN1964	C.0C175)
(1243	E 6	13JN1964	0.00209)	(1264	C' 1	10AU1964	0.00193)	(1272	C' 1	10SE1964	C.0C821)
(1279	E 1	16SE1964	0.00785)	(1287	F 3	15SE1964	0.00500)	(1293	D 2	15OC1964	0.00472)
(1341	A 3	19AP1967	0.00325)	(1408	A 3	23MY1967	0.00447)	(1536	E 2	24SE1967	C.00273)
(1388	GS12	12MY1967	0.00603)	(1356	GS20	13MY1967	C.01036)	(1397	GS21	13MY1967	C.00065)
(1555	GS 2	3OC1967	0.00706)	(1569	GS17	5OC1967	0.00149)	(1571	GS19	6OC1967	0.00117)
(1572	GS20	6OC1967	0.01532)	(1573	GS21	6OC1967	0.00336)	(1574	GS22	6OC1967	C.01726)
(1575	GS28	6OC1967	0.00387)	(1544	MU 1	2OC1967	0.00715)	(1546	LU 1	2OC1967	0.03001)
(1521	SH 1	18SE1967	0.00577)	(1522	BH 1	18SE1967	0.00547)	(1527	TR 1	20SE1967	C.03145)
(1529	KW 1	20SE1967	0.02398)	(1530	FR 1	24SE1967	C.01000)	(1545	WL 1	2OC1967	C.1C812)
(1552	SM 1	6OC1967	0.02641)	(1550	MR 1	5OC1967	1.58592)	(1553	SG 1	6OC1967	C.00734)
(1428	MU 2	29MY1967	0.00301)	(1426	MS 2	29MY1967	0.05249)	(1417	MO 2	22MY1967	C.01122)
(1350	BH 2	19AP1967	0.16519)	(1402	TR 2	6MY1967	0.00541)	(1354	GH 2	25AP1967	C.0C690)
(1404	MQ 2	10MY1967	0.02541)	(1407	SM 2	14MY1967	C.02986)	(1349	CI 2	19AP1967	C.00359)

Fragilaria construens var. *binodis* (Ehr.) Grun.

Fragilaria ? binodis Ehrenberg, Mikrogeol., pl. 5(2), fig. 26; pl. 6(1), fig. 43; pl. 11, fig. 15. 1854.
Fragilaria construens var. *binodis* (Ehr.) Grunow, Verh. Zool.-Bot. Ges. Wien, 12:371. 1862.

Valves biundulate with constricted midportions and protracted, rostrate to subcapitate ends. Size range and ornamentation of the valve surface the same as in the nominate variety. Valves often more or less asymmetric, strongly constricted on one side and somewhat less constricted to nearly parallel on the other.

Published reports indicate that this entity has about the same distribution range as the nominate variety. Asymmetric forms appear to be most common in highly eutrophied habitats.

243 FRCONSVB TOT NO OF STATIONS 65

(3541	CH	1FE1881	0.01956)	(46747	EV	1AU1937	0.00248)	(1245	F 2	11JN1964	0.00346)
(1264	C* 1	10AU1964	0.00772)	(1270	F 1	10AU1964	0.00272)	(1279	E 1	16SE1964	0.01178)
(1285	F 1	15SE1964	0.00582)	(1304	F 1	11OC1964	0.00247)	(1305	F 2	11OC1964	0.00345)
(1306	F 3	11OC1964	0.00554)	(1324	F 2	6NO1964	0.00233)	(1338	C 3	28MR1967	0.00132)
(1341	A 3	19AP1967	0.00542)	(1342	A 4	19AP1967	0.00361)	(1532	A 3	18SE1967	0.00657)
(1536	E 2	24SE1967	0.00818)	(1541	E 2	11OC1967	0.00532)	(1387	GS11	12MY1967	0.00396)
(1388	GS12	12MY1967	0.00603)	(1389	GS13	12MY1967	0.00258)	(1391	GS15	12MY1967	0.00479)
(1392	GS16	12MY1967	0.01541)	(1394	GS18	13MY1967	0.00344)	(1395	GS19	13MY1967	0.00117)
(1396	GS20	13MY1967	0.00592)	(1554	GS 1	30C1967	0.00356)	(1558	GS 5	40C1967	0.05946)
(1561	GS 9	40C1967	0.00587)	(1565	GS13	50C1967	0.03042)	(1566	GS14	50C1967	0.00183)
(1567	GS15	50C1967	0.01429)	(1568	GS16	50C1967	0.01299)	(1569	GS17	50C1967	0.01189)
(1571	GS19	60C1967	0.00234)	(1572	GS20	60C1967	0.03064)	(1574	GS22	60C1967	0.04315)
(1575	GS28	60C1967	0.02193)	(1544	MU 1	20C1967	0.06434)	(1546	LU 1	20C1967	0.03001)
(1520	HO 1	18SE1967	0.09901)	(1521	SH 1	18SE1967	0.04616)	(1522	BH 1	18SE1967	0.00365)
(1526	MO 1	20SE1967	0.14792)	(1527	TR 1	20SE1967	6.13836)	(1528	SB 1	20SE1967	0.02888)
(1529	KW 1	20SE1967	0.17988)	(1530	FR 1	24SE1967	0.08001)	(1531	GH 1	25SE1967	0.05072)
(1545	WL 1	20C1967	20.43381)	(1549	MQ 1	40C1967	0.01370)	(1552	SM 1	60C1967	0.01321)
(1550	MR 1	50C1967	0.35931)	(1553	SG 1	60C1967	0.02203)	(1428	MU 2	29MY1967	0.00904)
(1426	MS 2	29MY1967	0.02100)	(1427	LU 2	29MY1967	0.02421)	(1417	HO 2	22MY1967	0.06729)
(1418	SH 2	22MY1967	0.07776)	(1350	BH 2	19AP1967	0.11674)	(1401	MO 2	6MY1967	0.01764)
(1353	FR 2	23AP1967	0.01055)	(1354	GH 2	25AP1967	0.01036)	(1404	MQ 2	10MY1967	0.02541)
(1407	SM 2	14MY1967	0.00597)	(1406	GB 2	13MY1967	0.00539)	(			

Fragilaria construens var. *capitata* Hérib.

Fragilaria construens var. *capitata* Héribaud, Diat. Auvergne, p. 144, pl. 1, fig. 2. 1893.

Valves linear-lanceolate with protracted, capitate ends, occasionally slightly constricted near the middle of the valve. Specimens from Lake Michigan 12-30μ long, 4-7μ broad, striae 14-16 in 10μ. Ornamentation of the valve surface the same as in the nominate variety.

244 FRCONSVC TOT NO OF STATIONS 12

(3541	CH	1FE1881	0.01956)	(1274	O 1	17SE1964	0.00469)	(1279	E 1	16SE1964	0.02356)
(1382	GS 6	10MY1967	0.00278)	(1392	GS16	12MY1967	0.00925)	(1396	GS20	13MY1967	0.00074)
(1554	GS 1	30C1967	0.00712)	(1559	GS 7	40C1967	0.00350)	(1571	GS19	60C1967	0.00059)
(1350	BH 2	19AP1967	0.00220)	(1354	GH 2	25AP1967	0.00173)	(1404	MQ 2	10MY1967	0.01270)

Fragilaria construens var. *minuta* Temp. and Per.

Fragilaria construens var. *minuta* Tempere and Peragallo, Diat. Monde Entier, ed. I, no. 89. 1889.

Very small form, only 4-10μ long and 2-3μ broad. Valves elliptical-lanceolate in shape and striae finer than in the nominate variety, 16-20 in 10μ.

Although uncommon in modern collections, this entity is abundant in some subfossil material from the upper Great Lakes region. It is the same entity that we (Stoermer and Yang 1968) reported as an undetermined species abundant in Lake Huron sediments. Andrews (1966) reported entities under the name *F. construens* var. *venter* in the same size range. While it is conceivable that the range of variation in the above entity may include our specimens, it appears to us that the consistently narrower valves and the finer striae are sufficiently distinctive characteristics to separate the two taxa.

267 FRSPECOB TCT NC CF STATICNS 14

(46910	CH	DC1945	0.00109)	(46515	CH	20FE1946	0.00569)	(46906	CH	MY1947	C.00133)
(46758	EV	5JN1937	0.00713)	(46763	EV	23AU1937	0.04058)	(46768	EV	16MR1938	C.01470)
(46762	EV	18MR1938	0.02206)	(1260	F 3	6JL1964	C.00191)	(1268	E 2	15AU1964	C.00274)
(1270	F 1	10AU1964	0.00272)	(1285	F 1	15SE1964	0.01165)	(1305	F 2	110C1964	C.00173)
(1341	A 3	19AP1967	0.00217)	(1346	C 7	21AP1967	0.00267)	(			

Fragilaria construens var. *pumila* Grun.

Fragilaria construens var. *pumila* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 45, fig. 21a. 1881.

Valves elliptic-lanceolate to lanceolate with somewhat protracted, rostrate apices. Size range and oranmentation of the valve surface the same as in the nominate variety.

245 FRCONSVP TCT NO OF STATIONS 24

(3541	CH	1FE1881	0.04891)	(46747	EV	1AU1937	0.00248)	(46763	EV	23AU1937	C.02029)
(46750	EV	24SE1937	0.00471)	(1264	C' 1	1CAU1964	0.00193)	(1304	F 1	110C1964	0.00494)
(1341	A 3	19AP1967	0.00108)	(1533	A 4	19SE1967	0.00464)	(1536	E 2	24SE1967	C.CC273)
(1537	E 3	24SE1967	0.00431)	(1574	GS22	6OC1967	0.00288)	(1544	MU 1	20C1967	C.0C715)
(1520	HO 1	18SE1967	0.00471)	(1522	BH 1	18SE1967	C.00365)	(1527	TR 1	2CSE1967	C.01258)
(1529	KW 1	20SE1967	0.01199)	(1531	GH 1	25SE1967	0.01691)	(1545	WL 1	20C1967	C.05406)
(1550	MR 1	5OC1967	0.02478)	(1553	SG 1	6OC1967	0.00734)	(1428	MU 2	29MY1967	C.00904)
(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.04185)	(1354	CH 2	25AP1967	C.00345)

Fragilaria construens var. *subsalina* Hust.

Fragilaria construens var. *subsalina* Hustedt, Mitt. geogr. Ges., Naturhist. Mus. Lübeck, 2 Reihe, 30:106, fig. 5-8. 1925.

Valves linear with parallel sides and cuneate, in the larger specimens somewhat protracted, ends. Size range and ornamentation of the valve surface as in the nominate variety.

247 FRCONSVA TCT NO OF STATIONS 9

(60973	CH	1876	0.02362)	(46758	EV	5JN1937	C.01070)	(46762	EV	18MR1938	C.02206)
(1279	E 1	16SE1964	0.00785)	(1341	A 3	19AP1967	0.00108)	(1569	GS17	5OC1967	C.00149)
(1550	MR 1	5OC1967	0.01239)	(1350	BH 2	19AP1967	0.00220)	(1404	MQ 2	10MY1967	C.02541)

Fragilaria construens var. *venter* (Ehr.) Grun.

Fragilaria venter Ehrenberg, Mikrogeol., pl. 14, fig. 50. 1854.
Fragilaria construens var. *venter* (Ehr.) Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 45, figs. 21b, 22, 23, 24b, 26a-b. 1881.

Valves rhombic-elliptical to elliptical with somewhat protracted, rostrate ends. Maximum length of specimens from Lake Michigan does not exceed 10μ. Ornamentation of the valve surface essentially similar to that of the nominate variety.

246 FRCONSVV TCT NO OF STATIONS 71

(3540	CH	11MY1879	0.00466)	(3541	CH	1FE1881	0.00978)	(46917	CH	12JA1946	C.00083)
(46915	CH	20FE1946	0.00569)	(46923	CH	22NO1946	0.00219)	(46920	CH	20DE1946	C.00031)
(46905	CH	JA1947	0.00123)	(46916	CH	4MY1947	C.00068)	(46919	CH	5JN1947	C.00303)
(46907	CH	JL1947	C.00049)	(46922	CH	21AU1947	C.00388)	(46758	EV	5JN1937	C.01426)
(46771	EV	11JN1937	0.0C238)	(46743	EV	20JN1937	C.00428)	(46764	EV	17JL1937	C.04835)
(46747	EV	1AU1937	0.01238)	(46752	EV	15SE1937	C.02177)	(46750	EV	24SE1937	C.0C943)
(46748	EV	13OC1937	0.04270)	(46767	EV	27OC1937	0.01547)	(46768	EV	16MR1938	C.08820)
(46762	EV	18MR1938	0.02206)	(1274	D 1	17SE1964	0.00469)	(1279	E 1	16SE1964	C.0C785)
(1284	E 6	17SE1964	0.00318)	(1291	C' 2	16OC1964	C.00245)	(1297	D 6	14OC1964	C.00381)
(1303	E 6	13OC1964	0.01119)	(1322	E 6	7NO1964	0.00333)	(1340	C 7	28MR1967	0.00145)
(1374	E 2	7MY1967	0.00598)	(1452	E 2	14JL1967	0.00213)	(1537	E 3	24SE1967	C.0C431)
(1538	E 5	23SE1967	0.07181)	(1541	E 2	11OC1967	0.00532)	(1383	GS 7	10MY1967	C.00535)
(1387	GS11	12MY1967	0.00396)	(1392	GS16	12MY1967	0.00308)	(1394	GS18	13MY1967	C.0C344)
(1396	GS20	13MY1967	0.00148)	(1398	GS22	14MY1967	C.00607)	(1557	GS 4	3OC1967	C.0C374)
(1559	GS 7	4OC1967	0.00350)	(1561	GS 9	4OC1967	0.00587)	(1563	GS11	5OC1967	C.0C234)
(1566	GS14	5OC1967	0.00183)	(1567	GS15	5OC1967	C.00476)	(1572	GS20	6OC1967	C.00180)
(1574	GS22	6OC1967	0.31065)	(1575	GS28	6OC1967	C.00129)	(1544	MU 1	20C1967	C.01668)

(1521	SH 1	18SE1967	0.01154)	(1523	RA 1	19SE1967	0.01845)	(1526	MO 1	20SE1967	0.15930)
(1527	TR 1	20SE1967	0.13836)	(1528	SB 1	20SE1967	0.07219)	(1529	KW 1	20SE1967	0.07195)
(1545	WL 1	20OC1967	0.04730)	(1552	SM 1	6OC1967	0.15847)	(1550	MR 1	5OC1967	0.08673)
(1553	SG 1	6OC1967	0.03672)	(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.03744)
(1399	PW 2	5MY1967	0.01360)	(1401	MO 2	6MY1967	0.03528)	(1402	TR 2	6MY1967	0.04873)
(1352	KW 2	21AP1967	0.04295)	(1404	MO 2	10MY1967	0.02541)	(1405	ES 2	12MY1967	0.00645)
(1407	SM 2	14MY1967	0.37619)	(1349	CI 2	19AP1967	0.00359)	(			

Fragilaria crotonensis Kitton

Fragilaria crotonensis Kitton, Sci. Gossip, 5:110, fig. 81. 1869.

Cells in girdle view lanceolate, with blunt ends and expanded central portions. Cells joined by valve faces of the expanded central portion into long, ribbon-shaped colonies. Specimens from Lake Michigan 40-112μ long and 2-4μ broad at the widest part of the valve. Valves very elongate, spindle-shaped, with expanded central portion, tapering gradually to near the apices which are bluntly rounded to subcapitate. Pseudoraphe very narrow, linear. In most specimens a central area is present in the form of a broad transverse fascia. In some specimens this area is indistinctly bordered by partially developed striae and in some specimens, particularly in the smaller size range, the central area is entirely lacking. The striae are indistinct and sometimesirregular 12-16 in 10μ.

248 FRCROTON TOT NO OF STATIONS 320

(60973	CH	1876	44.63863)	(3540	CH	11MY1879	12.27228)	(3541	CH	1FE1881	6.72992)
(3507	CH	19FE1881	10.98030)	(46910	CH	0C1945	12.38913)	(46921	CH	23NO1945	23.28799)
(46908	CH	DE1945	12.10473)	(46917	CH	12JA1946	11.73145)	(46915	CH	20FE1946	17.38461)
(46914	CH	19AP1946	11.97185)	(46924	CH	10MY1946	10.38574)	(46923	CH	22NO1946	34.66364)
(46920	CH	20DE1946	71.07423)	(46905	CH	JA1947	42.78098)	(46909	CH	MR1947	8.43313)
(46912	CH	AP1947	36.24237)	(46916	CH	4MY1947	16.25369)	(46906	CH	MY1947	14.32250)
(46919	CH	5JN1947	16.66893)	(46907	CH	JL1947	30.03308)	(46913	CH	6AU1947	76.14265)
(46922	CH	21AU1947	35.53409)	(46758	EV	5JN1937	9.28607)	(46771	EV	11JN1937	12.64799)
(46743	EV	20JN1937	20.98141)	(46745	EV	3JL1937	28.67293)	(46770	EV	9JL1937	28.38739)
(46764	EV	17JL1937	29.55681)	(46757	EV	25JL1937	43.94588)	(46747	EV	1AU1937	55.24171)
(46763	EV	23AU1937	32.38635)	(46765	EV	30AU1937	29.82710)	(46769	EV	7SE1937	55.92705)
(46752	EV	15SE1937	40.83586)	(46760	EV	22SE1937	45.21954)	(46750	EV	24SE1937	42.75816)
(46744	EV	6OC1937	56.67186)	(46748	EV	13OC1937	2.86080)	(46767	EV	27OC1937	68.45383)
(46749	EV	12MR1938	36.70348)	(46768	EV	16MR1938	9.87799)	(46762	EV	18MR1938	50.63960)
(46751	EV	30MR1938	13.44350)	(46772	EV	18AP1938	12.12207)	(46756	EV	27AP1938	7.80429)
(46759	EV	19MY1938	5.19919)	(46761	EV	27MY1938	32.58475)	(46766	EV	14DE1938	33.26996)
(1223	B 3	18MY1964	2.51582)	(1224	B 4	18MY1964	1.64690)	(1225	C 6	15MY1964	7.13446)
(1226	C 7	16MY1964	10.12177)	(1227	C' 2	13MY1964	6.83189)	(1228	D 2	14MY1964	3.40606)
(1229	D 5	14MY1964	11.98960)	(1230	E 2	16MY1964	6.84546)	(1231	E 3	16MY1964	2.39703)
(1232	E 5	16MY1964	8.88727)	(1233	B 3	5JN2964	16.33682)	(1234	B 3	18JN1964	25.51452)
(1235	C 7	16JN1964	22.93330)	(1439	B 6	5JN1964	14.31369)	(1236	C' 1	8JN1964	11.76223)
(1237	C' 2	8JN1964	15.33900)	(1238	D 3	11JN1964	3.22000)	(1239	D 4	11JN1964	6.09225)
(1240	D 6	10JN1964	8.16063)	(1241	E 2	13JN1964	8.27986)	(1242	E 3	13JN1964	0.41963)
(1243	E 6	13JN1964	8.91589)	(1244	F 1	11JN1964	27.78416)	(1245	F 2	11JN1964	14.52182)
(1246	F 3	11JN1964	14.22339)	(1247	B 3	14JL1964	24.50163)	(1248	B 3	24JL1964	27.03554)
(1440	B 6	11JL1964	15.78656)	(1441	B 6	24JL1964	12.58838)	(1249	C 3	8JL1964	14.63878)
(1250	C 6	10JL1964	12.26310)	(1251	C 7	16JL1964	11.82282)	(1252	C' 1	16JL1964	16.55508)
(1253	C' 2	16JL1964	16.82947)	(1254	D 2	15JL1964	10.24899)	(1255	D 5	15JL1964	9.45793)
(1256	E 2	14JL1964	5.43160)	(1257	E 3	14JL1964	2.17729)	(1258	F 1	6JL1964	37.62181)
(1259	F 2	6JL1964	29.48996)	(1260	F 3	6JL1964	25.25545)	(1261	B 3	2AU1964	42.31100)
(1262	B 3	17AU1964	62.32675)	(1442	B 6	2AU1964	26.62914)	(1443	B 6	16AU1964	57.23322)
(1263	C 7	15AU1964	54.92393)	(1264	C' 1	10AU1964	20.67886)	(1265	C' 2	10AU1964	40.21638)
(1266	D 3	18AU1964	27.99214)	(1267	D 6	18AU1964	32.38219)	(1268	E 2	15AU1964	22.78696)
(1269	E 3	15AU1964	23.21437)	(1270	F 1	10AU1964	39.45540)	(1271	C 7	22SE1964	6.95306)
(1272	C' 1	10SE1964	34.91359)	(1273	C' 2	10SE1964	39.57201)	(1274	D 1	17SE1964	35.86073)
(1275	D 2	17SE1964	38.50073)	(1276	D 3	18SE1964	26.59811)	(1277	D 4	18SE1964	22.12169)
(1278	D 6	18SE1964	11.13801)	(1279	E 1	16SE1964	31.88832)	(1280	E 2	16SE1964	9.93941)
(1281	E 3	16SE1964	29.07428)	(1282	E 4	16SE1964	36.45428)	(1283	E 5	16SE1964	22.90669)
(1284	E 6	17SE1964	42.81447)	(1285	F 1	15SE1964	38.32623)	(1286	F 2	15SE1964	42.14098)
(1287	F 3	15SE1964	43.78502)	(1288	B 3	15OC1964	57.29460)	(1445	B 6	14OC1964	18.94977)
(1289	C 7	14OC1964	10.46568)	(1290	C' 1	16OC1964	49.34621)	(1291	C' 2	16OC1964	39.03918)
(1292	D 1	15OC1964	38.08884)	(1293	D 2	15OC1964	21.79039)	(1294	D 3	15OC1964	28.38118)
(1295	D 4	15OC1964	24.14079)	(1296	D 5	14OC1964	14.32112)	(1297	D 6	14OC1964	10.12909)
(1298	E 1	12OC1964	34.11783)	(1299	E 2	12OC1964	35.40685)	(1300	E 3	13OC1964	32.57561)
(1301	E 4	13OC1964	39.25638)	(1302	E 5	13OC1964	41.66328)	(1303	E 6	13OC1964	17.62124)
(1304	F 1	11OC1964	75.20003)	(1305	F 2	11OC1964	75.33960)	(1306	F 3	11OC1964	76.05742)
(1307	B 6	NO1964	36.87399)	(1308	C 7	6NO1964	16.39343)	(1309	C' 1	10NO1964	58.64098)
(1310	C' 2	10NO1964	50.47618)	(1311	D 1	8NO1964	48.03673)	(1312	D 2	8NO1964	45.41362)
(1313	D 3	9NO1964	34.59459)	(1314	D 4	9NO1964	35.78984)	(1315	D 5	9NO1964	27.07005)
(1316	D 6	9NO1964	39.13568)	(1317	E 1	6NO1964	48.24997)	(1318	E 2	7NO1964	44.21361)
(1319	E 3	7NO1964	47.83598)	(1320	E 4	7NO1964	46.18407)	(1321	E 5	7NO1964	48.49007)
(1322	E 6	7NO1964	51.78790)	(1323	F 1	6NO1964	67.80487)	(1324	F 2	6NO1964	65.87007)
(1325	F 3	6NO1964	48.13722)	(1336	C 3	27JA1967	6.46987)	(1337	C 3	2MR1967	3.36866)
(1338	C 3	28MR1967	2.71593)	(1339	C 5	28MR1967	2.20739)	(1340	C 7	28MR1967	2.91087)
(1341	A 3	19AP1967	2.74129)	(1342	A 4	19AP1967	3.81499)	(1344	C 3	25AP1967	1.50550)
(1345	C 5	25AP1967	2.74838)	(1346	C 7	21AP1967	2.61707)	(1347	E 2	23AP1967	1.62914)
(1348	E 5	23AP1967	1.75188)	(1368	A 3	4MY1967	4.21929)	(1369	A 4	4MY1967	0.33919)

(1370	A 6	3MY1967	6.41271)	(1371	C 3	4MY1967	0.54019)	(1372	C 5	5MY1967	0.36175)
(1373	C 7	5MY1967	0.47921)	(1374	E 2	7MY1967	2.30126)	(1375	E 3	7MY1967	1.88647)
(1376	E 5	6MY1967	3.98302)	(1408	A 3	23MY1967	4.69526)	(1409	A 4	23MY1967	2.10677)
(1410	A 6	24MY1967	6.39377)	(1411	C 3	31MY1967	2.87203)	(1412	C 5	31MY1967	1.94882)
(1413	C 7	25MY1967	2.23331)	(1414	E 2	28MY1967	2.38791)	(1415	E 3	28MY1967	0.44970)
(1416	E 5	28MY1967	2.77942)	(1431	A 3	12JN1967	3.82110)	(1432	A 4	13JN1967	4.49831)
(1433	C 3	17JN1967	4.97352)	(1434	C 5	17JN1967	2.53619)	(1435	C 7	13JN1967	7.52692)
(1436	E 2	15JN1967	1.88522)	(1437	E 3	15JN1967	0.45218)	(1438	E 5	14JN1967	3.30420)
(1446	A 3	11JL1967	2.39714)	(1447	A 4	11JL1967	12.77133)	(1448	A 6	10JL1967	5.44651)
(1449	C 3	16JL1967	5.08235)	(1450	C 5	16JL1967	8.93078)	(1451	C 7	16JL1967	10.60982)
(1452	E 2	14JL1967	8.79210)	(1453	E 3	15JL1967	0.57630)	(1454	E 5	15JL1967	15.96319)
(1504	A 3	28AU1967	32.14417)	(1505	A 4	28AU1967	32.46417)	(1506	A 6	29AU1967	20.50529)
(1508	C 3	2SE1967	20.14227)	(1509	C 5	2SE1967	29.32269)	(1510	C 7	29AU1967	26.11444)
(1511	E 2	1SE1967	12.03303)	(1512	E 3	1SE1967	24.18721)	(1513	E 5	31AU1967	51.43407)
(1532	A 3	18SE1967	44.38092)	(1533	A 4	19SE1967	44.84262)	(1534	A 6	19SE1967	43.86807)
(1535	C 7	20SE1967	16.44832)	(1536	E 2	24SE1967	19.27795)	(1537	E 3	24SE1967	16.90675)
(1538	E 5	23SE1967	27.06732)	(1539	C 3	4OC1967	42.26627)	(1540	C 5	4OC1967	38.21909)
(1541	E 2	11OC1967	37.99690)	(1542	E 3	11OC1967	24.20667)	(1543	E 5	10OC1967	28.15686)
(1377	GS 1	9MY1967	0.47101)	(1378	GS 2	9MY1967	3.53223)	(1379	GS 3	9MY1967	5.96534)
(1380	GS 4	9MY1967	9.41651)	(1381	GS 5	10MY1967	5.67667)	(1382	GS 6	10MY1967	2.91432)
(1383	GS 7	10MY1967	5.05239)	(1384	GS 8	10MY1967	2.19983)	(1385	GS 9	10MY1967	3.23044)
(1386	GS10	12MY1967	1.70928)	(1387	GS11	12MY1967	7.20849)	(1388	GS12	12MY1967	4.22323)
(1389	GS13	12MY1967	13.53686)	(1390	GS14	12MY1967	7.39871)	(1391	GS15	12MY1967	8.04482)
(1392	GS16	12MY1967	5.17767)	(1393	GS17	13MY1967	10.35503)	(1394	GS18	13MY1967	8.79004)
(1395	GS19	13MY1967	2.38392)	(1396	GS20	13MY1967	0.88047)	(1397	GS21	13MY1967	0.77832)
(1398	GS22	14MY1967	8.07602)	(1554	GS 1	3OC1967	30.38496)	(1555	GS 2	3OC1967	37.07626)
(1556	GS 3	3OC1967	23.36131)	(1557	GS 4	3OC1967	54.93272)	(1558	GS 5	4OC1967	51.88678)
(1559	GS 7	4OC1967	54.34706)	(1560	GS 8	4OC1967	32.73036)	(1561	GS 9	4OC1967	26.70657)
(1562	GS10	5OC1967	30.22154)	(1563	GS11	5OC1967	46.32184)	(1564	GS12	5OC1967	73.16148)
(1565	GS13	5OC1967	60.69363)	(1566	GS14	5OC1967	49.44046)	(1567	GS15	5OC1967	30.11876)
(1568	GS16	5OC1967	31.00964)	(1569	GS17	5OC1967	56.50111)	(1570	GS18	5OC1967	48.59183)
(1571	GS19	6OC1967	8.85106)	(1572	GS20	6OC1967	6.68758)	(1573	GS21	6OC1967	14.26764)
(1574	GS22	6OC1967	31.81268)	(1575	GS28	6OC1967	13.72761)	(1544	MU 1	2OC1967	0.40031)
(1547	MS 1	2OC1967	23.12175)	(1524	MI 1	20SE1967	15.76182)	(1546	LU 1	2OC1967	3.44120)
(1520	HO 1	18SE1967	18.85991)	(1521	SH 1	18SE1967	18.46295)	(1522	BH 1	18SE1967	0.00912)
(1523	RA 1	19SE1967	41.32840)	(1525	PW 1	20SE1967	25.62317)	(1526	MO 1	20SE1967	15.47477)
(1527	TR 1	20SE1967	5.23270)	(1528	SB 1	20SE1967	26.10452)	(1529	KW 1	20SE1967	17.65199)
(1530	FR 1	24SE1967	18.88188)	(1531	GH 1	25SE1967	0.48183)	(1545	WL 1	2OC1967	3.13535)
(1548	CA 1	3OC1967	68.59178)	(1549	MQ 1	4OC1967	14.03316)	(1551	ES 1	5OC1967	38.21391)
(1552	SM 1	6OC1967	29.47507)	(1550	MR 1	5OC1967	4.55553)	(1553	SG 1	6OC1967	16.80376)
(1428	MU 2	29MY1967	1.06059)	(1426	MS 2	29MY1967	7.72703)	(1351	MI 2	21AP1967	1.43988)
(1427	LU 2	29MY1967	2.90557)	(1417	HO 2	22MY1967	1.91416)	(1418	SH 2	22MY1967	5.97201)
(1350	BH 2	19AP1967	0.95152)	(1425	RA 2	25MY1967	12.02369)	(1399	PW 2	5MY1967	5.00544)
(1401	MO 2	6MY1967	1.97554)	(1402	TR 2	6MY1967	4.07191)	(1400	SB 2	6MY1967	5.81368)
(1352	KW 2	21AP1967	5.63477)	(1353	FR 2	23AP1967	0.07384)	(1354	GH 2	25AP1967	0.46949)
(1429	WL 2	29MY1967	2.03843)	(1403	CA 2	10MY1967	5.85851)	(1404	MQ 2	10MY1967	3.45528)
(1405	ES 2	12MY1967	5.57275)	(1407	SM 2	14MY1967	6.11453)	(1349	CI 2	15AP1967	2.12659)
(1406	GB 2	13MY1967	0.09435)	(1419	BU 2	23MY1967	12.59612)	(1420	IH 2	23MY1967	9.66767)
(1421	CH 2	23MY1967	11.10340)	(1422	GA 2	23MY1967	12.18004)	(1423	WA 2	25MY1967	19.52640)
(1424	KN 2	25MY1967	13.64242)	(1430	MC 2	12JN1967	4.34246)	(			

Fragilaria crotonensis var. *oregona* Sov.

Fragilaria crotonensis var. *oregona* Sovereign, Trans. American Micr. Soc. 77:107. pl. 2, figs. 1-3. 1958.

Cells in girdle view lanceolate, with expanded central portions and bluntly rounded to subcapitate ends. Cells joined by the valve faces of the expanded central portions into long, ribbon-shaped colonies. Specimens from Lake Michigan 55-150μ long, 2.5-4μ broad at the widest point. Valves elongate-lanceolate, central portion of the valve constricted, widest point lying on each side of the central area. Striae fine but distinct, 12-15 in 10μ. Axial area narrow, central area a structureless transverse fascia.

This species is one of the most widely reported of all freshwater plankton diatoms. Although most authors have chosen to treat all entities having similar colony form under the single epithet, the forms found in Lake Michigan are clearly separable into at least three series on the basis of morphology. The obvious differences in the size range of populations occurring in different lakes in Europe has been commented upon by Huber-Pestalozzi (1942). In Lake Michigan we have found occasional populations of apparent auxospores in the size range of 70-90μ, clearly smaller than the maximum size of two of the entities in the complex. Nipkow (1927) has reported similar observations from Lake Zurich. It seems clear to us that, in its general usage, the name *F. crotonensis* is applied to a complex of separate genetic entities. The proper taxonomic treatment of this complex is yet to be resolved. The treatment presented here appears reasonable on the grounds of morphologic criteria but further research may prove it to be inadequate.

269 FRSPECOF TOT NO OF STATIONS 29

(46919	CH	5JN1947	0.00152)	(1235	C 7	16JN1964	0.00282)	(1248	B 3	24JL1964	C.00788)
(1261	B 3	2AU1964	0.00589)	(1264	C' 1	10AU1964	0.00772)	(1299	E 2	12OC1964	C.00314)
(1322	E 6	7NO1964	C.01000)	(1324	F 2	6NO1964	0.00466)	(1452	E 2	14JL1967	C.00426)
(1454	E 5	15JL1967	0.00200)	(1532	A 3	18SE1967	0.00329)	(1533	A 4	19SE1967	C.00928)
(1535	C 7	20SE1967	0.00322)	(1539	C 3	4OC1967	0.00503)	(1393	GS17	13MY1967	C.00274)
(1395	GS19	13MY1967	0.00235)	(1544	MU 1	20C1967	0.01191)	(1547	MS 1	20C1967	C.01597)
(1521	SH 1	18SE1967	0.00577)	(1522	BH 1	18SE1967	0.05106)	(1523	RA 1	19SE1967	C.01845)
(1531	GH 1	25SE1967	0.10989)	(1545	WL 1	20C1967	0.02703)	(1550	MR 1	5OC1967	C.01239)
(1428	NU 2	29MY1967	0.25310)	(1426	MS 2	29MY1967	0.47244)	(1417	HO 2	22MY1967	C.02243)
(1350	BH 2	19AP1967	0.01542)	(1429	WL 2	29MY1967	0.04247)	(			

Fragilaria heideni Østrup

Synedra inflata Heiden, Mitt. Grossh. Meckl. Geol. Landesanst., 10(21): 14, fig. 19. 1900.
Fragilaria heideni Østrup, Danske Diat., p. 190, pl. 5, fig. 118. 1910.
Fragilaria inflata (Heid.) Hustedt *in*: Rabenhorst, Kryptog.-Fl. Deutschlands, 7(2)1:155, fig. 669. 1931. (non Pantocsek 1902).

Cells in girdle view rectangular, in life attached by the valve surfaces into band-shaped colonies. Valves lanceolate with expanded central portions and bluntly rounded to subcapitate ends. Specimens from Lake Michigan 22-40μ long, 7-10μ broad. Striae perpendicular to the midline of the valve throughout, 13-15 in 10μ. Axial area wide, lanceolate, without any especially demarcated central area.

Previous reports indicate that this entity is a littoral form in large lakes. In Lake Michigan it has only been noted in inshore areas.

253 FRINFLAT TOT NO OF STATIONS 3

(1350	BH 2	19AP1967	0.05506)	(1402	TR 2	6MY1967	C.00541)	(1404	PQ 2	10MY1967	C.01270)

Fragilaria heideni var. *istvanffyi* (Pant.)

Fragilaria istvanffyi Pantocsek, Res. Wiss. Erforsh. Balatonsees, p. 79, pl. 9, fig. 225, 1902.
Fragilaria inflata var. *istvanffyi* (Pant.) Hustedt *in*: Rabenhorst, Kryptog.-Fl. Deutschlands, 7(2)1:156, fig. 669. 1931.

Differs from the nominate variety in having more or less strongly triundulate margins and subcapitate to capitate ends.

254 FRINFLVI TOT NO OF STATIONS 1

(1350 BH 2 19AP1967 0.00220)

Fragilaria intermedia Grun.

Fragilaria intermedia Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 45, figs. 9-11. 1881.

Cells in girdle view elongate-rectangular, in life attached by the valve surfaces into long, band-shaped colonies. Valves linear-lanceolate to lanceolate with rostrate to subcapitate ends. Specimens from Lake Michigan 25-65μ long, 3-5μ broad. Transapical striae perpendicular to the apical axis throughout, coarsely structured, 8-13 in 10μ, finely cross-lineate. Axial area narrow, linear distinctly bordered. Central area a unilateral fascia, not visibly thickened, often indistinct or containing rudimentary striae.

This entity shows a great deal of variation in populations from Lake Michigan. Although previous reports indicate that it is primarily littoral in most habitats, it is present in the offshore plankton from Lake Michigan and often in considerable quantity. The forms occurring in the offshore plankton tend to be more elongate and lanceolate rather than linear in outline and may represent a separate variety or form. Our observations to date, however, indicate that these forms grade into the nominate variety to the extent that they cannot be satisfactorily separated on the basis of morphologic characteristics.

Petersen (1938) and several other authors have called attention to the similarity of this taxon to *Synedra vaucheriae* Kütz. [*Fragilaria vaucheriae* (Kütz.) Peters.]. It is Peterson's contention, based on the observation of isotype material, that the two entities are synonymous. If this contention can be supported, the entity we treat here, as it is generally treated in the modern literature, will need to be renamed as it is easily distinguished from *S. vaucheriae* on several morphologic characteristics. The decision on this awaits the monographer with access to type material.

Ahlstrom (1936) reported *Fragilaria virescens* Ralfs abundant in collections from Lake Michigan. We suspect that he was, in fact, dealing with the entity we treat here.

255 FRINTERM TCT NO OF STATIONS 142

(46921	CH	23NO1945	C.00194)	(46514	CH	19AP1946	0.00107)	(46923	CH	22NO1946	C.00437)
(46916	CH	4MY1947	0.00204)	(46919	CH	5JN1947	0.39453)	(46922	CH	21AU1947	C.00048)
(46758	EV	5JN1937	1.09835)	(46771	EV	11JN1937	0.00238)	(46745	EV	3JL1937	C.02090)
(46770	EV	9JL1937	0.28626)	(46764	EV	17JL1937	0.20951)	(46757	EV	25JL1937	C.29849)
(46747	EV	1AU1937	0.45053)	(46763	EV	23AU1937	0.87256)	(46752	EV	15SE1937	C.39182)
(46760	EV	22SE1937	0.05909)	(46750	EV	24SE1937	0.03299)	(46748	EV	13OC1937	C.02135)
(46767	EV	27OC1937	0.03095)	(46749	EV	12MR1938	0.03641)	(46768	EV	16MR1938	C.05880)
(46762	EV	18MR1938	0.19850)	(46772	EV	18AP1938	0.00710)	(46756	EV	27AP1938	C.01175)
(46759	EV	19MY1938	0.01350)	(46761	EV	27MY1938	0.01363)	(46766	EV	14DE1938	C.04753)
(1225	C 6	15MY1964	0.00784)	(1226	C 7	16MY1964	0.01142)	(1227	C' 2	13MY1964	C.CC110)
(1228	D 2	14MY1964	0.00389)	(1229	D 5	14MY1964	0.01057)	(1230	E 2	16MY1964	0.01778)
(1231	E 3	16MY1964	0.00245)	(1232	E 5	16MY1964	0.12870)	(1233	B 3	5JN2964	0.00238)
(1439	B 6	5JN1964	0.00599)	(1236	C' 1	8JN1964	0.00700)	(1239	D 4	11JN1964	0.10212)
(1240	D 6	10JN1964	0.02301)	(1241	E 2	13JN1964	0.02218)	(1242	E 3	13JN1964	0.06294)
(1243	E 6	13JN1964	0.03550)	(1244	F 1	11JN1964	0.00329)	(1245	F 2	11JN1964	0.00692)
(1246	F 3	11JN1964	0.05379)	(1252	C' 1	16JL1964	0.01395)	(1254	D 2	15JL1964	0.00192)
(1256	E 2	14JL1964	0.00916)	(1257	E 3	14JL1964	0.01675)	(1258	F 1	6JL1964	C.00472)
(1260	F 3	6JL1964	0.00191)	(1267	D 6	18AU1964	0.01513)	(1268	E 2	15AU1964	0.0C274)
(1269	E 3	15AU1964	0.00274)	(1270	F 1	10AU1964	0.00817)	(1273	C' 2	10SE1964	C.00538)
(1275	D 2	17SE1964	0.0C645)	(1284	E 6	17SE1964	0.00318)	(1285	F 1	15SE1964	C.1C483)
(1289	C 7	14OC1964	0.01319)	(1291	C' 2	16OC1964	C.00245)	(1292	D 1	15OC1964	0.00373)
(1297	D 6	14OC1964	0.00762)	(1303	E 6	13OC1964	0.04478)	(1305	F 2	11OC1964	C.0C173)
(1308	C 7	6NO1964	0.01217)	(1313	D 3	9NO1964	0.00193)	(1316	D 6	9NO1964	0.00756)
(1318	E 2	7NO1964	0.00190)	(1321	E 5	7NO1964	0.00319)	(1322	E 6	7NO1964	C.02333)
(1323	F 1	6NO1964	0.00139)	(1324	F 2	6NO1964	0.00233)	(1336	C 3	27JA1967	C.01348)
(1337	C 3	2MR1967	0.51441)	(1338	C 3	28MR1967	0.67964)	(1339	C 5	28MR1967	C.43649)
(1340	C 7	28MR1967	0.91624)	(1341	A 3	19AP1967	1.51872)	(1342	A 4	19AP1967	C.58831)
(1343	A 6	19AP1967	0.24316)	(1344	C 3	25AP1967	1.15808)	(1345	C 5	25AP1967	C.45611)
(1346	C 7	21AP1967	0.23367)	(1347	E 2	23AP1967	0.06178)	(1348	E 5	23AP1967	C.76765)
(1368	A 3	4MY1967	0.73516)	(1369	A 4	4MY1967	0.14164)	(1370	A 6	3MY1967	C.44424)
(1371	C 3	4MY1967	0.21007)	(1372	C 5	5MY1967	C.12768)	(1373	C 7	5MY1967	C.99835)
(1374	E 2	7MY1967	0.37956)	(1375	E 3	7MY1967	C.13234)	(1376	E 5	6MY1967	C.98381)
(1408	A 3	23MY1967	0.06260)	(1409	A 4	23MY1967	0.10415)	(1410	A 6	24MY1967	C.03383)
(1411	C 3	31MY1967	0.14360)	(1412	C 5	31MY1967	C.07155)	(1413	C 7	25MY1967	0.01264)
(1414	E 2	28MY1967	0.02687)	(1415	E 3	28MY1967	0.00675)	(1416	E 5	28MY1967	C.01093)
(1511	E 2	1SE1967	0.00307)	(1536	E 2	24SE1967	0.00818)	(1537	E 3	24SE1967	C.0C431)
(1538	E 5	23SE1967	0.04972)	(1387	GS11	12MY1967	C.01980)	(1389	GS13	12MY1967	C.00516)
(1390	GS14	12MY1967	0.01174)	(1392	GS16	12MY1967	0.01849)	(1398	GS22	14MY1967	C.0C607)
(1559	GS 7	4OC1967	0.00350)	(1567	GS15	5OC1967	C.00159)	(1571	GS19	6OC1967	C.00059)
(1574	GS22	6OC1967	0.00575)	(1575	GS28	6OC1967	0.00258)	(1522	BH 1	18SE1967	C.00365)
(1526	MO 1	20SE1967	0.06258)	(1527	TR 1	20SE1967	0.13836)	(1528	SB 1	20SE1967	C.01444)
(1529	KW 1	20SE1967	2.37435)	(1530	FR 1	24SE1967	0.02000)	(1551	ES 1	5OC1967	0.01598)
(1552	SM 1	6OC1967	0.02641)	(1550	MR 1	5OC1967	0.06195)	(1553	SG 1	6OC1967	C.01469)
(1351	MI 2	21AP1967	0.00621)	(1427	LU 2	29MY1967	0.01211)	(1418	SH 2	22MY1967	C.01555)
(1350	BH 2	19AP1967	C.16960)	(1399	PW 2	5MY1967	C.04081)	(1401	MO 2	6MY1967	0.03528)
(1402	TR 2	6MY1967	0.02707)	(1352	KW 2	21AP1967	0.18038)	(1353	FR 2	23AP1967	0.01055)
(1354	GH 2	25AP1967	0.00518)	(1404	MQ 2	10MY1967	0.01270)	(1407	SM 2	14MY1967	C.01194)
(1421	CH 2	23MY1967	0.01735)	(							

Fragilaria intermedia var. *fallax* (Grun.)

Synedra (amphicephala v. *??) fallax* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 39, fig. 16c. 1881.
Fragilaria vaucheriae var. *fallax* (Grun.) A. Cleve-Euler, K. Svenska Vet.-Akad. Handl., Fjärde Ser., 4(1):43, figs. 353s-x. 1953.

Valves more elongate and narrower than in the nominate variety, occasional specimens to 120μ long, linear to linear-lanceolate. Other features essentially as in the nominate variety.

256 ERINTEVL TOT NO OF STATIONS 256

(60973	CH	1876	19.88663)	(3540	CH	11MY1879	4.78964)	(3541	CH	1FE1881	0.65538)
(3507	CH	19FE1881	1.81118)	(46910	CH	0C1945	3.12404)	(46921	CH	23NO1945	1.70214)
(46908	CH	DE1945	0.21148)	(46517	CH	12JA1946	0.66676)	(46915	CH	20FE1946	1.47954)
(46914	CH	19AP1946	3.60907)	(46924	CH	10MY1946	2.43030)	(46923	CH	22NO1946	5.75250)
(46920	CH	20DE1946	2.91402)	(46905	CH	JA1947	3.14622)	(46909	CH	MR1947	3.11006)
(46912	CH	AP1947	0.90836)	(46916	CH	4MY1947	0.48518)	(46906	CH	MY1947	0.51768)
(46919	CH	5JN1947	0.00303)	(46907	CH	JL1947	0.70515)	(46913	CH	6AU1947	0.02092)
(46922	CH	21AU1947	0.37802)	(46758	EV	5JN1937	4.69296)	(46771	EV	11JN1937	0.39941)
(46743	EV	20JN1937	2.99734)	(46745	EV	3JL1937	10.53292)	(46770	EV	9JL1937	0.83492)
(46764	EV	17JL1937	2.48187)	(46757	EV	25JL1937	0.89548)	(46747	EV	1AU1937	8.59470)
(46763	EV	23AU1937	3.40905)	(46765	EV	30AU1937	0.62465)	(46769	EV	7SE1937	0.69475)
(46752	EV	15SE1937	9.14236)	(46760	EV	22SE1937	9.23728)	(46750	EV	24SE1937	10.42560)
(46748	EV	13OC1937	3.97096)	(46767	EV	27OC1937	3.79096)	(46749	EV	12MR1938	4.41801)
(46768	EV	16MR1938	5.35058)	(46762	EV	18MR1938	5.77856)	(46751	EV	30MR1938	7.50335)
(46772	EV	18AP1938	3.57700)	(46756	EV	27AP1938	2.58576)	(46759	EV	19MY1938	2.64686)
(46761	EV	27MY1938	2.67088)	(46766	EV	14DE1938	4.72117)	(1223	B 3	18MY1964	0.02656)
(1224	B 4	18MY1964	0.07646)	(1225	C 6	15MY1964	0.14112)	(1226	C 7	16MY1964	0.05327)
(1227	C' 2	13MY1964	0.06470)	(1228	D 2	14MY1964	0.40873)	(1229	D 5	14MY1964	0.54133)
(1231	E 3	16MY1964	0.11007)	(1232	E 5	16MY1964	1.21743)	(1234	B 3	18JN1964	0.00562)
(1439	B 6	5JN1964	0.00799)	(1236	C' 1	8JN1964	0.00700)	(1237	C' 2	8JN1964	0.00258)
(1238	D 3	11JN1964	0.28000)	(1239	D 4	11JN1964	0.37830)	(1240	D 6	10JN1964	0.02301)
(1241	E 2	13JN1964	0.22770)	(1242	E 3	13JN1964	0.11090)	(1243	E 6	13JN1964	0.03758)
(1244	F 1	11JN1964	0.00768)	(1245	F 2	11JN1964	0.02766)	(1246	F 3	11JN1964	0.20917)
(1248	B 3	24JL1964	0.00197)	(1250	C 6	10JL1964	0.00822)	(1252	C' 1	16JL1964	0.02232)
(1254	D 2	15JL1964	0.00958)	(1256	E 2	14JL1964	0.07694)	(1257	E 3	14JL1964	0.01436)
(1258	F 1	6JL1964	0.01416)	(1259	F 2	6JL1964	0.00620)	(1260	F 3	6JL1964	0.01528)
(1261	B 3	2AU1964	0.00196)	(1263	C 7	15AU1964	0.00400)	(1264	C' 1	10AU1964	0.00193)
(1265	C' 2	10AU1964	0.00671)	(1269	E 3	15AU1964	0.00548)	(1270	F 1	10AU1964	0.00272)
(1271	C 7	22SE1964	0.00653)	(1273	C' 2	10SE1964	0.00538)	(1278	D 6	18SE1964	0.00384)
(1279	E 1	16SE1964	0.00393)	(1280	E 2	16SE1964	0.00681)	(1281	E 3	16SE1964	0.00392)
(1284	E 6	17SE1964	0.00635)	(1285	F 1	15SE1964	0.04659)	(1286	F 2	15SE1964	0.01095)
(1288	B 3	15OC1964	0.00653)	(1445	B 6	14OC1964	0.00652)	(1289	C 7	14OC1964	0.00440)
(1295	D 4	15OC1964	0.00595)	(1297	D 6	14OC1964	0.07997)	(1298	E 1	12OC1964	0.01077)
(1300	E 3	13OC1964	0.00716)	(1302	E 5	13OC1964	0.02429)	(1303	E 6	13OC1964	0.10075)
(1304	F 1	11OC1964	0.00494)	(1307	B 6	NO1964	0.01082)	(1308	C 7	6NO1964	0.00912)
(1313	D 3	9NO1964	0.00386)	(1314	D 4	9NO1964	0.00287)	(1316	D 6	9NO1964	0.05289)
(1317	E 1	6NO1964	0.00383)	(1319	E 3	7NO1964	0.00262)	(1320	E 4	7NO1964	0.00207)
(1321	E 5	7NO1964	0.00638)	(1322	E 6	7NO1964	0.02999)	(1324	F 2	6NO1964	0.00466)
(1325	F 3	6NO1964	0.00252)	(1336	C 3	27JA1967	0.02888)	(1337	C 3	2MR1967	0.10876)
(1338	C 3	28MR1967	0.01983)	(1339	C 5	28MR1967	0.02806)	(1340	C 7	28MR1967	0.06036)
(1341	A 3	19AP1967	0.10197)	(1342	A 4	19AP1967	0.34829)	(1343	A 6	19AP1967	0.08962)
(1344	C 3	25AP1967	0.11581)	(1345	C 5	25AP1967	0.21051)	(1346	C 7	21AP1967	0.46733)
(1347	E 2	23AP1967	0.38046)	(1348	E 5	23AP1967	0.52776)	(1368	A 3	4MY1967	0.43984)
(1369	A 4	4MY1967	0.27582)	(1370	A 6	3MY1967	0.60536)	(1371	C 3	4MY1967	1.18657)
(1372	C 5	5MY1967	0.49652)	(1373	C 7	5MY1967	0.59901)	(1374	E 2	7MY1967	0.50209)
(1375	E 3	7MY1967	0.42109)	(1376	E 5	6MY1967	1.83832)	(1408	A 3	23MY1967	0.62603)
(1409	A 4	23MY1967	0.35410)	(1410	A 6	24MY1967	0.03383)	(1411	C 3	31MY1967	0.63185)
(1412	C 5	31MY1967	0.58928)	(1413	C 7	25MY1967	0.88448)	(1414	E 2	28MY1967	0.47019)
(1415	E 3	28MY1967	0.31479)	(1416	E 5	28MY1967	1.98998)	(1431	A 3	12JN1967	0.04635)
(1432	A 4	13JN1967	3.03975)	(1433	C 3	17JN1967	1.13034)	(1434	C 5	17JN1967	1.15145)
(1435	C 7	13JN1967	0.38519)	(1436	E 2	15JN1967	1.64640)	(1437	E 3	15JN1967	3.01456)
(1438	E 5	14JN1967	7.87945)	(1446	A 3	11JL1967	0.00245)	(1449	C 3	16JL1967	0.89419)
(1450	C 5	16JL1967	0.06665)	(1451	C 7	16JL1967	0.00394)	(1452	E 2	14JL1967	0.13412)
(1453	E 3	15JL1967	0.64707)	(1504	A 3	28AU1967	0.01234)	(1510	C 7	29AU1967	0.00316)
(1511	E 2	1SE1967	0.00614)	(1512	E 3	1SE1967	0.02356)	(1536	E 2	24SE1967	0.03545)
(1537	E 3	24SE1967	0.00863)	(1538	E 5	23SE1967	0.07734)	(1539	C 3	4OC1967	0.01006)
(1540	C 5	4OC1967	0.02482)	(1541	E 2	11OC1967	0.00532)	(1542	E 3	11OC1967	0.00509)
(1377	GS 1	9MY1967	5.26420)	(1378	GS 2	9MY1967	13.83457)	(1379	GS 3	9MY1967	9.09879)
(1380	GS 4	9MY1967	9.18110)	(1381	GS 5	10MY1967	12.18814)	(1382	GS 6	10MY1967	15.34875)
(1383	GS 7	10MY1967	12.35030)	(1384	GS 8	10MY1967	13.58721)	(1385	GS 9	10MY1967	8.07610)
(1386	GS10	12MY1967	14.67965)	(1387	GS11	12MY1967	4.71324)	(1388	GS12	12MY1967	0.58522)
(1389	GS13	12MY1967	0.51569)	(1390	GS14	12MY1967	0.75749)	(1391	GS15	12MY1967	3.35201)
(1392	GS16	12MY1967	4.53046)	(1393	GS17	13MY1967	5.75279)	(1394	GS18	13MY1967	3.73275)
(1395	GS19	13MY1967	0.25836)	(1396	GS20	13MY1967	0.00444)	(1397	GS21	13MY1967	0.02028)
(1398	GS22	14MY1967	0.39465)	(1554	GS 1	3OC1967	0.00712)	(1555	GS 2	3OC1967	0.01412)
(1557	GS 4	3OC1967	0.03363)	(1558	GS 5	4OC1967	0.02775)	(1559	GS 7	4OC1967	0.00350)
(1560	GS 8	4OC1967	0.01417)	(1561	GS 9	4OC1967	0.01761)	(1562	GS10	5OC1967	0.01480)
(1563	GS11	5OC1967	0.03507)	(1564	GS12	5OC1967	0.00823)	(1565	GS13	5OC1967	0.01014)
(1566	GS14	5OC1967	0.05870)	(1567	GS15	5OC1967	0.03175)	(1568	GS16	5OC1967	0.17171)
(1569	GS17	5OC1967	0.41621)	(1570	GS18	5OC1967	0.00992)	(1571	GS19	6OC1967	0.00820)
(1573	GS21	6OC1967	0.00560)	(1574	GS22	6OC1967	0.02301)	(1575	GS28	6OC1967	0.00516)
(1544	MU 1	20OC1967	0.00238)	(1524	MI 1	20SE1967	0.02189)	(1546	LU 1	20OC1967	0.01000)
(1520	HO 1	18SE1967	0.00943)	(1521	SH 1	18SE1967	0.06347)	(1523	RA 1	19SE1967	0.02768)

(1526	MO 1	20SE1967	0.21619)	(1527	TR 1	20SE1967	C.27044)	(1529	KW 1	20SE1967	0.02398)
(1530	FR 1	24SE1967	0.05001)	(1545	WL 1	20C1967	C.02703)	(1548	CA 1	30C1967	C.C5088)
(1552	SM 1	6OC1967	0.13206)	(1550	MR 1	5OC1967	0.30975)	(1553	SG 1	6OC1967	C.01469)
(1428	MU 2	29MY1967	0.15668)	(1426	MS 2	29MY1967	C.45144)	(1351	MI 2	21AP1967	1.34057)
(1427	LU 2	29MY1967	2.51816)	(1417	HC 2	22MY1967	2.93106)	(1418	SH 2	22MY1967	C.8C871)
(1350	BH 2	19AP1967	0.14097)	(1425	RA 2	25MY1967	C.55698)	(1399	PW 2	5MY1967	1.3C577)
(1401	MO 2	6MY1967	1.97554)	(1402	TR 2	6MY1967	2.51245)	(1400	SB 2	6MY1967	2.95449)
(1352	KW 2	21AP1967	2.74867)	(1353	FR 2	23AP1967	0.29536)	(1354	GH 2	25AP1967	C.23302)
(1429	WL 2	29MY1967	0.40344)	(1403	CA 2	10MY1967	10.04315)	(1404	MQ 2	10MY1967	C.72409)
(1405	ES 2	12MY1967	0.25155)	(1407	SM 2	14MY1967	C.11345)	(1349	CI 2	19AP1967	C.63223)
(1406	GB 2	13MY1967	0.00270)	(1419	BU 2	23MY1967	C.95203)	(1420	IH 2	23MY1967	C.12C85)
(1421	CH 2	23MY1967	0.13879)	(1422	GA 2	23MY1967	0.42916)	(1423	WA 2	25MY1967	1.84987)
(1424	KN 2	25MY1967	0.46629)	(							

Fragilaria leptostauron (Ehr.) Hust.

Biblarium leptostauron Ehrenberg, Mikrogeol., pl. 12, figs. 25-36. 1854.
Fragilaria leptostauron (Ehr.) Hustedt *in*: Rabenhorst, Kryptog.-Fl. Deutschland, 7(2)1:153, figs. 668a-b. 1931.

Cells in girdle view short rectangular, attached by the valve faces into short, often irregular or disorganized, band-shaped colonies. Valves lanceolate with extremely expanded centers, larger specimens cruciate in outline. This central expansion appears as a line or double line, depending on the level of focus, when the colony is seen in girdle view. Specimens from Lake Michigan 8-30μ long, 7-18μbroad. Striae very coarse, chambered 5-9 in 10μ, distinctly cross lineate. Axial area moderately broad, lanceolate in shape. No distinguishable central area is present. This species is extremely variable in outline and ornamentation and deformed or abnormal specimens are common in our collections.

257 FRLEPTOS TOT NO OF STATIONS 107

(6C973	CH	1876	0.11809)	(3540	CH	11MY1879	0.05125)	(3541	CH	1FE1881	C.00978)
(3507	CH	19FE1881	0.04528)	(46921	CH	23NO1945	0.00905)	(46917	CH	12JA1946	0.0C139)
(46915	CH	20FE1946	0.03983)	(46914	CH	19AP1946	0.00854)	(46924	CH	10MY1946	C.0C635)
(46923	CH	22NO1946	0.02404)	(46920	CH	20DE1946	0.00585)	(46905	CH	JA1947	C.00245)
(46909	CH	MR1947	0.00455)	(46916	CH	4MY1947	0.00475)	(46906	CH	MY1947	C.0C796)
(46919	CH	5JN1947	0.00910)	(46907	CH	JL1947	0.00937)	(46922	CH	21AU1947	C.01357)
(46758	EV	5JN1937	0.15334)	(46771	EV	11JN1937	C.00475)	(46743	EV	20JN1937	C.02569)
(46764	EV	17JL1937	0.10475)	(46757	EV	25JL1937	0.11073)	(46747	EV	1AU1937	C.05198)
(46763	EV	23AU1937	0.12175)	(46765	EV	30AU1937	0.00558)	(46752	EV	15SE1937	C.17414)
(46760	EV	22SE1937	0.00985)	(46750	EV	24SE1937	0.01414)	(46744	EV	6OC1937	C.00488)
(46748	EV	13OC1937	0.40564)	(46767	EV	27OC1937	C.06189)	(46768	EV	16MR1938	C.C4410)
(46762	EV	18MR1938	0.15439)	(46756	EV	27AP1938	0.00336)	(46759	EV	19MY1938	C.0C338)
(46766	EV	14DE1938	C.03169)	(1235	C 7	16JN1964	0.00282)	(1238	D 3	11JN1964	C.CC2CC)
(1240	D 6	10JN1964	0.05829)	(1243	E 6	13JN1964	C.09396)	(1252	C' 1	16JL1964	C.00558)
(1264	C' 1	10AU1964	0.00193)	(1265	C' 2	10AU1964	0.00224)	(1267	D 6	18AU1964	0.CC216)
(1270	F 1	10AU1964	0.00272)	(1271	C 7	22SE1964	0.01306)	(1279	E 1	16SE1964	C.01571)
(1283	E 5	16SE1964	0.01226)	(1284	E 6	17SE1964	0.02542)	(1285	F 1	15SE1964	0.01165)
(1297	D 6	14OC1964	0.00381)	(1300	E 3	13OC1964	0.00358)	(1302	E 5	13OC1964	C.01215)
(1303	E 6	13OC1964	C.CC560)	(1308	C 7	6NO1964	0.00304)	(1317	E 1	6NO1964	C.0C191)
(1318	E 2	7NO1964	0.00190)	(1322	E 6	7NO1964	C.C1666)	(1338	C 3	28MR1967	0.00264)
(1341	A 3	19AP1967	0.00217)	(1343	A 6	19AP1967	0.00556)	(1348	E 5	23AP1967	C.0C274)
(1368	A 3	4MY1967	0.00314)	(1371	C 3	4MY1967	0.00231)	(1411	C 3	31MY1967	C.00410)
(1449	C 3	16JL1967	0.00382)	(1536	E 2	24SE1967	0.00273)	(1538	E 5	23SE1967	C.06076)
(1543	E 5	10OC1967	0.00718)	(1386	GS10	12MY1967	0.00862)	(1387	GS11	12MY1967	C.03565)
(1388	GS12	12MY1967	0.00603)	(1389	GS13	12MY1967	0.00516)	(1393	GS17	13MY1967	C.0C274)
(1394	GS18	13MY1967	0.00516)	(1397	GS21	13MY1967	C.00065)	(1398	GS22	14MY1967	C.08197)
(1565	GS13	5OC1967	0.01014)	(1566	GS14	5OC1967	0.00183)	(1567	GS15	5OC1967	C.00318)
(1569	GS17	5OC1967	0.00892)	(1570	GS18	5OC1967	0.00992)	(1573	GS21	6OC1967	0.00224)
(1574	GS22	6OC1967	2.21481)	(1575	GS28	6OC1967	0.00387)	(1546	LU 1	20C1967	C.0C500)

(1521	SH 1	18SE1967	0.0C577)	(1526	MO 1	20SE1967	C.36980)	(1527	TR 1	20SE1967	C.58491)
(1528	SB 1	20SE1967	0.18770)	(1529	KW 1	20SE1967	0.38374)	(1552	SM 1	6OC1967	0.37636)
(1550	MR 1	5OC1967	0.08673)	(1553	SG 1	6OC1967	0.10282)	(1426	MS 2	29MY1967	C.01050)
(1350	BH 2	19AP1967	0.00661)	(1399	PW 2	5MY1967	0.08161)	(1401	MO 2	6MY1967	C.33514)
(1402	TR 2	6MY1967	0.22742)	(1400	SB 2	6MY1967	C.14892)	(1352	KW 2	21AP1967	C.03436)
(1404	MQ 2	10MY1967	0.08892)	(1407	SM 2	14MY1967	0.20302)	(1349	CI 2	19AP1967	0.01078)
(1422	GA 2	23MY1967	0.01022)	(1423	WA 2	25MY1967	C.00856)	(			

Fragilaria leptostauron var. *dubia* (Grun.) Hust.

Fragilaria harrisonii var. *dubia* Grunow, Verh. Zool.-Bot. Ges. Wien, 12:368, pl. 7, figs. 8a-d. 1862.
Fragilaria leptostauron var. *dubia* (Grun.) Hustedt *in*: Rabenhorst, Kryptog.-Fl. Deutschland, 7(2)1:154, figs. 668h-i. 1931.

The valves of this entity lack the strongly expanded central portion of the nominate variety and are rhombic-lanceolate to elliptic-lanceolate in outline. Other features as in the nominate variety.

258 FRLEPTVD TOT NO OF STATIONS 5

(1270	F 1	10AU1964	0.00272)	(1569	GS17	50C1967	0.00149)	(1571	GS19	60C1967	0.00117)
(1550	MR 1	50C1967	0.08673)	(1426	MS 2	29MY1967	0.02100)	(			

260 FRLEPTVR TOT NO OF STATIONS 2

(1341	A 3	19AP1967	0.00108)	(1552	SM 1	60C1967	0.00660)	(

Fragilaria leptostauron var. *fossilis* (Pant.) Řeháková

Staurosira harrisonii var. *fossilis* Pantocsek, Foss. Bacill. Ungarns, Vol. 3, p. 95, pl. 5, fig. 77. 1905.
Fragilaria leptostauron var. *fossilis* (Pant.) Řeháková, Rozpr. Ustřed. Ust. geol. Ceskoslavokia, 32:37, pl. 11, figs. 17-18. 1965.

The valves of this entity are considerably elongated in the apical axis and less strongly expanded in the mid portion of the valve than the nominate variety. The striae are somewhat shortened and a broad, lanceolate, structureless area occupies the axis of the valves. The maximum size of this variety exceeds that of the nominate variety, specimens in our material reaching 45μ in length. Structure and direction of the striae essentially similar to the nominate variety.

259 FRLEPTVF TOT NO OF STATIONS 5

(1567	GS15	50C1967	0.00159)	(1571	GS19	60C1967	0.00059)	(1426	MS 2	29MY1967	0.02100)
(1354	GH 2	25AP1967	0.00678)	(1404	MQ 2	10MY1967	0.01270)	(			

Fragilaria pinnata Ehr.

Fragilaria pinnata Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:415, pl. 3(6), fig. 8. 1843.

Cells in girdle view elongate-rectangular to square, attached by the valve faces into band-shaped colonies. Colony formation variable sometimes consisting of only a few cells. Valves variable in outline, linear-elliptic to elliptic, in the smaller individuals nearly circular. Specimens from Lake Michigan 5-30μ long, 2-6μ broad. Striae coarse, chambered, 8-11 in 10μ, distinctly cross lineate. Axial area narrow, linear to very slightly lanceolate. No specially demarcated central area is present.

This species is scattered in collections taken in nearshore areas in Lake Michigan. Occasional valves are noted in collections from offshore areas, especially in the fall months.

262 FRPINNAT TOT NO OF STATIONS 191

(60973	CH	1876	1.60605)	(3540	CH	11MY1879	0.06989)	(3541	CH	1FE1881	0.06847)
(3507	CH	19FE1881	0.01132)	(46921	CH	23NO1945	0.00517)	(46917	CH	12JA1946	0.01663)
(46915	CH	20FE1946	0.17641)	(46914	CH	19AP1946	0.02883)	(46924	CH	10MY1946	0.05714)
(46923	CH	22NO1946	0.11147)	(46920	CH	20DE1946	0.06655)	(46905	CH	JA1947	0.13605)
(46909	CH	MR1947	0.07286)	(46916	CH	4MY1947	0.01561)	(46906	CH	MY1947	0.10022)
(46919	CH	5JN1947	0.10925)	(46907	CH	JL1947	0.05375)	(46922	CH	21AU1947	0.03926)
(46758	EV	5JN1937	0.59910)	(46771	EV	11JN1937	0.00238)	(46743	EV	20JN1937	0.23979)
(46764	EV	17JL1937	0.34649)	(46757	EV	25JL1937	0.23109)	(46747	EV	1AU1937	0.34656)
(46763	EV	23AU1937	0.48701)	(46752	EV	15SE1937	1.52373)	(46760	EV	22SE1937	0.08863)
(46750	EV	24SE1937	0.73997)	(46744	EV	6OC1937	0.29750)	(46748	EV	13OC1937	1.43040)
(46767	EV	27OC1937	1.40807)	(46749	EV	12MR1938	0.14565)	(46768	EV	16MR1938	0.17639)
(46762	EV	18MR1938	3.70534)	(46751	EV	30MR1938	0.62528)	(46756	EV	27AP1938	0.01343)
(46759	EV	19MY1938	0.10466)	(46761	EV	27MY1938	0.04906)	(46766	EV	14DE1938	1.10900)
(1226	C 7	16MY1964	0.02664)	(1231	E 3	16MY1964	0.00245)	(1232	E 5	16MY1964	0.00348)
(1235	C 7	16JN1964	0.01412)	(1238	D 3	11JN1964	0.00200)	(1240	D 6	10JN1964	0.29605)
(1243	E 6	13JN1964	0.47607)	(1244	F 1	11JN1964	0.00110)	(1251	C 7	16JL1964	0.00290)
(1255	D 5	15JL1964	0.00513)	(1256	E 2	14JL1964	0.00183)	(1264	C' 1	10AU1964	0.00193)
(1267	D 6	18AU1964	0.03026)	(1269	E 3	15AU1964	0.00274)	(1271	C 7	22SE1964	0.02611)
(1272	C' 1	10SE1964	0.01642)	(1274	D 1	17SE1964	0.00938)	(1275	D 2	17SE1964	0.00645)
(1276	D 3	18SE1964	0.01118)	(1278	D 6	18SE1964	0.00769)	(1279	E 1	16SE1964	0.00393)

(1282	E 4	16SE1964	0.01108)	(1283	E 5	16SE1964	0.01839)	(1284	E 6	17SE1964	0.28914)
(1285	F 1	15SE1964	0.01747)	(1286	F 2	15SE1964	0.01095)	(1287	F 3	15SE1964	0.00500)
(1289	C 7	14OC1964	0.00440)	(1294	D 3	15OC1964	0.00330)	(1296	D 5	14OC1964	0.01574)
(1297	D 6	14OC1964	0.07997)	(1299	E 2	12OC1964	0.00314)	(1302	E 5	13OC1964	0.12552)
(1303	E 6	13OC1964	0.15672)	(1304	F 1	11OC1964	0.00494)	(1311	D 1	8NO1964	0.00258)
(1316	D 6	9NO1964	0.00756)	(1318	E 2	7NO1964	0.00190)	(1320	E 4	7NO1964	0.00207)
(1321	E 5	7NO1964	0.00638)	(1322	E 6	7NO1964	0.02999)	(1336	C 3	27JA1967	0.00193)
(1337	C 3	2MR1967	0.00147)	(1338	C 3	28MR1967	0.00264)	(1339	C 5	28MR1967	0.00312)
(1340	C 7	28MR1967	0.43267)	(1341	A 3	19AP1967	0.00542)	(1342	A 4	19AP1967	0.00722)
(1343	A 6	19AP1967	0.38905)	(1345	C 5	25AP1967	0.00195)	(1346	C 7	21AP1967	0.00801)
(1347	E 2	23AP1967	0.00163)	(1348	E 5	23AP1967	0.00960)	(1368	A 3	4MY1967	0.00314)
(1369	A 4	4MY1967	0.01118)	(1370	A 6	3MY1967	0.04143)	(1374	E 2	7MY1967	0.00299)
(1376	E 5	6MY1967	0.00281)	(1408	A 3	23MY1967	0.00447)	(1413	C 7	25MY1967	0.00632)
(1449	C 3	16JL1967	0.00764)	(1452	E 2	14JL1967	0.00639)	(1508	C 3	2SE1967	0.00400)
(1512	E 3	1SE1967	0.00393)	(1532	A 3	18SE1967	0.00329)	(1533	A 4	19SE1967	0.01393)
(1534	A 6	19SE1967	0.00620)	(1536	E 2	24SE1967	0.01909)	(1537	E 3	24SE1967	0.01725)
(1538	E 5	23SE1967	1.80081)	(1541	E 2	11OC1967	0.01064)	(1543	E 5	10OC1967	0.12211)
(1382	GS 6	10MY1967	0.00278)	(1383	GS 7	10MY1967	0.00802)	(1384	GS 8	10MY1967	0.01109)
(1386	GS10	12MY1967	0.00575)	(1387	GS11	12MY1967	0.38419)	(1388	GS12	12MY1967	0.01207)
(1389	GS13	12MY1967	0.07220)	(1390	GS14	12MY1967	0.01762)	(1391	GS15	12MY1967	0.01915)
(1392	GS16	12MY1967	0.09862)	(1393	GS17	13MY1967	0.01644)	(1394	GS18	13MY1967	0.02580)
(1395	GS19	13MY1967	0.00939)	(1396	GS20	13MY1967	0.13762)	(1397	GS21	13MY1967	0.00981)
(1398	GS22	14MY1967	1.06263)	(1554	GS 1	30OC1967	0.01779)	(1555	GS 2	30OC1967	0.00353)
(1556	GS 3	30OC1967	0.02607)	(1557	GS 4	30OC1967	0.06353)	(1558	GS 5	40OC1967	0.30918)
(1559	GS 7	40OC1967	0.02448)	(1560	GS 8	40OC1967	0.01417)	(1562	GS10	50OC1967	0.00493)
(1563	GS11	50OC1967	0.00701)	(1564	GS12	50OC1967	0.00329)	(1565	GS13	50OC1967	0.44620)
(1566	GS14	50OC1967	0.00917)	(1567	GS15	50OC1967	0.11114)	(1568	GS16	50OC1967	0.05195)
(1569	GS17	50OC1967	0.02676)	(1570	GS18	50OC1967	0.03967)	(1571	GS19	60OC1967	0.21893)
(1572	GS20	60OC1967	0.46326)	(1573	GS21	60OC1967	0.22398)	(1574	GS22	60OC1967	7.44981)
(1575	GS28	60OC1967	0.45157)	(1544	MU 1	20OC1967	0.00715)	(1547	MS 1	20OC1967	0.02395)
(1524	MI 1	20SE1967	0.08757)	(1546	LU 1	20OC1967	0.03001)	(1520	HO 1	18SE1967	0.43849)
(1521	SH 1	18SE1967	0.01154)	(1522	BH 1	18SE1967	0.03100)	(1523	RA 1	19SE1967	0.01845)
(1525	PW 1	20SE1967	0.27851)	(1526	MO 1	20SE1967	40.32542)	(1527	TR 1	20SE1967	55.67294)
(1528	SB 1	20SE1967	13.62980)	(1529	KW 1	20SE1967	36.64708)	(1530	FR 1	24SE1967	0.20002)
(1531	GH 1	25SE1967	0.03381)	(1545	WL 1	20OC1967	3.89215)	(1549	MQ 1	4OC1967	0.04111)
(1551	ES 1	5OC1967	0.01598)	(1552	SM 1	6OC1967	6.97260)	(1550	MR 1	5OC1967	13.08388)
(1553	SG 1	6OC1967	3.17274)	(1426	MS 2	29MY1967	0.08399)	(1351	MI 2	21AP1967	0.10240)
(1417	HO 2	22MY1967	0.10842)	(1418	SH 2	22MY1967	0.45101)	(1350	BH 2	19AP1967	0.24669)
(1425	RA 2	25MY1967	0.01768)	(1399	PW 2	5MY1967	1.52339)	(1401	MO 2	6MY1967	9.03104)
(1402	TR 2	6MY1967	8.49036)	(1400	SB 2	6MY1967	2.76388)	(1352	KW 2	21AP1967	3.29840)
(1353	FR 2	23AP1967	0.04219)	(1354	GH 2	25AP1967	0.01899)	(1404	MQ 2	10MY1967	0.60976)
(1405	ES 2	12MY1967	0.03225)	(1407	SM 2	14MY1967	5.25467)	(1349	CI 2	19AP1967	0.17243)
(1406	GB 2	13MY1967	0.00270)	(1421	CH 2	23MY1967	0.01735)	(1422	GA 2	23MY1967	0.02555)
(1423	WA 2	25MY1967	0.13703)	(1424	KN 2	25MY1967	0.06661)	(			

Fragilaria pinnata var. *intercedens* (Grun.) Hust.

Fragilaria mutabile var. *intercedens* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 45, fig. 13. 1881.
Fragilaria pinnata var. *intercedens* (Grun.) Hustedt *in*: Rabenhorst, Kryptog.-Fl. Deutschland, 7(2)2:161. 1931.

Distinguished from the nominate variety by its strictly linear shape, more robust structure and wider axial area. Striae 6-9 in 10μ, shorter than in the nominate variety.

The status of this entity is questionable. Its morphology, except for the lack of marginal spines and presence of cross lineation in the striae, is very similar to the linear forms of *F. spinosa* Skv. The relationship between *F. mutabile* (Wm. Smith) Grun., *F. pinnata* Ehr. and their numerous described varieties and Skvortzow's taxon should be critically reexamined.

268 FRSPECOD TOT NO OF STATIONS 33

(46914	CH	19AP1946	0.00107)	(46520	CH	20DE1946	0.00031)	(46906	CH	MY1947	0.00066)
(46907	CH	JL1947	0.00148)	(46758	EV	5JN1937	0.00713)	(46764	EV	17JL1937	0.00806)
(46747	EV	1AU1937	0.00495)	(46748	EV	13OC1937	0.04270)	(46767	EV	27OC1937	0.00387)
(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	0.02206)	(46751	EV	30MR1938	0.01117)
(1284	E 6	17SE1964	0.00318)	(1343	A 6	19AP1967	0.00139)	(1387	GS11	12MY1967	0.01188)
(1388	GS12	12MY1967	0.00603)	(1398	GS22	14MY1967	0.00304)	(1567	GS15	50C1967	0.00159)
(1569	GS17	50C1967	0.00149)	(1574	GS22	6OC1967	0.04315)	(1525	PW 1	20SE1967	0.02785)
(1526	MO 1	20SE1967	0.03982)	(1527	TR 1	20SE1967	0.05660)	(1528	SB 1	20SE1967	0.01444)
(1552	SM 1	6OC1967	0.00660)	(1550	MR 1	5OC1967	0.01239)	(1351	MI 2	21AP1967	0.00310)
(1418	SH 2	22MY1967	0.06221)	(1399	PW 2	5MY1967	0.00680)	(1401	MO 2	6MY1967	0.03528)
(1402	TR 2	6MY1967	0.01624)	(1352	KW 2	21AP1967	0.00859)	(1407	SM 2	14MY1967	0.01194)

Fragilaria pinnata var. *lancettula* (Schum.) Hust.

Fragilaria lancettula Schumann, Schrift. Phys.-Ökon. Ges. Königsberg, pl. 1, fig. 4. 1867.
Fragilaria pinnata var. *lancettula* (Schum.) Hustedt *in*: A. Schmidt, Atlas Diat., pl. 297, figs. 51, 59-64. 1913.

Valves lanceolate with more or less gibbous midportions and protracted, often somewhat unequal ends. Morphology and ornamentation of the frustule essentially similar to the nominate variety.

263 FRPINNVL TOT NO OF STATIONS 67

(60973	CH	1876	0.07085)	(46921	CH	23NO1945	C.00129)	(46917	CH	12JA1946	C.00028)
(46923	CH	22NO1946	0.00219)	(46920	CH	20DE1946	0.00062)	(46905	CH	JA1947	C.00245)
(46907	CH	JL1947	C.00049)	(46922	CH	21AU1947	C.00048)	(1229	D 5	14MY1964	C.00211)
(1240	D 6	10JN1964	0.01381)	(1243	E 6	13JN1964	0.01462)	(1244	F 1	11JN1964	C.00110)
(1264	C' 1	10AU1964	0.00386)	(1272	C' 1	10SE1964	C.00410)	(1278	D 6	18SE1964	C.00384)
(1297	D 6	14OC1964	0.01142)	(1301	E 4	13OC1964	0.00442)	(1302	E 5	13OC1964	C.00405)
(1343	A 6	19AP1967	0.00347)	(1536	E 2	24SE1967	0.00273)	(1385	GS 9	10MY1967	C.00471)
(1387	GS11	12MY1967	0.00792)	(1396	GS20	13MY1967	0.00296)	(1397	GS21	13MY1967	C.00131)
(1398	GS22	14MY1967	0.00304)	(1554	GS 1	30C1967	0.00356)	(1555	GS 2	30C1967	C.00353)
(1557	GS 4	30C1967	0.00374)	(1560	GS 8	40C1967	0.00472)	(1565	GS13	50C1967	C.04056)
(1567	GS15	50C1967	0.00159)	(1569	GS17	50C1967	0.00149)	(1570	GS18	50C1967	C.00992)
(1571	GS19	60C1967	0.00117)	(1572	GS20	60C1967	0.00631)	(1573	GS21	60C1967	C.00224)
(1574	GS22	60C1967	0.00288)	(1546	LU 1	20C1967	0.01501)	(1520	HO 1	18SE1967	C.00943)
(1522	BH 1	18SE1967	0.00729)	(1523	RA 1	19SE1967	0.00923)	(1525	PW 1	20SE1967	C.08355)
(1526	MO 1	20SE1967	1.51903)	(1527	TR 1	20SE1967	8.15094)	(1528	SB 1	20SE1967	C.69304)
(1529	KW 1	20SE1967	2.68617)	(1545	WL 1	20C1967	0.21623)	(1551	ES 1	50C1967	0.00799)
(1552	SM 1	60C1967	0.13206)	(1550	MR 1	50C1967	0.33453)	(1553	SG 1	60C1967	0.03672)
(1426	MS 2	29MY1967	0.02100)	(1351	MI 2	21AP1967	0.00310)	(1417	FO 2	22MY1967	C.00748)
(1350	BH 2	19AP1967	0.05947)	(1399	PW 2	5MY1967	0.01360)	(1401	MO 2	6MY1967	0.11759)
(1402	TR 2	6MY1967	0.12454)	(1400	SB 2	6MY1967	0.00596)	(1352	KW 2	21AP1967	C.06013)
(1354	GH 2	25AP1967	0.00518)	(1404	MQ 2	10MY1967	0.16514)	(1405	ES 2	12MY1967	C.01290)
(1407	SM 2	14MY1967	0.16719)	(1349	CI 2	19AP1967	0.00359)	(1420	IH 2	23MY1967	C.01511)
(1423	WA 2	25MY1967	0.00856)	(							

Fragilaria spinosa Skv.

Fragilaria mutabilis var. *robusta* Skvortzow and Meyer, Proc. Sungaree River Biol. Station, 1:7, pl. 1, fig. 8. 1928.
Fragilaria spinosa Skvortzow, Phillipine J. Sci., 37:307, pl. 1, figs. 13, 27; pl. 4, figs. 13, 19; pl. 5, figs. 54, 59. 1937.

Cells in girdle view elongate-rectangular, attached by the valve faces into band-shaped colonies. Membranous spines arising from the valve margin overlap the adjacent cell. Valves highly variable in outline, linear-elliptic to lanceolate, often more or less gibbous near the center. Specimens from Lake Michigan 25-46μ long, 5-8μ broad. Striae very coarse, chambered, not extending to the midline of the valve, 5-8 in 10μ, without visible substructure. A submarginal spine is visible between each of the striae. Axial area broad, more or less lanceolate, without visible structure. No specially demarcated central area is present.

Our specimens from Lake Michigan are uniformly narrower than those originally described by Skvortzow, length-width ratios being about 1/5-1/6 rather than 1/3.5-1/5 as in the Lake Baikal material. The structure and ornamentation of the frustule in our specimens is essentially identical to the specimens described by Skvortzow.

This species is rare in our collections, and its recorded distribution indicates that it is a member of the periphyton community in relatively deep water.

Coll: 1395.

Fragilaria vaucheriae (Kütz.) Peters.

Exilaria vaucheriae Kützing, Linnaea, 8:560, pl. 15, fig. 38. 1833.
Synedra vaucheriae (Kütz.) Kützing, Bacill., p. 65, pl. 14(4), figs. 1, 2a, 3. 1844.
Fragilaria vaucheriae (Kütz.) Peterson, Bot. Not. 1938(1/3):167, figs. 1a-b. 1938.

Cells in girdle view linear, united by the valve faces into band-shaped colonies of variable length. Valves elliptic-lanceolate to lanceolate with more or less protracted, usually rostrate, ends. Specimens from Lake Michigan 8-30μ long, 3-4.5μ broad. Axial area narrow, central area unilateral, usually noticeably thickened on its margins. Striae distinct, parallel throughout the length of the valve, 14-16 in 10μ.

This entity is common in periphyton collections but only occasional specimens are noted in plankton collections from Lake Michigan. In general aspect it resembles *F. intermedia* but is distinguished from that species by its finer striae, less strongly silicified frustule, and the presence of a distinctly thickened border around the central area.

696 SYVAUCHE TCT NO OF STATIONS 149

(3540	CH	11MY1879	0.00466)	(3541	CH	1FE1881	0.00978)	(46910	CH	0C1945	0.00437)
(46921	CH	23N01945	0.00259)	(46908	CH	DE1945	0.02014)	(46917	CH	12JA1946	0.00305)
(46915	CH	20FE1946	0.04552)	(46914	CH	19AP1946	0.01602)	(46924	CH	10MY1946	0.02540)
(46923	CH	22N01946	0.01748)	(46920	CH	20DE1946	0.00246)	(46909	CH	MR1947	0.02277)
(46912	CH	AP1947	0.01150)	(46916	CH	4MY1947	0.01221)	(46906	CH	MY1947	0.00796)
(46919	CH	5JN1947	0.49316)	(46907	CH	JL1947	0.00148)	(46922	CH	21AU1947	0.00630)
(46758	EV	5JN1937	8.18772)	(46771	EV	11JN1937	0.01189)	(46743	EV	20JN1937	0.40250)
(46745	EV	3JL1937	0.06270)	(46770	EV	9JL1937	1.10925)	(46764	EV	17JL1937	2.11120)
(46757	EV	25JL1937	0.58736)	(46747	EV	1AU1937	0.46043)	(46763	EV	23AU1937	4.18019)
(46765	EV	30AU1937	0.02789)	(46752	EV	15SE1937	0.23944)	(46760	EV	22SE1937	0.10340)
(46750	EV	24SE1937	0.29222)	(46748	EV	13OC1937	0.10675)	(46767	EV	27OC1937	0.05029)
(46768	EV	16MR1938	0.07350)	(46762	EV	18MR1938	0.24261)	(46756	EV	27AP1938	0.00336)
(46759	EV	19MY1938	0.02026)	(46761	EV	27MY1938	0.00818)	(46766	EV	14DE1938	0.07921)
(1236	C' 1	8JN1964	0.00175)	(1237	C' 2	8JN1964	0.00258)	(1240	D 6	10JN1964	0.00460)
(1243	E 6	13JN1964	0.00626)	(1244	F 1	11JN1964	0.01425)	(1245	F 2	11JN1964	0.02075)
(1246	F 3	11JN1964	0.01793)	(1252	C' 1	16JL1964	0.00279)	(1255	D 5	15JL1964	0.00513)
(1259	F 2	6JL1964	0.00310)	(1264	C' 1	10AU1964	0.02124)	(1265	C' 2	10AU1964	0.00894)
(1266	D 3	18AU1964	0.00351)	(1268	E 2	15AU1964	0.00547)	(1269	E 3	15AU1964	0.00274)
(1270	F 1	10AU1964	0.00272)	(1274	D 1	17SE1964	0.00938)	(1275	D 2	17SE1964	0.00645)
(1279	E 1	16SE1964	0.01178)	(1284	E 6	17SE1964	0.00318)	(1285	F 1	15SE1964	0.06406)
(1298	E 1	12OC1964	0.00539)	(1299	E 2	12OC1964	0.00314)	(1301	E 4	13OC1964	0.00442)
(1304	F 1	11OC1964	0.00247)	(1316	D 6	9N01964	0.00378)	(1318	E 2	7N01964	0.00380)
(1319	E 3	7N01964	0.00262)	(1320	E 4	7N01964	0.00207)	(1341	A 3	19AP1967	0.00108)
(1343	A 6	19AP1967	0.00208)	(1374	E 2	7MY1967	0.00299)	(1410	A 6	24MY1967	0.00564)
(1432	A 4	13JN1967	0.00255)	(1451	C 7	16JL1967	0.00197)	(1454	E 5	15JL1967	0.00200)
(1508	C 3	2SE1967	0.00400)	(1511	E 2	1SE1967	0.00307)	(1534	A 6	19SE1967	0.00310)
(1536	E 2	24SE1967	0.00818)	(1537	E 3	24SE1967	0.00431)	(1538	E 5	23SE1967	0.09943)
(1540	C 5	4OC1967	0.00496)	(1541	E 2	11OC1967	0.04790)	(1542	E 3	11OC1967	0.03051)
(1543	E 5	10OC1967	0.01437)	(1379	GS 3	9MY1967	0.00309)	(1380	GS 4	9MY1967	0.00168)
(1382	GS 6	10MY1967	0.01388)	(1384	GS 8	10MY1967	0.00185)	(1387	GS11	12MY1967	0.08714)
(1392	GS16	12MY1967	0.00308)	(1394	GS18	13MY1967	0.01032)	(1395	GS19	13MY1967	0.00235)
(1396	GS20	13MY1967	0.00148)	(1397	GS21	13MY1967	0.00196)	(1398	GS22	14MY1967	0.00607)
(1554	GS 1	30C1967	0.02491)	(1555	GS 2	30C1967	0.00706)	(1556	GS 3	30C1967	0.00521)
(1557	GS 4	30C1967	0.02242)	(1562	GS10	50C1967	0.00493)	(1565	GS13	50C1967	0.02535)
(1566	GS14	50C1967	0.00183)	(1568	GS16	50C1967	0.00144)	(1569	GS17	50C1967	0.00149)
(1570	GS18	50C1967	0.01983)	(1572	GS20	60C1967	0.00270)	(1573	GS21	60C1967	0.00112)
(1574	GS22	60C1967	0.07766)	(1575	GS28	60C1967	0.00387)	(1544	MU 1	20C1967	0.10246)
(1547	MS 1	20C1967	0.09581)	(1524	MI 1	20SE1967	0.08757)	(1546	LU 1	20C1967	1.28045)
(1520	HO 1	18SE1967	0.02829)	(1521	SH 1	18SE1967	0.02308)	(1522	BH 1	18SE1967	0.00365)
(1523	RA 1	19SE1967	0.00923)	(1526	MO 1	20SE1967	0.12516)	(1527	TR 1	20SE1967	0.30189)
(1528	SB 1	20SE1967	0.15882)	(1529	KW 1	20SE1967	2.49430)	(1530	FR 1	24SE1967	0.33003)
(1545	WL 1	20C1967	21.73119)	(1548	CA 1	30C1967	0.01272)	(1549	MQ 1	40C1967	0.04111)
(1551	ES 1	50C1967	0.00799)	(1552	SM 1	60C1967	0.01981)	(1550	MR 1	50C1967	0.35931)
(1553	SG 1	60C1967	0.03672)	(1428	MU 2	29MY1967	0.00603)	(1427	LU 2	29MY1967	0.03632)
(1417	HO 2	22MY1967	0.01495)	(1350	BH 2	19AP1967	0.07929)	(1425	RA 2	25MY1967	0.00884)
(1399	PW 2	5MY1967	0.04081)	(1402	TR 2	6MY1967	0.02707)	(1400	SB 2	6MY1967	0.02383)
(1352	KW 2	21AP1967	0.07731)	(1354	GH 2	25AP1967	0.00345)	(1429	WL 2	29MY1967	0.04247)
(1403	CA 2	10MY1967	2.30156)	(1404	MQ 2	10MY1967	0.07622)	(1405	ES 2	12MY1967	0.03225)
(1407	SM 2	14MY1967	0.04777)	(1349	CI 2	19AP1967	0.00359)	(1406	GB 2	13MY1967	0.02965)
(1419	BU 2	23MY1967	0.01831)	(1420	IH 2	23MY1967	0.03021)	(			

Fragilaria vaucheriae var. *capitellata* (Grun.) Patr.

Synedra capitellata Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 40, fig. 26. 1881.
Synedra vaucheriae var. *capitellata* (Grun.) Cleve, J. Linnean Soc. London, Bot., 20:314. 1883.
Fragilaria vaucheriae var. *capitellata* (Grun.) Patrick, Akad. Nat. Sci. Philadelphia Monogr. 13:121. 1966.

Valves lanceolate with subcapitate to capitate ends. Specimens from Lake Michigan 15-50μ long, 3-4μ broad. Striae somewhat finer than in the nominate variety, 14-18 in 10μ. Other features of morphology and ornamentation of the frustule essentially similar to the nominate variety.

This entity is quite common in plankton collections from Lake Michigan. It is somewhat questionable that forms having a much expanded central area such as illustrated by Patrick (Patrick and Reimer 1966) belong to this taxon.

697 SYVAUCVC TOT NO OF STATIONS 39

(46917	CH	12JA1946	0.00028)	(46914	CH	19AP1946	0.00107)	(46923	CH	22NO1946	0.00219)
(46909	CH	MR1947	0.00455)	(46512	CH	AP1947	0.01150)	(46916	CH	4MY1947	0.00170)
(46758	EV	5JN1937	0.93431)	(46743	EV	20JN1937	0.00856)	(46745	EV	3JL1937	0.04180)
(46747	EV	1AU1937	0.00495)	(46763	EV	23AU1937	0.04058)	(46752	EV	15SE1937	0.06530)
(1244	F 1	11JN1964	0.00219)	(1258	F 1	6JL1964	0.00708)	(1259	F 2	6JL1964	0.00620)
(1260	F 3	6JL1964	0.00573)	(1279	E 1	16SE1964	0.00785)	(1281	E 3	16SE1964	0.00392)
(1285	F 1	15SE1964	0.04659)	(1297	D 6	14OC1964	0.00190)	(1510	C 7	29AU1967	0.00316)
(1511	E 2	1SE1967	0.00307)	(1379	GS 3	9MY1967	0.00619)	(1382	GS 6	10MY1967	0.00278)
(1387	GS11	12MY1967	0.01188)	(1388	GS12	12MY1967	0.00603)	(1557	GS 4	30C1967	0.00374)
(1561	GS 9	40C1967	0.00587)	(1563	GS11	50C1967	0.00234)	(1565	GS13	50C1967	0.00507)
(1567	GS15	50C1967	0.00159)	(1574	GS22	60C1967	0.00863)	(1546	LU 1	20C1967	0.00500)
(1526	MO 1	20SE1967	0.00565)	(1549	MO 1	40C1967	0.01370)	(1552	SM 1	60C1967	0.00660)
(1550	MR 1	50C1967	0.02478)	(1403	CA 2	10MY1967	0.32693)	(1404	MO 2	10MY1967	0.07622)

Fragilaria vaucheriae var. *truncata* (Grev.)

Exilaria truncata Greville, *in*: Pritchard, Hist. Infus., p. 789. 1861.
Synedra vaucheriae var. *truncata* (Grev.) Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 40, fig. 20. 1881.

Valves linear with rostrate to subcapitate apices. Other features of the morphology and ornamentation of the frustule essentially similar to the nominate variety.

This entity is relatively rare in our collections. Previous reports indicate that it finds its primary habitat in the periphyton.

699 SYVALCVT TOT NO OF STATIONS 2

(1265	C' 2	10AU1964	0.00224)	(1341	A 3	19AP1967	0.00217)	(

Species *incertae sedis*

Fragilaria sp. #1.

266 FRSPECOA TOT NO OF STATIONS 6

(1565	GS13	50C1967	0.04563)	(1550	MR 1	50C1967	0.06195)	(1350	BH 2	19AP1967	0.01101)
(1354	GH 2	25AP1967	0.00173)	(1404	MO 2	10MY1967	0.03811)	(1420	IH 2	23MY1967	0.10574)

Fragilaria sp. #7.

270 FRSPECOG TCT NO OF STATIONS 223

(60973	CH	1876	0.37789)	(3540	CH	11MY1879	0.01864)	(3541	CH	1FE1881	C.22498)
(46910	CH	0C1945	0.00983)	(46921	CH	23N01945	C.25222)	(46908	CH	DE1945	C.46324)
(46917	CH	12JA1946	0.02246)	(46915	CH	20FE1946	C.11950)	(46914	CH	19AP1946	C.0C427)
(46924	CH	10MY1946	0.02116)	(46923	CH	22N01946	0.07868)	(46920	CH	20DE1946	1.24165)
(46905	CH	JA1947	0.03922)	(46909	CH	MR1947	0.05464)	(46912	CH	AP1947	C.24146)
(46916	CH	4MY1947	1.38939)	(46906	CH	MY1947	1.16478)	(46919	CH	5JN1947	0.01214)
(46907	CH	JL1947	1.18594)	(46913	CH	6AU1947	0.04184)	(46922	CH	21AU1947	C.5C403)
(46771	EV	11JN1937	0.01426)	(46743	EV	20JN1937	0.59947)	(46745	EV	3JL1937	0.04180)
(46770	EV	9JL1937	0.27433)	(46764	EV	17JL1937	0.05641)	(46757	EV	25JL1937	C.01444)
(46747	EV	1AU1937	0.01238)	(46763	EV	23AU1937	0.87256)	(46765	EV	30AU1937	C.0C558)
(46769	EV	7SE1937	0.02171)	(46760	EV	22SE1937	C.01477)	(46744	EV	6OC1937	C.0C488)
(46767	EV	27OC1937	0.00774)	(46749	EV	12MR1938	0.02427)	(46768	EV	16MR1938	C.C5880)
(46762	EV	18MR1938	0.08822)	(46751	EV	30MR1938	0.02233)	(46756	EV	27AP1938	C.0C5C4)
(46761	EV	27MY1938	0.00818)	(46766	EV	14DE1938	0.03169)	(1439	B 6	5JN1964	C.02198)
(1440	B 6	11JL1964	0.13266)	(1441	B 6	24JL1964	0.03965)	(1250	C 6	10JL1964	C.25899)
(1251	C 7	16JL1964	0.01159)	(1252	C' 1	16JL1964	0.10042)	(1253	C' 2	16JL1964	C.0C913)
(1254	D 2	15JL1964	0.01532)	(1255	D 5	15JL1964	0.09753)	(1256	E 2	14JL1964	0.01649)
(1257	E 3	14JL1964	0.04307)	(1258	F 1	6JL1964	C.33037)	(1259	F 2	6JL1964	0.39353)
(1260	F 3	6JL1964	2.00546)	(1442	B 6	2AU1964	1.43296)	(1443	B 6	16AU1964	1.79892)
(1444	B 6	19SE1964	0.04244)	(1271	C 7	22SE1964	C.00653)	(1272	C' 1	10SE1964	C.3C374)
(1273	C' 2	10SE1964	0.26883)	(1274	D 1	17SE1964	0.50673)	(1275	D 2	17SE1964	C.9C317)
(1276	D 3	18SE1964	0.04470)	(1277	D 4	18SE1964	C.C8675)	(1278	D 6	18SE1964	C.C2690)
(1279	E 1	16SE1964	C.07068)	(1280	E 2	16SE1964	0.30635)	(1281	E 3	16SE1964	3.02162)
(1282	E 4	16SE1964	0.58726)	(1283	E 5	16SE1964	C.66201)	(1284	E 6	17SE1964	0.25736)
(1285	F 1	15SE1964	0.54743)	(1286	F 2	15SE1964	0.18608)	(1287	F 3	15SE1964	0.59548)
(1445	B 6	14OC1964	0.00978)	(1293	D 2	15OC1964	0.01415)	(1296	D 5	14OC1964	0.00787)
(1297	D 6	14OC1964	0.00762)	(1300	E 3	13OC1964	C.00716)	(1304	F 1	11OC1964	C.00988)
(1305	F 2	11OC1964	0.00518)	(1306	F 3	11OC1964	C.01109)	(1308	C 7	6N01964	0.00912)
(1310	C' 2	10N01964	0.00227)	(1311	D 1	8N01964	C.00774)	(1312	D 2	8N01964	C.0C310)
(1317	E 1	6N01964	0.00383)	(1318	E 2	7N01964	C.66587)	(1319	E 3	7N01964	0.00524)
(1320	E 4	7N01964	0.01241)	(1321	E 5	7N01964	0.02554)	(1322	E 6	7N01964	C.C2000)
(1323	F 1	6N01964	0.32613)	(1324	F 2	6N01964	0.09783)	(1336	C 3	27JA1967	0.01348)
(1337	C 3	2MR1967	0.00882)	(1338	C 3	28MR1967	0.00264)	(1339	C 5	28MR1967	0.01247)
(1340	C 7	28MR1967	0.00291)	(1341	A 3	19AP1967	0.00434)	(1342	A 4	19AP1967	C.02707)
(1343	A 6	19AP1967	0.00417)	(1344	C 3	25AP1967	0.00331)	(1345	C 5	25AP1967	C.00585)
(1346	C 7	21AP1967	0.00534)	(1347	E 2	23AP1967	C.00813)	(1348	E 5	23AP1967	C.01508)
(1368	A 3	4MY1967	0.01571)	(1369	A 4	4MY1967	0.00373)	(1370	A 6	3MY1967	C.03222)
(1371	C 3	4MY1967	0.00693)	(1372	C 5	5MY1967	0.00709)	(1373	C 7	5MY1967	0.00285)
(1374	E 2	7MY1967	0.02092)	(1375	E 3	7MY1967	0.01203)	(1376	E 5	6MY1967	0.03935)
(1408	A 3	23MY1967	0.02683)	(1409	A 4	23MY1967	0.04463)	(1410	A 6	24MY1967	C.07894)
(1411	C 3	31MY1967	0.01641)	(1412	C 5	31MY1967	0.02105)	(1413	C 7	25MY1967	C.01264)
(1414	E 2	28MY1967	0.01679)	(1415	E 3	28MY1967	C.01124)	(1416	E 5	28MY1967	C.01093)
(1431	A 3	12JN1967	0.03605)	(1432	A 4	13JN1967	0.28609)	(1433	C 3	17JN1967	0.C1938)
(1434	C 5	17JN1967	0.00299)	(1435	C 7	13JN1967	0.01579)	(1436	E 2	15JN1967	0.0C724)
(1437	E 3	15JN1967	0.00269)	(1438	E 5	14JN1967	0.00726)	(1446	A 3	11JL1967	0.00978)
(1447	A 4	11JL1967	0.57307)	(1448	A 6	10JL1967	0.00354)	(1449	C 3	16JL1967	C.02675)
(1450	C 5	16JL1967	0.66648)	(1452	E 2	14JL1967	C.01064)	(1454	E 5	15JL1967	C.28006)
(1505	A 4	28AU1967	0.19582)	(1506	A 6	29AU1967	0.01569)	(1508	C 3	2SE1967	C.07194)
(1509	C 5	2SE1967	1.15070)	(1510	C 7	29AU1967	C.04110)	(1511	E 2	1SE1967	0.04604)
(1512	E 3	1SE1967	0.13743)	(1513	E 5	31AU1967	0.10135)	(1532	A 3	18SE1967	C.08213)
(1533	A 4	19SE1967	0.13462)	(1534	A 6	19SE1967	0.00310)	(1535	C 7	20SE1967	0.01288)
(1536	E 2	24SE1967	0.20178)	(1537	E 3	24SE1967	C.06038)	(1538	E 5	23SE1967	C.01657)
(1539	C 3	4OC1967	0.00503)	(1540	C 5	4OC1967	0.01985)	(1541	E 2	11OC1967	C.04257)
(1542	E 3	11OC1967	0.04068)	(1543	E 5	10OC1967	0.04310)	(1377	GS 1	9MY1967	C.0C792)
(1379	GS 3	9MY1967	0.01547)	(1380	GS 4	9MY1967	0.00841)	(1381	GS 5	10MY1967	C.01431)
(1382	GS 6	10MY1967	0.00555)	(1386	GS10	12MY1967	0.00287)	(1387	GS11	12MY1967	C.0C792)
(1389	GS13	12MY1967	0.00516)	(1390	GS14	12MY1967	0.01174)	(1391	GS15	12MY1967	C.00958)
(1392	GS16	12MY1967	0.00616)	(1393	GS17	13MY1967	C.01096)	(1394	GS18	13MY1967	C.00344)
(1398	GS22	14MY1967	0.01214)	(1554	GS 1	3OC1967	0.03202)	(1555	GS 2	3OC1967	C.06356)
(1556	GS 3	3OC1967	0.07822)	(1557	GS 4	3OC1967	0.28774)	(1558	GS 5	4OC1967	0.20612)
(1559	GS 7	4OC1967	0.30776)	(1560	GS 8	4OC1967	C.07084)	(1561	GS 9	4OC1967	C.08804)
(1562	GS10	5OC1967	0.29358)	(1563	GS11	5OC1967	0.00935)	(1564	GS12	5OC1967	C.15965)
(1566	GS14	5OC1967	0.00734)	(1567	GS15	5OC1967	0.04922)	(1568	GS16	5OC1967	C.03896)
(1569	GS17	5OC1967	0.08770)	(1570	GS18	5OC1967	C.02975)	(1571	GS19	6OC1967	C.0C176)
(1573	GS21	6OC1967	0.01008)	(1574	GS22	6OC1967	0.02301)	(1547	MS 1	2OC1967	0.54291)
(1546	LU 1	2OC1967	0.01501)	(1521	SH 1	18SE1967	0.01731)	(1526	MO 1	20SE1967	C.01707)
(1528	SB 1	20SE1967	0.05775)	(1529	KW 1	20SE1967	0.02398)	(1548	CA 1	3OC1967	1.60285)
(1549	MQ 1	4OC1967	0.12334)	(1551	ES 1	5OC1967	C.45531)	(1550	MR 1	5OC1967	0.01239)
(1426	MS 2	29MY1967	0.02100)	(1417	HO 2	22MY1967	0.00748)	(1425	RA 2	25MY1967	0.01768)
(1399	PW 2	5MY1967	0.29244)	(1401	MO 2	6MY1967	C.04704)	(1402	TR 2	6MY1967	C.02166)
(1400	SB 2	6MY1967	0.37527)	(1352	KW 2	21AP1967	C.21474)	(1354	GH 2	25AP1967	0.00690)
(1403	CA 2	10MY1967	1.21616)	(1404	MQ 2	10MY1967	C.06352)	(1405	ES 2	12MY1967	C.01290)
(1407	SM 2	14MY1967	0.01194)	(1349	CI 2	19AP1967	0.02155)	(1419	BU 2	23MY1967	0.07323)
(1420	IH 2	23MY1967	0.09063)	(1421	CH 2	23MY1967	0.08675)	(1422	GA 2	23MY1967	C.01533)
(1424	KN 2	25MY1967	0.06661)	(							

Fragilaria sp. #8 (*F. crotonensis* erstlingzellen ?).

271 FRSPECOH TCT NO OF STATIONS 28

(60973	CH	1876	0.30704)	(46913	CH	6AU1947	C.01046)	(46771	EV	11JN1937	C.0C238)
(46770	EV	9JL1937	0.02385)	(46764	EV	17JL1937	0.04835)	(46757	EV	25JL1937	0.00481)
(46747	EV	1AU1937	0.00743)	(46750	EV	24SE1937	C.00471)	(46744	EV	6OC1937	C.00488)
(46767	EV	27OC1937	0.0C774)	(46761	EV	27MY1938	0.00273)	(46766	EV	14DE1938	0.03169)
(1260	F 3	6JL1964	0.00191)	(1443	B 6	16AU1964	C.00198)	(1270	F 1	10AU1964	C.0C817)
(1304	F 1	11OC1964	0.22474)	(1305	F 2	11OC1964	C.02243)	(1306	F 3	11OC1964	C.01109)
(1315	D 5	9N01964	0.00455)	(1316	C 6	9N01964	0.01133)	(1318	E 2	7N01964	C.C0380)
(1323	F 1	6N01964	0.24390)	(1324	F 2	6N01964	0.19332)	(1325	F 3	6N01964	0.23678)
(1451	C 7	16JL1967	0.03937)	(1383	GS 7	10MY1967	0.00267)	(1387	GS11	12MY1967	C.0C396)
(1423	WA 2	25MY1967	0.00428)	(							

Fragilaria sp. #9.

272 FRSPECOI TOT NO OF STATIONS 15

(46915	CH	20FE1946	0.01138)	(46516	CH	4MY1947	0.00271)	(46919	CH	5JN1947	0.00455)
(46743	EV	20JN1937	0.00856)	(46757	EV	25JL1937	0.00481)	(46763	EV	23AU1937	0.02029)
(46752	EV	15SE1937	0.02177)	(1258	F 1	6JL1964	0.03540)	(1259	F 2	6JL1964	0.02479)
(1260	F 3	6JL1964	0.00573)	(1272	C* 1	10SE1964	0.00410)	(1284	E 6	17SE1964	0.00635)
(1285	F 1	15SE1964	0.09900)	(1452	E 2	14JL1967	0.00639)	(1558	GS 5	4OC1967	0.00793)

Fragilaria sp. #10.

273 FRSPECOJ TOT NO OF STATIONS 10

(46924	CH	10MY1946	0.00071)	(46516	CH	4MY1947	0.00136)	(46919	CH	5JN1947	0.00910)
(46922	CH	21AU1947	0.00048)	(46743	EV	20JN1937	0.00428)	(46757	EV	25JL1937	0.00481)
(1259	F 2	6JL1964	0.00930)	(1285	F 1	15SE1964	0.01165)	(1403	CA 2	10MY1967	0.49693)
(1404	MO 2	10MY1967	0.02541)	(							

Fragilaria sp. #11.

274 FRSPECOK TOT NO OF STATIONS 4

(46909	CH	MR1947	0.00455)	(46516	CH	4MY1947	0.00204)	(1449	C 3	16JL1967	0.00382)
(1530	FR 1	24SE1967	0.01000)	(							

Fragilaria sp. #15.

275 FRSPECOO TOT NO OF STATIONS 1

(1406	GB 2	13MY1967	0.00270)	(

Fragilaria "crotonensis v. *tenuissima."*

249 FRCROTVA TOT NO OF STATIONS 136

(60973	CH	1876	0.56684)	(3540	CH	11MY1879	0.04659)	(3541	CH	1FE1881	0.02935)
(3507	CH	19FE1881	0.06792)	(46910	CH	OC1945	0.10159)	(46921	CH	23NO1945	0.02457)
(46908	CH	DE1945	0.02014)	(46517	CH	12JA1946	0.04491)	(46915	CH	20FE1946	0.10812)
(46914	CH	19AP1946	0.00747)	(46524	CH	10MY1946	0.22927)	(46920	CH	20DE1946	0.24032)
(46905	CH	JA1947	0.15933)	(46909	CH	MR1947	0.01821)	(46912	CH	AP1947	0.52892)
(46916	CH	4MY1947	0.02613)	(46506	CH	MY1947	0.01062)	(46907	CH	JL1947	0.19231)
(46913	CH	6AU1947	0.09413)	(46922	CH	21AU1947	0.02423)	(46758	EV	5JN1937	0.09628)
(46771	EV	11JN1937	0.12125)	(46743	EV	20JN1937	0.16271)	(46745	EV	3JL1937	0.12539)
(46770	EV	9JL1937	0.30415)	(46764	EV	17JL1937	0.37067)	(46757	EV	25JL1937	0.13480)
(46747	EV	1AU1937	0.34656)	(46763	EV	23AU1937	0.52760)	(46765	EV	30AU1937	0.10039)
(46769	EV	7SE1937	0.04342)	(46752	EV	15SE1937	0.08707)	(46760	EV	22SE1937	0.43331)
(46750	EV	24SE1937	0.41476)	(46744	EV	6OC1937	0.88763)	(46748	EV	13OC1937	0.08540)
(46767	EV	27OC1937	0.36362)	(46749	EV	12MR1938	0.32771)	(46768	EV	16MR1938	0.10290)
(46762	EV	18MR1938	0.77195)	(46751	EV	30MR1938	0.04466)	(46772	EV	18AP1938	0.04968)
(46756	EV	27AP1938	0.03022)	(46759	EV	19MY1938	0.05402)	(46761	EV	27MY1938	0.05451)
(46766	EV	14DE1938	0.22180)	(1377	GS 1	9MY1967	0.01187)	(1378	GS 2	9MY1967	0.00841)
(1379	GS 3	9MY1967	0.13927)	(1380	GS 4	9MY1967	0.17152)	(1381	GS 5	10MY1967	0.09302)
(1382	GS 6	10MY1967	0.01665)	(1383	GS 7	10MY1967	0.08287)	(1384	GS 8	10MY1967	0.02033)
(1385	GS 9	10MY1967	0.01413)	(1386	GS10	12MY1967	0.03160)	(1387	GS11	12MY1967	0.15447)
(1388	GS12	12MY1967	0.04223)	(1390	GS14	12MY1967	0.05285)	(1391	GS15	12MY1967	0.02394)
(1392	GS16	12MY1967	0.18183)	(1393	GS17	13MY1967	0.05479)	(1394	GS18	13MY1967	0.12729)
(1395	GS19	13MY1967	0.08690)	(1396	GS20	13MY1967	0.01258)	(1397	GS21	13MY1967	0.00392)
(1398	GS22	14MY1967	0.15788)	(1554	GS 1	3OC1967	0.99623)	(1555	GS 2	3OC1967	0.06003)
(1556	GS 3	3OC1967	0.18772)	(1557	GS 4	3OC1967	0.97160)	(1558	GS 5	4OC1967	0.73728)
(1559	GS 7	4OC1967	0.41617)	(1560	GS 8	4OC1967	0.17003)	(1561	GS 9	4OC1967	0.21130)
(1562	GS10	5OC1967	0.26644)	(1563	GS11	5OC1967	0.14497)	(1564	GS12	5OC1967	0.14484)
(1566	GS14	5OC1967	0.05687)	(1567	GS15	5OC1967	0.12384)	(1568	GS16	5OC1967	0.15584)
(1569	GS17	5OC1967	0.27054)	(1570	GS18	5OC1967	0.69417)	(1571	GS19	6OC1967	0.03278)
(1572	GS20	6OC1967	0.03064)	(1573	GS21	6OC1967	0.14223)	(1574	GS22	6OC1967	0.12944)
(1575	GS28	6OC1967	0.02709)	(1544	MU 1	2OC1967	0.04766)	(1547	MS 1	2OC1967	0.41517)
(1524	MI 1	20SE1967	0.94133)	(1546	LU 1	2OC1967	0.04001)	(1520	HO 1	18SE1967	0.39606)
(1521	SH 1	18SE1967	2.21555)	(1522	BH 1	18SE1967	0.00912)	(1523	RA 1	19SE1967	2.06642)
(1525	PW 1	20SE1967	0.79376)	(1526	MO 1	20SE1967	0.32429)	(1527	TR 1	20SE1967	0.07547)
(1528	SB 1	20SE1967	0.46203)	(1529	KW 1	20SE1967	0.34776)	(1530	FR 1	24SE1967	0.15001)
(1531	GH 1	25SE1967	0.02536)	(1545	WL 1	2OC1967	0.14866)	(1548	CA 1	3OC1967	0.11449)
(1549	NO 1	4OC1967	0.10963)	(1551	ES 1	5OC1967	0.45531)	(1550	MR 1	5OC1967	0.06195)
(1553	SG 1	6OC1967	0.13220)	(1428	MU 2	29MY1967	0.03917)	(1426	MS 2	29MY1967	0.07349)
(1351	MI 2	21AP1967	0.01552)	(1427	LU 2	29MY1967	0.01211)	(1417	HO 2	22MY1967	0.05982)
(1418	SH 2	22MY1967	0.31104)	(1425	RA 2	25MY1967	0.45973)	(1399	PW 2	5MY1967	0.06121)
(1401	MO 2	6MY1967	0.07056)	(1402	TR 2	6MY1967	0.18952)	(1400	SB 2	6MY1967	0.05361)
(1352	KW 2	21AP1967	0.30064)	(1353	FR 2	23AP1967	0.02110)	(1354	GH 2	25AP1967	0.01036)
(1429	WL 2	29MY1967	0.06370)	(1403	CA 2	10MY1967	0.06539)	(1404	MO 2	10MY1967	0.03811)
(1405	ES 2	12MY1967	0.14190)	(1407	SM 2	14MY1967	0.14331)	(1349	CI 2	19AP1967	0.06825)
(1406	GB 2	13MY1967	0.02157)	(1419	BU 2	23MY1967	0.12816)	(1421	CH 2	23MY1967	0.08675)
(1422	GA 2	23MY1967	0.10218)	(1423	WA 2	25MY1967	0.50529)	(1424	KN 2	25MY1967	0.37303)
(1430	NC 2	12JN1967	0.02467)	(							

Genus *Frustulia* Rabh. (nom. cons. non Agardh 1824)
Rabenhorst, Süssw.-Diat., p. 50. 1853.

Most members of the genus *Frustulia* find their primary habitat in benthic communities. The occasional specimens that are noted in plankton collections from Lake Michigan are probably derived from such habitats.

Frustulia rhomboides (Ehr.) De Toni

Navicula rhomboides Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:419, pl. 3(1), fig. 15. 1843.
Frustulia rhomboides (Ehr.) De Toni, Syll. Alg. Vol. 2, Sect. 1, p. 277. 1891.

276 FURHOMBO TOT NO OF STATIONS 2

(46906	CH	MY1947	0.00066)	(46907	CH	JL1947	C.00049)	(			

Frustulia rhomboides var. *amphipleuroides* (Grun.) Cleve

Navicula rhomboides var. *amphipleuroides* Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):47, pl. 3, fig. 59. 1880.
Frustulia rhomboides var. *amphipleuroides* (Grun.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):123. 1894.

277 FURHOMVA TOT NO OF STATIONS 10

(60973	CH	1876	0.02362)	(3541	CH	1FE1881	C.00578)	(46921	CH	23NO1945	C.00065)
(46924	CH	10MY1946	0.00071)	(46923	CH	22NO1946	0.00437)	(46920	CH	20DE1946	C.00031)
(46919	CH	5JN1947	0.10925)	(1388	GS12	12MY1967	0.00603)	(1569	GS17	5OC1967	C.00149)
(1550	MR 1	5OC1967	0.01239)	(							

Frustulia rhomboides var. *saxonica* (Rabh.) De Toni

Frustulia saxonica Rabenhorst, Süssw.-Diat., p. 50, pl. 7, fig. 1. 1853.
Frustulia rhomboides var. *saxonica* (Rabh.) De Toni, Syll. Alg., Vol. 2, Sect. 1, p. 277. 1891.

278 FURHOMVS TOT NO OF STATIONS 2

(3540	CH	11MY1879	0.00466)	(1254	C 2	15JL1964	C.00192) (

Frustulia vulgaris (Thw.) De Toni

Schizonema vulgare Thwaites, Annals Mag. Nat. Hist., Ser. 2, 1:170, pl. 12(H), fig. 1-5. 1848.
Frustulia vulgaris (Thw.) De Toni, Syll. Alg., Vol. 2, Sect. 1, p. 280. 1891.

279 FUVULGAR TOT NO OF STATIONS 5

(46748	EV	13OC1937	0.02135)	(1285	F 1	15SE1964	0.00582)	(1341	A 3	19AP1967	C.00325)
(1431	A 3	12JN1967	0.00257)	(1350	BH 2	19AP1967	0.00220)	(			

Frustulia weinholdii Hust.

Frustulia weinholdii Hustedt *in*: Rabenhorst, Kryptog.-Fl. Deutschlands, Vol. 7(2)5:731, fig. 1101. 1937.

280 FUWEINHO TOT NO OF STATIONS 1

(46919	CH	5JN1947	0.00152)	(

Genus *Gomphoneis* Cleve
Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):73. 1894.

The members of the genus *Gomphoneis* noted in our collections are dominant entities in periphyton communities in many areas of the upper Great Lakes. The occasional specimens noted in our collections are undoubtedly derived from such habitats.

Gomphoneis eriense (Grun.) Skv.

Gomphonema eriense Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 23, fig. 10. 1880.
Gomphoneis eriense (Grun.) Skvortzow, Proc. Sungaree River Biol. Sta., 1(5):28. 1928.

281 GSERIENS TOT NO OF STATIONS 1
(1406 GB 2 13MY1967 0.00270) (

Gomphoneis herculeanum (Ehr.) Cleve

Gomphonema herculeanum Ehrenberg, Ber. Akad. Wiss. Berlin, 1845:78. 1845.
Gomphoneis herculeanum (Ehr.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):73. 1894.

282 GSHERCUL TOT NO OF STATIONS 1
(46770 EV 9JL1937 0.00596) (

Genus *Gomphonema* Agardh
Agardh, Syst. Alg., p. 15. 1824.

Most members of the genus *Gomphonema* find their primary habitat in periphyton communities. A relatively small proportion of the species occurring in such habitats in Lake Michigan are also taken in plankton collections.

Gomphonema abbreviatum Kütz.

Gomphonema abbreviatum Kützing, Bacill., p. 84, pl. 8, figs. 5-6. 1844.

283 GOABBREV TOT NO OF STATIONS 2
(46921 CH 23NO1945 0.00065) (1236 CH 1 8JN1964 0.00175) (

Gomphonema abbreviatum var. *inflata* Hust.

Gomphonema abbreviatum var. *inflata* Hustedt, Arch. Hydrobiol., 47(4):630, fig. 21. 1953.

Coll: 1550.

Gomphonema acuminatum var. *brebissonii* (Kütz.) Grun.

Gomphonema brebissonii Kützing, Sp. Alg., p.66. 1849.
Gomphonema acuminatum var. *brebissonii* (Kütz.) Grunow *in*: Syn. Diat. Belgique, pl. 23, figs. 23-26. 1880.

284 GOACUMIN TOT NO OF STATIONS 1
(1354 GH 2 25AP1967 0.00173) (

Gomphonema acuminatum var. *coronata* (Ehr.) Rabh.

Gomphonema coronatum Ehrenberg, Ber. Akad. Wiss. Berlin, 1840:17. 1841.
Gomphonema acuminatum var. *coronata* (Ehr.) Rabenhorst, Fl. Europaea Alg., Sect. I, p. 124. 1864.

285 GOACUMVC TOT NO OF STATIONS 1
(46917 CH 12JA1946 0.00055) (

Gomphonema acuminatum var. *pusillum* Grun.

Gomphonema acuminatum var. *pusillum* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 23, fig. 19. 1880.

286 GOACUMVP TOT NO OF STATIONS 1

(1350	BH 2	19AP1967	0.00220)	(			

Gomphonema angustatum (Kütz.) Rabh.

Sphenella angustata Kützing, Bacill., p. 83, pl. 8, fig. 4. 1844.
Gomphonema angustatum (Kütz.) Rabenhorst, Fl. Europaea Alg., Sect. 1, p. 283. 1864.

287 GOANGUST TOT NO OF STATIONS 22

(46758	EV	5JN1937	0.00357)	(46763	EV	23AU1937	0.02029)	(1236	C' 1	8JN1964	0.00175)
(1377	GS 1	9MY1967	0.00396)	(1544	MU 1	20C1967	0.00238)	(1546	LU 1	20C1967	0.01000)
(1520	HO 1	18SE1967	0.00943)	(1521	SH 1	18SE1967	0.00577)	(1522	BH 1	18SE1967	0.00365)
(1531	GH 1	25SE1967	0.00845)	(1545	WL 1	20C1967	0.00676)	(1550	MR 1	50C1967	0.03717)
(1428	MU 2	29MY1967	0.00904)	(1426	MS 2	29MY1967	0.01050)	(1427	LU 2	29MY1967	0.03632)
(1417	HO 2	22MY1967	0.00748)	(1350	BH 2	19AP1967	0.03524)	(1400	SB 2	6MY1967	0.02383)
(1354	GH 2	25AP1967	0.00173)	(1429	WL 2	29MY1967	0.01062)	(1403	CA 2	10MY1967	0.01308)
(1404	MO 2	10MY1967	0.03811)	(							

Gomphonema angustatum var. *producta* Grun.

Gomphonema angustatum var. *producta* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 24, figs. 52-55. 1880.

288 GOANGUVP TOT NO OF STATIONS 9

(46758	EV	5JN1937	0.01783)	(1264	C' 1	10AU1964	0.00193)	(1389	GS13	12MY1967	0.00258)
(1567	GS15	50C1967	0.00159)	(1545	WL 1	20C1967	0.00676)	(1549	MO 1	40C1967	0.01370)
(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.00441)	(1400	SB 2	6MY1967	0.00596)

Gomphonema angustatum var. *sarcophagus* (Greg.) Grun.

Gomphonema sarcophagus Gregory, Micr. J., 4:13, pl. 1, fig. 42. 1856.
Gomphonema angustatum var. *sarcophagus* (Greg.) Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 25, fig. 2. 1880.

Coll: 1331.

Gomphonema clevei Fricke

Gomphonema clevei Fricke *in*: A. Schmidt, Atlas Diat., pl. 234, figs. 44-46. 1902.

289 GOCLEVEI TOT NO OF STATIONS 3

(1571	GS19	60C1967	0.00117)	(1530	FR 1	24SE1967	0.01000)	(1550	MR 1	50C1967	0.04956)

Gomphonema constrictum Ehr.

Gomphonema constrictum Ehrenberg, Phys. Abh. Akad.Wiss. Berlin, 1830:63. 1832.

290 GOCCONSTR TOT NO OF STATIONS 7

(3541	CH	1FE1881	0.00978)	(46748	EV	13OC1937	0.02135)	(1566	GS14	50C1967	0.00183)
(1572	GS20	60C1967	0.00090)	(1575	GS28	60C1967	0.00129)	(1426	MS 2	29MY1967	0.02100)
(1407	SM 2	14MY1967	0.00597)	(							

Gomphonema constrictum var. *capitatum* (Ehr.) V. H.

Gomphonema capitatum Ehrenberg, Infusionsthierchen, p. 217, pl. 18, fig. 2. 1838.
Gomphonema constrictum var. *capitatum* (Ehr.) Van Heurck, Syn. Diat. Belgique, p. 123. 1885.

291 GCCCNSVC TCT NO CF STATICNS)

(1350	BH 2	19AP1967	0.CC22C)	(	

Gomphonema gracile Ehr.

Gomphonema gracile Ehrenberg, Infusionsthierchen, p. 217, pl. 18, fig. 3. 1838.

292 GOGRACIL TCT NC CF STATICNS 12

(46758	EV	5JN1937	0.C1070)	(46757	EV	25JL1937	C.CC481)	(46763	EV	23AU1937	C.C4058)
(46752	EV	15SE1937	0.06530)	(1341	A 3	19AP1967	0.00108)	(1397	GS21	13MY1967	C.CC065)
(1554	GS 1	3CC1967	0.00356)	(1556	GS 3	3OC1967	C.00521)	(1565	GS13	5OC1967	C.C1521)
(1550	MR 1	5OC1967	0.01239)	(1350	BH 2	19AP1967	C.00441)	(1404	MQ 2	10MY1967	C.C1270)

Gomphonema gracile var. *cymbelloides* Grun.

Gomphonema gracile var. *cymbelloides* Grunow *ex* Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):182. 1894.

293 GCGRACVA TCT NO OF STATICNS 1

(1559	GS 7	4OC1967	0.00350)	(	

Gomphonema grovei M. Schm.

Gomphonema grovei M. Schmidt *in*: A. Schmidt, Atlas. Diat., pl. 214, figs. 13-18. 1899.

294 GCGROVEI TOT NC CF STATICNS 6

(1571	GS19	6CC1967	C.0C117)	(1572	GS2C	6CC1967	C.00090)	(1550	MR 1	5OC1967	C.C4556)
(1427	LU 2	29MY1967	0.03632)	(1350	BH 2	19AP1967	C.00220)	(1404	MQ 2	10MY1967	0.01270)

Gomphonema intricatum Kütz.

Gomphonema intricatum Kützing, Bacill., p. 87, pl. 9, fig. 4. 1844.

295 GCINTRIC TCT NC CF STATICNS 56

(3541	CH	1FE1881	0.01956)	(46521	CH	23NO1945	C.00129)	(46917	CH	12JA1946	C.CC028)
(46923	CH	22NO1946	0.00219)	(46920	CH	20DE1946	0.00092)	(46909	CH	MR1947	C.00455)
(46916	CH	4MY1947	0.00068)	(46906	CH	MY1947	0.00133)	(46907	CH	JL1947	C.CC049)
(46922	CH	21AU1947	0.00145)	(46758	EV	5JN1937	0.00357)	(46764	EV	17JL1937	C.0C806)
(46757	EV	25JL1937	0.01444)	(46747	EV	1AU1937	C.00743)	(46763	EV	23AU1937	C.28409)
(46752	EV	15SE1937	0.17414)	(46760	EV	22SE1937	0.00492)	(46750	EV	24SE1937	C.0C471)
(46748	EV	13CC1937	0.17079)	(46767	EV	27OC1937	C.01160)	(46768	EV	16MR1938	C.22049)
(46762	EV	18MR1938	0.02206)	(46751	EV	30MR1938	C.01117)	(46761	EV	27MY1938	C.0C273)
(1244	F 1	11JN1964	0.CC110)	(1258	F 1	6JL1964	C.01416)	(1259	F 2	6JL1964	C.CC310)
(1279	E 1	16SE1964	0.00393)	(1284	E 6	17SE1964	0.01271)	(1285	F 1	15SE1964	C.C8736)
(1390	GS14	12MY1967	0.00587)	(1391	GS15	12MY1967	C.00958)	(1392	GS16	12MY1967	C.0C616)
(1397	GS21	13MY1967	C.00065)	(1563	GS11	5OC1967	C.00234)	(1566	GS14	5OC1967	C.CC183)
(1567	GS15	5OC1967	0.00476)	(1571	GS19	6OC1967	C.00059)	(1572	GS20	6OC1967	C.0C090)
(1573	GS21	6CC1967	0.00112)	(1574	GS22	6OC1967	C.04315)	(1522	BH 1	18SE1967	C.C0182)
(1523	RA 1	19SE1967	0.06458)	(1526	MO 1	20SE1967	0.00569)	(1530	FR 1	24SE1967	C.01000)
(1551	ES 1	5OC1967	C.00799)	(1552	SM 1	6CC1967	C.02641)	(1550	MR 1	5CC1967	C.C6195)
(1553	SG 1	6OC1967	0.03672)	(1426	MS 2	29MY1967	0.03150)	(1350	BH 2	19AP1967	0.01762)
(1402	TR 2	6MY1967	0.01083)	(1353	FR 2	23AP1967	C.01055)	(1403	CA 2	10MY1967	C.06539)
(1404	MQ 2	10MY1967	0.02541)	(1407	SM 2	14MY1967	0.05374)	(			

Gomphonema intricatum var. *dichotomum* (Kütz.) Grun.

Gomphonema dichotomum Kützing, Linnaea, 8:569, pl. 15, fig. 48. 1833.
Gomphonema intricatum var. *dichotomum* (Kütz.) Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 24, figs. 30-31. 1880.

296 GCINTRVD TCT NO OF STATICNS 9

(46752	EV	15SE1937	0.04354)	(1388	GS12	12MY1967	C.00603)	(1574	GS22	6OC1967	C.01726)
(1522	BH 1	18SE1967	0.00729)	(1526	MO 1	20SE1967	0.00569)	(1552	SM 1	6OC1967	C.01981)
(1550	MR 1	5CC1967	0.07434)	(1553	SG 1	6OC1967	0.01469)	(1404	MC 2	10MY1967	C.C1270)

Gomphonema intricatum var. *pumila* Grun.

Gomphonema intricatum var. *pumila* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 24, figs. 35-36. 1880.

297 GOINTRVP TOT NO OF STATIONS 47

(3540	CH	11MY1879	0.03727)	(46506	CH	MY1947	C.00066)	(46758	EV	5JN1937	C.01783)
(46770	EV	9JL1937	0.00596)	(46764	EV	17JL1937	0.01612)	(46757	EV	25JL1937	C.00963)
(46747	EV	1AU1937	0.01238)	(46763	EV	23AU1937	0.28409)	(46769	EV	7SE1937	C.02171)
(46752	EV	15SE1937	0.02177)	(46760	EV	22SE1937	0.00492)	(46748	EV	13OC1937	C.02135)
(46767	EV	27OC1937	0.00774)	(46768	EV	16MR1938	0.01470)	(1240	D 6	10JN1964	C.00153)
(1243	E 6	13JN1964	0.00626)	(1268	E 2	15AU1964	0.00274)	(1270	F 1	10AU1964	C.00817)
(1285	F 1	15SE1964	0.01165)	(1297	D 6	14OC1964	C.00190)	(1302	E 5	13OC1964	C.00405)
(1324	F 2	6NO1964	0.00466)	(1341	A 3	19AP1967	C.00108)	(1538	E 5	23SE1967	C.00552)
(1386	GS10	12MY1967	0.00287)	(1387	GS11	12MY1967	0.00792)	(1389	GS13	12MY1967	C.00258)
(1554	GS 1	3OC1967	0.00356)	(1555	GS 2	3OC1967	C.00353)	(1565	GS13	5OC1967	C.02535)
(1571	GS19	6OC1967	C.00059)	(1574	GS22	6OC1967	0.02301)	(1544	MU 1	2OC1967	C.00238)
(1526	MO 1	20SE1967	0.01138)	(1528	SB 1	20SE1967	0.01444)	(1530	FR 1	24SE1967	C.02000)
(1552	SM 1	6OC1967	0.00660)	(1550	MR 1	5OC1967	C.11151)	(1553	SG 1	6OC1967	C.02203)
(1428	MU 2	29MY1967	0.00603)	(1417	HO 2	22MY1967	0.01122)	(1350	BH 2	19AP1967	C.01101)
(1399	PW 2	5MY1967	0.00680)	(1402	TR 2	6MY1967	0.00541)	(1403	CA 2	10MY1967	C.01308)
(1405	ES 2	12MY1967	0.03225)	(1407	SM 2	14MY1967	0.00597)	(			

Gomphonema lanceolatum Ehr.

Gomphonema lanceolatum Ehrenberg, Abh. Akad. Wiss. Berlin, 1843:32, pl. 2(1), fig. 37. 1845.

298 GOLANCEO TOT NO OF STATIONS 13

(46764	EV	17JL1937	C.00806)	(46763	EV	23AU1937	C.04058)	(46748	EV	13OC1937	(.C2135)
(46767	EV	27OC1937	0.00387)	(46768	EV	16MR1938	0.01470)	(1388	GS12	12MY1967	C.C0603)
(1561	GS 9	4OC1967	0.01761)	(1575	GS28	6OC1967	C.00129)	(1550	MR 1	5OC1967	C.C3717)
(1417	HO 2	22MY1967	0.00374)	(1418	SH 2	22MY1967	0.01555)	(1350	BH 2	19AP1967	C.01322)
(1402	TR 2	6MY1967	0.00541)	(							

Gomphonema lanceolatum var. *insignis* (Greg.) Cleve

Gomphonema insigne Gregory, Micr. J., 4:12, pl. 1, fig. 39. 1856.
Gomphonema lanceolatum var. *insignis* (Greg.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Foljd, 26(2):183. 1894.

299 GOLANCVI TOT NO OF STATIONS 1

(46768	EV	16MR1938	0.04410)	(

Gomphonema longiceps Ehr.

Gomphonema longiceps Ehrenberg, Mikrog., pl. 4(3), fig. 27. 1854.

300 GOLONGIC TOT NO OF STATIONS 1

(46758	EV	5JN1937	0.0C357)	(

Gomphonema manubrium Fricke

Gomphonema manubrium Fricke *in*: A. Schmidt, Atlas Diat., pl. 248, fig. 12. 1904.

Coll: 1549a.

Gomphonema olivaceoides Hust.

Gomphonema olivaceoides Hustedt, Arch. Hydrobiol., 43(3/4):397, pl. 37, figs. 9-12. 1950.

302 GOOLECOE TOT NO OF STATIONS 17

(46758	EV	5JN1937	0.03209)	(46771	EV	11JN1937	C.00238)	(46743	EV	20JN1937	C.01285)
(46764	EV	17JL1937	0.00806)	(46757	EV	25JL1937	0.00963)	(46763	EV	23AU1937	C.02029)
(46752	EV	15SE1937	0.04354)	(46748	EV	13OC1937	0.06405)	(46749	EV	12MR1938	C.01214)
(46762	EV	18MR1938	0.06617)	(46756	EV	27AP1938	0.00168)	(1258	F 1	6JL1964	C.00472)
(1384	GS 8	10MY1967	0.00185)	(1530	FR 1	24SE1967	C.01000)	(1549	MO 1	4OC1967	C.01370)
(1552	SM 1	6OC1967	0.00660)	(1550	MR 1	5OC1967	0.03717)	(			

Gomphonema olivaceum (Lyngb.) Kütz.

Echinella olivacea Lyngbye, Tent. Hydrophyt. Danicae, p. 209, pl. 70, fig. c. 1819.
Gomphonema olivaceum (Lyngb.) Kützing, Bacill., p. 85, pl. 7, figs. 13, 15. 1844.

303 GOOLIVAC TOT NO OF STATIONS 82

(46921	CH	23NO1945	0.00194)	(46924	CH	10MY1946	0.00282)	(46920	CH	20DE1946	0.00062)
(46905	CH	JA1947	0.00123)	(46916	CH	4MY1947	0.00170)	(46919	CH	5JN1947	0.00303)
(46922	CH	21AU1947	0.00048)	(46758	EV	5JN1937	0.39940)	(46743	EV	20JN1937	0.00856)
(46770	EV	9JL1937	0.00596)	(46764	EV	17JL1937	0.00806)	(46757	EV	25JL1937	0.01926)
(46747	EV	1AU1937	0.01238)	(46763	EV	23AU1937	0.12175)	(46765	EV	30AU1937	0.00558)
(46752	EV	15SE1937	0.02177)	(46760	EV	22SE1937	0.00492)	(46748	EV	13OC1937	0.02135)
(46767	EV	27OC1937	0.00387)	(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	0.02206)
(46751	EV	30MR1938	0.02233)	(1227	C' 2	13MY1964	0.00110)	(1236	C' 1	8JN1964	0.00175)
(1240	D 6	10JN1964	0.00307)	(1252	C' 1	16JL1964	0.00279)	(1273	C' 2	10SE1964	0.00538)
(1279	E 1	16SE1964	0.00393)	(1282	E 4	16SE1964	0.01108)	(1285	F 1	15SE1964	0.00582)
(1341	A 3	19AP1967	0.00868)	(1342	A 4	19AP1967	0.00180)	(1346	C 7	21AP1967	0.00401)
(1368	A 3	4MY1967	0.00314)	(1369	A 4	4MY1967	0.00373)	(1372	C 5	5MY1967	0.00355)
(1375	E 3	7MY1967	0.00241)	(1416	E 5	28MY1967	0.00219)	(1432	A 4	13JN1967	0.00255)
(1451	C 7	16JL1967	0.00197)	(1452	E 2	14JL1967	0.00426)	(1453	E 3	15JL1967	0.00253)
(1532	A 3	18SE1967	0.00329)	(1538	E 5	23SE1967	0.00552)	(1381	GS 5	10MY1967	0.00239)
(1387	GS11	12MY1967	0.00396)	(1389	GS13	12MY1967	0.00258)	(1396	GS20	13MY1967	0.00222)
(1397	GS21	13MY1967	0.00065)	(1559	GS 7	4OC1967	0.00350)	(1563	GS11	5OC1967	0.00234)
(1567	GS15	5OC1967	0.00318)	(1569	GS17	5OC1967	0.00297)	(1571	GS19	6OC1967	0.00059)
(1573	GS21	6OC1967	0.00224)	(1574	GS22	6OC1967	0.00863)	(1575	GS28	6OC1967	0.00129)
(1524	MI 1	20SE1967	0.02189)	(1546	LU 1	20OC1967	0.02501)	(1521	SH 1	18SE1967	0.00577)
(1522	BH 1	18SE1967	0.01641)	(1545	WL 1	20OC1967	0.02703)	(1549	MQ 1	4OC1967	0.01370)
(1551	ES 1	5OC1967	0.00799)	(1550	MR 1	5OC1967	0.24780)	(1553	SG 1	6OC1967	0.00734)
(1428	MU 2	29MY1967	0.00904)	(1426	MS 2	29MY1967	0.04199)	(1351	MI 2	21AP1967	0.00621)
(1427	LU 2	29MY1967	0.04843)	(1417	HO 2	22MY1967	0.04112)	(1350	BH 2	19AP1967	0.49338)
(1401	MO 2	6MY1967	0.05292)	(1402	TR 2	6MY1967	0.01083)	(1400	SB 2	6MY1967	0.06552)
(1354	GH 2	25AP1967	0.01553)	(1429	WL 2	29MY1967	0.02123)	(1403	CA 2	10MY1967	0.05231)
(1407	SM 2	14MY1967	0.00597)	(1349	CI 2	19AP1967	0.00359)	(1406	GB 2	13MY1967	0.02696)
(1423	WA 2	25MY1967	0.01285)	(							

Gomphonema olivaceum var. *calcarea* Cleve

Gomphonema olivaceum var. *calcarea* Cleve, Ofv. K. Svenska Vet.-Akad. Forhandl., 24:231, pl. 4, fig. 7. 1868.

304 GOCLIVVC TOT NO OF STATIONS 9

(46758	EV	5JN1937	0.01426)	(46757	EV	25JL1937	0.01444)	(46747	EV	1AU1937	0.00248)
(46763	EV	23AU1937	0.02029)	(1285	F 1	15SE1964	0.00582)	(1342	A 4	19AP1967	0.00180)
(1526	MO 1	20SE1967	0.01138)	(1527	TR 1	20SE1967	0.00629)	(1529	KW 1	20SE1967	0.04797)

Gomphonema parvulum (Kütz.) Kütz.

Sphenella ? parvula Kützing, Bacill., p. 83, pl. 30, fig. 63. 1844.
Gomphonema parvulum (Kütz.) Kützing, Sp. Alg., p. 65. 1849.

305 GOPARVVM TOT NO OF STATIONS 18

(46909	CH	MR1947	0.00455)	(46758	EV	5JN1937	0.00357)	(46768	EV	16MR1938	0.01470)
(1258	F 1	6JL1964	0.00236)	(1265	C' 2	10AU1964	0.00224)	(1279	E 1	16SE1964	0.00393)
(1541	E 2	11OC1967	0.00532)	(1387	GS11	12MY1967	0.00792)	(1571	GS19	6OC1967	0.00117)
(1573	GS21	6OC1967	0.00112)	(1574	GS22	6OC1967	0.00288)	(1524	MI 1	20SE1967	0.04378)
(1520	HO 1	18SE1967	0.00471)	(1522	BH 1	18SE1967	0.00182)	(1523	RA 1	19SE1967	0.03690)
(1350	BH 2	19AP1967	0.05506)	(1401	MO 2	6MY1967	0.00588)	(1406	GB 2	13MY1967	0.00270)

Gomphonema parvulum var. *micropus* (Kütz.) Cleve

Gomphonema micropus Kützing, Bacill., p. 84, pl. 8, fig. 12. 1844.
Gomphonema parvulum var. *micropus* (Kütz.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):180. 1894.

306 GOSCLAVM TOT NO OF STATIONS 1

(1553	SG 1	6OC1967	0.00734)

Gomphonema sphaerophorum Ehr.

Gomphoneam sphaerophorum Ehrenberg, Ber. Akad. Wiss. Berlin, 1845:78. 1846.

307 GOSPHAER TOT NO OF STATIONS 1

(1350	BH 2	19AP1967	0.00661)	(

Gomphonema subtile Ehr.

Gomphonema subtile Ehrenberg, Ber. Akad. Wiss. Berlin, 1841:128. 1843.

308 GOSUBTIL TOT NO OF STATIONS 1

(1568	GS16	5OC1967	0.00144)	(

Gomphonema subtile var. *sagitta* (Schum.) Grun.

Gomphonema sagitta Schumann, Schrift. Phys.-Ökon. Ges. Königsberg, 3:187, pl. 9, figs. 19a-d. 1863.
Gomphonema subtile var. *sagitta* (Schum.) Grun. *in*: Van Heurck, Syn. Diat. Belgique, pl. 23, fig. 27. 1880.

309 GOSUBTVS TCT NO OF STATIONS 1

(1348	E 5	23AP1967	0.00137)	(			

Gomphonema tergestinum (Grun.) Fricke

Gomphonema semiapertum var. *tergestina* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 25, fig. 40. 1880.
Gomphonema tergestinum (Grun.) Fricke *in*: A. Schmidt, Atlas Diat., pl. 234, figs. 39-43. 1902.

310 GOTERGES TOT NO OF STATIONS 2

(1550	MR 1	5CC1967	0.01239)	(14C4	MC 2	10MY1967	0.02541) (

Species *incertae sedis*

Gomphonema sp. #2.

311 GOSPECOB TOT NO OF STATIONS 12

(46919	CH	5JN1947	0.00455)	(46758	EV	5JN1937	0.01070)	(46752	EV	15SE1937	C.06530)
(46768	EV	16MR1938	0.02940)	(46751	EV	30MR1938	0.02233)	(1285	F 1	15SE1964	C.00582)
(1394	GS18	13MY1967	0.00172)	(1397	GS21	13MY1967	0.00065)	(1560	GS 8	40C1967	C.00472)
(1550	MR 1	5CC1967	0.01239)	(14C4	MC 2	10MY1967	0.02541)	(14C5	ES 2	12MY1967	C.00645)

Gomphonema sp. #3.

312 GOSPECOC TOT NO OF STATIONS 3

(46920	CH	20DE1946	0.00031)	(46752	EV	15SE1937	0.02177)	(46767	EV	27OC1937	C.00387)

Gomphonema sp. #6.

313 GOSPECOF TOT NO OF STATIONS 1

(1401	MO 2	6MY1967	0.00588)	(			

Genus *Gyrosigma* Hass.
Hassall, British Freshw. Algae, p. 435. 1845.

Although most freshwater species of the genus *Gyrosigma* find their primary habitat in epipelic communities, many are successful facultative planktonts. Members of the genus are found in many plankton collections from Lake Michigan, but usually in small numbers.

Gyrosigma acuminatum (Kütz.) Rabh.

Frustulia acuminata Kützing, Linnaea, 8:555, pl. 14, fig. 36. 1833.
Gyrosigma acuminatum (Kütz.) Rabenhorst, Süssw.-Diat., p. 47, pl. 5, fig. 5a. 1853.

315 GYACUMIN TOT NO OF STATIONS 1

(1406	GB 2	13MY1967	0.00270)	(			

Gyrosigma attenuatum (Kütz.) Rabh.

Frustulia attenuatum Kützing, Linnaea, 8:555, pl. 14, fig. 35. 1833.
Gyrosigma attenuatum (Kütz.) Rabenhorst, Süssw.-Diat., p. 47, pl. 5, fig. 2. 1853.

316 GYATTENU TCT NC OF STATICNS 19

(3540	CH	11MY1879	0.00932)	(3541	CH	1FE1881	0.02935)	(46907	CH	JL1947	C.0C099)
(1284	E 6	17SE1964	0.00318)	(1285	F 1	15SE1964	0.00582)	(1384	GS 8	10MY1967	C.00185)
(1387	GS11	12MY1967	0.00396)	(1390	GS14	12MY1967	0.00587)	(1394	GS18	13MY1967	C.0C172)
(1567	GS15	50C1967	0.00318)	(1572	GS20	60C1967	C.00090)	(1574	GS22	60C1967	C.0C288)
(1575	GS28	60C1967	0.00129)	(1547	MS 1	20C1967	0.00798)	(1526	MO 1	20SE1967	C.C2276)
(1527	TR 1	20SE1967	0.01258)	(1553	SG 1	60C1967	0.00734)	(1426	MS 2	29MY1967	C.C1050)
(1350	BH 2	19AP1967	0.01542)	(							

Gyrosigma nodiferum (Grun.) Reim.

Pleurosigma nodiferum Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):59. 1880.
Gyrosigma nodiferum (Grun.) Reimer *in*: Patrick and Reimer, Acad. Nat. Sci. Philadelphia Monogr. 13:320, pl. 24, fig. 2. 1966.

317 GYNODIFE TCT NC OF STATIONS 22

(3541	CH	1FE1881	0.00978)	(46520	CH	20DE1946	0.00031)	(46906	CH	MY1947	C.0C066)
(46764	EV	17JL1937	0.00806)	(46757	EV	25JL1937	0.00481)	(46747	EV	1AU1937	C.00743)
(1260	F 3	6JL1964	0.00191)	(1323	F 1	6NO1964	0.00139)	(1346	C 7	21AP1967	C.0C134)
(1534	A 6	19SE1967	0.00310)	(1380	GS 4	9MY1967	0.00336)	(1388	GS12	12MY1967	C.C5430)
(1389	GS13	12MY1967	0.00258)	(1390	GS14	12MY1967	0.04698)	(1391	GS15	12MY1967	C.C4310)
(1393	GS17	13MY1967	0.01644)	(1394	GS18	13MY1967	0.01892)	(1395	GS19	13MY1967	C.00235)
(1563	GS11	50C1967	0.00234)	(1568	GS16	50C1967	0.00433)	(1552	SM 1	60C1967	C.01981)
(1553	SG 1	60C1967	0.00734)	(							

Gyrosigma sciotense (Sulliv. and Wormley) Cleve

Pleurosigma sciotense Sullivant and Wormley, American J. Sci., Ser. 2, 27:251. 1859.
Gyrosigma sciotense (Sulliv. and Wormley) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 27(3):pl. 1, fig. 5. 1895.

318 GYSCIOTE TCT NO OF STATIONS 1

(1405	ES 2	12MY1967	0.00645)	(	

319 GYSCIOTO TCT NC OF STATICNS 12

(1231	E 3	16MY1964	0.00245)	(1392	GS16	12MY1967	0.00616)	(1394	GS18	13MY1967	C.0C344)
(1395	GS19	13MY1967	0.00117)	(1566	GS14	50C1967	0.00367)	(1567	GS15	50C1967	C.05081)
(1569	GS17	50C1967	0.08324)	(1570	GS18	50C1967	0.27767)	(1571	GS19	60C1967	C.0C117)
(1573	GS21	60C1967	0.00112)	(1574	GS22	60C1967	0.00288)	(1575	GS28	60C1967	C.01677)

Gyrosigma spencerii (Quek.) Griff. and Henfr.

Navicula spencerii Quekett, Pract. Treat. Micr., p. 440, pl. 9. 1848.
Gyrosigma spencerii (Quek.) Griffith and Henfrey, Microgr. Dict., 1st. ed., p. 303, pl. 11, fig. 17. 1856.

320 GYSPENCE TCT NC OF STATICNS 5

(3540	CH	11MY1879	0.00466)	(1279	E 1	16SE1964	0.00393)	(1285	F 1	15SE1964	C.C1747)
(1569	GS17	50C1967	0.00149)	(1407	SM 2	14MY1967	0.01194)	(			

Gyrosigma spencerii var. *curvula* (Grun.) Reim.

Pleurosigma spencerii var. *curvula* Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):60. 1880.
Gyrosigma spencerii var. *curvula* (Grun.) Reimer *in*: Patrick and Reimer, Acad. Nat. Sci. Philadelphia Monogr., 13:316, pl. 23, fig. 8. 1966.

321 GYSPENVC TCT NC OF STATIONS 17

(46909	CH	MR1947	0.00455)	(46906	CH	MY1947	C.00066)	(46907	CH	JL1947	C.0C049)
(46922	CH	21AU1947	0.00048)	(1387	GS11	12MY1967	0.00396)	(1574	GS22	60C1967	C.0C575)
(1521	SH 1	18SE1967	0.0C577)	(1526	MO 1	20SE1967	0.00569)	(1527	TR 1	20SE1967	C.0C629)
(1553	SG 1	60C1967	0.00734)	(1426	MS 2	29MY1967	C.01050)	(1427	LU 2	29MY1967	C.01211)
(1401	MO 2	6MY1967	0.01176)	(1402	TR 2	6MY1967	C.01624)	(1407	SM 2	14MY1967	C.00597)
(1349	CI 2	19AP1967	0.00359)	(1422	GA 2	23MY1967	0.00511)	(			

Gyrosigma temperei Cleve

Gyrosigma temperei Cleve, Diatomiste, 2(15):55, pl. 3, fig. 3. 1893.

322 GYTEMPER TOT NO OF STATIONS 2

(3507 CH 19FE1881 0.01132) (1550 MR 1 50C1967 0.01239) (

Gyrosigma wormleyi (Sulliv.) Boyer

Pleurosigma wormleyi Sullivant *in*: Sullivant and Wormley, Amer. J. Sci., Ser. 2, 27:251. 1859.
Gyrosigma wormleyi (Sulliv.) Boyer, Contr. Biol. Micr. Sect. Acad. Nat. Sci. Philadelphia, 1:7, pl. 2, fig. 10. 1922.

323 GYWORMLE TOT NO OF STATIONS 1

(1531 GH 1 25SE1967 0.00845) (

Genus *Hannaea* Patr.
Patrick *in*: Patrick and Reimer
Acad. Nat. Sci. Philadelphia Monogr., 13:131. 1966.

Members of the genus *Hannaea* are most abundant in periphyton communities, especially in mountain streams and cold, oligotrophic lakes. Like several members of the closely related genus *Fragilaria* which have similar habit, they are apparently successful in the plankton under certain conditions. In Lake Michigan occasional specimens are taken in plankton collections from nearshore areas but the genus is rarely noted in offshore collections.

Hannaea arcus (Ehr.) Patr.

Navicula arcus Ehrenberg, Infusionsthierchen, p. 182, pl. 21, fig. 10. 1838.
Hannaea arcus (Ehr.) Patrick *in*: Patrick and Reimer, Acad. Nat. Sci. Philadelphia Monogr., 13:132, pl. 4, fig. 20. 1966.

324 HNARCUS TOT NO OF STATIONS 1

(1244 F 1 11JN1964 0.00110) (

Hannaea arcus var. *amphioxys* (Rabh.) Patr.

Ceratoneis amphioxys Rabenhorst, Süssw.-Diat., p. 37, pl. 9, fig. 4. 1853.
Hannaea arcus var. *amphioxys* (Rabh.) Patrick *in*: Patrick and Reimer, Acad. Nat. Sci. Philadelphia Monogr., 13:133, pl. 4, fig. 21. 1966.

325 HNARCUVA TOT NO OF STATIONS 2

(1258 F 1 6JL1964 0.00236) (1403 CA 2 10MY1967 0.02615) (

Genus *Hantzschia* Grun.
Grunow *in*: Cleve and Grunow
K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):103. 1880.

Freshwater members of the genus *Hantzschia* are most abundant in epipelic communities in aquatic habitats and in the soil flora. Only occasional isolated specimens have been noted in plankton collections from Lake Michigan.

Hantzschia amphioxys (Ehr.) Grun.

Eunotia amphioxys Ehrenberg, Abh. Akad. Wiss. Berlin, 1841:413, pl. 1(1), fig. 26. 1843.
Hantzschia amphioxys (Ehr.) Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):103. 1880.

326 HAAMPHIO TOT NO OF STATIONS 2

(1320 E 4 7NO1964 0.00207) (1402 TR 2 6MY1967 0.00541) (

Hantzschia amphioxys var. *capitata* O. Müll.

Hantzschia amphioxys var. *capitata* O. Müll., Bot. Jahrb., 43(4):34, pl. 2, fig. 28. 1909.

327 HAAMPHEC TOT NO OF STATIONS 3

(46917 CH 12JA1946 0.00028) (1512 E 3 1SE1967 0.00393) (1569 GS17 5OC1967 0.00149)

Genus *Mastogloia* Thw.
Thwaites *ex* Wm. Smith, Syn. British Diat., Vol. 2, p. 63. 1856.

Freshwater members of the genus *Mastogloia* find their primary habitat in periphyton and epipelic communities. Only occasional specimens are noted in plankton collections from Lake Michigan.

Mastogloia grevillei Wm. Smith

Mastogloia grevillei Wm. Smith, Syn. British Diat., Vol. 2, p. 65, Supp. pl. 62, fig. 389. 1856.

328 MAGREVIL TOT NO OF STATIONS 3

(1388 GS12 12MY1967 0.00603) (1573 GS21 6OC1967 0.00112) (1350 BH 2 19AP1967 0.00220)

Mastogloia smithii Thw.

Mastogloia smithii Thwaites *ex* Wm. Smith, Syn. British Diat., Vol. 2, p. 65, pl. 54, fig. 341. 1856.

329 MASMITHI TOT NO OF STATIONS 3

(60973 CH 1876 0.02362) (46905 CH JA1947 0.00123) (1350 BH 2 19AP1967 0.00220)

Mastogloia smithii var. *amphicephala* Grun.

Mastogloia smithii var. *amphicephala* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 4, fig. 27. 1880.

Coll: 1100.

Mastogloia smithii var. *lacustris* Grun.

Mastogloia smithii var. *lacustris* Grunow *in*: Schneider, Naturw. Beitr. Kenntn. Kaukasusländer, p. 111. 1878.

330 MASMITVL TOT NO OF STATIONS 3

(1244 F 1 11JN1964 0.00110) (1343 A 6 19AP1967 0.00069) (1407 SM 2 14MY1967 0.00597)

Genus *Melosira* Agardh
Agardh, Syst. Alg., p. 8. 1824.

Melosira distans (Ehr.) Kütz.

Gaillonella distans Ehrenberg, Ber. Akad. Wiss. Berlin, 1836:170. 1836.
Melosira distans (Ehr.) Kützing, Bacill., p. 170, pl. 2, fig. 12. 1844.

Cells cylindrical, united by the valve faces into short colonies. Individual valves of specimens from Lake Michigan 4-12μ in diameter, 4-6μ in height (valve mantle). Frustules are heavily silicified. Ornamentation of

the valve surface consists of irregularly arranged poroids. Ornamentation of the valve mantle consists of poroids arranged in rows usually parallel to the pervalvar axis. Rows of poroids usually about 13-15 in 10μ, poroids within the rows about 15-18 in 10μ. In the smaller specimens the arrangement of these structures tends to become irregular. The margin of the valve is furnished with a corona of small spines. Pseudosulcus apparent, usually deeply incised. Sulcus deeply incised, forming a sharp angle. Because of the deep incision of the sulcus and pseudosulcus, the margins of the valve mantle tend to be convex and the neck of each valve is more or less bowl-shaped.

This species is uncommon in our collections. Occasional populations are found in the modern plankton and isolated valves occur in many collections. We suspect that some of these are derived from Pleistocene deposits because of their corroded condition and random occurrence.

332 MEDISTAN TCT NO OF STATIONS 12

(3540	CH	11MY1879	0.03261)	(46510	CH	0C1945	C.00546)	(46914	CH	19AP1946	0.0C427)
(46923	CH	22NO1946	0.00656)	(46920	CH	20DE1946	0.00092)	(46905	CH	JA1947	C.0C368)
(46916	CH	4MY1947	0.0C238)	(46907	CH	JL1947	0.00197)	(1536	E 2	24SE1967	C.0C273)
(1537	E 3	24SE1967	0.00431)	(1538	E 5	23SE1967	C.00552)	(1554	CS 1	30C1967	C.0C712)

Melosira distans var. *alpigena* Grun.

Melosira distans var. *alpigena* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 86, figs. 28-29. 1882.

Distinguished from the nominate variety by its smaller size range, lesser degree of silicification and finer ornamentation. Specimens from Lake Michigan 3-6μ in diameter, 3-4μ high. Striae on the valve mantle about 16 in 10μ, poroids within the rows about 22 in 10μ. The striae are usually oblique to the pervalvar axis and tend to spiral around the frustule rather than being parallel to the pervalvar axis as in the nominate variety.

This entity is very rare in our collections. All specimens observed appear to be of modern derivation.

333 MEDISTVA TCT NO OF STATIONS 15

(3541	CH	1FE1881	0.01956)	(46744	EV	6OC1937	C.00488)	(1341	A 3	19AP1967	C.0C651)
(1342	A 4	19AP1967	0.00361)	(1431	A 3	12JN1967	0.00772)	(1436	E 2	15JN1967	0.01809)
(1437	E 3	15JN1967	0.00269)	(1446	A 3	11JL1967	C.00978)	(1451	C 7	16JL1967	C.0C394)
(1452	E 2	14JL1967	0.00852)	(1453	E 3	15JL1967	C.01011)	(1532	A 3	18SE1967	C.0C657)
(1538	E 5	23SE1967	0.01105)	(1543	E 5	10OC1967	C.00718)	(1395	CS19	13MY1967	C.0C470)

Melosira granulata (Ehr.) Ralfs

Gaillonella granulata Ehrenberg, Abh. Akad. Wiss. Berlin, 1841:415. 1843.
Melosira granulata (Ehr.) Ralfs *in*: Pritchard, Hist. Infus., p. 820. 1861.

Cells cylindrical, joined by the valve faces into long, closely appressed colonies. Individual valves of specimens from Lake Michigan 5-20μ in diameter, 5-20μ high. Pseudosulcus poorly developed, not apparent, sulcus only slightly incised consisting of a sharply angled furrow. Neck elongate, of the same diameter as the valve. The margin of the valve is often furnished with very coarse spines of irregular length. The longer of these spines often overlap one valve of the next cell in the colony. The degree of silicification and the ornamentation of the frustule is extremely variable. The valve mantle is more heavily silicified than the valve surface. Ornamentation of the valve surface poorly developed consisting of a few irregularly arranged poroids, often without visible structure. The ornamentation of the valve mantle is pleomorphic. In all cases the

poroids are arranged in rows oblique to the pervalvar axis, thus spiraling around the long dimension of the colony. The following types of ornamentation are found:

Status α; Ornamentation of the valve mantle consisting of rows of coarse, more or less rectangular areolae. Areolae rows about 8-9 in 10μ with 8-10 areolae in 10μ within the rows. Frustules are heavily silicified.

Status β: Both finely areolate and coarsely areolate frustules found in the same colony.

Status γ Ornamentation of the valve mantle consisting of fine, more or less circular puncta. Punctae rows 10-15 in 10μ with 10-15 puncta in 10μ within the rows.

This species is often abundant in eutrophied portions of Lake Michigan.

334 MEGRANUL TOT NO OF STATIONS 262

(60973	CH	1876	0.16533)	(3540	CH	11MY1879	0.17705)	(3541	CH	1FE1881	0.45975)
(3507	CH	19FE1881	0.12452)	(46910	CH	0C1945	63.90089)	(46921	CH	23NC1945	8.74351)
(46908	CH	DE1945	1.75226)	(46917	CH	12JA1946	1.35155)	(46915	CH	20FE1946	3.69886)
(46914	CH	19AP1946	3.36561)	(46924	CH	10MY1946	12.38078)	(46923	CH	22NO1946	14.20641)
(46920	CH	20DE1946	2.99412)	(46905	CH	JA1947	5.29722)	(46909	CH	MR1947	2.95979)
(46912	CH	AP1947	5.61113)	(46916	CH	4MY1947	4.41077)	(46906	CH	MY1947	3.71004)
(46919	CH	5JN1947	0.54172)	(46907	CH	JL1947	4.00655)	(46913	CH	6AU1947	4.07907)
(46922	CH	21AU1947	4.31575)	(46758	EV	5JN1937	0.02496)	(46771	EV	11JN1937	0.00713)
(46743	EV	20JN1937	0.04710)	(46745	EV	3JL1937	2.34065)	(46770	EV	9JL1937	0.25644)
(46764	EV	17JL1937	3.15874)	(46757	EV	25JL1937	0.89548)	(46747	EV	1AU1937	0.64856)
(46763	EV	23AU1937	0.42614)	(46765	EV	30AU1937	7.96430)	(46769	EV	7SE1937	6.07903)
(46752	EV	15SE1937	5.70309)	(46760	EV	22SE1937	8.82367)	(46750	EV	24SE1937	8.84197)
(46744	EV	6OC1937	6.55482)	(46748	EV	13OC1937	0.46968)	(46767	EV	27OC1937	0.30947)
(46749	EV	12MR1938	0.03641)	(46762	EV	18MR1938	2.11734)	(46772	EV	18AP1938	0.04258)
(46756	EV	27AP1938	0.03358)	(46759	EV	19MY1938	0.00338)	(46761	EV	27MY1938	0.02453)
(46766	EV	14DE1938	2.94677)	(1233	B 3	5JN2964	3.00064)	(1234	B 3	18JN1964	1.18084)
(1235	C 7	16JN1964	0.01130)	(1236	C' 1	8JN1964	2.20542)	(1237	C' 2	8JN1964	1.53390)
(1238	D 3	11JN1964	0.00800)	(1240	D 6	10JN1964	0.25770)	(1241	E 2	13JN1964	0.55298)
(1242	E 3	13JN1964	0.00300)	(1243	E 6	13JN1964	0.10023)	(1244	F 1	11JN1964	0.05811)
(1245	F 2	11JN1964	0.02766)	(1246	F 3	11JN1964	0.01195)	(1247	B 3	14JL1964	0.26892)
(1248	B 3	24JL1964	0.27587)	(1440	B 6	11JL1964	0.02948)	(1441	B 6	24JL1964	0.00220)
(1249	C 3	8JL1964	0.29332)	(1250	C 6	10JL1964	0.00822)	(1251	C 7	16JL1964	0.14485)
(1252	C' 1	16JL1964	3.90516)	(1253	C' 2	16JL1964	0.28985)	(1254	D 2	15JL1964	0.26815)
(1255	D 5	15JL1964	0.00257)	(1256	E 2	14JL1964	0.09709)	(1257	E 3	14JL1964	0.00718)
(1258	F 1	6JL1964	0.04248)	(1259	F 2	6JL1964	0.09606)	(1260	F 3	6JL1964	0.01719)
(1261	B 3	2AU1964	0.08046)	(1262	B 3	17AU1964	0.10500)	(1442	B 6	2AU1964	0.01365)
(1264	C' 1	10AU1964	5.94686)	(1265	C' 2	10AU1964	0.04024)	(1266	D 3	18AU1964	0.01403)
(1267	D 6	18AU1964	0.01081)	(1268	E 2	15AU1964	0.11489)	(1269	E 3	15AU1964	0.02837)
(1270	F 1	10AU1964	0.01089)	(1444	B 6	19SE1964	0.00606)	(1271	C 7	22SE1964	0.02611)
(1272	C' 1	10SE1964	0.18881)	(1273	C' 2	10SE1964	0.02151)	(1274	D 1	17SE1964	10.51002)
(1275	D 2	17SE1964	4.51584)	(1276	D 3	18SE1964	1.45284)	(1277	D 4	18SE1964	0.01239)
(1278	D 6	18SE1964	0.53807)	(1279	E 1	16SE1964	3.84812)	(1280	E 2	16SE1964	0.36081)
(1281	E 3	16SE1964	0.00785)	(1282	E 4	16SE1964	0.02216)	(1283	E 5	16SE1964	0.02452)
(1284	E 6	17SE1964	2.11292)	(1285	F 1	15SE1964	0.22713)	(1286	F 2	15SE1964	0.04378)
(1287	F 3	15SE1964	0.08507)	(1288	B 3	15OC1964	7.00945)	(1445	B 6	14OC1964	0.66210)
(1290	C' 1	16OC1964	0.30699)	(1291	C' 2	16OC1964	0.68490)	(1292	D 1	15OC1964	0.57394)
(1293	D 2	15OC1964	0.04245)	(1294	D 3	15OC1964	0.02967)	(1295	D 4	15OC1964	0.00595)
(1296	D 5	14OC1964	0.00393)	(1297	D 6	14OC1964	0.29131)	(1298	E 1	12OC1964	0.47124)
(1299	E 2	12OC1964	0.73516)	(1300	E 3	13OC1964	0.22552)	(1301	E 4	13OC1964	0.01766)
(1302	E 5	13OC1964	0.29962)	(1303	E 6	13OC1964	0.29106)	(1304	F 1	11OC1964	0.08397)
(1305	F 2	11OC1964	0.05520)	(1306	F 3	11OC1964	0.04158)	(1307	B 6	NO1964	0.50512)
(1308	C 7	6NO1964	0.01825)	(1309	C' 1	10NO1964	0.08040)	(1310	C' 2	10NO1964	0.03401)
(1311	D 1	8NO1964	0.02064)	(1312	D 2	8NO1964	0.29179)	(1313	D 3	9NO1964	0.02896)
(1314	D 4	9NO1964	0.01435)	(1315	D 5	9NO1964	0.01820)	(1316	D 6	9NO1964	0.06422)
(1317	E 1	6NO1964	0.15892)	(1318	E 2	7NO1964	0.22639)	(1319	E 3	7NO1964	0.10997)
(1320	E 4	7NO1964	0.07859)	(1321	E 5	7NO1964	0.26496)	(1322	E 6	7NO1964	0.40657)
(1323	F 1	6NO1964	0.08920)	(1324	F 2	6NO1964	0.32609)	(1325	F 3	6NO1964	0.32495)
(1336	C 3	27JA1967	0.67395)	(1337	C 3	2MR1967	0.33510)	(1339	C 5	28MR1967	0.02182)
(1340	C 7	28MR1967	0.00291)	(1341	A 3	19AP1967	0.32978)	(1342	A 4	19AP1967	0.31581)
(1343	A 6	19AP1967	0.00139)	(1344	C 3	25AP1967	0.00331)	(1346	C 7	21AP1967	0.00935)
(1368	A 3	4MY1967	0.00628)	(1369	A 4	4MY1967	0.00373)	(1371	C 3	4MY1967	0.01385)
(1408	A 3	23MY1967	0.01789)	(1411	C 3	31MY1967	0.02462)	(1412	C 5	31MY1967	0.07155)
(1414	E 2	28MY1967	0.00336)	(1415	E 3	28MY1967	0.00450)	(1416	E 5	28MY1967	0.00875)
(1431	A 3	12JN1967	0.00515)	(1432	A 4	13JN1967	0.01533)	(1433	C 3	17JN1967	0.18086)
(1434	C 5	17JN1967	0.01794)	(1435	C 7	13JN1967	0.01263)	(1436	E 2	15JN1967	0.02895)
(1446	A 3	11JL1967	13.18429)	(1447	A 4	11JL1967	0.09590)	(1448	A 6	10JL1967	0.01061)
(1451	C 7	16JL1967	0.03543)	(1452	E 2	14JL1967	0.29804)	(1454	E 5	15JL1967	0.30806)
(1504	A 3	28AU1967	0.34564)	(1511	E 2	1SE1967	2.14876)	(1532	A 3	18SE1967	2.75944)
(1533	A 4	19SE1967	0.40850)	(1534	A 6	19SE1967	2.38886)	(1535	C 7	20SE1967	0.07081)
(1536	E 2	24SE1967	2.48132)	(1537	E 3	24SE1967	0.02588)	(1538	E 5	23SE1967	0.23201)
(1539	C 3	4OC1967	2.28942)	(1540	C 5	4OC1967	0.09927)	(1541	E 2	11OC1967	4.84274)
(1542	E 3	11OC1967	0.07120)	(1543	E 5	10OC1967	0.25140)	(1380	GS 4	9MY1967	0.00336)
(1387	GS11	12MY1967	0.01188)	(1388	GS12	12MY1967	4.22323)	(1389	GS13	12MY1967	2.52688)
(1390	GS14	12MY1967	2.05520)	(1391	GS15	12MY1967	1.22588)	(1392	GS16	12MY1967	8.41372)
(1393	GS17	13MY1967	1.02454)	(1394	GS18	13MY1967	1.32453)	(1395	GS19	13MY1967	2.05510)
(1396	GS20	13MY1967	35.89212)	(1397	GS21	13MY1967	3.80004)	(1398	GS22	14MY1967	0.02429)
(1554	GS 1	30OC1967	1.08162)	(1555	GS 2	30OC1967	0.20833)	(1556	GS 3	30OC1967	0.02607)
(1557	GS 4	30OC1967	0.16816)	(1558	GS 5	4OC1967	0.17045)	(1559	GS 7	4OC1967	0.26929)
(1560	GS 8	4OC1967	0.08029)	(1561	GS 9	4OC1967	0.09978)	(1562	GS10	5OC1967	0.09622)
(1563	GS11	5OC1967	3.60099)	(1564	GS12	5OC1967	7.14333)	(1565	GS13	5OC1967	2.30707)
(1566	GS14	5OC1967	21.18877)	(1567	GS15	5OC1967	28.11824)	(1568	GS16	5OC1967	42.92867)

(1569	GS17	5OC1967	13.63103)	(1570	GS18	5OC1967	17.35422)	(1571	GS19	6OC1967	41.10005)		
(1572	GS20	6OC1967	31.67134)	(1573	GS21	6OC1967	53.22925)	(1574	GS22	6OC1967	1.00673)		
(1575	GS28	6OC1967	39.01532)	(1544	MU 1	2OC1967	82.57916)	(1547	MS 1	2OC1967	60.42314)		
(1546	LU 1	2OC1967	78.18736)	(1520	HO 1	18SE1967	35.07944)	(1521	SH 1	18SE1967	60.92775)		
(1522	BH 1	18SE1967	61.03462)	(1523	RA 1	19SE1967	0.14760)	(1526	MO 1	20SE1967	10.65028)		
(1527	TR 1	20SE1967	2.71698)	(1529	KW 1	20SE1967	1.00731)	(1530	FR 1	24SE1967	47.84477)		
(1531	GH 1	25SE1967	38.14032)	(1545	WL 1	2OC1967	20.00134)	(1548	CA 1	3OC1967	7.53085)		
(1549	MQ 1	4OC1967	21.04974)	(1551	ES 1	5OC1967	8.56298)	(1552	SM 1	6OC1967	16.05809)		
(1550	MR 1	5OC1967	2.57713)	(1553	SG 1	6OC1967	21.50410)	(1428	MU 2	29MY1967	71.73460)		
(1426	MS 2	29MY1967	1.85827)	(1351	MI 2	21AP1967	0.01862)	(1427	LU 2	29MY1967	10.07264)		
(1417	HO 2	22MY1967	4.90504)	(1418	SH 2	22MY1967	1.24417)	(1350	BH 2	19AP1967	37.07407)		
(1401	MO 2	6MY1967	0.02352)	(1402	TR 2	6MY1967	0.01083)	(1353	FR 2	23AP1967	0.18987)		
(1354	GH 2	25AP1967	3.42453)	(1429	WL 2	29MY1967	28.70792)	(1403	CA 2	10MY1967	0.32693)		
(1404	MQ 2	10MY1967	27.64227)	(1405	ES 2	12MY1967	1.85758)	(1407	SM 2	14MY1967	3.72604)		
(1349	CI 2	19AP1967	0.02155)	(1406	GB 2	13MY1967	90.06065)	(1420	IH 2	23MY1967	0.27190)		
(1421	CH 2	23MY1967	0.19084)	(1422	GA 2	23MY1967	0.03065)	(1423	WA 2	25MY1967	0.00856)		
(1430	MC 2	12JN1967	0.04935)	(									

Melosira granulata fo. *spiralis* Grun.

Melosira (granulata?) var. *spiralis* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 87, figs. 20-22. 1882.

Cells curved in the pervalvar, forming lax spiral colonies. Other morphologic features, including pleomorphic ornamentation, essentially similar to the nominate variety.

Our collections of this entity mostly come from highly eutrophied environments.

335 MEGRANFC TOT NO OF STATIONS 22

(46744	EV	6OC1937	0.00975)	(1454	E 5	15JL1967	0.28006)	(1511	E 2	1SE1967	0.05218)
(1512	E 3	1SE1967	0.00785)	(1536	E 2	24SE1967	0.07635)	(1541	E 2	11OC1967	0.01064)
(1542	E 3	11OC1967	0.01017)	(1396	GS20	13MY1967	0.00592)	(1555	GS 2	30C1967	0.01059)
(1558	GS 5	4OC1967	0.00793)	(1573	GS21	6OC1967	0.02240)	(1544	MU 1	20C1967	7.05316)
(1520	HO 1	18SE1967	3.77198)	(1521	SH .	18SE1967	0.14424)	(1522	BH 1	18SE1967	0.87526)
(1531	GH 1	25SE1967	0.85376)	(1545	WL 1	20C1967	0.10136)	(1549	MQ 1	4OC1967	0.02741)
(1428	MU 2	29MY1967	0.77134)	(1417	HO 2	22MY1967	0.01495)	(1429	WL 2	29MY1967	0.06370)
(1406	GB 2	13MY1967	0.90578)	(							

Melosira granulata var. *angustissima* O. Müll.

Melosira granulata var. *angustissima* O. Müller, Hedwigia, 38:315, pl. 12, fig. 28. 1899.

Cells elongate-cylindrical, only 3-6μ in diameter. Length of the pervalvar axis more than 5 times the diameter of the valve. Other features of the morphology and ornamentation of the frustule essentially similar to the nominate variety.

336 MEGRANVA TOT NO OF STATIONS 152

(46910	CH	CC1945	0.00546)	(46521	CH	23NO1945	0.00194)	(46914	CH	19AP1946	0.00214)
(46924	CH	10MY1946	0.00212)	(46923	CH	22NO1946	0.01311)	(46916	CH	4MY1947	0.00407)
(46907	CH	JL1947	0.00099)	(46522	CH	21AU1947	0.00291)	(46750	EV	24SE1937	0.32992)
(46744	EV	6OC1937	0.13656)	(1232	E 5	16MY1964	0.00696)	(1233	B 3	5JN2964	0.33340)
(1236	C' 1	8JN1964	0.29931)	(1237	C' 2	8JN1964	0.60325)	(1241	E 2	13JN1964	0.06653)
(1247	B 3	14JL1964	0.00854)	(1248	B 3	24JL1964	0.00985)	(1249	C 3	8JL1964	0.01086)
(1251	C 7	16JL1964	0.00579)	(1252	C' 1	16JL1964	0.03626)	(1253	C' 2	16JL1964	0.01369)
(1254	D 2	15JL1964	0.02681)	(1256	E 2	14JL1964	0.04030)	(1257	E 3	14JL1964	0.00479)
(1261	B 3	2AU1964	0.00785)	(1264	C' 1	10AU1964	1.35156)	(1265	C' 2	10AU1964	0.01341)
(1266	D 3	18AU1964	0.01403)	(1268	E 2	15AU1964	0.00547)	(1272	C' 1	10SE1964	0.11082)
(1273	C' 2	10SE1964	0.01613)	(1274	D 1	17SE1964	0.01408)	(1275	D 2	17SE1964	0.09677)
(1277	D 4	18SE1964	0.01239)	(1279	E 1	16SE1964	0.29057)	(1280	E 2	16SE1964	0.05446)
(1284	E 6	17SE1964	0.02224)	(1286	F 2	15SE1964	0.02189)	(1288	B 3	15OC1964	2.89521)
(1445	B 6	14OC1964	0.01957)	(1290	C' 1	16OC1964	0.10612)	(1291	C' 2	16OC1964	0.00245)
(1292	D 1	15OC1964	0.00373)	(1294	D 3	15OC1964	0.00330)	(1297	D 6	14OC1964	0.00190)
(1298	E 1	12OC1964	0.03770)	(1299	E 2	12OC1964	0.09739)	(1300	E 3	13OC1964	0.05012)
(1302	E 5	13OC1964	0.02024)	(1303	E 6	13OC1964	0.10075)	(1305	F 2	11OC1964	0.00690)
(1306	F 3	11OC1964	0.00554)	(1308	C 7	6NO1964	0.01217)	(1309	C' 1	10NO1964	0.00965)
(1316	D 6	9NO1964	0.00756)	(1317	E 1	6NO1964	0.00574)	(1318	E 2	7NO1964	0.01712)
(1319	E 3	7NO1964	0.00524)	(1320	E 4	7NO1964	0.01241)	(1321	E 5	7NO1964	0.00319)
(1322	E 6	7NO1964	0.01666)	(1323	F 1	6NO1964	0.00557)	(1337	C 3	2MR1967	0.01176)
(1338	C 3	28MR1967	0.00793)	(1340	C 7	28MR1967	0.00436)	(1341	A 3	19AP1967	0.12475)
(1342	A 4	19AP1967	0.34288)	(1346	C 7	21AP1967	0.00267)	(1348	E 5	23AP1967	0.00137)
(1408	A 3	23MY1967	0.01789)	(1411	C 3	31MY1967	0.00821)	(1412	C 5	31MY1967	0.00842)
(1432	A 4	13JN1967	0.02299)	(1433	C 3	17JN1967	0.11626)	(1436	E 2	15JN1967	0.00724)
(1446	A 3	11JL1967	0.94173)	(1447	A 4	11JL1967	0.01403)	(1451	C 7	16JL1967	0.00197)
(1452	E 2	14JL1967	0.52157)	(1454	E 5	15JL1967	0.03001)	(1506	A 6	29AU1967	0.01046)
(1508	C 3	2SE1967	0.00400)	(1511	E 2	1SE1967	0.05525)	(1532	A 3	18SE1967	0.50590)
(1533	A 4	19SE1967	0.03714)	(1534	A 6	19SE1967	0.29163)	(1535	C 7	20SE1967	0.00966)
(1536	E 2	24SE1967	0.11180)	(1537	E 3	24SE1967	0.06469)	(1538	E 5	23SE1967	0.01105)
(1539	C 3	4OC1967	1.17742)	(1541	E 2	11OC1967	0.10643)	(1542	E 3	11OC1967	0.01017)
(1387	GS11	12MY1967	0.00792)	(1388	GS12	12MY1967	0.05430)	(1389	GS13	12MY1967	0.32746)
(1391	GS15	12MY1967	0.01915)	(1392	GS16	12MY1967	0.09554)	(1393	GS17	13MY1967	0.01096)
(1394	GS18	13MY1967	0.01376)	(1395	GS19	13MY1967	0.08220)	(1396	GS20	13MY1967	3.62547)

(1397	GS21	13MY1967	0.08306)	(1554	GS 1	30C1967	0.14943)	(1556	GS 3	30C1967	C.01043)
(1558	GS 5	4OC1967	0.00396)	(1560	GS 8	4OC1967	C.02361)	(1561	GS 9	4OC1967	C.01174)
(1563	GS11	5OC1967	0.00468)	(1564	GS12	5OC1967	C.19587)	(1565	GS13	5OC1967	C.02535)
(1566	GS14	5OC1967	0.09723)	(1567	GS15	5OC1967	0.06510)	(1568	GS16	5OC1967	1.41412)
(1569	GS17	5OC1967	0.13973)	(1571	GS19	6OC1967	C.13698)	(1572	GS20	6OC1967	C.12618)
(1573	GS21	6OC1967	1.01912)	(1574	GS22	6OC1967	C.04890)	(1575	GS28	6OC1967	C.38706)
(1544	MU 1	2OC1967	4.42252)	(1547	MS 1	2OC1967	0.16766)	(1520	HO 1	18SE1967	14.86162)
(1521	SH 1	18SE1967	3.23102)	(1522	BH 1	18SE1967	1.77969)	(1523	RA 1	19SE1967	C.01845)
(1526	MO 1	20SE1967	1.09234)	(1527	TR 1	20SE1967	0.08176)	(1529	KW 1	20SE1967	C.02398)
(1530	FR 1	24SE1967	4.80048)	(1531	GH 1	25SE1967	19.07016)	(1545	WL 1	2OC1967	C.23650)
(1548	CA 1	3OC1967	0.05088)	(1549	MQ 1	4OC1967	0.78114)	(1551	ES 1	5OC1967	C.41537)
(1552	SM 1	6OC1967	0.20469)	(1550	MR 1	5OC1967	1.44963)	(1553	SG 1	6OC1967	1.29260)
(1428	MU 2	29MY1967	8.87041)	(1426	MS 2	29MY1967	0.66142)	(1427	LU 2	29MY1967	0.30266)
(1417	HO 2	22MY1967	1.07677)	(1418	SH 2	22MY1967	0.38880)	(1399	PW 2	5MY1967	C.01360)
(1402	TR 2	6MY1967	0.03249)	(1354	GH 2	25AP1967	0.09839)	(1429	WL 2	29MY1967	5.43582)
(1403	CA 2	10MY1967	0.05231)	(1404	MQ 2	10MY1967	2.03252)	(1405	ES 2	12MY1967	C.36120)
(1407	SM 2	14MY1967	0.01194)	(1406	GB 2	13MY1967	0.56072)	(			

Melosira granulata var. *angustissima* fo. *curvata* (Grun.)

Melosira granulata var. *curvata* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 87, fig. 18. 1882.

Cells bent in the pervalvar axis, forming lax spiral colonies. Other morphologic features essentially similar to var. *angustissima*.

Both of the above entities are found in abundance only in eutrophied portions of Lake Michigan. *M. granulata* var. *angustissima* fo. *curvata* seems to occur only under highly eutrophic conditions and may represent a response of the previous variety to such conditions.

337 MEGRVAFC TOT NO OF STATIONS 10

(1396	GS20	13MY1967	0.03330)	(1568	GS16	5OC1967	0.00289)	(1544	MU 1	2OC1967	C.53375)
(1522	BH 1	18SE1967	0.40845)	(1531	GH 1	25SE1967	C.99746)	(1428	MU 2	29MY1967	0.00301)
(1417	HO 2	22MY1967	0.02243)	(1350	BH 2	19AP1967	1.05725)	(1429	WL 2	29MY1967	0.11679)
(1406	GB 2	13MY1967	0.24801)	(							

Melosira granulata var. *muzzanensis* (Meist.) Bethge

Melosira muzzanensis Meister, Kryptog.-Fl. Schweiz, 4(1):41, pl. 1, fig. 10. 1912.
Melosira granulata var. *muzzanensis* (Meist.) Bethge, Pflanzenforsch., 3:32. 1925.

In this entity the pervalvar axis of cells is much shorter than in the nominate variety, height of the valve mantle only 4-8μ. This variety is apparently not polymorphic and all observed specimens are finely structured. Other morphologic features essentially similar to the nominate variety.

This entity occurs occasionally but always in low abundance in our collections from Lake Michigan. Its taxonomic status is somewhat questionable in that it does not show the polymorphism characteristic of the other varieties of this taxon. It should be pointed out that post-auxospore valves of *M. islandica* have similar length to width ratios.

338 MEISLAVA TOT NO OF STATIONS 65

(46914	CH	19AP1946	0.00214)	(46924	CH	10MY1946	0.00282)	(46906	CH	MY1947	C.00531)
(1251	C 7	16JL1964	0.00579)	(1254	D 2	15JL1964	0.01341)	(1255	D 5	15JL1964	C.01027)
(1257	E 3	14JL1964	0.00957)	(1281	E 3	16SE1964	C.00785)	(1341	A 3	19AP1967	C.00868)
(1342	A 4	19AP1967	0.01444)	(1344	C 3	25AP1967	0.02151)	(1345	C 5	25AP1967	C.00975)
(1346	C 7	21AP1967	0.01068)	(1347	E 2	23AP1967	0.00650)	(1348	E 5	23AP1967	C.00548)
(1368	A 3	4MY1967	0.08797)	(1369	A 4	4MY1967	C.04846)	(1370	A 6	3MY1967	0.00691)
(1371	C 3	4MY1967	0.34858)	(1372	C 5	5MY1967	0.06029)	(1373	C 7	5MY1967	C.13121)
(1374	E 2	7MY1967	0.00598)	(1375	E 3	7MY1967	C.01925)	(1376	E 5	6MY1967	C.01687)
(1408	A 3	23MY1967	0.01789)	(1409	A 4	23MY1967	0.05356)	(1410	A 6	24MY1967	0.04511)
(1411	C 3	31MY1967	0.C3282)	(1412	C 5	31MY1967	0.04630)	(1413	C 7	25MY1967	0.02527)
(1414	E 2	28MY1967	0.10411)	(1415	E 3	28MY1967	0.07870)	(1416	E 5	28MY1967	C.00875)
(1432	A 4	13JN1967	0.01533)	(1433	C 3	17JN1967	0.08397)	(1434	C 5	17JN1967	C.06580)
(1435	C 7	13JN1967	0.03473)	(1436	E 2	15JN1967	0.02171)	(1437	E 3	15JN1967	C.47103)
(1438	E 5	14JN1967	0.06173)	(1446	A 3	11JL1967	C.00978)	(1449	C 3	16JL1967	C.06496)
(1511	E 2	1SE1967	0.00614)	(1512	E 3	1SE1967	0.00393)	(1537	E 3	24SE1967	C.01725)
(1538	E 5	23SE1967	0.01105)	(1377	GS 1	9MY1967	0.05937)	(1380	GS 4	9MY1967	C.01009)
(1382	GS 6	10MY1967	0.02220)	(1384	GS 8	10MY1967	0.01109)	(1385	GS 9	10MY1967	C.00942)
(1386	GS10	12MY1967	0.01149)	(1387	GS11	12MY1967	0.02376)	(1388	GS12	12MY1967	C.01810)
(1389	GS13	12MY1967	0.00516)	(1394	GS18	13MY1967	0.00344)	(1397	GS21	13MY1967	C.00392)
(1398	GS22	14MY1967	C.CC911)	(1567	GS15	5OC1967	0.01111)	(1569	GS17	5OC1967	C.CC297)
(1428	MU 2	29MY1967	0.00603)	(1426	MS 2	29MY1967	0.02100)	(1400	SB 2	6MY1967	0.01191)
(1422	GA 2	23MY1967	C.01022)	(1424	KN 2	25MY1967	0.02665)	(			

Melosira islandica O. Müll.

Melosira islandica O. Müller, Jahrb. wissench. Bot., 43:56, pl. 1, figs. 3-6. 1906.

Cells cylindrical, joined by the valve faces into long, closely appressed filamentous colonies. Individual valves of specimens from Lake Michigan 8-30μ in diameters, 7-21μ high (valve mantle). Pseudosulcus little developed, apparent only as a narrow, sharply-angled identation. Sulcus a shallow furrow with an internal thickening intruding into the interior of the cell. Neck short, in optical section more or less bowl-shaped. Degree of silicification and ornamentation of the frustule highly variable. Ornamentation of the valve surface consists of numerous, randomly arranged, small areolae. The margin of the valve is usually furnished with a corona of very small and inconspicuous spines. Ornamentation of the valve mantle is pleomorphic. In all cases the elements are arranged in rows running parallel to the pervalvar axis. The following types of ornamentation may be found:

Status α: Ornamentation of the valve mantle consisting of rows of coarse, circular areolae. Areolae rows 10-12 in 10μ with 12-13 areolae in 10μ within the individual rows. Frustules are heavily silicified.

Status β: Both finely and coarsely areolate frustules found in the same colony.

Status γ: Ornamentation of the valve mantle consisting of fine circular areolae. Areolae rows 13-16 in 10μ with 14-18 areolae in 10μ within the rows.

This species is usually abundant and often dominant in spring collections from Lake Michigan. Populations from the offshore waters have usually been referred to *M. islandica* subsp. *helvetica* O. Müll. In the material that we have examined we can find no justification for the sub-specific designation for specimens from Lake Michigan. The populations of variable morphology grade together to the extent that any separation is entirely artificial. It appears that environmental conditions determine the degree of silicification to at least a certain degree as collections from the eutrophied portions of the lake contain only coarsely structured specimens. Auxospore populations are common and post-auxospore cells usually are characterized by much foreshortened pervalvar axes.

339 MEISLAVH TOT NO OF STATIONS 311

(60973	CH	1876	3.61360)	(3540	CH	11MY1879	8.61948)	(3541	CH	1FE1881	5.92781)
(3507	CH	19FE1881	4.75436)	(46921	CH	23ND1945	0.00194)	(46908	CH	0E1945	0.46324)
(46917	CH	12JA1946	0.18021)	(46915	CH	20FE1946	1.84943)	(46914	CH	19AP1946	38.55402)
(46924	CH	10MY1946	51.40315)	(46523	CH	22ND1946	0.08305)	(46920	CH	20DE1946	0.13033)
(46905	CH	JA1947	1.07611)	(46509	CH	MR1947	12.13515)	(46912	CH	AP1947	25.41106)
(46916	CH	4MY1947	1.03653)	(46506	CH	MY1947	14.84018)	(46919	CH	5JN1947	0.19727)
(46907	CH	JL1947	0.80131)	(46913	CH	6AU1947	0.26148)	(46922	CH	21AU1947	0.37802)
(46758	EV	5JN1937	34.34846)	(46771	EV	11JN1937	50.72511)	(46743	EV	20JN1937	20.86151)
(46745	EV	3JL1937	0.18809)	(46770	EV	9JL1937	0.03578)	(46764	EV	17JL1937	2.25624)
(46757	EV	25JL1937	2.29166)	(46747	EV	1AU1937	2.91111)	(46763	EV	23AU1937	1.03490)
(46769	EV	7SE1937	0.04342)	(46752	EV	15SE1937	0.06530)	(46760	EV	22SE1937	0.02462)
(46744	EV	6OC1937	0.23410)	(46748	EV	13OC1937	78.30913)	(46767	EV	27OC1937	0.05029)
(46749	EV	12MR1938	27.86745)	(46768	EV	16MR1938	58.03322)	(46762	EV	18MR1938	2.82311)
(46751	EV	30MR1938	56.58775)	(46772	EV	18AP1938	61.80269)	(46756	EV	27AP1938	41.84225)
(46759	EV	19MY1938	80.35110)	(46761	EV	27MY1938	36.93448)	(46766	EV	14DE1938	0.14259)
(1223	B 3	18MY1964	75.91217)	(1224	B 4	18MY1964	82.89383)	(1225	C 6	15MY1964	57.35005)
(1226	C 7	16MY1964	43.68340)	(1227	C' 2	13MY1964	41.60544)	(1228	D 2	14MY1964	58.03928)
(1229	D 5	14MY1964	43.66580)	(1230	E 2	16MY1964	54.76366)	(1231	E 3	16MY1964	72.42441)
(1232	E 5	16MY1964	51.13220)	(1233	B 3	5JN2964	29.17291)	(1234	B 3	18JN1964	16.72852)
(1235	C 7	16JN1964	7.90804)	(1439	B 6	5JN1964	43.91608)	(1236	C' 1	8JN1964	30.01819)
(1237	C' 2	8JN1964	30.31708)	(1238	D 3	11JN1964	77.70000)	(1239	D 4	11JN1964	55.31766)
(1240	D 6	10JN1964	57.12444)	(1241	E 2	13JN1964	60.79486)	(1242	E 3	13JN1964	88.12157)
(1243	E 6	13JN1964	48.52585)	(1244	F 1	11JN1964	11.20577)	(1245	F 2	11JN1964	12.06964)
(1246	F 3	11JN1964	17.15173)	(1247	B 3	14JL1964	21.81242)	(1248	B 3	24JL1964	17.24205)
(1440	B 6	11JL1964	21.66783)	(1441	B 6	24JL1964	44.40625)	(1249	C 3	8JL1964	34.22052)
(1250	C 6	10JL1964	42.87769)	(1251	C 7	16JL1964	6.28657)	(1252	C' 1	16JL1964	11.12971)

(1253	C' 2	16JL1964	38.82143)	(1254	D 2	15JL1964	54.29994)	(1255	D 5	15JL1964	38.44771)
(1256	E 2	14JL1964	60.01318)	(1257	E 3	14JL1964	64.14642)	(1258	F 1	6JL1964	12.38879)
(1259	F 2	6JL1964	2C.60609)	(1260	F 3	6JL1964	17.78175)	(1261	B 3	2AU1964	3.98383)
(1262	B 3	17AU1964	6.32087)	(1442	B 6	2AU1964	18.15079)	(1443	B 6	16AU1964	19.09619)
(1263	C 7	15AU1964	3.36269)	(1264	C' 1	10AU1964	1C.13670)	(1265	C' 2	10AU1964	5.47694)
(1266	D 3	18AU1964	20.13469)	(1267	D 6	18AU1964	0.65716)	(1268	E 2	15AU1964	32.93576)
(1269	E 3	15AU1964	35.49306)	(1270	F 1	10AU1964	4.38393)	(1444	B 6	19SE1964	17.61192)
(1271	C 7	22SE1964	0.91402)	(1272	C' 1	10SE1964	8.90695)	(1273	C' 2	10SE1964	5.4C911)
(1274	D 1	17SE1964	7.22564)	(1275	D 2	17SE1964	5.41900)	(1276	D 3	18SE1964	15.55743)
(1277	D 4	18SE1964	5.20511)	(1278	D 6	18SE1964	2.15227)	(1279	E 1	16SE1964	7.14650)
(1280	E 2	16SE1964	53.37326)	(1281	E 3	16SE1964	29.39214)	(1282	E 4	16SE1964	8.53186)
(1283	E 5	16SE1964	24.8866C)	(1284	E 6	17SE1964	4.89308)	(1285	F 1	15SE1964	4.68814)
(1286	F 2	15SE1964	9.96060)	(1287	F 3	15SE1964	6.30504)	(1288	B 3	15OC1964	0.36571)
(1445	B 6	14OC1964	0.83496)	(1289	C 7	14OC1964	C.67719)	(1290	C' 1	16OC1964	C.C7580)
(1291	C' 2	16OC1964	0.34245)	(1292	D 1	15OC1964	0.71929)	(1293	D 2	15OC1964	0.30186)
(1294	D 3	15OC1964	1.09767)	(1295	D 4	15OC1964	1.39137)	(1296	D 5	14OC1964	C.75933)
(1297	D 6	14OC1964	4.53143)	(1298	E 1	12OC1964	0.29082)	(1299	E 2	12OC1964	3.95853)
(1300	E 3	13OC1964	5.76338)	(1301	E 4	13OC1964	11.12779)	(1302	E 5	13OC1964	4.81820)
(1303	E 6	13OC1964	7.83611)	(1304	F 1	11OC1964	0.57789)	(1305	F 2	11OC1964	C.21909)
(1306	F 3	11OC1964	0.27163)	(1307	B 6	NO1964	C.80820)	(1308	C 7	6NO1964	C.46838)
(1309	C' 1	10NO1964	0.00322)	(1310	C' 2	10NO1964	0.08163)	(1311	D 1	8NO1964	0.00774)
(1312	D 2	8NO1964	0.29179)	(1313	D 3	9NO1964	0.22973)	(1314	D 4	9NO1964	0.55407)
(1315	D 5	9NO1964	C.57780)	(1316	D 6	9NO1964	1.58658)	(1317	E 1	6NO1964	0.00574)
(1318	E 2	7NO1964	0.44518)	(1319	E 3	7NO1964	1.09968)	(1320	E 4	7NO1964	0.66598)
(1321	E 5	7NO1964	0.33518)	(1322	E 6	7NO1964	0.77982)	(1323	F 1	6NO1964	C.24390)
(1324	F 2	6NO1964	0.44954)	(1325	F 3	6NO1964	0.35265)	(1336	C 3	27JA1967	3.23494)
(1337	C 3	2MR1967	53.49872)	(1338	C 3	28MR1967	51.46242)	(1339	C 5	28MR1967	49.10519)
(1340	C 7	28MR1967	56.24677)	(1341	A 3	19AP1967	55.05353)	(1342	A 4	19AP1967	48.38214)
(1343	A 6	19AP1967	42.21233)	(1344	C 3	25AP1967	66.82108)	(1345	C 5	25AP1967	47.75548)
(1346	C 7	21AP1967	68.32413)	(1347	E 2	23AP1967	58.84074)	(1348	E 5	23AP1967	56.23029)
(1368	A 3	4MY1967	52.56047)	(1369	A 4	4MY1967	73.05527)	(1370	A 6	3MY1967	64.12704)
(1371	C 3	4MY1567	67.22379)	(1372	C 5	5MY1967	62.06554)	(1373	C 7	5MY1967	76.67293)
(1374	E 2	7MY1967	59.20502)	(1375	E 3	7MY1967	61.98416)	(1376	E 5	6MY1967	36.20418)
(1408	A 3	23MY1967	32.86678)	(1409	A 4	23MY1967	49.57448)	(1410	A 6	24MY1967	46.17726)
(1411	C 3	31MY1967	54.28137)	(1412	C 5	31MY1967	63.64171)	(1413	C 7	25MY1967	72.30627)
(1414	E 2	28MY1967	63.94626)	(1415	E 3	28MY1967	68.30957)	(1416	E 5	28MY1967	57.86263)
(1431	A 3	12JN1967	34.42593)	(1432	A 4	13JN1967	52.03329)	(1433	C 3	17JN1967	18.08551)
(1434	C 5	17JN1967	65.52817)	(1435	C .	13JN1967	55.25211)	(1436	E 2	15JN1967	49.85868)
(1437	E 3	15JN1967	69.71173)	(1438	E 5	14JN1967	68.88162)	(1446	A 3	11JL1967	21.06061)
(1447	A 4	11JL1967	22.10422)	(1448	A 6	10JL1967	0.17330)	(1449	C 3	16JL1967	24.07428)
(1450	C 5	16JL1967	35.58983)	(1451	C 7	16JL1967	8.81855)	(1452	E 2	14JL1967	11.17640)
(1453	E 3	15JL1967	51.31056)	(1454	E 5	15JL1967	2.66053)	(1504	A 3	28AU1967	4.14764)
(1505	A 4	28AU1967	3.96784)	(1508	C 3	2SE1967	5.31532)	(1509	C 5	2SE1967	19.78398)
(1510	C 7	29AU1967	1.77047)	(1511	E 2	1SE1967	5.58676)	(1512	E 3	1SE1967	12.64332)
(1513	E 5	31AU1967	4.25661)	(1532	A 3	18SE1967	0.45991)	(1533	A 4	19SE1967	C.77987)
(1534	A 6	19SE1967	0.01861)	(1535	C 7	20SE1967	0.22532)	(1536	E 2	24SE1967	4.19916)
(1537	E 3	24SE1967	9.96291)	(1538	E 5	23SE1967	6.18682)	(1539	C 3	4OC1967	C.02013)
(1540	C 5	4OC1967	0.63037)	(1541	E 2	11OC1967	1.61779)	(1542	E 3	11OC1967	C.78316)
(1543	E 5	10OC1967	0.50280)	(1377	GS 1	9MY1967	59.01443)	(1378	GS 2	9MY1967	33.85054)
(1379	GS 3	9MY1967	17.11438)	(1380	GS 4	9MY1967	16.24347)	(1381	GS 5	10MY1967	22.87363)
(1382	GS 6	10MY1967	48.18340)	(1383	GS 7	10MY1967	33.30838)	(1384	GS 8	10MY1967	49.30214)
(1385	GS 9	10MY1967	35.10629)	(1386	GS10	12MY1967	46.85434)	(1387	GS11	12MY1967	33.82445)
(1388	GS12	12MY1967	25.76169)	(1389	GS13	12MY1967	7.40015)	(1390	GS14	12MY1967	13.97534)
(1391	GS15	12MY1967	17.09523)	(1392	GS16	12MY1967	14.23860)	(1393	GS17	13MY1967	16.87486)
(1394	GS18	13MY1967	4.57563)	(1395	GS19	13MY1967	3.37036)	(1396	GS20	13MY1967	C.82868)
(1397	GS21	13MY1967	1.09881)	(1398	GS22	14MY1967	27.20345)	(1554	GS 1	3OC1967	1C.95851)
(1555	GS 2	3OC1967	2.96610)	(1556	GS 3	3OC1967	1.22021)	(1557	GS 4	3OC1967	6.27803)
(1558	GS 5	4OC1967	2.08102)	(1559	GS 7	4OC1967	5.87536)	(1560	GS 8	4OC1967	8.26524)
(1561	GS 9	4OC1967	9.86089)	(1562	GS10	5OC1967	16.57867)	(1563	GS11	5OC1967	7.20198)
(1564	GS12	5OC1967	0.02798)	(1565	GS13	5OC1967	0.03549)	(1566	GS14	5OC1967	C.64208)
(1567	GS15	5OC1967	0.61127)	(1568	GS16	5OC1967	0.65656)	(1569	GS17	5OC1967	0.34784)
(1570	GS18	5OC1967	0.63467)	(1571	GS19	6OC1967	C.00410)	(1573	GS21	6OC1967	C.03024)
(1574	GS22	6OC1967	3.02019)	(1575	GS28	6OC1967	0.04129)	(1547	PS 1	2OC1967	2.29940)
(1524	MF 1	20SE1967	0.04378)	(1546	LU 1	2OC1967	C.02001)	(1520	HO 1	18SE1967	C.75440)
(1523	RA 1	19SE1967	0.00923)	(1526	MO 1	20SE1967	0.71685)	(1527	TR 1	20SE1967	C.15723)
(1528	SB 1	2CSE1967	0.21658)	(1529	KW 1	20SE1967	0.81545)	(1530	FR 1	24SE1967	C.84008)
(1531	GH 1	25SE1967	0.05072)	(1545	WL 1	2OC1967	C.06081)	(1548	CA 1	3OC1967	0.03816)
(1549	MQ 1	4OC1967	0.78114)	(1551	ES 1	5OC1967	0.03195)	(1552	SM 1	6OC1967	C.25091)
(1550	MR 1	5OC1967	0.09912)	(1553	SG 1	6OC1967	0.14689)	(1428	PU 2	29MY1967	C.14764)
(1426	MS 2	29MY1967	6.71916)	(1351	MI 2	21AP1967	31.08145)	(1427	LU 2	29MY1967	15.37045)
(1417	HO 2	22MY1967	4.42650)	(1418	SH 2	22MY1967	3.23484)	(1350	BH 2	19AP1967	C.98676)
(1425	RA 2	25MY1967	29.84705)	(1399	PW 2	5MY1967	5C.92491)	(1401	MO 2	6MY1967	50.79962)
(1402	TR 2	6MY1967	50.76889)	(1400	SB 2	6MY1967	48.79675)	(1352	KW 2	21AP1967	19.92784)
(1353	FR 2	23AP1967	6.58228)	(1354	GH 2	25AP1967	7.45663)	(1429	WL 2	29MY1967	0.2C172)
(1403	CA 2	10MY1967	16.11089)	(1404	MQ 2	10MY1967	8.13008)	(1405	ES 2	12MY1967	1.44479)
(1407	SM 2	14MY1967	3.53496)	(1349	CI 2	19AP1967	44.42847)	(1419	BU 2	23MY1967	16.40424)
(1420	IH 2	23MY1967	10.39275)	(1421	CH 2	23MY1967	18.04301)	(1422	GA 2	23MY1967	15.04113)
(1424	KN 2	25MY1967	27.28484)	(1430	MC 2	12JN1967	C.04935)	(			

Melosira italica subsp. *subartica* O. Müll.

Melosira italica subsp. *subartica* O. Müller, Jahrb. Wiss. Bot., 43:78, pl. 2, figs. 7-11. 1906.

Cells cylindrical, joined by the valve faces into long, more or less closely appressed colonies. Individual valves of specimens from Lake Michigan 7-15μ in diameter, 5-20μ high (valve mantle). Valve mantle parallel, valve surface flat or only slightly convex. Pseudosulcus very small, not apparent. Sulcus moderately deeply incised, forming a broad angle, with a conspicuous internal thickening extending into the lumen of the cell. Neck very short and poorly defined. Degree of silicification of the valve mantle variable, usually moderately strong. Ornamentation of the valve surface is comprised of very fine, irregularly arranged puncta with elongate, ray-like puncta at the margins. The margin of the valve surface is furnished with a corona of small species. Ornamentation of the valve mantle comprised of spiral rows of fine, usually more or less elongate, puncta. This species is somewhat pleomorphic but does not exhibit the pronounced structural differences found in other members of the genus. Strongly silicified forms (α status) with about 18 striae in 10μ and the same number of puncta in 10μ within the striae. Weakly silicified forms (γ status) with about 20 striae in 10μ and about 22 puncta in 10μ within the rows.

This entity occurs sporadically in our collections from Lake Michigan. It is common in a number of habitats surrounding the lake, and the populations we have encountered are perhaps derived from tributaries to the lake which became established in the open waters.

340 MEITALIC TCT NC CF STATIONS 172

(46908	CH	DE1945	C.05035)	(46914	CH	19AP1946	0.00214)	(46905	CH	JA1947	C.00368)
(46909	CH	MR1947	0.00455)	(46906	CH	MY1947	C.00066)	(1223	B 3	18MY1964	C.00156)
(1224	B 4	18MY1964	0.10979)	(1225	C 6	15MY1964	C.00784)	(1226	C 7	16MY1964	C.01522)
(1227	C' 2	13MY1964	0.01645)	(1228	D 2	14MY1964	0.34061)	(1229	D 5	14MY1964	C.08881)
(1230	E 2	16MY1964	0.21633)	(1231	E 3	16MY1964	0.03180)	(1232	E 5	16MY1964	C.24349)
(1439	B 6	5JN1964	0.01399)	(1236	C' 1	8JN1964	0.01225)	(1237	C' 2	8JN1964	0.04640)
(1238	D 3	11JN1964	0.09600)	(1239	D 4	11JN1964	0.00464)	(1240	D 6	10JN1964	0.02148)
(1241	E 2	13JN1964	0.07836)	(1242	E 3	13JN1964	0.14837)	(1243	E 6	13JN1964	C.03758)
(1244	F 1	11JN1964	0.00548)	(1245	F 2	11JN1964	0.01383)	(1246	F 3	11JN1964	0.03586)
(1440	B 6	11JL1964	0.00369)	(1250	C 6	10JL1964	0.02878)	(1254	D 2	15JL1964	C.00575)
(1255	D 5	15JL1964	0.00513)	(1256	E 2	14JL1964	0.06412)	(1257	E 3	14JL1964	0.06939)
(1259	F 2	6JL1964	0.00310)	(1260	F 3	6JL1964	0.00764)	(1262	B 3	17AU1964	C.00630)
(1268	E 2	15AU1964	0.00547)	(1269	E 3	15AU1964	0.09319)	(1270	F 1	10AU1964	C.00272)
(1281	E 3	16SE1964	0.01570)	(1297	D 6	14OC1964	C.00190)	(1299	E 2	12OC1964	C.00314)
(1300	E 3	13OC1964	0.01074)	(1301	E 4	13OC1964	0.00442)	(1304	F 1	11OC1964	C.00988)
(1317	E 1	6NO1964	0.00574)	(1320	E 4	7NO1964	0.00414)	(1321	E 5	7NO1964	C.00958)
(1322	E 6	7NO1964	C.01000)	(1336	C 3	27JA1967	0.19641)	(1337	C 3	2MR1967	4.62970)
(1338	C 3	28MR1967	2.96187)	(1339	C 5	28MR1967	4.80140)	(1340	C 7	28MR1967	1.47616)
(1341	A 3	19AP1967	1.51872)	(1342	A 4	19AP1967	1.51589)	(1343	A 6	19AP1967	C.12158)
(1344	C 3	25AP1967	1.27388)	(1345	C 5	25AP1967	7.50443)	(1346	C 7	21AP1967	1.68240)
(1347	E 2	23AP1967	6.71490)	(1348	E 5	23AP1967	1.91912)	(1368	A 3	4MY1967	3.29877)
(1369	A 4	4MY1967	3.65276)	(1370	A 6	3MY1967	0.60536)	(1371	C 3	4MY1967	4.84787)
(1372	C 5	5MY1967	4.96524)	(1373	C 7	5MY1967	3.99338)	(1374	E 2	7MY1967	4.18410)
(1375	E 3	7MY1967	6.40054)	(1376	E 5	6MY1967	0.98381)	(1408	A 3	23MY1967	1.56508)
(1409	A 4	23MY1967	4.99911)	(1410	A 6	24MY1967	0.51308)	(1411	C 3	31MY1967	1.72322)
(1412	C 5	31MY1967	5.89275)	(1413	C 7	25MY1967	3.31680)	(1414	E 2	28MY1967	1.17548)
(1415	E 3	28MY1967	5.82363)	(1416	E 5	28MY1967	1.68383)	(1431	A 3	12JN1967	C.63084)
(1432	A 4	13JN1967	5.90068)	(1433	C 3	17JN1967	1.80855)	(1434	C 5	17JN1967	5.65259)
(1435	C 7	13JN1967	0.88403)	(1436	E 2	15JN1967	7.85208)	(1437	E 3	15JN1967	4.14502)
(1438	E 5	14JN1967	2.16049)	(1446	A 3	11JL1967	C.42806)	(1447	A 4	11JL1967	C.32747)
(1448	A 6	10JL1967	0.02829)	(1449	C 3	16JL1967	1.73870)	(1450	C 5	16JL1967	2.53261)
(1451	C 7	16JL1967	0.06693)	(1452	E 2	14JL1967	0.48537)	(1453	E 3	15JL1967	13.26997)
(1454	E 5	15JL1967	0.C1600)	(1504	A 3	28AU1967	0.01481)	(1506	A 6	29AU1967	C.01046)
(1509	C 5	2SE1967	0.31796)	(1511	E 2	1SE1967	0.06139)	(1512	E 3	1SE1967	3.02340)
(1513	E 5	31AU1967	0.02534)	(1532	A 3	18SE1967	0.02957)	(1534	A 6	19SE1967	C.00620)
(1535	C 7	20SE1967	0.00644)	(1536	E 2	24SE1967	0.04090)	(1537	E 3	24SE1967	0.83240)
(1538	E 5	23SE1967	0.09391)	(1539	C 3	4OC1967	C.03019)	(1541	E 2	11OC1967	C.39381)
(1542	E 3	11OC1967	0.47803)	(1377	GS 1	9MY1967	6.64951)	(1378	GS 2	9MY1967	C.63496)
(1379	GS 3	9MY1967	0.12998)	(1380	GS 4	9MY1967	0.23541)	(1381	GS 5	10MY1967	C.36493)
(1382	GS 6	10MY1967	0.97144)	(1383	GS 7	10MY1967	0.53464)	(1384	GS 8	10MY1967	C.77641)
(1385	GS 9	10MY1967	C.76758)	(1386	GS10	12MY1967	2.61419)	(1387	GS11	12MY1967	1.01394)
(1388	GS12	12MY1967	1.03167)	(1389	GS13	12MY1967	0.32746)	(139C	GS14	12MY1967	C.24662)
(1391	GS15	12MY1967	0.51717)	(1392	GS16	12MY1967	0.09554)	(1393	GS17	13MY1967	C.25586)
(1394	GS18	13MY1967	C.11009)	(1395	GS19	13MY1967	0.32882)	(1396	GS20	13MY1967	C.00666)
(1397	GS21	13MY1967	C.00589)	(1398	GS22	14MY1967	2.33780)	(1554	GS 1	3OC1967	0.17790)
(1555	GS 2	3OC1967	0.01059)	(1556	GS 3	3OC1967	0.00521)	(1562	GS10	5OC1967	C.00987)
(1563	GS11	5OC1967	0.00468)	(1567	GS15	5OC1967	0.01746)	(1568	GS16	5OC1967	C.00144)
(1569	GS17	5OC1967	0.01189)	(1570	GS18	5OC1967	0.00992)	(1571	GS19	6OC1967	C.00059)
(1574	GS22	6OC1967	0.00863)	(1526	MO 1	20SE1967	0.00569)	(1528	SB 1	20SE1967	C.01444)
(1549	MQ 1	4OC1967	0.01370)	(1550	MR 1	5OC1967	0.02478)	(1428	MU 2	29MY1967	0.00301)
(1426	MS 2	29MY1967	1.06037)	(1351	MI 2	21AP1967	0.22964)	(1427	LU 2	29MY1967	2.13075)
(1417	HO 2	22MY1967	0.13085)	(1425	RA 2	25MY1967	0.01768)	(1399	PW 2	5MY1967	C.74129)
(1401	MO 2	6MY1967	0.37041)	(1402	TR 2	6MY1967	0.45484)	(1400	SB 2	6MY1967	1.00071)
(1352	KW 2	21AP1967	0.10308)	(1353	FR 2	23AP1967	0.10549)	(1354	GH 2	25AP1967	0.08976)
(1429	WL 2	29MY1967	0.16987)	(1403	CA 2	10MY1967	C.20923)	(1405	ES 2	12MY1967	C.C1290)
(1407	SM 2	14MY1967	0.02388)	(1349	CI 2	19AP1967	0.03233)	(1419	BU 2	23MY1967	C.03662)
(1421	CH 2	23MY1967	0.05205)	(1422	GA 2	23MY1967	C.02044)	(1423	WA 2	25MY1967	C.06423)
(1424	KN 2	25MY1967	0.02665)	(							

Melosira undulata (Ehr.) Kütz.

Gaillonella undulata Ehrenberg, Ber. Akad. Wiss. Berlin, 1840:17. 1840.
Melosira undulata (Ehr.) Kützing, Bacill., p. 54, pl. 2, fig. 9. 1844.

Cells cylindrical, joined by the valve faces into short, poorly adhering colonies. Individual valves of specimens from Lake Michigan 20-70μ in diameter, 20-35μ high (valve mantle). Valve mantles parallel, valve surfaces flat in the center, convex only at the margins, therefore forming a narrow and inconspicuous pseudosulcus. The sulcus and associated structures are entirely lacking. The walls of the frustule are of varying thickness, thin at the girdle margins, much thicker at the valve mantle, then becoming somewhat thinner again at the valve surface. As the outer margins of the valve mantle are straight and parallel, the variable thickness of the wall makes the inner surface appear undulate from which the name of the taxon is derived. The ornamentation of the valve mantle consists of straight, parallel rows of puncta, about 16 in 10μ, with complex substructure and apparently subtended by chambers. A conspicuous corona of slime pores is present on the valve mantle about one-third of the distance between the valve surface and the girdle margin. These pores enter the interior of the frustule through a small nipple-like projection on the interior wall. Ornamentation of the valve surface consists of anastomosing radial striae of varying lengths having the same structure as the striae of the valve margin. A small, structureless, area is present at the center of the valve. In some specimens the ornamentation of the wall surface spirals around the midpoint.

This entity is very rare in plankton collections from Lake Michigan. It appears that the specimens found are derived from populations that exist in periphyton communities in relatively deep water (50^{+}m). As Hustedt (1927) points out, the reported modern distribution of this species is primarily tropical, although it is present in tertiary deposits throughout central and northern Europe. Its occurrence in the deep waters of Lake Michigan is somewhat puzzling, although it should be pointed out that a morphologically very similar entity, *Cyclotella fottii* Hust. (Fott, 1935; Jurilj, 1954), has been reported from similar habitats in Lake Ohrid.

In life the colonies are attached to rocks or other solid substrates by slime strands arising from the pores of the terminal cell of the colony. Both the attachment to the substrate and the attachment of the cells to one another is tenuis so that individual free cells are often found.

Coll: 973.

Melosira undulata var. *normanii* Arnott *ex* V. H.

Melosira undulata var. *normanii* Arnott *ex* Van Heurck, Syn. Diat. Belgique, pl. 90, fig. 7. 1882.

In this entity the interior surface of the valve mantle is polygonal. The interior opening of the slime pores occurs at the angles of the polygon and the nipple-like structure surrounding the pore tends to be more highly developed than in the nominate variety. On the basis of the limited number of specimens we have observed from Lake Michigan it appears that the spiral arrangement of the valve ornamentation is more common in this entity than it is in the nominate variety, although both types of ornamentation are found in both taxa.

Very rare in plankton collections from Lake Michigan. It is suspected that the specimens observed are derived from deepwater periphyton communities. The reported distribution of this entity is more northern than that of the nominate variety (Hustedt 1927).

341 MEUNDUVM TOT NO OF STATIONS 2

(1573	GS21	6OC1967	0.00112)	(1550	MR 1	5OC1967	C.03717)	(			

Melosira varians Ag.

Melosira varians Agardh, Syn. Alg., p. 78. 1817.

Cells cylindrical, joined by the valve faces into long, closely appressed colonies. Individual valves of specimens from Lake Michigan 10-33μ in diameter, 8-13μ high (valve mantle). Valve mantles parallel, valve surfaces only slightly convex, therefore forming an inconspicuous pseudosulcus. The sulcus and associated structures are entirely lacking in this species. The walls of the frustule are of similar thickness throughout. The ornamentation of both the valve surface and the valve mantle is composed of very fine puncta which can barely be resolved with the light microscope under optimum optical conditions. In normal preparations the wall appears homogeneous.

This species is occasionally found in nearshore plankton collections from Lake Michigan, especially in areas that have been appreciably eutrophied. Its reported distribution indicates that it reaches its greatest abundance in highly eutrophic waters. It apparently finds its primary habitat in benthic communities although it is not uncommon in the plankton of highly polluted lakes and streams.

342 MEVARIAN TOT NO OF STATIONS 28

(46762	EV	18MR1938	C.04411)	(1571	GS19	6OC1967	0.00527)	(1544	MU 1	2OC1967	C.OC477)
(1547	MS 1	2OC1967	0.03992)	(1546	LU 1	2OC1967	C.01000)	(1520	HO 1	18SE1967	C.02829)
(1521	SH 1	18SE1967	1.10778)	(1522	BH 1	18SE1967	0.00365)	(1523	RA 1	19SE1967	C.02768)
(1526	MO 1	2OSE1967	0.OC569)	(1529	KW 1	2OSE1967	0.01199)	(1530	FR 1	24SE1967	C.35003)
(1531	GH 1	25SE1967	2.97549)	(1550	MR 1	5OC1967	1.58592)	(1428	MU 2	29MY1967	0.25310)
(1426	MS 2	29MY1967	0.66142)	(1427	LU 2	29MY1967	3.09927)	(1417	HO 2	22MY1967	C.03365)
(1418	SH 2	22MY1967	1.69518)	(1350	BH 2	19AP1967	C.15418)	(1401	MO 2	6MY1967	C.C2940)
(1400	SB 2	6MY1967	0.00596)	(1354	GH 2	25AP1967	0.00690)	(1429	WL 2	29MY1967	C.14864)
(1406	GB 2	13MY1967	0.01617)	(1422	GA 2	23MY1967	0.05620)	(1423	WA 2	25MY1967	C.OC428)
(1424	KN 2	25MY1967	0.02665)	(							

Species *incertae sedis*

Melosira sp. #1.

343 MESPECOA TOT NO OF STATIONS 36

(1229	D 5	14MY1964	C.C5921)	(1230	E 2	16MY1964	0.04149)	(1231	E 3	16MY1964	C.34243)
(1232	E 5	16MY1964	0.40697)	(1235	C 7	16JN1964	0.00565)	(1237	C' 2	8JN1964	0.00516)
(1241	E 2	13JN1964	0.C0739)	(1242	E 3	13JN1964	C.00899)	(1257	E 3	14JL1964	C.OC479)
(1262	B 3	17AU1964	0.00840)	(1281	E 3	16SE1964	0.00785)	(1346	C 7	21AP1967	C.00534)
(1370	A 6	3MY1567	0.09667)	(1372	C 5	5MY1967	C.02128)	(1375	E 3	7MY1967	C.OC481)
(1416	E 5	28MY1967	0.01749)	(1435	C 7	13JN1967	0.00631)	(1450	C 5	16JL1967	C.00381)
(1512	E 3	1SE1967	0.01571)	(1537	E 3	24SE1967	0.02588)	(1379	GS 3	9MY1967	C.OC619)
(1380	GS 4	9MY1967	0.01513)	(1381	GS 5	10MY1967	0.02147)	(1384	GS 8	10MY1967	C.00739)
(1385	GS 9	10MY1967	0.00942)	(1386	GS10	12MY1967	0.01724)	(1389	GS13	12MY1967	C.00774)
(1390	GS14	12MY1967	0.01174)	(1391	GS15	12MY1967	0.02873)	(1393	GS17	13MY1967	C.01096)
(1394	GS18	13MY1967	0.00172)	(1395	GS19	13MY1967	0.01644)	(1554	GS 1	3OC1967	C.OC712)
(1351	MI 2	21AP1967	0.01241)	(1401	MO 2	6MY1967	0.02352)	(1400	SB 2	6MY1967	C.1C722)

Genus *Meridion* Agardh
Agardh, Syst. Alg., p. 14. 1824.

Members of the genus *Meridion* find their primary habitat in periphyton communities. Only occasional specimens are found in plankton collections from Lake Michigan and these are undoubtedly derived from shoreline sources.

Meridion circulare (Grev.) Agardh

Echinella circularis Greville, Mem. Vernerian Nat. Hist. Soc., 4:213, pl. 8, fig. 2. 1822.
Meridion circulare (Grev.) Agardh, Consp. Crit. Diat., pt. 3, p. 40. 1831.

344 MRCIRCUL TOT NO OF STATIONS 21

(46743	EV	20JN1937	0.00428)	(1341	A 3	19AP1967	0.00108)	(1348	E 5	23AP1967	0.00137)
(1394	GS18	13MY1967	0.00344)	(1569	GS17	5OC1967	0.00297)	(1571	GS19	6OC1967	0.00059)
(1544	MU 1	2OC1967	0.00238)	(1522	BH 1	18SE1967	0.00365)	(1550	MR 1	5OC1967	0.02478)
(1426	MS 2	29MY1967	0.01050)	(1427	LU 2	29MY1967	0.01211)	(1417	HO 2	22MY1967	0.01122)
(1418	SH 2	22MY1967	0.03110)	(1350	BH 2	19AP1967	0.00881)	(1401	MO 2	6MY1967	0.00588)
(1400	SB 2	6MY1967	0.02383)	(1354	GH 2	25AP1967	0.00518)	(1403	CA 2	10MY1967	0.03923)
(1404	MQ 2	10MY1967	0.03811)	(1405	ES 2	12MY1967	0.00645)	(1407	SM 2	14MY1967	0.00597)

Meridion circulare var. *constrictum* (Ralfs) V. H.

Meridion constrictum Ralfs, Annals Mag. Nat. Hist., 12:458, pl. 18, fig. 2. 1843.
Meridion circulare var. *constrictum* (Ralfs) Van Heurck, Syn. Diat. Belgique, p. 161, pl. 51, figs. 14-15. 1885.

345 MRCIRCVC TOT NO OF STATIONS 6

(1550	MR 1	5OC1967	0.01239)	(1428	MU 2	29MY1967	0.00301)	(1350	BH 2	19AP1967	0.00220)
(1354	GH 2	25AP1967	0.01036)	(1404	MQ 2	10MY1967	0.02541)	(1405	ES 2	12MY1967	0.00645)

Genus *Navicula* Bory
Bory, Encyclop. Methodl., p. 562. 1824.

Navicula is by far the largest of the diatom genera occurring in fresh water. Its members occupy a diversity of habits ranging from terrestrial to occurrences in the plankton of large lakes. Probably none of the freshwater species is euplanktonic although a number are successful facultative planktonts and are regularly noted in plankton collections, even those from offshore areas.

Navicula abiskoensis Hust.

Navicula abiskoensis Hustedt, Arch. Hydrobiol., 39:118, fig. 36. 1942.

Coll: ANSP Schulze A70.

Navicula aboensis (Cleve) Hust.

Navicula torneensis var. *aboensis* Cleve, Acta Soc. Fauna Fl. Fennica, 8(2):33, pl. 2, fig. 7. 1891.
Navicula aboensis (Cleve) Hustedt, Bot. Not., 105:407, figs. 131-132. 1952.

Coll: 1800.

Navicula acceptata Hust.

Navicula acceptata Hustedt, Arch. Hydrobiol., 43:398, pl. 38, figs. 66-67. 1950.

346 NAACCEPT TOT NO OF STATIONS 14

(3541	CH	1FE1881	0.00978)	(46768	EV	16MR1938	0.01470)	(1304	F 1	11OC1964	0.00247)
(1305	F 2	11OC1964	0.00345)	(1340	C 7	28MR1967	0.00073)	(1555	GS 2	3OC1967	0.00353)
(1574	GS22	6OC1967	0.00575)	(1544	MU 1	2OC1967	0.00715)	(1546	LU 1	2CC1967	0.01000)
(1527	TR 1	20SE1967	0.01258)	(1529	KW 1	20SE1967	0.01199)	(1550	MR 1	5OC1967	0.01239)
(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.00661)	(			

Navicula accomoda Hust.

Navicula accomoda Hustedt, Arch. Hydrobiol., 43:446, pl. 39, figs. 17-18. 1950.

347 NAACCOMM TOT NO OF STATIONS 1

(1350	BH 2	19AP1967	0.00220)	(

Navicula ambigua Ehr.

Navicula ambigua Ehrenberg, Abh. Akad. Wiss. Berlin, 1841:129, pl. 2, fig. II(9). 1843.

37C NACUSPVA TOT NO OF STATIONS 1

(1531	GH 1	25SE1967	0.00845)	(

Navicula amphibola var. *perrieri* Per. and Hérib.

Navicula amphibola var. *perrieri* Peragallo and Héribaud *in*: Héribaud, Foss. Diat. Auvergne, Pt. 1, p. 25, pl. 7, fig. 11. 1902.

Coll: ANSP Schulze A70.

Navicula amphiceros Kütz.

Navicula amphiceros Kützing, Bacill., p. 95, pl. 3, fig. 39. 1844.

Coll: 1056.

Navicula anglica Ralfs

Navicula anglica Ralfs *in*: Pritchard, Hist. Infus., 4th ed., p. 900. 1861.

348 NAANGLIC TOT NO OF STATIONS 16

(46921	CH	23NO1945	0.00065)	(46917	CH	12JA1946	0.00028)	(46920	CH	20DE1946	0.00092)
(46905	CH	JA1947	0.00123)	(46909	CH	MR1947	0.00455)	(46906	CH	MY1947	0.00066)
(46907	CH	JL1947	0.00099)	(46758	EV	5JN1937	0.02496)	(46764	EV	17JL1937	0.05641)
(46757	EV	25JL1937	0.00963)	(46747	EV	1AU1937	0.00495)	(46763	EV	23AU1937	0.04058)
(46752	EV	15SE1937	0.13061)	(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	0.02206)
(46761	EV	27MY1938	0.00273)	(							

349 NAANGLIQ TOT NO OF STATIONS 6

(46919	CH	5JN1947	0.00303)	(46922	CH	21AU1947	0.00097)	(46747	EV	1AU1937	0.00743)
(1566	GS14	5OC1967	0.00183)	(1550	MR 1	5OC1967	0.01239)	(1404	MQ 2	10MY1967	0.02541)

Navicula anglica var. *signata* Hust.

Navicula anglica var. *signata* Hustedt, Ber. Deutsch Bot. Ges., 61(5):287, pl. 8, fig. 26. 1943.

350 NAANGLVS TOT NO OF STATIONS 19

(46915	CH	20FE1946	0.00569)	(46758	EV	5JN1937	0.00357)	(46747	EV	1AU1937	0.00248)
(46760	EV	22SE1937	0.00492)	(46767	EV	27OC1937	0.00387)	(1264	C' 1	10AU1964	0.00193)
(1304	F 1	11OC1964	0.00247)	(1388	GS12	12MY1967	0.00603)	(1565	GS13	5OC1967	0.05578)
(1569	GS17	5OC1967	0.00149)	(1546	LU 1	2OC1967	0.00500)	(1521	SH 1	18SE1967	0.00577)
(1526	MO 1	20SE1967	0.00569)	(1527	TR 1	20SE1967	0.00629)	(1528	SB 1	2OSE1967	0.01444)
(1545	WL 1	2OC1967	0.01351)	(1417	HO 2	22MY1967	0.00374)	(1403	CA 2	10MY1967	0.01308)
(1423	WA 2	25MY1967	0.00428)	(							

Navicula anglica var. *subsalsa* (Grun.) Cleve

Navicula timida var. *subsalsa* Grunow, Verh. Zool.-Bot. Ges. Wien, 10:537, pl. 4, fig. 43b. 1860.
Navicula anglica var. *subsalsa* (Grun.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 27(3):22. 1895.

351 NAANGLVA TOT NO OF STATIONS 2

(46758	EV	5JN1937	0.00357)	(46757	EV	25JL1937	0.00481)

Navicula angusta Grun.

Navicula angusta Grunow, Verh. Zool.-Bot. Ges. Wien, 10:528, pl. 5, fig. 19. 1860.

497 NASPECOT TOT NO OF STATIONS 4

(46770	EV	9JL1937	0.00596)	(46766	EV	14DE1938	0.01584)	(1536	E 2	24SE1967	0.00273)
(1394	GS18	13MY1967	0.00172)	(							

Navicula aurora Sov.

Navicula aurora Sovereign, Trans. American Micr. Soc., 77(2):120, pl. 3, figs. 29-31. 1958.

352 NAAURORA TOT NO OF STATIONS 13

(46920	CH	20DE1946	0.00031)	(46758	EV	5JN1937	0.00357)	(46771	EV	11JN1937	0.00238)
(46764	EV	17JL1937	0.00806)	(46757	EV	25JL1937	0.00963)	(46747	EV	1AU1937	0.00248)
(46760	EV	22SE1937	0.00492)	(46762	EV	18MR1938	0.02206)	(46756	EV	27AP1938	0.00168)
(1427	LU 2	29MY1967	0.01211)	(1400	SB 2	6MY1967	0.00596)	(1404	MO 2	10MY1967	0.01270)
(1405	ES 2	12MY1967	0.00645)	(							

Navicula bacillum Ehr.

Navicula bacillum Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:418, pl. 4(5), fig. 8. 1843.

353 NABACILL TOT NO OF STATIONS 6

(46758	EV	5JN1937	0.00357)	(46757	EV	25JL1937	0.00481)	(46747	EV	1AU1937	0.00495)
(46750	EV	24SE1937	0.00471)	(1392	GS16	12MY1967	0.00308)	(1565	GS13	5OC1967	0.01014)

Navicula balcanica Hust.

Navicula balcanica Hustedt, Arch. Hydrobiol., 40:928, pl. 40, figs. 12-15. 1945.

354 NABALCAN TOT NO OF STATIONS 29

(46910	CH	0C1945	0.00218)	(46921	CH	23NO1945	0.00129)	(46915	CH	2OFE1946	0.00569)
(46914	CH	19AP1946	0.00107)	(46924	CH	10MY1946	0.00071)	(46923	CH	22NO1946	0.00437)
(46920	CH	20DE1946	0.00062)	(46909	CH	MR1947	0.00911)	(46916	CH	4MY1947	0.00034)
(46906	CH	MY1947	0.00066)	(46907	CH	JL1947	0.00148)	(46922	CH	21AU1947	0.00242)
(46758	EV	5JN1937	0.24249)	(46743	EV	20JN1937	0.00428)	(46770	EV	9JL1937	0.00596)
(46764	EV	17JL1937	0.13695)	(46757	EV	25JL1937	0.02889)	(46747	EV	1AU1937	0.02723)
(46763	EV	23AU1937	0.12175)	(46765	EV	30AU1937	0.01115)	(46752	EV	15SE1937	0.04354)
(46760	EV	22SE1937	0.00985)	(46750	EV	24SE1937	0.02828)	(46767	EV	27OC1937	0.01160)
(46749	EV	12MR1938	0.01214)	(46762	EV	18MR1938	0.13233)	(46761	EV	27MY1938	0.00273)
(46766	EV	14DE1938	0.01584)	(1544	MU 1	2OC1967	0.00238)	(			

Navicula bryophila Peters.

Navicula bryophila Petersen, Bot. Iceland, Vol. 2, p. 388, fig. 13. 1928.

355 NABRYCPH TCT NO OF STATIONS 4

(46917	CH	12JA1946	0.00028)	(1285	F 1	15SE1964	0.01165)	(1346	C 7	21AP1967	C.00134)
(1350	BH 2	19AP1967	0.00441)	(							

Navicula capitata Ehr.

Navicula capitata Ehrenberg, Infusionsthierchen, p. 185, pl. 13, fig. 20. 1838.

356 NACAPITA TCT NO OF STATIONS 18

(46759	EV	19MY1938	0.00338)	(1236	C' 1	8JN1964	0.00175)	(1274	D 1	17SE1964	0.00469)
(1279	E 1	16SE1964	0.00785)	(1286	F 2	15SE1964	0.01095)	(1341	A 3	19AP1967	C.00108)
(1521	SH 1	18SE1967	0.01154)	(1526	MO 1	20SE1967	0.00569)	(1531	GH 1	25SE1967	C.00845)
(1550	MR 1	5OC1967	0.03717)	(1426	MS 2	29MY1967	0.02100)	(1417	HO 2	22MY1967	C.00374)
(1418	SH 2	22MY1967	0.03110)	(1350	BH 2	19AP1967	C.01982)	(1402	TR 2	6MY1967	C.01083)
(1352	KW 2	21AP1967	0.00859)	(1407	SM 2	14MY1967	C.00597)	(1406	GB 2	13MY1967	C.00270)

Navicula capitata var. *hungarica* (Grun.) Ross

Navicula hungarica Grunow, Verh. Zool.-Bot. Ges. Wien, 10:539, pl. 3, fig. 30. 1860.
Navicula capitata var. *hungarica* (Grun.) Ross, Natl. Mus. Canada Bull., 97(2):192. 1947.

357 NACAPIVH TCT NO OF STATIONS 3

(46743	EV	20JN1937	0.00856)	(1253	C' 2	16JL1964	C.00228)	(1550	MR 1	5OC1967	C.01239)

Navicula capitata var. *luneburgensis* (Grun.) Patr.

Navicula hungarica var. *luneburgensis* Grunow *in*: Mojsisovics and Neumayer, Beitr. Paläont. Österreich-Ungarns, Vol. 2, pt. 4, p. 156, pl. 30, figs. 43-44. 1882.
Navicula capitata var. *luneburgensis* (Grun.) Patrick *in*: Patrick and Reimer, Acad. Nat. Sci. Philadelphia Monogr., 13:537, pl. 52, fig. 4. 1966.

358 NACAPIVL TCT NO OF STATIONS 25

(46915	CH	20FE1946	0.01138)	(46914	CH	19AP1946	0.00107)	(46909	CH	MR1947	C.00455)
(46922	CH	21AU1947	0.00097)	(46764	EV	17JL1937	C.00806)	(1270	F 1	10AU1964	C.00272)
(1275	D 2	17SE1964	0.00645)	(1345	C 5	25AP1967	0.00195)	(1346	C 7	21AP1967	C.00134)
(1374	E 2	7MY1967	0.00299)	(1388	GS12	12MY1967	0.01207)	(1561	GS 9	4OC1967	C.00587)
(1565	GS13	5OC1967	0.18254)	(1574	GS22	6OC1967	0.00575)	(1546	LU 1	2OC1967	C.02001)
(1520	HO 1	18SE1967	0.00943)	(1527	TR 1	20SE1967	C.00629)	(1550	MR 1	5OC1967	C.02478)
(1428	MU 2	29MY1967	0.00301)	(1354	GH 2	25AP1967	0.00173)	(1403	CA 2	10MY1967	C.01308)
(1349	CI 2	19AP1967	0.00359)	(1420	IH 2	23MY1967	C.01511)	(1421	CH 2	23MY1967	C.01735)
(1423	WA 2	25MY1967	0.00428)	(							

Navicula capsa Hohn

Navicula capsa Hohn, Trans. American Micr. Soc., 80(2):161, pl. 1, fig. 20. 1961.

454 NASBACIL TOI NO OF STATIONS 6

(46919	CH	5JN1947	0.00152)	(46764	EV	17JL1937	C.00806)	(46763	EV	23AU1937	C.02029)
(1350	BH 2	19AP1967	C.22907)	(1401	MO 2	6MY1967	0.00588)	(1404	MO 2	10MY1967	C.01270)

Navicula caroliniana Patr.

Navicula caroliniana Patrick, Proc. Acad. Nat. Sci. Philadelphia, 111:107, pl. 7, fig. 11. 1959.

Coll: 1741.

Navicula certa Hust.

Navicula certa Hustedt, Arch. Hydrobiol., 40(4):924, pl. 42, figs. 2-3. 1945.

359 NACERTA TCT NO OF STATIONS 6

(1545	WL 1	20C1967	0.00676)	(1550	MR 1	50C1967	0.01239)	(1426	MS 2	29MY1967	C.01050)
(1351	MI 2	21AP1967	0.00310)	(1350	BH 2	19AP1967	0.00220)	(1404	MQ 2	10MY1967	C.01270)

Navicula clementis Grun.

Navicula clementis Grunow *in*: Mojsisovics and Neumayer, Beitr. Paläont. Österreich-Ungarns, Vol. 2, pt. 4, p. 144, pl. 30, fig. 52. 1882.

361 NACLOIDC TCT NC OF STATICNS 2

(1388	GS12	12MY1567	0.00603)	(1527	TR 1	20SE1567	C.00629)	(

Navicula clementis var. *linearis* Bander

Navicula clementis var. *linearis* Bander *ex* Hustedt *in*: A. Schmidt, Atlas Diat., pl. 403, fig. 43. 1936.

360 NACLEPVL TCT NO OF STATICNS 2

(1550	MR 1	50C1967	0.01239)	(1428	MU 2	29MY1967	C.00301)	(

Navicula clementis var. *quadristigmata* Mang.

Navicula clementis var. *quadristigmata* Manguin, Rev. Algol., Nouv. Sér., 5(4):274, pl. 2 (J. pl. 27), fig. 2. 1961.

456 NASCLEME TCT NO OF STATIONS 2

(46920	CH	20DE1946	0.00062)	(46767	EV	27OC1937	0.00387)	(

Navicula cocconeiformis Greg.

Navicula cocconeiformis Gregory *ex* Greville, Annals Mag. Nat. Hist., Ser. 2, 15:256, pl. 9, fig. 6. 1855.

362 NACOCCON TCT NC CF STATICNS 5

(1565	GS13	50C1967	0.02028)	(1549	MQ 1	40C1967	0.01370)	(1550	MR 1	50C1967	C.01239)
(1553	SG 1	60C1967	0.00734)	(1407	SM 2	14MY1967	0.00597)	(			

Navicula confervacea (Kütz.) Grun.

Diadesmis confervacea Kützing, Bacill., p. 109, pl. 30, fig. 8. 1844.
Navicula confervacea (Kütz.) Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 14, fig. 36. 1880.

363 NACONFER TCT NC CF STATICNS 2

(1550	MR 1	50C1967	0.04956)	(1350	BH 2	19AP1967	0.00441)	(

Navicula costulata Grun.

Navicula costulata Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):27. 1880.

364 NACOSTUL TOT NO OF STATIONS 30

(46921	CH	23NO1945	0.00517)	(46917	CH	12JA1946	0.00055)	(46924	CH	10MY1946	0.00635)
(46923	CH	22NO1946	0.00874)	(46920	CH	20DE1946	0.00062)	(46909	CH	MR1947	0.00911)
(46916	CH	4MY1947	0.00238)	(46919	CH	5JN1947	0.00607)	(46907	CH	JL1947	0.00148)
(46922	CH	21AU1947	0.00582)	(46758	EV	5JN1937	0.05349)	(46743	EV	20JN1937	0.01285)
(46745	EV	3JL1937	0.02090)	(46764	EV	17JL1937	0.01612)	(46757	EV	25JL1937	0.02407)
(46747	EV	1AU1937	0.02723)	(46763	EV	23AU1937	0.10146)	(46752	EV	15SE1937	0.08707)
(46750	EV	24SE1937	0.01885)	(46744	EV	6OC1937	0.00488)	(46748	EV	13OC1937	0.04270)
(46767	EV	27OC1937	0.00774)	(46749	EV	12MR1938	0.02427)	(46768	EV	16MR1938	0.05880)
(46762	EV	18MR1938	0.06617)	(46751	EV	30MR1938	0.01117)	(46756	EV	27AP1938	0.00168)
(46759	EV	19MY1938	0.01013)	(46761	EV	27MY1938	0.00545)	(1274	D 1	17SE1964	0.00469)

Navicula cryptocephala Kütz.

Navicula cryptocephala Kützing, Bacill., p. 95, pl. 3, figs. 20, 26. 1844.

365 NACRYPTO TOT NO OF STATIONS 35

(46915	CH	20FE1946	0.00569)	(46906	CH	MY1947	0.00066)	(46752	EV	15SE1937	0.02177)
(46744	EV	6OC1937	0.00975)	(1240	D 6	10JN1964	0.00307)	(1241	E 2	13JN1964	0.00148)
(1533	A 4	19SE1967	0.00464)	(1387	GS11	12MY1967	0.00792)	(1389	GS13	12MY1967	0.00516)
(1392	GS16	12MY1967	0.00308)	(1394	GS18	13MY1967	0.00172)	(1397	GS21	13MY1967	0.00196)
(1558	GS 5	4OC1967	0.00396)	(1562	GS10	5OC1967	0.00247)	(1565	GS13	5OC1967	0.01521)
(1571	GS19	6OC1967	0.00059)	(1575	GS28	6OC1967	0.00129)	(1546	LU 1	2OC1967	0.00500)
(1522	BH 1	18SE1967	0.00365)	(1527	TR 1	20SE1967	0.00629)	(1530	FR 1	24SE1967	0.16002)
(1531	GH 1	25SE1967	0.01691)	(1545	WL 1	20OC1967	0.03379)	(1550	MR 1	5OC1967	0.09912)
(1553	SG 1	6OC1967	0.00734)	(1427	LU 2	29MY1967	0.01211)	(1417	HO 2	22MY1967	0.00748)
(1350	BH 2	19AP1967	0.07048)	(1401	MO 2	6MY1967	0.01764)	(1402	TR 2	6MY1967	0.00541)
(1400	SB 2	6MY1967	0.00596)	(1352	KW 2	21AP1967	0.00859)	(1354	GH 2	25AP1967	0.00173)
(1404	MO 2	10MY1967	0.01270)	(1407	SM 2	14MY1967	0.00597)	(			

Navicula cryptocephala var. *intermedia* Grun.

Navicula cryptocephala var. *intermedia* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 8, fig. 10. 1880.

366 NACRYPVI TOT NO OF STATIONS 27

(46762	EV	18MR1938	0.02206)	(1534	A 6	19SE1967	0.00620)	(1543	E 5	10OC1967	0.00718)
(1383	GS 7	10MY1967	0.00267)	(1388	GS12	12MY1967	0.00603)	(1571	GS19	6OC1967	0.00059)
(1573	GS21	6OC1967	0.00112)	(1574	GS22	6OC1967	0.00575)	(1544	MU 1	2OC1967	0.00477)
(1547	MS 1	2OC1967	0.00798)	(1522	BH 1	18SE1967	0.03465)	(1526	MO 1	20SE1967	0.00569)
(1545	WL 1	2OC1967	0.03379)	(1551	ES 1	5OC1967	0.00799)	(1552	SM 1	6OC1967	0.00660)
(1550	MR 1	5OC1967	0.35931)	(1426	MS 2	29MY1967	0.05249)	(1351	MI 2	21AP1967	0.00621)
(1417	HO 2	22MY1967	0.01122)	(1418	SH 2	22MY1967	0.01555)	(1350	BH 2	19AP1967	0.03524)
(1401	MO 2	6MY1967	0.01176)	(1402	TR 2	6MY1967	0.02707)	(1400	SB 2	6MY1967	0.04765)
(1354	GH 2	25AP1967	0.00173)	(1407	SM 2	14MY1967	0.01791)	(1406	GB 2	13MY1967	0.01078)

Navicula cryptocephala var. *lancettula* (Schum.) Grun.

Navicula lancettula Schumann, Schrift. K. Phys.-Ökonom. Ges. Königsberg, 5:16, pl. 2, fig. 34. 1864.
Navicula cryptocephala var. *lancettula* (Schum.) Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 8, fig. 11. 1880.

367 NACRYPVL TOT NO OF STATIONS 1

(1279	E 1	16SE1964	0.00393)	(

Navicula cryptocephala var. *veneta* (Kütz.) Rabh.

Navicula veneta Kützing, Bacill., p. 95, pl. 30, fig. 76. 1844.
Navicula cryptocephala var. *veneta* (Kütz.) Rabenhorst, Fl. Europaea Alg., Sect. 1, p. 198. 1864.

368 NACRYPVV TOT NO OF STATIONS 27

(46919	CH	5JN1947	0.00152)	(46750	EV	24SE1937	0.00471)	(46748	EV	13OC1937	0.02135)
(1344	C 3	25AP1967	0.00165)	(1346	C 7	21AP1967	0.00134)	(1348	E 5	23AP1967	0.00137)
(1382	GS 6	10MY1967	0.00278)	(1554	GS 1	30OC1967	0.00356)	(1558	GS 5	4OC1967	0.00396)
(1565	GS13	5OC1967	0.00507)	(1574	GS22	6OC1967	0.04315)	(1544	MU 1	20C1967	0.00238)
(1546	LU 1	20C1967	0.04502)	(1521	SH 1	18SE1967	0.00577)	(1526	MO 1	20SE1967	0.04551)
(1527	TR 1	20SE1967	0.22013)	(1528	SB 1	20SE1967	0.01444)	(1529	KW 1	20SE1967	0.08394)
(1530	FR 1	24SE1967	0.01000)	(1545	WL 1	20C1967	0.21623)	(1550	MR 1	5OC1967	0.16107)
(1351	MI 2	21AP1967	0.00310)	(1350	BH 2	19AP1967	0.07929)	(1401	MO 2	6MY1967	0.01176)
(1400	SB 2	6MY1967	0.01191)	(1352	KW 2	21AP1967	0.00859)	(1407	SM 2	14MY1967	0.02986)

Navicula cuspidata (Kütz.) Kütz.

Frustulia cuspidata Kützing, Linnaea, 8:549, pl. 4, fig. 26. 1833.
Navicula cuspidata (Kütz.) Kützing, Bacill., p. 94, pl. 3, figs. 24, 37. 1844.

369 NACUSPID TOT NO OF STATIONS 6

(1287	F 3	15SE1964	0.00500)	(1369	A 4	4MY1967	0.00373)	(1572	GS20	6OC1967	0.00090)
(1520	HO 1	18SE1967	0.00471)	(1417	HO 2	22MY1967	0.00374)	(1406	GB 2	13MY1967	0.00809)

Navicula cuspidata var. *major* Meist.

Navicula cuspidata var. *major* Meister, Beitr. Kryptog.-Fl. Schweiz, 4(1):134, pl. 20, fig. 10. 1912.

371 NACUSPVM TOT NO OF STATIONS 1

(1549	MO 1	4OC1967	0.01370)	(

Navicula decussis Østr.

Navicula decussis Østrup, Danske Diat., p. 77, pl. 2, fig. 50. 1910.

372 NADECUSS TOT NO OF STATIONS 62

(46910	CH	DC1945	0.00109)	(46921	CH	23NO1945	0.00065)	(46917	CH	12JA1946	0.00055)
(46915	CH	20FE1946	0.01138)	(46914	CH	19AP1946	0.00320)	(46924	CH	10MY1946	0.00141)
(46923	CH	22NO1946	0.00874)	(46920	CH	20DE1946	0.00062)	(46909	CH	MR1947	0.01821)
(46916	CH	4MY1947	0.00102)	(46906	CH	MY1947	0.00133)	(46919	CH	5JN1947	0.00303)
(46907	CH	JL1947	0.00099)	(46922	CH	21AU1947	0.00145)	(46758	EV	5JN1937	0.03923)
(46743	EV	20JN1937	0.00428)	(46770	EV	9JL1937	0.01193)	(46764	EV	17JL1937	0.02417)
(46757	EV	25JL1937	0.03370)	(46747	EV	1AU1937	0.00990)	(46763	EV	23AU1937	0.12175)
(46765	EV	30AU1937	0.00558)	(46752	EV	15SE1937	0.04354)	(46760	EV	22SE1937	0.00492)
(46750	EV	24SE1937	0.01885)	(46744	EV	6OC1937	0.00488)	(46748	EV	13OC1937	0.02135)
(46745	EV	12MR1938	0.01214)	(46768	EV	16MR1938	0.04410)	(46751	EV	30MR1938	0.01117)
(46759	EV	19MY1938	0.00338)	(46761	EV	27MY1938	0.00545)	(1240	D 6	10JN1964	0.00153)
(1264	C' 1	10AU1964	0.00193)	(1341	A 3	19AP1967	0.00325)	(1504	A 3	28AU1967	0.00247)
(1540	C 5	4OC1967	0.00496)	(1541	E 2	11OC1967	0.00532)	(1565	GS13	5OC1967	0.00507)
(1574	GS22	6OC1967	0.00288)	(1544	MU 1	20C1967	0.00238)	(1547	MS 1	20C1967	0.01591)
(1546	LU 1	20C1967	0.03001)	(1520	HO 1	18SE1967	0.00471)	(1521	SH 1	18SE1967	0.00577)
(1522	BH 1	18SE1967	0.02735)	(1527	TR 1	20SE1967	0.08176)	(1528	SB 1	20SE1967	0.04332)
(1530	FR 1	24SE1967	0.01000)	(1545	WL 1	20C1967	0.16893)	(1550	MR 1	5OC1967	0.04956)
(1428	MU 2	29MY1967	0.00603)	(1426	MS 2	29MY1967	0.03150)	(1427	LU 2	29MY1967	0.03632)
(1417	HO 2	22MY1967	0.01122)	(1350	BH 2	19AP1967	0.08590)	(1399	PW 2	5MY1967	0.00680)
(1402	TR 2	6MY1967	0.00541)	(1352	KW 2	21AP1967	0.00859)	(1404	MO 2	10MY1967	0.01270)
(1407	SM 2	14MY1967	0.00597)	(1422	GA 2	23MY1967	0.00511)	(			

Navicula diluviana Krasske

Navicula diluviana Krasske, Zeitschr. Geschiebforsh., 9(2):90, pl. 2, figs. 2a-b, pl. 3. 1933.

374 NADILUVI TOT NO OF STATIONS 1

(1388	GS12	12MY1967	0.00603)	(

Navicula elginensis (Greg.) Ralfs

Pinnularia elginensis Gregory, Quart. J. Micr. Sci., 4:9, pl. 1, fig. 33, 1856.
Navicula elginensis (Greg.) Ralfs *in*: Pritchard, Hist. Infusoria, 4th ed., p. 902. 1861.

375 NAELGINE TOT NO OF STATIONS 1

(1350	BH 2	19AP1967	0.00220)	(

Navicula exigua var. *capitata* Patr.

Navicula exigua var. *capitata* Patrick, Farlowia, 2(2):179, pl. 1, fig. 8. 1945.

377 NAEXIGVC TOT NO OF STATIONS 3

(1565	GS13	5OC1967	0.00507)	(1571	GS19	6OC1967	0.00059)	(1527	TR 1	20SE1967	0.00629)

Navicula exiguaformis Hust.

Navicula exiguaformis Hustedt, Arch. Hydrobiol., 40(4):929, pl. 42, figs. 21-22. 1945.

376 NAEXIGUI TOT NO OF STATIONS 26

(46917	CH	12JA1946	0.00028)	(46924	CH	10MY1946	0.00071)	(46923	CH	22NO1946	0.00219)
(46906	CH	MY1947	0.00066)	(46758	EV	5JN1937	0.11768)	(46743	EV	20JN1937	0.00428)
(46770	EV	9JL1937	0.00596)	(46764	EV	17JL1937	0.21757)	(46757	EV	25JL1937	0.00963)
(46747	EV	1AU1937	0.01485)	(46763	EV	23AU1937	0.16234)	(46752	EV	15SE1937	0.15237)
(46750	EV	24SE1937	0.01885)	(46748	EV	13OC1937	0.10675)	(46767	EV	27OC1937	0.01547)
(46768	EV	16MR1938	0.11760)	(46762	EV	18MR1938	0.04411)	(46751	EV	30MR1938	0.02233)
(1279	E 1	16SE1964	0.00393)	(1565	GS13	5OC1967	0.03549)	(1546	LU 1	2DC1967	0.03501)
(1522	BH 1	18SE1967	0.00182)	(1523	RA 1	19SE1967	0.00923)	(1527	TR 1	20SE1967	0.00629)
(1545	WL 1	2OC1967	0.01351)	(1350	BH 2	19AP1967	0.00220)	(			

Navicula explanata Hust.

Navicula explanata Hustedt, Schweizerische Zeitschr. Hydrobiol., 11:207, fig. 7-8. 1948.

378 NAEXPLAN TOT NO OF STATIONS 13

(46758	EV	5JN1937	0.00713)	(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	0.04411)
(46761	EV	27MY1938	0.00273)	(1386	GS10	12MY1967	0.00287)	(1388	GS12	12MY1967	0.01810)
(1389	GS13	12MY1967	0.00258)	(1394	GS18	13MY1967	0.00172)	(1565	GS13	5OC1967	0.01014)
(1574	GS22	6OC1967	0.00575)	(1550	MR 1	5OC1967	0.01239)	(1354	GH 2	25AP1967	0.00173)
(1404	MO 2	10MY1967	0.01270)	(							

Navicula farta Hust.

Navicula farta Hustedt, Bot. Not., 105:408. 1952.

379 NAFARTA TOT NO OF STATIONS 1

(1565	GS13	5OC1967	0.28395)	(

Navicula fracta Hust.

Navicula fracta Hustedt *in*: Rabenhorst, Kryptog.-Fl. Deutschlands, 7(2)1: 127, fig. 1259. 1961.

380 NAFRACTO TOT NO OF STATIONS 6

(46763	EV	23AU1937	0.02029)	(1300	E 3	13OC1964	0.00358)	(1394	GS18	13MY1967	0.00172)
(1560	GS 8	4OC1967	0.00472)	(1565	GS13	5OC1967	0.00507)	(1422	GA 2	23MY1967	0.00511)

Navicula gastriformis Hust.

Navicula gastriformis Hustedt *in*: A. Schmidt, Atlas Diat., pl. 398, figs. 17-19. 1934.

381 NAGASTRI TOT NO OF STATIONS 1

(1396	GS20	13MY1967	0.00074)	(

Navicula gastrum (Ehr.) Kütz.

Pinnularia gastrum Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:421, pl. 3(7), fig. 23. 1843.
Navicula gastrum (Ehr.) Kützing, Bacill., p. 94, pl. 28, fig. 56. 1844.

382 NAGASTRU TOT NO OF STATIONS 23

(46914	CH	19AP1946	0.00107)	(46920	CH	20DE1946	0.00031)	(46747	EV	1AU1937	0.00495)
(1244	F 1	11JN1964	0.00110)	(1257	E 3	14JL1964	0.00239)	(1272	C' 1	10SE1964	0.00410)
(1341	A 3	19AP1967	0.00108)	(1504	A 3	28AU1967	0.00247)	(1388	GS12	12MY1967	0.00603)
(1554	GS 1	30OC1967	0.00356)	(1567	GS15	50C1967	0.00159)	(1570	GS18	50C1967	0.00992)
(1575	GS28	60C1967	0.00129)	(1520	HO 1	18SE1967	0.00471)	(1522	BH 1	18SE1967	0.00547)
(1527	TR 1	20SE1967	0.01258)	(1530	FR 1	24SE1967	0.01000)	(1545	WL 1	20C1967	0.00676)
(1550	MR 1	5CC1967	0.02478)	(1350	BH 2	19AP1967	0.01542)	(1402	TR 2	6MY1967	0.00541)
(1400	SB 2	6MY1967	0.00596)	(1407	SM 2	14MY1967	0.00597)	(			

Navicula gastrum var. *signata* Hust.

Navicula gastrum var. *signata* Hustedt *in*: A. Schmidt, Atlas Diat., pl. 403, figs. 27-28. 1936.

383 NAGASTVS TOT NO OF STATIONS 21

(60973	CH	1876	0.04724)	(3540	CH	11MY1875	0.00466)	(46921	CH	23NO1945	0.00065)
(46917	CH	12JA1946	0.00055)	(46915	CH	20FE1946	0.01138)	(46914	CH	19AP1946	0.00107)
(46905	CH	JA1947	0.CC490)	(46516	CH	4MY1947	0.00034)	(46919	CH	5JN1947	0.CC303)
(46764	EV	17JL1937	0.00806)	(46747	EV	1AU1937	0.00743)	(46768	EV	16MR1938	0.01470)
(46762	EV	18MR1938	0.04411)	(46761	EV	27MY1938	0.00273)	(1279	E 1	16SE1964	0.00393)
(1565	GS13	50C1967	0.04563)	(1574	GS22	60C1967	0.00288)	(1520	HO 1	18SE1967	0.00471)
(1526	MO 1	20SE1967	0.01138)	(1527	TR 1	20SE1967	0.05031)	(1417	HO 2	22MY1967	0.00374)

Navicula globosa Meist.

Navicula globosa Meister, Ber. Schweizerische Bot. Ges., 44:89, fig. 8. 1934.

384 NAGLOBOG TOT NO OF STATIONS 4

(1527	TR 1	20SE1967	0.00629)	(1350	BH 2	19AP1967	0.00220)	(1354	GH 2	25AP1967	0.00173)
(1404	MO 2	10MY1967	0.03811)	(							

Navicula gottlandica Grun.

Navicula gottlandica Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 8. fig. 8. 1880.

385 NAGOTTLA TOT NO OF STATIONS 2

(1565	GS13	50C1967	0.07099)	(1404	MO 2	10MY1967	0.01270)	(			

Navicula graciloides A. Mayer

Navicula graciloides A. Mayer, Kryptog. Forsch., 1:203, pl. 7, fig. 60. 1919.

386 NAGRACIL TOT NO OF STATIONS 15

(46763	EV	23AU1937	0.02029)	(1343	A 6	19AP1967	0.00069)	(1554	GS 1	30C1967	0.00712)
(1569	GS17	50C1967	0.00149)	(1571	GS19	60C1967	0.00059)	(1574	GS22	60C1967	0.12944)
(1544	MU 1	20C1967	0.00238)	(1546	LU 1	20C1967	0.00500)	(1526	MO 1	20SE1967	0.00569)
(1527	TR 1	20SE1967	0.01258)	(1529	KW 1	20SE1967	0.01199)	(1549	MO 1	40C1967	0.01370)
(1350	BH 2	19AP1967	0.00661)	(1404	MO 2	10MY1967	0.05081)	(1407	SM 2	14MY1967	0.00597)

Navicula gregaria Donk.

Navicula gregaria Donkin, Quart. J. Micr. Sci., New Ser., 1:10, pl. 1, fig. 10. 1861.

387 NAGREGAR TOT NO OF STATIONS 19

(1236	C' 1	8JN1964	0.00175)	(1264	C' 1	10AU1964	0.00193)	(1345	C 5	25AP1967	0.00195)
(1368	A 3	4MY1967	0.00314)	(1542	E 3	110C1967	0.00509)	(1546	LU 1	20C1967	0.03001)
(1521	SH 1	18SE1967	0.02308)	(1522	BH 1	18SE1967	0.00365)	(1527	TR 1	20SE1967	0.01258)
(1531	GH 1	25SE1967	0.00845)	(1545	WL 1	20C1967	0.13514)	(1550	MR 1	50C1967	0.03717)
(1426	MS 2	29MY1967	0.06299)	(1427	LU 2	29MY1967	0.01211)	(1417	HO 2	22MY1967	0.03365)
(1418	SH 2	22MY1967	0.03110)	(1350	BH 2	19AP1967	0.11013)	(1354	GH 2	25AP1967	0.00345)
(1429	WL 2	29MY1967	0.01062)	(							

Navicula grimmei Krasske

Navicula grimmei Krasske, Abh. Ber. Ver. Naturk. Cassel, 56:45, pl. 1, fig. 14. 1925.

388 NAGRIMME TOT NO OF STATIONS 5

(1567	GS15	5OC1967	0.0C159)	(1550	MR 1	5CC1967	0.01239)	(1426	PS 2	29MY1967	C.C4195)
(1350	BH 2	19AP1967	0.01542)	(1404	MO 2	10MY1967	0.01270)	(			

Navicula hambergii Hust.

Navicula hambergii Hustedt *in*: Hamberg, Naturw. Untersuch. Sarekgebiet Schwedisch-Lappland, Bd. 3, Bot., p. 562, pl. 17, fig. 2. 1924.

Coll: ANSP 46763a.

Navicula hasta Pant.

Navicula hasta Pantocsek, Beitr. Kenntn. Foss. Bacill. Ungarns, Theil 3, p. 69, Beitr. 3, pl. 5, fig. 74. 1905.

Coll: 1813.

Navicula heufleri Grun.

Navicula heufleri Grunow, Verh. Zool.-Bot. Ges. Wien, 10:528, pl. 3, figs. 32a-b. 1860.

389 NAHEUFLE TOT NO OF STATIONS 1

(1350	BH 2	19AP1967	0.00661)	(

Navicula heufleri var. *leptocephala* (Bréb.) Patr.

Navicula leptocephala de Brébisson *ex* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 7, fig. 16. 1880.
Navicula cincta var. *leptocephala* (Bréb.) Van Heurck, Syn. Diat. Belgique, p. 82. 1885.
Navicula heufleri var. *leptocephala* (Bréb.) Patrick *in*: Patrick and Reimer, Acad. Nat. Sci. Philadelphia Monogr., 13:515, pl. 49, fig. 7. 1966.

390 NAHEUFVL TOT NO OF STATIONS 2

(1522	BH 1	18SE1967	0.00182)	(1417	HO 2	22MY1967	0.00374)	(

Navicula imbricata Bock

Navicula imbricata Bock, Nova Hedw., 5:228, pl. 3, figs. 150-160. 1963.

391 NAIMBRIC TOT NO OF STATIONS 1

(46756	EV	27AP1938	0.0C168)	(

Navicula integra (Wm. Smith) Ralfs

Pinnularia integra Wm. Smith, Syn. British Diat., Vol. 2, p. 96. 1856.
Navicula integra (Wm. Smith) Ralfs *in*: Pritchard, Hist. Infusoria, 4th ed., p. 895. 1861.

393 NAINTEGR TOT NO OF STATIONS 7

(1236	C' 1	8JN1964	0.00350)	(1342	A 4	19AP1967	0.00361)	(15C4	A 3	28AU1967	C.0C247)
(1559	GS 7	4OC1967	0.00350)	(1522	BH 1	18SE1967	0.00182)	(1417	HO 2	22MY1967	0.00374)
(1350	BH 2	19AP1967	0.03304)	(							

Navicula jaernefeltii Hust.

Navicula jaernefeltii Hustedt, Arch. Hydrobiol., 39:111. 1942.

394 NAJAERNE TOT NO OF STATIONS 7

(1395	GS19	13MY1967	0.00117)	(1560	GS 8	4OC1967	0.00472)	(1565	GS13	5OC1967	C.02028)
(1569	GS17	5OC1967	0.00149)	(1574	GS22	6OC1967	0.00288)	(1575	GS28	6OC1967	0.00129)
(1551	ES 1	5OC1967	0.00799)	(							

Navicula lacustris Greg.

Navicula lacustris Gregory, Quart. J. Micr. Sci., 4:6, pl. 1, fig. 23. 1856.

396 NALACUST TOT NO OF STATIONS 16

(3541	CH	1FE1881	0.01956)	(46514	CH	19AP1946	0.00107)	(46920	CH	20DE1946	0.00031)
(46919	CH	5JN1947	0.00152)	(46907	CH	JL1947	0.00049)	(46764	EV	17JL1937	0.00806)
(46747	EV	1AU1937	0.00743)	(46769	EV	7SE1937	0.02171)	(46760	EV	22SE1937	0.00492)
(46767	EV	27OC1937	0.00387)	(1258	F 1	6JL1964	0.00236)	(1392	GS16	12MY1967	0.00308)
(1526	MO 1	20SE1967	0.00569)	(1545	WL 1	20OC1967	0.06081)	(1427	LU 2	29MY1967	0.01211)
(1354	GH 2	25AP1967	0.00173)	(							

489 NASPECCK TOT NO OF STATIONS 1

(1254 D 2 15JL1964 0.00192) (

Navicula lanceolata (Agardh) Kütz.

Frustulia lanceolata Agardh, Flora, 10:626. 1827.
Navicula lanceolata (Agardh) Kützing, Bacill., p. 94, pl. 28, fig. 38. 1844.

395 NALANCEO TOT NO OF STATIONS 67

(60973	CH	1876	0.02362)	(46921	CH	23NO1945	0.00065)	(46915	CH	20FE1946	0.01138)
(46914	CH	19AP1946	0.00107)	(46920	CH	20DE1946	0.00031)	(46905	CH	JA1947	0.00123)
(46906	CH	MY1947	0.00199)	(46907	CH	JL1947	0.00049)	(46922	CH	21AU1947	0.00048)
(46758	EV	5JN1937	0.00357)	(46743	EV	20JN1937	0.00428)	(46764	EV	17JL1937	0.04029)
(46757	EV	25JL1937	0.12999)	(46747	EV	1AU1937	0.03218)	(46763	EV	23AU1937	0.18263)
(46765	EV	30AU1937	0.01115)	(46752	EV	15SE1937	0.15237)	(46760	EV	22SE1937	0.00492)
(46750	EV	24SE1937	0.01414)	(46744	EV	6OC1937	0.02439)	(46748	EV	13OC1937	0.04270)
(46767	EV	27OC1937	0.01160)	(46749	EV	12MR1938	0.01214)	(46768	EV	16MR1938	0.04410)
(46762	EV	18MR1938	0.04411)	(1232	E 5	16MY1964	0.00174)	(1285	F 1	15SE1964	0.01165)
(1305	F 2	11OC1964	0.00173)	(1341	A 3	19AP1967	0.00108)	(1375	E 3	7MY1967	0.00241)
(1453	E 3	15JL1967	0.00253)	(1377	GS 1	9MY1967	0.00396)	(1389	GS13	12MY1967	0.00258)
(1390	GS14	12MY1967	0.00587)	(1391	GS15	12MY1967	0.00479)	(1392	GS16	12MY1967	0.00616)
(1394	GS18	13MY1967	0.00172)	(1555	GS 2	3OC1967	0.00353)	(1558	GS 5	4OC1967	0.00396)
(1560	GS 8	4OC1967	0.00472)	(1565	GS13	5OC1967	0.01521)	(1572	GS20	6OC1967	0.00090)
(1573	GS21	6OC1967	0.00112)	(1574	GS22	6OC1967	0.00288)	(1575	GS28	6OC1967	0.00129)
(1544	MU 1	20OC1967	0.00238)	(1547	MS 1	20OC1967	0.00798)	(1546	LU 1	20OC1967	0.15005)
(1520	HO 1	18SE1967	0.00471)	(1521	SH 1	18SE1967	0.00577)	(1522	BH 1	18SE1967	0.01641)
(1527	TR 1	20SE1967	0.05031)	(1529	KW 1	20SE1967	0.01199)	(1545	WL 1	20OC1967	0.03379)
(1552	SM 1	6OC1967	0.00660)	(1550	MR 1	5OC1967	0.26019)	(1553	SG 1	6OC1967	0.00734)
(1426	MS 2	29MY1967	0.02100)	(1351	MI 2	21AP1967	0.00621)	(1427	LU 2	29MY1967	0.01211)
(1350	BH 2	19AP1967	0.04405)	(1401	MO 2	6MY1967	0.03528)	(1402	TR 2	6MY1967	0.09747)
(1400	SB 2	6MY1967	0.05361)	(1404	MQ 2	10MY1967	0.01270)	(1406	GB 2	13MY1967	0.01078)
(1423	WA 2	25MY1967	0.00428)	(							

Navicula lanceolata var. *cymbula* (Donk.) Cleve

Navicula cymbula Donkin, Quart. J. Micr. Sci., 9:294, pl. 18, fig. 6. 1869.
Navicula lanceolata var. *cymbula* (Donk.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 27(3):22. 1895.

398 NALANCVC TOT NO OF STATIONS 4

(1305	F 2	11OC1964	0.00173)	(1565	GS13	5OC1967	0.00507)	(1428	MU 2	29MY1967	0.00301)
(1404	MO 2	10MY1967	0.01270)	(							

Navicula latens Krasske

Navicula latens Krasske, Arch. Hydrobiol., 31:41. 1937.

399 NALATENS TOT NO OF STATIONS 12

(46757	EV	25JL1937	0.00481)	(1521	SH 1	18SE1967	0.00577)	(1526	MO 1	20SE1967	0.00569)
(1527	TR 1	20SE1967	0.02516)	(1528	SB 1	20SE1967	0.01444)	(1530	FR 1	24SE1967	0.01000)
(1545	WL 1	20OC1967	0.13514)	(1550	MR 1	5OC1967	0.01239)	(1402	TR 2	6MY1967	0.00541)
(1354	GH 2	25AP1967	0.00345)	(1349	CI 2	19AP1967	0.00359)	(1422	GA 2	23MY1967	0.00511)

Navicula laterostrata Hust.

Navicula laterostrata Hustedt, Internat. Rev. Hydrobiol., 13:357, fig. 4. 1925.

Coll: 1404.

Navicula levanderi Hust.

Navicula levanderi Hustedt, Internat. Rev. Hydrobiol., 43:174. 1943.

400 NALEVAND TOT NO OF STATIONS 2

(46757	EV	25JL1937	0.00481)	(46763	EV	23AU1937	0.04058)

Navicula menisculus Schum.

Navicula menisculus Schumann, Schrift. K. Phys.-Ökonom. Ges. Königsberg, 8:56, pl. 2, fig. 33. 1867.

401 NAMENISC TCT NO OF STATIONS 4

(1240	D 6	10JN1964	0.00153)	(1365	F 2	11OC1964	C.00173)	(1337	C 3	2MR1967	C.00147)
(1341	A 3	19AP1967	0.00108)	(							

Navicula menisculus var. *obtusa* Hust.

Navicula menisculus var. *obtusa* Hustedt, Arch. Hydrobiol., Suppl. 15:271, pl. 20, figs. 12-14. 1938.

402 NAMENIVC TCT NO OF STATIONS 9

(46758	EV	5JN1937	0.00357)	(46757	EV	25JL1937	0.00481)	(46763	EV	23AU1937	C.06088)
(46752	EV	15SE1937	0.06530)	(46768	EV	16MR1938	0.02940)	(46762	EV	18MR1938	C.02206)
(1544	MU 1	20OC1967	0.00238)	(1545	WL 1	2OC1967	0.00676)	(1350	BH 2	19AP1967	C.00220)

Navicula menisculus var. *upsaliensis* Grun.

Navicula (menisculus Schum. var.?) *upsaliensis* Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):33. 1880.
Navicula menisculus var. *upsaliensis* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 8, figs. 23-24. 1880.

403 NAMENIVU TCT NO OF STATIONS 40

(46905	CH	MR1947	0.00455)	(46912	CH	AP1947	C.01150)	(46907	CH	JL1947	C.00049)
(46758	EV	5JN1937	0.00357)	(46771	EV	11JN1937	0.00238)	(46763	EV	23AU1937	C.04058)
(46752	EV	15SE1937	0.06530)	(46767	EV	27OC1937	0.00774)	(46762	EV	18MR1938	C.02206)
(1388	GS12	12MY1967	0.00603)	(1389	GS13	12MY1967	0.00258)	(1390	GS14	12MY1967	C.00587)
(1391	GS15	12MY1967	0.00475)	(1392	GS16	12MY1967	0.00308)	(1394	GS18	13MY1967	C.00172)
(1397	GS21	13MY1967	0.00065)	(1554	GS 1	30OC1967	0.00356)	(1557	GS 4	30OC1967	C.00374)
(1558	GS 5	4OC1967	C.00396)	(1565	GS13	5OC1967	C.05578)	(1567	GS15	5OC1967	C.00159)
(1571	GS19	6OC1967	C.00059)	(1573	GS21	6OC1967	0.00112)	(1574	GS22	6OC1967	C.01151)
(1544	MU 1	20OC1967	0.00477)	(1546	LU 1	2OC1967	C.05002)	(1522	BH 1	18SE1967	C.00365)
(1526	MO 1	20SE1967	0.01138)	(1527	TR 1	20SE1967	C.06918)	(1528	SB 1	20SE1967	C.02888)
(1529	KW 1	20SE1967	0.04797)	(1545	WL 1	2OC1967	C.39192)	(1550	MR 1	5OC1967	C.01239)
(1428	MU 2	29MY1967	C.00904)	(1417	HO 2	22MY1967	0.01122)	(1350	BH 2	19AP1967	C.02423)
(1354	GH 2	25AP1967	0.00173)	(1404	MQ 2	10MY1967	C.01270)	(1420	IH 2	23MY1967	C.01511)
(1423	WA 2	25MY1967	0.00428)	(							

Navicula micropupula Choln.

Navicula micropupula Cholnoky, Bot. Not., 110(3):353, fig. 61-63. 1957.

404 NAMICROP TCT NO OF STATIONS 3

(1258	F 1	6JL1964	0.00236)	(1528	SB 1	20SE1967	C.01444)	(1545	WL 1	2OC1967	C.02027)

Navicula minima Grun.

Navicula minima Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 14, fig. 15. 1880.

405 NAMINIMA TCT NO OF STATIONS 8

(46905	CH	MR1947	0.00455)	(46764	EV	17JL1937	0.01612)	(46767	EV	27OC1937	C.00774)
(1291	C' 2	16OC1964	0.00245)	(1341	A 3	19AP1967	0.00108)	(1345	C 5	25AP1967	C.00195)
(1388	GS12	12MY1967	0.01207)	(1550	MR 1	5OC1967	0.39648)	(			

Navicula minima var. *okamurae* Skv.

Navicula minima var. *okamurae* Skvortzow, Phillipine J. Sci., 62:203, pl. 1, fig. 23. 1937.

406 NAMINIVC TCT NO OF STATIONS 1

(1550	MR 1	5OC1967	0.03717)	(

Navicula minuscula Grun.

Navicula minuscula Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 14, fig. 3. 1880.

392 NAIMPCRQ TCT NO OF STATIONS 4

(1244	F 1	11JN1964	C.00110)	(1565	GS13	5OC1967	C.02028)	(1527	TR 1	20SE1967	C.01258)
(1550	MR 1	5OC1967	0.01239)	(							

Navicula monoculata Hust.

Navicula monoculata Hustedt, Arch. Hydrobiol., 40:921, pl. 41, fig. 4. 1945.

407 NAMONOCU TOT NO OF STATIONS 2

(1571	GS19	6OC1967	0.00059)	(135C	BH 2	19AP1967	0.00441)	(			

Navicula muraliformis Hust.

Navicula muraliformis Hustedt *ex* Brendemühl, Arch. Mikrobiol., 14:440, fig. 5. 1949.

408 NAMURALI TOT NO OF STATIONS 3

(1268	E 2	15AU1964	0.00274)	(1348	E 5	23AP1967	0.00137)	(1451	C 7	16JL1967	C.0C197)

Navicula mutica Kütz.

Navicula mutica Kützing, Bacill., p. 93, pl. 3, fig. 32. 1844.

Coll: 1734.

Navicula mutica var. *cohnii* (Hilse) Grun.

Stauroneis cohnii Hilse, Jahres-Ber. Schlesische Ges. Vaterl. Kult., 38:83. 1860.
Navicula mutica var. *cohnii* (Hilse) Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 10, fig. 17. 1880.

409 NAMUTIVC TOT NO OF STATIONS 3

(46916	CH	4MY1947	0.00068)	(46922	CH	21AU1947	C.00097)	(1241	E 2	13JN1964	C.0C148)

Navicula mutica var. *tropica* Hust.

Navicula mutica var. *tropica* Hustedt, Arch. Hydrobiol., Suppl. 15:233, pl. 17, fig. 6. 1937.

410 NAMUTIVT TOT NO OF STATIONS 4

(46921	CH	23N01945	0.00065)	(46922	CH	21AU1947	C.00097)	(1342	A 4	19AP1967	C.0C180)
(1350	BH 2	19AP1967	0.00220)	(							

Navicula muticoides Hust.

Navicula muticoides Hustedt, Instit. Parcs Nat. Congo Belge, Expl. Parc Nat. Albert, Mission H. Damas (1935-1936), Fasc. 8, p. 82, pl. 4, figs. 33-36. 1949.

411 NAMUTICO TOT NO OF STATIONS 1

(46758	EV	5JN1937	C.0C357)	(

Navicula muticopsis V. H.

Navicula muticopsis Van Heurck, Exped. Antartic Belge, Bot., Diat., p. 12, pl. 2, fig. 181. 1909.

412 NAMUTICO TOT NO OF STATIONS 2

(46924	CH	10MY1946	0.00071)	(1542	E 3	11OC1967	C.00509)	(

Navicula nyassensis fo. *minor* O. Müll.

Navicula nyassensis fo. *minor* O. Müller, Bot. Jahrb., 45:83, pl. 1, fig. 6. 1911.

430 NAPUPUFM TOT NO OF STATIONS 13

(46758	EV	5JN1937	0.04636)	(46764	EV	17JL1937	0.12087)	(46757	EV	25JL1937	0.02889)
(46747	EV	1AU1937	0.00248)	(46763	EV	23AU1937	0.08117)	(46752	EV	15SE1937	0.06530)
(46750	EV	24SE1937	0.01414)	(46767	EV	27OC1937	0.00387)	(46762	EV	18MR1938	0.02206)
(46761	EV	27MY1938	0.00545)	(1545	WL 1	20C1967	0.00676)	(1550	MR 1	50C1967	0.01239)
(1417	MO 2	22MY1967	0.00374)	(							

Navicula oblonga (Kütz.) Kütz.

Frustulia oblonga Kützing, Linnaea, 8:548, pl. 14, fig. 24. 1833.
Navicula oblonga (Kütz.) Kützing, Bacill., p. 97, pl. 4, fig. 21. 1844.

413 NAOBLONG TOT NO OF STATIONS 4

(3541	CH	1FE1881	0.00578)	(1538	E 5	23SE1967	0.00552)	(1388	GS12	12MY1967	0.00603)
(1569	GS17	50C1967	0.00149)	(							

Navicula odiosa Wallace

Navicula odiosa Wallace, Not. Nat. Acad. Nat. Sci. Philadelphia, 331:5, pl. 2, fig. 4. 1960.

414 NAODIOSA TOT NO OF STATIONS 17

(46923	CH	22NO1946	0.00219)	(46919	CH	5JN1947	0.00303)	(46757	EV	25JL1937	0.00563)
(46752	EV	15SE1937	0.04354)	(46750	EV	24SE1937	0.00471)	(46759	EV	19MY1938	0.00338)
(1256	E 2	14JL1964	0.00183)	(1268	E 2	15AU1964	0.00274)	(1270	F 1	10AU1964	0.00272)
(1285	F 1	15SE1964	0.02912)	(1397	GS21	13MY1967	0.00065)	(1557	GS 4	30C1967	0.00374)
(1573	GS21	60C1967	0.00224)	(1574	GS22	60C1967	0.00575)	(1529	KW 1	20SE1967	0.02398)
(1401	MO 2	6MY1967	0.00588)	(1429	WL 2	29MY1967	0.01062)	(			

Navicula oppugnata Hust.

Navicula oppugnata Hustedt, Arch. Hydrobiol., 40(4):925, pl. 42, fig. 1. 1945.

415 NAOPPUGO TOT NO OF STATIONS 37

(46917	CH	12JA1946	0.00028)	(46923	CH	22NO1946	0.00219)	(46920	CH	20DE1946	0.00092)
(46916	CH	4MY1947	0.00170)	(46919	CH	5JN1947	0.01062)	(46922	CH	21AU1947	0.00533)
(46758	EV	5JN1937	0.00713)	(46771	EV	11JN1937	0.00475)	(46743	EV	20JN1937	0.01285)
(46764	EV	17JL1937	0.07252)	(46757	EV	25JL1937	0.02889)	(46747	EV	1AU1937	0.05446)
(46763	EV	23AU1937	0.08117)	(46752	EV	15SE1937	0.06530)	(46760	EV	22SE1937	0.00985)
(46750	EV	24SE1937	0.01414)	(46744	EV	6OC1937	0.00975)	(46767	EV	27OC1937	0.00774)
(46749	EV	12MR1938	0.01214)	(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	0.06617)
(46751	EV	30MR1938	0.02233)	(46759	EV	19MY1938	0.00338)	(46766	EV	14DE1938	0.01584)
(1240	D 6	10JN1964	0.00153)	(1278	D 6	18SE1964	0.00384)	(1297	D 6	14OC1964	0.00190)
(1388	GS12	12MY1967	0.01207)	(1392	GS16	12MY1967	0.003[illegible])	(1394	GS18	13MY1967	0.00172)
(1574	GS22	6OC1967	0.00288)	(1546	LU 1	20C1967	0.00500)	(1527	TR 1	20SE1967	0.00629)
(1545	WL 1	20C1967	0.03379)	(1427	LU 2	29MY1967	0.01211)	(1401	MO 2	6MY1967	0.00588)
(1402	TR 2	6MY1967	0.00541)	(							

Navicula ordinaria Hust.

Navicula ordinaria Hustedt, Arch. Hydrobiol., 43:352, pl. 37, figs. 27-28. 1950.

83 ANSPECOA TOT NO OF STATIONS 2

(1285	F 1	15SE1964	0.00582)	(1565	GS13	50C1967	0.01014)	(

Navicula paca Hohn and Hellerm.

Navicula paca Hohn and Hellerman, Trans. American Micr. Soc., 82(3):307, pl. 3, fig. 11. 1963.

482 NASPECOB TOT NO OF STATIONS 1

(1268	E 2	15AU1964	0.00821)	(

Navicula paludosa Hust.

Navicula paludosa Hustedt, Abh. Naturw. Ver. Bremen, 34:286. 1957.

416 NAPALUDO TOT NO OF STATIONS 12

(46764	EV	17JL1937	0.00806)	(1304	F 1	11OC1964	0.00247)	(1546	LU 1	20C1967	0.01000)
(1527	TR 1	20SE1967	0.01887)	(1530	FR 1	24SE1967	0.01000)	(1545	WL 1	20C1967	0.00676)
(1550	MR 1	5OC1967	0.12390)	(1426	MS 2	29MY1967	0.01050)	(1427	LU 2	29MY1967	0.02421)
(1350	BH 2	19AP1967	0.03524)	(1354	GH 2	25AP1967	0.00690)	(1404	WQ 2	10MY1967	0.01270)

Navicula pelliculosa (Bréb.) Hilse

Synedra minutissima var. *pelliculosa* Kützing, Sp. Alg., p. 40. 1849. (=*Frustulia pelliculosa* de Brébisson *in litt.* fide Kützing.).
Navicula pelliculosa (Bréb.) Hilse, Abh. Schleische Ges. Vaterl. Kult., 2(2):68. 1863.

Coll: 1712.

Navicula peratomus Hust.

Navicula peratomus Hustedt, Abh. Naturw. Ver. Bremen, 34(3):277, fig. 26. 1957.

417 NAPERATO TOT NO OF STATIONS 1

(1350	BH 2	19AP1967	0.01101)	(

Navicula perpusilla Grun.

Navicula perpusilla Grunow, Verh. Zool.-Bot. Wien, 10:552, pl. 4, fig. 7. 1860.

418 NAPERPUS TOT NO OF STATIONS 1

(1550	MR 1	5OC1967	0.01239)	(

Navicula placentula (Ehr.) Kütz.

Pinnularia placentula Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:421, pl. 3(7), fig. 22. 1843.
Navicula placentula (Ehr.) Kützing, Bacill., p. 94. 1844.

419 NAPLACEN TOT NO OF STATIONS 13

(46917	CH	12JA1946	0.00055)	(46914	CH	19AP1946	0.00107)	(46905	CH	JA1947	0.00123)
(46916	CH	4MY1947	0.00034)	(46770	EV	9JL1937	0.01193)	(46757	EV	25JL1937	0.00963)
(46747	EV	1AU1937	0.00248)	(46763	EV	23AU1937	0.02029)	(46752	EV	15SE1937	0.02177)
(46756	EV	27AP1938	0.00168)	(46761	EV	27MY1938	0.00273)	(1275	D 2	17SE1964	0.00645)
(1568	GS16	5OC1967	0.00144)	(							

Navicula placentula var. *rostrata* A. Mayer

Navicula placentula var. *rostrata* A. Mayer, Kryptog. Forsch., 3:125, pl. 3, figs. 27a-b. 1918.

42C NAPLACVR TOT NO OF STATIONS 20

(46924	CH	10MY1946	0.00071)	(46919	CH	5JN1947	0.00152)	(46922	CH	21AU1947	0.00194)
(46758	EV	5JN1937	0.00357)	(46771	EV	11JN1937	0.00238)	(46743	EV	20JN1937	0.00856)
(46764	EV	17JL1937	0.01612)	(46757	EV	25JL1937	0.00481)	(46752	EV	15SE1937	0.04354)
(46768	EV	16MR1938	0.01470)	(1236	C' 1	8JN1964	0.00175)	(1396	GS20	13MY1967	0.00074)
(1554	GS 1	3OC1967	0.00356)	(1565	GS13	5OC1967	0.00507)	(1520	HO 1	16SE1967	0.00471)
(1527	TR 1	20SE1967	0.00629)	(1401	MO 2	6MY1967	0.00588)	(1419	BU 2	23MY1967	0.01831)
(1422	GA 2	23MY1967	0.00511)	(1423	WA 2	25MY1967	0.00428)	(			

Navicula platycephala O. Müll.

Navicula platycephala O. Müller, Bot. Jahrb., 45:84, pl. 1, fig. 12. 1911.

Coll: 1574.

Navicula platystoma var. *pantocsekii* Wisl. and Kolbe

Navicula platystoma var. *pantocsekii* Wislouch and Kolbe, Trav. Exped. Sci. Olenetz, Part 5, Livr. 1, p. 73, fig. 10. 1927.

421 NAPLATVP TOT NO OF STATIONS 30

(3541	CH	1FE1881	0.00978)	(46921	CH	23NO1945	0.00129)	(46914	CH	19AP1946	0.00107)
(46924	CH	10MY1946	0.00141)	(46920	CH	20DE1946	0.00123)	(46905	CH	JA1947	0.00123)
(46906	CH	MY1947	0.00066)	(46922	CH	21AU1947	0.00291)	(46758	EV	5JN1937	0.00357)
(46771	EV	11JN1937	0.00238)	(46764	EV	17JL1937	0.03223)	(46757	EV	25JL1937	0.01926)
(46747	EV	1AU1937	0.01980)	(46763	EV	23AU1937	0.06088)	(46752	EV	15SE1937	0.02177)
(46760	EV	22SE1937	0.00985)	(46750	EV	24SE1937	0.00943)	(46744	EV	6OC1937	0.00488)
(46748	EV	13OC1937	0.02135)	(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	0.04411)
(1279	E 1	16SE1964	0.00393)	(1394	GS18	13MY1967	0.00172)	(1567	GS15	5OC1967	0.00318)
(1546	LU 1	2OC1967	0.00500)	(1526	MO 1	20SE1967	0.00569)	(1527	TR 1	20SE1967	0.01258)
(1545	WL 1	2OC1967	0.00676)	(1550	MR 1	5OC1967	0.01239)	(1429	WL 2	29MY1967	0.01062)

Navicula potzgeri Reim.

Navicula potzgeri Reimer, Proc. Indiana Acad. Sci., 71:315, pl. 1, fig. 5. 1962.

Coll: 1808.

Navicula protracta Grun.

Navicula (crucicula var.*?) protracta* Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):35, pl. 2, fig. 38. 1880.

422 NAPROTRA TOT NO OF STATIONS 8

(46924	CH	10MY1946	0.00071)	(46922	CH	21AU1947	0.00145)	(46749	EV	12MR1938	0.01214)
(1546	LU 1	2OC1967	0.01000)	(1521	SH 1	18SE1967	0.00577)	(1550	MR 1	5OC1967	0.02478)
(1350	BH 2	19AP1967	0.00661)	(1405	ES 2	12MY1967	0.00645)	(			

Navicula protracta fo. *subcapitata* (Wisl. and Por.) Hustedt

Navicula lundstromii var. *subcapitata* Wislouch and Poretzky, Trav. Soc. Natural. Leningrad, 47-53:139, fig. 2. 1924.
Navicula protracta var. *subcapitata* (Wisl. and Por.) Hustedt *in*: Rabenhorst, Kryptog.-Fl. Deutschlands, 7(3)2:316, fig. 1434. 1962.

423 NAPROTFS TOT NO OF STATIONS 2

(1388	GS12	12MY1967	0.00603)	(1565	GS13	5OC1967	0.01521)	(

Navicula protracta var. *elliptica* Gallik

Navicula protracta var. *elliptica* Gallik, Pannonhalmi Szmle, 10:65, fig. 7. 1935.

424 NAPROTVE TOT NO OF STATIONS 24

(46917	CH	12JA1946	0.00028)	(46771	EV	11JN1937	0.00238)	(46764	EV	17JL1937	0.03223)
(46757	EV	25JL1937	0.01926)	(46747	EV	1AU1937	0.00990)	(46763	EV	23AU1937	0.02029)
(46752	EV	15SE1937	0.19591)	(46760	EV	22SE1937	0.00985)	(46750	EV	24SE1937	0.00943)
(46744	EV	6OC1937	0.01463)	(46748	EV	13OC1937	0.06405)	(46761	EV	27MY1938	0.00273)
(1264	C' 1	10AU1964	0.00193)	(1563	GS11	5OC1967	0.00234)	(1546	LU 1	2OC1967	0.01000)
(1520	HO 1	18SE1967	0.00471)	(1527	TR 1	20SE1967	0.03145)	(1545	WL 1	2OC1967	0.04054)
(1426	MS 2	29MY1967	0.01050)	(1427	LU 2	29MY1967	0.01211)	(1417	HO 2	22MY1967	0.00374)
(1350	BH 2	19AP1967	0.00220)	(1402	TR 2	6MY1967	0.00541)	(1423	WA 2	25MY1967	0.00428)

Navicula pseudoclementis Hust.

Navicula pseudoclementis Hustedt, Bot. Not., 1952(4):400, fig. 107. 1952.

Coll: ANSP 46920a.

Navicula pseudoscutiformis Hust.

Navicula pseudoscutiformis Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 291, fig. 495. 1930.

425 NAPSCUTI TOT NO OF STATIONS 10

(1346	C 7	21AP1967	0.00134)	(1541	E 2	11OC1967	0.00532)	(1388	GS12	12MY1967	C.CC603)
(1390	GS14	12MY1967	0.00587)	(1396	GS20	13MY1967	0.00074)	(1555	GS 2	30C1967	C.00706)
(1556	GS 3	30C1967	0.00521)	(1550	MR 1	50C1967	0.04956)	(1354	GH 2	25AP1967	C.0C173)
(1404	MO 2	10MY1967	0.01270)	(							

Navicula pseudoventralis Hust.

Navicula pseudoventralis Hustedt *in*: A. Schmidt, Atlas Diat., pl. 401, figs. 116-118. 1934.

426 NAPVENTR TOT NO OF STATIONS 1

(1350	BH 2	15AP1967	0.00220)	(	

Navicula pupula Kütz.

Navicula pupula Kützing, Bacill., p. 93, pl. 30, fig. 40. 1844.

427 NAPUPULA TOT NO OF STATIONS 56

(60973	CH	1876	0.02362)	(46523	CH	22NO1946	0.00656)	(46905	CH	JA1947	C.CC245)
(46909	CH	MR1947	0.00455)	(46906	CH	MY1947	C.00398)	(46907	CH	JL1947	0.00049)
(46922	CH	21AU1947	0.00097)	(46758	EV	5JN1937	0.03209)	(46743	EV	20JN1937	C.01285)
(46745	EV	3JL1937	0.02090)	(46770	EV	9JL1937	0.01193)	(46764	EV	17JL1937	C.22562)
(46757	EV	25JL1937	0.03370)	(46747	EV	1AU1937	0.00743)	(46763	EV	23AU1937	C.16234)
(46752	EV	15SE1937	0.08707)	(46750	EV	24SE1937	C.01885)	(46767	EV	27OC1937	C.0C774)
(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	0.08822)	(46756	EV	27AP1938	C.0C168)
(46759	EV	19MY1938	0.0C338)	(1246	F 3	11JN1964	0.00598)	(1279	E 1	16SE1964	C.CC393)
(1285	F 1	15SE1964	0.00582)	(1298	E 1	12OC1964	0.00269)	(1387	GS11	12MY1967	C.0C396)
(1388	GS12	12MY1967	0.00603)	(1389	GS13	12MY1967	0.00258)	(1565	GS13	50C1967	C.07606)
(1566	GS14	50C1967	0.00183)	(1568	GS16	50C1967	0.00144)	(1574	GS22	60C1967	C.01726)
(1547	MS 1	20C1967	0.01597)	(1546	LU 1	20C1967	C.01000)	(1520	HO 1	18SE1967	C.0C471)
(1521	SH 1	18SE1967	0.00577)	(1522	BH 1	18SE1967	0.00729)	(1526	MO 1	20SE1967	0.00569)
(1527	TR 1	20SE1967	0.03774)	(1529	KW 1	20SE1967	0.01199)	(1545	WL 1	20C1967	C.00676)
(1550	MR 1	50C1967	0.09912)	(1553	SG 1	60C1967	0.00734)	(1426	MS 2	29MY1967	0.01050)
(1427	LU 2	29MY1967	0.01211)	(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	C.05506)
(1400	SB 2	6MY1967	0.00596)	(1352	KW 2	21AP1967	0.00859)	(1354	GH 2	25AP1967	C.0C173)
(1429	WL 2	29MY1967	0.01062)	(1404	MO 2	10MY1967	C.05081)	(1405	ES 2	12MY1967	C.01935)
(1407	SM 2	14MY1967	0.00597)	(1422	GA 2	23MY1967	0.00511)	(			

Navicula pupula var. *aquaeductae* (Krasske) Hust.

Navicula aquaeductae Krasske, Bot. Arch., 3:197, fig. 4. 1923.
Navicula pupula var. *aquaeductae* (Krasske) Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 282. 1930.

432 NAPUPUVA TOT NO OF STATIONS 1

(1550	MR 1	50C1967	0.01239)	(	

Navicula pupula var. *capitata* Skv. and Meyer

Navicula pupula var. *capitata* Skvortzow and Meyer, Proc. Sungaree River Biol. Sta., 1(5):15, pl. 1, fig. 40. 1928.

428 NAPUPUEC TOT NO OF STATIONS 7

(46758	EV	5JN1937	0.00357)	(46763	EV	23AU1937	C.C4058)	(46752	EV	15SE1937	C.02177)
(46760	EV	22SE1937	0.0C492)	(1565	GS13	50C1967	0.00507)	(1417	HO 2	22MY1967	C.00374)
(1350	BH 2	19AP1967	0.0C441)	(							

Navicula pupula var. *elliptica* Hust.

Navicula pupula var. *elliptica* Hustedt, Abh. Naturw. Ver. Bremen, 20:291, pl. 3, fig. 40. 1911.

429 NAPUPUEE TOT NO OF STATIONS 2

(46915	CH	20FE1946	0.00569)	(46764	EV	17JL1937	0.00806)	(	

Navicula pupula var. *rectangularis* (Greg.) Grun.

Stauroneis rectangularis Gregory, Quart. J. Micr. Sci., 2:99, pl. 4, fig. 17. 1854.
Navicula pupula var. *rectangularis* (Greg.) Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):45. 1880.

431 NAPUPUER TOT NO OF STATIONS 3

(46764	EV	17JL1937	0.00806)	(1565	GS13	50C1967	0.00507)	(1423	WA 2	25MY1967	C.00428)

Navicula pupula var. *rostrata* Hust.

Navicula pupula var. *rostrata* Hustedt, Abh. Naturw. Ver. Bremen, 20:211, pl. 3, fig. 39. 1911.

433 NAPUPUVR TOT NO OF STATIONS 13

(60973	CH	1876	0.02362)	(46524	CH	10MY1946	0.00071)	(46919	CH	5JN1947	C.00152)
(46922	CH	21AU1947	0.00145)	(46747	EV	1AU1937	0.00743)	(46750	EV	24SE1937	C.00471)
(1388	GS12	12MY1967	0.00603)	(1526	MO 1	20SE1967	0.00569)	(1551	ES 1	50C1967	C.00799)
(1550	MR 1	50C1967	0.01239)	(1350	BH 2	19AP1967	0.00220)	(1407	SM 2	14MY1967	0.00597)
(1421	CH 2	23MY1967	0.01735)	(							

Navicula pygmaea Kütz.

Navicula pygmaea Kützing, Sp. Alg., p. 77. 1849.

434 NAPYGMAE TOT NO OF STATIONS 3

(1264	C' 1	10AU1964	0.00193)	(1565	GS13	50C1967	0.00507)	(1522	BH 1	18SE1967	C.00182)

Navicula quadripartita Hust.

Navicula quadripartita Hustedt, Arch. Hydrobiol., Suppl. 15:263, pl. 18, figs. 35-37. 1937.

436 NAQPARTI TOT NO OF STATIONS 1

(1545	WL 1	20C1967	0.00676)	(

Navicula radiosa Kütz.

Navicula radiosa Kützing, Bacill., p. 91, pl. 4, fig. 23. 1844.

437 NARADIOS TOT NO OF STATIONS 101

(60973	CH	1876	0.02362)	(3540	CH	11MY1879	0.06523)	(3541	CH	1FE1881	C.23476)
(3507	CH	19FE1881	0.04528)	(46910	CH	0C1945	0.00218)	(46921	CH	23ND1945	C.00517)
(46917	CH	12JA1946	0.00527)	(46915	CH	20FE1946	0.01707)	(46914	CH	19AP1946	0.00427)
(46924	CH	10MY1946	0.00423)	(46923	CH	22ND1946	0.03716)	(46920	CH	20DE1946	C.01109)
(46905	CH	JA1947	0.00123)	(46909	CH	MR1947	0.02277)	(46912	CH	AP1947	0.04599)
(46916	CH	4MY1947	0.02409)	(46906	CH	MY1947	0.01858)	(46919	CH	5JN1947	C.10925)
(46907	CH	JL1947	0.11785)	(46922	CH	21AU1947	0.04507)	(46758	EV	5JN1937	C.01783)
(46771	EV	11JN1937	0.00475)	(46743	EV	20JN1937	0.02141)	(46770	EV	9JL1937	C.01193)
(46764	EV	17JL1937	0.20951)	(46757	EV	25JL1937	0.12999)	(46747	EV	1AU1937	C.08664)
(46763	EV	23AU1937	0.04058)	(46752	EV	15SE1937	0.02177)	(46744	EV	6OC1937	C.00488)
(46748	EV	13OC1937	0.02135)	(46767	EV	27OC1937	0.00774)	(46768	EV	16MR1938	C.01470)
(46762	EV	18MR1938	0.06617)	(46751	EV	30MR1938	0.01117)	(46772	EV	18AP1938	0.00710)
(46759	EV	19MY1938	0.00338)	(46766	EV	14DE1938	0.01584)	(1232	E 5	16MY1964	C.00348)
(1240	D 6	10JN1964	0.00153)	(1241	E 2	13JN1964	0.00148)	(1243	E 6	13JN1964	0.00626)
(1244	F 1	11JN1964	0.00768)	(1245	F 2	11JN1964	0.02766)	(1246	F 3	11JN1964	C.03586)
(1258	F 1	6JL1964	0.00708)	(1259	F 2	6JL1964	0.00310)	(1260	F 3	6JL1964	0.00573)
(1268	F 2	15AU1964	0.00547)	(1279	E 1	16SE1964	0.01178)	(1285	F 1	15SE1964	C.03494)
(1286	F 2	15SE1964	0.01095)	(1290	C' 1	16OC1964	0.00379)	(1304	F 1	11OC1964	C.00494)
(1305	F 2	11OC1964	0.00345)	(1306	F 3	11OC1964	0.00832)	(1341	A 3	19AP1967	C.00108)
(1345	C 5	25AP1967	0.00195)	(1379	GS 3	9MY1967	0.00928)	(1380	GS 4	9MY1967	C.00504)
(1382	GS 6	10MY1967	0.01665)	(1383	GS 7	10MY1967	0.00267)	(1384	GS 8	10MY1967	0.00739)
(1385	GS 9	10MY1967	0.00706)	(1386	GS10	12MY1967	0.00287)	(1387	GS11	12MY1967	C.02376)
(1388	GS12	12MY1967	0.23529)	(1389	GS13	12MY1967	0.03868)	(1390	GS14	12MY1967	C.24662)
(1391	GS15	12MY1967	0.19633)	(1392	GS16	12MY1967	0.01541)	(1393	GS17	13MY1967	C.06575)
(1394	GS18	13MY1967	0.11009)	(1395	GS19	13MY1967	0.00352)	(1396	GS20	13MY1967	C.00148)
(1398	GS22	14MY1967	0.00607)	(1558	GS 5	40C1967	0.00793)	(1563	GS11	50C1967	C.00701)
(1564	GS12	50C1967	0.00165)	(1565	GS13	50C1967	0.01521)	(1566	GS14	50C1967	C.01101)
(1567	GS15	50C1967	0.08891)	(1568	GS16	50C1967	0.00289)	(1569	GS17	50C1967	C.13081)
(1570	GS18	50C1967	0.21817)	(1571	GS19	60C1967	0.00117)	(1572	GS20	60C1967	C.00090)
(1574	GS22	60C1967	0.01438)	(1575	GS28	60C1967	0.00387)	(1522	BH 1	18SE1967	C.00182)
(1549	MO 1	40C1967	0.01370)	(1551	ES 1	50C1967	0.00799)	(1552	SM 1	60C1967	C.00660)
(1550	MR 1	50C1967	0.02478)	(1426	MS 2	29MY1967	0.01050)	(1350	BH 2	19AP1967	C.00881)
(1402	TR 2	6MY1967	0.00541)	(1403	CA 2	10MY1967	0.09154)	(1404	MO 2	10MY1967	C.06352)
(1405	ES 2	12MY1967	0.01935)	(1407	SM 2	14MY1967	0.00597)	(			

Navicula radiosa var. *parva* Wallace

Navicula radiosa var. *parva* Wallace, Not. Nat. Acad. Nat. Sci. Philadelphia, 331:3, pl. 1, fig. 5. 1960.

438 NARADIVP TOT NO OF STATIONS 2

(46922	CH	21AU1947	0.00048)	(1285	F 1	15SE1964	0.01165)	(

Navicula radiosa var. *tenella* (Bréb.) Grun.

Navicula tenella de Brébisson *ex* Kützing, Sp. Alg., p. 74. 1849.
Navicula radiosa var. *tenella* (Bréb.) Grunow *in*: Van Heurck, Syn. Diat. Belgique, p. 84. 1885.

439 NARADIVT TOT NO OF STATIONS 57

(46915	CH	20FE1946	0.00569)	(46920	CH	20DE1946	0.00031)	(46919	CH	5JN1947	0.00303)
(46764	EV	17JL1937	0.04029)	(46757	EV	25JL1937	0.01926)	(46763	EV	23AU1937	0.04058)
(46766	EV	14DE1938	0.01584)	(1229	D 5	14MY1964	0.00211)	(1231	E 3	16MY1964	0.00245)
(1240	D 6	10JN1964	0.00153)	(1243	E 6	13JN1964	0.00209)	(1244	F 1	11JN1964	0.00439)
(1256	E 2	14JL1964	0.00183)	(1258	F 1	6JL1964	0.00944)	(1268	E 2	15AU1964	0.01094)
(1270	F 1	10AU1964	0.01634)	(1275	D 2	17SE1964	0.00645)	(1279	E 1	16SE1964	0.01178)
(1285	F 1	15SE1964	0.52996)	(1286	F 2	15SE1964	0.01095)	(1304	F 1	11OC1964	0.00494)
(1320	E 4	7NO1964	0.00207)	(1340	C 7	28MR1967	0.00073)	(1341	A 3	19AP1967	0.00325)
(1452	E 2	14JL1967	0.00852)	(1536	E 2	24SE1967	0.00545)	(1541	E 2	11OC1967	0.01064)
(1542	E 3	11OC1967	0.00509)	(1387	GS11	12MY1967	0.00396)	(1388	GS12	12MY1967	0.00603)
(1389	GS13	12MY1967	0.00258)	(1390	GS14	12MY1967	0.00587)	(1394	GS18	13MY1967	0.00344)
(1395	GS19	13MY1967	0.00117)	(1554	GS 1	30C1967	0.00712)	(1555	GS 2	30C1967	0.00706)
(1557	GS 4	30C1967	0.01121)	(1558	GS 5	40C1967	0.00793)	(1560	GS 8	40C1967	0.00945)
(1574	GS22	60C1967	0.00863)	(1544	MU 1	20C1967	0.00477)	(1547	MS 1	20C1967	0.00798)
(1522	BH 1	18SE1967	0.00182)	(1530	FR 1	24SE1967	0.12001)	(1549	MQ 1	40C1967	0.01370)
(1552	SM 1	60C1967	0.00660)	(1550	MR 1	50C1967	0.04956)	(1553	SG 1	60C1967	0.01469)
(1428	MU 2	29MY1967	0.00301)	(1426	MS 2	29MY1967	0.02100)	(1350	BH 2	19AP1967	0.06388)
(1402	TR 2	6MY1967	0.00541)	(1352	KW 2	21AP1967	0.00859)	(1354	GH 2	25AP1967	0.00345)
(1403	CA 2	10MY1967	0.23539)	(1404	MQ 2	10MY1967	0.08892)	(1405	ES 2	12MY1967	0.01290)

Navicula reinhardtii (Grun.) Grun.

Stauroneis reinhardtii Grunow, Verh. Zool.-Bot. Ges. Wien, 10:566, pl. 6, fig. 19. 1860.
Navicula reinhardtii (Grun.) Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):32. 1880.

440 NAREINHA TOT NO OF STATIONS 41

(60973	CH	1876	0.04724)	(3540	CH	11MY1879	0.00932)	(3541	CH	1FE1881	0.00978)
(46910	CH	0C1945	0.00109)	(46921	CH	23NO1945	0.00129)	(46917	CH	12JA1946	0.00055)
(46924	CH	10MY1946	0.00071)	(46920	CH	20DE1946	0.00246)	(46916	CH	4MY1947	0.00034)
(46906	CH	MY1947	0.00066)	(46907	CH	JL1947	0.00148)	(46922	CH	21AU1947	0.00097)
(46758	EV	5JN1937	0.00713)	(46752	EV	15SE1937	0.06530)	(46750	EV	24SE1937	0.00943)
(46744	EV	60C1937	0.00488)	(46748	EV	13OC1937	0.02135)	(46767	EV	27OC1937	0.00774)
(46749	EV	12MR1938	0.01214)	(46751	EV	30MR1938	0.01117)	(46761	EV	27MY1938	0.00273)
(1236	C' 1	8JN1964	0.00175)	(1245	F 2	11JN1964	0.00346)	(1258	F 1	6JL1964	0.00236)
(1285	F 1	15SE1964	0.00582)	(1541	E 2	11OC1967	0.00532)	(1387	GS11	12MY1967	0.00396)
(1391	GS15	12MY1967	0.00479)	(1396	GS20	13MY1967	0.00148)	(1398	GS22	14MY1967	0.00304)
(1574	GS22	60C1967	0.00575)	(1575	GS28	60C1967	0.00387)	(1544	MU 1	20C1967	0.00238)
(1545	WL 1	20C1967	0.00676)	(1550	MR 1	50C1967	0.01239)	(1426	MS 2	29MY1967	0.02100)
(1354	GH 2	25AP1967	0.00345)	(1429	WL 2	29MY1967	0.01062)	(1404	MQ 2	10MY1967	0.01270)
(1405	ES 2	12MY1967	0.00645)	(1407	SM 2	14MY1967	0.00597)	(			

Navicula reinhardtii var. *elliptica* Herib.

Navicula reinhardtii var. *elliptica* Héribaud, Diat. Foss. Auvergne, Vol. 2, p. 8. 1903.

441 NAREINVE TOT NO OF STATIONS 7

(46905	CH	JA1947	0.00245)	(46915	CH	5JN1947	0.00152)	(1544	MU 1	20C1967	0.00238)
(1528	SB 1	20SE1967	0.01444)	(1428	MU 2	29MY1967	0.00301)	(1427	LU 2	29MY1967	0.03632)
(1354	GH 2	25AP1967	0.00518)	(							

Navicula rhynchocephala Kütz.

Navicula rhynchocephala Kützing, Bacill., p. 152, pl. 30, fig. 35. 1844.

442 NARHYNCH TOT NO OF STATIONS 7

(46915	CH	20FE1946	0.00569)	(46920	CH	20DE1946	0.00031)	(46916	CH	4MY1947	0.00034)
(46764	EV	17JL1937	0.00806)	(46757	EV	25JL1937	0.00481)	(46763	EV	23AU1937	0.02029)
(46768	EV	16MR1938	0.01470)	(							

Navicula rotunda Hust.

Navicula rotunda Hustedt, Arch. Hydrobiol., 40:916, pl. 41, fig. 29. 1945.

443 NAROTUND TOT NO OF STATIONS 10

(1565	GS13	50C1967	0.04563)	(1575	GS28	60C1967	0.00129)	(1546	LU 1	20C1967	0.01000)
(1525	PW 1	20SE1967	0.01393)	(1526	MO 1	20SE1967	0.00569)	(1527	TR 1	20SE1967	0.01887)
(1549	MQ 1	40C1967	0.01370)	(1550	MR 1	50C1967	0.01239)	(1350	BH 2	19AP1967	0.00661)
(1402	TR 2	6MY1967	0.00541)	(							

Navicula salinarum Grun.

Navicula salinarum Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):33, pl. 2, fig. 34. 1880.

444 NASALINA TOT NO OF STATIONS 1

(46916	CH	4MY1947	0.00034)	(							

Navicula schoenfeldii Hust.

Navicula schönfeldii Hustedt *in*: Pascher, Sussw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 301, fig. 520. 1930.

455 NASCHONC TOT NO OF STATIONS 1

(1550	MR 1	5OC1967	0.01239)	(							

Navicula scutelloides Wm. Smith

Navicula scutelloides Wm. Smith *ex* Gregory, Quart. J. Micr. Sci., 4:4, pl. 1, fig. 15. 1856.

445 NASCUTEL TOT NO OF STATIONS 38

(60973	CH	1876	0.02362)	(3540	CH	11MY1879	0.00466)	(46920	CH	20DE1946	0.00031)
(46747	EV	1AU1937	0.00248)	(1245	F 2	11JN1964	0.00346)	(1267	D 6	18AU1964	0.00216)
(1274	D 1	17SE1964	0.00469)	(1279	E 1	16SE1964	0.01571)	(1304	F 1	11OC1964	0.00247)
(1320	E 4	7NO1964	0.00207)	(1541	E 2	11OC1967	0.00532)	(1542	E 3	11OC1967	0.01017)
(1382	GS 6	10MY1967	0.00278)	(1395	GS19	13MY1967	0.00117)	(1396	GS20	13MY1967	0.00222)
(1554	GS 1	3OC1967	0.00712)	(1555	GS 2	3OC1967	0.00706)	(1556	GS 3	3OC1967	0.00521)
(1557	GS 4	3OC1967	0.00374)	(1558	GS 5	4OC1967	0.00396)	(1565	GS13	5OC1967	1.29804)
(1567	GS15	5OC1967	0.00794)	(1569	GS17	5OC1967	0.00149)	(1571	GS19	6OC1967	0.00059)
(1572	GS20	6OC1967	0.00721)	(1573	GS21	6OC1967	0.00448)	(1574	GS22	6OC1967	0.01438)
(1575	GS28	6OC1967	0.00387)	(1546	LU 1	2OC1967	0.00500)	(1520	HO 1	18SE1967	0.00471)
(1530	FR 1	24SE1967	0.03000)	(1550	MR 1	5OC1967	0.11151)	(1553	SG 1	6OC1967	0.02938)
(1426	MS 2	29MY1967	0.01050)	(1427	LU 2	29MY1967	0.08475)	(1350	BH 2	19AP1967	0.00881)
(1354	GH 2	25AP1967	0.00173)	(1404	MQ 2	10MY1967	0.03811)	(			

Navicula semenoides Hust.

Navicula semenoides Hustedt, Arch. Hydrobiol., 18:163, pl. 5, fig. 8. 1927.

373 NADECUSC TOT NO OF STATIONS 6

(1279	E 1	16SE1964	0.00393)	(1319	E 3	7NO1964	0.00262)	(1343	A 6	19AP1967	0.00069)
(1388	GS12	12MY1967	0.01810)	(1565	GS13	5OC1967	0.29916)	(1573	GS21	6OC1967	0.00112)

Navicula seminuloides Hust.

Navicula seminuloides Hustedt *in*: A. Schmidt, Atlas Diat., pl. 401, figs. 68-71. 1936.

448 NASEMINO TOT NO OF STATIONS 5

(1286	F 2	15SE1964	0.01095)	(1325	F 3	6NO1964	0.00252)	(1348	E 5	23AP1967	0.00137)
(1567	GS15	5OC1967	0.00318)	(1521	SH 1	18SE1967	0.00577)	(			

Navicula seminulum Grun.

Navicula seminulum Grunow, Verh. Zool.-Bot. Ges. Wien, 10:552, pl. 4, fig. 3. 1860.

446 NASEMINU TOT NO OF STATIONS 26

(46920	CH	20DE1946	0.00031)	(46909	CH	MR1947	0.00455)	(1278	D 6	18SE1964	0.00284)
(1279	E 1	16SE1964	0.01178)	(1285	F 1	15SE1964	0.00582)	(1318	E 2	7NO1964	0.00190)
(1348	E 5	23AP1967	0.00137)	(1565	GS13	5OC1967	8.51840)	(1566	GS14	5OC1967	0.00183)
(1567	GS15	5OC1967	0.00476)	(1569	GS17	5OC1967	0.00149)	(1574	GS22	6OC1967	0.01438)
(1546	LU 1	2OC1967	0.01501)	(1521	SH 1	18SE1967	0.00577)	(1522	BH 1	18SE1967	0.00547)
(1523	RA 1	15SE1967	0.00923)	(1526	MO 1	20SE1967	0.00569)	(1527	TR 1	20SE1967	0.03774)
(1529	KW 1	20SE1967	0.01199)	(1545	WL 1	2OC1967	0.00676)	(1551	ES 1	5OC1967	0.00799)
(1552	SM 1	6OC1967	0.00660)	(1550	MR 1	5OC1967	0.49560)	(1553	SG 1	6OC1967	0.02203)
(1350	BH 2	19AP1967	0.07048)	(1354	GH 2	25AP1967	0.00173)	(			

Navicula seminulum var. *intermedia* Hust.

Navicula seminulum var. *intermedia* Hustedt, Arch. Hydrobiol., 39:110, figs. 25-28. 1942.

447 NASEMIVI TOT NO OF STATIONS 1

(1264 C' 1 10AU1964 0.00193) (

Navicula similis Krasske

Navicula similis Krasske, Bot. Arch., 27:254, fig. 15. 1929.

450 NASIMILI TOT NO OF STATIONS 3

(388 GS12 12MY1967 0.00603) (1565 GS13 5OC1967 0.01521) (1350 BH 2 19AP1967 0.00220)

Navicula simplex Krasske

Navicula simplex Krasske, Abh. Ber. Ver. Naturk. Cassel, 56:112, pl. 1, fig. 16. 1925.

459 NASIMPLE TOT NO OF STATIONS 1

(1350 BH 2 19AP1967 0.00220) (

Navicula skabitschewskyi Kiselev

Navicula skabitschewskyi Kiselev (original description not available, cited in Zabelina *et al*, Opred, Presn. Vod. USSR, p. 279. 1951).

451 NASKABIO TOT NO OF STATIONS 1

(1349 CI 2 19AP1967 0.00359) (

Navicula stroesei A. Cleve

Stauroneis dilatata Wm. Smith *sensu* Strüse, Festschr. XXXVII Versamml. Deutsch. Philog. Schulm. Dessau, p. 11, pl. 1, fig. 28. 1884. (non Wm. Smith 1853).
Navicula tuscula var. *strösei* Østrup, Danske Diat., p. 84, pl. 1, fig. 28. 1910.
Navicula strösei A. Cleve, Acta Forest. Fennica, 22(4):63. 1922.
Navicula pseudotuscula Hustedt, Internat. Rev. Hydrobiol., 43:170. 1943.

452 NASTROES TOT NO OF STATIONS 9

(46758	EV	5JN1937	0.01426)	(46764	EV	17JL1937	0.04029)	(46757	EV	25JL1937	0.00963)
(1382	GS 6	10MY1967	0.00278)	(1388	GS12	12MY1967	0.01207)	(1391	GS15	12MY1967	0.00479)
(1565	GS13	5OC1967	0.00507)	(1569	GS17	5OC1967	0.00149)	(1574	GS22	6OC1967	0.00288)

Navicula stroemii Hust.

Navicula strömii Hustedt, Arch. Hydrobiol., 22:544, fig. 3. 1931.

453 NASTROMO TOT NO OF STATIONS 3

(46919 CH 5JN1947 0.00910) (46747 EV 1AU1937 0.00248) (1565 GS13 5OC1967 0.02028)

Navicula subcostulata Hust.

Navicula subcostulata Hustedt, Abh. Bremen Wiss. Ges., 8/9:386, fig. 13. 1934.

457 NASCOSTU TOT NO OF STATIONS 1

(1433 C 3 17JN1967 0.00646) (

Navicula subhamulata Grun.

Navicula subhamulata Grunow *in*: Van Heurck, Syn. Diat. Belgique, p. 106, pl. 13, fig. 14. 1885.

458 NASHAMUL TOT NO OF STATIONS 5

(1574	GS22	6OC1967	0.00288)	(1545	WL 1	20C1967	0.00676)	(1549	MQ 1	4OC1967	0.01370)
(1350	BH 2	19AP1967	0.00441)	(1403	CA 2	10MY1967	0.01308)	(			

Navicula subrhynchocephala Hust.

Navicula subrhynochocephala Hustedt, Arch. Hydrobiol., Suppl. 14:156, pl. 1, fig. 11. 1935.

487 NASPECCI TOT NO OF STATIONS 19

(60973	CH	1876	0.04724)	(46915	CH	20FE1946	0.00569)	(46758	EV	5JN1937	0.00357)
(46743	EV	20JN1937	0.00428)	(46770	EV	9JL1937	0.01789)	(46764	EV	17JL1937	0.06446)
(46757	EV	25JL1937	0.03370)	(46763	EV	23AU1937	0.12175)	(46752	EV	15SE1937	0.02177)
(46760	EV	22SE1937	0.00492)	(46768	EV	16MR1938	0.04410)	(46762	EV	18MR1938	0.08822)
(46766	EV	14DE1938	0.01584)	(1306	F 3	11OC1964	0.00277)	(1557	GS 4	30C1967	0.00374)
(1546	LU 1	20C1967	0.02501)	(1350	BH 2	19AP1967	0.00661)	(1404	MQ 2	10MY1967	0.05081)
(1407	SM 2	14MY1967	0.00597)	(							

Navicula subrotundata Hust.

Navicula subrotundata Hustedt, Arch. Hydrobiol., 40:917, pl. 41, figs. 30-33. 1945.

460 NASROTUD TOT NO OF STATIONS 12

(46916	CH	4MY1947	0.00034)	(1274	C 1	17SE1964	0.00469)	(1275	D 2	17SE1964	0.00645)
(1348	E 5	23AP1967	0.00137)	(1449	C 3	16JL1967	0.00382)	(1538	E 5	23SE1967	0.00552)
(1384	GS 8	10MY1967	0.00185)	(1565	GS13	5OC1967	0.04056)	(1574	GS22	6OC1967	0.00575)
(1545	WL 1	20C1967	0.00676)	(1350	BH 2	19AP1967	0.00881)	(1354	GH 2	25AP1967	0.00345)

Navicula subsulcata Hust.

Navicula subsulcata Hustedt, Arch. Hydrobiol., Suppl 15:261, pl. 18, fig. 7. 1938.

526 NASPECAZ TOT NO OF STATIONS 1

(1350	BH 2	19AP1967	0.00220)	(

Navicula tantula Hust.

Navicula tantula Hustedt, Internat. Rev. Hydrobiol., 43:162. 1943.

461 NATANTUL TOT NO OF STATIONS 27

(46763	EV	23AU1937	0.02029)	(1272	C 1	10SE1964	0.00410)	(1274	D 1	17SE1964	0.01408)
(1275	D 2	17SE1964	0.00645)	(1278	D 6	18SE1964	0.00384)	(1280	E 2	16SE1964	0.00681)
(1281	E 3	16SE1964	0.00392)	(1282	E 4	16SE1964	0.01108)	(1284	E 6	17SE1964	0.00318)
(1285	F 1	15SE1964	0.01747)	(1287	F 3	15SE1964	0.00500)	(1303	E 6	13OC1964	0.01119)
(1322	E 6	7NO1964	0.00333)	(1323	F 1	6NO1964	0.00139)	(1324	F 2	6NO1964	0.00233)
(1343	A 6	19AP1967	0.00069)	(1534	A 6	19SE1967	0.00310)	(1538	E 5	23SE1967	0.00552)
(1565	GS13	5OC1967	0.00507)	(1567	GS15	5OC1967	0.00476)	(1571	GS19	6OC1967	0.00059)
(1523	RA 1	19SE1967	0.00923)	(1525	PW 1	20SE1967	0.01393)	(1545	WL 1	20C1967	0.01351)
(1551	ES 1	5OC1967	0.00799)	(1550	MR 1	5OC1967	0.03717)	(1417	HO 2	22MY1967	0.00748)

Navicula tridentula var. *parallela* Krasske

Navicula tridentula var. *parallela* Krasske, Abh. Ver. Naturk. Cassel, 56:46, pl. 2, fig. 35. 1926.

462 NATRIDFP TOT NO OF STATIONS 2

(1550	MR 1	5OC1967	0.01239)	(1404	MQ 2	10MY1967	0.01270)	(

Navicula tripunctata (O. F. Müll.) Bory

Vibrio tripunctata O. F. Müller, Animal. Infus., p. 52, pl. 7, fig. 2. 1786.
Navicula tripunctata (O. F. Müll.) Bory, Encyclop. Method., p. 563. 1824.

463 NATRIPUN TCT NO OF STATIONS 77

(3540	CH	11MY1879	0.00932)	(3541	CH	1FE1881	0.00978)	(46910	CH	0C1945	C.0C109)
(46921	CH	23N01945	0.00065)	(46917	CH	12JA1946	0.00083)	(46914	CH	19AP1946	C.00107)
(46905	CH	JA1947	0.00123)	(46909	CH	MR1947	0.00455)	(46906	CH	MY1947	C.00066)
(46758	EV	5JN1937	0.01070)	(46764	EV	17JL1937	0.01612)	(46768	EV	16MR1938	C.C1470)
(46762	EV	18MR1938	0.06617)	(1232	E 5	16MY1964	0.00174)	(1236	C' 1	8JN1964	C.00525)
(1240	D 6	10JN1964	0.00767)	(1243	E 6	13JN1964	0.00209)	(1264	C' 1	10AU1964	C.00386)
(1272	C' 1	10SE1964	0.00410)	(1273	C' 2	10SE1964	0.01075)	(1285	F 1	15SE1964	C.C1165)
(1301	E 4	13OC1964	0.00442)	(1324	F 2	6N01964	0.00233)	(1341	A 3	19AP1967	C.0C434)
(1345	C 5	25AP1967	0.00195)	(1375	E 3	7MY1967	0.00241)	(1435	C 7	13JN1967	C.00316)
(1504	A 3	28AU1967	0.00247)	(1533	A 4	19SE1967	0.00464)	(1534	A 6	19SE1967	C.0C310)
(1536	E 2	24SE1967	0.00273)	(1378	GS 2	9MY1967	0.00421)	(1379	GS 3	9MY1967	C.00309)
(1397	GS21	13MY1967	0.00131)	(1555	GS 2	30C1967	0.00353)	(1559	GS 7	40C1967	C.CC699)
(1565	GS13	50C1967	0.00507)	(1567	GS15	50C1967	0.00159)	(1569	GS17	50C1967	C.00297)
(1570	GS18	50C1967	0.01983)	(1571	GS19	60C1967	0.00117)	(1572	GS20	60C1967	C.CC090)
(1574	GS22	60C1967	0.01438)	(1575	GS28	60C1967	0.00258)	(1524	MI 1	20SE1967	C.04378)
(1546	LU 1	20C1967	0.01501)	(1520	HC 1	18SE1967	0.00471)	(1521	SH 1	18SE1967	C.01731)
(1522	BH 1	18SE1967	0.02918)	(1523	RA 1	19SE1967	0.00923)	(1526	MO 1	20SE1967	C.06258)
(1527	TR 1	20SE1967	0.00629)	(1529	KW 1	20SE1967	0.02398)	(1531	GH 1	25SE1967	C.04227)
(1545	WL 1	20C1967	0.02027)	(1548	CA 1	30C1967	0.02544)	(1549	MQ 1	40C1967	C.01370)
(1551	ES 1	50C1967	0.00799)	(1550	MR 1	50C1967	0.03717)	(1553	SG 1	60C1967	C.0C734)
(1428	MU 2	29MY1967	0.03314)	(1426	MS 2	29MY1967	0.04199)	(1427	LU 2	29MY1967	0.01211)
(1417	HO 2	22MY1967	0.02617)	(1418	SH 2	22MY1967	0.01555)	(1350	BH 2	19AP1967	C.14097)
(1399	PW 2	5MY1967	0.0068C)	(1401	MO 2	6MY1967	0.06468)	(1402	TR 2	6MY1967	0.01624)
(1400	SB 2	6MY1967	0.07148)	(1352	KW 2	21AP1967	0.00859)	(1354	GH 2	25AP1967	C.00863)
(1429	WL 2	29MY1967	0.05308)	(1403	CA 2	10MY1967	0.02615)	(1406	GB 2	13MY1967	C.0C809)
(1422	GA 2	23MY1967	0.01022)	(1423	WA 2	25MY1967	0.00428)	(			

Navicula tripunctata var. *cuneata* (Lauby) comb. nov.

Navicula gracilis var. *cuneata* Lauby, Bull. Serv. Carte Geol. France, 125:145, pl. 10, fig. 8. 1910.

464 NATRIPVC TCT NC CF STATICNS 6

(46915	CH	20FE1946	0.01707)	(46919	CH	5JN1947	0.00455)	(1272	C' 1	10SE1964	C.CC410)
(1575	GS28	6OC1967	0.00129)	(1524	MI 1	20SE1967	0.06567)	(1350	BH 2	19AP1967	0.00661)

Navicula tripunctata var. *schizonemoides* (V. H.) Patr.

Schizonema neglectum Thwaites, Annals Mag. Nat. Hist., Ser. 2, 1:171, pl. 12(J), figs. 1-4. 1848.
Navicula gracilis var. *schizonemoides* Van Heurck, Syn. Diat. Belgique, p. 83. 1885.
Navicula tripunctata var. *schizonemoides* (V. H.) Patrick, Proc. Acad. Nat. Sci. Philadelphia, 111:106, pl. 7, fig. 2. 1959.

465 NATRIPVS TCT NC CF STATICNS 5

(46922	CH	21AU1947	0.00097)	(1279	E 1	16SE1964	0.00393)	(1346	C 7	21AP1967	C.0C134)
(1557	GS 4	30C1967	0.00374)	(1558	GS 5	40C1967	0.00396)	(			

Navicula tuscula Ehr.

Navicula tuscula Ehrenberg, Ber. Akad. Wiss. Berlin, 1840:215. 1840.

466 NATUSCUL TCT NC CF STATICNS 25

(60973	CH	1876	0.02262)	(3541	CH	1FE1881	0.03913)	(46921	CH	23N01945	C.00065)
(46917	CH	12JA1946	0.00028)	(46914	CH	19AP1946	0.00107)	(46924	CH	10MY1946	0.00071)
(46923	CH	22N01946	0.00437)	(46920	CH	20DE1946	C.00031)	(46922	CH	21AU1947	C.CC291)
(46743	EV	20JN1937	0.00428)	(46745	EV	3JL1937	0.02090)	(46757	EV	25JL1937	0.00481)
(46747	EV	1AU1937	0.01238)	(46763	EV	23AU1937	C.C4058)	(46752	EV	15SE1937	C.04354)
(46750	EV	24SE1937	0.00943)	(1244	F 1	11JN1964	0.00110)	(1266	D 3	18AU1964	0.00351)
(1541	F 2	11OC1967	0.00532)	(1565	GS13	50C1967	0.00507)	(1574	GS22	60C1967	C.00575)
(1527	TR 1	20SE1967	0.00629)	(1545	WL 1	2CC1967	0.00676)	(1550	MR 1	50C1967	C.01239)
(1401	MO 2	6MY1967	0.CC588)	(							

Navicula tuscula fo. *obtusa* Hust.

Navicula tuscula fo. *obtusa* Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 309. 1930.

467 NATUSCVM TOT NO OF STATIONS 17

(3540	CH	11MY1879	0.00466)	(46763	EV	23AU1937	0.02029)	(1268	E 2	15AU1964	0.00274)
(1285	F 1	15SE1964	0.00582)	(1541	E 2	11OC1967	0.00532)	(1394	GS18	13MY1967	0.00172)
(1555	GS 2	3OC1967	0.00353)	(1560	GS 8	4OC1967	0.00472)	(1567	GS15	5OC1967	0.00159)
(1574	GS22	6OC1967	0.00863)	(1530	FR 1	24SE1967	0.03000)	(1545	WL 1	2OC1967	0.00676)
(1553	SG 1	6OC1967	0.00734)	(1426	MS 2	29MY1967	0.01050)	(1403	CA 2	10MY1967	0.01308)
(1404	MQ 2	10MY1967	0.01270)	(1405	ES 2	12MY1967	0.00645)	(			

Navicula tuscula fo. *rostrata* Hust.

Navicula tuscula fo. *rostrata* Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 308. 1930.

469 NATUSCVB TOT NO OF STATIONS 1

(1404	MQ 2	10MY1967	0.01270)	(

Navicula vanheurckii Patr.

Navicula vanheurckii Patrick *in*: Patrick and Reimer, Acad. Nat. Sci. Philadelphia Monogr., 13:491, pl. 46, fig. 22. 1966.

472 NAVANHEU TOT NO OF STATIONS 7

(1275	D 2	17SE1964	0.00645)	(1388	GS12	12MY1967	0.01207)	(1389	GS13	12MY1967	0.00516)
(1392	GS16	12MY1967	0.00925)	(1396	GS20	13MY1967	0.00074)	(1554	ES 1	3OC1967	0.00356)
(1545	WL 1	2OC1967	0.00676)	(							

Navicula ventosa Hust.

Navicula ventosa Hustedt, Abh. Naturw. Ver. Bremen, 34:281, fig. 28-31. 1957.

473 NAVENTOS TOT NO OF STATIONS 4

(1544	MU 1	2OC1967	0.00238)	(1527	TR 1	20SE1967	0.00629)	(1550	MR 1	5OC1967	0.01239)
(1354	GH 2	25AP1967	0.00173)	(							

Navicula ventralis Krasske

Navicula ventralis Krasske, Bot. Arch., 3:197, fig. 3. 1923.

474 NAVENTRA TOT NO OF STATIONS 2

(1550	MR 1	5OC1967	0.06195)	(1404	MQ 2	10MY1967	0.01270) (

Navicula viridula (Kütz.) Kütz.

Frustulia viridula Kützing, Linnaea, 8:551, pl. 13, fig. 12. 1833.
Navicula viridula (Kütz.) Kützing, Bacill., p. 91, pl. 30, fig. 47. 1844.

475 NAVIRIDU TOT NO OF STATIONS 25

(46917	CH	12JA1946	0.00028)	(46523	CH	22NO1946	0.00219)	(46920	CH	20DE1946	0.00031)
(46907	CH	JL1947	0.00099)	(46757	EV	25JL1937	0.00481)	(46747	EV	1AU1937	0.00248)
(1341	A 3	19AP1967	0.00108)	(1448	A 6	10JL1967	0.00354)	(1523	A 4	19SE1967	0.00464)
(1566	GS14	5OC1967	0.00183)	(1567	GS15	5OC1967	0.00159)	(1569	GS17	5OC1967	0.00149)
(1522	BH 1	18SE1967	0.00729)	(1531	GH 1	25SE1967	0.01691)	(1545	WL 1	2OC1967	0.00676)
(1550	MR 1	5OC1967	0.03717)	(1553	SG 1	6OC1967	0.01469)	(1426	MS 2	29MY1967	0.05249)
(1427	LU 2	29MY1967	0.01211)	(1417	HO 2	22MY1967	0.00748)	(1350	BH 2	19AP1967	0.01982)
(1401	MO 2	6MY1967	0.00588)	(1354	GH 2	25AP1967	0.00518)	(1349	CI 2	19AP1967	0.00359)
(1422	GA 2	23MY1967	0.00511)	(							

Navicula viridula var. *avenacea* (Bréb.) V. H.

Navicula (viridula Kg. var.?*) avenacea* de Brébisson *ex* Grunow *in*: Schneider, Naturw. Beitr. Kenntn. Kaukasusländer, p. 112, pl. 4, fig. 23. 1878.
Navicula viridula var. *avenacea* (Bréb.) Van Heurck, Syn. Diat. Belgique, p. 84. 1885.

476 NAVIRIVA TOT NO OF STATIONS 8

(46924	CH	10MY1946	0.00071)	(46922	CH	21AU1967	0.00048)	(1559	GS 7	40C1967	0.00350)
(1546	LU 1	20C1967	0.00500)	(1427	LU 2	29MY1967	0.01211)	(1350	BH 2	19AP1967	0.00881)
(1354	GH 2	25AP1967	0.00173)	(1422	GA 2	23MY1967	0.02044)	(			

Navicula viridula var. *linearis* Hust.

Navicula viridula var. *linearis* Hustedt, Arch. Hydrobiol., Suppl. 15:264, pl. 19, figs. 1-2. 1937.

478 NAVIRIVL TOT NO OF STATIONS 6

(1316	D 6	9NO1964	0.00378)	(1395	GS19	13MY1967	0.00117)	(1571	GS19	6OC1967	0.00059)
(1575	GS28	6OC1967	0.00129)	(1520	HO 1	18SE1967	0.00471)	(1427	LU 2	29MY1967	0.01211)

Navicula viridula var. *rostellata* (Kütz.) Cleve

Navicula rostellata Kützing, Bacill., p. 95, pl. 3, fig. 65. 1844.
Navicula viridula var. *rostellata* (Kütz.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 27(3):15. 1895.

479 NAVIRIVR TOT NO OF STATIONS 5

(46758	EV	5JN1937	0.00357)	(1571	GS15	6OC1967	0.00059)	(1550	MR 1	5OC1967	0.01239)
(1350	BH 2	19AP1967	0.00220)	(1421	CH 2	23MY1967	0.01735)	(			

Navicula vulpina Kütz.

Navicula vulpina Kützing, Bacill., p. 92, pl. 3, fig. 43. 1844.

480 NAVULPIN TOT NO OF STATIONS 2

(1388	GS12	12MY1967	0.00603)	(1403	CA 2	10MY1967	0.01308)

Navicula wittrockii (Lagerst.) A. Cleve

Stauroneis wittrockii Lagerstedt, Bih. K. Svenska Vet.-Akad. Handl., 1(14):38, pl. 2, fig. 15. 1873.
Navicula wittrockii (Lagerst.) A. Cleve, Soc. Sci. Fennica Comm. Biol., 4(14):86. 1934.

481 NAWITTRO TOT NO OF STATIONS 7

(1285	F 1	15SE1964	0.00582)	(1389	GS13	12MY1967	0.00258)	(1396	GS20	13MY1967	0.00074)
(1565	GS13	5OC1967	0.01014)	(1567	GS15	5OC1967	0.00159)	(1571	GS19	6OC1967	0.00059)
(1550	MR 1	5OC1967	0.01239)	(							

Navicula zanoni Hust.

Navicula zanoni Hustedt, Inst. Parcs Nat. Congo Belge, Expl. Parc. Nat. Albert, (Damas 1935-1936), Facs. 8:92, pl. 5, figs. 1-5. 1949.

485 NASPECOE TOT NO OF STATIONS 35

(46923	CH	22NO1946	0.00219)	(1229	D 5	14MY1964	0.00423)	(1439	B 6	5JN1964	0.00200)
(1244	F 1	11JN1964	0.00987)	(1245	F 2	11JN1964	0.01383)	(1246	F 3	11JN1964	0.01793)
(1256	E 2	14JL1964	0.01282)	(1258	F 1	6JL1964	0.00944)	(1259	F 2	6JL1964	0.02479)
(1260	F 3	6JL1964	0.02674)	(1268	E 2	15AU1964	0.00274)	(1284	E 6	17SE1964	0.00635)
(1285	F 1	15SE1964	0.01747)	(1287	F 3	15SE1964	0.00500)	(1302	E 5	13OC1964	0.00405)
(1305	F 2	11OC1964	0.00173)	(1323	F 1	6NO1964	0.00418)	(1324	F 2	6NO1964	0.00466)
(1346	C 7	21AP1967	0.00134)	(1381	GS 5	10MY1967	0.00239)	(1383	GS 7	10MY1967	0.00535)
(1388	GS12	12MY1967	0.02413)	(1390	GS14	12MY1967	0.02936)	(1393	GS17	13MY1967	0.01096)
(1394	GS18	13MY1967	0.00688)	(1564	GS12	5OC1967	0.00165)	(1566	GS14	5OC1967	0.00183)
(1567	GS15	5OC1967	0.00159)	(1547	MS 1	2OC1967	0.00798)	(1546	LU 1	2OC1967	0.00500)
(1520	HO 1	18SE1967	0.00471)	(1527	TR 1	20SE1967	0.00629)	(1545	WL 1	2OC1967	0.00676)
(1426	MS 2	29MY1967	0.01050)	(1403	CA 2	10MY1967	0.05231)	(			

Species *incertae sedis*

Navicula (viridula var.?)

477 NAVIRIVB TOT NO OF STATIONS 4

(1521	SH 1	18SE1967	0.00577)	(1522	BH 1	18SE1967	0.02370)	(1550	MR 1	5OC1967	C.01239)		
(1417	HO 2	22MY1967	0.00374)	(									

Navicula (tuscula var. 1*)*

468 NATUSCVA TOT NO OF STATIONS 1

(1388	GS12	12MY1967	0.00603)	(

Navicula (tuscula var. 3*)*

471 NATUSCFR TOT NO OF STATIONS 5

(46758	EV	5JN1937	0.00357)	(46764	EV	17JL1937	0.01612)	(1574	GS22	6OC1967	C.00288)		
(1527	TR 1	20SE1967	0.00629)	(1350	BH 2	19AP1967	0.00220)	(					

Navicula sp. (aff. N. *lacustris)*

397 NALACUSG TOT NO OF STATIONS 12

(46924	CH	10MY1946	0.00071)	(46920	CH	20DE1946	0.00031)	(46916	CH	4MY1947	C.00034)		
(46906	CH	MY1947	0.00133)	(46922	CH	21AU1947	0.00388)	(1544	MU 1	20C1967	0.00238)		
(1546	LU 1	20OC1967	0.01000)	(1521	SH 1	18SE1967	0.00577)	(1527	TR 1	20SE1967	C.06918)		
(1529	KW 1	20SE1967	0.01199)	(1402	TR 2	6MY1967	0.00541)	(1429	WL 2	29MY1967	C.01062)		

Navicula "pygmaea var. *producta"* (not validly described)

435 NAPYGMVP TOT NO OF STATIONS 3

(1264	C' 1	10AU1964	0.00193)	(1533	A 4	19SE1967	0.00464)	(1396	GS20	13MY1967	C.00074)		

Navicula sp. #3.

483 NASPECOC TOT NO OF STATIONS 1

(1265	C' 2	10AU1964	0.00224)	(

Navicula sp. #4.

484 NASPECOD TOT NO OF STATIONS 3

(1388	GS12	12MY1967	0.00603)	(1565	GS13	5OC1967	0.02028)	(1566	GS14	5OC1967	C.00183)		

Navicula sp. #8.

486 NASPECOH TOT NO OF STATIONS 11

(46907	CH	JL1947	0.00049)	(1304	F 1	11OC1964	0.00247)	(1396	GS20	13MY1967	C.00074)		
(1545	WL 1	20C1967	0.10812)	(1552	SM 1	6OC1967	0.01321)	(1550	MR 1	5OC1967	C.03717)		
(1428	MU 2	29MY1967	0.00301)	(1426	MS 2	29MY1967	C.01050)	(1427	LU 2	29MY1967	C.06053)		
(1350	BH 2	19AP1967	0.01542)	(1402	TR 2	6MY1967	0.02707)	(					

Navicula sp. #10.

488 NASPECOJ TOT NO OF STATIONS 1

(1343	A 6	19AP1967	C.00069)	(

Navicula sp. #12.

490 NASPECOL TOT NO OF STATIONS 37

(46919	CH	5JN1947	0.27162)	(46758	EV	5JN1937	0.00713)	(46743	EV	20JN1937	C.00428)		
(46770	EV	9JL1937	0.02385)	(46764	EV	17JL1937	0.20951)	(46757	EV	25JL1937	C.12036)		
(46747	EV	1AU1937	0.00743)	(46763	EV	23AU1937	0.16234)	(46752	EV	15SE1937	C.17414)		
(46750	EV	24SE1937	0.01414)	(46748	EV	13OC1937	0.10675)	(46767	EV	27OC1937	0.01160)		
(46749	EV	12MR1938	0.01214)	(46768	EV	16MR1938	0.10290)	(46762	EV	18MR1938	C.02206)		
(46751	EV	30MR1938	0.01117)	(46761	EV	27MY1938	0.00818)	(1258	F 1	6JL1964	0.00472)		
(1260	F 3	6JL1964	0.00191)	(1540	C 5	4OC1967	C.00496)	(1541	E 2	11OC1967	C.01597)		

(1387	GS11	12MY1967	0.00396)	(1394	GS18	13MY1967	0.00172)	(1554	GS 1	30C1967	C.00356)
(1559	GS 7	40C1967	0.00350)	(1565	GS13	50C1967	0.01014)	(1574	GS22	60C1967	0.00863)
(1544	MU 1	20C1967	0.00715)	(1547	MS 1	20C1967	0.00798)	(1546	LU 1	20C1967	C.04001)
(1526	MO 1	20SE1967	0.01138)	(1527	TR 1	20SE1967	0.00629)	(1529	KW 1	20SE1967	0.02398)
(1545	WL 1	2CC1967	0.02703)	(1551	ES 1	50C1967	0.01598)	(1552	SM 1	6CC1967	0.00660)
(1550	MR 1	50C1967	0.02478)	(							

Navicula sp. #13.

491 NASPECCM TCT NO OF STATIONS 5

(46747	EV	1AU1937	0.00248)	(1285	F 1	15SE1964	0.00582)	(1565	GS13	50C1967	C.01521)
(1527	TR 1	20SE1967	0.00629)	(1403	CA 2	10MY1967	0.01308)	(			

Navicula sp. #14.

492 NASPECCN TCT NO OF STATIONS 2

(1286	F 2	15SE1964	0.01095)	(1527	TR 1	20SE1967	0.01258)	(

Navicula sp. #15.

493 NASPECOO TCT NO OF STATIONS 1

(1522	BH 1	18SE1967	0.00547)	(

Navicula sp. #18.

495 NASPECOR TCT NC OF STATICNS 1

(1545	WL 1	2CC1967	0.00676)	(

Navicula sp. #19.

496 NASPECOS TOT NO OF STATICNS 27

(46921	CH	23NO1945	C.00065)	(46517	CH	12JA1946	0.00166)	(46915	CH	20FE1946	C.0C569)
(46914	CH	19AP1946	0.00107)	(46924	CH	10MY1946	0.00141)	(46923	CH	22NO1946	0.00219)
(46920	CH	20DE1946	0.00092)	(46519	CH	5JN1947	0.00455)	(46922	CH	21AU1947	0.00145)
(46764	EV	17JL1937	0.00806)	(46747	EV	1AU1937	0.00248)	(46763	EV	23AU1937	C.02029)
(46744	EV	6OC1937	0.00975)	(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	C.02206)
(1387	GS11	12MY1967	0.00396)	(1388	GS12	12MY1967	0.00603)	(1556	GS 3	30C1967	C.00521)
(1565	GS13	5OC1967	0.02028)	(1566	GS14	5OC1967	0.00183)	(1567	GS15	5OC1967	C.0C159)
(1574	GS22	6OC1967	0.01151)	(1546	LU 1	20C1967	C.02001)	(1531	GH 1	25SE1967	0.00845)
(1550	MR 1	50C1967	0.01239)	(1351	MI 2	21AP1967	0.00310)	(1350	BH 2	19AP1967	C.00220)

Navicula sp. #22.

498 NASPECOV TOT NO OF STATICNS 2

(46906	CH	MY1947	0.00066)	(1285	F 1	15SE1964	0.00582)	(

Navicula sp. #23.

499 NASPECOW TOT NO OF STATIONS 15

(46758	EV	5JN1937	0.00713)	(46764	EV	17JL1937	C.00806)	(46763	EV	23AU1937	C.10146)
(46750	EV	24SE1937	0.00471)	(46767	EV	27OC1937	0.00387)	(46762	EV	18MR1938	0.06617)
(1451	C 7	16JL1967	C.00197)	(1542	E 3	11OC1967	C.00509)	(1546	LU 1	20C1967	C.C1000)
(1545	WL 1	2OC1967	0.08109)	(1550	MR 1	5OC1967	C.01239)	(1426	MS 2	29MY1967	C.02100)
(1354	GH 2	25AP1967	0.00173)	(1407	SM 2	14MY1967	C.00597)	(1423	WA 2	25MY1967	C.0C428)

Navicula sp. #24.

500 NASPECOX TOT NO OF STATIONS 5

(46917	CH	12JA1946	0.00028)	(46907	CH	JL1947	C.00049)	(46743	EV	20JN1937	C.0C428)
(1537	E 3	24SE1967	0.00431)	(1541	E 2	11OC1967	0.00532)	(			

Navicula sp. #25.

501 NASPECGY TOT NO OF STATIONS 1

(1541 E 2 11OC1967 0.00532) (

Navicula sp. #26.

502 NASPECOZ TOT NO OF STATIONS 1

(46906 CH MY1947 C.00066) (

Navicula sp. #27.

503 NASPECAA TOT NO OF STATIONS 5

(46910 CH OC1945 0.00109) (46764 EV 17JL1937 C.01612) (46763 EV 23AU1937 C.04058)
(1390 GS14 12MY1967 0.00587) (1545 WL 1 2OC1967 0.00676) (

Navicula sp. #29.

504 NASPECAC TOT NO OF STATIONS 4

(46757 EV 25JL1937 0.0C481) (46752 EV 15SE1937 C.02177) (46768 EV 16MR1936 C.C1470)
(1544 MU 1 2OC1967 0.00953) (

Navicula sp. #30.

505 NASPECAD TOT NO OF STATIONS 1

(46757 EV 25JL1937 C.CC481) (

Navicula sp. #31.

506 NASPECAE TOT NO OF STATIONS 1

(46758 EV 5JN1937 0.0C357) (

Navicula sp. #32.

507 NASPECAF TOT NO OF STATIONS 1

(46767 EV 27OC1937 0.0C387) (

Navicula sp. #33.

508 NASPECAG TOT NO OF STATIONS 1

(46763 EV 23AU1937 0.02C29) (

Navicula sp. #34.

509 NASPECAH TOT NO OF STATIONS 6

(1389 GS13 12MY1967 0.00258) (1574 GS22 6OC1967 0.00288) (1550 MR 1 5OC1967 C.C1239)
(1350 BH 2 19AP1967 0.00220) (1400 SB 2 6MY1967 0.00596) (1429 WL 2 29MY1967 C.01062)

Navicula sp. #35.

510 NASPECAI TOT NO OF STATIONS 1

(1554 GS 1 3CC1967 0.00356) (

Navicula sp. #36.

511 NASPECAJ TOT NO OF STATIONS 2

(1565 GS13 5OC1967 0.01014) (1546 LU 1 2OC1967 C.00500) (

Navicula sp. #37.

512 NASPECAK TOT NO OF STATIONS 1

(1565 GS13 50C1967 0.00507) (

Navicula sp. #38.

513 NASPECAL TOT NO OF STATIONS 2

(1565 GS13 50C1967 0.04056) (1350 BH 2 19AP1967 0.00661) (

Navicula sp. #39.

514 NASPECAM TOT NO OF STATIONS 2

(1565 GS13 50C1967 0.01521) (1350 BH 2 19AP1967 0.00441) (

Navicula sp. #40.

515 NASPECAN TOT NO OF STATIONS 3

(1567 GS15 50C1967 0.00159) (1426 MS 2 29MY1967 0.01050) (1354 GH 2 25AP1967 0.00173)

Navicula sp. #41.

516 NASPECAC TOT NO OF STATIONS 1

(1574 GS22 60C1967 0.00288) (

Navicula sp. #42.

517 NASPECAP TOT NO OF STATIONS 1

(1546 LU 1 2CC1967 0.00500) (

Navicula sp. #43.

518 NASPECAQ TOT NO OF STATIONS 6

(1526 HO 1 20SE1967 0.00569) (1527 TR 1 20SE1967 0.00629) (1550 MR 1 50C1967 0.03717)
(1417 HO 2 22MY1967 0.00374) (1350 BH 2 19AP1967 0.00220) (1402 TR 2 6MY1967 0.00541)

Navicula sp. #44.

519 NASPECAR TOT NO OF STATIONS 2

(1545 WL 1 20C1967 0.10136) (1350 BH 2 19AP1967 0.00220) (

Navicula sp. #45.

520 NASPECAS TOT NO OF STATIONS 1

(1545 WL 1 20C1967 0.00676) (

Navicula sp. #46.

521 NASPECAT TOT NO OF STATIONS 2

(1545 WL 1 20C1967 0.00676) (1350 BH 2 19AP1967 0.00220) (

Navicula sp. #47.

522 NASPECAU TOT NO OF STATIONS 1

(1550 MR 1 50C1967 0.01239) (

Navicula sp. #48.

523 NASPECAV TOT NO OF STATIONS 1

(1550 MR 1 50C1967 0.01239) (

Navicula sp. #49.

524 NASPECAW TOT NO OF STATIONS 1

(1550 MR 1 50C1967 0.04956) (

Navicula sp. #50.

525 NASPECAX TOT NC CF STATIONS 1

(1550 MR 1 50C1967 0.01239) (

Navicula sp. #53.

527 NASPECBA TOT NO CF STATICNS 1

(1350 BH 2 19AP1967 0.00441) (

Navicula sp. #54.

528 NASPECBB TOT NC CF STATICNS 2

(1350 BH 2 19AP1967 C.CC220) (1405 ES 2 12MY1967 0.0C645) (

Navicula sp. #55.

529 NASPECBC TCT NO OF STATIGNS 2

(1422 GA 2 23MY1967 0.01022) (1423 WA 2 25MY1967 C.00428) (

Genus *Neidium* Pfitz.

Pfitzer, Bot. Abh. Geb. Morph. Physiol., 1(2):39. 1871.

In most instances members of the genus *Neidium* comprise a minor component of epipelic communities in freshwater. Probably none of the species may be classified as euplanktonic but occasional specimens are found in plankton collections. Members of the genus are very rare in our collections, and those noted come from nearshore localities.

Neidium affine (Ehr.) Pfitz.

Navicula affinis Ehrenberg, Abh. Akad. Wiss. Berlin, 1841:417, pl. 2(2), fig. 7. 1843.
Neidium affine (Ehr.) Pfitzer, Bot. Abh. Geb. Morph. Physiol., 1(2):39. 1871.

530 NEAFFINE TOT NO OF STATIONS 7

(46909	CH	MR1947	0.00455)	(46506	CH	MY1947	0.00066)	(46758	EV	5JN1937	0.01426)
(46747	EV	1AU1937	0.00248)	(46752	EV	15SE1937	0.04354)	(46762	EV	18MR1938	0.02206)
(46759	EV	19MY1938	0.00338)	(							

Neidium affine var. *humerus* Reim.

Neidium affine var. *humerus* Reimer, Proc. Acad. Nat. Sci. Philadelphia, 111:12, pl. 4, fig. 3. 1959.

531 NEAFFIVH TOT NO OF STATIONS 4

(46764	EV	17JL1937	0.00806)	(46765	EV	30AU1937	0.00558)	(46762	EV	18MR1938	0.02206)
(1565	ES13	5OC1967	0.00507)	(							

Neidium binode (Ehr.) Hust.

Navicula binodis Ehrenberg, Ber. Akad. Wiss. Berlin, 1840:212. 1840.
Neidium binodis (Ehr.) Hustedt, Arch. Hydrobiol., 40:933. 1945.

532 NEBINODE TOT NO OF STATIONS 1

(46757	EV	25JL1937	0.00481)	(

Neidium bisulcatum (Lagerst.) Cleve

Navicula bisulcata Lagerstedt, Bih. K. Svenska Vet.-Akad. Handl., 1(14):31, pl. 1, fig. 8. 1873.
Neidium bisulcatum (Largerst.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):68. 1894.

533 NEBISULC TOT NO OF STATIONS 1

(1350	BH 2	19AP1967	0.00220)	(

Neidium bisulcatum var. *baicalense* (Skv. and Meyer) Reim.

Neidium bisulcatum fo. *baicalensis* Skvortzow and Meyer, Proc. Sungaree River Biol. Sta., 1(5):14, pl. 1, fig. 50. 1928.
Neidium bisulcatum var. *baicalensis* (Skv. and Meyer) Reimer, Proc. Acad. Nat. Sci. Philadelphia, 111:18, pl. 2, fig. 2. 1959.

534 NEBISVBC TOT NO OF STATIONS 1

(46758	EV	5JN1937	0.00357)	(

Neidium calvum Østr.

Neidium calvum Østrup, Danske Diat., p. 20, pl. 1, fig. 11. 1910.

535 NECALVUM TOT NO OF STATIONS 1

(46760	EV	22SE1937	0.00492)	(											

Neidium dubium (Ehr.) Cleve

Navicula dubia Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:418, pl. 2(2), fig. 8. 1843.
Neidium dubium (Ehr.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):70. 1894.

536 NEDUBIUM TOT NO OF STATIONS 3

(46909	CH	MR1947	0.00455)	(1258	F 1	6JL1964	0.00236)	(1522	BH 1	18SE1967	0.00182)				

Neidium dubium fo. *constrictum* Hust.

Neidium dubium fo. *constricta* Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 246, fig. 384b. 1930.

537 NEDUBIFC TOT NO OF STATIONS 9

(3540	CH	11MY1879	0.00466)	(46758	EV	5JN1937	0.00713)	(46768	EV	16MR1938	0.01470)				
(46756	EV	27AP1938	0.00168)	(1240	D 6	10JN1964	0.00153)	(1568	GS16	5OC1967	0.00144)				
(1574	GS22	6OC1967	0.01151)	(1427	LU 2	29MY1967	0.01211)	(1407	SM 2	14MY1967	0.00597)				

Neidium iridis (Ehr.) Cleve

Navicula iridis Ehrenberg, Abh. Akad. Wiss. Berlin, 1841:418, pl. 4(1), fig. 2. 1843.
Neidium iridis (Ehr.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):69. 1894.

538 NEIRIDIS TOT NO OF STATIONS 1

(1426	MS 2	29MY1967	0.01050)	(											

Neidium iridis var. *amphigomphus* (Ehr.) A. Mayer

Navicula amphigomphus Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:417, pl. 3(1), fig. 8. 1843.
Neidium iridis var. *amphigomphus* (Ehr.) A. Mayer. Denkschr. Bayer. Bot. Ges. Regensburg, 13:30. 1917.

539 NEIRIDVA TOT NO OF STATIONS 1

(1567	GS15	5OC1967	0.00159)	(											

Neidium iridis var. *vernalis* Reichelt

Neidium iridis var. *vernalis* Reichelt, Sitzungsber. Naturf. Ges. Leipzig, 24:8. 1897.

540 NESPECOB TOT NO OF STATIONS 8

(46915	CH	20FE1946	0.00569)	(46909	CH	MR1947	0.00911)	(46907	CH	JL1947	0.00049)				
(46758	EV	5JN1937	0.00357)	(46764	EV	17JL1937	0.00806)	(46757	EV	25JL1937	0.00481)				
(46747	EV	1AU1937	0.00743)	(1565	GS13	5OC1967	0.00507)	(							

Neidium kozlowi Mereschk.

Neidium kozlowi Mereschkowsky, Arb. Exped. Kais. Russischen Geogr. Ges., 1899-1901, Vol. 8, p. 16, fig. 7. 1906.

544 NESPECOF TOT NO OF STATIONS 1

(1388	GS12	12MY1967	0.00603)	(											

Neidium ladogense (Cleve) comb. nov.

Navicula ladogensis Cleve, Acta Soc. Fauna Fl. Fennica, 8(2):35, pl. 2, fig. 3. 1891.

Coll: 1388.

Neidium sacoense Reim.

Neidium sacoense Reimer *in*: Patrick and Reimer, Acad. Nat. Sci. Philadelphia Monogr., 13:402, pl. 37, fig. 3. 1966.

Coll: 1813.

Species *incertae sedis*

Neidium sp. #3.

541 NESPECOC TCT NO OF STATIONS 18

(60973	CH	1876	0.04724)	(3541	CH	1FE1881	C.00578)	(46923	CH	22NO1946	C.CC219)
(46920	CH	20DE1946	0.00031)	(46758	EV	5JN1937	C.00713)	(46770	EV	9JL1937	C.0C596)
(46757	EV	25JL1937	0.00481)	(46763	EV	23AU1937	C.04058)	(46752	EV	15SE1937	C.02177)
(1541	E 2	11OC1967	0.00532)	(1571	GS19	6OC1967	C.00059)	(1575	GS28	6OC1967	C.CC129)
(1544	MU 1	20C1967	0.00238)	(1521	SH 1	18SE1967	0.00577)	(1527	TR 1	20SE1967	C.02516)
(1530	FR 1	24SE1967	C.01000)	(1545	WL 1	20C1967	0.00676)	(1553	SG 1	6OC1967	C.CC734)

Neidium sp. #4.

542 NESPECCO TCT NO OF STATIONS 2

(46747	EV	1AU1937	0.00248)	(46768	EV	16MR1938	C.01470)

Neidium sp. #5.

543 NESPECOE TOT NO OF STATIONS 1

(46764	EV	17JL1937	C.0C8C6)

Genus *Nitzschia* Hass.
Hassall, Hist. British Freshw. Alg., Vol. 1, p. 435. 1845.

The members of the genus *Nitzschia* occurring in Lake Michigan are found in a variety of habitats. Although the greatest number of species are found in benthic environments, a number of species are apparently euplanktonic. Besides the euplanktonic species, many of the entities that find their primary habitat in epipelic communities are successful facultative planktonts and are regularly taken in plankton collections, usually in low numbers.

Nitzschia acicularis (Kütz.) Wm. Smith

Synedra acicularis Kützing, Bacill., p. 63, pl. 4, fig. 3. 1844.
Nitzschia acicularis (Kütz.) Wm. Smith, Syn. British Diat., Vol. 1, p. 39, pl. 13, fig. 108. 1853.

545 NIACICUL TOT NO OF STATIONS 25

(46906	CH	MY1947	0.00066)	(46764	EV	17JL1937	0.02417)	(1231	E 3	16MY1964	C.CC489)
(1439	B 6	5JN1964	0.00799)	(1238	D 3	11JN1964	0.00400)	(1241	E 2	13JN1964	0.00148)
(1243	E 6	13JN1964	0.00209)	(1246	F 3	11JN1964	C.C0598)	(1252	C° 1	16JL1964	C.0C279)
(1257	E 3	14JL1964	0.00479)	(1258	F 1	6JL1964	0.00944)	(1259	F 2	6JL1964	0.01549)
(1260	F 3	6JL1964	0.00191)	(1340	C 7	28MR1967	C.00073)	(1449	C 3	16JL1967	C.00382)
(1450	C 5	16JL1967	0.00190)	(1546	LU 1	20C1967	0.00500)	(1551	ES 1	5OC1967	C.00799)
(1550	MR 1	5OC1967	0.03717)	(1426	MS 2	29MY1967	C.01050)	(1350	BH 2	19AP1967	C.CC220)
(1401	MO 2	6MY1967	0.01176)	(1353	FR 2	23AP1967	C.01055)	(1354	GH 2	25AP1967	0.00345)
(1349	CI 2	19AP1967	0.00359)	(							

Nitzschia acuta Hantz.

Nitzschia acuta Hantzsch *ex* Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):90. 1880.

546 NIACUTA TCT NO OF STATIONS 124

(60973	CH	1876	0.04724)	(3541	CH	1FE1881	C.00578)	(46910	CH	0C1945	C.00109)
(46921	CH	23N01945	0.00388)	(46917	CH	12JA1946	0.00111)	(46915	CH	20FE1946	C.01138)
(46914	CH	19AP1946	0.00747)	(46924	CH	10MY1946	0.00282)	(46923	CH	22N01946	C.00219)
(46920	CH	20DE1946	0.00031)	(46905	CH	JA1947	0.00123)	(46909	CH	MR1947	C.01366)
(46916	CH	4MY1947	0.00407)	(46906	CH	MY1947	0.00597)	(46919	CH	5JN1947	C.01366)
(46907	CH	JL1947	0.00937)	(46922	CH	21AU1947	0.00145)	(46758	EV	5JN1937	C.02853)
(46771	EV	11JN1937	0.01664)	(46743	EV	20JN1937	0.02997)	(46770	EV	9JL1937	C.00596)
(46757	EV	25JL1937	0.00481)	(46747	EV	1AU1937	0.00248)	(46756	EV	27AP1938	C.00336)
(46759	EV	19MY1938	0.01013)	(46761	EV	27MY1938	0.01363)	(1233	B 3	5JN2964	0.00238)
(1439	B 6	5JN1964	0.02198)	(1441	B 6	24JL1964	0.00441)	(1250	C 6	10JL1964	C.01233)
(1252	C' 1	16JL1964	0.00279)	(1255	C 5	15JL1964	0.00513)	(1256	E 2	14JL1964	C.02565)
(1257	E 3	14JL1964	0.00718)	(1258	F 1	6JL1964	C.01180)	(1259	F 2	6JL1964	C.00930)
(1260	F 3	6JL1964	0.01528)	(1271	C 7	22SE1964	C.00653)	(1284	E 6	17SE1964	C.02542)
(1285	F 1	15SE1964	0.01747)	(1286	F 2	15SE1964	C.01095)	(1290	C' 1	16OC1964	C.00379)
(1297	D 6	14OC1964	0.00190)	(1302	E 5	13OC1964	0.02429)	(1304	F 1	11OC1964	C.00988)
(1305	F 2	11OC1964	C.01035)	(1306	F 3	11OC1964	0.01940)	(1311	D 1	8N01964	C.00258)
(1319	E 3	7N01964	0.00524)	(1321	E 5	7N01964	0.00638)	(1322	E 6	7N01964	C.02000)
(1323	F 1	6N01964	0.00279)	(1337	C 3	2MR1967	0.00147)	(1338	C 3	28MR1967	C.00529)
(1339	C 5	28MR1967	0.00624)	(1340	C 7	28MR1967	0.00436)	(1341	A 3	19AP1967	C.00542)
(1342	A 4	19AP1967	0.00361)	(1343	A 6	19AP1967	0.00208)	(1346	C 7	21AP1967	C.00935)
(1348	E 5	23AP1967	C.00960)	(1368	A 3	4MY1967	0.00314)	(1369	A 4	4MY1967	C.00373)
(1370	A 6	3MY1967	0.01151)	(1372	C 5	5MY1967	0.00355)	(1374	E 2	7MY1967	C.00299)
(1375	E 3	7MY1967	0.00241)	(1376	E 5	6MY1967	0.00281)	(1408	A 3	23MY1967	C.01342)
(1410	A 6	24MY1967	0.03383)	(1412	C 5	31MY1967	0.00421)	(1415	E 3	28MY1967	C.00225)
(1431	A 3	12JN1967	0.00257)	(1432	A 4	13JN1967	0.00766)	(1435	C 7	13JN1967	C.00631)
(1448	A 6	10JL1967	0.00354)	(1536	E 2	24SE1967	0.00273)	(1379	GS 3	9MY1967	C.00309)
(1381	GS 5	10MY1967	0.00477)	(1382	GS 6	10MY1967	0.00833)	(1383	GS 7	10MY1967	C.01604)
(1386	GS10	12MY1967	0.00287)	(1387	GS11	12MY1967	0.01584)	(1388	GS12	12MY1967	C.00603)
(1389	GS13	12MY1967	0.00516)	(1390	GS14	12MY1967	0.00587)	(1391	GS15	12MY1967	C.00479)
(1393	GS17	13MY1967	C.01096)	(1394	GS18	13MY1967	0.02580)	(1395	GS19	13MY1967	C.00705)
(1397	GS21	13MY1967	0.00327)	(1555	GS 2	3OC1967	0.00353)	(1557	GS 4	3OC1967	0.00747)
(1559	GS 7	4OC1967	0.00350)	(1560	GS 8	4OC1967	0.00472)	(1568	GS16	5OC1967	C.00289)
(1569	GS17	5OC1967	0.00149)	(1544	MU 1	2CC1967	0.00477)	(1520	HO 1	18SE1967	C.00471)
(1528	SB 1	20SE1967	0.01444)	(1551	ES 1	5OC1967	C.01598)	(1552	SM 1	6OC1967	C.00660)
(1550	MR 1	5CC1967	C.18585)	(1553	SG 1	6OC1967	0.00734)	(1426	MS 2	29MY1967	C.02100)
(1427	LU 2	29MY1967	0.01211)	(1417	HO 2	22MY1967	0.01495)	(1425	RA 2	25MY1967	C.01768)
(1399	PW 2	5MY1967	0.00680)	(1401	MO 2	6MY1967	0.00588)	(1402	TR 2	6MY1967	C.00541)
(1400	SB 2	6MY1967	0.02383)	(1352	KW 2	21AP1967	C.02577)	(1429	WL 2	29MY1967	C.03185)
(1403	CA 2	10MY1967	0.17000)	(1404	MO 2	10MY1967	0.01270)	(1405	ES 2	12MY1967	C.02580)
(1407	SM 2	14MY1967	0.00597)	(1349	CI 2	19AP1967	C.01078)	(1406	GB 2	13MY1967	0.01078)
(1421	CH 2	23MY1967	0.01735)	(1422	GA 2	23MY1967	C.04598)	(1423	WA 2	25MY1967	C.00428)
(1424	KN 2	25MY1967	0.01332)	(							

Nitzschia amphibia Grun.

Nitzschia amphibia Grunow, Verh. Zool.-Bot. Ges. Wien, 12:574, pl. 18, fig. 23. 1862.

547 NIAMPHIB TCT NO OF STATIONS 52

(46910	CH	0C1945	0.00328)	(46921	CH	23N01945	C.00388)	(46915	CH	20FE1946	C.02845)
(46914	CH	19AP1946	0.00320)	(46924	CH	10MY1946	0.00141)	(46923	CH	22N01946	C.01530)
(46920	CH	20DE1946	0.00185)	(46905	CH	JA1947	0.00123)	(46909	CH	MR1947	C.00911)
(46916	CH	4MY1947	0.00068)	(46906	CH	MY1947	C.00066)	(46919	CH	5JN1947	C.00455)
(46907	CH	JL1947	0.00296)	(46922	CH	21AU1947	C.01018)	(46758	EV	5JN1937	C.02140)
(46743	EV	20JN1937	0.00428)	(46770	EV	9JL1937	0.00596)	(46764	EV	17JL1937	C.12893)
(46757	EV	25JL1937	0.18295)	(46747	EV	1AU1937	0.05446)	(46763	EV	23AU1937	C.40584)
(46765	EV	30AU1937	0.02789)	(46752	EV	15SE1937	C.13061)	(46760	EV	22SE1937	C.00985)
(46750	EV	24SE1937	0.00471)	(46748	EV	13OC1937	0.10675)	(46768	EV	16MR1938	C.17639)
(46762	EV	18MR1938	0.15439)	(46766	EV	14DE1938	0.03169)	(1243	E 6	13JN1964	C.00209)
(1252	C' 1	16JL1964	0.00279)	(1279	E 1	16SE1964	0.00393)	(1284	E 6	17SE1964	C.00318)
(1343	A 6	19AP1967	0.00069)	(1383	GS 7	10MY1967	C.00267)	(1557	GS 4	3OC1967	C.00374)
(1559	GS 7	4OC1967	0.00350)	(1566	GS14	5OC1967	C.00183)	(1573	GS21	6OC1967	C.00112)
(1546	LU 1	2OC1967	0.00500)	(1522	BH 1	18SE1967	0.00365)	(1527	TR 1	20SE1967	C.01258)
(1545	WL 1	2CC1967	0.00676)	(1549	MO 1	4OC1967	0.01370)	(1550	MR 1	5OC1967	C.11151)
(1553	SG 1	6OC1967	0.01469)	(1428	MU 2	29MY1967	0.00301)	(1426	MS 2	29MY1967	C.01050)
(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	C.07048)	(1407	SM 2	14MY1967	C.00597)
(1406	GB 2	13MY1967	0.00270)	(							

Nitzschia amphibia var. *fossilis* Grun.

Nitzschia amphibia var. *fossilis* Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):98. 1880.

549 NIAMPHVQ TOT NO OF STATIONS 3

(46747	EV	1AU1937	C.0C248)	(1574	GS22	6CC1967	0.00288)	(1550	MR 1	5OC1967	C.01239)

Nitzschia angustata (Wm. Smith) Grun.

Tryblionella angustata Wm. Smith, Syn. British Diat., Vol. 1, p. 36, suppl. pl. 30, fig. 262. 1853.
Nitzschia angustata (Wm. Smith) Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):70. 1880.

550 NIANGUST TOT NO OF STATIONS 75

(60973	CH	1876	0.11809)	(3540	CH	11MY1875	0.02796)	(3541	CH	1FE1881	0.28367)
(3507	CH	19FE1881	0.03396)	(46521	CH	23ND1945	0.02199)	(46917	CH	12JA1946	0.00471)
(46915	CH	20FE1946	0.01707)	(46914	CH	19AP1946	0.00747)	(46924	CH	10MY1946	0.00494)
(46923	CH	22ND1946	0.06338)	(46520	CH	20DE1946	0.01356)	(46905	CH	JA1947	0.00735)
(46909	CH	MR1947	0.01821)	(46516	CH	4MY1947	0.00170)	(46906	CH	MY1947	0.00996)
(46919	CH	5JN1947	0.02731)	(46507	CH	JL1947	0.01183)	(46922	CH	21AU1947	0.01648)
(46758	EV	5JN1937	0.00357)	(46743	EV	20JN1937	0.00856)	(46764	EV	17JL1937	0.02223)
(46757	EV	25JL1937	0.00963)	(46747	EV	1AU1937	0.00990)	(46763	EV	23AU1937	0.30438)
(46752	EV	15SE1937	0.08707)	(46760	EV	22SE1937	0.01477)	(46750	EV	24SE1937	0.04713)
(46744	EV	6OC1937	0.01463)	(46748	EV	13OC1937	0.04270)	(46767	EV	27OC1937	0.04255)
(46768	EV	16MR1938	0.02940)	(46762	EV	18MR1938	0.28672)	(46756	EV	27AP1938	0.00168)
(1228	D 2	14MY1964	0.00195)	(1258	F 1	6JL1964	0.00236)	(1259	F 2	6JL1964	0.00310)
(1264	C' 1	10AU1964	0.00193)	(1279	E 1	16SE1964	0.00393)	(1284	E 6	17SE1964	0.00318)
(1285	F 1	15SE1964	0.05241)	(1297	D 6	14OC1964	0.00190)	(1300	E 3	13OC1964	0.00358)
(1303	E 6	13OC1964	0.00560)	(1304	F 1	11OC1964	0.00494)	(1322	E 6	7ND1964	0.00333)
(1337	C 3	2MR1967	0.00147)	(1387	GS11	12MY1967	0.00396)	(1388	GS12	12MY1967	0.00603)
(1390	GS14	12MY1967	0.01174)	(1391	GS15	12MY1967	0.00479)	(1398	GS22	14MY1967	0.00304)
(1557	GS 4	30OC1967	0.00374)	(1567	GS15	5OC1967	0.00159)	(1572	GS20	6OC1967	0.00090)
(1574	GS22	6OC1967	0.00863)	(1526	MO 1	20SE1967	0.00569)	(1527	TR 1	20SE1967	0.00629)
(1529	KW 1	20SE1967	0.01199)	(1549	MQ 1	4OC1967	0.01370)	(1552	SM 1	6OC1967	0.01981)
(1550	MR 1	5OC1967	0.02478)	(1553	SG 1	6OC1967	0.01469)	(1426	PS 2	29MY1967	0.02100)
(1350	BH 2	19AP1967	0.00220)	(1401	MO 2	6MY1967	0.00588)	(1402	TR 2	6MY1967	0.00541)
(1400	SB 2	6MY1967	0.00596)	(1403	CA 2	10MY1967	0.06539)	(1404	MQ 2	10MY1967	0.01270)
(1407	SM 2	14MY1967	0.01791)	(1349	CI 2	19AP1967	0.00359)	(1419	BU 2	23MY1967	0.01831)
(1421	CH 2	23MY1967	0.01735)	(1422	GA 2	23MY1967	0.00511)	(1423	WA 2	25MY1967	0.00428)

Nitzschia angustata var. *acuta* Grun.

Nitzschia angustata var. *acuta* Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):70. 1880.

551 NIANGUVA TOT NO OF STATIONS 5

(46920	CH	20DE1946	0.00062)	(46519	CH	5JN1947	0.00303)	(1244	F 1	11JN1964	0.00219)
(1541	E 2	11OC1967	0.00532)	(1556	GS 3	30OC1967	0.00521)	(			

Nitzschia apiculata (Greg.) Grun.

Tryblionella apiculata Gregory, Trans. Micr. Soc. (London), n. s., 4:79, pl. 1, fig. 43. 1857.
Nitzschia apiculata (Greg.) Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):73. 1880.

552 NIAPICUL TOT NO OF STATIONS 1

(1406	GB 2	13MY1967	0.00270)	(

Nitzschia bacata Hust.

Nitzschia bacata Hustedt, Arch. Hydrobiol. Suppl., 15(3):485, pl. 41, figs. 30-33. 1938.

553 NIBACATA TOT NO OF STATIONS 188

(60973	CH	1876	0.02362)	(46510	CH	OC1945	0.00218)	(46921	CH	23ND1945	0.00323)
(46917	CH	12JA1946	0.00166)	(46515	CH	20FE1946	0.01707)	(46914	CH	19AP1946	0.00641)
(46924	CH	10MY1946	0.00141)	(46520	CH	20DE1946	0.00031)	(46909	CH	MR1947	0.00911)
(46916	CH	4MY1947	0.00204)	(46506	CH	MY1947	0.11880)	(46919	CH	5JN1947	0.14112)
(46907	CH	JL1947	0.32052)	(46522	CH	21AU1947	0.00436)	(46758	EV	5JN1937	0.00357)
(46771	EV	11JN1937	0.02140)	(46743	EV	20JN1937	0.03426)	(46764	EV	17JL1937	0.90250)
(46757	EV	25JL1937	0.01926)	(46747	EV	1AU1937	0.01980)	(46763	EV	23AU1937	0.08117)
(46744	EV	6OC1937	0.01463)	(46748	EV	13OC1937	0.02135)	(46767	EV	27OC1937	0.00387)
(46745	EV	12MR1938	0.01214)	(46756	EV	27AP1938	0.00672)	(46759	EV	19MY1938	0.00338)
(46761	EV	27MY1938	0.00273)	(46766	EV	14DE1938	0.03169)	(1224	B 4	18MY1964	0.01961)
(1225	C 6	15MY1964	0.02352)	(1226	C 7	16MY1964	0.05327)	(1227	C' 2	13MY1964	0.00548)
(1228	D 2	14MY1964	0.14403)	(1229	D 5	14MY1964	0.11207)	(1230	E 2	16MY1964	0.41488)
(1231	E 3	16MY1964	0.34243)	(1232	E 5	16MY1964	0.73046)	(1233	B 3	5JN2964	0.01429)
(1234	B 3	18JN1964	0.00562)	(1235	C 7	16JN1964	0.00847)	(1439	B 6	5JN1964	0.12787)
(1236	C' 1	8JN1964	0.01050)	(1237	C' 2	8JN1964	0.06445)	(1238	D 3	11JN1964	0.38600)
(1239	D 4	11JN1964	0.00696)	(1240	D 6	10JN1964	0.04909)	(1241	E 2	13JN1964	0.06062)
(1242	E 3	13JN1964	0.01049)	(1243	E 6	13JN1964	0.15451)	(1244	F 1	11JN1964	0.06031)
(1245	F 2	11JN1964	0.12102)	(1246	F 3	11JN1964	0.12550)	(1248	B 3	24JL1964	0.00197)
(1440	B 6	11JL1964	0.01106)	(1441	B 6	24JL1964	0.00220)	(1250	C 6	10JL1964	0.01644)
(1252	C' 1	16JL1964	0.00279)	(1253	C' 2	16JL1964	0.00456)	(1254	D 2	15JL1964	0.08044)
(1255	D 5	15JL1964	0.02053)	(1256	E 2	14JL1964	0.19785)	(1257	E 3	14JL1964	0.24405)
(1258	F 1	6JL1964	0.15103)	(1259	F 2	6JL1964	0.02169)	(1260	F 3	6JL1964	0.02101)
(1261	B 3	2AU1964	0.00196)	(1265	C' 2	10AU1964	0.00224)	(1266	D 3	18AU1964	0.00351)
(1268	E 2	15AU1964	0.03009)	(1269	E 3	15AU1964	0.17267)	(1270	F 1	10AU1964	0.00272)
(1271	C 7	22SE1964	0.01306)	(1280	E 2	16SE1964	0.00681)	(1281	E 3	16SE1964	0.00785)
(1284	E 6	17SE1964	0.00318)	(1285	F 1	15SE1964	0.00582)	(1286	F 2	15SE1964	0.02189)
(1287	F 3	15SE1964	0.00500)	(1297	D 6	14OC1964	0.00190)	(1298	E 1	12OC1964	0.00269)
(1299	E 2	12OC1964	0.00628)	(1300	E 3	13OC1964	0.00358)	(1302	E 5	13OC1964	0.00810)
(1303	E 6	13OC1964	0.01679)	(1304	F 1	11OC1964	0.00494)	(1305	F 2	11OC1964	0.00173)
(1306	F 3	11OC1964	0.00832)	(1307	B 6	ND1964	0.00361)	(1308	C 7	6ND1964	0.00304)

(1313	D 3	9NO.964	0.00193)	(1318	E 2	7NO1964	C.00190)	(1319	E 3	7NO1964	C.00524)
(1322	E 6	7NO1964	0.01666)	(1336	C 3	27JA1967	0.00385)	(1337	C 3	2MR1967	C.03674)
(1338	C 3	28MR1967	0.03835)	(1339	C 5	28MR1967	C.13095)	(1340	C 7	28MR1967	C.04581)
(1341	A 3	19AP1967	0.04882)	(1342	A 4	19AP1967	0.10647)	(1343	A 6	19AP1967	C.00347)
(1344	C 3	25AP1967	0.01158)	(1345	C 5	25AP1967	0.24755)	(1346	C 7	21AP1967	C.00534)
(1347	E 2	23AP1967	0.06178)	(1348	E 5	23AP1967	0.02467)	(1368	A 3	4MY1967	C.02199)
(1370	A 6	3MY1967	0.00460)	(1372	C 5	5MY1967	C.01064)	(1374	E 2	7MY1967	C.00598)
(1375	E 3	7MY1967	0.00241)	(1376	E 5	6MY1967	0.00843)	(1408	A 3	23MY1967	C.00447)
(1409	A 4	23MY1967	0.00298)	(1410	A 6	24MY1967	0.01128)	(1412	C 5	31MY1967	C.01263)
(1415	E 3	28MY1967	0.00225)	(1416	E 5	28MY1967	0.00437)	(1432	A 4	13JN1967	C.00255)
(1434	C 5	17JN1967	0.00299)	(1435	C 7	13JN1967	0.00316)	(1438	E 5	14JN1967	C.00363)
(1447	A 4	11JL1967	0.00234)	(1449	C 3	16JL1967	0.01146)	(1450	C 5	16JL1967	C.00571)
(1451	C 7	16JL1967	0.00591)	(1452	E 2	14JL1967	0.00213)	(1511	E 2	1SE1967	0.00307)
(1536	E 2	24SE1967	0.00273)	(1538	E 5	23SE1967	0.02210)	(1379	GS 3	9MY1967	C.00309)
(1381	GS 5	10MY1967	0.01431)	(1383	GS 7	10MY1967	0.01337)	(1384	GS 8	10MY1967	C.01109)
(1386	GS10	12MY1967	0.01149)	(1387	GS11	12MY1967	0.00792)	(1391	GS15	12MY1967	C.00958)
(1393	GS17	13MY1967	0.00822)	(1394	GS18	13MY1967	0.05505)	(1395	GS19	13MY1967	C.00117)
(1397	GS21	13MY1967	0.00131)	(1398	GS22	14MY1967	0.00607)	(1555	GS 2	30C1967	0.00353)
(1557	GS 4	30C1967	0.00374)	(1566	GS14	50C1967	0.00183)	(1569	GS17	50C1967	C.00149)
(1572	GS20	60C1967	0.00090)	(1544	MU 1	20C1967	0.00238)	(1546	LU 1	20C1967	C.01000)
(1521	SH 1	18SE1967	0.01154)	(1522	BH 1	18SE1967	0.00182)	(1526	MO 1	20SE1967	0.14223)
(1527	TR 1	20SE1967	0.04403)	(1530	FR 1	24SE1967	0.01000)	(1545	WL 1	20C1967	0.02703)
(1549	MQ 1	40C1967	0.01370)	(1551	ES 1	50C1967	0.03195)	(1552	SM 1	60C1967	0.01981)
(1550	MR 1	50C1967	0.65667)	(1553	SG 1	60C1967	1.64512)	(1428	MU 2	29MY1967	0.01808)
(1426	MS 2	29MY1967	0.13648)	(1351	MI 2	21AP1967	0.06206)	(1427	LU 2	29MY1967	C.07264)
(1417	HO 2	22MY1967	0.08599)	(1418	SH 2	22MY1967	0.01555)	(1350	BH 2	19AP1967	C.03084)
(1399	PW 2	5MY1967	0.01360)	(1401	MO 2	6MY1967	0.03528)	(1402	TR 2	6MY1967	0.02707)
(1400	SB 2	6MY1967	0.04765)	(1352	KW 2	21AP1967	0.04295)	(1353	FR 2	23AP1967	C.01055)
(1354	GH 2	25AP1967	0.17433)	(1429	WL 2	29MY1967	0.14864)	(1403	CA 2	10MY1967	0.31385)
(1404	MQ 2	10MY1967	0.02541)	(1405	ES 2	12MY1967	0.01935)	(1407	SM 2	14MY1967	0.02986)
(1349	CI 2	19AP1967	0.06466)	(1406	GB 2	13MY1967	0.00539)	(1419	BU 2	23MY1967	0.03662)
(1420	JH 2	23MY1967	0.03021)	(1421	CH 2	23MY1967	0.05205)	(1422	GA 2	23MY1967	C.03065)
(1423	WA 2	25MY1967	C.CC856)	(1424	KN 2	25MY1967	0.05329)	(			

Nitzschia bulnheimiana (Rabh.) H. L. Smith

Homoeocladia bulnheimiana Rabenhorst, Alg. Sachsens resp. Mitteleuropas, No. 1301. 1871.
Nitzschia bulnheimiana (Rabh.) H. L. Smith, Diat. Sp. Typ., No. 689. 1874.

554 NIBULNHO TOT NO OF STATIONS 5

(46764	EV	17JL1937	0.05641)	(46767	EV	27OC1937	0.00774)	(1536	E 2	24SE1967	C.00273)
(1551	ES 1	50C1967	0.00799)	(1550	MR 1	50C1967	0.01239)	(			

Nitzschia capitellata Hust.

Nitzschia capitellata Hustedt *in*: A. Schmidt, Atlas Diat., pl. 349, figs. 57-59. 1922.

555 NICAPITE TOT NO OF STATIONS 3

(1531	GH 1	25SE1967	0.03381)	(1545	WL 1	20C1967	0.01351)	(1417	HO 2	22MY1967	C.00374)

Nitzschia confinis Hust.

Nitzschia confinis Hustedt, Inst. Parcs Nat. Congo Belge, Expl. Parc. Nat. Albert, Miss. Damas (1935-1936), Fasc. 8, p. 145, pl. 11, figs. 49-54; pl. 13, figs. 84-90. 1949.

556 NICONFIN TOT NO OF STATIONS 99

(46910	CH	0C1945	0.00109)	(46921	CH	23NO1945	0.03816)	(46908	CH	DE1945	0.02014)
(46917	CH	12JA1946	0.00166)	(46915	CH	20FE1946	0.07398)	(46914	CH	19AP1946	0.00854)
(46924	CH	10MY1946	0.00494)	(46923	CH	22NO1946	0.10928)	(46909	CH	MR1947	C.06375)
(46916	CH	4MY1947	0.00407)	(46906	CH	MY1947	0.00796)	(46919	CH	5JN1947	C.88770)
(46907	CH	JL1947	0.00690)	(46913	CH	6AU1947	0.01046)	(46922	CH	21AU1947	C.10468)
(46758	EV	5JN1937	0.06419)	(46743	EV	20JN1937	0.04710)	(46745	EV	3JL1937	0.02090)
(46770	EV	9JL1937	0.01193)	(46764	EV	17JL1937	0.49960)	(46757	EV	25JL1937	0.03370)
(46747	EV	1AU1937	0.05446)	(46763	EV	23AU1937	0.24351)	(46765	EV	30AU1937	C.01115)
(46752	EV	15SE1937	0.39182)	(46760	EV	22SE1937	0.02462)	(46750	EV	24SE1937	C.41476)
(46744	EV	6OC1937	0.01951)	(46748	EV	13OC1937	0.10675)	(46767	EV	27OC1937	C.03095)
(46749	EV	12MR1938	0.01214)	(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	C.04411)
(46751	EV	30MR1938	0.01117)	(46759	EV	19MY1938	0.00675)	(46766	EV	14DE1938	C.11090)
(1229	D 5	14MY1964	0.00211)	(1243	E 6	13JN1964	0.00209)	(1252	E 1	16JL1964	C.01116)
(1255	D 5	15JL1964	0.00513)	(1256	E 2	14JL1964	0.00183)	(1257	E 3	14JL1964	C.00718)
(1258	F 1	6JL1964	0.03304)	(1259	F 2	6JL1964	0.00310)	(1260	F 3	6JL1964	C.00382)
(1266	D 3	18AU1964	0.00351)	(1268	E 2	15AU1964	0.01368)	(1271	C 7	22SE1964	C.00653)
(1275	D 2	17SE1964	0.00645)	(1279	E 1	16SE1964	0.00393)	(1284	E 6	17SE1964	C.00318)
(1285	F 1	15SE1964	0.02330)	(1288	B 3	15OC1964	0.00218)	(1445	B 6	14OC1964	C.00652)
(1297	D 6	14OC1964	0.00190)	(1303	E 6	13OC1964	0.00560)	(1304	F 1	11OC1964	C.00247)
(1307	B 6	NO1964	0.00361)	(1340	C 7	28MR1967	0.00145)	(1341	A 3	19AP1967	0.00108)
(1342	A 4	19AP1967	0.00361)	(1343	A 6	19AP1967	0.00069)	(1345	C 5	25AP1967	C.00195)
(1348	E 5	23AP1967	0.00137)	(1373	C 7	5MY1967	0.00285)	(1374	E 2	7MY1967	0.00299)
(1449	C 3	16JL1967	0.00764)	(1450	C 5	16JL1967	0.00381)	(1453	E 3	15JL1967	C.00253)
(1454	E 5	15JL1967	0.00200)	(1536	E 2	24SE1967	0.00545)	(1383	GS 7	10MY1967	C.00267)
(1384	GS 8	10MY1967	0.00370)	(1387	GS11	12MY1967	0.00396)	(1391	GS15	12MY1967	C.00479)
(1394	GS18	13MY1967	0.00688)	(1554	GS 1	30C1967	0.00712)	(1557	GS 4	30C1967	C.01495)
(1560	GS 8	40C1967	C.00472)	(1562	GS10	50C1967	C.00247)	(1563	GS11	50C1967	C.00234)

(1566	GS14	50C1967	0.00183)	(1569	GS17	50C1967	0.00149)	(1571	GS19	60C1967	C.00059)
(1573	GS21	60C1967	0.00112)	(1574	GS22	60C1967	0.00288)	(1526	MO 1	20SE1967	C.C1138)
(1529	KW 1	20SE1967	0.01199)	(1545	WL 1	20C1967	0.00676)	(1551	ES 1	50C1967	C.C2396)
(1550	MR 1	50C1967	0.09912)	(1351	MI 2	21AP1967	C.00310)	(1417	MO 2	22MY1967	C.CC374)
(1352	KW 2	21AP1967	0.00859)	(1403	CA 2	10MY1967	C.09154)	(1404	MQ 2	10MY1967	C.C127C)
(1405	ES 2	12MY1967	0.01935)	(1349	CI 2	19AP1967	0.00359)	(1422	GA 2	23MY1967	C.00511)

Nitzschia denticula Grun.

Nitzschia denticula Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):82. 1880.

558 NIDENTIC TOT NO OF STATIONS 44

(46921	CH	23NO1945	C.0C129)	(46917	CH	12JA1946	0.00028)	(46924	CH	10MY1946	C.CC141)
(46923	CH	22NO1946	0.00219)	(46920	CH	20DE1946	0.00062)	(46905	CH	JA1947	C.00245)
(46916	CH	4MY1947	0.00034)	(46906	CH	MY1947	0.00133)	(46919	CH	5JN1947	C.0C152)
(46907	CH	JL1947	0.00148)	(46922	CH	21AU1947	0.00097)	(46758	EV	5JN1937	0.0C713)
(46743	EV	20JN1937	0.00856)	(46764	EV	17JL1937	0.06446)	(46757	EV	25JL1937	C.04814)
(46747	EV	1AU1937	0.03713)	(46763	EV	23AU1937	0.08117)	(46765	EV	30AU1937	0.01115)
(46748	EV	13OC1937	0.04270)	(46767	EV	27OC1937	0.00774)	(46768	EV	16MR1938	C.C5880)
(46762	EV	18MR1938	0.08822)	(1243	E 6	13JN1964	0.00209)	(1246	F 3	11JN1964	0.00598)
(1258	F 1	6JL1964	0.00708)	(1260	F 3	6JL1964	0.00191)	(1270	F 1	10AU1964	C.C1089)
(1279	E 1	16SE1964	0.00393)	(1285	F 1	15SE1964	0.40766)	(1304	F 1	11OC1964	C.00247)
(1306	F 3	11OC1964	0.00832)	(1320	E 4	7NO1964	0.00207)	(1388	GS12	12MY1967	C.01207)
(1389	GS13	12MY1967	0.00258)	(1398	GS22	14MY1967	0.00304)	(1557	GS 4	30C1967	C.00374)
(1558	GS 5	40C1967	0.00396)	(1564	GS12	50C1967	0.00165)	(1574	GS22	60C1967	C.02013)
(1526	MO 1	20SE1967	0.00569)	(1527	TR 1	20SE1967	0.00629)	(1529	KW 1	20SE1967	C.01199)
(1404	MQ 2	10MY1967	0.01270)	(1407	SM 2	14MY1967	0.00597)	(			

Nitzschia dissipata (Kütz.) Grun.

Synedra dissipata Kützing, Bacill., p. 64, pl. 14, fig. 3. 1844.
Nitzschia dissipata (Kütz.) Grunow, Verh. Zool.-Bot. Ges. Wien, 12(2):17. 1862.

559 NIDISSIP TOT NO OF STATIONS 178

(46921	CH	23NO1945	0.00129)	(46914	CH	19AP1946	C.00107)	(46924	CH	10MY1946	C.00141)
(46923	CH	22NO1946	0.0C656)	(46905	CH	JA1947	0.00245)	(46909	CH	MR1947	C.00911)
(46916	CH	4MY1947	0.00034)	(46906	CH	MY1947	0.00265)	(46919	CH	5JN1947	C.34446)
(46922	CH	21AU1947	0.00048)	(46758	EV	5JN1937	0.04279)	(46743	EV	20JN1937	C.0C428)
(46764	EV	17JL1937	0.24174)	(46757	EV	25JL1937	0.04333)	(46747	EV	1AU1937	C.01238)
(46763	EV	23AU1937	0.77110)	(46752	EV	15SE1937	0.08707)	(46767	EV	27OC1937	C.0C387)
(46762	EV	18MR1938	0.02206)	(46756	EV	27AP1938	0.00168)	(46759	EV	19MY1938	C.0C338)
(46761	EV	27MY1938	0.0C273)	(1223	B 3	18MY1964	0.00156)	(1224	B 4	18MY1964	C.C1176)
(1225	C 6	15MY1964	0.00784)	(1226	C 7	16MY1964	0.00761)	(1227	C* 2	13MY1964	0.00768)
(1228	D 2	14MY1964	0.02141)	(1229	D 5	14MY1964	C.01903)	(1230	E 2	16MY1964	C.C7408)
(1231	E 3	16MY1964	0.14431)	(1232	E 5	16MY1964	0.12696)	(1235	C 7	16JN1964	0.00282)
(1439	B 6	5JN1964	0.03397)	(1236	C* 1	8JN1964	0.00175)	(1238	D 3	11JN1964	C.01800)
(1239	D 4	11JN1964	0.00116)	(1240	D 6	10JN1964	0.00767)	(1241	E 2	13JN1964	0.01626)
(1242	E 3	13JN1964	0.05395)	(1243	E 6	13JN1964	0.00209)	(1244	F 1	11JN1964	0.00658)
(1245	F 2	11JN1964	0.0C692)	(1246	F 3	11JN1964	0.01793)	(1440	B 6	11JL1964	C.CC369)
(1441	B 6	24JL1964	0.00220)	(1251	C 7	16JL1964	0.00290)	(1255	D 5	15JL1964	0.00257)
(1256	E 2	14JL1964	0.02381)	(1257	E 3	14JL1964	0.11724)	(1258	F 1	6JL1964	C.CC708)
(1259	F 2	6JL1964	0.00310)	(1260	F 3	6JL1964	0.00764)	(1262	B 3	17AU1964	C.00210)
(1264	C* 1	10AU1964	0.00386)	(1268	E 2	15AU1964	C.00821)	(1269	E 3	15AU1964	0.01096)
(1270	F 1	10AU1964	0.00272)	(1280	E 2	16SE1964	0.00681)	(1285	F 1	15SE1964	C.08153)
(1288	B 3	15OC1964	0.00218)	(1445	B 6	14OC1964	0.00326)	(1292	D 1	15OC1964	C.00373)
(1300	E 3	13OC1964	0.02506)	(1301	E 4	13OC1964	0.00442)	(1302	E 5	13OC1964	C.00810)
(1304	F 1	11OC1964	0.00741)	(13C5	F 2	11OC1964	0.00518)	(13C6	F 3	11OC1964	C.00277)
(1315	D 5	9NO1964	0.00910)	(1317	E 1	6NO1964	0.00383)	(1318	E 2	7NO1964	C.00761)
(1320	E 4	7NO1964	0.00207)	(1322	E 6	7NO1964	0.00333)	(1323	F 1	6NO1964	0.00418)
(1336	C 3	27JA1967	0.00193)	(1337	C 3	2MR1967	0.02058)	(1338	C 3	28MR1967	C.16793)
(1339	C 5	28MR1967	0.05612)	(1340	C 7	28MR1967	0.06835)	(1341	A 3	19AP1967	C.12909)
(1342	A 4	19AP1967	0.21475)	(1343	A 6	19AP1967	0.02918)	(1344	C 3	25AP1967	C.01324)
(1345	C 5	25AP1967	0.81867)	(1346	C 7	21AP1967	0.07344)	(1347	E 2	23AP1967	C.05653)
(1348	E 5	23AP1967	0.35093)	(1368	A 3	4MY1967	0.02513)	(1369	A 4	4MY1967	C.01118)
(1370	A 6	3MY1967	0.01151)	(1372	C 5	5MY1967	0.04965)	(1373	C 7	5MY1967	C.01141)
(1374	E 2	7MY1967	0.01494)	(1375	E 3	7MY1967	0.00481)	(1376	E 5	6MY1967	C.04779)
(1408	A 3	23MY1967	0.00894)	(1410	A 6	24MY1967	0.00564)	(1411	C 3	31MY1967	C.00410)
(1412	C 5	31MY1967	0.02525)	(1416	E 5	28MY1967	0.00656)	(1432	A 4	13JN1967	C.0C511)
(1433	C 3	17JN1967	0.01292)	(1434	C 5	17JN1967	0.00299)	(1438	E 5	14JN1967	C.00363)
(1446	A 3	11JL1967	0.00245)	(1449	C 3	16JL1967	0.13757)	(1450	C 5	16JL1967	C.03237)
(1452	E 2	14JL1967	0.00213)	(1453	E 3	15JL1967	0.07330)	(1454	E 5	15JL1967	C.00200)
(1509	C 5	2SE1967	0.00505)	(1512	E 3	1SE1967	0.00393)	(1532	A 3	18SE1967	C.00329)
(1533	A 4	19SE1967	0.00464)	(1539	C 3	4OC1967	0.01510)	(1540	C 5	4OC1967	C.00496)
(1541	E 2	11OC1967	C.C1064)	(1378	GS 2	9MY1967	0.00421)	(1379	GS 3	9MY1967	C.0C619)
(1380	GS 4	9MY1967	0.01345)	(1381	GS 5	10MY1967	0.01193)	(1382	GS 6	10MY1967	C.00278)
(1383	GS 7	10MY1967	C.02139)	(1384	GS 8	10MY1967	0.02588)	(1386	GS10	12MY1967	C.02585)
(1387	GS11	12MY1967	0.01584)	(1391	GS15	12MY1967	0.01437)	(1392	GS16	12MY1967	0.00308)
(1393	GS17	13MY1967	0.01096)	(1394	GS18	13MY1967	0.16170)	(1395	GS19	13MY1967	C.00822)
(1397	GS21	13MY1967	C.00065)	(1555	GS 2	30C1967	0.00706)	(1556	GS 3	30C1967	C.CC521)
(1557	GS 4	30C1967	0.01868)	(1558	GS 5	40C1967	0.03567)	(1559	GS 7	40C1967	C.00350)
(1560	GS 8	40C1967	0.00472)	(1562	GS10	50C1967	0.00247)	(1565	GS13	50C1967	C.00507)
(1568	GS16	50C1967	0.00289)	(1570	GS18	50C1967	0.00992)	(1573	GS21	60C1967	C.0C112)
(1544	MU 1	20C1967	0.01430)	(1524	MI 1	20SE1967	0.02189)	(1546	LU 1	20C1967	C.28510)
(1521	SH 1	18SE1967	0.02885)	(1522	BH 1	18SE1967	0.00547)	(1525	PW 1	20SE1967	C.01393)
(1526	MO 1	20SE1967	0.01138)	(1527	TR 1	20SE1967	0.04403)	(1528	SB 1	20SE1967	C.02888)
(1529	KW 1	20SE1967	0.02398)	(1530	FR 1	24SE1967	0.03000)	(1545	WL 1	20C1967	1.51362)
(1551	ES 1	50C1967	0.02396)	(1550	MR 1	50C1967	0.26019)	(1553	SG 1	60C1967	C.CC734)

(1428	MU 2	29MY1967	0.01808)	(1426	MS 2	29MY1967	0.29396)	(1351	MI 2	21AP1967	0.01241)
(1427	LU 2	29MY1967	0.06053)	(1417	HO 2	22MY1967	0.03365)	(1350	BH 2	19AP1967	0.03744)
(1399	PW 2	5MY1967	0.01360)	(1400	SB 2	6MY1967	0.02978)	(1352	KW 2	21AP1967	0.00859)
(1354	GH 2	25AP1967	0.00173)	(1429	WL 2	29MY1967	0.02123)	(1403	CA 2	10MY1967	0.14385)
(1404	MQ 2	10MY1967	0.02541)	(1405	ES 2	12MY1967	0.01290)	(1349	CI 2	19AP1967	0.00718)
(1406	GB 2	13MY1967	0.00270)	(1419	BU 2	23MY1967	0.01831)	(1423	WA 2	25MY1967	0.02997)
(1424	KN 2	25MY1967	0.01332)	(							

Nitzschia dissipata var. *media* (Hantz.) Grun.

Nitzschia media Hantzsch, Hedwigia, 2:40, pl. 6, fig. 9. 1853.
Nitzschia dissipata var. *media* Grunow *in*: Van Heurck, Syn. Diat. Belgique, p. 178, pl. 63, fig. 4. 1885.

560 NIDISSVM TOT NO OF STATIONS 40

(46770	EV	9JL1937	0.01193)	(46768	EV	16MR1938	0.11760)	(1389	GS13	12MY1967	0.00258)
(1555	GS 2	30C1967	0.00353)	(1557	GS 4	30C1967	0.00374)	(1560	GS 8	40C1967	0.00472)
(1565	GS13	50C1967	0.01014)	(1544	MU 1	20C1967	0.00238)	(1547	MS 1	20C1967	0.01597)
(1524	MI 1	20SE1967	0.04378)	(1546	LU 1	20C1967	0.02001)	(1521	SH 1	18SE1967	0.02885)
(1522	BH 1	18SE1967	0.00182)	(1523	RA 1	19SE1967	0.04613)	(1526	MO 1	20SE1967	0.03982)
(1527	TR 1	20SE1967	0.06289)	(1529	KW 1	20SE1967	0.07195)	(1530	FR 1	24SE1967	0.01000)
(1531	GH 1	25SE1967	0.00845)	(1545	WL 1	20C1967	0.03379)	(1548	CA 1	30C1967	0.01272)
(1551	ES 1	50C1967	0.00799)	(1552	SM 1	60C1967	0.01321)	(1550	MR 1	50C1967	0.08673)
(1553	SG 1	60C1967	0.00734)	(1428	MU 2	29MY1967	0.00603)	(1426	MS 2	29MY1967	0.03150)
(1351	MI 2	21AP1967	0.00621)	(1427	LU 2	29MY1967	0.01211)	(1417	HO 2	22MY1967	0.00748)
(1418	SH 2	22MY1967	0.03110)	(1350	BH 2	19AP1967	0.06388)	(1401	MO 2	6MY1967	0.01764)
(1402	TR 2	6MY1967	0.00541)	(1354	GH 2	25AP1967	0.01036)	(1403	CA 2	10MY1967	0.01308)
(1407	SM 2	14MY1967	0.01194)	(1349	CI 2	19AP1967	0.00359)	(1406	GB 2	13MY1967	0.00270)
(1423	WA 2	25MY1967	0.00428)	(							

Nitzschia filiformis (Wm. Smith) Schutt

Homoeocladia filiformis Wm. Smith, Syn. British Diat., Vol. 2, p. 80, pl. 55. fig. 348. 1856.
Nitzschia filiformis (Wm. Smith) Schutt *in*: Engler and Prantl, Natürl. Pflanzenfam., Teil 1, Abt. 1b, p. 144, figs. 261a-c. 1896.

561 NIFILIFC TOT NO OF STATIONS 1

(46905	CH	MR1947	0.00455)	(

Nitzschia fonticola Grun.

Nitzschia fonticola Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 69, figs. 15-20. 1881.

562 NIFONTIC TOT NO OF STATIONS 104

(46910	CH	0C1945	0.00328)	(46921	CH	23NO1945	0.00259)	(46915	CH	20FE1946	0.01707)
(46914	CH	19AP1946	0.00107)	(46924	CH	10MY1946	0.00071)	(46923	CH	22NO1946	0.01748)
(46905	CH	JA1947	0.00245)	(46909	CH	MR1947	0.00455)	(46916	CH	4MY1947	0.00102)
(46906	CH	MY1947	0.00199)	(46919	CH	5JN1947	0.01973)	(46907	CH	JL1947	0.00148)
(46922	CH	21AU1947	0.00291)	(46758	EV	5JN1937	0.08915)	(46743	EV	20JN1937	0.01713)
(46770	EV	9JL1937	0.01789)	(46764	EV	17JL1937	0.75745)	(46757	EV	25JL1937	0.26961)
(46747	EV	1AU1937	0.13862)	(46763	EV	23AU1937	1.56250)	(46765	EV	30AU1937	0.00558)
(46752	EV	15SE1937	2.04615)	(46760	EV	22SE1937	0.02462)	(46750	EV	24SE1937	0.08012)
(46744	EV	6OC1937	0.03414)	(46748	EV	13OC1937	0.08540)	(46767	EV	27OC1937	0.71951)
(46749	EV	12MR1938	0.03641)	(46768	EV	16MR1938	0.13229)	(46762	EV	18MR1938	1.49978)
(46751	EV	30MR1938	0.03350)	(46756	EV	27AP1938	0.00336)	(46759	EV	19MY1938	0.00338)
(46761	EV	27MY1938	0.00545)	(46766	EV	14DE1938	0.19011)	(1439	B 6	5JN1964	0.00200)
(1236	C* 1	8JN1964	0.00175)	(1237	C* 2	8JN1964	0.00258)	(1240	D 6	10JN1964	0.00153)
(1241	E 2	13JN1964	0.00444)	(1242	E 3	13JN1964	0.00300)	(1243	E 6	13JN1964	0.00209)
(1245	F 2	11JN1964	0.00346)	(1251	C 7	16JL1964	0.00290)	(1256	E 2	14JL1964	0.00366)
(1264	C* 1	10AU1964	0.01545)	(1265	C* 2	10AU1964	0.00447)	(1268	E 2	15AU1964	0.00547)
(1269	E 3	15AU1964	0.00274)	(1272	C* 1	10SE1964	0.00410)	(1285	F 1	15SE1964	0.00582)
(1288	B 3	15OC1964	0.00435)	(1295	D 4	15OC1964	0.00595)	(1298	E 1	12OC1964	0.00539)
(1299	E 2	12OC1964	0.00943)	(1300	E 3	13OC1964	0.00716)	(1301	E 4	13OC1964	0.00442)
(1302	E 5	13OC1964	0.00405)	(1312	D 2	8NO1964	0.00310)	(1315	D 5	9NO1964	0.00455)
(1318	E 2	7NO1964	0.00190)	(1320	E 4	7NO1964	0.00620)	(1346	C 7	21AP1967	0.00134)
(1416	E 5	28MY1967	0.00219)	(1452	E 2	14JL1967	0.00213)	(1511	E 2	1SE1967	0.00307)
(1539	C 3	40C1967	0.00503)	(1541	E 2	11OC1967	0.00532)	(1542	E 3	11OC1967	0.00509)
(1543	E 5	10OC1967	0.01437)	(1383	GS 7	10MY1967	0.00267)	(1387	GS11	12MY1967	0.00792)
(1389	GS13	12MY1967	0.00258)	(1554	GS 1	3OC1967	0.01423)	(1555	GS 2	3OC1967	0.00353)
(1558	GS 5	4OC1967	0.00396)	(1559	GS 7	4OC1967	0.00350)	(1560	GS 8	4OC1967	0.00945)
(1563	GS11	5OC1967	0.00234)	(1565	GS13	5OC1967	0.01521)	(1571	GS19	6OC1967	0.00059)
(1572	GS20	6OC1967	0.00180)	(1574	GS22	6OC1967	0.00575)	(1544	MU 1	20C1967	0.02859)
(1547	MS 1	20C1967	0.01597)	(1546	LU 1	20C1967	0.31511)	(1526	MO 1	20SE1967	0.01707)
(1527	TR 1	20SE1967	0.01887)	(1529	KW 1	20SE1967	0.03598)	(1530	FR 1	24SE1967	0.07001)
(1545	WL 1	20C1967	1.18927)	(1549	MQ 1	40C1967	0.02741)	(1551	ES 1	50C1967	0.00799)
(1552	SM 1	6OC1967	0.01321)	(1550	MR 1	5OC1967	0.09912)	(1553	SG 1	6OC1967	0.01469)
(1350	BH 2	19AP1967	0.03304)	(1401	MO 2	6MY1967	0.00588)	(1402	TR 2	6MY1967	0.00541)
(1354	GH 2	25AP1967	0.00345)	(1429	WL 2	29MY1967	0.05308)	(1403	CA 2	10MY1967	0.02615)
(1404	MQ 2	10MY1967	0.01270)	(1407	SM 2	14MY1967	0.01194)	(			

Nitzschia fonticola var. *pelagica* Hust.

Nitzschia fonticola var. *pelagica* Hustedt *in*: A. Schmidt, Atlas Diat., pl. 349, figs. 15-16. 1922.

563 NIFONTVP TOT NO OF STATIONS 6

(1316	D 6	9NO1964	0.00378)	(1544	MU 1	20C1967	0.00238)	(1550	MR 1	50C1967	0.07434)
(1350	BH 2	19AP1967	0.01101)	(1400	SB 2	6MY1967	0.00596)	(1407	SM 2	14MY1967	0.01194)

Nitzschia fonticoloides Sov.

Nitzschia fonticoloides Sovereign, Trans. American Micr. Soc., 77(2):130, pl. 4, figs. 58-62. 1958.

564 NIFONLEC TOT NO OF STATIONS 8

(46757	EV	25JL1937	0.00481)	(1387	GS11	12MY1967	0.00396)	(1575	GS28	60C1967	0.00258)
(1544	MU 1	20C1967	0.00477)	(1545	WL 1	20C1967	0.00676)	(1550	MR 1	50C1967	0.03717)
(1400	SB 2	6MY1967	0.00596)	(1403	CA 2	10MY1967	0.05231)	(			

Nitzschia frustulum (Kütz.) Grun.

Synedra frustulum Kützing, Bacill., p. 63, pl. 30, fig. 77. 1844.
Nitzschia frustulum (Kütz.) Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):98. 1880.

565 NIFRUSTO TOT NO OF STATIONS 4

(1573	GS21	60C1967	0.00112)	(1574	GS22	60C1967	0.00288)	(1417	HO 2	22MY1967	0.00374)
(1401	MO 2	6MY1967	0.00588)	(							

Nitzschia frustulum var. *perminuta* Grun.

Nitzschia frustulum var. *perminuta* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 68, fig. 31. 1881.

566 NIFRUSVP TOT NO OF STATIONS 7

(1565	GS13	50C1967	0.01014)	(1567	GS15	50C1967	0.00159)	(1568	GS16	50C1967	0.00144)
(1523	RA 1	19SE1967	0.00923)	(1553	SG 1	60C1967	0.01469)	(1417	HO 2	22MY1967	0.00748)
(1350	BH 2	19AP1967	0.03524)	(							

Nitzschia hungarica Grun.

Nitzschia hungarica Grunow, Verh. Zool.-Bot. Ges. Wien, 12:568, pl. 18, figs. 31a-b. 1862.

568 NIHUNGAR TOT NO OF STATIONS 9

(1264	C' 1	10AU1964	0.00193)	(1504	A 3	28AU1967	0.00247)	(1556	GS 3	30C1967	0.00521)
(1567	GS15	50C1967	0.00159)	(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.00220)
(1401	MO 2	6MY1967	0.01764)	(1400	SB 2	6MY1967	0.00596)	(1422	GA 2	23MY1967	0.00511)

Nitzschia insecta Hust.

Nitzschia insecta Hustedt, Internat. Rev. Hydrobiol., 42:141, fig. 348. 1942.

569 NIINSECO TOT NO OF STATIONS 2

(46924	CH	10MY1946	0.00071)	(1572	GS20	60C1967	0.00090) (

Nitzschia interrupta (Reich.) Hust.

Denticula interrupta Reichelt *ex* Kuntze, Rev. Gen. Plant., 3:392. 1891.
Nitzschia interrupta (Reich.) Hustedt, Arch. Hydrobiol., 18:168. 1927.

570 NIINTERR TOT NO OF STATIONS 1

(46763	EV	23AU1937	0.02029) (

Nitzschia luzonensis Hust.

Nitzschia luzonensis Hustedt, Internat. Rev. Hydrobiol., 42:137, figs. 331-336. 1942.

571 NILUZONE TOT NO OF STATIONS 29

(46910	CH	0C1945	0.00109)	(46921	CH	23N01945	0.00065)	(46917	CH	12JA1946	0.00028)
(46915	CH	20FE1946	0.00569)	(46914	CH	19AP1946	0.00107)	(46916	CH	4MY1947	0.00068)
(46919	CH	5JN1947	0.00759)	(46758	EV	5JN1937	0.00357)	(46770	EV	9JL1937	0.00596)
(46764	EV	17JL1937	0.07252)	(46757	EV	25JL1937	0.00963)	(46767	EV	27OC1937	0.00387)
(46766	EV	14DE1938	0.01584)	(1440	B 6	11JL1964	0.00369)	(1256	E 2	14JL1964	0.00183)
(1257	E 3	14JL1964	0.00239)	(1258	F 1	6JL1964	0.00236)	(1265	C' 2	10AU1964	0.00224)
(1268	E 2	15AU1964	0.00547)	(1275	D 2	17SE1964	0.00645)	(1276	D 3	18SE1964	0.01118)
(1284	E 6	17SE1964	0.00318)	(1285	F 1	15SE1964	0.00582)	(1445	B 6	14OC1964	0.00652)
(1289	C 7	14OC1964	0.00440)	(1302	E 5	13OC1964	0.00405)	(1309	C' 1	10NO1964	0.00161)
(1569	GS17	5OC1967	0.00149)	(1573	GS21	6OC1967	0.00112)	(			

Nitzschia macilenta Grev.

Nitzschia macilenta Greville, Quart. J. Micr. Sci., 7:83, pl. 6, figs. 8-9. 1859.

572 NIMACILQ TOT NO OF STATIONS 86

(60973	CH	1876	0.02362)	(3541	CH	1FE1881	0.07825)	(46921	CH	23N01945	0.00388)
(46917	CH	12JA1946	0.00028)	(46923	CH	22N01946	0.00437)	(46920	CH	20DE1946	0.00277)
(46905	CH	JA1947	0.00123)	(46906	CH	MY1947	0.00066)	(46907	CH	JL1947	0.00148)
(46922	CH	21AU1947	0.00097)	(46747	EV	1AU1937	0.00990)	(46765	EV	30AU1937	0.00558)
(46748	EV	13OC1937	0.02135)	(46749	EV	12MR1938	0.04855)	(46751	EV	30MR1938	0.01117)
(1244	F 1	11JN1964	0.00110)	(1245	F 2	11JN1964	0.00346)	(1246	F 3	11JN1964	0.01195)
(1279	E 1	16SE1964	0.00393)	(1285	F 1	15SE1964	0.01747)	(1286	F 2	15SE1964	0.01095)
(1302	E 5	13OC1964	0.00810)	(1304	F 1	11OC1964	0.01729)	(1305	F 2	11OC1964	0.00863)
(1306	F 3	11OC1964	0.00832)	(1323	F 1	6NO1964	0.00697)	(1324	F 2	6NO1964	0.00466)
(1325	F 3	6NO1964	0.00504)	(1337	C 3	2MR1967	0.00441)	(1338	C 3	28MR1967	0.00132)
(1340	C 7	28MR1967	0.00073)	(1344	C 3	25AP1967	0.00165)	(1345	C 5	25AP1967	0.00390)
(1346	C 7	21AP1967	0.00134)	(1347	E 2	23AP1967	0.00325)	(1348	E 5	23AP1967	0.00274)
(1374	E 2	7MY1967	0.00299)	(1410	A 6	24MY1967	0.00564)	(1415	E 3	28MY1967	0.00225)
(1437	E 3	15JN1967	0.00269)	(1438	E 5	14JN1967	0.00363)	(1504	A 3	28AU1967	0.00247)
(1377	GS 1	9MY1967	0.00396)	(1382	GS 6	10MY1967	0.01110)	(1383	GS 7	10MY1967	0.00267)
(1384	GS 8	10MY1967	0.00185)	(1385	GS 9	10MY1967	0.00471)	(1387	GS11	12MY1967	0.01980)
(1388	GS12	12MY1967	0.08446)	(1389	GS13	12MY1967	0.12634)	(1390	GS14	12MY1967	0.01174)
(1391	GS15	12MY1967	0.02873)	(1392	GS16	12MY1967	0.04007)	(1393	GS17	13MY1967	0.02192)
(1394	GS18	13MY1967	0.02236)	(1395	GS19	13MY1967	0.00352)	(1396	GS20	13MY1967	0.00222)
(1397	GS21	13MY1967	0.00131)	(1398	GS22	14MY1967	0.01214)	(1558	GS 5	4OC1967	0.00793)
(1559	GS 7	4OC1967	0.00350)	(1561	GS 9	4OC1967	0.00587)	(1563	GS11	5OC1967	0.00935)
(1564	GS12	5OC1967	0.00165)	(1565	GS13	5OC1967	0.00507)	(1566	GS14	5OC1967	0.00917)
(1567	GS15	5OC1967	0.02699)	(1568	GS16	5OC1967	0.01299)	(1569	GS17	5OC1967	0.03122)
(1570	GS18	5OC1967	0.10908)	(1571	GS19	6OC1967	0.00059)	(1573	GS21	6OC1967	0.00112)
(1574	GS22	6OC1967	0.00288)	(1575	GS28	6OC1967	0.00258)	(1526	MO 1	20SE1967	0.01707)
(1527	TR 1	20SE1967	0.00629)	(1528	SB 1	20SE1967	0.01444)	(1529	KW 1	20SE1967	0.04797)
(1551	ES 1	5OC1967	0.00799)	(1552	SM 1	6OC1967	0.01321)	(1550	MR 1	5OC1967	0.01239)
(1553	SG 1	6OC1967	0.01469)	(1426	MS 2	29MY1967	0.01050)	(1404	MC 2	10MY1967	0.02541)
(1407	SM 2	14MY1967	0.00597)	(1406	GB 2	13MY1967	0.00270)	(			

Nitzschia palea (Kütz.) Wm. Smith

Synedra palea Kützing, Bacill., p. 63, pl. 3, fig. 27, pl. 4, fig. 2. 1844.
Nitzschia palea (Kütz.) Wm. Smith, Syn. British Diat., Vol. 2, p. 89. 1856.

573 NIPALEA TOT NO OF STATIONS 70

(46910	CH	0C1945	0.00218)	(46921	CH	23N01945	0.00065)	(46917	CH	12JA1946	0.00028)
(46915	CH	20FE1946	0.00569)	(46914	CH	19AP1946	0.00107)	(46924	CH	10MY1946	0.00071)
(46923	CH	22N01946	0.00437)	(46909	CH	MR1947	0.00455)	(46916	CH	4MY1947	0.00034)
(46919	CH	5JN1947	0.00152)	(46907	CH	JL1947	0.00197)	(46922	CH	21AU1947	0.03926)
(46758	EV	5JN1937	0.00357)	(46743	EV	20JN1937	0.00428)	(46770	EV	9JL1937	0.00596)
(46764	EV	17JL1937	0.90250)	(46757	EV	25JL1937	0.04333)	(46747	EV	1AU1937	0.06436)
(46763	EV	23AU1937	0.08117)	(46752	EV	15SE1937	0.08707)	(46750	EV	24SE1937	0.04242)
(46744	EV	6OC1937	0.02439)	(46767	EV	27OC1937	0.05416)	(46768	EV	16MR1938	0.01470)
(46762	EV	18MR1938	0.08822)	(46761	EV	27MY1938	0.00273)	(1252	C' 1	16JL1964	0.00558)
(1254	D 2	15JL1964	0.00383)	(1256	E 2	14JL1964	0.00183)	(1258	F 1	6JL1964	0.00472)
(1260	F 3	6JL1964	0.00382)	(1272	C' 1	10SE1964	0.00821)	(1279	E 1	16SE1964	0.00785)
(1285	F 1	15SE1964	0.00582)	(1302	E 5	13OC1964	0.00405)	(1452	E 2	14JL1967	0.00426)
(1454	E 5	15JL1967	0.00200)	(1532	A 3	18SE1967	0.00657)	(1538	E 5	23SE1967	0.00552)
(1541	E 2	11OC1967	0.00532)	(1542	E 3	11OC1967	0.01017)	(1555	GS 2	3OC1967	0.00353)
(1559	GS 7	4OC1967	0.00350)	(1565	GS13	5OC1967	0.00507)	(1544	MU 1	2OC1967	0.03098)
(1546	LU 1	2OC1967	0.08003)	(1520	HC 1	18SE1967	0.00471)	(1521	SH 1	18SE1967	0.25964)
(1522	BH 1	18SE1967	0.00547)	(1523	RA 1	19SE1967	0.00923)	(1526	MO 1	20SE1967	0.02845)
(1527	TR 1	20SE1967	0.10063)	(1528	SB 1	20SE1967	0.04332)	(1529	KW 1	20SE1967	0.01199)
(1530	FR 1	24SE1967	0.06001)	(1545	WL 1	2OC1967	0.25677)	(1549	MQ 1	4OC1967	0.01370)
(1551	ES 1	5OC1967	0.01598)	(1552	SM 1	6OC1967	0.00660)	(1550	MR 1	5OC1967	0.35931)
(1553	SG 1	6OC1967	0.00734)	(1426	MS 2	29MY1967	0.03150)	(1417	MO 2	22MY1967	0.00374)
(1350	BH 2	19AP1967	0.30616)	(1401	MO 2	6MY1967	0.01764)	(1402	TR 2	6MY1967	0.01624)
(1400	SB 2	6MY1967	0.01191)	(1352	KW 2	21AP1967	0.01718)	(1354	GH 2	25AP1967	0.00690)
(1423	WA 2	25MY1967	0.00428)	(							

Nitzschia palea var. *sumatrana* Hust.

Nitzschia palea var. *sumatrana* Hustedt, Arch. Hydrobiol. Suppl. Bd., 15:483, pl. 41, fig. 10. 1938.

575 NIPALEVS TOT NO OF STATIONS 1

(1323	F 1	6NO1964	0.00139)	(	

Nitzschia paleacea Grun.

Nitzschia paleacea Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 68, figs. 9-10. 1881.

574 NIPALEAC TOT NO OF STATIONS 1

(1544	MU 1	20C1967	0.02859)	(	

Nitzschia parvula Wm. Smith

Nitzschia parvula Wm. Smith, Syn. British Diat., Vol. 1, p. 41, pl. 13, fig. 106. 1853.

576 NIPARVUL TOT NO OF STATIONS 1

(1426	MS 2	29MY1967	0.02100)	(	

Nitzschia recta Hantz.

Nitzschia recta Hantzsch *ex* Rabenhorst, Alg. Sachsens resp. Mitteleuropas Exsicc., No. 1283. 1860.

577 NIRECTA TOT NO OF STATIONS 198

(60973	CH	1876	0.04724)	(3540	CH	11MY1879	0.01398)	(3541	CH	1FE1881	0.04891)
(3507	CH	19FE1881	0.02264)	(46921	CH	23NO1945	0.00453)	(46917	CH	12JA1946	0.00139)
(46915	CH	20FE1946	0.02845)	(46914	CH	19AP1946	0.00320)	(46924	CH	10MY1946	0.00282)
(46923	CH	22NO1946	0.00219)	(46920	CH	20DE1946	0.00123)	(46905	CH	JA1947	0.00245)
(46909	CH	MR1947	0.00455)	(46916	CH	4MY1947	0.00543)	(46919	CH	5JN1947	0.00455)
(46907	CH	JL1947	0.01381)	(46922	CH	21AU1947	0.01502)	(46758	EV	5JN1937	0.00357)
(46771	EV	11JN1937	0.00238)	(46743	EV	20JN1937	0.00856)	(46770	EV	9JL1937	0.00596)
(46764	EV	17JL1937	0.01612)	(46757	EV	25JL1937	0.02407)	(46747	EV	1AU1937	0.01485)
(46750	EV	24SE1937	0.00471)	(46767	EV	27OC1937	0.00387)	(46768	EV	16MR1938	0.01470)
(46751	EV	30MR1938	0.01117)	(1223	B 3	18MY1964	0.05000)	(1224	B 4	18MY1964	0.05411)
(1225	C 6	15MY1964	0.05880)	(1226	C 7	16MY1964	0.13699)	(1227	C* 2	13MY1964	0.03509)
(1228	D 2	14MY1964	0.27248)	(1229	D 5	14MY1964	0.35525)	(1230	E 2	16MY1964	0.21929)
(1231	E 3	16MY1964	0.62616)	(1232	E 5	16MY1964	0.40697)	(1233	B 3	5JN2964	0.04763)
(1235	C 7	16JN1964	0.00282)	(1439	B 6	5JN1964	0.02997)	(1236	C* 1	8JN1964	0.01050)
(1237	C* 2	8JN1964	0.03609)	(1238	D 3	11JN1964	0.03000)	(1239	D 4	11JN1964	0.01509)
(1240	D 6	10JN1964	0.10738)	(1241	E 2	13JN1964	0.07393)	(1242	E 3	13JN1964	0.06444)
(1243	E 6	13JN1964	0.14616)	(1244	F 1	11JN1964	0.14144)	(1245	F 2	11JN1964	0.09335)
(1246	F 3	11JN1964	0.05379)	(1249	C 3	8JL1964	0.00272)	(1252	C* 1	16JL1964	0.00279)
(1255	D 5	15JL1964	0.00257)	(1256	E 2	14JL1964	0.01282)	(1257	E 3	14JL1964	0.01196)
(1258	F 1	6JL1964	0.01180)	(1259	F 2	6JL1964	0.00930)	(1260	F 3	6JL1964	0.01146)
(1268	E 2	15AU1964	0.00547)	(1270	F 1	10AU1964	0.00272)	(1271	C 7	22SE1964	0.00653)
(1274	D 1	17SE1964	0.00469)	(1279	E 1	16SE1964	0.00393)	(1284	E 6	17SE1964	0.00318)
(1285	F 1	15SE1964	0.03494)	(1288	B 3	15OC1964	0.00218)	(1289	C 7	14OC1964	0.01319)
(1290	C* 1	16OC1964	0.00379)	(1292	D 1	15OC1964	0.01118)	(1294	D 3	15OC1964	0.00330)
(1295	D 4	15OC1964	0.00595)	(1297	D 6	14OC1964	0.00762)	(1298	E 1	12OC1964	0.00808)
(1299	E 2	12OC1964	0.01571)	(1300	E 3	13OC1964	0.01074)	(1302	E 5	13OC1964	0.00810)
(1303	E 6	13OC1964	0.00560)	(1304	F 1	11OC1964	0.01976)	(1305	F 2	11OC1964	0.02415)
(1306	F 3	11OC1964	0.04158)	(1307	B 6	NO1964	0.00361)	(1310	C* 2	10NO1964	0.00227)
(1316	D 6	9NO1964	0.00378)	(1317	E 1	6NO1964	0.00191)	(1318	E 2	7NO1964	0.00190)
(1319	E 3	7NO1964	0.00785)	(1320	E 4	7NO1964	0.00827)	(1321	E 5	7NO1964	0.00958)
(1322	E 6	7NO1964	0.01333)	(1323	F 1	6NO1964	0.00139)	(1324	F 2	6NO1964	0.00233)
(1325	F 3	6NO1964	0.00252)	(1336	C 3	27JA1967	0.00963)	(1337	C 3	2MR1967	0.04997)
(1338	C 3	28MR1967	0.18512)	(1339	C 5	28MR1967	0.30866)	(1340	C 7	28MR1967	0.07417)
(1341	A 3	19AP1967	0.04448)	(1342	A 4	19AP1967	0.16422)	(1343	A 6	19AP1967	0.02709)
(1344	C 3	25AP1967	0.01489)	(1345	C 5	25AP1967	1.09155)	(1346	C 7	21AP1967	0.06409)
(1347	E 2	23AP1967	0.13495)	(1348	E 5	23AP1967	0.17272)	(1368	A 3	4MY1967	0.14138)
(1369	A 4	4MY1967	0.01864)	(1370	A 6	3MY1967	0.10358)	(1372	C 5	5MY1967	0.16314)
(1373	C 7	5MY1967	0.00856)	(1374	E 2	7MY1967	0.01793)	(1375	E 3	7MY1967	0.02166)
(1376	E 5	6MY1967	0.08995)	(1410	A 6	24MY1967	0.03383)	(1411	C 3	31MY1967	0.01641)
(1412	C 5	31MY1967	0.02525)	(1413	C 7	25MY1967	0.00316)	(1415	E 3	28MY1967	0.00450)
(1432	A 4	13JN1967	0.01533)	(1433	C 3	17JN1967	0.00646)	(1434	C 5	17JN1967	0.00299)
(1435	C 7	13JN1967	0.00631)	(1436	E 2	15JN1967	0.00362)	(1438	E 5	14JN1967	0.00363)
(1449	C 3	16JL1967	0.00764)	(1532	A 3	18SE1967	0.00329)	(1538	E 5	23SE1967	0.00552)
(1377	GS 1	9MY1967	0.00396)	(1378	GS 2	9MY1967	0.00841)	(1380	GS 4	9MY1967	0.01177)
(1381	GS 5	10MY1967	0.00954)	(1382	GS 6	10MY1967	0.01110)	(1383	GS 7	10MY1967	0.01604)
(1384	GS 8	10MY1967	0.01664)	(1385	GS 9	10MY1967	0.00942)	(1386	GS10	12MY1967	0.00575)
(1387	GS11	12MY1967	0.11090)	(1388	GS12	12MY1967	0.04827)	(1389	GS13	12MY1967	0.04383)
(1390	GS14	12MY1967	0.22901)	(1391	GS15	12MY1967	0.20591)	(1392	GS16	12MY1967	0.03390)
(1393	GS17	13MY1967	0.06027)	(1394	GS18	13MY1967	0.66226)	(1395	GS19	13MY1967	0.06576)
(1396	GS20	13MY1967	0.00296)	(1397	GS21	13MY1967	0.01112)	(1398	GS22	14MY1967	0.00304)
(1557	GS 4	3OC1967	0.00374)	(1560	GS 8	4OC1967	0.00472)	(1563	GS11	5OC1967	0.00468)
(1567	GS15	5OC1967	0.00159)	(1568	GS16	5OC1967	0.00144)	(1569	GS17	5OC1967	0.04757)
(1570	GS18	5OC1967	0.02975)	(1571	GS19	6OC1967	0.00117)	(1573	GS21	6OC1967	0.00224)

(1575	GS28	6OC1967	0.00129)	(1544	MU 1	20C1967	0.00477)	(1546	LU 1	20C1967	0.01501)
(1520	HO 1	18SE1967	0.02829)	(1521	SH 1	18SE1967	0.05193)	(1522	BH 1	18SE1967	0.01641)
(1526	MO 1	20SE1967	0.01707)	(1527	TR 1	20SE1967	0.02516)	(1528	SB 1	20SE1967	0.01444)
(1545	WL 1	2DC1967	0.04054)	(1552	SM 1	6OC1967	0.00660)	(1550	MR 1	5OC1967	0.16107)
(1553	SG 1	6OC1967	0.01469)	(1428	MU 2	29MY1967	0.00301)	(1426	MS 2	29MY1967	0.05249)
(1351	MI 2	21AP1967	0.01241)	(1427	LU 2	29MY1967	0.08475)	(1417	HO 2	22MY1967	0.02991)
(1418	SH 2	22MY1967	0.04666)	(1350	BH 2	19AP1967	0.02643)	(1425	RA 2	25MY1967	0.02652)
(1399	PW 2	5MY1967	0.02040)	(1401	MO 2	6MY1967	0.04116)	(1402	TR 2	6MY1967	0.08122)
(1400	SB 2	6MY1967	0.01787)	(1352	KW 2	21AP1967	0.02577)	(1354	GH 2	25AP1967	0.01381)
(1429	WL 2	29MY1967	0.02123)	(1403	CA 2	10MY1967	0.06539)	(1404	MQ 2	10MY1967	0.02541)
(1405	ES 2	12MY1967	0.07095)	(1407	SM 2	14MY1967	0.04180)	(1349	CI 2	19AP1967	0.02155)
(1419	BU 2	23MY1967	0.05492)	(1420	IH 2	23MY1967	0.01511)	(1421	CH 2	23MY1967	0.01735)
(1422	GA 2	23MY1967	0.05109)	(1423	WA 2	25MY1967	0.09421)	(1424	KN 2	25MY1967	0.01332)

Nitzschia romana Grun.

Nitzschia romana Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 69, figs. 12-13. 1881.

578 NIRCMANA TOT NO OF STATIONS 48

(46917	CH	12JA1946	0.00083)	(46915	CH	20FE1946	0.00569)	(46924	CH	10MY1946	0.00141)
(46923	CH	22NO1946	0.00437)	(46516	CH	4MY1947	0.00034)	(46919	CH	5JN1947	0.00303)
(46747	EV	1AU1937	0.00248)	(46767	EV	27OC1937	0.00387)	(1230	E 2	16MY1964	0.00296)
(1240	D 6	10JN1964	0.00307)	(1243	E 6	13JN1964	0.00418)	(1244	F 1	11JN1964	0.00219)
(1440	B 6	11JL1964	0.00369)	(1258	F 1	6JL1964	0.00236)	(1260	F 3	6JL1964	0.00191)
(1264	C* 1	10AU1964	0.02510)	(1265	C* 2	10AU1964	0.00224)	(1266	D 3	18AU1964	0.00351)
(1275	D 2	17SE1964	0.00645)	(1279	E 1	16SE1964	0.00785)	(1285	F 1	15SE1964	0.01165)
(1304	F 1	11OC1964	0.00247)	(1307	B 6	NO1964	0.00361)	(1308	C 7	6NO1964	0.00304)
(1320	E 4	7NO1964	0.00207)	(1343	A 6	19AP1967	0.00069)	(1536	E 2	24SE1967	0.00273)
(1543	E 5	10OC1967	0.00718)	(1387	GS11	12MY1967	0.00396)	(1398	GS22	14MY1967	0.00304)
(1555	GS 2	3OC1967	0.00353)	(1559	GS 7	4OC1967	0.00350)	(1564	GS12	5OC1967	0.00165)
(1522	BH 1	18SE1967	0.00182)	(1526	MO 1	20SE1967	0.01707)	(1527	TR 1	20SE1967	0.00629)
(1529	KW 1	20SE1967	0.01199)	(1531	GH 1	25SE1967	0.00845)	(1550	MR 1	5OC1967	0.02478)
(1428	MU 2	29MY1967	0.00301)	(1351	MI 2	21AP1967	0.00310)	(1417	HO 2	22MY1967	0.00748)
(1350	BH 2	19AP1967	0.01762)	(1401	MO 2	6MY1967	0.01764)	(1402	TR 2	6MY1967	0.00541)
(1400	SB 2	6MY1967	0.00596)	(1352	KW 2	21AP1967	0.00859)	(1407	SM 2	14MY1967	0.01194)

Nitzschia sigmoidea (Nitz.) Wm. Smith

Bacillaria sigmoidea Nitzsch, Neue Schrift. Naturforsch. Ges. Halle, 3(1):104. 1817.

575 NISIGMOI TOT NO OF STATIONS 25

(1337	C 3	2MR1967	0.00147)	(1341	A 3	19AP1967	0.00108)	(1396	GS20	13MY1967	0.00222)
(1554	GS 1	3OC1967	0.00356)	(1565	GS13	5OC1967	0.01014)	(1568	GS16	5OC1967	0.00144)
(1569	GS17	5OC1967	0.00149)	(1575	GS28	6OC1967	0.00516)	(1547	MS 1	2OC1967	0.00798)
(1526	MO 1	20SE1967	0.01707)	(1527	TR 1	20SE1967	0.01258)	(1529	KW 1	20SE1967	0.01199)
(1530	FR 1	24SE1967	0.01000)	(1531	GH 1	25SE1967	0.00845)	(1552	SM 1	6OC1967	0.00660)
(1550	MR 1	5OC1967	0.02478)	(1553	SG 1	6OC1967	0.00734)	(1428	MU 2	29MY1967	0.00301)
(1417	HO 2	22MY1967	0.00748)	(1418	SH 2	22MY1967	0.01555)	(1350	BH 2	19AP1967	0.02863)
(1401	MO 2	6MY1967	0.00588)	(1404	MQ 2	10MY1967	0.02541)	(1407	SM 2	14MY1967	0.01194)
(1349	CI 2	19AP1967	0.00359)	(							

Nitzschia sinuata var. *tabellaria* (Grun.) Grun.

Denticula tabellaria Grunow, Verh. Zool.-Bot. Ges. Wien, 12:548. 1862. *Nitzschia sinuata* var. *tabellaria* (Grun.) Grunow *in*: Van Heurck, Syn. Diat. Belgique, p. 176, pl. 60, figs. 12-13. 1885.

580 NISINUVT TOT NO OF STATIONS 3

(1530	FR 1	24SE1967	0.01000)	(1545	WL 1	20C1967	0.00676)	(1550	MR 1	5OC1967	0.01239)

Nitzschia spiculoides Hust.

Nitzschia spiculoides Hustedt, Instit. Parcs. Nat. Congo Belge, Expl. Parc Nat. Albert, Mission Damas (1935-1936), Fasc. 8, p. 151, pl. 13, figs. 5-6. 1949.

582 NISPICUL TOT NO OF STATIONS 8

(1258	F 1	6JL1964	0.00944)	(1259	F 2	6JL1964	0.00930)	(1260	F 3	6JL1964	0.00191)
(1300	E 3	13OC1964	0.00358)	(1536	E 2	24SE1967	0.00273)	(1380	GS 4	9MY1967	0.00673)
(1544	MU 1	20C1967	0.00477)	(1522	BH 1	18SE1967	0.00365)	(			

Nitzschia subacicularis Hust.

Nitzschia subacicularis Hustedt *in*: A. Schmidt, Atlas Diat., pl. 348, fig. 76. 1922.

583 NISACICU TOT NO OF STATIONS 1

(1268	E 2	15AU1964	0.00274)	(											

Nitzschia sublinearis Hust.

Nitzschia sublinearis Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 411, fig. 786. 1930.

581 NISLINEA TOT NO OF STATIONS 9

(1522	BH 1	18SE1967	0.03100)	(1523	RA 1	19SE1967	0.00923)	(1526	MO 1	20SE1967	0.03414)				
(1528	SB 1	20SE1967	0.08663)	(1545	WL 1	20C1967	0.33110)	(1550	MR 1	50C1967	0.03717)				
(1417	HO 2	22MY1967	0.01122)	(1350	BH 2	19AP1967	0.01762)	(1420	IH 2	23MY1967	0.01511)				

Nitzschia thermalis (Ehr.) Auersw.

Pinnularia thermalis Ehrenberg, Abh. Akad. Wiss. Berlin, 1841:21. 1843.
Nitzschia thermalis (Ehr.) Auerswald *ex* Rabenhorst, Alg. Sachsens resp. Mitteleuropas Exsicc., No. 1064. 1860.

584 NITHERMA TOT NO OF STATIONS 2

(1264	C' 1	10AU1964	0.00193)	(1532	A 3	18SE1967	0.00329)	(							

Nitzschia tropica Hust.

Nitzschia tropica Hustedt, Instit. Parcs Nat. Congo Belge, Expl. Parc Nat. Albert, Mission Damas (1935-1936), Fasc. 8, p. 147, pl. 11, figs. 34-48. 1949.

585 NITROPIC TOT NO OF STATIONS 2

(46762	EV	18MR1938	0.02206)	(1258	F 1	6JL1964	0.00236)	(							

Nitzschia tryblionella Hantz.

Nitzschia tryblionella Hantzsch *ex* Rabenhorst, Alg. Sachsens resp. Mitteleuropas Exsicc., No. 984. 1860.

586 NITRYBLI TOT NO OF STATIONS 1

(1552	SM 1	60C1967	0.00660)	(											

Nitzschia tryblionella var. *debilis* (Arnott) A. Mayer

Nitzschia debilis Arnott *ex* Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):68. 1880.
Nitzschia tryblionella var. *debilis* (Arnott) A. Mayer, Ber. Naturw. Ver. Regensburg, 14:295, pl. 16, fig. 16. 1913.

587 NITRYBVD TOT NO OF STATIONS 1

(46764	EV	17JL1937	0.00806)	(											

Nitzschia tryblionella var. *levidensis* (Wm. Smith) Grun.

Tryblionella levidensis Wm. Smith, Syn. British Diat., Vol. 2, p. 89. 1856.
Nitzschia tryblionella var. *levidensis* (Wm. Smith) Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):70. 1880.

588 NITRYBVL TOT NO OF STATIONS 4

(1556	GS 3	30C1967	0.00521)	(1572	GS20	60C1967	0.00090)	(1545	WL 1	20C1967	0.00676)				
(1401	MO 2	6MY1967	0.01764)	(											

Nitzschia sp. #1. (aff. *N. lancettula* O. Müll.)

589 NISPECCA TCT NO OF STATIONS 120

(46910	CH	0C1945	0.00546)	(46921	CH	23N01945	0.00194)	(46917	CH	12JA1946	0.0C028)
(46915	CH	20FE1946	0.01707)	(46914	CH	19AP1946	0.00641)	(46924	CH	10MY1946	0.00141)
(46923	CH	22N01946	0.00874)	(46920	CH	20DE1946	0.00031)	(46905	CH	JA1947	0.00735)
(46909	CH	MR1947	0.00911)	(46916	CH	4MY1947	0.00170)	(46906	CH	MY1947	0.00929)
(46919	CH	5JN1947	0.09863)	(46907	CH	JL1947	0.00099)	(46922	CH	21AU1947	0.0C291)
(46758	EV	5JN1937	0.04636)	(46771	EV	11JN1937	0.00238)	(46764	EV	17JL1937	0.04835)
(46757	EV	25JL1937	0.01926)	(46747	EV	1AU1937	0.00495)	(46763	EV	23AU1937	0.02029)
(46752	EV	15SE1937	0.06530)	(46760	EV	22SE1937	0.00492)	(46744	EV	6OC1937	0.0C975)
(46767	EV	27OC1937	0.00387)	(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	0.04411)
(1225	C 6	15MY1964	0.0C392)	(1228	D 2	14MY1964	0.00389)	(1229	D 5	14MY1964	0.00423)
(1230	E 2	16MY1964	0.00593)	(1231	E 3	16MY1964	0.03180)	(1232	E 5	16MY1964	0.09218)
(1233	B 3	5JN2964	0.00238)	(1238	D 3	11JN1964	0.00400)	(1239	D 4	11JN1964	0.00116)
(1240	D 6	10JN1964	0.00153)	(1241	E 2	13JN1964	0.00739)	(1242	E 3	13JN1964	0.0C749)
(1243	E 6	13JN1964	0.00418)	(1244	F 1	11JN1964	0.00548)	(1245	F 2	11JN1964	0.0C692)
(1246	F 3	11JN1964	0.01195)	(1252	C' 1	16JL1964	0.00837)	(1254	D 2	15JL1964	0.0C383)
(1256	E 2	14JL1964	0.01282)	(1257	E 3	14JL1964	0.00479)	(1258	F 1	6JL1964	0.01888)
(1259	F 2	6JL1964	0.00310)	(1260	F 3	6JL1964	0.00573)	(1264	C' 1	10AU1964	0.0C579)
(1265	C' 2	10AU1964	0.00224)	(1266	D 3	18AU1964	0.00351)	(1267	D 6	18AU1964	0.0C216)
(1268	E 2	15AU1964	0.02188)	(1269	E 3	15AU1964	0.01096)	(1274	D 1	17SE1964	0.00469)
(1285	F 1	15SE1964	0.02912)	(1288	B 3	15OC1964	0.00218)	(1445	B 6	14OC1964	0.0C652)
(1290	C' 1	16OC1964	0.00379)	(1300	E 3	13OC1964	0.01790)	(1304	F 1	11OC1964	0.00247)
(1322	E 6	7N01964	0.00333)	(1337	C 3	2MR1967	0.00588)	(1338	C 3	28MR1967	0.00661)
(1339	C 5	28MR1967	0.04053)	(1340	C 7	28MR1967	0.00291)	(1341	A 3	19AP1967	0.0C217)
(1342	A 4	19AP1967	0.00180)	(1343	A 6	19AP1967	0.00139)	(1345	C 5	25AP1967	0.02924)
(1347	E 2	23AP1967	0.00813)	(1348	E 5	23AP1967	0.02467)	(1368	A 3	4MY1967	0.00314)
(1370	A 6	3MY1967	0.00230)	(1372	C 5	5MY1967	0.00355)	(1373	C 7	5MY1967	0.0C570)
(1374	E 2	7MY1967	0.0C598)	(1375	E 3	7MY1967	0.01684)	(1376	E 5	6MY1967	0.0C562)
(1411	C 3	31MY1967	0.00410)	(1412	C 5	31MY1967	0.00842)	(1416	E 5	28MY1967	0.0C437)
(1433	C 3	17JN1967	0.00646)	(1436	E 2	15JN1967	0.00362)	(1449	C 3	16JL1967	0.01529)
(1451	C 7	16JL1967	0.0C197)	(1453	E 3	15JL1967	0.00506)	(1512	E 3	1SE1967	0.0C393)
(1536	E 2	24SE1967	0.00273)	(1542	E 3	11OC1967	0.00509)	(1381	GS 5	10MY1967	0.0C477)
(1383	GS 7	10MY1967	0.00802)	(1384	GS 8	10MY1967	0.00555)	(1385	GS 9	10MY1967	0.0C235)
(1386	GS10	12MY1967	0.00287)	(1387	GS11	12MY1967	0.00396)	(1394	GS18	13MY1967	0.0C172)
(1570	GS18	5OC1967	0.0C992)	(1574	GS22	6OC1967	0.00288)	(1546	LU 1	2OC1967	0.0C500)
(1526	MO 1	20SE1967	0.02845)	(1527	TR 1	20SE1967	0.01258)	(1550	MR 1	5OC1967	0.01239)
(1426	MS 2	29MY1967	0.01050)	(1351	MI 2	21AP1967	0.00621)	(1417	HO 2	22MY1967	0.01869)
(1425	RA 2	25MY1967	0.00884)	(1399	PW 2	5MY1967	0.00680)	(1401	MO 2	6MY1967	0.0C588)
(1400	SB 2	6MY1967	0.01191)	(1352	KW 2	21AP1967	0.00859)	(1353	FR 2	23AP1967	0.01055)
(1403	CA 2	10MY1967	0.01308)	(1407	SM 2	14MY1967	0.00597)	(1421	CH 2	23MY1967	0.01735)
(1422	GA 2	23MY1967	0.01022)	(1423	WA 2	25MY1967	0.02141)	(1424	KN 2	25MY1967	0.01332)

Nitzschia sp. #2.

590 NISPECOB TCT NO OF STATIONS 258

(60973	CH	1876	0.07085)	(3540	CH	11MY1879	0.06523)	(3541	CH	1FE1881	0.17607)
(3507	CH	19FE1881	0.03396)	(46921	CH	23N01945	0.11576)	(46908	CH	DE1945	0.05035)
(46917	CH	12JA1946	0.30635)	(46915	CH	20FE1946	0.09105)	(46914	CH	19AP1946	0.52107)
(46924	CH	10MY1946	0.09171)	(46923	CH	22N01946	0.15736)	(46920	CH	20DE1946	0.02003)
(46905	CH	JA1947	0.01716)	(46909	CH	MR1947	0.12295)	(46912	CH	AP1947	0.05749)
(46916	CH	4MY1947	0.01391)	(46906	CH	MY1947	0.41016)	(46919	CH	5JN1947	0.12291)
(46907	CH	JL1947	0.11785)	(46922	CH	21AU1947	0.07560)	(46758	EV	5JN1937	1.29805)
(46771	EV	11JN1937	0.66568)	(46743	EV	20JN1937	0.37681)	(46764	EV	17JL1937	0.12087)
(46757	EV	25JL1937	0.00481)	(46747	EV	1AU1937	0.09902)	(46763	EV	23AU1937	0.08117)
(46752	EV	15SE1937	0.02177)	(46748	EV	13OC1937	0.32024)	(46767	EV	27OC1937	0.02095)
(46749	EV	12MR1938	0.06069)	(46768	EV	16MR1938	0.07350)	(46762	EV	18MR1938	0.04411)
(46751	EV	30MR1938	0.04466)	(46772	EV	18AP1938	0.01419)	(46756	EV	27AP1938	0.11753)
(46759	EV	19MY1938	0.05402)	(46761	EV	27MY1938	0.05178)	(46766	EV	14DE1938	0.03169)
(1223	B 3	18MY1964	0.00781)	(1224	B 4	18MY1964	0.02745)	(1225	C 6	15MY1964	0.05880)
(1226	C 7	16MY1964	0.17504)	(1227	C' 2	13MY1964	0.01535)	(1228	D 2	14MY1964	0.32698)
(1229	D 5	14MY1964	0.21569)	(1230	E 2	16MY1964	0.15706)	(1231	E 3	16MY1964	0.94169)
(1232	E 5	16MY1964	0.30436)	(1233	B 3	5JN2964	0.03334)	(1234	B 3	18JN1964	0.00281)
(1235	C 7	16JN1964	0.00282)	(1439	B 6	5JN1964	0.05594)	(1236	C' 1	8JN1964	0.05601)
(1237	C' 2	8JN1964	0.04640)	(1238	D 3	11JN1964	0.16600)	(1239	D 4	11JN1964	0.00696)
(1240	D 6	10JN1964	0.53688)	(1241	E 2	13JN1964	0.15081)	(1242	E 3	13JN1964	0.20981)
(1243	E 6	13JN1964	0.22551)	(1244	F 1	11JN1964	0.08443)	(1245	F 2	11JN1964	0.06915)
(1246	F 3	11JN1964	0.05379)	(1247	B 3	14JL1964	0.00427)	(1248	B 3	24JL1964	0.0C394)
(1440	B 6	11JL1964	0.00737)	(1441	B 6	24JL1964	0.00441)	(1250	C 6	10JL1964	0.0C411)
(1251	C 7	16JL1964	0.00579)	(1252	C' 1	16JL1964	0.00279)	(1253	C' 2	16JL1964	0.01598)
(1254	D 2	15JL1964	0.03448)	(1255	D 5	15JL1964	0.00513)	(1256	E 2	14JL1964	0.03297)
(1257	E 3	14JL1964	0.11485)	(1258	F 1	6JL1964	0.08259)	(1259	F 2	6JL1964	0.05578)
(1260	F 3	6JL1964	0.02865)	(1261	B 3	2AU1964	0.00196)	(1264	C' 1	10AU1964	0.00193)
(1268	E 2	15AU1964	0.0C274)	(1269	E 3	15AU1964	0.01644)	(1272	C' 1	10SE1964	0.01231)
(1278	D 6	18SE1964	0.00384)	(1279	E 1	16SE1964	0.01571)	(1281	E 3	16SE1964	0.0C785)
(1284	E 6	17SE1964	0.00635)	(1285	F 1	15SE1964	0.14559)	(1287	F 3	15SE1964	0.0C500)
(1288	B 3	15OC1964	0.01088)	(1445	B 6	14OC1964	0.00978)	(1289	C 7	14OC1964	0.0C440)
(1291	C' 2	16OC1964	0.00245)	(1293	D 2	15OC1964	0.00472)	(1297	D 6	14OC1964	0.00762)
(1298	E 1	12OC1964	0.00808)	(1299	E 2	12OC1964	0.00943)	(1300	E 3	13OC1964	0.03222)
(1301	E 4	13OC1964	0.00442)	(1302	E 5	13OC1964	0.02834)	(1303	E 6	13OC1964	0.02239)
(1304	F 1	11OC1964	0.01976)	(1305	F 2	11OC1964	0.00690)	(1306	F 3	11OC1964	0.00832)
(1307	B 6	N01964	0.01082)	(1308	C 7	6N01964	0.00912)	(1310	C' 2	10N01964	0.0C227)
(1314	D 4	9N01964	0.00287)	(1315	D 5	9N01964	0.00455)	(1316	D 6	9N01964	0.00378)
(1317	E 1	6N01964	0.00383)	(1318	E 2	7N01964	0.00190)	(1319	E 3	7N01964	0.0C524)
(1320	E 4	7N01964	0.01241)	(1321	E 5	7N01964	0.00319)	(1322	E 6	7N01964	0.04332)
(1323	F 1	6N01964	0.01254)	(1324	F 2	6N01964	0.00466)	(1325	F 3	6N01964	0.0C252)
(1336	C 3	27JA1967	0.00770)	(1337	C 3	2MR1967	0.12199)	(1338	C 3	28MR1967	0.61617)
(1339	C 5	28MR1967	0.60173)	(1340	C 7	28MR1967	0.15271)	(1341	A 3	19AP1967	0.16597)
(1342	A 4	19AP1967	0.42228)	(1343	A 6	19AP1967	0.24316)	(1344	C 3	25AP1967	0.27794)
(1345	C 5	25AP1967	0.39569)	(1346	C 7	21AP1967	0.31245)	(1347	E 2	23AP1967	0.41623)
(1348	E 5	23AP1967	1.34339)	(1368	A 3	4MY1967	0.73516)	(1369	A 4	4MY1967	0.27582)
(1370	A 6	3MY1967	0.19105)	(1371	C 3	4MY1967	0.59098)	(1372	C 5	5MY1967	1.48957)
(1373	C 7	5MY1967	0.30806)	(1374	E 2	7MY1967	0.52301)	(1375	[illegible] 3	7MY1967	0.92639)

(1376	E 5	6MY1967	0.51158)	(1408	A 3	23MY1967	0.20570)	(1409	A 4	23MY1967	0.04166)
(1410	A 6	24MY1967	0.33266)	(1411	C 3	31MY1967	0.31592)	(1412	C 5	31MY1967	0.38303)
(1413	C 7	25MY1967	0.13267)	(1414	E 2	28MY1967	0.05709)	(1415	E 3	28MY1967	0.15740)
(1416	E 5	28MY1967	0.15308)	(1431	A 3	12JN1967	0.02317)	(1432	A 4	13JN1967	0.22479)
(1433	C 3	17JN1967	0.41338)	(1434	C 5	17JN1967	0.14356)	(1435	C 7	13JN1967	0.11050)
(1436	E 2	15JN1967	0.10494)	(1437	E 3	15JN1967	0.07536)	(1438	E 5	14JN1967	0.12346)
(1446	A 3	11JL1967	0.00245)	(1449	C 3	16JL1967	0.06496)	(1450	C 5	16JL1967	0.00571)
(1451	C 7	16JL1967	0.00197)	(1452	E 2	14JL1967	0.00852)	(1453	E 3	15JL1967	0.07330)
(1504	A 3	28AU1967	0.00247)	(1505	A 4	28AU1967	0.01031)	(1508	C 3	2SE1967	0.00400)
(1511	E 2	1SE1967	0.00307)	(1512	E 3	1SE1967	0.00393)	(1532	A 3	18SE1967	0.00329)
(1534	A 6	19SE1967	0.00620)	(1537	E 3	24SE1967	0.01294)	(1538	E 5	23SE1967	0.00552)
(1541	E 2	11OC1967	0.00532)	(1377	GS 1	9MY1967	0.18999)	(1378	GS 2	9MY1967	0.11354)
(1379	GS 3	9MY1967	0.06499)	(1380	GS 4	9MY1967	0.10762)	(1381	GS 5	10MY1967	0.05009)
(1382	GS 6	10MY1967	0.11380)	(1383	GS 7	10MY1967	0.08287)	(1384	GS 8	10MY1967	0.15713)
(1385	GS 9	10MY1967	0.13892)	(1386	GS10	12MY1967	0.11204)	(1387	GS11	12MY1967	0.27725)
(1388	GS12	12MY1967	0.25339)	(1389	GS13	12MY1967	0.10056)	(1390	GS14	12MY1967	0.24662)
(1391	GS15	12MY1967	0.20112)	(1392	GS16	12MY1967	0.12636)	(1393	GS17	13MY1967	0.34791)
(1394	GS18	13MY1967	1.02350)	(1395	GS19	13MY1967	0.08690)	(1396	GS20	13MY1967	0.01036)
(1397	GS21	13MY1967	0.03859)	(1398	GS22	14MY1967	0.21253)	(1554	GS 1	30C1967	0.02135)
(1557	GS 4	30C1967	0.01121)	(1560	GS 8	40C1967	0.01417)	(1562	GS10	50C1967	0.00247)
(1563	GS11	50C1967	0.00701)	(1564	GS12	50C1967	0.00165)	(1565	GS13	50C1967	0.00507)
(1567	GS15	50C1967	0.00953)	(1568	GS16	50C1967	0.00289)	(1569	GS17	50C1967	0.01932)
(1570	GS18	50C1967	0.01983)	(1571	GS19	60C1967	0.00176)	(1572	GS20	60C1967	0.00180)
(1573	GS21	60C1967	0.00224)	(1574	GS22	60C1967	0.00288)	(1575	GS28	60C1967	0.00645)
(1544	MU 1	20C1967	0.00238)	(1546	LU 1	20C1967	0.03501)	(1520	HO 1	18SE1967	0.01886)
(1521	SH 1	18SE1967	0.04616)	(1522	BH 1	18SE1967	0.02188)	(1526	MO 1	20SE1967	0.06827)
(1527	TR 1	20SE1967	0.01258)	(1528	SB 1	20SE1967	0.02888)	(1529	KW 1	20SE1967	0.15589)
(1530	FR 1	24SE1967	0.01000)	(1531	GH 1	25SE1967	0.03381)	(1545	WL 1	20C1967	0.02703)
(1549	MQ 1	40C1967	0.02741)	(1551	ES 1	50C1967	0.02396)	(1552	SM 1	60C1967	0.06603)
(1550	MR 1	50C1967	0.06195)	(1553	SG 1	60C1967	0.02203)	(1428	MU 2	29MY1967	0.07533)
(1426	MS 2	29MY1967	0.97638)	(1351	MI 2	21AP1967	0.26067)	(1427	LU 2	29MY1967	0.82324)
(1417	HO 2	22MY1967	0.65799)	(1418	SH 2	22MY1967	0.07776)	(1350	BH 2	19AP1967	0.59911)
(1425	RA 2	25MY1967	0.22102)	(1399	PW 2	5MY1967	0.32644)	(1401	MO 2	6MY1967	0.43509)
(1402	TR 2	6MY1967	0.86636)	(1400	SB 2	6MY1967	0.30975)	(1352	KW 2	21AP1967	0.36076)
(1353	FR 2	23AP1967	0.04219)	(1354	GH 2	25AP1967	0.08976)	(1429	WL 2	29MY1967	0.33974)
(1403	CA 2	10MY1967	0.23539)	(1404	MQ 2	10MY1967	0.05081)	(1405	ES 2	12MY1967	0.04515)
(1407	SM 2	14MY1967	0.08957)	(1349	CI 2	19AP1967	0.74718)	(1406	GB 2	13MY1967	0.04044)
(1419	BU 2	23MY1967	0.43940)	(1420	IH 2	23MY1967	0.18127)	(1421	CH 2	23MY1967	0.32963)
(1422	GA 2	23MY1967	0.29122)	(1423	WA 2	25MY1967	1.43879)	(1424	KN 2	25MY1967	0.46629)

Nitzschia sp. #5.

591 NISPECOE TOT NO OF STATIONS 61

(3540	CH	11MY1879	0.00466)	(46509	CH	MR1947	0.00455)	(46906	CH	MY1947	0.00465)
(46907	CH	JL1947	0.00099)	(46747	EV	1AU1937	0.00248)	(46752	EV	15SE1937	0.02177)
(1253	C' 2	16JL1964	0.00456)	(1254	D 2	15JL1964	0.00958)	(1256	E 2	14JL1964	0.00916)
(1257	E 3	14JL1964	0.01914)	(1258	F 1	6JL1964	0.00236)	(1260	F 3	6JL1964	0.00764)
(1279	E 1	16SE1964	0.00393)	(1287	F 3	15SE1964	0.00500)	(1445	B 6	14OC1964	0.00652)
(1374	E 2	7MY1967	0.02690)	(1375	E 3	7MY1967	0.01203)	(1376	E 5	6MY1967	0.00843)
(1412	C 5	31MY1967	0.01263)	(1414	E 2	28MY1967	0.00336)	(1432	A 4	13JN1967	0.01022)
(1433	C 3	17JN1967	0.00646)	(1436	E 2	15JN1967	0.00362)	(1446	A 3	11JL1967	0.00489)
(1447	A 4	11JL1967	0.00234)	(1450	C 5	16JL1967	0.00190)	(1452	E 2	14JL1967	0.00639)
(1453	E 3	15JL1967	0.00506)	(1511	E 2	1SE1967	0.00307)	(1512	E 3	1SE1967	0.01571)
(1379	GS 3	9MY1967	0.00619)	(1380	GS 4	9MY1967	0.00336)	(1381	GS 5	10MY1967	0.00954)
(1383	GS 7	10MY1967	0.03743)	(1384	GS 8	10MY1967	0.05176)	(1385	GS 9	10MY1967	0.00235)
(1386	GS10	12MY1967	0.00862)	(1392	GS16	12MY1967	0.01233)	(1394	GS18	13MY1967	0.05333)
(1395	GS19	13MY1967	0.00587)	(1397	GS21	13MY1967	0.00131)	(1398	GS22	14MY1967	0.00304)
(1555	GS 2	30C1967	0.00353)	(1560	GS 8	40C1967	0.00472)	(1544	MU 1	20C1967	0.00238)
(1521	SH 1	18SE1967	0.00577)	(1552	SM 1	60C1967	0.01981)	(1550	MR 1	50C1967	0.02478)
(1428	MU 2	29MY1967	0.00301)	(1426	MS 2	29MY1967	0.03150)	(1351	MI 2	21AP1967	0.00621)
(1427	LU 2	29MY1967	0.01211)	(1417	HO 2	22MY1967	0.01122)	(1350	BH 2	19AP1967	0.00441)
(1399	PW 2	5MY1967	0.00680)	(1352	KW 2	21AP1967	0.02577)	(1353	FR 2	23AP1967	0.01055)
(1354	GH 2	25AP1967	0.01726)	(1429	WL 2	29MY1967	0.03185)	(1403	CA 2	10MY1967	0.15692)
(1404	MQ 2	10MY1967	0.01270)	(							

Nitzschia sp. #6.

592 NISPECOF TOT NO OF STATIONS 65

(46924	CH	10MY1946	0.00071)	(46758	EV	5JN1937	0.00357)	(46764	EV	17JL1937	0.02417)
(1224	B 4	18MY1964	0.00196)	(1231	E 3	16MY1964	0.00245)	(1439	B 6	5JN1964	0.00200)
(1243	E 6	13JN1964	0.00209)	(1257	E 3	14JL1964	0.00239)	(1258	F 1	6JL1964	0.00236)
(1260	F 3	6JL1964	0.00191)	(1268	E 2	15AU1964	0.00274)	(1269	E 3	15AU1964	0.00274)
(1337	C 3	2MR1967	0.00441)	(1338	C 3	28MR1967	0.10975)	(1339	C 5	28MR1967	0.02806)
(1340	C 7	28MR1967	0.00654)	(1341	A 3	19AP1967	0.01627)	(1342	A 4	19AP1967	0.21475)
(1343	A 6	19AP1967	0.00417)	(1344	C 3	25AP1967	0.00496)	(1345	C 5	25AP1967	0.30018)
(1346	C 7	21AP1967	0.00267)	(1347	E 2	23AP1967	0.03577)	(1348	E 5	23AP1967	0.21110)
(1368	A 3	4MY1967	0.05655)	(1369	A 4	4MY1967	0.00745)	(1370	A 6	3MY1967	0.01381)
(1372	C 5	5MY1967	0.04611)	(1373	C 7	5MY1967	0.00285)	(1374	E 2	7MY1967	0.02092)
(1375	E 3	7MY1967	0.01203)	(1376	E 5	6MY1967	0.01405)	(1412	C 5	31MY1967	0.01684)
(1433	C 3	17JN1967	0.00646)	(1434	C 5	17JN1967	0.00598)	(1511	E 2	1SE1967	0.00307)
(1512	E 3	1SE1967	0.00393)	(1379	GS 3	9MY1967	0.00309)	(1380	GS 4	9MY1967	0.00168)
(1382	GS 6	10MY1967	0.02220)	(1383	GS 7	10MY1967	0.00267)	(1384	GS 8	10MY1967	0.00370)
(1386	GS10	12MY1967	0.00575)	(1387	GS11	12MY1967	0.00396)	(1394	GS18	13MY1967	0.00344)
(1557	GS 4	30C1967	0.00374)	(1562	GS10	50C1967	0.00247)	(1566	GS14	50C1967	0.00183)
(1528	SB 1	20SE1967	0.01444)	(1545	WL 1	20C1967	0.01351)	(1551	ES 1	50C1967	0.00799)
(1550	MR 1	50C1967	0.01239)	(1428	MU 2	29MY1967	0.00301)	(1426	MS 2	29MY1967	0.01050)
(1351	MI 2	21AP1967	0.00310)	(1427	LU 2	29MY1967	0.02421)	(1417	HO 2	22MY1967	0.10842)
(1401	MO 2	6MY1967	0.01176)	(1402	TR 2	6MY1967	0.00541)	(1400	SB 2	6MY1967	0.01191)
(1354	GH 2	25AP1967	0.02244)	(1403	CA 2	10MY1967	0.01308)	(1349	CI 2	19AP1967	0.01796)
(1422	GA 2	23MY1967	0.00511)	(1423	WA 2	25MY1967	0.02141)	(			

Nitzschia sp. #7.

593 NISPECCG TOT NO OF STATIONS 22

(46758	EV	5JN1937	0.00357)	(46747	EV	1AU1937	0.00248)	(1268	E 2	15AU1964	C.C0274)
(1274	D 1	17SE1964	0.00469)	(1279	E 1	16SE1964	0.00393)	(1556	GS 3	30C1967	C.0C521)
(1572	GS20	6CC1967	0.00090)	(1544	MU 1	20C1967	C.02859)	(1546	LU 1	20C1967	C.28510)
(1521	SH 1	18SE1967	0.02885)	(1526	MO 1	20SE1967	0.00569)	(1530	FR 1	24SE1967	C.06001)
(1531	GH 1	25SE1967	0.00845)	(1545	WL 1	20C1967	6.91939)	(1548	CA 1	3CC1967	C.C1272)
(1549	MO 1	4CC1967	0.01370)	(1552	SM 1	6OC1967	0.00660)	(1550	MR 1	5CC1967	C.C7434)
(1417	HO 2	22MY1967	0.00748)	(1354	GH 2	25AP1967	0.00173)	(1429	WL 2	29MY1967	C.C1062)
(1404	MO 2	10MY1967	0.02541)	(							

Nitzschia sp. #8.

594 NISPECCH TOT NO OF STATIONS 7

(46752	EV	15SE1937	0.02177)	(1270	F 1	10AU1964	0.00272)	(1275	D 2	17SE1964	C.CC645)
(1285	E 1	15SE1964	0.02912)	(1554	GS 1	30C1967	0.00356)	(1546	LU 1	20C1967	C.02001)
(1403	CA 2	10MY1967	C.C1308)	(							

Nitzschia sp. #9.

595 NISPECCI TOT NO OF STATIONS 3

(1340	C 7	28MR1967	0.00073)	(1341	A 3	19AP1967	C.C0108)	(1536	E 2	24SE1967	C.CC545)

Nitzschia sp. #10.

596 NISPECCJ TOT NO OF STATIONS 1

(1250	C 6	10JL1964	0.CC411)	(

Nitzschia sp. #11.

597 NISPECCK TOT NO OF STATIONS 2

(1272	C' 1	1CSE1964	0.00410)	(1550	MR 1	5OC1967	C.C1239)	(

Nitzschia sp. #12.

598 NISPECCL TOT NO OF STATIONS 4

(1550	MR 1	5OC1967	0.03717)	(1426	MS 2	29MY1967	0.01050)	(1350	BH 2	19AP1967	C.00661)
(1404	MO 2	10MY1967	0.01270)	(							

Nitzschia sp. #14.

599 NISPECCN TOT NO OF STATIONS 1

(1511	E 2	1SE1967	0.00307)	(

Nitzschia sp. #15.

600 NISPECCO TOT NO OF STATIONS 4

(1544	MU 1	20C1967	0.01668)	(1546	LU 1	20C1967	C.03001)	(1550	MR 1	5OC1967	C.02478)
(1428	MU 2	29MY1967	0.01205)	(							

Nitzschia sp. #16.

601 NISPECCP TOT NO OF STATIONS 4

(1544	MU 1	20C1967	0.00715)	(1546	LU 1	20C1967	C.00500)	(1529	KW 1	20SE1967	C.01199)
(1545	WL 1	20C1967	0.03379)	(							

Nitzschia sp. #17.

602 NISPECCQ TOT NO OF STATIONS 1

(1546	LU 1	20C1967	0.02501)	(

Nitzschia sp. #18.

603 NISPECOR TOT NO OF STATIONS 2

(1522	BH 1	18SE1967	0.10029)	(1550	MR 1	50C1967	0.01239)	(			

Genus *Opephora* Petit

Petit, Miss. Sci. Cap Horn, 1882-1883, Bot., Vol. 5, p. 130. 1888.

Members of the genus *Opephora* find their primary habitat in periphyton communities. Occasional specimens are taken in plankton collections from Lake Michigan, especially in nearshore areas.

Opephora ansata Hohn and Hellerm.

Opephora ansata Hohn and Hellerman, Trans. American Micr. Soc., 82(3): 321, pl. 1, fig. 13, 1963.

606 OPSPECOB TOT NO OF STATIONS 37

(60973	CH	1876	0.04724)	(3541	CH	1FE1881	0.00978)	(46921	CH	23NO1945	C.00065)
(46915	CH	20FE1946	0.00569)	(46924	CH	10MY1946	0.00071)	(46916	CH	4MY1947	C.00034)
(46922	CH	21AU1947	0.00097)	(46758	EV	5JN1937	0.02853)	(46764	EV	17JL1937	C.00806)
(46757	EV	25JL1937	0.01926)	(46747	EV	1AU1937	0.01733)	(46763	EV	23AU1937	C.34497)
(46752	EV	15SE1937	0.17414)	(46760	EV	22SE1937	0.00985)	(46744	EV	6OC1937	C.00975)
(46748	EV	13OC1937	0.06405)	(46767	EV	27CC1937	0.02708)	(46749	EV	12MR1938	C.02427)
(46768	EV	16MR1938	0.05880)	(46762	EV	18MR1938	0.17644)	(46759	EV	19MY1938	0.01013)
(1264	C' 1	10AU1964	0.00193)	(1279	E 1	16SE1964	0.00393)	(1285	F 1	15SE1964	C.01165)
(1303	E 6	13OC1964	0.00560)	(1340	C 7	28MR1967	0.00218)	(1538	E 5	23SE1967	C.08286)
(1541	E 2	11OC1967	0.01597)	(1543	E 5	10OC1967	0.01437)	(1388	GS12	12MY1967	C.00603)
(1392	GS16	12MY1967	0.00616)	(1394	GS18	13MY1967	0.00344)	(1398	GS22	14MY1967	C.00607)
(1567	GS15	50C1967	0.00318)	(1571	GS19	60C1967	C.00059)	(1574	GS22	60C1967	3.62423)
(1575	GS28	60C1967	0.00129)	(							

Opephora martyi Hérib.

Opephora martyi Héribaud, Diat. Foss. Auvergne, Vol. 1, p. 43, pl. 8, fig. 20. 1902.

604 OPMARTYI TOT NO OF STATIONS 47

(3540	CH	11MY1879	0.00466)	(46916	CH	4MY1947	0.00034)	(46768	EV	16MR1938	C.02940)
(1279	E 1	16SE1964	0.08639)	(1284	E 6	17SE1964	0.00318)	(1285	F 1	15SE1964	0.00582)
(1297	D 6	14OC1964	0.00190)	(1320	E 4	7NO1964	0.00207)	(1372	C 5	5MY1967	C.00355)
(1532	A 3	18SE1967	0.00329)	(1533	A 4	19SE1967	0.00464)	(1377	CS 1	9MY1967	C.00396)
(1388	GS12	12MY1967	0.01207)	(1390	GS14	12MY1967	0.00587)	(1392	GS16	12MY1967	0.00925)
(1396	GS20	13MY1967	0.00074)	(1554	GS 1	30C1967	0.00356)	(1557	GS 4	30C1967	C.00747)
(1558	GS 5	40C1967	0.00396)	(1565	GS13	50C1967	C.07099)	(1567	GS15	50C1967	C.00635)
(1569	GS17	50C1967	0.00149)	(1571	GS19	60C1967	0.00176)	(1572	GS20	60C1967	0.00270)
(1574	GS22	60C1967	0.01438)	(1575	GS28	60C1967	0.00129)	(1544	MU 1	20C1967	C.00238)
(1547	MS 1	20C1967	0.01597)	(1546	LU 1	20C1967	0.01501)	(1520	HO 1	18SE1967	C.02357)
(1521	SH 1	18SE1967	0.02308)	(1522	BH 1	18SE1967	0.00182)	(1525	PW 1	20SE1967	0.01393)
(1526	MO 1	20SE1967	0.00569)	(1531	GH 1	25SE1967	0.01691)	(1545	WL 1	20C1967	C.00676)
(1550	MR 1	50C1967	0.28497)	(1553	SG 1	60C1967	0.00734)	(1426	MS 2	29MY1967	0.04199)
(1427	LU 2	29MY1967	0.04843)	(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	C.01762)
(1354	GH 2	25AP1967	0.00518)	(1404	MQ 2	10MY1967	0.05081)	(1407	SM 2	14MY1967	C.01194)
(1349	CI 2	19AP1967	0.00359)	(1406	GB 2	13MY1967	0.00539)	(			

Species *incertae sedis*

Opephora sp. #1.

605 OPSPECOA TOT NO OF STATIONS 4

(46923	CH	22NO1946	0.00219)	(1285	F 1	15SE1964	0.00582)	(1565	GS13	50C1967	C.00507)
(1350	BH 2	19AP1967	0.00441)	(							

Opephora sp. #2.

607 OPSPECOC TOT NO OF STATIONS 9

(1565	GS13	5CC1967	0.00507)	(1571	GS19	60C1967	0.00293)	(1573	GS21	60C1967	C.00112)
(1546	LU 1	20C1967	0.00500)	(1522	BH 1	18SE1967	0.00182)	(1545	WL 1	20C1967	C.00676)
(1550	MR 1	50C1967	0.28497)	(1553	SG 1	60C1967	0.00734)	(1350	BH 2	19AP1967	C.01982)

Genus *Oestrupia* Heid.
Heiden *ex* Hustedt, Ber. Deutsch. Bot. Ges., 53(1):16. 1935.

Although the growth habit of the freshwater members of the genus *Oestrupia* is poorly known, the limited information available indicates that they are most often found in benthic communities. The entities known from Lake Michigan are rare in plankton collections and those noted usually come from nearshore localities.

Oestrupia zachariasi (Reich.) comb. nov.

Navicula (Caloneis) zachariasi Reichelt, Forshungsber. Biol. Sta. Plön, 14:199. 1903.

608 OEZACHAR TOT NO OF STATIONS 3

(1565	GS13	5OC1967	0.01014)	(1521	SH 1	18SE1967	0.00577)	(1545	WL 1	2OC1967	0.04054)

Oestrupia zachariasi var. *undulata* (Schulz) comb. nov.

Caloneis baltica var. *undulata* Schulz, Bot. Arch., 13:203, fig. 76. 1926.

609 OEZACHVU TOT NO OF STATIONS 7

(46915	CH	2OFE1946	0.00569)	(1279	E 1	16SE1964	0.00393)	(1398	GS22	14MY1967	0.00304)
(1565	GS13	5OC1967	0.01521)	(1574	GS22	6OC1967	0.00288)	(1546	LU 1	2OC1967	0.01000)
(1527	TR 1	2OSE1967	0.00629)	(							

Genus *Pinnularia* Ehr. nom. cons.
Ehrenberg, Ber. Akad. Wiss. Berlin, 1843:45. 1843.

Most species of the genus *Pinnularia* find their primary habitat in benthic communities. The rare representatives of the genus that are taken in plankton collections from Lake Michigan are undoubtedly derived from such communities within the lake or from sources outside the lake proper.

Pinnularia abaujensis (Pant.) Ross

Navicula abaujensis Pantocsek, Beitr. Foss. Bacill. Ungarns, Theil 2, p. 41, pl. 3, fig. 54. 1889.
Pinnularia abaujensis (Pant.) Ross, Natl. Mus. Canada Bull., 97(2):199, pl. 10, fig. 1. 1947.

Coll: 1800.

Pinnularia abaujensis var. *linearis* (Hust.) Patr.

Pinnularia gibba var. *linearis* Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 327, fig. 604. 1930.

Coll: 1800.

Pinnularia acrosphaeria Wm. Smith

Pinnularia acrosphaeria Wm. Smith, Syn. British Diat., Vol. 1, p. 58, pl. 19, fig. 183. 1853.

Coll: 1818.

Pinnularia biceps Greg.

Pinnularia biceps Gregory, Quart. J. Micr. Sci., 4:8, pl. 1, fig. 28. 1856.

610 PIBICEPS TOT NO OF STATIONS 1

(1350 BH 2 19AP1967 0.00220) (

Pinnularia biceps fo. *petersenii* Ross

Pinnularia interrupta fo. *minor* Peterson, Bot. Iceland, Vol. 2, Pt. 2, p. 405, fig. 25. 1928.
Pinnularia biceps fo. *petersenii* Ross, Natl. Mus. Canada Bull., 97(2):201, pl. 9, fig. 11. 1947.

611 PIBICEEP TOT NO OF STATIONS 1

(1404 MO 2 10MY1967 0.01270) (

Pinnularia borealis Ehr.

Pinnularia borealis Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:420, pl. 1(2), fig. 6. 1843.

612 PIBOREAL TOT NO OF STATIONS 1

(1395 GS19 13MY1967 0.00117) (

Pinnularia brebissonii (Kütz.) Rabh.

Navicula brebissonii Kützing, Bacill., p. 93, pl. 3, fig. 49. 1844.
Pinnularia brebissionii (Kütz.) Rabenhorst, Fl. Europaea Alg., Sect. 1, p. 222. 1864.

613 PIBREBIS TOT NO OF STATIONS 5

(46920 CH 20DE1946 0.00031) (46916 CH 4MY1947 0.00034) (46764 EV 17JL1937 0.00806)
(46759 EV 19MY1938 0.00338) (1423 WA 2 25MY1967 0.00428) (

Pinnularia burkii Patr.

Pinnularia burkii Patrick, Farlowia, 2(2):189, pl. 3, fig. 1. 1945.

614 PIBURKII TOT NO OF STATIONS 1

(1354 CH 2 25AP1967 0.00173) (

Pinnularia globiceps var. *krockii* (Grun.) Cleve

Navicula krockii Grunow *in*: Mojsisovics and Neumayer, Beitr. Paläontol. Österreich-Ungarns, Bd. 2, Heft 4, p. 155, pl. 30, fig. 40. 1882.
Pinnularia globiceps var. *krockii* (Grun.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 27(3):77. 1895.

615 PIGLOBVK TOT NO OF STATIONS 1

(1389 GS13 12MY1967 0.00258) (

Pinnularia interrupta var. *crassior* (Grun.) Cleve

Navicula globiceps var. *crassior* Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):27, pl. 1, fig. 13. 1880.
Pinnularia interrupta var. *crassior* (Grun.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 27(3):76. 1895.

616 PIINTEVC TOT NO OF STATIONS 3

(1388 GS12 12MY1967 0.00603) (1389 GS13 12MY1967 0.00258) (1417 HO 2 22MY1967 0.00374)

Pinnularia legumen (Ehr.) Ehr.

Navicula legumen Ehrenberg, Ber. Akad. Wiss. Berlin, 1841:141. 1841.
Pinnularia legumen (Ehr.) Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:301, pl. 4(1), fig. 7. 1843.

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617  PILEGUME TOT NO OF STATIONS    1
( 1404    MQ 2        10MY1967   0.01270 )   (
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Pinnularia leptosoma (Grun.) Cleve

Navicula leptosoma Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 12, fig. 29. 1880.
Pinnularia leptosoma (Grun.) Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 27(3):74. 1895.

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618  PILEPTOS TOT NO OF STATIONS    1
( 1550    MR 1        50C1967   0.02478 )   (
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Pinnularia major (Kütz.) Rabh.

Frustulia maior Kützing, Linnaea, 8:547, pl. 14, fig. 25. 1833.
Navicula major (Kütz.) Kützing, Bacill., p. 97, pl. 4, figs. 19-20. 1844.
Pinnularia major (Kütz.) Rabenhorst, Süssw.-Diat., p. 42, pl. 6, fig. 5. 1853.

Coll: 1552.

Pinnularia stomatophora (Grun.) Cleve

Navicula stomatophora Grunow *in*: A. Schmidt, Atlas Diat., pl. 44, figs. 27-29. 1876.
Pinnularia stomatophora (Grun.) Cleve, Acta Soc. Fauna Fl. Fennica, 8(2):27. 1891.

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620  PISPECOC TOT NO OF STATIONS    1
( 3541    CH          1FE1881   0.00578 )   (
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Pinnularia tibetana Hust.

Pinnularia tibetana Hustedt *in*: Hedin, South. Tibet, Vol. 6, part 3 (Bot.) p. 129, pl. 9, figs. 3-5. 1922.

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621  PISPECOD TOT NO OF STATIONS    1
(46764    EV          17JL1937   C.01612 )   (
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Pinnularia undulata Greg.

Pinnularia undulata Gregory, Quart. J. Micr. Sci., 2:97, pl. 4, fig. 10. 1854.

Coll: 862.

Pinnularia viridis (Nitz.) Ehr.

Bacillaria viridis Nitzsch, Neue Schrift. Naturf. Ges. Halle, 3(1):97, pl. 6, figs. 1-3. 1817.
Pinnularia viridis (Nitz.) Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841: 305, pl. 1(1), fig. 7. 1843.

619 PIVIRIDI TCT NO OF STATIONS 2

(3541	CH	1FE1881	0.01956)	(1390	GS14	12MY1967	C.00587)	(	

Genus *Rhizosolenia* Ehr.

Ehrenberg, Abh. Akad. Wiss. Berlin, 1841:134. 1843.

All known members of the genus *Rhizosolenia* are euplanktonic. Most of its members are marine, however the following species are found only in fresh water and are widely reported from the Great Lakes.

Rhizosolenia eriensis H. L. Smith

Rhizosolenia eriensis H. L. Smith, The Lens, 1:44. 1872.

Cells bacilliform with a single conspicuous spine at each end. Valves much reduced, appearing as a cap at the end of the cells. Cells elongated in the pervalvar axis and laterally compressed. Specimens from Lake Michigan 35-150μ long, 10-25μ broad in greatest diameter, only 2-4μ in least diameter. Because of the construction of the frustule, specimens are almost always observed in girdle view. Intercalary bands numerous, constructed in the form of a split-ring with cuneate ends so that the ends of the "ring" overlap one side of its own opposite end and one side of the next successive intercalary band. The line of imbrication of the intercalary bands is in the median of the long axis of the cell and is quite conspicuous. The frustule is very lightly silicified and is usually destroyed by standard diatom cleaning procedures. In living cells the chromatophores occur near the center of the cell. The end spines are excentric and usually occur on opposite sides of the ends of the cells.

This species is common in plankton collections from Lake Michigan, usually reaching its maximum abundance in the late spring or early fall.

622 RHERIENS TCT NO OF STATIONS 252

(60973	CH	1876	0.87388)	(3541	CH	1FE1881	0.00978)	(46921	CH	23ND1945	C.00388)
(46908	CH	DE1945	0.03021)	(46917	CH	12JA1946	0.04186)	(46915	CH	20FE1946	0.17641)
(46914	CH	19AP1946	0.00320)	(46924	CH	10MY1946	0.22927)	(46923	CH	22ND1946	C.01530)
(46920	CH	20DE1946	0.00031)	(46905	CH	JA1947	0.01471)	(46909	CH	MR1947	C.10018)
(46916	CH	4MY1947	0.35286)	(46906	CH	MY1947	1.55304)	(46919	CH	5JN1947	C.27162)
(46907	CH	JL1947	0.04586)	(46922	CH	21AU1947	0.00242)	(46758	EV	5JN1937	C.66329)
(46771	EV	11JN1937	4.65979)	(46743	EV	20JN1937	0.19697)	(46764	EV	17JL1937	C.12087)
(46757	EV	25JL1937	0.01444)	(46747	EV	1AU1937	0.01238)	(46763	EV	23AU1937	0.06088)
(46765	EV	30AU1937	0.02789)	(46760	EV	22SE1937	0.01970)	(46750	EV	24SE1937	C.04242)
(46744	EV	6OC1937	0.01463)	(46748	EV	13OC1937	0.04270)	(46767	EV	27OC1937	0.23984)
(46749	EV	12MR1938	0.18206)	(46768	EV	16MR1938	0.23519)	(46762	EV	18MR1938	0.19850)
(46751	EV	30MR1938	0.35730)	(46772	EV	18AP1938	0.11356)	(46756	EV	27AP1938	0.79923)
(46759	EV	19MY1938	1.60702)	(46761	EV	27MY1938	C.99204)	(46766	EV	14DE1938	C.09506)
(1224	B 4	18MY1964	0.00196)	(1225	C 6	15MY1964	0.01568)	(1226	C 7	16MY1964	C.04186)
(1227	C' 2	13MY1964	0.00219)	(1228	D 2	14MY1964	0.00584)	(1229	D 5	14MY1964	C.03595)
(1230	E 2	16MY1964	0.01185)	(1231	E 3	16MY1964	C.01712)	(1232	E 5	16MY1964	C.01044)
(1233	B 3	5JN2964	0.03096)	(1234	B 3	18JN1964	0.98403)	(1235	C 7	16JN1964	C.05649)
(1439	B 6	5JN1964	0.76923)	(1236	C' 1	8JN1964	0.00875)	(1237	C' 2	8JN1964	C.19077)
(1238	D 3	11JN1964	0.02800)	(1240	D 6	10JN1964	0.05215)	(1241	E 2	13JN1964	0.10350)
(1242	E 3	13JN1964	0.00749)	(1243	E 6	13JN1964	0.32156)	(1244	F 1	11JN1964	C.0C439)
(1245	F 2	11JN1964	0.01729)	(1246	F 3	11JN1964	0.04183)	(1247	B 3	14JL1964	1.49400)
(1248	B 3	24JL1964	0.68968)	(1440	B 6	11JL1964	4.38516)	(1441	B 6	24JL1964	2.92958)
(1249	C 3	8JL1964	0.01358)	(1250	C 6	10JL1964	1.62795)	(1251	C 7	16JL1964	C.23466)
(1252	C' 1	16JL1964	0.53835)	(1253	C' 2	16JL1964	C.08673)	(1254	D 2	15JL1964	2.41333)
(1255	D 5	15JL1964	5.21020)	(1256	E 2	14JL1964	1.79527)	(1257	E 3	14JL1964	1.0C490)
(1258	F 1	6JL1964	1.98221)	(1259	F 2	6JL1964	2.16906)	(1260	F 3	6JL1964	2.13916)
(1261	B 3	2AU1964	0.01766)	(1262	B 3	17AU1964	0.03780)	(1442	B 6	2AU1964	1.43296)
(1443	B 6	16AU1964	0.01581)	(1264	C' 1	10AU1964	0.07916)	(1265	C' 2	10AU1964	C.44710)
(1266	D 3	18AU1964	4.91090)	(1267	D 6	18AU1964	0.02810)	(1268	E 2	15AU1964	2.48933)
(1269	E 3	15AU1964	C.29600)	(1270	F 1	10AU1964	0.10619)	(1444	B 6	19SE1964	0.00606)
(1271	C 7	22SE1964	0.02611)	(1272	C' 1	10SE1964	0.00821)	(1273	C' 2	10SE1964	C.02688)
(1274	D 1	17SE1964	0.02815)	(1275	D 2	17SE1964	0.26450)	(1276	D 3	18SE1964	0.04470)
(1277	D 4	18SE1964	0.02479)	(1278	D 6	18SE1964	C.01153)	(1279	E 1	16SE1964	C.2C811)
(1280	E 2	16SE1964	0.04085)	(1281	E 3	16SE1964	0.11380)	(1282	E 4	16SE1964	C.15512)
(1283	E 5	16SE1964	0.25745)	(1284	E 6	17SE1964	C.26372)	(1285	F 1	15SE1964	0.08736)
(1286	F 2	15SE1964	0.16419)	(1287	F 3	15SE1964	0.32026)	(1288	B 3	15OC1964	0.07619)
(1445	B 6	14OC1964	0.68493)	(1289	C 7	14OC1964	C.80032)	(1290	C' 1	16OC1964	C.03411)
(1291	C' 2	16OC1964	0.01468)	(1292	D 1	15OC1964	0.23852)	(1293	D 2	15OC1964	C.56127)

(1294	D 3	15OC1964	0.57685)	(1295	D 4	15OC1964	C.74920)	(1296	D 5	14OC1964	C.6C196)
(1297	D 6	14OC1964	0.33319)	(1298	E 1	12OC1964	0.10233)	(1299	E 2	12OC1964	C.33930)
(1300	E 3	13OC1964	0.70163)	(1301	E 4	13OC1964	3.09105)	(1302	E 5	13OC1964	1.7C054)
(1303	E 6	13OC1964	0.82279)	(1304	F 1	11OC1964	C.14571)	(1305	F 2	11OC1964	C.1C178)
(1306	F 3	11OC1964	0.04712)	(1307	B 6	NO1964	C.26699)	(1308	C 7	6NO1964	1.38386)
(1309	C' 1	10NO1964	1.12555)	(1310	C' 2	10NO1964	2.69841)	(1311	D 1	8NO1964	2.34766)
(1312	D 2	8NO1964	0.94366)	(1313	D 3	9NO1964	2.70270)	(1314	D 4	9NO1964	1.2C575)
(1315	D 5	9NO1964	1.91083)	(1316	D 6	9NO1964	0.34376)	(1317	E 1	6NO1964	2.68055)
(1318	E 2	7NO1964	2.92982)	(1319	E 3	7NO1964	2.93247)	(1320	E 4	7NO1964	4.34333)
(1321	E 5	7NO1964	3.79876)	(1322	E 6	7NO1964	7.46492)	(1323	F 1	6NO1964	C.15052)
(1324	F 2	6NO1964	0.06289)	(1325	F 3	6NO1964	0.00252)	(1336	C 3	27JA1967	C.74134)
(1337	C 3	2MR1967	1.23459)	(1338	C 3	28MR1967	2.03628)	(1339	C 5	28MR1967	C.37102)
(1340	C 7	28MR1967	0.61082)	(1341	A 3	19AP1967	0.27771)	(1342	A 4	19AP1967	1.38957)
(1343	A 6	19AP1967	0.02848)	(1344	C 3	25AP1967	C.21011)	(1345	C 5	25AP1967	3.68399)
(1346	C 7	21AP1967	0.56080)	(1347	E 2	23AP1967	0.83570)	(1348	E 5	23AP1967	C.62371)
(1368	A 3	4MY1967	0.00628)	(1369	A 4	4MY1967	0.01491)	(1374	E 2	7MY1967	C.C5380)
(1375	E 3	7MY1967	0.00241)	(1376	E 5	6MY1967	0.01405)	(1408	A 3	23MY1967	C.0C447)
(1409	A 4	23MY1967	0.0C298)	(1410	A 6	24MY1967	0.00564)	(1411	C 3	31MY1967	C.CC410)
(1412	C 5	31MY1967	0.00842)	(1413	C 7	25MY1967	0.00316)	(1414	E 2	28MY1967	C.C1008)
(1415	E 3	28MY1967	0.00450)	(1416	E 5	28MY1967	0.00875)	(1431	A 3	12JN1967	C.03605)
(1432	A 4	13JN1967	0.03576)	(1433	C 3	17JN1967	0.56840)	(1434	C 5	17JN1967	C.03888)
(1435	C 7	13JN1967	0.01579)	(1436	E 2	15JN1967	0.01447)	(1437	E 3	15JN1967	C.01615)
(1438	E 5	14JN1967	C.01089)	(1446	A 3	11JL1967	1.02735)	(1447	A 4	11JL1967	3.76591)
(1449	C 3	16JL1967	3.74489)	(1450	C 5	16JL1967	2.13272)	(1451	C 7	16JL1967	0.59840)
(1452	E 2	14JL1967	C.96862)	(1453	E 3	15JL1967	1.41546)	(1454	E 5	15JL1967	1.82036)
(1505	A 4	28AU1967	0.00515)	(1509	C 5	2SE1967	0.20692)	(1510	C 7	29AU1967	C.00948)
(1511	E 2	1SE1967	2.57851)	(1512	E 3	1SE1967	0.46725)	(1513	E 5	31AU1967	C.04561)
(1532	A 3	18SE1967	0.0C329)	(1536	E 2	24SE1967	0.52626)	(1537	E 3	24SE1967	C.13801)
(1541	E 2	11OC1967	0.02661)	(1542	E 3	11OC1967	C.16273)	(1543	E 5	10OC1967	C.01437)
(1380	GS 4	9MY1967	0.00168)	(1381	GS 5	10MY1967	C.01193)	(1384	GS 8	10MY1967	C.CC185)
(1385	GS 9	10MY1967	0.00471)	(1386	GS10	12MY1967	C.00575)	(1387	GS11	12MY1967	C.C1584)
(1388	GS12	12MY1967	0.00603)	(1389	GS13	12MY1967	0.00258)	(1390	GS14	12MY1967	C.01174)
(1392	GS16	12MY1967	0.00308)	(1393	GS17	13MY1967	0.00274)	(1394	GS18	13MY1967	C.CC860)
(1395	GS19	13MY1967	0.00235)	(1398	GS22	14MY1967	0.01214)	(1554	GS 1	3OC1967	C.31310)
(1555	GS 2	3OC1967	0.44845)	(1557	GS 4	3OC1967	0.02616)	(1558	GS 5	4OC1967	C.00396)
(1560	GS 8	4OC1967	0.02834)	(1561	GS 9	4OC1967	0.00587)	(1562	GS10	5OC1967	C.02220)
(1563	GS11	5OC1967	0.00935)	(1565	GS13	5OC1967	0.01521)	(1566	GS14	5OC1967	C.00367)
(1568	GS16	5OC1967	0.01010)	(1573	GS21	6OC1967	0.00112)	(1544	MU 1	2OC1967	C.CC238)
(1546	LU 1	2OC1967	0.00500)	(1527	TR 1	2OSE1967	0.00629)	(1528	SB 1	2OSE1967	C.C1444)
(1529	KW 1	2OSE1967	0.01199)	(1530	FR 1	24SE1967	C.01000)	(1548	CA 1	3OC1967	C.01272)
(1549	MQ 1	4CC1967	0.01370)	(1551	ES 1	5CC1967	0.05592)	(1552	SM 1	6OC1967	C.01981)
(1553	SG 1	6OC1967	0.02938)	(1351	MI 2	21AP1967	C.17688)	(1427	LU 2	29MY1967	C.03632)
(1399	PW 2	5MY1967	0.01360)	(1402	TR 2	6MY1967	0.01624)	(1400	SB 2	6MY1967	C.01191)
(1352	KW 2	21AP1967	C.18897)	(1354	GH 2	25AP1967	C.01726)	(1403	CA 2	10MY1967	C.01308)
(1405	ES 2	12MY1967	0.03870)	(1349	CI 2	19AP1967	0.01437)	(1419	BU 2	23MY1967	C.03662)
(1421	CH 2	23MY1967	0.01735)	(1423	WA 2	25MY1967	C.C0856)	(1424	KN 2	25MY1967	C.01332)

Rhizosolenia gracilis H. L. Smith

Rhizosolenia gracilis H. L. Smith, Proc. Amer. Soc. Micr., 5:177, pl. 1, fig. 1b. 1882.

Cells bacilliform with a single conspicuous spine at each end. Valves much reduced, appearing as a cap at the ends of the cells. Cells elongate in the pervalvar axis and laterally compressed. Specimens from Lake Michigan 55-250μ long, 4-12μ broad at the greatest diameter, only 2-4μ broad at the least diameter. Intercalary bands numerous, similar in structure to a flattened split-ring. Frustules very lightly silicified, structure of the intercalary bands and imbrication line poorly visible. The terminal spines are only slightly excentric and are very long and fine.

This species is occasionally taken in plankton collections from Lake Michigan, most usually in regions that have undergone some degree of eutrophication. It is extremely variable in structure, and malformed specimens are common. This species is usually destroyed in diatom cleaning procedures and is easily overlooked in living material due to its delicate structure.

623 RHLONGIS TCT NC OF STATIONS 123

(60973	CH	1876	0.28342)	(46924	CH	10MY1946	0.00564)	(46909	CH	MR1947	C.00455)
(46916	CH	4MY1947	0.00170)	(46906	CH	MY1947	0.43140)	(46907	CH	JL1947	C.00049)
(46771	EV	11JN1937	1.19823)	(46747	EV	1AU1937	0.00495)	(46750	EV	24SE1937	C.0C471)
(46767	EV	27OC1937	0.01547)	(46772	EV	18AP1938	0.01419)	(46756	EV	27AP1938	C.03526)
(46755	EV	19MY1938	0.00338)	(46761	EV	27MY1938	0.07631)	(1439	B 6	5JN1964	C.69930)
(1440	B 6	11JL1964	2.83745)	(1441	B 6	24JL1964	C.30838)	(1250	C 6	10JL1964	C.56197)
(1251	C 7	16JL1964	0.01738)	(1252	C' 1	16JL1964	C.01395)	(1253	C' 2	16JL1964	C.01369)
(1254	D 2	15JL1964	0.32178)	(1255	D 5	15JL1964	1.61696)	(1256	E 2	14JL1964	C.18136)
(1257	E 3	14JL1964	0.83742)	(1258	F 1	6JL1964	0.00472)	(1259	F 2	6JL1964	C.12705)
(1260	F 3	6JL1964	0.09359)	(1442	B 6	2AU1964	C.01706)	(1265	C' 2	10AU1964	C.01341)
(1268	E 2	15AU1964	0.00821)	(1269	E 3	15AU1964	0.01370)	(1273	C' 2	10SE1964	0.01613)
(1281	E 3	16SE1964	0.00785)	(1282	E 4	16SE1964	C.01108)	(1283	E 5	16SE1964	C.04291)
(1285	F 1	15SE1964	0.01165)	(1288	B 3	15OC1964	C.00435)	(1445	B 6	14OC1964	C.CC978)
(1289	C 7	14OC1964	0.02199)	(1293	D 2	15CC1964	C.00943)	(1294	D 3	15OC1964	C.C1319)
(1295	D 4	15OC1964	0.02378)	(1296	D 5	14OC1964	0.02754)	(1297	D 6	14OC1964	C.00571)

(1298	E 1	12OC1964	0.00269)	(1299	E 2	12OC1964	0.01257)	(1300	E 3	13OC1964	C.OC716)
(1301	E 4	13OC1964	0.00883)	(1303	E 6	13OC1964	0.00560)	(1304	F 1	11OC1964	C.OC494)
(1305	F 2	11OC1964	0.00173)	(1307	B 6	NO1964	C.01082)	(1308	C 7	6NO1964	0.02129)
(1309	C' 1	10NO1964	0.02251)	(1310	C' 2	10NO1964	0.03401)	(1311	D 1	8NO1964	C.09287)
(1312	D 2	8NO1964	0.02794)	(1313	D 3	9NO1964	C.10618)	(1314	D 4	9NO1964	0.05742)
(1315	D 5	9NO1964	C.02275)	(1316	D 6	9NO1964	C.00756)	(1317	E 1	6NO1964	C.19530)
(1318	E 2	7NO1964	0.C2854)	(1319	E 3	7NO1964	C.02095)	(1320	E 4	7NO1964	C.OC827)
(1321	E 5	7NO1964	0.00638)	(1322	E 6	7NO1964	C.C0333)	(1323	F 1	6NO1964	0.00557)
(1336	C 3	27JA1967	0.00193)	(1337	C 3	2MR1967	0.01911)	(1339	C 5	28MR1967	C.OC624)
(1340	C 7	28MR1967	0.00654)	(1341	A 3	19AP1967	0.01410)	(1342	A 4	19AP1967	0.31581)
(1343	A 6	19AP1967	0.02640)	(1344	C 2	25AP1967	0.01158)	(1345	C 5	25AP1967	C.12475)
(1346	C 7	21AP1967	C.15885)	(1347	E 2	23AP1967	0.02764)	(1348	E 5	23AP1967	C.C5596)
(1368	A 3	4MY1967	0.00628)	(1370	A 6	3MY1967	0.00230)	(1374	E 2	7MY1967	C.02690)
(1376	E 5	6MY1967	C.CC562)	(1411	C 3	31MY1967	0.00410)	(1414	E 2	28MY1967	C.CC336)
(1416	E 5	28MY1967	0.00219)	(1431	A 3	12JN1967	0.04635)	(1432	A 4	13JN1967	0.02044)
(1433	C 3	17JN1967	0.32296)	(1434	C 5	17JN1967	0.0C598)	(1435	C 7	13JN1967	C.01894)
(1446	A 3	11JL1967	0.85612)	(1447	A 4	11JL1967	0.65494)	(1449	C 3	16JL1967	1.60495)
(1450	C 5	16JL1967	1.33295)	(1451	C 7	16JL1967	0.08267)	(1452	E 2	14JL1967	C.16605)
(1453	E 3	15JL1967	0.25782)	(1454	E 5	15JL1967	0.16603)	(1511	E 2	1SE1967	C.00614)
(1512	E 3	1SE1967	0.02749)	(1538	E 5	23SE1967	C.00552)	(1381	GS 5	10MY1967	C.CC239)
(1383	GS 7	10MY1967	0.00267)	(1386	GS10	12MY1967	0.00287)	(1387	GS11	12MY1967	C.OC792)
(1392	GS16	12MY1967	0.00308)	(1395	GS19	13MY1967	C.00117)	(1398	GS22	14MY1967	C.CC911)
(1556	GS 3	30C1967	0.00521)	(1547	MS 1	2CC1967	C.00798)	(1351	MI 2	21AP1967	C.11171)
(1399	PW 2	5MY1967	0.01360)	(1400	SB 2	6MY1967	C.00596)	(1352	KW 2	21AP1967	C.03436)
(1353	FR 2	23AP1967	C.01055)	(1403	CA 2	10MY1967	0.01308)	(1407	SM 2	14MY1967	C.OC597)
(1419	BU 2	23MY1967	0.01831)	(1423	WA 2	25MY1967	C.00428)	(1424	KN 2	25MY1967	C.01332)

Genus *Rhoicosphenia* Grun.
Grunow, Verh. Zool.-Bot. Ges. Wien, 10:511. 1860.

Members of the genus *Rhoicosphenia* find their primary habitat in periphyton communities. Occasional specimens are taken in plankton collections from Lake Michigan, particularly in nearshore areas.

Rhoicosphenia curvata (Kütz.) Grun.

Gomphonema curvatum Kützing, Linnaea, 8:567, pl. 16, fig. 51. 1833.
Rhoicosphenia curvata (Kütz.) Grunow *ex* Rabenhorst, Fl. Europaea Alg., p. 112. 1864.

624 ROCURVAT TCT NC OF STATIONS 64

(3541	CH	1FE1881	0.00978)	(46517	CH	12JA1946	0.00028)	(46923	CH	22NO1946	0.00219)
(46920	CH	20DE1946	0.00062)	(46522	CH	21AU1947	C.00097)	(46764	EV	17JL1937	C.00806)
(46747	EV	1AU1937	0.01485)	(46763	EV	23AU1937	1.56250)	(46752	EV	15SE1937	C.26121)
(46750	EV	24SE1937	0.00943)	(46748	EV	13OC1937	0.17079)	(46767	EV	27OC1937	C.01547)
(46749	EV	12MR1938	0.01214)	(46768	EV	16MR1938	0.C1470)	(46762	EV	18MR1938	C.02206)
(46751	EV	30MR1938	0.01117)	(1272	C' 1	10SE1964	0.00821)	(1285	F 1	15SE1964	C.00582)
(1341	A 3	19AP1967	0.00108)	(1342	A 4	19AP1967	0.00180)	(1343	A 6	19AP1967	C.OCC69)
(1504	A 3	28AU1967	0.00247)	(1536	E 2	24SE1967	0.00273)	(1538	E 5	23SE1967	C.02210)
(1388	GS12	12MY1967	0.00603)	(1557	GS 4	30C1967	0.00374)	(1561	GS 9	40C1967	C.00587)
(1567	GS15	5OC1967	C.00476)	(1569	GS17	5OC1967	0.00297)	(1575	GS28	6OC1967	C.C0387)
(1524	MI 1	2CSE1967	2.03590)	(1546	LU 1	2OC1967	C.03001)	(1520	HO 1	18SE1967	0.05658)
(1521	SH 1	18SE1967	0.06347)	(1522	BH 1	18SE1967	0.00912)	(1523	RA 1	1SSE1967	C.18450)
(1525	PW 1	20SE1967	0.08355)	(1526	MO 1	20SE1967	0.81356)	(1527	TR 1	20SE1967	C.08176)
(1528	SB 1	2CSE1967	0.23101)	(1529	KW 1	20SE1967	0.62358)	(1530	FR 1	24SE1967	C.02000)
(1531	GH 1	25SE1967	0.10989)	(1545	WL 1	2OC1967	0.10812)	(1548	CA 1	3OC1967	C.05088)
(1549	MO 1	4OC1967	0.01370)	(1552	SM 1	6OC1967	C.C0660)	(1550	MR 1	5CC1967	C.01239)
(1553	SG 1	6CC1967	0.01469)	(1428	MU 2	29MY1967	0.00603)	(1426	MS 2	29MY1967	0.03150)
(1351	MI 2	21AP1967	0.00310)	(1427	LU 2	29MY1967	0.03632)	(1417	HO 2	22MY1967	C.00374)
(1350	BH 2	19AP1967	0.03524)	(1399	PW 2	5MY1967	0.00680)	(1401	MO 2	6MY1967	0.01176)
(1402	TR 2	6MY1967	0.01624)	(1400	SB 2	6MY1967	0.07148)	(1352	KW 2	21AP1967	C.OC859)
(1354	GH 2	25AP1967	0.00173)	(1429	WL 2	29MY1967	C.01062)	(1403	CA 2	10MY1967	C.01308)
(1423	WA 2	25MY1967	0.OC428)	(							

Rhoicosphenia curvata var. *subacuta* M. Schmidt

Rhoicosphenia curvata var. *subacuta* M. Schmidt *in*: A. Schmidt, Atlas Diat., pl. 213, figs. 6-7. 1899.

625 ROCURVVS TCT NC OF STATIONS 1

(1544	MU 1	2OC1967	0.00238)	(

Genus *Rhopalodia* O. Müll.
O. Müller, Bot. Jahrb., 22:55. 1895.

Members of the genus *Rhopalodia* are adapted to epiphytic growth on aquatic vascular plants and the coarser species of algae. Occasional specimens are noted in plankton collections from Lake Michigan, particularly those from nearshore areas.

Rhopalodia gibba (Ehr.) O. Müll.

Navicula gibba Ehrenberg, Infusionsthierchen, p. 184, pl. 13, fig. 19. 1838.
Rhopalodia gibba (Ehr.) O. Müller, Bot. Jahrb., 22:65, pl. 1, figs. 15-17. 1897.

626 RPGIBBA TOT NO OF STATIONS 5

(60973	CH	1876	0.02362)	(1285	F 1	15SE1964	0.02912)	(1379	GS 3	9MY1967	C.00309)
(1531	GH 1	25SE1967	0.00845)	(1553	SG 1	6OC1967	0.00734)	(			

Rhopalodia gibba var. *ventricosa* (Kütz.) V. H.

Epithemia ventricosa Kützing, Bacill., p. 25, pl. 3, fig. 9. 1844.
Rhopalodia gibba var. *ventricosa* (Kütz.) Van Heurck, Treat. Diat., p. 296. 1896.

628 RPGIBBVV TOT NO OF STATIONS 1

(1284	E 6	17SE1964	0.00318)	(

Rhopalodia gibberula (Ehr.) O. Müll.

Eunotia gibberula Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:126, pl. 3(4), fig. 8. 1843.

627 RPGIBBAR TOT NO OF STATIONS 1

(1350	BH 2	19AP1967	0.00220)	(

Genus *Stauroneis* Ehr.
Ehrenberg, Ber. Akad. Wiss. Berlin, 1843:45. 1843.

Most members of the genus *Stauroneis* find their primary habitat in benthic communities. Certain species that are abundant in epipelic populations are rather commonly found in plankton collections from Lake Michigan but always in very low numbers.

Stauroneis acutiuscula Per. and Hérib.

Stauroneis acutiuscula Peragallo and Héribaud *in*: Héribaud, Diat. Auvergne, p. 78, pl. 3, fig. 20. 1893.

629 SAACUTI TOT NO OF STATIONS 5

(1565	GS13	5OC1967	0.01521)	(1569	GS17	5OC1967	0.00149)	(1546	LU 1	2OC1967	C.00500)
(1530	FR 1	24SE1967	0.01000)	(1545	WL 1	2OC1967	C.02027)	(			

Stauroneis anceps Ehr.

Stauroneis anceps Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:422, pl. 2(1), fig. 18. 1843.

63C SAANCEPS TOT NO OF STATIONS 6

(46747	EV	1AU1937	0.00743)	(46750	EV	24SE1937	C.00471)	(1392	GS16	12MY1967	C.00308)
(1530	FR 1	24SE1967	0.01000)	(1350	BH 2	19AP1967	0.00220)	(1402	TR 2	6MY1967	C.00541)

Stauroneis anceps fo. *gracilis* Rabh.

Stauroneis anceps fo. *gracilis* Rabenhorst, Fl. Europaea Alg., sect. 1, p. 247. 1864.

631 SAANCEVH TOT NO OF STATIONS 1

(1406	GB 2	13MY1967	0.00270)	(

Stauroneis anceps var. *siberica* Grun.

Stauroneis anceps var. *siberica* Grunow *in*: Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):48, pl. 3, fig. 65. 1880.

632 SAANCEVS TOT NO OF STATIONS 5

(46922	CH	21AU1947	0.00048)	(46764	EV	17JL1937	0.01612)	(46763	EV	23AU1937	0.02029)
(1575	GS28	6OC1967	0.00129)	(1405	ES 2	12MY1967	0.00645)	(			

Stauroneis dilatata Ehr.

Stauroneis dilatata Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:134, pl. 1(2), fig. 12. 1843.

634 SADILATA TOT NO OF STATIONS 4

(46764	EV	17JL1937	0.03223)	(46757	EV	25JL1937	0.02889)	(46747	EV	1AU1937	0.00495)
(46763	EV	23AU1937	0.02029)	(							

Stauroneis nobilis var. *baconiana* (Stodd.) Reim.

Stauroneis baconiana Stoddard, Proc. Boston Soc. Nat. Hist., 7:26. 1859.
Stauroneis nobilis var. *baconiana* (Stodd.) Reimer, Proc. Acad. Nat. Sci. Philadelphia, 113:204, pl. 2, fig. 1. 1961.

633 SANOBIVB TOT NO OF STATIONS 1

(1388	GS12	12MY1967	0.00603)	(

Stauroneis phoenicenteron (Nitz.) Ehr.

Bacillaria phoenicenteron Nitzsch, (pro parte), Neue Schrift. Naturf. Ges. Halle, 3(1):92, pl. 4, figs. 12, 14 (non figs. 1-11, 13, 15-22). 1817.
Stauroneis phoenicenteron (Nitz.) Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:387, pl. 2(5), fig. 1. 1843.

635 SAPHCENI TOT NO OF STATIONS 1

(1390	GS14	12MY1967	0.00587)	(

Stauroneis phoenicenteron var. *brevis* Dippel

Stauroneis phoenicenteron var. *brevis* Dippel, Diat. Rhein-Mainebene, p. 82, fig. 176. 1904.

637 SASPECCA TOT NO OF STATIONS 1

(1404	MQ 2	10MY1967	0.01270)	(

Stauroneis smithii Grun.

Stauroneis smithii Grunow, Verh. Zool.-Bot. Ges. Wien, 10:564, pl. 6, fig. 16. 1860.

636 SASMITHI TOT NO OF STATIONS 6

(1389	GS13	12MY1967	0.00258)	(1565	GS13	5OC1967	0.02028)	(1549	MQ 1	4OC1967	0.01370)
(1550	MR 1	5OC1967	0.01239)	(1350	BH 2	19AP1967	0.00220)	(1404	MQ 2	10MY1967	0.01270)

Genus *Stephanodiscus* Ehr.
Ehrenberg, Ber. Akad. Wiss. Berlin, 1845:80. 1845.

Stephanodiscus alpinus Hust. *ex* Huber-Pestalozzi

Stephanodiscus alpinus Hust. *ex* Huber-Pestalozzi, Die Binnengewässer, Band 16, Teil 2, Hälfte 2, p. 412, pl. 122, fig. 508. 1942.

Cells circular in valve view and rectangular in girdle view. Vegetative cells always occur singly. Valves of specimens from Lake Michigan 7-33μ in diameter with slightly concave centers. Radial striae usually in biseriate fascicles near the margin, becoming single near the center of the valve, more rarely single throughout or becoming triseriate near the margins. Puncta in radial striae small but distinct, 18-22 in 10μ. Fascicles are rather widely separated by conspicuous, thickened ribs. The marginal spines occur at the ends of the ribs, between the fascicles. Usually a spine is present at the end of each rib but occasionally, especially in the small individuals, spines may be irregular or lacking. Fascicles and spines 7-10 in 10μ at the margin of the valves.

Although this species has only recently been reported from Lake Michigan (Stoermer 1967), specimens included in our concept of the taxon are present both in modern samples and in samples dating back to 1876. Previous reports probably refer this species to *Stephanodiscus astraea* (Ehr.) Grun. or *S. astraea* var. *minutula* (Kütz.) Grun. Huber-Pestalozzi (1942) reports this entity is abundant in the hypolimnion of alpine lakes.

638 STALPINU TOT NO OF STATIONS 256

(60973	CH	1876	0.49598)	(3540	CH	11MY1879	0.29819)	(3541	CH	1FE1881	0.70429)
(3507	CH	19FE1881	0.30564)	(46910	CH	0C1945	0.00109)	(46921	CH	23ND1945	0.00323)
(46917	CH	12JA1946	0.00582)	(46915	CH	20FE1946	0.03414)	(46914	CH	19AP1946	0.23064)
(46924	CH	10MY1946	0.01058)	(46923	CH	22ND1946	0.00437)	(46920	CH	20DE1946	0.00647)
(46905	CH	JA1947	0.00490)	(46909	CH	MR1947	0.59196)	(46912	CH	AP1947	0.03449)
(46916	CH	4MY1947	0.00611)	(46906	CH	MY1947	0.01726)	(46919	CH	5JN1947	0.00910)
(46907	CH	JL1947	0.32052)	(46922	CH	21AU1947	0.04362)	(46771	EV	11JN1937	0.01902)
(46743	EV	20JN1937	0.01285)	(46764	EV	17JL1937	0.01612)	(46757	EV	25JL1937	0.00481)
(46763	EV	23AU1937	0.02029)	(46756	EV	27AP1938	0.00336)	(46759	EV	19MY1938	0.00675)
(1224	B 4	18MY1964	0.00392)	(1228	D 2	14MY1964	0.00389)	(1229	D 5	14MY1964	0.03806)
(1231	E 3	16MY1964	0.03669)	(1232	E 5	16MY1964	0.04174)	(1233	B 3	5JN2964	0.00714)
(1234	B 3	18JN1964	0.01406)	(1235	C 7	16JN1964	0.00282)	(1236	C' 1	8JN1964	0.00525)
(1237	C' 2	8JN1964	0.01031)	(1238	D 3	11JN1964	0.01200)	(1239	C 4	11JN1964	0.00348)
(1240	D 6	10JN1964	0.02148)	(1241	E 2	13JN1964	0.06653)	(1242	E 3	13JN1964	0.00450)
(1243	E 6	13JN1964	0.01044)	(1244	F 1	11JN1964	0.02741)	(1245	F 2	11JN1964	0.12102)
(1246	F 3	11JN1964	0.06574)	(1247	B 3	14JL1964	0.00854)	(1440	B 6	11JL1964	0.07370)
(1441	B 6	24JL1964	0.02423)	(1250	C 6	10JL1964	0.01233)	(1252	C' 1	16JL1964	0.01116)
(1253	C' 2	16JL1964	0.06162)	(1254	D 2	15JL1964	0.20686)	(1255	D 5	15JL1964	0.30543)
(1256	E 2	14JL1964	0.06595)	(1257	E 3	14JL1964	0.07417)	(1258	F 1	6JL1964	0.05191)
(1259	F 2	6JL1964	0.06817)	(1260	F 3	6JL1964	0.01719)	(1261	B 3	2AU1964	0.00785)
(1262	B 3	17AU1964	0.01050)	(1442	B 6	2AU1964	0.00341)	(1263	C 7	15AU1964	0.00400)
(1264	C' 1	10AU1964	0.00579)	(1266	D 3	18AU1964	0.04911)	(1268	E 2	15AU1964	0.17234)
(1269	E 3	15AU1964	0.17267)	(1270	F 1	10AU1964	0.01634)	(1271	C 7	22SE1964	0.01306)
(1272	C' 1	10SE1964	0.00410)	(1275	D 2	17SE1964	0.00645)	(1278	D 6	18SE1964	0.00769)
(1279	E 1	16SE1964	0.01571)	(1280	E 2	16SE1964	0.00681)	(1281	E 3	16SE1964	0.00392)
(1283	E 5	16SE1964	0.01226)	(1284	E 6	17SE1964	0.00635)	(1285	F 1	15SE1964	0.02912)
(1286	F 2	15SE1964	0.02189)	(1287	F 3	15SE1964	0.03002)	(1445	B 6	14OC1964	0.01305)
(1289	C 7	14OC1964	0.00879)	(1292	D 1	15OC1964	0.00373)	(1293	D 2	15OC1964	0.00472)
(1294	D 3	15OC1964	0.00659)	(1296	D 5	14OC1964	0.01574)	(1298	E 1	12OC1964	0.00539)
(1299	E 2	12OC1964	0.00943)	(1300	E 3	13OC1964	0.04654)	(1301	E 4	13OC1964	0.00883)
(1302	E 5	13OC1964	0.08503)	(1303	E 6	13OC1964	0.00560)	(1304	F 1	11OC1964	0.00741)
(1305	F 2	11OC1964	0.00345)	(1306	F 3	11OC1964	0.00554)	(1308	C 7	6ND1964	0.01217)
(1309	C' 1	10ND1964	0.00161)	(1310	C' 2	10ND1964	0.00227)	(1312	D 2	8ND1964	0.00310)
(1313	D 3	9ND1964	0.02896)	(1314	D 4	9ND1964	0.00861)	(1315	D 5	9ND1964	0.00910)
(1316	D 6	9ND1964	0.00378)	(1317	E 1	6ND1964	0.00766)	(1318	E 2	7ND1964	0.01332)
(1319	E 3	7ND1964	0.00785)	(1320	E 4	7ND1964	0.01861)	(1321	E 5	7ND1964	0.00958)
(1322	E 6	7ND1964	0.00333)	(1323	F 1	6ND1964	0.00279)	(1325	F 3	6ND1964	0.00504)
(1336	C 3	27JA1967	0.00578)	(1337	C 3	2MR1967	0.00588)	(1338	C 3	28MR1967	0.01190)
(1339	C 5	28MR1967	0.05300)	(1340	C 7	28MR1967	0.00509)	(1341	A 3	19AP1967	0.00759)
(1343	A 6	19AP1967	0.00625)	(1345	C 5	25AP1967	0.00585)	(1346	C 7	21AP1967	0.00401)
(1347	E 2	23AP1967	0.00163)	(1348	E 5	23AP1967	0.01234)	(1369	A 4	4MY1967	0.00745)
(1370	A 6	3MY1967	0.01611)	(1371	C 3	4MY1967	0.00462)	(1372	C 5	5MY1967	0.02837)
(1374	E 2	7MY1967	0.00598)	(1375	E 3	7MY1967	0.01684)	(1376	E 5	6MY1967	0.00843)
(1409	A 4	23MY1967	0.00893)	(1410	A 6	24MY1967	0.01128)	(1411	C 3	31MY1967	0.02051)
(1414	E 2	28MY1967	0.00336)	(1416	E 5	28MY1967	0.00656)	(1432	A 4	13JN1967	0.00255)
(1433	C 3	17JN1967	0.00646)	(1434	C 5	17JN1967	0.01196)	(1435	C 7	13JN1967	0.02210)
(1436	E 2	15JN1967	0.00724)	(1438	E 5	14JN1967	0.00363)	(1446	A 3	11JL1967	0.00245)
(1449	C 3	16JL1967	0.00764)	(1450	C 5	16JL1967	0.00571)	(1451	C 7	16JL1967	0.00197)
(1452	E 2	14JL1967	0.00639)	(1453	E 3	15JL1967	0.01011)	(1454	E 5	15JL1967	0.01200)
(1504	A 3	28AU1967	0.00988)	(1509	C 5	2SE1967	0.01009)	(1511	E 2	1SE1967	0.01842)
(1512	E 3	1SE1967	0.01571)	(1532	A 3	18SE1967	0.00986)	(1533	A 4	19SE1967	0.00464)
(1534	A 6	19SE1967	0.00310)	(1535	C 7	20SE1967	0.00322)	(1536	E 2	24SE1967	0.01636)
(1537	E 3	24SE1967	0.08626)	(1538	E 5	23SE1967	0.02762)	(1539	C 3	4OC1967	0.01510)
(1540	C 5	4OC1967	0.00993)	(1541	E 2	11OC1967	0.04790)	(1542	E 3	11OC1967	0.32038)
(1543	E 5	10OC1967	0.01437)	(1377	GS 1	9MY1967	0.01583)	(1378	GS 2	9MY1967	0.00841)
(1379	GS 3	9MY1967	0.36828)	(1380	GS 4	9MY1967	0.05213)	(1381	GS 5	10MY1967	0.03101)
(1382	GS 6	10MY1967	0.06939)	(1383	GS 7	10MY1967	0.09356)	(1384	GS 8	10MY1967	0.66550)
(1385	GS 9	10MY1967	0.02590)	(1386	GS10	12MY1967	0.27866)	(1387	GS11	12MY1967	0.79214)
(1388	GS12	12MY1967	0.35596)	(1389	GS13	12MY1967	0.08767)	(1390	GS14	12MY1967	0.39342)
(1391	GS15	12MY1967	0.42140)	(1392	GS16	12MY1967	0.72118)	(1393	GS17	13MY1967	0.54789)
(1394	GS18	13MY1967	1.32453)	(1395	GS19	13MY1967	0.18202)	(1396	GS20	13MY1967	0.05179)
(1397	GS21	13MY1967	0.16744)	(1398	GS22	14MY1967	0.12448)	(1554	GS 1	3OC1967	0.01423)

(1555	GS 2	30C1967	0.01059)	(1556	GS 3	30C1967	0.30766)	(1557	GS 4	30C1967	C.23169)
(1558	GS 5	40C1967	0.05549)	(1559	GS 7	40C1967	C.01399)	(1560	GS 8	4CC1967	C.C1417)
(1561	GS 9	40C1967	0.00587)	(1562	GS10	50C1967	C.00740)	(1563	GS11	50C1967	0.03040)
(1564	GS12	5CC1967	0.00658)	(1565	GS13	50C1967	C.01014)	(1566	GS14	50C1967	C.C3302)
(1567	GS15	50C1967	0.31754)	(1568	GS16	50C1967	C.12698)	(1569	GS17	50C1967	C.55594)
(1570	GS18	50C1967	0.87267)	(1571	GS19	60C1967	C.04507)	(1572	GS20	6CC1967	C.C1622)
(1573	GS21	60C1967	0.22622)	(1574	GS22	60C1967	C.04027)	(1575	GS28	6CC1967	C.25804)
(1544	MU 1	20C1967	C.22160)	(1547	MS 1	20C1967	C.27944)	(1524	MI 1	20SE1967	C.32837)
(1546	LU 1	20C1967	0.88031)	(1520	HO 1	18SE1967	C.75440)	(1521	SH 1	18SE1967	C.3C002)
(1523	RA 1	19SE1967	0.C3690)	(1525	PW 1	20SE1967	C.01393)	(1526	MO 1	20SE1967	C.15930)
(1527	TR 1	2CSE1967	0.18239)	(1528	SB 1	20SE1967	0.07219)	(1529	KW 1	20SE1967	C.C5996)
(1530	FR 1	24SE1967	0.01000)	(1531	GH 1	25SE1967	0.29586)	(1545	WL 1	2CC1967	1.94608)
(1548	CA 1	30C1967	0.07633)	(1549	MQ 1	4CC1967	C.09593)	(1551	ES 1	5CC1967	C.67C98)
(1552	SM 1	6CC1967	0.16507)	(1550	MR 1	5CC1967	C.73101)	(1553	SG 1	6CC1967	0.49941)
(1428	MU 2	29MY1967	0.1C546)	(1426	MS 2	29MY1967	0.03150)	(1351	MI 2	21AP1967	C.19550)
(1427	LU 2	29MY1967	0.50847)	(1417	HO 2	22MY1967	0.59818)	(1418	SH 2	22MY1967	C.24883)
(1350	BH 2	19AP1967	C.12995)	(1425	RA 2	25MY1967	C.39784)	(1359	PW 2	5MY1967	C.58487)
(1401	MO 2	6MY1967	0.84078)	(1402	TR 2	6MY1967	1.03964)	(1400	SB 2	6MY1967	C.8518C)
(1352	KW 2	21AP1967	0.72153)	(1353	FR 2	23AP1967	0.17932)	(1354	GH 2	25AP1967	C.14499)
(1429	WL 2	29MY1967	0.29727)	(1403	CA 2	10MY1967	1.76540)	(1404	MQ 2	10MY1967	C.1C163)
(1405	ES 2	12MY1967	0.40635)	(1407	SM 2	14MY1967	0.57921)	(1349	CI 2	19AP1967	C.30175)
(1406	GB 2	13MY1967	0.04044)	(1419	BU 2	23MY1967	0.58587)	(1420	IH 2	23MY1967	C.18127)
(1421	CH 2	23MY1967	0.74601)	(1422	GA 2	23MY1967	0.77658)	(1423	WA 2	25MY1967	1.52015)
(1424	KN 2	25MY1967	0.83933)	(							

Stephanodiscus astraea (Ehr.) Grun. *in* Cl. and Grun.

Discoplea ? astraea Ehrenberg, Ber. Akad. Wiss. Berlin, 1844:267. 1844.
Cyclotella astraea (Ehr.) Kützing, Sp. Alg., p. 19. 1849.
Stephanodiscus astraea (Ehr.) Grunow, *in* Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):114. 1880.

Cells circular in valve view and rectangular in girdle view. Vegetative cells always occur singly. Radial striae in biseriate fascicles near the margin of the valve, becoming uniseriate and disorganized near the center of the valve which is markedly concave. Puncta in the radial striae distinct, 16-19 in 10μ. The fascicles are closely packed with only a narrow hyaline space separating them. The spines in this species are submarginal and irregularly arranged, usually between every 2-4 fascicles. Fascicles 6-8 in 10μ at the margins of the valves. In this taxon the fine, irregularly punctate ornamentation of the valve mantle is visible as a margin which is separated from the ornamentation of the valve surface by a narrow hyaline space. The spines arise from the inner border of the apparent margin.

Despite the fact that this is the most widely reported species of the genus, numerous problems of both circumscription and formal nomenclature are attached to it. I have not had the opportunity to observe authentic material of *Discoplea astraea*. Material annotated by Grunow, author of the combination, upon whose illustrations and verified specimens most modern treatments of this taxon are based is available in the United States and is the basis of our concept of the taxon.

Many of the authors that have treated the Lake Michigan plankton have either failed to distinguish this species from *S. niagarae* or have considered the two taxa to be synonymous. Cleve-Euler (1951) has made a variety, *S. astraea* var. *niagarae*, and has pointed out the close morphologic similarity of the two forms. Although this contention cannot be dismissed lightly, substantial differences do exist in the morphology of apparently discrete populations from the upper Great Lakes region and we chose to take the taxonomically conservative position that the two taxa, as circumscribed, represent distinct genetic entities unless it can be shown experimentally that the range of variation observed can be accommodated by a single genome.

The formal nomenclature of this species has been beclouded by the great number of "varieties," some with strikingly different morphology, that have been attached to it. It is our contention that a number of these entities should be treated as separate entities as their resemblance to the typical species is, at best, superficial.

Hendy (1964) has made a new combination, *S. rotula* (Kütz.) Hendy, citing *S. astraea* (Ehr. *ex* Kütz.) Grun. *in* Cleve and Grunow as a synonym. Hendy's reasoning on this is obscure in that Kützing (1849) clearly indicates that *Cyclotella rotula* Kützing (1844) is a later synonym of *Discoplea ? astraea* Ehrenberg (1844) and further makes a new combination *Cyclotella astraea* (Ehr.) Kütz. based on that epithet. In order to make his intentions fully clear he then proceeds to make a new, and by current rules thoroughly illegal, combination *C. rotula* (Ehr.) Kütz. based on *Discoplea ? rotula* Ehr. (1844). Although Kützing's name juggling seems to have confused Hendy, such was not the case with Grunow as he clearly refers the specific epithet to Ehrenberg's type along with Kützing's synonym.

This species, despite the relatively large number of reports referring to it, is rare in the plankton of the major portion of the Lake Michigan basin. It occurs in considerable quantity in estuaries and inshore waters that are appreciably eutrophied. It is also one of the most common members of the genus in smaller lakes throughout the state.

635 STASTRAE TOT NO OF STATIONS 33

(1232	E 5	16MY1964	0.00174)	(1236	C' 1	8JN1964	0.00875)	(1237	C' 2	8JN1964	0.00773)
(1238	D 3	11JN1964	0.00200)	(1241	E 2	13JN1964	0.00296)	(1264	C' 1	10AU1964	0.00193)
(1266	D 3	18AU1964	0.00351)	(1274	E 1	17SE1964	0.00469)	(1309	C' 1	10NO1964	0.00322)
(1337	C 3	2MR1967	0.00294)	(1338	C 2	28MR1967	0.00132)	(1341	A 3	19AP1967	0.00108)
(1342	A 4	19AP1967	0.00180)	(1411	C 3	31MY1967	0.00821)	(1416	E 5	28MY1967	0.06342)
(1432	A 4	13JN1967	0.00511)	(1437	E 3	15JN1967	0.00269)	(1380	GS 4	9MY1967	0.00168)
(1384	GS 8	10MY1967	0.00185)	(1389	GS13	12MY1967	0.00258)	(1566	GS14	5OC1967	0.00183)
(1544	MU 1	2OC1967	0.04766)	(1520	HO 1	18SE1967	0.39606)	(1526	MO 1	20SE1967	0.00569)
(1531	GH 1	25SE1967	0.01691)	(1428	MU 2	29MY1967	0.01808)	(1417	HO 2	22MY1967	0.77763)
(1418	SH 2	22MY1967	0.01555)	(1350	BH 2	19AP1967	0.00220)	(1354	GH 2	25AP1967	0.01381)
(1429	WL 2	29MY1967	0.04247)	(1406	GB 2	13MY1967	0.11592)	(1419	BU 2	23MY1967	0.07323)

Stephanodiscus binderanus (Kütz.) Krieger

Melosira binderana Kütz., Bacill., p. 55, pl. 2, fig. 1. 1844.
Stephanodiscus binderanus (Kütz.) Krieger, Pflanzenforsch. 10:21. 1927.

Cells circular in valve view and rectangular in girdle view, elongate in the pervalvar axis. Vegetative cells always occur in colonies, attached at the valve surface. Valves of specimens from Lake Michigan 8-22μ in diameter, valve surfaces planar. The radial striae are not united into well defined fascicles. Ornamentation of the valve surface is very irregular in this species. In some specimens the poroids are arranged in definite rows and a secondary level of radial ribs is visible, in others the ornamentation of the valve is only partially developed and its order is obscured. A border of small, regularly arranged, submarginal spines is present. The slime pores are not directly below the spines on the valve mantle in this species as they are in most other members of the genus. Because of the shallow valve mantle the slime pores, which are irregularly arranged, are highly visible and their thickened bases may be confused with spines unless care is taken. Puncta in the radial striae about 20-24 in 10μ. Submarginal spines 8-10 in 10μ, usually 3-5 spines occur between each slime pore.

As Krieger (1927) points out the frustular structure and the sequence of formation of elements of the frustule in this species are essentially similar to other species of *Stephanodiscus* and much different from *Melosira* (Reimann 1960). Its superficial resemblance to the latter genus is only based on its consistent colonial growth habit. A number of the smaller species of *Stephanodiscus* show a greater or lesser tendency to adopt the colonial habit. Great care must be taken if these species are to be distinguished. It is to be emphasized that there is no certain way to distinguish them in living material.

This species is apparently a recent introduction into the flora of Lake Michigan. We have not been able to find records of its occurrence prior to 1938. It is now present in polluted inshore areas throughout the lake and substantial spring blooms have been noted in all parts of the lake in the past few years. Its introduction has caused substantial difficulties for filtration plants utilizing water from that lake in that its filamentous growth habit makes it an excellent filter clogger.

331 MERINDER TOT NO OF STATIONS 224

(46921	CH	23NO1945	0.00065)	(46914	CH	19AP1946	0.48584)	(46924	CH	10MY1946	0.00141)
(46912	CH	AP1947	0.01150)	(46916	CH	4MY1947	0.00170)	(46906	CH	MY1947	0.00133)
(46751	EV	30MR1938	0.06699)	(46772	EV	18AP1938	0.01419)	(46756	EV	27AP1938	0.06884)
(46761	EV	27MY1938	0.00545)	(1225	C 6	15MY1964	0.09408)	(1226	C 7	16MY1964	0.35769)
(1227	C' 2	13MY1964	0.00329)	(1228	D 2	14MY1964	0.01557)	(1229	D 5	14MY1964	0.00634)
(1230	E 2	16MY1964	0.27263)	(1231	E 3	16MY1964	0.07093)	(1232	E 5	16MY1964	1.21743)
(1233	B 3	5JN2964	0.04287)	(1234	B 3	18JN1964	0.03936)	(1235	C 7	16JN1964	0.09038)
(1439	B 6	5JN1964	0.18781)	(1236	C' 1	8JN1964	0.01925)	(1237	C' 2	8JN1964	0.04383)
(1238	D 3	11JN1964	0.02800)	(1239	D 4	11JN1964	0.05570)	(1240	D 6	10JN1964	0.01994)
(1241	E 2	13JN1964	0.07393)	(1242	E 3	13JN1964	0.00150)	(1243	E 6	13JN1964	0.03758)
(1244	F 1	11JN1964	0.00548)	(1245	F 2	11JN1964	0.01383)	(1246	F 3	11JN1964	0.01195)
(1440	B 6	11JL1964	0.00369)	(1441	B 6	24JL1964	0.00881)	(1250	C 6	10JL1964	0.01644)
(1251	C 7	16JL1964	0.00579)	(1252	C' 1	16JL1964	0.00558)	(1253	C' 2	16JL1964	0.00228)
(1254	D 2	15JL1964	0.01724)	(1255	D 5	15JL1964	0.00513)	(1256	E 2	14JL1964	0.06228)
(1258	F 1	6JL1964	0.00236)	(1259	F 2	6JL1964	0.00930)	(1260	F 3	6JL1964	0.00382)
(1442	B 6	2AU1964	0.00682)	(1264	C' 1	10AU1964	0.00193)	(1265	C' 2	10AU1964	0.00224)
(1266	D 3	18AU1964	0.00351)	(1267	D 6	18AU1964	0.00649)	(1268	E 2	15AU1964	0.02462)
(1270	F 1	10AU1964	0.00272)	(1273	C' 2	10SE1964	0.00538)	(1274	D 1	17SE1964	0.04223)
(1275	D 2	17SE1964	0.02580)	(1278	D 6	18SE1964	0.00384)	(1279	E 1	16SE1964	0.12743)
(1280	E 2	16SE1964	0.00681)	(1284	E 6	17SE1964	0.04448)	(1285	F 1	15SE1964	0.00582)
(1288	B 3	15OC1964	0.00218)	(1289	C 7	14OC1964	0.00440)	(1290	C' 1	16OC1964	0.01137)
(1291	C' 2	16OC1964	0.00734)	(1293	D 2	15OC1964	0.00472)	(1294	D 3	15OC1964	0.00330)
(1297	D 6	14OC1964	0.00190)	(1303	E 6	13OC1964	0.00560)	(1308	C 7	6NO1964	0.00304)
(1309	C' 1	10NO1964	0.00322)	(1310	C' 2	10NO1964	0.00227)	(1311	D 1	8NO1964	0.00774)
(1312	D 2	8NO1964	0.04656)	(1313	D 3	9NO1964	0.00386)	(1314	D 4	9NO1964	0.00574)
(1316	D 6	9NO1964	0.00378)	(1317	E 1	6NO1964	0.00574)	(1320	E 4	7NO1964	0.00414)
(1321	E 5	7NO1964	0.00319)	(1325	F 3	6NO1964	0.00252)	(1336	C 3	27JA1967	0.01733)
(1337	C 3	2MR1967	4.88690)	(1338	C 3	28MR1967	7.40466)	(1339	C 5	28MR1967	0.29307)
(1340	C 7	28MR1967	8.29704)	(1341	A 3	19AP1967	1.89840)	(1342	A 4	19AP1967	0.19490)
(1343	A 6	19AP1967	42.65001)	(1344	C 3	25AP1967	0.63694)	(1345	C 5	25AP1967	0.24755)
(1346	C 7	21AP1967	1.58893)	(1347	E 2	23AP1967	1.93480)	(1348	E 5	23AP1967	4.89376)
(1368	A 3	4MY1967	1.64939)	(1369	A 4	4MY1967	0.02236)	(1370	A 6	3MY1967	2.41685)
(1371	C 3	4MY1967	0.03001)	(1372	C 5	5MY1967	0.00709)	(1373	C 7	5MY1967	0.12836)
(1374	E 2	7MY1967	0.62762)	(1375	E 3	7MY1967	0.10106)	(1376	E 5	6MY1967	2.55790)
(1408	A 3	23MY1967	0.03130)	(1410	A 6	24MY1967	0.00544)	(1411	C 3	31MY1967	0.00410)
(1412	C 5	31MY1967	0.00842)	(1413	C 7	25MY1967	0.04422)	(1414	E 2	28MY1967	0.01008)
(1415	E 3	28MY1967	0.00450)	(1416	E 5	28MY1967	2.09058)	(1431	A 3	12JN1967	0.01030)
(1432	A 4	13JN1967	0.00766)	(1433	C 3	17JN1967	0.05167)	(1434	C 5	17JN1967	0.00299)
(1435	C 7	13JN1967	0.22101)	(1436	E 2	15JN1967	0.01809)	(1437	E 3	15JN1967	0.00269)
(1438	E 5	14JN1967	0.55919)	(1447	A 4	11JL1967	0.00234)	(1448	A 6	10JL1967	0.00354)
(1449	C 3	16JL1967	0.69548)	(1450	C 5	16JL1967	0.00381)	(1451	C 7	16JL1967	0.34447)
(1452	E 2	14JL1967	0.03832)	(1453	E 3	15JL1967	0.00758)	(1511	E 2	1SE1967	0.01535)
(1513	E 5	31AU1967	0.00507)	(1532	A 3	18SE1967	0.00657)	(1533	A 4	19SE1967	0.00464)
(1536	E 2	24SE1967	0.00273)	(1537	E 3	24SE1967	0.00431)	(1538	E 5	23SE1967	0.00552)
(1540	C 5	4OC1967	0.00993)	(1541	E 2	11OC1967	0.01064)	(1542	E 3	11OC1967	0.00509)
(1377	GS 1	9MY1967	0.00792)	(1378	GS 2	9MY1967	0.23969)	(1380	GS 4	9MY1967	1.76560)
(1381	GS 5	10MY1967	1.00176)	(1382	GS 6	10MY1967	1.36001)	(1383	GS 7	10MY1967	4.11677)
(1384	GS 8	10MY1967	3.62325)	(1385	GS 9	10MY1967	1.23614)	(1386	GS10	12MY1967	2.41310)
(1387	GS11	12MY1967	1.52487)	(1388	GS12	12MY1967	0.42232)	(1389	GS13	12MY1967	1.80491)
(1390	GS14	12MY1967	1.64416)	(1391	GS15	12MY1967	4.02241)	(1392	GS16	12MY1967	10.13961)
(1393	GS17	13MY1967	4.79399)	(1394	GS18	13MY1967	5.65934)	(1395	GS19	13MY1967	45.62321)
(1396	GS20	13MY1967	15.58951)	(1397	GS21	13MY1967	54.71146)	(1398	GS22	14MY1967	0.17306)
(1554	GS 1	3OC1967	0.00356)	(1555	GS 2	3OC1967	0.00353)	(1557	GS 4	3OC1967	0.01495)
(1558	GS 5	4OC1967	0.01586)	(1560	GS 8	4OC1967	0.02361)	(1561	GS 9	4OC1967	0.02935)
(1562	GS10	5OC1967	0.00740)	(1563	GS11	5OC1967	0.01871)	(1564	GS12	5OC1967	0.14484)
(1565	GS13	5OC1967	0.04056)	(1566	GS14	5OC1967	0.23298)	(1567	GS15	5OC1967	0.01111)
(1568	GS16	5OC1967	0.31457)	(1569	GS17	5OC1967	0.01338)	(1571	GS19	6OC1967	0.32782)
(1572	GS20	6OC1967	0.34700)	(1573	GS21	6OC1967	1.80305)	(1574	GS22	6OC1967	0.00575)
(1575	GS28	6OC1967	0.07225)	(1544	MU 1	2OC1967	0.00715)	(1547	MS 1	2OC1967	0.05589)
(1524	MI 1	20SE1967	0.15324)	(1546	LU 1	2OC1967	6.00210)	(1520	HO 1	18SE1967	0.03300)
(1521	SH 1	18SE1967	0.18463)	(1522	BH 1	18SE1967	0.25346)	(1523	RA 1	19SE1967	1.91882)
(1525	PW 1	20SE1967	0.41777)	(1526	MO 1	20SE1967	3.36804)	(1527	TR 1	20SE1967	1.50943)
(1528	SB 1	20SE1967	1.15507)	(1529	KK 1	20SE1967	0.07195)	(1530	FR 1	24SE1967	0.38004)
(1531	GH 1	25SE1967	0.10144)	(1545	WL 1	2OC1967	0.21623)	(1549	MC 1	4OC1967	0.02741)

(1551	ES 1	50C1967	0.17573)	(1552	SM 1	60C1967	C.61406)	(1550	MR 1	50C1967	C.49560)		
(1553	SG 1	60C1967	1.17509)	(1428	MU 2	29MY1967	2.02477)	(1426	MS 2	29MY1967	C.19948)		
(1351	MI 2	21AP1967	24.32893)	(1427	LU 2	29MY1967	C.18160)	(1417	HO 2	22MY1967	32.06221)		
(1418	SH 2	22MY1967	0.20218)	(1350	BH 2	19AP1967	3.91181)	(1425	RA 2	25MY1967	6.36548)		
(1399	PW 2	5MY1967	3.37323)	(1401	MO 2	6MY1967	10.81844)	(1402	TR 2	6MY1967	8.92354)		
(1400	SB 2	6MY1967	1.23898)	(1352	KW 2	21AP1967	10.85724)	(1353	FR 2	23AP1967	14.17721)		
(1354	GH 2	25AP1967	56.72563)	(1429	WL 2	29MY1967	6.96465)	(1403	CA 2	10MY1967	1.4254C)		
(1404	MO 2	10MY1967	1.06707)	(1405	ES 2	12MY1967	5.67595)	(1407	SM 2	14MY1967	18.82127)		
(1349	CI 2	15AP1967	29.08253)	(1406	GB 2	13MY1967	0.00809)	(1419	BU 2	23MY1967	C.89711)		
(1420	IH 2	23MY1967	0.95166)	(1421	CH 2	23MY1967	0.45108)	(1422	GA 2	23MY1967	C.60287)		
(1423	WA 2	25MY1967	9.59192)	(1424	KN 2	25MY1967	4.90274)	(					

Stephanodiscus hantzschii Grun.

Stephanodiscus hantzschii Grunow *in* Cleve and Grunow, K. Svenska Vet.-Akad. Handl., Ny Följd, 17(2):115. 1880.
Stephanodiscus hantzschianus Grun. *in* Van Heurck, Syn. Diat. Belgique, p. 216, pl. 95, fig. 10. 1885.

Cells circular in valve view and square in girdle view. Vegetative cells may occur singly or in colonies of up to 100 cells. Valves of specimens from Lake Michigan 8-22μ in diameter with very slightly concave centers. Radial striae in biseriate to quadriseriate fascicles at the valve margins, becoming uniseriate near the center of the valve. Puncta in the radial striae fine, somewhat difficult to resolve, 22-24 in 10μ. Fascicles widely separated by a hyaline area that is not apparently thickened. The marginal spines occur regularly at the ends of each hyaline ray and arise from noticeably thickened bases. Placement of the spines is very regular in this taxon and they are irregular or missing only on grossly abnormal specimens. Fascicles and spines 8-11 in 10μ at the margins of the valves.

Our concept of this taxon is based on specimens examined by Grunow in the Van Heurck exsiccatae (Types du Synopsis no. 482). It closely resembles several of the other smaller species of *Stephanodiscus* and adequate optical equipment, used with care, is necessary to distinguish it from these species. On the basis of our observations it is rare in the offshore flora and only becomes abundant in harbors and eutrophied inshore areas.

643 STHANTZS TOT NO OF STATIONS 199

(3540	CH	11MY1879	0.19569)	(3507	CH	19FE1881	0.06792)	(46910	CH	0C1945	C.00109)		
(46908	CH	DE1945	0.01007)	(46914	CH	19AP1946	0.55524)	(46924	CH	10MY1946	0.22927)		
(46923	CH	22NO1946	0.01967)	(46920	CH	20DE1946	0.00431)	(46905	CH	JA1947	C.00613)		
(46909	CH	MR1947	0.01366)	(46912	CH	AP1947	0.08049)	(46916	CH	4MY1947	C.00577)		
(46906	CH	MY1947	0.08628)	(46919	CH	5JN1947	0.02124)	(46907	CH	JL1947	C.00394)		
(46922	CH	21AU1947	0.00485)	(46772	EV	18AP1938	0.00710)	(46756	EV	27AP1938	0.00336)		
(46761	EV	27MY1938	0.00273)	(1224	B 4	18MY1964	0.00196)	(1225	C 6	15MY1964	0.03136)		
(1226	C 7	16MY1964	0.05327)	(1227	C' 2	13MY1964	0.00110)	(1228	D 2	14MY1964	0.01752)		
(1229	D 5	14MY1964	0.02749)	(1230	E 2	16MY1964	0.07408)	(1231	E 3	16MY1964	0.03669)		
(1232	E 5	16MY1964	0.06087)	(1233	B 3	5JN2964	0.02620)	(1234	B 3	18JN1964	0.02530)		
(1235	C 7	16JN1964	0.03954)	(1439	B 6	5JN1964	0.10989)	(1236	C' 1	8JN1964	C.03151)		
(1237	C' 2	8JN1964	0.04383)	(1238	D 3	11JN1964	0.01600)	(1239	D 4	11JN1964	C.00116)		
(1240	D 6	10JN1964	0.05829)	(1241	E 2	13JN1964	C.15081)	(1243	E 6	13JN1964	C.01670)		
(1244	F 1	11JN1964	0.03399)	(1245	F 2	11JN1964	0.10027)	(1246	F 3	11JN1964	0.02988)		
(1440	B 6	11JL1964	0.01474)	(1441	B 6	24JL1964	C.01542)	(1250	C 6	10JL1964	0.19733)		
(1251	C 7	16JL1964	0.00869)	(1252	C' 1	16JL1964	0.01116)	(1253	C' 2	16JL1964	0.00685)		
(1254	D 2	15JL1964	0.01149)	(1255	D 5	15JL1964	0.01540)	(1256	E 2	14JL1964	C.03297)		
(1257	E 3	14JL1964	0.00957)	(1258	F 1	6JL1964	0.04248)	(1259	F 2	6JL1964	0.01859)		
(1260	F 3	6JL1964	0.00764)	(1264	C' 1	10AU1964	0.01545)	(1265	C' 2	10AU1964	0.00894)		
(1267	D 6	18AU1964	0.00216)	(1268	E 2	15AU1964	0.00821)	(1269	E 3	15AU1964	0.00274)		
(1271	C 7	22SE1964	0.00653)	(1272	C' 1	10SE1964	0.05336)	(1273	C' 2	10SE1964	0.01613)		
(1274	D 1	17SE1964	0.01408)	(1275	D 2	17SE1964	0.01290)	(1276	D 3	18SE1964	0.01118)		
(1277	D 4	18SE1964	0.00620)	(1278	D 6	18SE1964	0.00769)	(1279	E 1	16SE1964	C.01178)		
(1281	E 3	16SE1964	0.00392)	(1283	E 5	16SE1964	C.00613)	(1284	E 6	17SE1964	C.00635)		
(1285	F 1	15SE1964	0.01747)	(1287	F 3	15SE1964	0.01501)	(1292	D 1	15OC1964	C.00373)		
(1295	D 4	15OC1964	0.01189)	(1297	D 6	14OC1964	0.00571)	(1298	E 1	12OC1964	0.00269)		
(1300	E 3	13OC1964	0.00716)	(1301	E 4	13OC1964	0.00442)	(1303	E 6	13OC1964	0.01119)		
(1304	F 1	11OC1964	C.00247)	(1306	F 3	11OC1964	0.00277)	(1307	B 6	NO1964	0.00361)		
(1308	C 7	6NO1964	0.00912)	(1309	C' 1	10NO1964	0.00643)	(1311	D 1	8NO1964	C.00258)		
(1312	D 2	8NO1964	0.00310)	(1313	D 3	9NO1964	0.00193)	(1315	D 5	9NO1964	0.00910)		
(1317	E 1	6NO1964	0.00383)	(1318	E 2	7NO1964	0.00190)	(1319	E 3	7NO1964	0.00262)		
(1320	E 4	7NO1964	0.00207)	(1323	F 1	6NO1964	0.00139)	(1325	F 3	6NO1964	0.00252)		
(1336	C 3	27JA1967	0.00193)	(1337	C 3	2MR1967	0.00147)	(1338	C 3	28MR1967	C.01190)		
(1339	C 5	28MR1967	0.04365)	(1340	C 7	28MR1967	0.81443)	(1341	A 3	19AP1967	C.15187)		
(1342	A 4	19AP1967	0.01624)	(1343	A 6	19AP1967	0.35710)	(1344	C 3	25AP1967	0.00165)		
(1346	C 7	21AP1967	0.07878)	(1347	E 2	23AP1967	0.00976)	(1348	E 5	23AP1967	C.14805)		
(1370	A 6	3MY1967	0.13580)	(1371	C 3	4MY1967	0.00231)	(1374	E 2	7MY1967	0.02092)		
(1376	E 5	6MY1967	0.11525)	(1408	A 3	23MY1967	0.01342)	(1410	A 6	24MY1967	C.00564)		
(1411	C 3	31MY1967	0.01231)	(1412	C 5	31MY1967	0.00421)	(1415	E 3	28MY1967	C.CC450)		
(1416	E 5	28MY1967	0.07654)	(1431	A 3	12JN1967	0.00772)	(1432	A 4	13JN1967	C.00511)		
(1433	C 3	17JN1967	0.00646)	(1434	C 5	17JN1967	0.00299)	(1435	C 7	13JN1967	C.01263)		

(1438	E 5	14JN1967	0.01452)	(1451	C 7	16JL1967	0.05512)	(1452	E 2	14JL1967	0.00852)
(1454	E 5	15JL1967	0.00200)	(1504	A 3	28AU1967	0.00741)	(1506	A 6	29AU1967	0.00523)
(1532	A 3	18SE1967	0.00329)	(1537	E 3	24SE1967	0.00431)	(1540	C 5	40C1967	0.00496)
(1541	E 2	110C1967	0.00532)	(1543	E 5	100C1967	0.00718)	(1378	GS 2	9MY1967	0.00421)
(1379	GS 3	9MY1967	0.00309)	(1380	GS 4	9MY1967	0.01177)	(1381	GS 5	10MY1967	0.01431)
(1383	GS 7	10MY1967	0.00267)	(1384	GS 8	10MY1967	0.00555)	(1385	GS 9	10MY1967	0.00706)
(1387	GS11	12MY1967	0.00396)	(1389	GS13	12MY1967	0.00258)	(1392	GS16	12MY1967	0.00308)
(1395	GS19	13MY1967	0.00705)	(1396	GS20	13MY1967	0.00296)	(1397	GS21	13MY1967	0.00196)
(1554	GS 1	30C1967	0.00356)	(1555	GS 2	30C1967	0.00353)	(1563	GS11	50C1967	0.00234)
(1565	GS13	50C1967	0.01014)	(1566	GS14	50C1967	0.00734)	(1567	GS15	50C1967	0.00476)
(1568	GS16	50C1967	0.00289)	(1569	GS17	50C1967	0.00297)	(1570	GS18	50C1967	0.00992)
(1571	GS19	60C1967	0.00117)	(1572	GS20	60C1967	0.00631)	(1573	GS21	60C1967	0.00560)
(1574	GS22	60C1967	0.00288)	(1575	GS28	60C1967	0.00387)	(1544	MU 1	20C1967	0.02383)
(1546	LU 1	20C1967	0.02501)	(1520	HO 1	18SE1967	0.04243)	(1521	SH 1	18SE1967	0.03462)
(1522	BH 1	18SE1967	0.21334)	(1523	RA 1	19SE1967	0.00923)	(1526	MO 1	20SE1967	0.00569)
(1527	TR 1	20SE1967	0.00629)	(1531	GH 1	25SE1967	0.00845)	(1545	WL 1	20C1967	0.23650)
(1548	CA 1	30C1967	0.01272)	(1549	MQ 1	40C1967	0.01370)	(1550	MR 1	50C1967	0.07434)
(1553	SG 1	60C1967	0.01469)	(1428	MU 2	29MY1967	0.48209)	(1426	MS 2	29MY1967	0.18898)
(1351	MI 2	21AP1967	0.01241)	(1427	LU 2	29MY1967	0.03632)	(1417	HO 2	22MY1967	4.48632)
(1418	SH 2	22MY1967	0.13997)	(1350	BH 2	19AP1967	1.05725)	(1425	RA 2	25MY1967	0.00884)
(1399	PW 2	5MY1967	0.00680)	(1402	TR 2	6MY1967	0.11912)	(1400	SB 2	6MY1967	0.25614)
(1352	KW 2	21AP1967	0.03436)	(1353	FR 2	23AP1967	0.04219)	(1354	GH 2	25AP1967	1.49133)
(1429	WL 2	29MY1967	3.22752)	(1403	CA 2	10MY1967	0.03923)	(1404	MQ 2	10MY1967	0.01270)
(1405	ES 2	12MY1967	0.01935)	(1407	SM 2	14MY1967	0.04180)	(1349	CI 2	19AP1967	0.05748)
(1406	GB 2	13MY1967	0.16983)	(1422	GA 2	23MY1967	0.02044)	(1423	WA 2	25MY1967	0.07708)
(1424	KN 2	25MY1967	0.03997)	(							

Stephanodiscus minutus Grun. *ex* Cleve and Möll.

Cyclotella minutula Kütz., Bacill., p. 50, pl. 2, fig. 3. 1844.
Stephanodiscus minutus Grunow *ex* Cleve and Möller, Diatoms, #221. 1879.
Stephanodiscus astraea var. *minutula* Grun. *in* V. H., Syn. Diat. Belgique, pl. 95, figs. 7, 8. 1882.
Stephanodiscus balatonis Pant., Res. Wiss. erforsch. Balatonsees, p. 105, pl. 15, fig. 324. 1902.

Cells circular in valve view and rectangular in girdle view. Vegetative cells always occur singly. Valves of specimens from Lake Michigan 4-22μ in diameter with strongly concave centers. Radial striae in biseriate fascicles at the valve margins, becoming disorganized near the center of the valve. Puncta in the radial striae fine, more than 30 in 10μ. Fascicles are separated by narrow but obviously thickened radial ribs. The marginal spines arise at the ends of each of these ribs. Placement of the spines is very regular in this species and they are irregular or missing only in grossly abnormal specimens. Fascicles and spines 15-18 in 10μ at the margins of the valves.

Our concept of this taxon is based upon the material on Cleve and Möller slide #221. Most recent workers have considered this entity to be a variety of *S. astraea*. The reason for this is difficult to discern as this species has only a superficial resemblence to *S. astraea*. Its morphology is somewhat similar to that of *S. transilvanicus* but it differs from that taxon by its finer structure and in that the radial striae are always in fascicles of two.

Although *S. astraea* var. *minutula* has been widely reported, the confusion surrounding this name makes it difficult to determine the actual distribution of the taxon we treat here. In our experience in Lake Michigan it is a minor component of the offshore flora and only becomes abundant in estuaries and eutrophied inshore areas of the lake.

640 STASIRVM TOT NO OF STATIONS 257

(60973	CH	1876	0.02362)	(46910	CH	0C1945	0.00218)	(46921	CH	23N01945	C.00129)		
(46917	CH	17JA1946	0.00055)	(46915	CH	20FE1946	0.04552)	(46914	CH	19AP1946	3.5C443)		
(46923	CH	22N01946	0.10928)	(46520	CH	20DE1946	0.03358)	(46905	CH	JA1947	C.01103)		
(46909	CH	MR1947	0.00911)	(46912	CH	AP1947	C.08049)	(46916	CH	4MY1947	C.24259)		
(46906	CH	MY1947	1.55304)	(46919	CH	5JN1947	1.38086)	(46907	CH	JL1947	C.73720)		
(46913	CH	6AU1947	0.02092)	(46922	CH	21AU1947	0.10468)	(46758	EV	5JN1937	C.19970)		
(46743	EV	20JN1937	0.21838)	(46764	EV	17JL1937	0.02417)	(46757	EV	25JL1937	C.01926)		
(46747	EV	1AU1937	0.00248)	(46765	EV	30AU1937	0.00558)	(46744	EV	6OC1937	C.01463)		
(46768	EV	16MR1938	0.01470)	(46751	EV	30MR1938	C.07816)	(46772	EV	18AP1938	0.01419)		
(46756	EV	27AP1938	0.18806)	(46759	EV	19MY1938	0.02701)	(46761	EV	27MY1938	C.06813)		
(46766	EV	14DE1938	0.01584)	(1223	B 3	18MY1964	0.00469)	(1224	B 4	18MY1964	C.00588)		
(1225	C 6	15MY1964	0.01176)	(1226	C 7	16MY1964	0.01142)	(1227	C' 2	13MY1964	C.00219)		
(1228	D 2	14MY1964	0.00973)	(1229	D 5	14MY1964	0.19243)	(1230	E 2	16MY1964	C.14224)		
(1231	E 3	16MY1964	0.85608)	(1232	E 5	16MY1964	0.65046)	(1233	B 3	5JN2964	0.01191)		
(1234	B 3	18JN1964	0.02530)	(1439	B 6	5JN1964	0.15385)	(1236	C' 1	8JN1964	C.00875)		
(1237	C' 2	8JN1964	C.C5672)	(1238	D 3	11JN1964	0.08200)	(1239	D 4	11JN1964	C.CC116)		
(1240	D 6	10JN1964	0.01381)	(1241	E 2	13JN1964	0.34598)	(1242	E 3	13JN1964	C.52453)		
(1243	E 6	13JN1964	0.03550)	(1244	F 1	11JN1964	0.01864)	(1245	F 2	11JN1964	C.C6915)		
(1246	F 3	11JN1964	0.19124)	(1440	B 6	11JL1964	0.06633)	(1441	B 6	24JL1964	C.CC881)		
(1250	C 6	10JL1964	0.02467)	(1251	C 7	16JL1964	0.00579)	(1252	C' 1	16JL1964	C.02232)		
(1253	C' 2	16JL1964	0.00913)	(1254	D 2	15JL1964	0.08044)	(1255	D 5	15JL1964	0.04363)		
(1256	E 2	14JL1964	0.08976)	(1257	E 3	14JL1964	C.72736)	(1258	F 1	6JL1964	C.02124)		
(1259	F 2	6JL1964	0.01549)	(1260	F 3	6JL1964	0.01528)	(1261	B 3	2AU1964	0.00196)		
(1262	B 3	17AU1964	C.00210)	(1264	C' 1	10AU1964	C.02510)	(1265	C' 2	10AU1964	C.CC671)		
(1266	D 3	18AU1964	0.00702)	(1267	D 6	18AU1964	0.00216)	(1268	E 2	15AU1964	C.19149)		
(1269	E 3	15AU1964	0.34534)	(1270	F 1	10AU1964	0.00272)	(1271	C 7	22SE1964	0.00653)		
(1272	C' 1	10SE1964	0.00410)	(1273	C' 2	10SE1964	0.00538)	(1274	D 1	17SE1964	C.00469)		
(1279	E 1	16SE1964	0.00785)	(1280	E 2	16SE1964	0.01362)	(1282	E 4	16SE1964	C.01108)		
(1283	E 5	16SE1964	0.01226)	(1285	F 1	15SE1964	0.01165)	(1286	F 2	15SE1964	C.02189)		
(1288	B 3	15OC1964	0.00218)	(1445	B 6	14CC1964	0.00652)	(1289	C 7	14OC1964	C.CC44C)		
(1292	D 1	15OC1964	0.00373)	(1293	D 2	15DC1964	0.00472)	(1294	D 3	15OC1964	C.00330)		
(1296	D 5	14OC1964	0.00787)	(1297	D 6	14CC1964	0.00381)	(1298	E 1	12OC1964	C.CC808)		
(1299	F 2	12OC1964	0.01571)	(1300	E 3	13OC1964	0.02864)	(1301	E 4	13OC1964	C.C1325)		
(1305	F 2	11OC1964	0.00173)	(1307	B 6	NO1964	0.00361)	(1309	C' 1	10NO1964	C.00161)		
(1310	C' 2	10NO1964	C.0C227)	(1311	D 1	8NO1964	0.00516)	(1312	D 2	8NO1964	C.CC621)		
(1313	D 3	9NO1964	0.00193)	(1315	D 5	9NO1964	0.00455)	(1317	E 1	6NO1964	0.00383)		
(1318	E 2	7NO1964	C.00380)	(1319	E 3	7NO1964	C.00524)	(1320	E 4	7NO1964	C.C1034)		
(1321	E 5	7NO1964	0.00319)	(1322	E 6	7NO1964	C.00667)	(1323	F 1	6NO1964	C.00418)		
(1324	F 2	6NO1964	C.0C699)	(1336	C 3	27JA1967	C.00770)	(1337	C 3	2MR1967	C.41153)		
(1338	C 3	28MR1967	1.38837)	(1339	C 5	28MR1967	1.52772)	(1340	C 7	28MR1967	1.27255)		
(1341	A 3	19AP1967	0.35364)	(1342	A 4	19AP1967	1.26324)	(1343	A 6	19AP1967	C.63221)		
(1344	C 3	25AP1967	0.09761)	(1345	C 5	25AP1967	4.63910)	(1346	C 7	21AP1967	C.31245)		
(1347	E 2	23AP1967	1.13812)	(1348	E 5	23AP1967	3.93420)	(1368	A 3	4MY1967	C.05655)		
(1369	A 4	4MY1967	0.15282)	(1370	A 6	3MY1967	0.06215)	(1371	C 3	4MY1967	C.03232)		
(1372	C 5	5MY1967	0.22698)	(1373	C 7	5MY1967	C.01141)	(1374	E 2	7MY1967	2.71966)		
(1375	E 3	7MY1967	0.24543)	(1376	E 5	6MY1967	C.25298)	(1408	A 3	23MY1967	C.01789)		
(1409	A 4	23MY1967	0.0C298)	(1410	A 6	24MY1967	0.02255)	(1411	C 3	31MY1967	C.00410)		
(1412	C 5	31MY1967	0.01684)	(1413	C 7	25MY1967	0.00632)	(1414	E 2	28MY1967	C.01008)		
(1415	E 3	28MY1967	0.01799)	(1416	E 5	28MY1967	C.15308)	(1431	A 3	12JN1967	C.01030)		
(1432	A 4	13JN1967	0.01788)	(1433	C 3	17JN1967	0.24545)	(1434	C 5	17JN1967	C.C1794)		
(1435	C 7	13JN1967	0.00631)	(1436	E 2	15JN1967	0.01447)	(1437	E 3	15JN1967	C.00538)		
(1438	E 5	14JN1967	0.03268)	(1446	A 3	11JL1967	0.07827)	(1447	A 4	11JL1967	C.03509)		
(1449	C 3	16JL1967	1.33746)	(1450	C 5	16JL1967	0.33324)	(1451	C 7	16JL1967	C.01772)		
(1452	E 2	14JL1967	0.69400)	(1453	E 3	15JL1967	0.97313)	(1454	E 5	15JL1967	C.C1600)		
(1508	C 3	2SE1967	0.00799)	(1511	E 2	1SE1967	C.42975)	(1512	E 3	1SE1967	C.36909)		
(1532	A 3	18SE1967	0.01314)	(1533	A 4	19SE1967	0.00464)	(1534	A 6	19SE1967	C.00931)		
(1535	C 7	20SE1967	0.00322)	(1536	E 2	24SE1967	0.12543)	(1537	E 3	24SE1967	C.02588)		
(1538	E 5	23SE1967	0.09391)	(1539	C 3	4OC1967	C.03019)	(1540	C 5	4OC1967	C.00993)		
(1541	E 2	11OC1967	0.39381)	(1542	E 3	11OC1967	0.10679)	(1543	E 5	10OC1967	C.06465)		
(1379	GS 3	9MY1967	0.01857)	(1380	GS 4	9MY1967	0.04708)	(1381	GS 5	10MY1967	C.04055)		
(1382	GS 6	10MY1967	0.01943)	(1383	GS 7	10MY1967	C.15772)	(1384	GS 8	10MY1967	C.36972)		
(1385	GS 9	10MY1967	0.00471)	(1386	GS10	12MY1967	0.04309)	(1387	GS11	12MY1967	C.34854)		
(1390	GS14	12MY1967	0.01174)	(1392	GS16	12MY1967	0.00616)	(1393	GS17	13MY1967	0.00822)		
(1394	GS18	13MY1967	0.04988)	(1395	GS19	13MY1967	0.01527)	(1396	GS20	13MY1967	C.02886)		
(1397	GS21	13MY1967	0.07064)	(1398	GS22	14MY1967	0.01214)	(1554	GS 1	3OC1967	C.08895)		
(1555	GS 2	3OC1967	0.02472)	(1556	GS 3	3OC1967	0.03650)	(1557	GS 4	3OC1967	C.01495)		
(1558	GS 5	4OC1967	0.01189)	(1559	GS 7	4OC1967	0.00350)	(1560	GS 8	4OC1967	C.C1889)		
(1561	GS 9	4OC1967	0.01761)	(1562	GS10	5OC1967	0.00740)	(1563	GS11	5OC1967	C.00234)		
(1568	GS16	5OC1967	0.00144)	(1569	GS17	5OC1967	C.00446)	(1570	GS18	5OC1967	0.00992)		
(1571	GS19	6OC1967	0.00351)	(1572	GS20	6OC1967	0.00631)	(1573	GS21	6OC1967	C.10527)		
(1574	GS22	6OC1967	0.01151)	(1575	GS28	6OC1967	0.00387)	(1544	MU 1	2OC1967	0.17633)		
(1547	MS 1	2OC1967	0.00798)	(1546	LU 1	2OC1967	C.42015)	(1521	SH 1	18SE1967	C.11539)		
(1522	BH 1	18SE1967	0.0C729)	(1523	RA 1	19SE1967	0.04613)	(1526	MO 1	20SE1967	C.19912)		
(1527	TR 1	20SE1967	0.15723)	(1528	SB 1	20SE1967	0.01444)	(1529	KW 1	20SE1967	C.26382)		
(1530	FR 1	24SE1967	0.02000)	(1531	GH 1	25SE1967	0.01691)	(1545	WL 1	2OC1967	1.08115)		
(1548	CA 1	3OC1967	0.01272)	(1551	ES 1	5OC1967	0.12781)	(1552	SM 1	6OC1967	C.03301)		
(1550	MR 1	5OC1967	0.73101)	(1553	SG 1	6OC1967	C.41863)	(1428	MU 2	29MY1967	C.03013)		
(1426	MS 2	29MY1967	0.07349)	(1351	MI 2	21AP1967	2.53220)	(1427	LU 2	29MY1967	C.30266)		
(1417	HO 2	22MY1967	2.27307)	(1350	BH 2	19AP1967	1.33918)	(1425	RA 2	25MY1967	C.18566)		
(1399	PW 2	5MY1967	0.25843)	(1401	MO 2	6MY1967	0.54680)	(1402	TR 2	6MY1967	0.95300)		
(1400	SB 2	6MY1967	0.55397)	(1352	KW 2	21AP1967	2.19893)	(1353	FR 2	23AP1967	C.44304)		
(1354	GH 2	25AP1967	1.27039)	(1429	WL 2	29MY1967	C.16987)	(1403	CA 2	10MY1967	2.09232)		
(1404	MO 2	10MY1967	0.06352)	(1405	ES 2	12MY1967	C.04515)	(1407	SM 2	14MY1967	C.09554)		
(1349	CI 2	19AP1967	0.57475)	(1406	GB 2	13MY1967	0.04313)	(1419	BU 2	23MY1967	C.10985)		
(1420	IH 2	23MY1967	0.09063)	(1421	CH 2	23MY1967	0.10409)	(1422	GA 2	23MY1967	0.05620)		
(1423	WA 2	25MY1967	C.57808)	(1424	KN 2	25MY1967	0.14655)	(					

Stephanodiscus niagarae Ehr.

Stephanodiscus niagarae Ehrenberg, Ber. Akad. Wiss. Berlin 1845:80. 1845.

Cells circular in valve view and rectangular in girdle view. Vegetative cells always occur singly. Valves of specimens from Lake Michigan 42-94μ in diameter with slightly concave centers. Radial striae in biseriate

fascicles near the valve margins, becoming uniseriate near the centers. Puncta in the radial striae coarse, 12-16 in 10μ. Fascicles closely packed with only small hyaline spaces between them. The coarse spines of this species are sub-marginal and irregularly arranged, usually between each 2-4 fascicles. Fascicles 5-8 in 10μ at the valve margin. In this taxon a prominent marginal area of fine, irregularly arranged puncta is present. The spines arise from the inner margin of this zone and it is separated from the fascicles by an unornamented space.

This species much resembles *S. astraea* (Ehr.) Grun. and a good deal of speculation has been put forth in the literature regarding the relationship between the two taxa and about their distributions. Our concept of *S. niagarae* is based upon specimens attributed to Bailey in the Academy of Natural Sciences of Philadelphia (ANSP 42768) which are believed to be derived from the original material from Niagara Falls from which this taxon was described.

642 STNIAGVM TOT NO OF STATIONS 222

(60973	CH	1876	0.18895)	(3540	CH	11MY1879	0.01864)	(3541	CH	1FE1881	1.29121)
(46910	CH	0C1945	0.00437)	(46921	CH	23N01945	C.00776)	(46917	CH	12JA1946	0.00166)
(46914	CH	19AP1946	0.03630)	(46924	CH	10MY1946	0.06067)	(46923	CH	22N01946	0.03497)
(46920	CH	20DE1946	0.00585)	(46905	CH	JA1947	0.00613)	(46909	CH	MR1947	0.01366)
(46912	CH	AP1947	0.04599)	(46916	CH	4MY1947	0.02443)	(46906	CH	MY1947	0.03982)
(46919	CH	5JN1947	0.00607)	(46907	CH	JL1947	0.03205)	(46922	CH	21AU1947	C.02859)
(46758	EV	5JN1937	0.05706)	(46771	EV	11JN1937	0.03804)	(46743	EV	20JN1937	C.11989)
(46745	EV	3JL1937	0.08359)	(46770	EV	9JL1937	0.11331)	(46764	EV	17JL1937	C.17728)
(46757	EV	25JL1937	0.06259)	(46747	EV	1AU1937	0.06436)	(46763	EV	23AU1937	C.06088)
(46765	EV	30AU1937	0.03904)	(46769	EV	7SE1937	0.04342)	(46752	EV	15SE1937	C.04354)
(46760	EV	22SE1937	0.07386)	(46750	EV	24SE1937	0.01885)	(46744	EV	6OC1937	0.00488)
(46748	EV	13OC1937	0.10675)	(46767	EV	27OC1937	0.00387)	(46749	EV	12MR1938	C.07282)
(46768	EV	16MR1938	0.02940)	(46762	EV	18MR1938	0.11028)	(46751	EV	30MR1938	0.03350)
(46772	EV	18AP1938	0.06388)	(46756	EV	27AP1938	0.05541)	(46759	EV	19MY1938	C.31735)
(46761	EV	27MY1938	0.10902)	(46766	EV	14DE1938	0.01584)	(1224	B 4	18MY1964	C.00784)
(1225	C 6	15MY1964	0.00392)	(1226	C 7	16MY1964	C.01903)	(1227	C' 2	13MY1964	C.CC110)
(1228	D 2	14MY1964	0.01752)	(1229	D 5	14MY1964	0.00634)	(1230	E 2	16MY1964	C.02074)
(1231	E 3	16MY1964	0.04158)	(1232	E 5	16MY1964	0.01217)	(1234	B 3	18JN1964	C.C2812)
(1236	C' 1	8JN1964	0.01225)	(1237	C' 2	8JN1964	0.01547)	(1238	D 3	11JN1964	C.CC600)
(1241	E 2	13JN1964	0.00739)	(1242	E 3	13JN1964	C.00599)	(1243	E 6	13JN1964	C.01044)
(1244	F 1	11JN1964	0.00110)	(1245	F 2	11JN1964	C.00692)	(1246	F 3	11JN1964	C.CC598)
(1247	B 3	14JL1964	0.00427)	(1255	D 5	15JL1964	0.00770)	(1256	E 2	14JL1964	C.00366)
(1257	E 3	14JL1964	0.00718)	(1258	F 1	6JL1964	0.00472)	(1259	F 2	6JL1964	C.00310)
(1260	F 3	6JL1964	0.00382)	(1262	B 3	17AU1964	0.00210)	(1264	C' 1	10AU1964	C.0C386)
(1266	D 3	18AU1964	0.00351)	(1278	D 6	18SE1964	0.00384)	(1284	E 6	17SE1964	C.0C318)
(1285	F 1	15SE1964	0.01165)	(1288	B 3	15OC1964	0.00218)	(1301	E 4	13OC1964	C.00883)
(1302	E 5	13OC1964	0.01620)	(1304	F 1	11OC1964	0.00494)	(1305	F 2	11OC1964	0.0C345)
(1318	E 2	7N01964	0.00190)	(1320	E 4	7N01964	0.00207)	(1321	E 5	7N01964	C.0C638)
(1323	F 1	6N01964	0.00557)	(1324	F 2	6N01964	0.00699)	(1336	C 3	27JA1967	0.00385)
(1337	C 3	2MR1967	0.00294)	(1338	C 3	28MR1967	0.02248)	(1339	C 5	28MR1967	C.17148)
(1340	C 7	28MR1967	0.01018)	(1341	A 3	19AP1967	0.01953)	(1342	A 4	19AP1967	0.03248)
(1343	A 6	19AP1967	0.00347)	(1344	C 2	25AP1967	0.01324)	(1345	C 5	25AP1967	C.15009)
(1346	C 7	21AP1967	0.01869)	(1347	E 2	23AP1967	C.04065)	(1348	E 5	23AP1967	0.01919)
(1368	A 3	4MY1967	0.15708)	(1369	A 4	4MY1967	0.32800)	(1370	A 6	3MY1967	0.00691)
(1371	C 3	4MY1967	0.08080)	(1372	C 5	5MY1967	0.64548)	(1373	C 7	5MY1967	C.15118)
(1374	E 2	7MY1967	0.18828)	(1375	E 3	7MY1967	0.12512)	(1376	E 5	6MY1967	C.01968)
(1408	A 3	23MY1967	0.16992)	(1409	A 4	23MY1967	0.05356)	(1410	A 6	24MY1967	0.01691)
(1411	C 3	31MY1967	0.08206)	(1412	C 5	31MY1967	0.51772)	(1413	C 7	25MY1967	C.05370)
(1414	E 2	28MY1967	0.06045)	(1415	E 3	28MY1967	0.07870)	(1416	E 5	28MY1967	0.06123)
(1431	A 3	12JN1967	0.01287)	(1432	A 4	13JN1967	C.16093)	(1433	C 3	17JN1967	C.02584)
(1434	C 5	17JN1967	0.57722)	(1435	C 7	13JN1967	0.01579)	(1436	E 2	15JN1967	C.18092)
(1437	E 3	15JN1967	0.13458)	(1438	E 5	16JN1967	0.07262)	(1449	C 3	16JL1967	0.24456)
(1450	C 5	16JL1967	0.08565)	(1452	E 2	14JL1967	0.00639)	(1453	E 3	15JL1967	C.08847)
(1504	A 3	28AU1967	0.00247)	(1509	C 5	2SE1967	C.01009)	(1510	C 7	29AU1967	0.0C316)
(1511	E 2	1SE1967	0.00921)	(1512	E 3	1SE1967	0.01963)	(1532	A 3	18SE1967	C.00329)
(1537	E 3	24SE1967	0.06469)	(1538	E 5	23SE1967	0.01105)	(1542	E 3	11OC1967	0.02034)
(1377	GS 1	9MY1967	0.05541)	(1378	GS 2	9MY1967	0.03364)	(1379	GS 3	9MY1967	C.13308)
(1380	GS 4	9MY1967	0.04540)	(1381	GS 5	10MY1967	0.02385)	(1382	GS 6	10MY1967	0.03886)
(1383	GS 7	10MY1967	0.07485)	(1384	GS 8	10MY1967	0.25880)	(1385	GS 9	10MY1967	C.02119)
(1386	GS10	12MY1967	0.16087)	(1387	GS11	12MY1967	0.25349)	(1388	GS12	12MY1967	0.84465)
(1389	GS13	12MY1967	0.18049)	(1390	GS14	12MY1967	0.32883)	(1391	GS15	12MY1967	C.83800)
(1392	GS16	12MY1967	0.73659)	(1393	GS17	13MY1967	0.46844)	(1394	GS18	13MY1967	C.96329)
(1395	GS19	13MY1967	0.69873)	(1396	GS20	13MY1967	0.49203)	(1397	GS21	13MY1967	0.77832)
(1398	GS22	14MY1967	0.04251)	(1554	GS 1	3OC1967	0.01423)	(1555	GS 2	3OC1967	C.00353)
(1556	GS 3	3OC1967	0.01043)	(1559	GS 7	4OC1967	0.01049)	(1560	GS 8	4OC1967	C.00945)
(1563	GS11	5OC1967	0.01637)	(1564	GS12	5OC1967	0.01152)	(1565	GS13	5OC1967	C.01014)
(1566	GS14	5OC1967	0.01835)	(1567	GS15	5OC1967	C.55570)	(1568	GS16	5OC1967	C.11255)
(1569	GS17	5OC1967	1.76891)	(1570	GS18	5OC1967	0.87267)	(1571	GS19	6OC1967	C.28684)
(1572	GS20	6OC1967	0.31545)	(1573	GS21	6OC1967	0.36509)	(1574	GS22	6OC1967	C.22436)
(1575	GS28	6OC1967	2.70940)	(1544	MU 1	2OC1967	0.24067)	(1547	MS 1	2OC1967	C.0C798)
(1546	LU 1	2OC1967	0.02501)	(1520	HO 1	18SE1967	0.09901)	(1521	SH 1	18SE1967	C.0C577)
(1522	BH 1	18SE1967	0.00365)	(1526	MO 1	20SE1967	0.01138)	(1527	TR 1	20SE1967	C.01887)
(1528	SB 1	20SE1967	0.02888)	(1531	GH 1	25SE1967	0.00845)	(1545	WL 1	2OC1967	C.04054)
(1549	MO 1	4OC1967	0.02741)	(1551	ES 1	5OC1967	0.11183)	(1552	SM 1	6OC1967	1.16210)
(1550	MR 1	5OC1967	1.32573)	(1553	SG 1	6OC1967	2.70270)	(1428	MU 2	29MY1967	C.67492)
(1426	MS 2	29MY1967	0.07349)	(1351	MI 2	21AP1967	0.01241)	(1427	LU 2	29MY1967	0.25424)
(1417	HO 2	22MY1967	0.10468)	(1418	SH 2	22MY1967	0.01555)	(1350	BH 2	19AP1967	C.02643)
(1425	RA 2	25MY1967	0.02652)	(1399	PH 2	5MY1967	0.04761)	(1401	MO 2	6MY1967	C.02352)

(1402	TR 2	6MY1967	0.03790)	(1400	SB 2	6MY1967	0.02978)	(1352	KW 2	21AP1967	C.02577)
(1353	FR 2	23AP1967	C.01055)	(1354	GH 2	25AP1967	C.10874)	(1429	WL 2	29MY1967	C.44591)
(1403	CA 2	10MY1967	0.15692)	(1404	MQ 2	10MY1967	C.19055)	(1405	ES 2	12MY1967	C.59985)
(1407	SM 2	14MY1967	1.52863)	(1349	CI 2	19AP1967	0.00718)	(1406	GB 2	13MY1967	C.86265)
(1419	BU 2	23MY1967	0.01831)	(1420	IH 2	23MY1967	0.01511)	(1421	CH 2	23MY1967	C.01735)
(1422	GA 2	23MY1967	0.01022)	(1423	WA 2	25MY1967	0.01285)	(1424	KN 2	25MY1967	C.06661)

Stephanodiscus niagarae var. *magnifica* Fricke

Stephanodiscus niagarae var. *magnifica* Fricke, A. Schmidt's Atlas Diat., pl. 227, figs. 10-13. 1901.

Differs from the nominate variety in its more robust structure. The puncta in the fascicles are closely packed and appear hexagonal in surface focus and circular in deep focus. Valves of Lake Michigan specimens are from 42-106μ in diameter. Puncta in the radial striae 10-12 in 10μ. Fascicles 4-5 in 10μ, becoming indistinct near the marginal zone due to irregular placement. The submarginal spines are very long and coarse and tend to be somewhat more regular in their placement than in the nominate variety. In the larger specimens a second circlet of smaller spines is found on the valve surface, surrounding the sunken central portion of the valve.

This entity reaches its greatest abundance in eutrophic, hardwater lakes in western North America. Its occurrence in Lake Michigan is limited to eutrophied inshore areas and estuaries.

641 STNIAGAR TCT NO OF STATIONS 27

(60973	CH	1876	0.23618)	(46516	CH	4MY1947	C.00068)	(46763	EV	23AU1937	C.02029)
(46760	EV	22SE1937	0.00492)	(1223	B 3	18MY1964	0.00156)	(1224	B 4	18MY1964	C.00196)
(1238	D 3	11JN1964	0.00600)	(1268	E 2	15AU1964	0.00274)	(1322	E 6	7NO1964	0.00333)
(1369	A 4	4MY1967	0.00745)	(1370	A 6	3MY1967	0.00230)	(1372	C 5	5MY1967	0.00709)
(1408	A 3	23MY1967	0.00894)	(1416	E 5	28MY1967	0.00875)	(1377	GS 1	9MY1967	C.00396)
(1382	GS 6	10MY1967	0.00278)	(1391	GS15	12MY1967	0.02394)	(1392	GS16	12MY1967	C.02157)
(1396	GS20	13MY1967	0.00518)	(1544	MU 1	2CC1967	0.01191)	(1520	HO 1	18SE1967	C.03300)
(1529	KW 1	20SE1967	0.01199)	(1531	GH 1	25SE1967	0.00845)	(1428	MU 2	29MY1967	C.00301)
(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.00441)	(1406	GB 2	13MY1967	C.22645)

Stephanodiscus subtilis (Van Goor) A. Cleve

Melosira subtilis Van Goor, Recueil Trav. Bot. Néerlandis, 21:359, fig. 8. 1924.
Stephanodiscus subtilis (Van Goor) A. Cleve-Euler, K. Svenska Vet.-Akad. Handl., Fjärde Serien, 2(1):54, fig. 72. 1951.

Cells circular in valve view and rectangular, elongate in the pervalvar axis, in girdle view. Vegetative cells always occur in filamentous colonies, joined at the valve surfaces. Cell walls are very lightly silicified, and the frustules are often deformed in prepared collections. Valves of specimens from Lake Michigan 6-22μ in diameter, only slightly concave at the center. The radial striae are contained in biseriate fascicles near the margins of the valve. The fascicles gradually taper and become uniseriate as they approach the center of the valve but retain their identity. The center of the valve is usually marked by a rosette of puncta. Puncta in the radial striae very fine, barely resolvable with the light microscope, about 40 in 10μ. The fascicles are separated by narrow, but appreciably thickened radial ribs. A very small marginal spine occurs at the termination of each rib. Fascicles 14-16 in 10μ at the valve margin.

This species resembles *S. tenuis* in size and general morphologic structure but differs from that taxon in occurring in colonies, having biseriate rather than multiseriate fascicles of striae on the valve surface, and by its finer structure and ornamentation. Its structure also much resembles that of *S. damasi* Hust. (1949) but *S. subtilis* does not approach the maximum size of that taxon and has much finer ornamentation.

This species is apparently a recent introduction into the flora of Lake Michigan and has only been found in quantity in eutrophied areas that also have considerable chloride contamination. Previous reports of its occurrence indicate that it flourishes only in such situations.

716. THNANA ICI NO OF STATIONS 139

(46917	CH	12JA1946	0.00028)	(46915	CH	20FE1946	C.C1707)	(46924	CH	10MY1946	0.C4585)
(46923	CH	22NO1946	0.01311)	(46920	CH	20DE1946	0.00031)	(46909	CH	MR1947	C.01821)
(46916	CH	4MY1947	0.0C170)	(46919	CH	5JN1947	C.00455)	(46922	CH	21AU1947	C.0C097)
(46758	EV	5JN1937	0.73461)	(46771	EV	11JN1937	C.00238)	(46764	EV	17JL1937	C.41096)
(46757	EV	25JL1937	C.16850)	(46747	EV	1AU1937	0.02475)	(46763	EV	23AU1937	C.04058)
(46752	EV	15SE1937	0.04354)	(46750	EV	24SE1937	C.01885)	(46748	EV	13OC1937	C.02135)
(46745	EV	12MR1938	0.19420)	(46762	EV	18MR1938	C.04411)	(46751	EV	30MR1938	C.C3350)
(46756	EV	27AP1938	0.0C168)	(46761	EV	27MY1938	C.00545)	(46766	EV	14DE1938	C.01584)
(1236	C' 1	8JN1964	0.00350)	(1237	C' 2	8JN1964	C.00258)	(1240	D 6	10JN1964	C.CC460)
(1241	E 2	13JN1964	0.00148)	(1243	E 6	13JN1964	C.00209)	(1440	B 6	11JL1964	C.C1474)
(1252	C' 1	16JL1964	C.00279)	(1253	C' 2	16JL1964	C.00228)	(1254	D 2	15JL1964	C.CC383)
(1255	D 5	15JL1964	0.00770)	(1256	E 2	14JL1964	0.00183)	(1257	E 3	14JL1964	0.00239)
(1264	C' 1	10AU1964	0.00965)	(1444	B 6	19SE1964	C.00303)	(1271	C 7	22SE1964	C.CC653)
(1272	C' 1	10SE1964	0.01642)	(1277	D 4	18SE1964	C.00620)	(1278	D 6	18SE1964	0.00384)
(1279	E 1	16SE1964	0.07068)	(1284	E 6	17SE1964	C.00635)	(1287	F 3	15SE1964	C.01001)
(1288	B 3	15OC1964	C.00218)	(1295	D 4	15OC1964	C.01784)	(1297	D 6	14OC1964	C.CC190)
(1298	E 1	12OC1964	0.00539)	(1300	E 3	13OC1964	C.C0358)	(1305	F 2	11OC1964	C.CC173)
(1306	F 3	11OC1964	C.00277)	(1307	B 6	NO1964	C.00361)	(1309	C' 1	10NO1964	C.CC161)
(1311	D 1	8NO1964	0.00516)	(1313	D 3	9NO1964	C.00193)	(1314	D 4	9NO1964	C.CC287)
(1316	D 6	9NO1964	0.00378)	(1317	E 1	6NO1964	C.00574)	(1318	E 2	7NO1964	C.C0380)
(1319	E 3	7NO1964	0.00262)	(1320	E 4	7NO1964	C.00207)	(1321	E 5	7NO1964	C.C0958)
(1323	F 1	6NO1964	0.00139)	(1324	F 2	6NO1964	0.00466)	(1339	C 5	28MR1967	C.00312)
(1341	A 3	19AP1967	0.00434)	(1370	A 6	3MY1967	0.00230)	(1416	E 5	28MY1967	C.00437)
(1431	A 3	12JN1967	0.00257)	(1432	A 4	13JN1967	0.00255)	(1433	C 3	17JN1967	C.C1292)
(1435	C 7	13JN1967	0.00316)	(1438	E 5	14JN1967	C.00726)	(1446	A 3	11JL1967	C.00245)
(1447	A 4	11JL1967	0.00234)	(1451	C 7	16JL1967	0.00197)	(1452	E 2	14JL1967	C.01277)
(1454	E 5	15JL1967	C.C0200)	(1532	A 3	18SE1967	0.00657)	(1533	A 4	19SE1967	C.C2785)
(1534	A 6	19SE1967	0.00620)	(1535	C 7	20SE1967	0.01288)	(1536	E 2	24SE1967	C.01091)
(1537	E 3	24SE1967	0.01294)	(1541	E 2	11OC1967	C.07983)	(1542	E 3	11OC1967	C.C2034)
(1543	E 5	10OC1967	0.01437)	(1554	GS 1	3OC1967	0.08539)	(1555	GS 2	3OC1967	C.01059)
(1556	GS 3	3OC1967	0.03650)	(1557	GS 4	3OC1967	0.02990)	(1558	GS 5	4OC1967	0.00793)
(1559	GS 7	4OC1967	C.01049)	(1560	GS 8	4OC1967	0.03306)	(1561	GS 9	4OC1967	C.00587)
(1563	GS11	5OC1967	0.00468)	(1564	GS12	5OC1967	C.00165)	(1565	GS13	5OC1967	C.00507)
(1566	GS14	5OC1967	0.00183)	(1569	GS17	5OC1967	0.00149)	(1571	GS19	6OC1967	C.00059)
(1573	GS21	6OC1967	0.00112)	(1575	GS28	6OC1967	0.00129)	(1544	MU 1	2OC1967	C.16203)
(1547	MS 1	2OC1967	0.00798)	(1546	LU 1	2OC1967	C.13005)	(1521	SH 1	18SE1967	C.04616)
(1522	BH 1	18SE1967	2.56742)	(1523	RA 1	19SE1967	0.08303)	(1526	MO 1	2CSE1967	1.18336)
(1527	TR 1	2CSE1967	1.00629)	(1528	SB 1	20SE1967	0.50534)	(1529	KW 1	20SE1967	C.09593)
(1530	FR 1	24SE1967	0.10001)	(1531	GH 1	25SE1967	0.48183)	(1545	WL 1	2OC1967	C.29056)
(1548	CA 1	3CC1967	0.01272)	(1549	MC 1	4OC1967	0.10963)	(1551	ES 1	5OC1967	C.C3994)
(1550	MR 1	5CC1967	0.61950)	(1553	SG 1	6OC1967	0.02203)	(1428	MU 2	29MY1967	C.53030)
(1426	MS 2	29MY1967	0.01050)	(1351	MI 2	21AP1967	C.00621)	(1427	LU 2	29MY1967	C.02421)
(1417	HO 2	22MY1967	0.048[illegible])	(1350	BH 2	19AP1967	3.24222)	(1401	MO 2	6MY1967	C.C294C)
(1402	TR 2	6MY1967	0.08664)	(1400	SB 2	6MY1967	1.33429)	(1352	KW 2	21AP1967	0.01718)
(1354	GH 2	25AP1967	C.01036)	(1429	WL 2	29MY1967	0.07432)	(1349	CI 2	19AP1967	C.0C359)
(1406	GB 2	13MY1967	0.00270)	(1419	BU 2	23MY1967	0.01831)	(1422	CA 2	23MY1967	C.C1533)
(1423	WA 2	25MY1967	0.04710)	(							

Stephanodiscus tenuis Hust.

Stephanodiscus tenuis Hustedt *ex* Huber-Pestalozzi, Binnengew., Vol. 16, Teil 2, Hälfte 2, p. 411, pl. 122, fig. 506. 1942.

Cells circular in valve view and rectangular in girdle view. Vegetative cells occur singly or in colonies. Valves of specimens from Lake Michigan 12-25μ in diameter without marked depression in the central portion. Radial striae in multiseriate (usually 4-5) fascicles near the margin. The fascicles gradually taper but retain their identity to near the center of the valve. Some of the fascicles become uniseriate and end about one-quarter the valve diameter from the center, others become sinuous and extend to near the center of the valve. The center of the valve is often marked by a small rosette of puncta. The fascicles are separated by narrow, but noticeably

thickened ribs. The spines are small and very regular in their placement, one spine occurring at the end of each interfascicular rib. The spines have apparently thickened bases. Structure of the entire valve fine and difficult to resolve. Puncta in the radial striae fine, about 24-30 in 10μ. Fascicles and spines 6-7 in 10μ at the margins of the valves.

Because of its small size and fine structure this species is difficult to distinguish from other small species of the genus, especially *S. hantzschii*, unless considerable care is exercised. In structure it most resembles *S. transilvanicus* but it is easily distinguished from that species by its smaller size range and much finer structure.

644 STENUIS TCT NO OF STATIONS 190

(3507	CH	19FE1881	0.01132)	(46915	CH	20FE1946	0.01707)	(46914	CH	19AP1946	1.14465)
(46924	CH	10MY1946	0.27513)	(46923	CH	22NO1946	0.00656)	(46905	CH	JA1947	0.00123)
(46909	CH	MR1947	0.03643)	(46912	CH	AP1947	0.01150)	(46916	CH	4MY1947	C.00645)
(46906	CH	MY1947	0.14336)	(46919	CH	5JN1947	C.00152)	(46922	CH	21AU1947	C.00048)
(46772	EV	18AP1938	0.02839)	(46756	EV	27AP1938	0.23507)	(46761	EV	27MY1938	C.CC818)
(1225	C 6	15MY1964	0.C1568)	(1226	C 7	16MY1964	C.04947)	(1227	C' 2	13MY1964	C.CC219)
(1228	D 2	14MY1964	0.00584)	(1229	D 5	14MY1964	0.00846)	(1230	E 2	16MY1964	C.05927)
(1231	E 3	16MY1964	0.00245)	(1234	B 3	18JN1964	0.00562)	(1235	C 7	16JN1964	C.C5649)
(1439	B 6	5JN1964	0.03596)	(1237	C' 2	8JN1964	0.01805)	(1240	D 6	10JN1964	C.CC460)
(1241	E 2	13JN1964	0.00296)	(1243	E 6	13JN1964	C.01253)	(1244	F 1	11JN1964	0.CC219)
(1440	B 6	11JL1964	0.01843)	(1441	B 6	24JL1964	C.00661)	(1249	C 3	8JL1964	C.CC543)
(1250	C 6	10JL1964	0.16032)	(1251	C 7	16JL1964	C.00290)	(1252	C' 1	16JL1964	C.00558)
(1253	C' 2	16JL1964	0.00228)	(1254	D 2	15JL1964	0.00575)	(1255	D 5	15JL1964	C.02310)
(1256	E 2	14JL1964	0.00733)	(1257	E 3	14JL1964	0.00239)	(1258	F 1	6JL1964	C.CC472)
(1442	B 6	2AU1964	0.00341)	(1264	C' 1	10AU1964	C.00193)	(1271	C 7	22SE1964	C.01306)
(1272	C' 1	10SE1964	0.02463)	(1273	C' 2	10SE1964	C.01075)	(1274	D 1	17SE1964	C.CC469)
(1277	D 4	18SE1964	C.C0620)	(1278	D 6	18SE1964	0.00769)	(1284	E 6	17SE1964	C.CC318)
(1289	C 7	14OC1964	0.00440)	(1290	C' 1	16OC1964	C.00379)	(1293	D 2	15OC1964	C.00472)
(1295	D 4	15OC1964	0.00595)	(1297	D 6	14OC1964	C.00952)	(1301	E 4	13OC1964	C.CC442)
(1302	E 5	13OC1964	0.00405)	(13C4	F 1	11OC1964	0.00247)	(1305	F 2	11OC1964	C.CC173)
(1306	F 3	11OC1964	0.00277)	(1307	B 6	NO1964	C.00361)	(1309	C' 1	10NO1964	C.CC161)
(1311	D 1	8NO1964	0.00774)	(1316	D 6	9NO1964	0.00378)	(1320	E 4	7NO1964	C.CC207)
(1336	C 3	27JA1967	0.00193)	(1337	C 3	2MR1967	0.89067)	(1338	C 3	28MR1967	C.86476)
(1339	C 5	28MR1967	0.05300)	(1340	C 7	28MR1967	1.27255)	(1341	A 3	19AP1967	C.49358)
(1342	A 4	19AP1967	0.16422)	(1343	A 6	19AP1967	2.91790)	(1344	C 3	25AP1967	C.00993)
(1345	C 5	25AP1967	0.00780)	(1346	C 7	21AP1967	C.93467)	(1347	E 2	23AP1967	0.08129)
(1348	E 5	23AP1967	1.24743)	(1368	A 3	4MY1967	C.05655)	(1369	A 4	4MY1967	C.01118)
(1370	A 6	3MY1967	0.07366)	(1371	C 3	4MY1967	0.00231)	(1372	C 5	5MY1967	C.CC355)
(1374	E 2	7MY1967	0.02391)	(1376	E 5	6MY1967	C.00281)	(1408	A 3	23MY1967	C.CC447)
(1416	E 5	28MY1967	0.27772)	(1431	A 3	12JN1967	C.01287)	(1432	A 4	13JN1967	C.02044)
(1433	C 3	17JN1967	0.03875)	(1434	C 5	17JN1567	C.00897)	(1435	C 7	13JN1967	C.05683)
(1438	E 5	14JN1967	0.00363)	(1448	A 6	10JL1967	C.01061)	(1451	C 7	16JL1967	C.21259)
(1452	E 2	14JL1967	0.01064)	(1511	E 2	1SE1967	0.00307)	(1532	A 3	18SE1967	0.00986)
(1533	A 4	19SE1967	0.14855)	(1534	A 6	19SE1967	C.02172)	(1535	C 7	20SE1967	C.00322)
(1536	E 2	24SE1967	0.03545)	(1537	E 3	24SE1967	0.01294)	(1538	E 5	23SE1967	0.02210)
(1539	C 3	4OC1967	C.01006)	(1540	C 5	4OC1967	0.00496)	(1541	E 2	11OC1967	C.02661)
(1542	E 3	11OC1967	0.00509)	(1543	E 5	10OC1967	0.01437)	(1380	ES 4	9MY1967	C.00336)
(1384	GS 8	10MY1967	0.00185)	(1385	GS 9	10MY1967	C.01177)	(1386	GS10	12MY1967	C.CC862)
(1389	GS13	12MY1967	0.00516)	(1390	GS14	12MY1967	0.01174)	(1391	GS15	12MY1967	C.02873)
(1392	GS16	12MY1967	0.11095)	(1393	GS17	13MY1967	C.02465)	(1394	GS18	13MY1967	C.05505)
(1395	GS19	13MY1967	0.45212)	(1396	GS20	13MY1967	0.17683)	(1397	GS21	13MY1967	1.55664)
(1398	GS22	14MY1967	0.00607)	(1555	GS 2	3OC1967	0.00353)	(1556	GS 3	3OC1967	C.01043)
(1557	GS 4	3OC1967	0.00747)	(1559	GS 7	4OC1967	C.00350)	(1560	GS 8	4OC1967	0.00945)
(1562	GS10	5OC1967	0.00493)	(1564	GS12	5OC1967	0.00329)	(1565	GS13	5OC1967	C.01014)
(1566	GS14	5OC1967	0.00734)	(1567	GS15	5OC1967	0.00476)	(1568	GS16	5OC1967	C.00433)
(1569	GS17	5OC1967	0.00149)	(1571	GS19	6OC1967	C.00176)	(1572	GS20	6OC1967	C.00451)
(1573	GS21	6OC1967	0.03136)	(1574	GS22	6OC1967	0.00575)	(1575	GS28	6OC1967	C.00645)
(1544	MU 1	2OC1967	0.24067)	(1547	MS 1	2OC1967	0.00798)	(1524	MI 1	20SE1967	0.08757)
(1546	LU 1	2OC1967	1.20042)	(1520	HO 1	18SE1967	0.01886)	(1521	SH 1	18SE1967	C.32887)
(1522	BH 1	18SE1967	13.88742)	(1523	RA 1	19SE1967	0.26753)	(1525	PW 1	20SE1967	C.01393)
(1526	MO 1	20SE1967	0.21619)	(1527	TR 1	20SE1967	C.06918)	(1528	SB 1	20SE1967	C.17326)
(1529	KW 1	2CSE1967	0.01199)	(1530	FR 1	24SE1967	C.11001)	(1531	GH 1	25SE1967	C.03381)
(1545	WL 1	2OC1967	0.13514)	(1548	CA 1	3OC1967	0.02544)	(1549	MQ 1	4OC1967	0.02741)
(1551	ES 1	5OC1967	0.00799)	(1552	SM 1	6OC1967	0.C1981)	(1550	MR 1	5OC1967	C.11151)
(1553	SG 1	6OC1967	0.02203)	(1428	MU 2	29MY1967	1.10880)	(1426	MS 2	29MY1967	5.37533)
(1351	MI 2	21AP1967	8.68891)	(1427	LU 2	29MY1967	C.13317)	(1417	HO 2	22MY1967	5.02467)
(1418	SH 2	22MY1967	0.07776)	(1350	BH 2	19AP1967	5.14526)	(1425	RA 2	25MY1967	1.69746)
(1399	PW 2	5MY1967	0.29924)	(1401	MO 2	6MY1967	1.31703)	(1402	TR 2	6MY1967	1.05047)
(1400	SB 2	6MY1967	0.60162)	(1352	KW 2	21AP1967	0.51538)	(1353	FR 2	23AP1967	5.23207)
(1354	GH 2	25AP1967	12.42772)	(1429	WL 2	29MY1967	2.88778)	(1404	MQ 2	10MY1967	C.02541)
(1405	ES 2	12MY1967	0.16125)	(1407	SM 2	14MY1967	0.50158)	(1349	CI 2	19AP1967	5.80501)
(1406	GB 2	13MY1967	0.06739)	(1419	BU 2	23MY1967	0.18308)	(1420	IH 2	23MY1967	C.24169)
(1421	CH 2	23MY1967	0.27758)	(1422	GA 2	23MY1967	C.43938)	(1423	WA 2	25MY1967	3.35717)
(1424	KN 2	25MY1967	0.98588)	(							

Stephanodiscus transilvanicus Pant.

Stephanodiscus transilvanicus Pantocsek, Beitr. Kenntn. Foss. Bacill. Ungarns, p. 96, Beitgr. III, pl. 8, fig. 125. 1905.
Stephanodiscus astraea var. *intermedia* Fricke *in*: A. Schmidt's Atlas Diat., pl. 225, figs. 37-39. 1901.

Stephanodiscus astraea var. *transilvanica* Fricke *in*: A. Schmidt's Atlas Diat., pl. 226, figs. 2-22. 1901.
Stephanodiscus astraea var. *multipunctata* Fricke *in*: A. Schmidt's Atlas Diat., pl. 226, figs. 23-24. 1901.

Cells circular in valve view and rectangular in girdle view. Vegetative cells always occur singly. Valves of specimens from Lake Michigan 14-60μ in diameter, with markedly concave center. Radial striae in multiseriate (usually 4-6) at the margins, fascicles becoming uniseriate and, eventually, disorganized as they approach the sunken center portion of the valve. Puncta in the radial striae usually fine but irregular in size and placement, 14-20 in 10μ. The fascicles are separated by quite wide and markedly thickened radial ribs. The spines are regularly placed in this species and one spine usually occurs at the end of each rib. A narrow marginal zone of fine, irregularly arranged, puncta is present in the larger individuals and the ribs and spines extend into this zone. In smaller specimens this feature is not apparent in valve view due to the accentuated contour of the valve. Fascicles and spines 3-5 in 10μ at the margins of the valves.

Although the only reports of this species from Lake Michigan are those of Skvortzow (1937), it is the most abundant large member of the genus in the offshore plankton at the present time and is abundant in collections dating back to 1876.

645 STTRANSI TCT NO OF STATIONS 290

(60973	CH	1876	3.47189)	(3540	CH	11MY1879	0.47524)	(3541	CH	1FE1881	1.59444)
(3507	CH	19FE1881	0.27168)	(46910	CH	0C1945	0.00109)	(46921	CH	23N01945	0.00841)
(46917	CH	12JA1946	0.09898)	(46915	CH	20FE1946	0.26177)	(46914	CH	19AP1946	1.07524)
(46924	CH	10MY1946	0.55026)	(46923	CH	22N01946	0.01748)	(46920	CH	20DE1946	0.01695)
(46905	CH	JA1947	0.11398)	(46909	CH	MR1947	0.59196)	(46912	CH	AP1947	0.13798)
(46916	CH	4MY1947	0.03325)	(46906	CH	MY1947	0.12942)	(46919	CH	5JN1947	0.08194)
(46907	CH	JL1947	0.44873)	(46913	CH	6AU1947	0.01046)	(46922	CH	21AU1947	0.05767)
(46758	EV	5JN1937	0.66329)	(46771	EV	11JN1937	0.37326)	(46743	EV	20JN1937	0.21838)
(46745	EV	3JL1937	0.08359)	(46764	EV	17JL1937	0.12893)	(46757	EV	25JL1937	0.10110)
(46747	EV	1AU1937	0.01485)	(46763	EV	23AU1937	0.02029)	(46769	EV	7SE1937	0.04342)
(46752	EV	15SE1937	0.02177)	(46744	EV	6OC1937	0.00975)	(46748	EV	13OC1937	0.38429)
(46767	EV	27OC1937	0.00774)	(46749	EV	12MR1938	0.19420)	(46768	EV	16MR1938	0.10290)
(46762	EV	18MR1938	0.06617)	(46751	EV	30MR1938	0.05583)	(46772	EV	18AP1938	0.12775)
(46756	EV	27AP1938	0.14776)	(46759	EV	19MY1938	0.29710)	(46761	EV	27MY1938	0.11719)
(1223	B 3	18MY1964	0.02188)	(1224	B 4	18MY1964	0.10195)	(1225	C 6	15MY1964	0.05880)
(1226	C 7	16MY1964	0.05327)	(1227	C' 2	13MY1964	0.04935)	(1228	D 2	14MY1964	0.23161)
(1229	D 5	14MY1964	0.26855)	(1230	E 2	16MY1964	0.05038)	(1231	E 3	16MY1964	0.85608)
(1232	E 5	16MY1964	0.79133)	(1233	B 3	5JN2964	0.03096)	(1234	B 3	18JN1964	0.00281)
(1235	C 7	16JN1964	0.01130)	(1439	B 6	5JN1964	0.02198)	(1236	C' 1	8JN1964	0.01750)
(1237	C' 2	8JN1964	0.03351)	(1238	D 3	11JN1964	0.25400)	(1239	D 4	11JN1964	0.02785)
(1240	D 6	10JN1964	0.08130)	(1241	E 2	13JN1964	0.56924)	(1242	E 3	13JN1964	0.41963)
(1243	E 6	13JN1964	0.22551)	(1244	F 1	11JN1964	0.08114)	(1245	F 2	11JN1964	0.22128)
(1246	F 3	11JN1964	0.20319)	(1247	B 3	14JL1964	0.00427)	(1248	B 3	24JL1964	0.00985)
(1440	B 6	11JL1964	0.01106)	(1441	B 6	24JL1964	0.03745)	(1249	C 3	8JL1964	0.00272)
(1250	C 6	10JL1964	0.02878)	(1251	C 7	16JL1964	0.01738)	(1252	C' 1	16JL1964	0.00837)
(1253	C' 2	16JL1964	0.04108)	(1254	D 2	15JL1964	0.18004)	(1255	D 5	15JL1964	0.16993)
(1256	E 2	14JL1964	0.13556)	(1257	E 3	14JL1964	0.50245)	(1258	F 1	6JL1964	0.30441)
(1259	F 2	6JL1964	0.16423)	(1260	F 3	6JL1964	0.14134)	(1261	B 3	2AU1964	0.00196)
(1262	B 3	17AU1964	0.02310)	(1442	B 6	2AU1964	0.00682)	(1443	B 6	16AU1964	0.00198)
(1263	C 7	15AU1964	0.00400)	(1264	C' 1	10AU1964	0.00579)	(1265	C' 2	10AU1964	0.00671)
(1266	D 3	18AU1964	0.05963)	(1268	E 2	15AU1964	0.20243)	(1269	E 3	15AU1964	0.76742)
(1270	F 1	10AU1964	0.01361)	(1444	B 6	19SE1964	0.04244)	(1271	C 7	22SE1964	0.01959)
(1273	C' 2	10SE1964	0.02688)	(1274	D 1	17SE1964	0.01408)	(1275	D 2	17SE1964	0.01290)
(1276	D 3	18SE1964	0.02235)	(1278	D 6	18SE1964	0.01153)	(1280	E 2	16SE1964	0.03404)
(1281	E 3	16SE1964	0.16482)	(1282	E 4	16SE1964	0.02216)	(1283	E 5	16SE1964	0.12872)
(1284	E 6	17SE1964	0.00953)	(1285	F 1	15SE1964	0.05241)	(1286	F 2	15SE1964	0.01095)
(1287	F 3	15SE1964	0.01001)	(1445	B 6	14OC1964	0.00326)	(1289	C 7	14OC1964	0.15391)
(1290	C' 1	16OC1964	0.01137)	(1291	C' 2	16OC1964	0.00734)	(1293	D 2	15OC1964	0.00943)
(1294	D 3	15OC1964	0.06593)	(1295	D 4	15OC1964	0.08324)	(1296	D 5	14OC1964	0.02754)
(1297	D 6	14OC1964	0.02666)	(1298	E 1	12OC1964	0.01885)	(1299	E 2	12OC1964	0.01257)
(1300	E 3	13OC1964	0.11455)	(1301	E 4	13OC1964	0.18546)	(1302	E 5	13OC1964	0.04454)
(1303	E 6	13OC1964	0.02799)	(1304	F 1	11OC1964	0.00247)	(1305	F 2	11OC1964	0.00518)
(1306	F 3	11OC1964	0.00554)	(1307	B 6	N01964	0.00361)	(1308	C 7	6N01964	0.01521)
(1309	C' 1	10N01964	0.00322)	(1310	C' 2	10N01964	0.00454)	(1311	D 1	8N01964	0.00258)
(1312	D 2	8N01964	0.00621)	(1313	D 3	9N01964	0.09653)	(1314	D 4	9N01964	0.04019)
(1315	D 5	9N01964	0.03185)	(1317	E 1	6N01964	0.00574)	(1318	E 2	7N01964	0.08181)
(1319	E 3	7N01964	0.18328)	(1320	E 4	7N01964	0.05584)	(1321	E 5	7N01964	0.02873)
(1322	E 6	7N01964	0.03666)	(1323	F 1	6N01964	0.00279)	(1324	F 2	6N01964	0.01398)
(1325	F 3	6N01964	0.00756)	(1336	C 3	27JA1967	0.01540)	(1337	C 3	2MR1967	0.08671)
(1338	C 3	28MR1967	1.42011)	(1339	C 5	28MR1967	2.07333)	(1340	C 7	28MR1967	0.16580)
(1341	A 3	19AP1967	0.18225)	(1342	A 4	19AP1967	0.50530)	(1343	A 6	19AP1967	0.21120)
(1344	C 3	25AP1967	0.28952)	(1345	C 5	25AP1967	1.77378)	(1346	C 7	21AP1967	0.23367)
(1347	E 2	23AP1967	1.36574)	(1348	E 5	23AP1967	0.24400)	(1368	A 3	4MY1967	1.97926)
(1369	A 4	4MY1967	5.47915)	(1370	A 6	3MY1967	0.21637)	(1371	C 3	4MY1967	1.93915)
(1372	C 5	5MY1967	6.45482)	(1373	C 7	5MY1967	2.59570)	(1374	E 2	7MY1967	2.30126)
(1375	E 3	7MY1967	0.84218)	(1376	E 5	6MY1967	0.78705)	(1408	A 3	23MY1967	1.56508)

(1409	A 4	23MY1967	0.41659)	(1410	A 6	24MY1967	1.18403)	(1411	C 3	31MY1967	0.96008)
(1412	C 5	31MY1967	2.35710)	(1413	C 7	25MY1967	2.43232)	(1414	E 2	28MY1967	1.41058)
(1415	E 3	28MY1967	0.94437)	(1416	E 5	28MY1967	0.20556)	(1431	A 3	12JN1967	0.36048)
(1432	A 4	13JN1967	4.11260)	(1433	C 3	17JN1967	1.13034)	(1434	C 5	17JN1967	3.76839)
(1435	C 7	13JN1967	0.59988)	(1436	E 2	15JN1967	6.33232)	(1437	E 3	15JN1967	4.33343)
(1438	E 5	14JN1967	1.52505)	(1446	A 3	11JL1967	0.01468)	(1447	A 4	11JL1967	0.16373)
(1448	A 6	10JL1967	0.02476)	(1449	C 3	16JL1967	1.73870)	(1450	C 5	16JL1967	1.73284)
(1451	C 7	16JL1967	0.01181)	(1452	E 2	14JL1967	0.27036)	(1453	E 3	15JL1967	2.47706)
(1454	E 5	15JL1967	0.01600)	(1504	A 3	28AU1967	0.00988)	(1508	C 3	2SE1967	0.01998)
(1509	C 5	2SE1967	0.47441)	(1510	C 7	29AU1967	0.00316)	(1511	E 2	1SE1967	0.42975)
(1512	E 3	1SE1967	1.46851)	(1513	E 5	31AU1967	0.06588)	(1533	A 4	19SE1967	0.00464)
(1536	E 2	24SE1967	0.03817)	(1537	E 3	24SE1967	4.22669)	(1538	E 5	23SE1967	0.45849)
(1540	C 5	4OC1967	0.00496)	(1541	E 2	11OC1967	0.02129)	(1542	E 3	11OC1967	1.77990)
(1543	E 5	10OC1967	0.01437)	(1377	GS 1	9MY1967	1.01326)	(1378	GS 2	9MY1967	0.24810)
(1379	GS 3	9MY1967	0.36828)	(1380	GS 4	9MY1967	0.28754)	(1381	GS 5	10MY1967	0.25998)
(1382	GS 6	10MY1967	0.64948)	(1383	GS 7	10MY1967	0.15237)	(1384	GS 8	10MY1967	0.47324)
(1385	GS 9	10MY1967	0.06357)	(1386	GS10	12MY1967	0.43953)	(1387	GS11	12MY1967	0.15447)
(1388	GS12	12MY1967	0.04223)	(1389	GS13	12MY1967	0.01289)	(1390	GS14	12MY1967	0.04698)
(1391	GS15	12MY1967	0.16760)	(1392	GS16	12MY1967	0.05548)	(1393	GS17	13MY1967	0.04931)
(1394	GS18	13MY1967	0.60206)	(1395	GS19	13MY1967	0.09864)	(1396	GS20	13MY1967	0.00592)
(1397	GS21	13MY1967	0.00523)	(1398	GS22	14MY1967	0.19431)	(1554	GS 1	3OC1967	0.01423)
(1555	GS 2	3OC1967	0.00706)	(1557	GS 4	3OC1967	0.01121)	(1558	GS 5	4OC1967	0.00396)
(1559	GS 7	4OC1967	0.01399)	(1562	GS10	5OC1967	0.00493)	(1563	GS11	5OC1967	0.00701)
(1566	GS14	5OC1967	0.00183)	(1567	GS15	5OC1967	0.07780)	(1568	GS16	5OC1967	0.01154)
(1569	GS17	5OC1967	0.58865)	(1570	GS18	5OC1967	0.33717)	(1571	GS19	6OC1967	0.00351)
(1572	GS20	6OC1967	0.00180)	(1573	GS21	6OC1967	0.03920)	(1574	GS22	6OC1967	0.01438)
(1575	GS28	6OC1967	0.01677)	(1544	MU 1	2OC1967	0.00477)	(1546	LU 1	2OC1967	0.07503)
(1520	HO 1	18SE1967	0.02357)	(1521	SH 1	18SE1967	0.01731)	(1526	MO 1	20SE1967	0.04551)
(1527	TR 1	20SE1967	0.00629)	(1528	SB 1	20SE1967	0.05775)	(1529	KW 1	20SE1967	0.02398)
(1545	WL 1	2OC1967	0.08784)	(1548	CA 1	3OC1967	0.01272)	(1551	ES 1	5OC1967	0.00799)
(1552	SM 1	6OC1967	0.00660)	(1550	MR 1	5OC1967	0.06195)	(1553	SG 1	6OC1967	0.03672)
(1428	MU 2	29MY1967	0.04821)	(1426	MS 2	29MY1967	0.88189)	(1351	MI 2	21AP1967	0.20171)
(1427	LU 2	29MY1967	3.48668)	(1417	HO 2	22MY1967	0.22432)	(1418	SH 2	22MY1967	0.04666)
(1350	BH 2	19AP1967	0.01542)	(1425	RA 2	25MY1967	0.22102)	(1399	PW 2	5MY1967	0.42845)
(1401	MO 2	6MY1967	0.28222)	(1402	TR 2	6MY1967	0.34113)	(1400	SB 2	6MY1967	0.75054)
(1352	KW 2	21AP1967	0.08590)	(1353	FR 2	23AP1967	0.21097)	(1354	GH 2	25AP1967	0.04143)
(1429	WL 2	29MY1967	0.98737)	(1403	CA 2	10MY1967	1.42540)	(1404	MC 2	10MY1967	0.07622)
(1405	ES 2	12MY1967	0.14190)	(1407	SM 2	14MY1967	0.04777)	(1349	CI 2	19AP1967	0.04670)
(1406	GB 2	13MY1967	0.00270)	(1419	BU 2	23MY1967	0.16477)	(1420	IH 2	23MY1967	0.09063)
(1421	CH 2	23MY1967	0.26024)	(1422	GA 2	23MY1967	0.19414)	(1423	WA 2	25MY1967	0.35970)
(1424	KN 2	25MY1967	0.26645)	(1430	MC 2	12JN1967	0.02467)	(			

Species *incertae sedis*

Stephanodiscus sp. #5.

646 STSPECOE TOT NO OF STATIONS 135

(46917	CH	12JA1946	0.00028)	(46915	CH	20FE1946	0.03414)	(46914	CH	19AP1946	0.00961)
(46924	CH	10MY1946	0.00071)	(46923	CH	22NO1946	0.00437)	(46909	CH	MR1947	0.18669)
(46916	CH	4MY1947	0.00102)	(46906	CH	MY1947	0.02057)	(46919	CH	5JN1947	0.00455)
(46922	CH	21AU1947	0.00048)	(46758	EV	5JN1937	0.00357)	(46756	EV	27AP1938	0.00672)
(46761	EV	27MY1938	0.00545)	(1223	B 3	18MY1964	0.00156)	(1224	B 4	18MY1964	0.00588)
(1225	C 6	15MY1964	0.00392)	(1226	C 7	16MY1964	0.00381)	(1227	C' 2	13MY1964	0.00439)
(1228	D 2	14MY1964	0.00973)	(1229	D 5	14MY1964	0.03595)	(1230	E 2	16MY1964	0.04149)
(1231	E 3	16MY1964	0.01712)	(1232	E 5	16MY1964	0.02261)	(1233	B 3	5JN2964	0.04287)
(1234	B 3	18JN1964	0.00843)	(1235	C 7	16JN1964	0.00847)	(1439	B 6	5JN1964	0.34965)
(1236	C' 1	8JN1964	0.00350)	(1237	C' 2	8JN1964	0.15210)	(1238	D 3	11JN1964	0.06400)
(1239	D 4	11JN1964	0.00116)	(1240	D 6	10JN1964	0.01994)	(1241	E 2	13JN1964	0.10941)
(1242	E 3	13JN1964	0.00300)	(1243	E 6	13JN1964	0.02297)	(1244	F 1	11JN1964	0.00439)
(1245	F 2	11JN1964	0.02420)	(1246	F 3	11JN1964	0.05379)	(1248	B 3	24JL1964	0.00591)
(1440	B 6	11JL1964	0.29849)	(1441	B 6	24JL1964	0.20705)	(1249	C 3	8JL1964	0.00272)
(1250	C 6	10JL1964	0.69065)	(1251	C 7	16JL1964	0.00579)	(1252	C' 1	16JL1964	0.00837)
(1253	C' 2	16JL1964	0.02054)	(1254	D 2	15JL1964	0.29496)	(1255	D 5	15JL1964	1.25764)
(1256	E 2	14JL1964	0.51293)	(1257	E 3	14JL1964	0.17705)	(1258	F 1	6JL1964	0.05899)
(1259	F 2	6JL1964	0.09606)	(1260	F 3	6JL1964	0.03438)	(1261	B 3	2AU1964	0.00392)
(1262	B 3	17AU1964	0.00630)	(1442	B 6	2AU1964	0.09894)	(1443	B 6	16AU1964	0.00395)
(1264	C' 1	10AU1964	0.00772)	(1265	C' 2	10AU1964	0.00894)	(1266	D 3	18AU1964	0.45250)
(1268	E 2	15AU1964	0.70030)	(1269	E 3	15AU1964	0.34534)	(1270	F 1	10AU1964	0.00817)
(1444	B 6	19SE1964	0.00303)	(1273	C' 2	10SE1964	0.00538)	(1275	D 2	17SE1964	0.00645)
(1277	D 4	18SE1964	0.01239)	(1279	E 1	16SE1964	0.01178)	(1280	E 2	16SE1964	0.00681)
(1281	E 3	16SE1964	0.00785)	(1283	E 5	16SE1964	0.00613)	(1285	F 1	15SE1964	0.01747)
(1294	D 3	15OC1964	0.00330)	(1295	D 4	15OC1964	0.01784)	(1297	D 6	14OC1964	0.00190)
(1299	E 2	12OC1964	0.00628)	(1300	E 3	13OC1964	0.01432)	(1301	E 4	13OC1964	0.01325)
(1302	E 5	13OC1964	0.00405)	(1305	F 2	11OC1964	0.00345)	(1307	B 6	NO1964	0.00361)
(1318	E 2	7NO1964	0.00951)	(1319	E 3	7NO1964	0.01047)	(1320	E 4	7NO1964	0.00827)
(1336	C 3	27JA1967	0.00193)	(1337	C 3	2MR1967	0.00441)	(1338	C 3	28MR1967	0.01851)
(1339	C 5	28MR1967	0.00935)	(1340	C 7	28MR1967	0.00509)	(1341	A 3	19AP1967	0.00976)
(1342	A 4	19AP1967	0.00361)	(1343	A 6	19AP1967	0.00278)	(1345	C 5	25AP1967	0.00780)
(1346	C 7	21AP1967	0.05608)	(1347	E 2	23AP1967	0.00488)	(1348	E 5	23AP1967	0.00548)
(1369	A 4	4MY1967	0.00373)	(1373	C 7	5MY1967	0.00285)	(1374	E 2	7MY1967	0.00897)
(1408	A 3	23MY1967	0.00894)	(1412	C 5	31MY1967	0.00842)	(1432	A 4	13JN1967	0.00511)
(1433	C 3	17JN1967	0.07105)	(1434	C 5	17JN1967	0.00299)	(1438	E 5	14JN1967	0.00363)
(1446	A 3	11JL1967	0.00489)	(1447	A 4	11JL1967	0.00468)	(1449	C 3	16JL1967	0.34774)
(1450	C 5	16JL1967	0.02666)	(1452	E 2	14JL1967	0.03193)	(1453	E 3	15JL1967	0.04297)
(1454	E 5	15JL1967	0.00400)	(1511	E 2	1SE1967	0.01842)	(1512	E 3	1SE1967	0.01178)
(1513	E 5	31AU1967	0.00507)	(1536	E 2	24SE1967	0.00273)	(1537	E 3	24SE1967	0.01294)
(1538	E 5	23SE1967	0.01105)	(1542	E 3	11OC1967	0.04068)	(1378	GS 2	9MY1967	0.00421)
(1379	GS 3	9MY1967	0.00309)	(1383	GS 7	10MY1967	0.00267)	(1384	GS 8	10MY1967	0.00370)
(1386	GS10	12MY1967	0.00287)	(1387	GS11	12MY1967	0.00396)	(1389	GS13	12MY1967	0.00258)
(1392	GS16	12MY1967	0.00308)	(1398	GS22	14MY1967	0.00304)	(1524	MI 1	20SE1967	0.02189)
(1522	BH 1	18SE1967	1.16701)	(1549	MO 1	4OC1967	0.01370)	(1400	SB 2	6MY1967	0.00596)
(1352	KW 2	21AP1967	0.09449)	(1429	WL 2	29MY1967	0.01062)	(1423	WA 2	25MY1967	0.02141)

Stephanodiscus sp. #10.

649 STSPECCJ TCT NO OF STATIONS 22

(46914	CH	19AP1946	0.01708)	(46924	CH	10MY1946	0.00494)	(46923	CH	22ND1946	0.00656)
(46909	CH	MR1947	0.00911)	(46906	CH	MY1947	0.01327)	(46919	CH	5JN1947	0.01214)
(46758	EV	5JN1937	0.00713)	(46743	EV	20JN1937	0.01285)	(46757	EV	25JL1937	0.00963)
(46750	EV	24SE1937	0.00471)	(1255	D 5	15JL1964	0.00513)	(1256	E 2	14JL1964	0.00733)
(1257	E 3	14JL1964	0.00957)	(1258	F 1	6JL1964	0.00472)	(1259	F 2	6JL1964	0.00310)
(1260	F 3	6JL1964	0.00191)	(1284	E 6	17SE1964	0.00318)	(1337	C 3	2MR1967	0.00294)
(1347	E 2	23AP1967	0.00325)	(1436	E 2	15JN1967	0.00362)	(1453	E 3	15JL1967	0.01264)
(1541	E 2	11OC1967	0.02661)	(							

650 STSPECOK TCT NO OF STATIONS 2

(46907	CH	JL1947	0.00197)	(1250	C 6	10JL1964	0.00411)

Genus *Surirella* Turp.

Turpin, Mem. Mus. Hist. Nat. (Paris), 16:361. 1828.

Although the majority of freshwater members of the genus *Surirella* find their primary habitat in benthic communities, many are successful facultative planktonts. Plankton collections from Lake Michigan, especially those from nearshore areas, often contain representatives of the genus, usually in low numbers.

Surirella angusta Kütz.

Surirella angusta Kützing, Bacill., p. 61, pl. 30, fig. 52. 1844.

651 SUANGUST TCT NO OF STATIONS 162

(60973	CH	1876	0.11809)	(3540	CH	11MY1879	0.02796)	(3507	CH	19FE1881	0.04528)
(46921	CH	23ND1945	0.00776)	(46917	CH	12JA1946	0.00749)	(46915	CH	20FE1946	0.01138)
(46914	CH	19AP1946	0.04698)	(46924	CH	10MY1946	0.02540)	(46923	CH	22ND1946	0.01311)
(46920	CH	20DE1946	0.01109)	(46905	CH	JA1947	0.01716)	(46909	CH	MR1947	0.06375)
(46916	CH	4MY1947	0.01493)	(46906	CH	MY1947	0.02920)	(46919	CH	5JN1947	0.03945)
(46907	CH	JL1947	0.01085)	(46922	CH	21AU1947	0.02666)	(46758	EV	5JN1937	0.19970)
(46771	EV	11JN1937	0.01426)	(46743	EV	20JN1937	0.12846)	(46745	EV	3JL1937	0.02090)
(46770	EV	9JL1937	0.01789)	(46764	EV	17JL1937	0.32232)	(46757	EV	25JL1937	0.03370)
(46747	EV	1AU1937	0.15348)	(46763	EV	23AU1937	0.04058)	(46765	EV	30AU1937	0.00558)
(46750	EV	24SE1937	0.01885)	(46744	EV	6OC1937	0.01463)	(46748	EV	13OC1937	0.02135)
(46749	EV	12MR1938	0.01214)	(46762	EV	18MR1938	0.02206)	(46772	EV	18AP1938	0.00710)
(46756	EV	27AP1938	0.00672)	(46761	EV	27MY1938	0.01908)	(46766	EV	14DE1938	0.01584)
(1223	B 3	18MY1964	0.01094)	(1224	B 4	18MY1964	0.00980)	(1225	C 6	15MY1964	0.00392)
(1226	C 7	16MY1964	0.01142)	(1227	C' 2	13MY1964	0.00658)	(1228	D 2	14MY1964	0.00779)
(1229	D 5	14MY1964	0.01692)	(1230	E 2	16MY1964	0.00889)	(1231	E 3	16MY1964	0.07582)
(1232	E 5	16MY1964	0.06609)	(1233	B 3	5JN2964	0.01191)	(1234	B 3	18JN1964	0.00281)
(1439	B 6	5JN1964	0.00999)	(1236	C' 1	8JN1964	0.00175)	(1237	C' 2	8JN1964	0.00516)
(1238	D 3	11JN1964	0.01600)	(1239	D 4	11JN1964	0.00116)	(1240	D 6	10JN1964	0.02301)
(1241	E 2	13JN1964	0.01183)	(1242	E 3	13JN1964	0.01049)	(1243	E 6	13JN1964	0.01253)
(1244	F 1	11JN1964	0.04934)	(1245	F 2	11JN1964	0.02766)	(1246	F 3	11JN1964	0.07769)
(1254	D 2	15JL1964	0.00958)	(1256	E 2	14JL1964	0.00916)	(1257	E 3	14JL1964	0.01196)
(1258	F 1	6JL1964	0.00472)	(1260	F 3	6JL1964	0.00573)	(1267	D 6	18AU1964	0.00216)
(1269	F 3	15AU1964	0.00548)	(1444	B 6	19SE1964	0.00303)	(1271	C 7	22SE1964	0.00653)
(1280	E 2	16SE1964	0.00681)	(1285	F 1	15SE1964	0.01165)	(1297	D 6	14OC1964	0.00190)
(1298	E 1	12OC1964	0.00269)	(1299	E 2	12OC1964	0.00314)	(1300	E 3	13OC1964	0.01432)
(1302	E 5	13OC1964	0.00405)	(1303	E 6	13OC1964	0.00560)	(1304	F 1	11OC1964	0.00988)
(1305	F 2	11OC1964	0.00518)	(1308	C 7	6NO1964	0.00304)	(1311	D 1	8NO1964	0.00258)
(1317	E 1	6NO1964	0.00191)	(1322	E 6	7NO1964	0.00333)	(1336	C 3	27JA1967	0.00193)
(1337	C 3	2MR1967	0.00294)	(1338	C 3	28MR1967	0.00926)	(1339	C 5	28MR1967	0.04677)
(1340	C 7	28MR1967	0.00436)	(1341	A 3	19AP1967	0.01627)	(1342	A 4	19AP1967	0.00180)
(1343	A 6	19AP1967	0.01251)	(1344	C 3	25AP1967	0.00496)	(1345	C 5	25AP1967	0.01754)
(1346	C 7	21AP1967	0.01202)	(1347	E 2	23AP1967	0.00488)	(1348	E 5	23AP1967	0.01234)
(1368	A 3	4MY1967	0.01571)	(1369	A 4	4MY1967	0.01118)	(1370	A 6	3MY1967	0.04143)
(1371	C 3	4MY1967	0.00923)	(1372	C 5	5MY1967	0.03901)	(1374	E 2	7MY1967	0.01494)
(1375	E 3	7MY1967	0.04331)	(1376	E 5	6MY1967	0.01687)	(1410	A 6	24MY1967	0.01128)
(1412	C 5	31MY1967	0.01263)	(1415	E 3	28MY1967	0.00225)	(1435	C 7	13JN1967	0.00316)
(1436	E 2	15JN1967	0.00362)	(1532	A 3	18SE1967	0.00329)	(1537	E 3	24SE1967	0.00431)
(1379	GS 3	9MY1967	0.00619)	(1380	GS 4	9MY1967	0.00336)	(1381	GS 5	10MY1967	0.00477)
(1382	GS 6	10MY1967	0.00555)	(1383	GS 7	10MY1967	0.00802)	(1384	GS 8	10MY1967	0.00739)
(1385	GS 9	10MY1967	0.00471)	(1386	GS10	12MY1967	0.00575)	(1387	GS11	12MY1967	0.01188)
(1388	GS12	12MY1967	0.01207)	(1390	GS14	12MY1967	0.02936)	(1391	GS15	12MY1967	0.00479)
(1393	GS17	13MY1967	0.00274)	(1394	GS18	13MY1967	0.00516)	(1397	GS21	13MY1967	0.00065)
(1398	GS22	14MY1967	0.00304)	(1558	GS 5	4OC1967	0.00396)	(1567	GS15	5OC1967	0.00159)
(1574	GS22	6OC1967	0.00288)	(1546	LU 1	2OC1967	0.00500)	(1523	RA 1	19SE1967	0.00923)
(1526	MO 1	20SE1967	0.02845)	(1527	TR 1	20SE1967	0.05660)	(1528	SB 1	20SE1967	0.01444)
(1529	KW 1	20SE1967	0.01199)	(1545	WL 1	2OC1967	0.04730)	(1550	MR 1	5OC1967	0.02478)
(1428	MU 2	29MY1967	0.01205)	(1426	MS 2	29MY1967	0.01050)	(1351	MI 2	21AP1967	0.03103)
(1427	LU 2	29MY1967	0.01211)	(1417	HO 2	22MY1967	0.04486)	(1350	BH 2	19AP1967	0.00441)
(1425	RA 2	25MY1967	0.02652)	(1399	PW 2	5MY1967	0.02720)	(1401	MO 2	6MY1967	0.11759)
(1402	TR 2	6MY1967	0.18952)	(1400	SB 2	6MY1967	0.17870)	(1352	KW 2	21AP1967	0.02577)
(1353	FR 2	23AP1967	0.02110)	(1354	GH 2	25AP1967	0.03107)	(1403	CA 2	10MY1967	0.05231)
(1407	SM 2	14MY1967	0.01791)	(1349	CI 2	19AP1967	0.04670)	(1406	GB 2	13MY1967	0.01348)
(1419	BU 2	23MY1967	0.05492)	(1420	IH 2	23MY1967	0.01511)	(1421	CH 2	23MY1967	0.06940)
(1422	GA 2	23MY1967	0.16349)	(1423	WA 2	25MY1967	0.08992)	(1424	KN 2	25MY1967	0.02665)

Surirella biseriata Bréb. and Godey

Surirella biseriata de Brébisson and Godey, Mem. Soc. Acad. Falaise, 1:53, pl. 7. 1835.

Coll: 1552a.

Surirella biseriata var. *bifrons* (Ehr.) Hust.

Navicula bifrons Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1832:259. 1832.
Surirella bifrons (Ehr.) Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:388, pl. 3(5), fig. 5. 1843.
Surirella biseriata var. *bifrons* Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 433, fig. 833. 1930.

652 SUBISEVB TOT NO OF STATIONS 3

(6C973	CH	1876	0.02362)	(3541	CH	1FE1881	0.02935)	(1565	GS13	50C1967	C.00507)

Surirella elegans Ehr.

Surirella elegans Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:424. 1843.

Coll: 1407a.

Surirella guatemalensis Ehr.

Surirella guatemalensis Ehrenberg, Mikrogeologie, pl. 33(6), fig. 7. 1854.

Coll: 1552a.

Surirella linearis Wm. Smith

Surirella linearis Wm. Smith, Syn. British Diat., Vol. 1, p. 31, pl. 8, fig. 58z. 1853.

66C SLSPECCA TOT NO OF STATIONS 1

(14C7	SM 2	14MY1967	C.CC597)	(

Surirella linearis var. *constricta* (Ehr.) Grun.

Navicula ? constricta Ehrenberg, Infusionsthierchen, p. 188, pl. 21, fig. 17. 1838.
Surirella constricta (Ehr.) Ehrenberg, Mikrogeologie, pl. 14, fig. 37. 1854.
Surirella linearis var. *constricta* (Ehr.) Grunow, Verh. Zool.-Bot. Ges. Wien, 12:455. 1862.

653 SULINEVC TOT NO OF STATIONS 1

(1279	E 1	16SE1964	0.00393)	(

Surirella linearis var. *helvetica* (Brun) Meist.

Surirella helvetica Brun, Diat. Alpes et Jura, p. 100, pl. 2, fig. 4. 1880.
Surirella linearis var. *helvetica* (Brun) Meister, Beitr. Kryptog.-Fl. Schweiz, 4(1):223, pl. 41, fig. 6. 1913.

654 SULINEVH TOT NO OF STATIONS 7

(3541	CH	1FE1881	0.00578)	(46921	CH	23NO1945	C.00065)	(46906	CH	MY1947	C.00133)
(46922	CH	21AU1947	0.00048)	(1346	C 7	21AP1967	0.00134)	(1388	GS12	12MY1967	C.00603)
(1407	SM 2	14MY1967	0.00597)	(							

Surirella ovata Kütz.

Surirella ovata Kützing, Bacill., p. 62, pl. 7, figs. 1-4. 1844.

655 SUOVATA TOT NO OF STATIONS 64

(46921	CH	23NO1945	0.00388)	(46517	CH	12JA1946	0.00194)	(46915	CH	20FE1946	0.00569)
(46914	CH	19AP1946	0.04698)	(46924	CH	10MY1946	0.00282)	(46923	CH	22NO1946	0.00437)
(46920	CH	20DE1946	0.00154)	(46905	CH	JA1947	0.00613)	(46909	CH	MR1947	0.07741)
(46912	CH	AP1947	0.02300)	(46906	CH	MY1947	0.00398)	(46919	CH	5JN1947	0.00455)
(46907	CH	JL1947	0.00690)	(46522	CH	21AU1947	0.00145)	(46758	EV	5JN1937	0.00357)
(46764	EV	17JL1937	0.02417)	(46744	EV	6OC1937	0.00488)	(1226	C 7	16MY1964	0.00381)
(1228	D 2	14MY1964	0.00195)	(1231	E 3	16MY1964	0.00245)	(1232	E 5	16MY1964	0.01044)
(1238	D 3	11JN1964	0.00200)	(1240	D 6	10JN1964	0.00307)	(1242	E 3	13JN1964	0.00150)
(1244	F 1	11JN1964	0.00219)	(1245	F 2	11JN1964	0.00346)	(1246	F 3	11JN1964	0.00598)
(1252	C' 1	16JL1964	0.00279)	(1256	E 2	14JL1964	0.00183)	(1257	E 3	14JL1964	0.00239)
(1258	F 1	6JL1964	0.00236)	(1259	F 2	6JL1964	0.00310)	(1268	E 2	15AU1964	0.00547)
(1272	C' 1	10SE1964	0.00410)	(1285	F 1	15SE1964	0.00582)	(1300	E 3	13OC1964	0.00358)
(1341	A 3	19AP1967	0.00108)	(1343	A 6	19AP1967	0.00069)	(1346	C 7	21AP1967	0.00134)
(1371	C 3	4MY1967	0.00462)	(1375	E 3	7MY1967	0.00241)	(1413	C 7	25MY1967	0.00316)
(1416	E 5	28MY1967	0.00219)	(1436	E 2	15JN1967	0.00724)	(1512	E 3	1SE1967	0.00393)
(1382	GS 6	10MY1967	0.00278)	(1384	GS 8	10MY1967	0.00370)	(1391	GS15	12MY1967	0.00479)
(1522	BH 1	18SE1967	0.00182)	(1529	KW 1	20SE1967	0.01199)	(1351	MI 2	21AP1967	0.00310)
(1427	LU 2	29MY1967	0.01211)	(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.00881)
(1425	RA 2	25MY1967	0.01768)	(1401	MO 2	6MY1967	0.01764)	(1402	TR 2	6MY1967	0.02707)
(1400	SB 2	6MY1967	0.01787)	(1354	GH 2	25AP1967	0.00690)	(1403	CA 2	10MY1967	0.03923)
(1404	MO 2	10MY1967	0.01270)	(1422	GA 2	23MY1967	0.00511)	(1423	WA 2	25MY1967	0.00856)
(1424	KN 2	25MY1967	0.02665)	(							

Surirella ovata var. *pinnata* (Wm. Smith) Hust.

Surirella pinnata Wm. Smith, Syn. British Diat., Vol. 1, p. 34, pl. 9, fig. 72. 1853.
Surirella ovata var. *pinnata* (Wm. Smith) Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 442, fig. 865. 1930.

656 SUOVATVP TOT NO OF STATIONS 21

(3507	CH	19FE1881	0.01132)	(46906	CH	MY1947	0.00265)	(46919	CH	5JN1947	0.00455)
(46907	CH	JL1947	0.00049)	(46922	CH	21AU1947	0.00048)	(46758	EV	5JN1937	0.00713)
(46747	EV	1AU1937	0.00248)	(46755	EV	19MY1933	0.00338)	(1232	E 5	16MY1964	0.00174)
(1236	C' 1	8JN1964	0.00175)	(1245	F 2	11JN1964	0.00346)	(1452	E 2	14JL1967	0.00213)
(1556	GS 3	30OC1967	0.00521)	(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.00220)
(1402	TR 2	6MY1967	0.01083)	(1400	SB 2	6MY1967	0.00596)	(1354	GH 2	25AP1967	0.00345)
(1405	ES 2	12MY1967	0.00645)	(1406	GB 2	13MY1967	0.00809)	(1423	WA 2	25MY1967	0.00856)

Surirella robusta var. *splendida* (Ehr.) V. H.

Navicula ? splendida Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1832:81. 1832.
Surirella splendida (Ehr.) Ehrenberg, Mikrogeologie, pl. 3(2), fig. 17. 1854.
Surirella robusta var. *splendida* (Ehr.) Van Heurck, Syn. Diat. Belgique, p. 187. 1885.

657 SUROBLVS TOT NO OF STATIONS 2

(3541	CH	1FE1881	0.00978)	(1407	SP 2	14MY1967	0.00597)	(			

Surirella tenera var. *nervosa* A. S.

Surirella tenera var. *nervosa* A. Schmidt, Atlas Diat., pl. 23, figs. 15-17. 1875.

Coll: #844.

Surirella tenuissima Hust.

Surirella tenuissima Hustedt *in*: A. Schmidt, Atlas Diat., pl. 299, fig. 15. 1913.

659 SUTENUIO TOT NO OF STATIONS 1

(1550	MR 1	5OC1967	0.01239)	(							

Species *incertae sedis*

Surirella sp. #3.

661 SUSPECOC TCT NO OF STATIONS 11

(46922	CH	21AU1947	0.00145)	(46758	EV	5JN1937	0.00357)	(46764	EV	17JL1937	C.C8864)
(46757	EV	25JL1937	0.00963)	(46747	EV	1AU1937	0.01485)	(46752	EV	15SE1937	C.02177)
(46750	EV	24SE1937	0.00471)	(46744	EV	6OC1937	0.00488)	(1527	TR 1	20SE1967	C.00629)
(1404	MO 2	10MY1967	0.0127C)	(1423	WA 2	25MY1967	0.00428)	(			

Genus *Synedra* Ehr.

Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1830:40. 1832.

Synedra acus Kütz.

Synedra acus Kützing, Bacill., p. 68, pl. 15, fig. 7. 1844.

Cells in girdle view elongate, rectangular with parallel sides. Specimens from Lake Michigan 90-200μ long, 4-6μ broad at the widest point. Valves lanceolate, gradually tapering to rounded or subcapitate ends. Striae perpendicular to the mid-line of the valve throughout, very finely cross-lineate, about 12-14 in 10μ. Axial area narrow, linear, very slightly expanded in the central portion of the valve. A distinct, quadrate, central area is always present in this species. It lacks any regular ornamentation but occasionally contains what appearsto be incompletely developed striae, especially near the valve margins.

This species is occasional in our collections. Its primary habitat is apparently in the periphyton, but, like many other members of the genus, it is able to maintain its existence in the phytoplankton.

662 SYACUS TCT NO OF STATIONS 50

(46921	CH	23NO1945	0.00065)	(46924	CH	10MY1946	C.00071)	(46916	CH	4MY1947	C.00068)
(46922	CH	21AU1947	C.00097)	(46758	EV	5JN1937	0.66329)	(46771	EV	11JN1937	C.01664)
(46743	EV	20JN1937	0.0C856)	(46770	EV	9JL1937	0.03578)	(46764	EV	17JL1937	C.02417)
(46757	EV	25JL1937	0.00963)	(46747	EV	1AU1937	0.00248)	(46765	EV	30AU1937	C.01115)
(46744	EV	6OC1937	0.0C488)	(46749	EV	12MR1938	0.01214)	(46762	EV	18MR1938	C.02206)
(46756	EV	27AP1938	0.00168)	(46761	EV	27MY1938	C.00273)	(1234	B 3	18JN1964	C.00562)
(1237	C' 2	8JN1964	0.01031)	(1241	E 2	13JN1964	0.00148)	(1243	E 6	13JN1964	C.0C418)
(1244	F 1	11JN1964	0.00110)	(1252	C' 1	16JL1964	0.00279)	(1270	F 1	10AU1964	C.00545)
(1285	F 1	15SE1964	0.00582)	(1297	D 6	14OC1964	0.00381)	(1304	F 1	11OC1964	C.0C494)
(1320	E 4	7NO1964	0.0C620)	(1387	GS11	12MY1967	0.00396)	(1394	GS18	13MY1967	C.0C172)
(1395	GS19	13MY1967	0.00117)	(1396	GS20	13MY1967	C.00074)	(1575	GS28	6OC1967	C.00129)
(1522	BH 1	18SE1967	C.00182)	(1550	MR 1	5OC1967	0.04956)	(1553	SG 1	6OC1967	C.02203)
(1428	MU 2	29MY1967	0.00904)	(1426	MS 2	29MY1967	C.23097)	(1417	HO 2	22MY1967	C.01122)
(1350	BH 2	15AP1967	0.00220)	(1401	MO 2	6MY1967	0.02352)	(1400	SB 2	6MY1967	C.14892)
(1354	GH 2	25AP1967	0.00863)	(1429	WL 2	29MY1967	C.01062)	(1403	CA 2	10MY1967	C.05231)
(1404	MO 2	10MY1967	0.06352)	(1405	ES 2	12MY1967	0.01290)	(1407	SM 2	14MY1967	C.01791)
(1406	GB 2	13MY1967	0.01617)	(1422	GA 2	23MY1967	C.01022)	(			

Synedra amphicephala Kütz.

Synedra amphicephala Kützing, Bacill., p. 64, pl. 3, fig. 12. 1844.

Cells in girdle view elongate, sub-rectangular, narrowed toward the ends. Specimens from Lake Michigan 15-50μ long, 2-4μ broad. Valves linear to, especially in the smaller individuals, linear-lanceolate with distinctly protracted sub-capitate to capitate apices. Striae finely structured, very finely cross-lineate, parallel throughout the length of the valve, 13-16 in 10μ. Axial area narrow, slightly lanceolate. Specimens from Lake Michigan lack a central area.

This species apparently finds its primary habitat in the periphyton but is able to exist in the plankton. Most of our specimens come from the northern portion of the lake.

664 SYAMPHVA TOT NO OF STATIONS 1											
(1343	A 6	19AP1967	0.00065)	(							

Synedra amphicephala var. *austrica* (Grun.) Hust.

Synedra austrica Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 39, figs. 16a-b. 1881.
Synedra amphicephala var. *austrica* (Grun.) Hustedt *in*: Rabenhorst, Kryptog.-Fl. Deutschland, 7(2)2:206, figs. 696b-d. 1932.

Valves lanceolate with capitate ends. Striae 12-15 in 10μ. Morphology and ornamentation of the frustule otherwise essentially similar to the nominate variety.

More common than the nominate variety in our collections, this entity apparently is better adapted to planktonic existence.

252 FRGRACIQ TOT NO OF STATIONS 20											
(46917	CH	12JA1946	0.00055)	(46924	CH	10MY1946	0.00423)	(46923	CH	22NO1946	0.01748)
(46916	CH	4MY1947	0.00238)	(46919	CH	5JN1947	0.21699)	(46922	CH	21AU1947	0.00921)
(46758	EV	5JN1937	0.12481)	(46743	EV	20JN1937	0.01713)	(46770	EV	9JL1937	0.01193)
(46764	EV	17JL1937	0.05641)	(46763	EV	23AU1937	0.16234)	(46765	EV	30AU1937	0.02231)
(46752	EV	15SE1937	0.04354)	(46760	EV	22SE1937	0.00492)	(46750	EV	24SE1937	0.02828)
(46744	EV	6OC1937	0.01951)	(1258	F 1	6JL1964	0.01652)	(1259	F 2	6JL1964	0.00930)
(1260	F 3	6JL1964	0.00382)	(1549	MQ 1	4OC1967	0.04111)	(			

Synedra capitata Ehr.

Synedra capitata Ehrenberg, Poggendr. Ann. Phys., Ser. 2, 38:221, pl. 3, fig, 3(1). 1836.

Cells in girdle view linear with slightly expanded apices. Specimens from Lake Michigan 150-420μ long, 7-10μ broad. Valves linear with much expanded cuneately narrowed apices. Striae coarse, distinctly punctate-lineate, parallel throughout most of the length of the valve, becoming radiate in the expanded apices, 7-10 in 10μ. Axial area narrow but distinct, linear throughout. Central area often entirely lacking, when present rather small, quadrate, not reaching the margins of the valve. A distinct "jelly pore" is visible at the ends of the valve.

This very distinctive species is restricted to the periphyton and only occasional accidental occurrences have been noted in our collections.

666 SYCAPITA TOT NO OF STATIONS 5											
(60973	CH	1876	0.02362)	(3540	CH	11MY1879	0.00466)	(46916	CH	4MY1947	0.00034)
(1396	GS20	13MY1967	0.00074)	(1350	BH 2	19AP1967	0.00881)	(			

Synedra cyclopum Brutschy

Synedra cyclopum Brutschy, Internat. Rev. Hydrobiol., 10:284, fig. 11. 1922.

Living cells attached at one end, usually to planktonic microcrustaceans. Usually several cells are attached at a common point, forming a bushy colony. Valves arcuate, narrowing to rostrate to sub-capitate ends. Specimens from Lake Michigan 30-65μ long, 3-4μ broad. Striae finely structured, parallel throughout the length of the valve, 14-18 in 10μ. Axial area narrow, linear, often slightly displaced toward the concave margin of the valve. Central area may be either present or absent, when present it is quite small, elliptical in shape and does not extend to the margins of the valve.

The secondarily planktonic, epizoic growth habit of this species appears to be obligate. It is most common on copepods although it is occasionally observed on other zooplankters.

668 SYCYCLOP TOT NO OF STATIONS 2

(1260	F 3	6JL1964	0.00191)	(1568	GS16	5OC1967	0.00144)	(			

Synedra delicatissima Wm. Smith

Synedra delicatissima Wm. Smith, Syn. British Diat., vol. 1, pl. 12, fig. 94. 1853.

Cells in girdle view linear, narrowing slightly toward the ends. Valves elongate-lanceolate with rounded to subcapitate ends. Specimens from Lake Michigan 100-335μ long, 3-4μ broad. Striae parallel throughout, 14-16 in 10μ. Axial area narrow, filiform, central area variable, usually elongate-elliptical, not reaching the valve margins, in some specimens much reduced, only marked by a few irregular striae at the center of the valve.

705 SYSPECOH TOT NO OF STATIONS 11

(46916	CH	4MY1947	0.00034)	(46919	CH	5JN1947	2.36719)	(46922	CH	21AU1947	0.00145)
(46744	EV	6OC1937	0.00488)	(1244	F 1	11JN1964	0.00219)	(1246	F 3	11JN1964	0.01195)
(1270	F 1	10AU1964	0.00817)	(1348	E 5	23AP1967	0.00137)	(1426	MS 2	29MY1967	0.01050)
(1350	BH 2	19AP1967	0.00661)	(1403	CA 2	10MY1967	0.02615)	(			

Synedra delicatissima var. *angustissima* Grun.

Synedra delicatissima var. *angustissima* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 39, fig. 10. 1881.
Synedra acus var. *angustissima* (Grun.) Van Heurck, Syn. Diat. Belgique, p. 151. 1885.

Cells in girdle view linear, narrowed toward the ends. Valves elongate-lanceolate with subcapitate ends. Specimens from Lake Michigan 200-380μ long, 4-5μ broad. Striae parallel throughout, 12-14 in 10μ. Axial area narrow, filiform, central area elongate, rectangular, usually reaching the margins of the valves. In some specimens the central area is irregularly bordered and tends to become more or less elliptical.

Both of these entities are euplanktonic in Lake Michigan. As is true of most members of the genus, certain morphologic characteristics, particularly the form of the central area, tends to be variable. Isolated specimens in the intermediate size range are difficult to distinguish, but large populations appear to fall into two discrete series.

663 SYACUSVA TOT NO OF STATIONS 315

(60973	CH	1876	0.51960)	(3540	CH	11MY1875	0.07921)	(3541	CH	1FE1881	0.39127)
(3507	CH	19FE1881	0.14716)	(46910	CH	OC1945	1.13602)	(46921	CH	23NO1945	0.27356)
(46908	CH	DE1945	0.09063)	(46917	CH	12JA1946	0.21625)	(46915	CH	20FE1946	0.30729)
(46914	CH	19AP1946	0.10037)	(46924	CH	10MY1946	0.89381)	(46923	CH	22NO1946	0.78026)
(46920	CH	20DE1946	0.20027)	(46905	CH	JA1947	0.06128)	(46909	CH	MR1947	0.12750)
(46912	CH	AP1947	1.03484)	(46916	CH	4MY1947	1.32323)	(46906	CH	MY1947	2.37270)
(46919	CH	5JN1947	0.69043)	(46913	CH	6AU1947	0.16735)	(46922	CH	21AU1947	0.18901)
(46758	EV	5JN1937	0.39940)	(46771	EV	11JN1937	0.57534)	(46743	EV	20JN1937	0.06851)
(46745	EV	3JL1937	0.27168)	(46770	EV	9JL1937	0.02982)	(46764	EV	17JL1937	0.16116)
(46757	EV	25JL1937	0.24553)	(46747	EV	1AU1937	0.55450)	(46763	EV	23AU1937	0.14205)
(46765	EV	30AU1937	0.22309)	(46769	EV	7SE1937	0.54277)	(46752	EV	15SE1937	0.06530)
(46760	EV	22SE1937	0.27574)	(46750	EV	24SE1937	0.19324)	(46744	EV	6OC1937	0.46820)
(46748	EV	13OC1937	0.02135)	(46767	EV	27OC1937	0.10444)	(46768	EV	16MR1938	0.23519)
(46762	EV	18MR1938	0.72783)	(46751	EV	30MR1938	0.10049)	(46772	EV	18AP1938	0.12065)
(46756	EV	27AP1938	0.20485)	(46759	EV	19MY1938	0.37812)	(46761	EV	27MY1938	0.56143)
(46766	EV	14DE1938	0.20596)	(1223	B 3	18MY1964	0.28440)	(1224	B 4	18MY1964	0.45878)
(1225	C 6	15MY1964	1.92081)	(1226	C 7	16MY1964	2.92998)	(1227	C' 2	13MY1964	0.42220)
(1228	D 2	14MY1964	1.36242)	(1229	D 5	14MY1964	2.96039)	(1230	E 2	16MY1964	1.86694)

(1231	E 3	16MY1964	2.62694)	(1232	E 5	16MY1964	1.70441)	(1233	B 3	5JN2964	C.22386)
(1234	B 3	18JN1964	0.17431)	(1235	C 7	16JN1964	0.16663)	(1439	B 6	5JN1964	1.03496)
(1236	C' 1	8JN1964	0.30631)	(1237	C' 2	8JN1964	0.20624)	(1238	D 3	11JN1964	1.96000)
(1239	D 4	11JN1964	0.17871)	(1240	D 6	10JN1964	0.71482)	(1241	E 2	13JN1964	1.24198)
(1242	E 3	13JN1964	1.39975)	(1243	E 6	13JN1964	2.63092)	(1244	F 1	11JN1964	0.16776)
(1245	F 2	11JN1964	0.59125)	(1246	F 3	11JN1964	C.92034)	(1247	B 3	14JL1964	C.02561)
(1248	B 3	24JL1964	0.05517)	(1440	B 6	11JL1964	0.28375)	(1441	B 6	24JL1964	C.46257)
(1249	C 3	8JL1964	0.05975)	(1250	C 6	10JL1964	0.25899)	(1251	C 7	16JL1964	0.22307)
(1252	C' 1	16JL1964	0.04184)	(1253	C' 2	16JL1964	0.37657)	(1254	D 2	15JL1964	C.98449)
(1255	D 5	15JL1964	0.23099)	(1256	E 2	14JL1964	C.85367)	(1257	E 3	14JL1964	1.11497)
(1258	F 1	6JL1964	0.90851)	(1259	F 2	6JL1964	1.08453)	(1260	F 3	6JL1964	1.51078)
(1261	B 3	2AU1964	0.00785)	(1262	B 3	17AU1964	0.01470)	(1442	B 6	2AU1964	C.28659)
(1443	B 6	16AU1964	0.01186)	(1263	C 7	15AU1964	0.00400)	(1264	C' 1	10AU1964	C.02124)
(1265	C' 2	10AU1964	0.07601)	(1266	D 3	18AU1964	0.44549)	(1267	D 6	18AU1964	C.01946)
(1268	E 2	15AU1964	1.05318)	(1269	E 3	15AU1964	C.29600)	(1270	F 1	10AU1964	C.08441)
(1444	B 6	19SE1964	0.21219)	(1271	C 7	22SE1964	C.01306)	(1272	C' 1	10SE1964	C.00821)
(1273	C' 2	10SE1964	C.06990)	(1274	D 1	17SE1964	0.06100)	(1275	D 2	17SE1964	C.11612)
(1276	D 3	18SE1964	1.13992)	(1277	D 4	18SE1964	0.09295)	(1278	D 6	18SE1964	C.53807)
(1279	E 1	16SE1964	0.20811)	(1280	E 2	16SE1964	0.37443)	(1281	E 3	16SE1964	C.29039)
(1282	E 4	16SE1964	0.22161)	(1283	E 5	16SE1964	0.77847)	(1284	E 6	17SE1964	1.22327)
(1285	F 1	15SE1964	2.44598)	(1286	F 2	15SE1964	1.02890)	(1287	F 3	15SE1964	C.70056)
(1288	B 3	15OC1964	0.02177)	(1445	B 6	14OC1964	0.20548)	(1289	C 7	14OC1964	0.27703)
(1290	C' 1	16OC1964	0.07580)	(1291	C' 2	16OC1964	0.01468)	(1292	D 1	15OC1964	C.01491)
(1293	D 2	15OC1964	0.12735)	(1294	D 3	15OC1964	0.53071)	(1295	D 4	15OC1964	C.10703)
(1296	D 5	14OC1964	0.05902)	(1297	D 6	14OC1964	0.23990)	(1298	E 1	12OC1964	C.19657)
(1299	E 2	12OC1964	0.26076)	(1300	E 3	13OC1964	2.00465)	(1301	E 4	13OC1964	C.74185)
(1302	E 5	13OC1964	1.41712)	(1303	E 6	13OC1964	0.78361)	(1304	F 1	11OC1964	C.43218)
(1305	F 2	11OC1964	0.28983)	(1306	F 3	11OC1964	1.16414)	(1307	B 6	NO1964	C.05051)
(1308	C 7	6NO1964	0.02737)	(1309	C' 1	10NO1964	0.20421)	(1310	C' 2	10NO1964	C.29252)
(1311	D 1	8NO1964	0.23477)	(1312	D 2	8NO1964	0.13037)	(1313	D 3	9NO1964	C.16988)
(1314	D 4	9NO1964	0.67178)	(1315	D 5	9NO1964	0.57780)	(1316	D 6	9NO1964	1.05772)
(1317	E 1	6NO1964	C.13403)	(1318	E 2	7NO1964	C.22639)	(1319	E 3	7NO1964	C.79596)
(1320	E 4	7NO1964	0.86867)	(1321	E 5	7NO1964	1.65358)	(1322	E 6	7NO1964	1.51631)
(1323	F 1	6NO1964	C.64948)	(1324	F 2	6NO1964	C.97827)	(1325	F 3	6NO1964	1.41061)
(1336	C 3	27JA1967	0.67395)	(1337	C 3	2MR1967	2.81309)	(1338	C 3	28MR1967	2.28222)
(1339	C 5	28MR1967	2.18245)	(1340	C 7	28MR1967	1.59542)	(1341	A 3	19AP1967	1.21497)
(1342	A 4	19AP1967	3.28443)	(1343	A 6	19AP1967	0.24316)	(1344	C 3	25AP1967	2.08454)
(1345	C 5	25AP1967	3.45789)	(1346	C 7	21AP1967	4.05111)	(1347	E 2	23AP1967	3.03390)
(1348	E 5	23AP1967	2.36600)	(1368	A 3	4MY1967	3.95853)	(1369	A 4	4MY1967	C.10436)
(1370	A 6	3MY1967	0.00230)	(1371	C 3	4MY1967	0.07849)	(1372	C 5	5MY1967	1.24131)
(1373	C 7	5MY1967	0.49917)	(1374	E 2	7MY1967	3.76569)	(1375	E 3	7MY1967	C.78443)
(1376	E 5	6MY1967	2.36114)	(1408	A 3	23MY1967	2.92447)	(1409	A 4	23MY1967	2.63643)
(1410	A 6	24MY1967	3.15742)	(1411	C 3	31MY1967	2.44123)	(1412	C 5	31MY1967	2.55072)
(1413	C 7	25MY1967	1.99008)	(1414	E 2	28MY1967	3.44584)	(1415	E 3	28MY1967	2.30697)
(1416	E 5	28MY1967	2.96967)	(1431	A 3	12JN1967	3.36277)	(1432	A 4	13JN1967	3.93379)
(1433	C 3	17JN1967	8.13848)	(1434	C 5	17JN1967	2.93097)	(1435	C 7	13JN1967	6.18824)
(1436	E 2	15JN1967	6.41916)	(1437	E 3	15JN1967	4.77485)	(1438	E 5	14JN1967	1.69208)
(1446	A 3	11JL1967	1.94217)	(1447	A 4	11JL1967	2.39989)	(1448	A 6	10JL1967	C.49514)
(1449	C 3	16JL1967	12.12885)	(1450	C 5	16JL1967	4.79863)	(1451	C 7	16JL1967	1.46845)
(1452	E 2	14JL1967	3.77656)	(1453	E 3	15JL1967	4.00880)	(1454	E 5	15JL1967	C.35007)
(1504	A 3	28AU1967	0.69127)	(1505	A 4	28AU1967	0.23189)	(1506	A 6	29AU1967	0.00523)
(1509	C 5	2SE1967	2.35187)	(1510	C 7	29AU1967	C.44262)	(1511	E 2	1SE1967	1.86021)
(1512	E 3	1SE1967	7.69593)	(1513	E 5	31AU1967	3.31408)	(1532	A 3	18SE1967	C.04599)
(1533	A 4	19SE1967	0.01857)	(1534	A 6	19SE1967	C.10858)	(1535	C 7	20SE1967	C.01288)
(1536	E 2	24SE1967	3.81742)	(1537	E 3	24SE1967	4.42508)	(1538	E 5	23SE1967	2.32006)
(1539	C 3	4OC1967	0.00503)	(1540	C 5	4OC1967	C.01489)	(1541	E 2	11OC1967	C.28205)
(1542	E 3	11OC1967	2.61391)	(1543	E 5	10OC1967	0.63209)	(1377	GS 1	9MY1967	C.16228)
(1378	GS 2	9MY1967	0.95875)	(1379	GS 3	9MY1967	C.46732)	(1380	GS 4	9MY1967	2.66685)
(1381	GS 5	10MY1967	2.11325)	(1382	GS 6	10MY1967	0.11380)	(1383	GS 7	10MY1967	1.21632)
(1384	GS 8	10MY1967	1.12025)	(1385	GS 9	10MY1967	1.09722)	(1386	GS10	12MY1967	C.25280)
(1387	GS11	12MY1967	0.87136)	(1388	GS12	12MY1967	0.05430)	(1389	GS13	12MY1967	C.09282)
(1390	GS14	12MY1967	0.19965)	(1391	GS15	12MY1967	0.57463)	(1392	GS16	12MY1967	C.75816)
(1393	GS17	13MY1967	C.70129)	(1394	GS18	13MY1967	1.68576)	(1395	GS19	13MY1967	C.27480)
(1396	GS20	13MY1967	0.06511)	(1397	GS21	13MY1967	C.13081)	(1398	GS22	14MY1967	1.55395)
(1554	GS 1	3OC1967	2.15612)	(1555	GS 2	3OC1967	C.38489)	(1556	GS 3	3OC1967	C.07822)
(1557	GS 4	3OC1967	0.57922)	(1558	GS 5	4OC1967	0.27747)	(1559	GS 7	4OC1967	C.52808)
(1560	GS 8	4OC1967	0.45813)	(1561	GS 9	4OC1967	1.09174)	(1562	GS10	5OC1967	C.69078)
(1563	GS11	5OC1967	0.55886)	(1564	GS12	5OC1967	0.01152)	(1565	GS13	5OC1967	C.03042)
(1566	GS14	5OC1967	0.10457)	(1567	GS15	5OC1967	C.18894)	(1568	GS16	5OC1967	C.67243)
(1569	GS17	5OC1967	C.90081)	(1570	GS18	5OC1967	C.12892)	(1571	GS19	6OC1967	C.05151)
(1572	GS20	6OC1967	0.00090)	(1573	GS21	6OC1967	0.03920)	(1574	GS22	6OC1967	C.44584)
(1575	GS28	6OC1967	0.15353)	(1544	MU 1	2OC1967	0.01191)	(1547	MS 1	2OC1967	C.03194)
(1546	LU 1	2OC1967	C.03001)	(1520	HC 1	18SE1967	C.03772)	(1521	SH 1	18SE1967	C.06347)
(1522	BH 1	18SE1967	1.94380)	(1526	MO 1	20SE1967	0.05120)	(1527	TR 1	20SE1967	0.05660)
(1528	SB 1	20SE1967	0.08663)	(1529	KW 1	20SE1967	0.14390)	(1530	FR 1	24SE1967	C.14001)
(1531	GH 1	25SE1967	1.06509)	(1548	CA 1	3OC1967	0.05088)	(1549	MQ 1	4OC1967	1.60340)
(1551	ES 1	5OC1967	0.44732)	(1552	SM 1	6OC1967	0.66689)	(1550	MR 1	5OC1967	C.19824)
(1553	SG 1	6OC1967	0.13954)	(1428	MU 2	29MY1967	0.35253)	(1426	MS 2	29MY1967	14.89764)
(1351	MI 2	21AP1967	2.54771)	(1427	LU 2	29MY1967	6.45278)	(1417	HO 2	22MY1967	2.23194)
(1418	SH 2	22MY1967	0.88647)	(1350	BH 2	19AP1967	1.55063)	(1425	RA 2	25MY1967	3.58058)
(1399	PW 2	5MY1967	3.40724)	(1401	MO 2	6MY1967	2.06961)	(1402	TR 2	6MY1967	C.92593)
(1400	SB 2	6MY1967	3.36550)	(1352	KW 2	21AP1967	1.92407)	(1353	FR 2	23AP1967	1.46624)
(1354	GH 2	25AP1967	0.20195)	(1429	WL 2	29MY1967	1.58191)	(1403	CA 2	10MY1967	1.67386)
(1404	MQ 2	10MY1967	1.09248)	(1405	ES 2	12MY1967	0.65144)	(1407	SM 2	14MY1967	C.69863)
(1349	CI 2	19AP1967	0.88009)	(1406	GB 2	13MY1967	0.07818)	(1419	BU 2	23MY1967	5.07140)
(1420	IH 2	23MY1967	3.70091)	(1421	CH 2	23MY1967	4.25052)	(1422	GA 2	23MY1967	2.61585)
(1423	WA 2	25MY1967	0.36398)	(1424	KN 2	25MY1967	5.82201)	(1430	MC 2	12JN1967	0.54281)

Synedra demerarae Grun.

Synedra ? demerarae Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 41, fig. 29. 1881.

Cells in girdle view linear, slightly narrowed toward the ends. Cells sometimes attached by the valve faces into short, band-shaped colonies.

Valves lanceolate with capitate ends. Specimens from Lake Michigan 20-90μ long, 2.5-4μ broad. Axial area highly variable, in the smaller individuals wide and more or less lanceolate, in the larger individuals narrow and filiform. Central area entirely lacking in most specimens, in some of the larger individuals marked by a few partially developed striae near the center of the valve. Striae appearing very coarse and well defined 8-12, usually 8-10, in 10μ. One of the most distinctive features of this taxon is the alternate placement of the striae on the two sides of the axial area rather than being opposite one another as is the case in most species of the genus.

The identity of the specimens from Lake Michigan assigned to this taxon is somewhat questionable. The striae are not marginal as in Grunow's original illustration except in the very small individuals. The size range of our specimens is also considerably greater than that reported by other authors (Patrick and Reimer 1966). There is also some question as to the correct generic classification in that our specimens sometimes occur in colonies similar to *Fragilaria*. As has been pointed out by numerous authorities, colony formation is an extremely tenuis taxonomic characteristic in diatoms and a number of the smaller taxa are more or less arbitrarily assigned to either *Synedra* or *Fragilaria* although they may adopt the growth habit "characteristic" of either genus.

670 SYDEMERC TCT NC OF STATIONS 153

(60973	CH	1876	0.04724)	(3540	CH	11MY1879	0.10716)	(3541	CH	1FE1881	C.1C760)
(3507	CH	19FE1881	0.20376)	(46910	CH	0C1945	0.00983)	(46921	CH	23N01945	0.02005)
(46908	CH	DE1945	0.02014)	(46917	CH	12JA1946	0.00943)	(46915	CH	20FE1946	C.C6829)
(46914	CH	19AP1946	0.01281)	(46924	CH	10MY1946	0.05573)	(46923	CH	22N01946	0.22293)
(46920	CH	20DE1946	0.08011)	(46SC5	CH	JA1947	C.03922)	(469C9	CH	MR1947	C.07286)
(46912	CH	AP1947	0.03449)	(46916	CH	4MY1947	0.00305)	(46906	CH	MY1947	0.01261)
(46919	CH	5JN1947	0.01214)	(46SC7	CH	JL1947	C.01874)	(46922	CH	21AU1947	C.0C436)
(46758	EV	5JN1937	0.08915)	(46743	EV	20JN1937	0.03426)	(46745	EV	3JL1937	C.02090)
(46770	EV	9JL1937	0.03578)	(46764	EV	17JL1937	0.16116)	(46757	EV	25JL1937	0.01444)
(46747	EV	1AU1937	0.19803)	(46763	EV	23AU1937	C.06088)	(46765	EV	30AU1937	0.00558)
(46752	EV	15SE1937	0.08707)	(46760	EV	22SE1937	0.33483)	(46750	EV	24SE1937	C.0C943)
(46744	EV	6OC1937	0.02439)	(46767	EV	27OC1937	0.06576)	(46749	EV	12MR1938	0.03641)
(46768	EV	16MR1938	0.C8820)	(46762	EV	18MR1938	0.02206)	(46751	EV	30MR1938	0.03350)
(46772	EV	18AP1938	0.01419)	(46756	EV	27AP1938	0.04533)	(46759	EV	19MY1938	C.0C338)
(46761	EV	27MY1938	0.00818)	(46766	EV	14DE1938	0.09506)	(1224	B 4	18MY1964	C.01568)
(1225	C 6	15MY1964	0.01568)	(1227	C' 2	13MY1964	0.00768)	(1228	D 2	14MY1964	C.01557)
(1229	D 5	14MY1964	0.01903)	(1230	E 2	16MY1964	0.00889)	(1231	E 3	16MY1964	C.C2201)
(1232	E 5	16MY1964	0.24349)	(1236	C' 1	8JN1964	C.00700)	(1239	D 4	11JN1964	0.01625)
(1240	D 6	10JN1964	0.00153)	(1241	E 2	13JN1964	0.C0444)	(1242	E 3	13JN1964	C.CC300)
(1243	E 6	13JN1964	0.01462)	(1244	F 1	11JN1964	0.00329)	(1256	E 2	14JL1964	0.0C366)
(1257	E 3	14JL1964	0.00239)	(1258	F 1	6JL1964	0.01888)	(1260	F 3	6JL1964	0.00382)
(1280	E 2	16SE1964	0.00681)	(1285	F 1	15SE1964	0.02330)	(1292	D 1	15OC1964	C.0C373)
(1297	D 6	14OC1964	0.01523)	(1304	F 1	11OC1964	C.00494)	(1305	F 2	11OC1964	0.00173)
(1306	F 3	11OC1964	0.00277)	(1316	D 6	9N01964	0.00378)	(1320	E 4	7N01964	C.0C414)
(1321	E 5	7N01964	0.00638)	(1322	E 6	7N01964	0.04666)	(1323	F 1	6N01964	C.CC139)
(1336	C 3	27JA1967	0.00578)	(1337	C 3	2MR1967	C.04997)	(1338	C 3	28MR1967	C.09256)
(1339	C 5	28MR1967	0.02182)	(1340	C 7	28MR1967	C.06036)	(1341	A 3	19AP1967	C.16706)
(1342	A 4	19AP1967	C.01444)	(1343	A 6	19AP1967	C.01042)	(1344	C 3	25AP1967	C.0C993)
(1345	C 5	25AP1967	0.02924)	(1346	C 7	21AP1967	C.05074)	(1347	E 2	23AP1967	0.C2276)
(1348	E 5	23AP1967	0.19191)	(1368	A 3	4MY1967	C.17279)	(1369	A 4	4MY1967	C.19755)
(1370	A 6	3MY1967	C.17033)	(1371	C 3	4MY1967	0.04155)	(1372	C 5	5MY1967	C.04611)
(1373	C 7	5MY1967	0.11695)	(1374	E 2	7MY1967	0.04184)	(1375	E 3	7MY1967	C.19972)
(1376	E 5	6MY1967	C.78705)	(1408	A 3	23MY1967	0.07602)	(1409	A 4	23MY1967	C.06546)
(1410	A 6	24MY1967	0.03383)	(1411	C 3	31MY1967	C.28720)	(1412	C 5	31MY1967	0.02105)
(1413	C 7	25MY1967	0.14531)	(1414	E 2	28MY1967	0.01343)	(1415	E 3	28MY1967	C.0C899)
(1416	E 5	28MY1967	0.07654)	(1431	A 3	12JN1967	0.00515)	(1432	A 4	13JN1967	C.03576)
(1433	C 3	17JN1967	0.01938)	(1434	C 5	17JN1967	0.00897)	(1436	E 2	15JN1967	C.01447)
(1437	E 3	15JN1967	0.00538)	(1438	E 5	14JN1967	0.06173)	(1450	C 5	16JL1967	C.0C381)
(1453	E 3	15JL1967	0.00758)	(1506	A 6	29AU1967	0.00523)	(1511	E 2	1SE1967	C.00307)
(1535	C 7	20SE1967	0.00322)	(1536	E 2	24SE1967	0.00273)	(1538	E 5	23SE1967	C.00552)
(1377	GS 1	5MY1967	0.02771)	(1378	GS 2	9MY1967	C.34061)	(1379	GS 3	9MY1967	C.25687)
(1380	GS 4	9MY1967	0.15806)	(1381	GS 5	10MY1967	0.25760)	(1382	GS 6	10MY1967	C.13600)
(1383	GS 7	10MY1967	0.04812)	(1384	GS 8	10MY1967	C.02033)	(1385	GS 9	10MY1967	C.04003)
(1386	GS10	12MY1967	0.08905)	(1387	GS11	12MY1967	0.13862)	(1388	GS12	12MY1967	C.02413)
(1389	GS13	12MY1967	0.01031)	(1390	GS14	12MY1967	0.01762)	(1391	GS15	12MY1967	C.18675)
(1392	GS16	12MY1967	0.04315)	(1393	GS17	13MY1967	0.04657)	(1394	GS18	13MY1967	C.04816)
(1395	GS19	13MY1967	0.00587)	(1398	GS22	14MY1967	0.00911)	(1559	GS 7	4OC1967	C.0C350)
(1560	GS 8	4OC1967	0.00472)	(1561	GS 9	4OC1967	0.00587)	(1574	GS22	6OC1967	C.00288)
(1521	SH 1	18SE1967	0.00577)	(1526	MO 1	20SE1967	0.01138)	(1529	KW 1	20SE1967	C.01199)
(1351	MI 2	21AP1967	0.00621)	(1417	HO 2	22MY1967	0.00374)	(1402	TR 2	6MY1967	C.06498)
(1400	SB 2	6MY1967	0.04170)	(1352	KW 2	21AP1967	C.01718)	(1423	WA 2	25MY1967	C.0C856)

Synedra filiformis Grun.

Synedra filiformis Grunow *in*: Cleve and Grunow, Svenska Vet.-Akad. Handl., Ny Följd, 17(2):106, pl. 6, fig. 116. 1880.

Cells in girdle view very narrow, linear, occurring singly or in bushy colonies. Valves elongate-lanceolate with very fine, rounded, ends. Specimens from Lake Michigan 45-195μ long, only 1-2μ broad. The frustule is very lightly silicified and the striae are very fine in structure and difficult to resolve. Striae more or less marginal, parallel throughout the length of the valve, 26-30 in 10μ. Axial area relatively wide, indistinctly bordered. In the specimens from Lake Michigan a central area is entirely lacking.

At the present time the taxonomy of the members of the genus *Synedra* that display extreme adaptations to planktonic existence is extremely confused. Many authors have considered many of these forms to be varieties of *S. acus*. Our observations do not support this view. The species most closely resembling the taxon discussed here are *S. ostenfeldii*, which is distinguished by its somewhat coarser structure and *S. tenera*, which is distinguished by its still finer structure and somewhat smaller size range. *Synedra nana* has been reported from Lake Michigan (Williams and Scott 1962) but their identification was apparently based on descriptions and illustrations published by Hustedt (1931) which in no way resemble the original description and illustration of Meister (1912).

703 SYSPECOF TCT NO OF STATIONS 277

(60973	CH	1876	0.23618)	(3541	CH	1FE1881	0.00578)	(46910	CH	0C1945	0.00109)
(46921	CH	23N01945	0.02846)	(46917	CH	12JA1946	0.00194)	(46915	CH	20FE1946	0.28453)
(46914	CH	19AP1946	0.01175)	(46924	CH	10MY1946	0.57354)	(46923	CH	22N01946	0.00874)
(46909	CH	MR1947	0.02277)	(46912	CH	AP1947	0.02300)	(46916	CH	4MY1947	0.00543)
(46906	CH	MY1947	2.67468)	(46919	CH	5JN1947	0.78906)	(46907	CH	JL1947	0.16026)
(46913	CH	6AU1947	0.01046)	(46922	CH	21AU1947	0.02859)	(46758	EV	5JN1937	0.79880)
(46771	EV	11JN1937	1.59764)	(46743	EV	20JN1937	0.04710)	(46764	EV	17JL1937	0.01612)
(46747	EV	1AU1937	0.04703)	(46765	EV	30AU1937	0.01673)	(46769	EV	7SE1937	0.02171)
(46752	EV	15SE1937	0.04354)	(46760	EV	22SE1937	0.01477)	(46750	EV	24SE1937	0.12726)
(46744	EV	6OC1937	0.54623)	(46748	EV	13OC1937	0.02135)	(46767	EV	27OC1937	0.37136)
(46749	EV	12MR1938	0.02427)	(46768	EV	16MR1938	0.02940)	(46762	EV	18MR1938	0.26467)
(46751	EV	30MR1938	0.01117)	(46772	EV	18AP1938	0.00710)	(46756	EV	27AP1938	0.02015)
(46759	EV	19MY1938	0.08440)	(46761	EV	27MY1938	0.01090)	(46766	EV	14DE1938	0.09506)
(1224	B 4	18MY1964	0.00392)	(1225	C 6	15MY1964	0.01176)	(1226	C 7	16MY1964	0.00761)
(1227	C' 2	13MY1964	0.00548)	(1228	D 2	14MY1964	0.01168)	(1229	D 5	14MY1964	0.01692)
(1230	E 2	16MY1964	0.02963)	(1231	E 3	16MY1964	0.01712)	(1232	E 5	16MY1964	0.00348)
(1233	B 3	5JN2964	0.02620)	(1234	B 3	18JN1964	0.23898)	(1235	C 7	16JN1964	0.05649)
(1439	B 6	5JN1964	3.07692)	(1236	C' 1	8JN1964	0.00350)	(1237	C' 2	8JN1964	0.47693)
(1238	D 3	11JN1964	0.21600)	(1239	D 4	11JN1964	0.00580)	(1240	D 6	10JN1964	0.29452)
(1241	E 2	13JN1964	0.15968)	(1242	E 3	13JN1964	0.01499)	(1243	E 6	13JN1964	0.36541)
(1244	F 1	11JN1964	0.00658)	(1245	F 2	11JN1964	0.02766)	(1246	F 3	11JN1964	0.20917)
(1247	B 3	14JL1964	0.04695)	(1248	B 3	24JL1964	0.06897)	(1440	B 6	11JL1964	9.28621)
(1441	B 6	24JL1964	4.16309)	(1249	C 3	8JL1964	0.01358)	(1250	C 6	10JL1964	3.59712)
(1251	C 7	16JL1964	0.28681)	(1252	C' 1	16JL1964	0.01395)	(1253	C' 2	16JL1964	0.31952)
(1254	D 2	15JL1964	7.50814)	(1255	D 5	15JL1964	16.52892)	(1256	E 2	14JL1964	5.12933)
(1257	E 3	14JL1964	10.88647)	(1258	F 1	6JL1964	2.80813)	(1259	F 2	6JL1964	3.25359)
(1260	F 3	6JL1964	3.34244)	(1262	B 3	17AU1964	0.01260)	(1442	B 6	2AU1964	0.59707)
(1443	B 6	16AU1964	0.00988)	(1263	C 7	15AU1964	0.01201)	(1264	C' 1	10AU1964	0.00193)
(1265	C' 2	10AU1964	0.01788)	(1266	D 3	18AU1964	4.17427)	(1267	D 6	18AU1964	0.00216)
(1268	E 2	15AU1964	2.29784)	(1269	E 3	15AU1964	12.27868)	(1270	F 1	10AU1964	0.00272)
(1444	B 6	19SE1964	0.00909)	(1271	C 7	22SE1964	0.01959)	(1272	C' 1	10SE1964	0.00821)
(1273	C' 2	10SE1964	0.02688)	(1275	D 2	17SE1964	0.05161)	(1276	D 3	18SE1964	0.06705)
(1277	D 4	18SE1964	0.04338)	(1279	E 1	16SE1964	0.03141)	(1281	E 3	16SE1964	4.94447)
(1282	E 4	16SE1964	0.05540)	(1283	E 5	16SE1964	1.07270)	(1284	E 6	17SE1964	0.01589)
(1285	F 1	15SE1964	0.01747)	(1286	F 2	15SE1964	0.05473)	(1287	F 3	15SE1964	0.02502)
(1288	B 3	15OC1964	0.00653)	(1445	B 6	14OC1964	0.11742)	(1289	C 7	14OC1964	0.01319)
(1290	C' 1	16OC1964	0.01516)	(1291	C' 2	16OC1964	0.00245)	(1292	D 1	15OC1964	0.03354)
(1293	D 2	15OC1964	0.33016)	(1294	D 3	15OC1964	0.11867)	(1295	D 4	15OC1964	0.08324)
(1296	D 5	14OC1964	0.06688)	(1297	D 6	14OC1964	0.01333)	(1299	E 2	12OC1964	0.01571)
(1300	E 3	13OC1964	0.50116)	(1301	E 4	13OC1964	0.67562)	(1302	E 5	13OC1964	0.78144)
(1303	E 6	13OC1964	0.03358)	(1304	F 1	11OC1964	0.01729)	(1305	F 2	11OC1964	0.00518)
(1306	F 3	11OC1964	0.00277)	(1307	B 6	N01964	0.01804)	(1308	C 7	6N01964	0.03954)
(1309	C' 1	10N01964	0.00804)	(1310	C' 2	10N01964	0.09524)	(1311	D 1	8N01964	0.10835)
(1312	D 2	8N01964	0.08692)	(1313	D 3	9N01964	0.22973)	(1314	D 4	9N01964	0.14067)
(1315	D 5	9N01964	0.14559)	(1316	D 6	9N01964	0.00756)	(1317	E 1	6N01964	0.20679)
(1318	E 2	7N01964	0.11986)	(1319	E 3	7N01964	0.36656)	(1320	E 4	7N01964	0.72389)
(1321	E 5	7N01964	0.49160)	(1322	E 6	7N01964	0.31326)	(1323	F 1	6N01964	0.01951)
(1324	F 2	6N01964	0.01630)	(1325	F 3	6N01964	0.00252)	(1337	C 3	2MR1967	0.06761)
(1338	C 3	28MR1967	0.20363)	(1339	C 5	28MR1967	0.04677)	(1340	C 7	28MR1967	0.20361)
(1341	A 3	19AP1967	0.30374)	(1342	A 4	19AP1967	0.71463)	(1343	A 6	19AP1967	0.00208)
(1344	C 3	25AP1967	0.04632)	(1345	C 5	25AP1967	1.77378)	(1346	C 7	21AP1967	0.23367)
(1347	E 2	23AP1967	0.91050)	(1348	E 5	23AP1967	0.31254)	(1368	A 3	4MY1967	0.00628)
(1369	A 4	4MY1967	0.01864)	(1370	A 6	3MY1967	0.00230)	(1372	C 5	5MY1967	0.00355)
(1374	E 2	7MY1967	0.01195)	(1375	E 3	7MY1967	0.00722)	(1376	E 5	6MY1967	0.01124)

(1408	A 3	23MY1967	0.03577)	(1409	A 4	23MY1967	0.00595)	(1410	A 6	24MY1967	C.05074)
(1411	C 3	31MY1967	0.00410)	(1412	C 5	31MY1967	0.01263)	(1413	C 7	25MY1967	C.00316)
(1414	E 2	28MY1967	0.02015)	(1415	E 3	28MY1967	0.01124)	(1416	E 5	28MY1967	C.C3936)
(1431	A 3	12JN1967	0.72096)	(1432	A 4	13JN1967	2.14570)	(1433	C 3	17JN1967	5.42566)
(1434	C 5	17JN1967	0.83742)	(1435	C 7	13JN1967	2.65210)	(1436	E 2	15JN1967	C.5C659)
(1437	E 3	15JN1967	0.27454)	(1438	E 5	14JN1967	0.14887)	(1446	A 3	11JL1967	4.79429)
(1447	A 4	11JL1967	11.46145)	(1448	A 6	10JL1967	0.02122)	(1449	C 3	16JL1967	12.3C464)
(1450	C 5	16JL1967	9.46396)	(1451	C 7	16JL1967	0.75784)	(1452	E 2	14JL1967	3.27841)
(1453	E 3	15JL1967	4.42332)	(1454	E 5	15JL1967	0.45609)	(1504	A 3	28AU1967	C.00247)
(1505	A 4	28AU1967	0.17520)	(1508	C 3	2SE1967	0.08792)	(1509	C 5	2SE1967	2.11971)
(1510	C 7	29AU1967	0.07588)	(1511	E 2	1SE1967	3.86776)	(1512	E 3	1SE1967	7.69593)
(1513	E 5	31AU1967	1.77359)	(1532	A 3	18SE1967	0.00657)	(1535	C 7	20SE1967	0.C0966)
(1536	E 2	24SE1967	2.29045)	(1537	E 3	24SE1967	0.66419)	(1538	E 5	23SE1967	C.14915)
(1541	E 2	11OC1967	0.01064)	(1542	E 3	11OC1967	2.13588)	(1379	GS 3	9MY1967	C.0C309)
(1380	GS 4	9MY1967	0.01345)	(1381	GS 5	10MY1967	C.00954)	(1382	GS 6	10MY1967	C.00555)
(1383	GS 7	10MY1967	0.01871)	(1384	GS 8	10MY1967	C.01294)	(1385	GS 9	10MY1967	C.C0942)
(1387	GS11	12MY1967	0.05941)	(1388	GS12	12MY1967	0.00603)	(1390	GS14	12MY1967	C.00587)
(1391	GS15	12MY1967	0.01437)	(1392	GS16	12MY1967	C.04007)	(1393	GS17	13MY1967	C.01370)
(1394	GS18	13MY1967	0.24082)	(1395	GS19	13MY1967	C.01996)	(1397	GS21	13MY1967	C.00131)
(1398	GS22	14MY1967	0.04554)	(1554	GS 1	3OC1967	0.78275)	(1555	GS 2	3OC1967	C.01412)
(1557	GS 4	3OC1967	0.04111)	(1558	GS 5	4OC1967	0.01189)	(1560	GS 8	4OC1967	C.02834)
(1562	GS10	5OC1967	0.00740)	(1563	GS11	5OC1967	0.01403)	(1564	GS12	5OC1967	C.00165)
(1565	GS13	5OC1967	0.01014)	(1568	GS16	5OC1967	0.00577)	(1569	GS17	5OC1967	C.00297)
(1571	GS19	6OC1967	0.00234)	(1572	GS20	6OC1967	0.00090)	(1573	GS21	6OC1967	0.01008)
(1575	GS28	6OC1967	0.00258)	(1544	MU 1	2OC1967	C.00715)	(1547	MS 1	2OC1967	C.C0798)
(1546	LU 1	2OC1967	0.01501)	(1521	SH 1	18SE1967	C.01154)	(1526	MO 1	20SE1967	C.02845)
(1527	TR 1	20SE1967	0.03145)	(1528	SB 1	20SE1967	C.01444)	(1529	KW 1	20SE1967	C.05996)
(1530	FR 1	24SE1967	0.01000)	(1545	WL 1	2OC1967	C.01351)	(1549	MQ 1	4OC1967	C.01370)
(1551	ES 1	5OC1967	0.17573)	(1552	SM 1	6OC1967	0.03301)	(1550	MR 1	5OC1967	C.18585)
(1553	SG 1	6OC1967	0.05141)	(1428	MU 2	29MY1967	0.00301)	(1426	MS 2	29MY1967	C.06299)
(1351	MI 2	21AP1967	0.74476)	(1427	LU 2	29MY1967	1.01695)	(1417	HO 2	22MY1967	C.02617)
(1350	BH 2	19AP1967	0.01101)	(1425	RA 2	25MY1967	0.17682)	(1399	PW 2	5MY1967	C.04081)
(1401	MO 2	6MY1967	0.04116)	(1402	TR 2	6MY1967	C.04873)	(1400	SB 2	6MY1967	0.04765)
(1352	KW 2	21AP1967	2.61123)	(1353	FR 2	23AP1967	0.01055)	(1354	GH 2	25AP1967	0.02071)
(1429	WL 2	29MY1967	0.02123)	(1403	CA 2	10MY1967	3.13848)	(1404	MQ 2	10MY1967	C.C5081)
(1405	ES 2	12MY1967	0.59985)	(1407	SM 2	14MY1967	0.01791)	(1349	CI 2	19AP1967	C.C8981)
(1419	BU 2	23MY1967	0.40278)	(1420	IH 2	23MY1967	0.33233)	(1421	CH 2	23MY1967	C.20819)
(1422	GA 2	23MY1967	0.4C873)	(1423	WA 2	25MY1967	0.18413)	(1424	KN 2	25MY1967	0.26645)
(1430	MC 2	12JN1967	0.02467)	(							

Synedra fasciculata (Agardh) Kütz.

Diatoma fasciculata Agardh, Disp. Alg. Sveciae, p. 35. 1812.
Synedra fasciculata (Agardh) Kützing, Bacill., p. 68. 1844.

Cells in girdle view broadly rectangular, often occurring in colonies of 2 or more cells. Valves linear to linear-lanceolate with broadly rounded to subrostrate ends. Specimens from Lake Michigan 74-220μ long, 4-6μ broad. Striae marginal, appearing rather coarse, 12-15 in 10μ. Axial area a broad lanceolate space without ornamentation. No specially defined central area is present. A distinct slime pore is usually visible near one end of each valve.

Most reports of this entity come from waters of high conductivity. In Lake Michigan it has been noted only in polluted harbors and appears to be associated with appreciable chloride contamination.

671 SYFASCIC TOT NO OF STATIONS 7

(1544	MU 1	2OC1967	0.00238)	(1521	SH 1	18SE1967	0.00577)	(1428	MU 2	29MY1967	C.01808)
(1426	MS 2	29MY1967	0.05249)	(1417	HO 2	22MY1967	0.00374)	(1354	GH 2	25AP1967	C.C0345)
(1429	WL 2	29MY1967	0.1C617)	(							

Synedra minuscula Grun.

Synedra minuscula Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 39, fig. 13. 1881.

Cells in girdle view elongate rectangular. Valves linear-lanceolate to lanceolate with more or less sharply attenuated, sometimes slightly protracted, ends. Specimens from Lake Michigan 15-30μ long, 2-3μ broad. Striae parallel throughout the length of the valve, finely structured but distinct, 18-20 in 10μ. Axial area narrow, distinct. In the Lake Michigan specimens the central area is usually entirely lacking; when present it consists of a small structureless area surrounded by a few shortened striae.

This species is rare in our collections. The specimens observed are probably ultimately derived from periphyton communities. Previous reports indicate that this species reaches its greatest abundance in periphyton communities where it grows attached to filamentous algae.

675 SYMINUSC TOT NO OF STATIONS 61

(60973	CH	1876	0.02362)	(46910	CH	0C1945	C.00109)	(46914	CH	19AP1946	0.00320)
(46924	CH	10MY1946	0.00071)	(46523	CH	22N01946	0.00219)	(46909	CH	MR1947	C.00455)
(46916	CH	4MY1947	0.00136)	(46506	CH	MY1947	C.00199)	(46919	CH	5JN1947	2.26855)
(46913	CH	6AU1947	0.01046)	(46922	CH	21AU1947	0.00145)	(46758	EV	5JN1937	1.39790)
(46771	EV	11JN1937	0.00951)	(46743	EV	20JN1937	0.03426)	(46770	EV	9JL1937	C.01789)
(46764	EV	17JL1937	0.07252)	(46757	EV	25JL1937	0.04333)	(46747	EV	1AU1937	0.02971)
(46763	EV	23AU1937	0.18263)	(46752	EV	15SE1937	0.10884)	(46760	EV	22SE1937	C.0C492)
(46750	EV	24SE1937	0.09426)	(46749	EV	12MR1938	0.01214)	(46768	EV	16MR1938	C.01470)
(46762	EV	18MR1938	0.04411)	(46756	EV	27AP1938	0.00168)	(1439	B 6	5JN1964	C.0C599)
(1441	B 6	24JL1964	C.00220)	(1255	D 5	15JL1964	0.00513)	(1257	E 3	14JL1964	0.CC718)
(1279	E 1	16SE1964	0.00393)	(1285	F 1	15SE1964	0.01747)	(1286	F 2	15SE1964	C.01095)
(1321	E 5	7N01964	0.0C319)	(1370	A 6	3MY1967	0.C0230)	(1431	A 3	12JN1967	0.00257)
(1449	C 3	16JL1967	0.00382)	(1450	C 5	16JL1967	0.00190)	(1452	E 2	14JL1967	C.00213)
(1536	E 2	24SE1967	0.00273)	(1540	C 5	4OC1967	0.00496)	(1542	E 3	11OC1967	0.01017)
(1556	GS 3	30C1967	0.00521)	(1558	GS 5	4OC1967	0.00793)	(1560	GS 8	4CC1967	C.00472)
(1567	GS15	50C1967	0.00159)	(1544	MU 1	20C1967	C.00715)	(1547	MS 1	20C1967	0.07186)
(1546	LU 1	20C1967	0.96034)	(1526	MO 1	20SE1967	0.01707)	(1530	FR 1	24SE1967	0.09001)
(1545	WL 1	20C1967	0.73654)	(1548	CA 1	30C1967	0.01272)	(1549	MQ 1	40C1967	0.01370)
(1551	ES 1	50C1967	0.00799)	(1550	MR 1	50C1967	0.09912)	(1351	MI 2	21AP1967	0.00310)
(1427	LU 2	29MY1967	0.02421)	(1417	HC 2	22MY1967	0.00374)	(1400	SB 2	6MY1967	C.00596)
(1353	FR 2	23AP1967	0.01055)	(							

Synedra montana Krasske

Synedra montana Krasske *ex* Hustedt *in*: Rabenhorst, Kryptog.-Fl. Deutschland, 7(2)2:204, fig. 694. 1932.

Cells in girdle view very narrowly linear for most of their length, abruptly expanded near the center. Valves very narrow except at the expanded central portion, often more or less constricted at the center, with subcapitate ends. Specimens from Lake Michigan 80-200μ long, 3-4μ broad at the widest part, only 1-1.5μ broad near the ends. Frustules are often curved. Striae distinct, 12-14 in 10μ. Axial area variable, often relatively broad and lanceolate in outline, especially in the larger individuals. Central area completely lacking in our specimens.

The specimens from Lake Michigan have somewhat coarser structure and a greater size range than those originally described from the Alps. The general morphology of the frustule is, however, essentially similar. It appears that this species is much more common in periphyton communities in Lake Michigan than it is in the plankton.

708 SYSPECOK TOT NO OF STATIONS 63

(3541	CH	1FE1881	0.00978)	(46917	CH	12JA1946	0.00028)	(46913	CH	6AU1947	C.01046)
(46747	EV	1AU1937	0.02971)	(46763	EV	23AU1937	C.06088)	(46760	EV	22SE1937	C.01477)
(46750	EV	24SE1937	0.01414)	(46749	EV	12MR1938	0.02427)	(46762	EV	18MR1938	0.04411)
(1440	B 6	11JL1964	0.00369)	(1257	E 3	14JL1964	0.00239)	(1258	F 1	6JL1964	C.0C944)
(1259	F 2	6JL1964	0.01239)	(1442	B 6	2AU1964	0.00682)	(1270	F 1	10AU1964	0.00272)
(1298	E 1	12OC1964	0.00269)	(1299	E 2	12OC1964	0.00314)	(1300	E 3	13OC1964	C.00716)
(1302	E 5	13OC1964	0.01620)	(1303	E 6	13OC1964	0.00560)	(1304	F 1	11OC1964	C.0C988)
(1305	F 2	11OC1964	0.01553)	(1308	C 7	6N01964	C.00304)	(1309	C* 1	10N01964	C.02251)
(1310	C* 2	10N01964	0.01134)	(1311	D 1	8N01964	C.02064)	(1312	D 2	8N01964	C.01242)
(1313	D 3	9N01964	0.00579)	(1314	D 4	9N01964	0.00861)	(1316	D 6	9N01964	C.00756)
(1317	E 1	6N01964	0.00574)	(1319	E 3	7N01964	0.00262)	(1320	E 4	7N01964	C.04137)
(1321	E 5	7N01964	0.00319)	(1322	E 6	7N01964	0.00667)	(1323	F 1	6N01964	C.01254)
(1324	F 2	6N01964	0.00466)	(1325	F 3	6N01964	0.00504)	(1348	E 5	23AP1967	C.0C137)
(1432	A 4	13JN1967	0.00511)	(1433	C 3	17JN1967	0.00646)	(1447	A 4	11JL1967	0.00936)
(1449	C 3	16JL1967	0.01146)	(1450	C 5	16JL1967	0.00571)	(1510	C 7	29AU1967	C.0C316)
(1512	E 3	1SE1967	0.01178)	(1532	A 3	18SE1967	0.00329)	(1533	A 4	19SE1967	0.00464)
(1535	C 7	20SE1967	0.00322)	(1540	C 5	4OC1967	0.00496)	(1379	GS 3	9MY1967	C.0C619)
(1389	GS13	12MY1967	0.00516)	(1393	GS17	13MY1967	0.00822)	(1394	GS18	13MY1967	C.0C344)
(1554	GS 1	30C1967	0.01779)	(1557	GS 4	30C1967	C.00747)	(1558	GS 5	4OC1967	C.01189)
(1562	GS10	50C1967	0.00247)	(1526	MO 1	20SE1967	0.00569)	(1548	CA 1	30C1967	C.03816)
(1425	RA 2	25MY1967	0.03536)	(1403	CA 2	10MY1967	0.01308)	(1404	MQ 2	10MY1967	C.03811)

Synedra ostenfeldii (Krieger) A. Cleve

Synedra acus var. *ostenfeldii* Krieger, Pflanzenforsch., 10:36, fig. 29-2b. 1927.

Synedra ostenfeldii (Krieger) A. Cleve-Euler *ex* Stålberg, Verh. Internat. Verein. Limnol., 9:194. 1940.

Cells in girdle view linear-lanceolate, narrowing slightly from the middle to the rectangular ends. In life several cells are united at one end to form bushy colonies. Specimens from Lake Michigan 80-170μ long, 2-3μ broad. Valves lanceolate with capitate ends, very lightly silicified. Striae with very delicate structure 16-24 (usually 20-24) in 10μ. Axial area relatively broad, indistinctly bordered. Central area lacking in specimens from Lake Michigan.

This species is quite common in the summer flora of Lake Michigan, especially in areas that have undergone some degree of eutrophication. It is variable in morphology and the structures of the valve are so delicate that they are difficult to resolve satisfactorily except under optimal conditions.

702 SYSPECOB TOT NO OF STATIONS 271

(3541	CH	1FE1881	0.01956)	(46921	CH	23NO1945	0.00194)	(46908	CH	DE1945	0.02014)
(46917	CH	12JA1946	0.00111)	(46915	CH	20FE1946	0.07967)	(46914	CH	19AP1946	0.01281)
(46924	CH	10MY1946	0.00423)	(46923	CH	22NO1946	0.00874)	(46920	CH	20DE1946	0.00062)
(46909	CH	MR1947	0.02277)	(46912	CH	AP1947	0.06899)	(46916	CH	4MY1947	3.08754)
(46906	CH	MY1947	5.60821)	(46919	CH	5JN1947	1.18359)	(46907	CH	JL1947	0.70515)
(46913	CH	6AU1947	0.01046)	(46922	CH	21AU1947	0.10468)	(46758	EV	5JN1937	0.64903)
(46771	EV	11JN1937	0.99853)	(46743	EV	20JN1937	0.18412)	(46747	EV	1AU1937	0.00743)
(46765	EV	30AU1937	0.01673)	(46750	EV	24SE1937	0.00471)	(46744	EV	6OC1937	0.01463)
(46749	EV	12MR1938	0.08496)	(46751	EV	30MR1938	0.01117)	(46772	EV	18AP1938	0.04258)
(46756	EV	27AP1938	0.89326)	(46759	EV	19MY1938	0.07090)	(46761	EV	27MY1938	0.10356)
(46766	EV	14DE1938	0.03169)	(1223	B 3	18MY1964	0.06563)	(1224	B 4	18MY1964	0.02549)
(1225	C 6	15MY1964	0.24696)	(1226	C 7	16MY1964	0.45282)	(1227	C' 2	13MY1964	0.05264)
(1228	D 2	14MY1964	0.21020)	(1229	D 5	14MY1964	0.14802)	(1230	E 2	16MY1964	0.24004)
(1231	E 3	16MY1964	0.34243)	(1232	E 5	16MY1964	0.08696)	(1233	B 3	5JN2964	0.36675)
(1234	B 3	18JN1964	0.12652)	(1235	C 7	16JN1964	0.28808)	(1439	B 6	5JN1964	1.11888)
(1236	C' 1	8JN1964	0.09627)	(1237	C' 2	8JN1964	0.36092)	(1238	D 3	11JN1964	0.28000)
(1239	D 4	11JN1964	0.05570)	(1240	D 6	10JN1964	0.07056)	(1241	E 2	13JN1964	0.15968)
(1242	E 3	13JN1964	0.19033)	(1243	E 6	13JN1964	0.19001)	(1244	F 1	11JN1964	0.04934)
(1245	F 2	11JN1964	0.09681)	(1246	F 3	11JN1964	0.26893)	(1247	B 3	14JL1964	0.02134)
(1248	B 3	24JL1964	0.13794)	(1440	B 6	11JL1964	3.09540)	(1441	B 6	24JL1964	2.62120)
(1249	C 3	8JL1964	0.01358)	(1250	C 6	10JL1964	1.43885)	(1251	C 7	16JL1964	0.15354)
(1252	C' 1	16JL1964	0.01674)	(1253	C' 2	16JL1964	0.44048)	(1254	D 2	15JL1964	2.41333)
(1255	D 5	15JL1964	5.92885)	(1256	E 2	14JL1964	2.17997)	(1257	E 3	14JL1964	7.03433)
(1258	F 1	6JL1964	0.22182)	(1259	F 2	6JL1964	1.19298)	(1260	F 3	6JL1964	0.93588)
(1261	B 3	2AU1964	0.02944)	(1262	B 3	17AU1964	0.02730)	(1442	B 6	2AU1964	1.07472)
(1443	B 6	16AU1964	0.01186)	(1263	C 7	15AU1964	0.02002)	(1265	C' 2	10AU1964	0.04695)
(1266	D 3	18AU1964	0.22099)	(1267	D 6	18AU1964	0.00216)	(1268	E 2	15AU1964	0.42127)
(1269	E 3	15AU1964	4.98821)	(1444	B 6	19SE1964	0.02122)	(1271	C 7	22SE1964	0.02611)
(1272	C' 1	10SE1964	0.00821)	(1273	C' 2	10SE1964	0.09678)	(1274	D 1	17SE1964	0.01877)
(1275	D 2	17SE1964	0.01935)	(1276	D 3	18SE1964	1.13992)	(1277	D 4	18SE1964	0.09295)
(1278	D 6	18SE1964	0.01922)	(1279	E 1	16SE1964	0.02356)	(1280	E 2	16SE1964	0.52420)
(1281	E 3	16SE1964	4.39509)	(1282	E 4	16SE1964	0.91967)	(1283	E 5	16SE1964	1.43435)
(1284	E 6	17SE1964	0.05719)	(1285	F 1	15SE1964	0.08153)	(1286	F 2	15SE1964	0.76620)
(1287	F 3	15SE1964	0.19015)	(1445	B 6	14OC1964	0.03588)	(1289	C 7	14OC1964	0.00879)
(1290	C' 1	16OC1964	0.01137)	(1293	D 2	15OC1964	0.01415)	(1294	D 3	15OC1964	0.12526)
(1295	D 4	15OC1964	0.05351)	(1296	D 5	14OC1964	0.04328)	(1297	D 6	14OC1964	0.03808)
(1298	E 1	12OC1964	0.00539)	(1299	E 2	12OC1964	0.01257)	(1300	E 3	13OC1964	0.22552)
(1301	E 4	13OC1964	0.09273)	(1302	E 5	13OC1964	0.12957)	(1303	E 6	13OC1964	0.01119)
(1307	B 6	NO1964	0.01443)	(1308	C 7	6NO1964	0.00304)	(1309	C' 1	10NO1964	0.00161)
(1310	C' 2	10NO1964	0.00680)	(1311	D 1	8NO1964	0.00774)	(1312	D 2	8NO1964	0.00931)
(1313	D 3	9NO1964	0.05405)	(1314	D 4	9NO1964	0.04306)	(1315	D 5	9NO1964	0.05005)
(1316	D 6	9NO1964	0.20777)	(1317	E 1	6NO1964	0.01532)	(1318	E 2	7NO1964	0.02854)
(1319	E 3	7NO1964	0.85356)	(1320	E 4	7NO1964	0.28956)	(1321	E 5	7NO1964	0.04469)
(1322	E 6	7NO1964	0.35325)	(1324	F 2	6NO1964	0.00466)	(1336	C 3	27JA1967	0.00385)
(1337	C 3	2MR1967	0.08084)	(1338	C 3	28MR1967	0.15735)	(1339	C 5	28MR1967	0.43649)
(1340	C 7	28MR1967	0.66173)	(1341	A 3	19AP1967	0.45562)	(1342	A 4	19AP1967	1.38957)
(1343	A 6	19AP1967	0.12644)	(1344	C 3	25AP1967	1.15808)	(1345	C 5	25AP1967	2.59244)
(1346	C 7	21AP1967	1.02813)	(1347	E 2	23AP1967	2.27624)	(1348	E 5	23AP1967	0.32077)
(1368	A 3	4MY1967	0.65975)	(1369	A 4	4MY1967	0.01491)	(1370	A 6	3MY1967	0.03222)
(1371	C 3	4MY1967	0.00462)	(1372	C 5	5MY1967	0.12058)	(1373	C 7	5MY1967	0.02567)
(1374	E 2	7MY1967	0.00598)	(1375	E 3	7MY1967	0.09865)	(1376	E 5	6MY1967	0.36541)
(1408	A 3	23MY1967	0.31302)	(1409	A 4	23MY1967	0.19044)	(1410	A 6	24MY1967	0.51308)
(1411	C 3	31MY1967	0.14360)	(1412	C 5	31MY1967	0.88391)	(1413	C 7	25MY1967	0.10108)
(1414	E 2	28MY1967	0.47019)	(1415	E 3	28MY1967	0.52615)	(1416	E 5	28MY1967	0.20556)
(1431	A 3	12JN1967	2.70361)	(1432	A 4	13JN1967	1.78809)	(1433	C 3	17JN1967	2.71283)
(1434	C 5	17JN1967	0.57722)	(1435	C 7	13JN1967	0.73880)	(1436	E 2	15JN1967	3.54610)
(1437	E 3	15JN1967	1.31887)	(1438	E 5	14JN1967	0.64633)	(1446	A 3	11JL1967	0.68490)
(1447	A 4	11JL1967	1.39175)	(1448	A 6	10JL1967	0.01061)	(1449	C 3	16JL1967	9.62971)
(1450	C 5	16JL1967	3.99886)	(1451	C 7	16JL1967	0.15944)	(1452	E 2	14JL1967	1.78622)
(1453	E 3	15JL1967	7.25425)	(1454	E 5	15JL1967	0.28006)	(1504	A 3	28AU1967	0.01728)
(1505	A 4	28AU1967	0.01031)	(1506	A 6	29AU1967	0.00523)	(1508	C 3	2SE1967	0.19583)
(1509	C 5	2SE1967	0.84789)	(1510	C 7	29AU1967	0.04742)	(1511	E 2	1SE1967	0.71830)
(1512	E 3	1SE1967	12.36846)	(1513	E 5	31AU1967	0.78038)	(1532	A 3	18SE1967	0.01643)
(1533	A 4	19SE1967	0.02321)	(1534	A 6	19SE1967	0.00620)	(1535	C 7	20SE1967	0.00322)

(1536	E 2	24SE1967	0.95435)	(1537	E 3	24SE1967	9.05719)	(1538	E 5	23SE1967	1.93338)
(1540	C 5	4OC1967	0.00496)	(1541	E 2	11OC1967	0.18626)	(1542	E 3	11OC1967	2.13588)
(1543	E 5	10OC1967	0.02873)	(1377	GS 1	9MY1967	0.01187)	(1378	GS 2	9MY1967	0.04626)
(1379	GS 3	9MY1967	0.02476)	(1380	GS 4	9MY1967	0.39348)	(1381	GS 5	10MY1967	0.12641)
(1382	GS 6	10MY1967	0.00833)	(1383	GS 7	10MY1967	0.10960)	(1384	GS 8	10MY1967	0.12940)
(1385	GS 9	10MY1967	0.01648)	(1386	GS10	12MY1967	0.01149)	(1387	GS11	12MY1967	0.17823)
(1388	GS12	12MY1967	0.01207)	(1389	GS13	12MY1967	0.00516)	(1391	GS15	12MY1967	0.03831)
(1392	GS16	12MY1967	0.04623)	(1393	GS17	13MY1967	0.04931)	(1394	GS18	13MY1967	0.34747)
(1395	GS19	13MY1967	0.01996)	(1397	GS21	13MY1967	0.00262)	(1398	GS22	14MY1967	0.04554)
(1554	GS 1	30OC1967	0.78275)	(1555	GS 2	30OC1967	0.05297)	(1556	GS 3	30OC1967	0.02086)
(1557	GS 4	30OC1967	0.02616)	(1558	GS 5	40C1967	0.03567)	(1559	GS 7	40C1967	0.10142)
(1560	GS 8	40C1967	0.01889)	(1561	GS 9	40C1967	0.00587)	(1562	GS10	50C1967	0.04194)
(1574	GS22	60C1967	0.00288)	(1547	MS 1	20C1967	0.01597)	(1520	MO 1	18SE1967	0.01414)
(1521	SH 1	18SE1967	0.00577)	(1526	MO 1	20SE1967	0.05120)	(1527	TR 1	20SE1967	0.01258)
(1529	KW 1	20SE1967	0.02398)	(1530	FR 1	24SE1967	0.03000)	(1545	WL 1	20C1967	0.01351)
(1548	CA 1	30C1967	0.02544)	(1549	MQ 1	40C1967	0.01370)	(1551	ES 1	50C1967	0.01598)
(1552	SM 1	60C1967	0.01321)	(1553	SG 1	60C1967	0.00734)	(1428	MU 2	29MY1967	0.02109)
(1426	MS 2	29MY1967	3.86352)	(1351	MI 2	21AP1967	0.49651)	(1427	LU 2	29MY1967	3.29298)
(1417	HO 2	22MY1967	0.10842)	(1418	SH 2	22MY1967	0.03110)	(1350	BH 2	19AP1967	0.00220)
(1425	RA 2	25MY1967	0.20334)	(1399	PW 2	5MY1967	1.19695)	(1401	MO 2	6MY1967	0.25282)
(1402	TR 2	6MY1967	0.40065)	(1400	SB 2	6MY1967	0.80415)	(1352	KW 2	21AP1967	0.93627)
(1353	FR 2	23AP1967	0.36920)	(1354	GH 2	25AP1967	0.12773)	(1429	WL 2	29MY1967	0.19110)
(1403	CA 2	10MY1967	1.32078)	(1404	MQ 2	10MY1967	0.07622)	(1405	ES 2	12MY1967	0.05805)
(1407	SM 2	14MY1967	0.08957)	(1349	CI 2	19AP1967	0.36281)	(1406	GB 2	13MY1967	0.00270)
(1419	BU 2	23MY1967	0.45771)	(1420	IH 2	23MY1967	0.52870)	(1421	CH 2	23MY1967	0.27758)
(1422	GA 2	23MY1967	0.37807)	(1423	WA 2	25MY1967	0.25693)	(1424	KN 2	25MY1967	0.50626)
(1430	MC 2	12JN1967	0.02467)	(							

Synedra parasitica (Wm. Smith) Hust.

Odontidium ? parasiticum Wm. Smith, Syn. British Diat., vol. 2, p. 19, supp. pl. 60, fig. 375. 1856.
Fragilaria ? parasitica (Wm. Smith) Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 45, fig. 30. 1881.
Synedra parasitica (Wm. Smith) Hustedt *in*: Pascher, Sussw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 161, fig. 195. 1930.

Cells in girdle view rectangular, on focusing obviously expanded in the central portion. Valves rhombic-lanceolate with much expanded centers and narrow, sharply attenuated to subcapitate ends. Specimens from Lake Michigan 10-25μ long, 4-6μ broad. Axial area broad, lanceolate, without visible ornamentation. Striae finely structured, short 16-19 in 10μ.

This species often grows attached to some of the larger tychoplanktonic algae, especially members of the genera *Nitzschia*, *Surirella*, and *Cymatopleura*.

676 SYPARASI TOT NO OF STATIONS 30

(46921	CH	23ND1945	0.00129)	(46915	CH	20FE1946	0.00569)	(46914	CH	19AP1946	0.00320)
(46924	CH	10MY1946	0.00141)	(46923	CH	22ND1946	0.00656)	(46920	CH	20DE1946	0.00062)
(46905	CH	JA1947	0.00123)	(46909	CH	MR1947	0.00911)	(46907	CH	JL1947	0.00049)
(46758	EV	5JN1937	0.00357)	(46747	EV	1AU1937	0.00495)	(46765	EV	30AU1937	0.00558)
(46767	EV	27OC1937	0.00387)	(46749	EV	12MR1938	0.01214)	(1242	E 3	13JN1964	0.00150)
(1245	F 2	11JN1964	0.00346)	(1304	F 1	11OC1964	0.00247)	(1453	E 3	15JL1967	0.00253)
(1388	GS12	12MY1967	0.00603)	(1389	GS13	12MY1967	0.00774)	(1392	GS16	12MY1967	0.00308)
(1393	GS17	13MY1967	0.00274)	(1394	GS18	13MY1967	0.00516)	(1395	GS19	13MY1967	0.00235)
(1397	GS21	13MY1967	0.00065)	(1565	GS13	5OC1967	0.03549)	(1350	BH 2	19AP1967	0.01542)
(1352	KW 2	21AP1967	0.00859)	(1404	MQ 2	10MY1967	0.02541)	(1405	ES 2	12MY1967	0.00645)

Synedra parasitica var. *subconstricta* (Grun.) Hust.

Fragilaria parasitica var. *subconstricta* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 45, fig. 29. 1881.
Synedra parasitica var. *subconstricta* (Grun.) Hustedt *in*: Pascher, Süssw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 161, fig. 196. 1930.

Valves more or less constricted in the middle, other morphologic features of the frustule and ornamentation of the valve essentially similar to the nominate variety.

677 SYPARAVS TOT NO OF STATIONS 2

(1341	A 3	19AP1967	0.00108)	(1350	BH 2	19AP1967	0.04405)	(

Synedra pulchella Ralfs

Synedra pulchella Ralfs *ex* Kützing, Bacill., p. 68, pl. 29, fig. 87. 1844.

Cells in girdle view rectangular-lanceolate, slightly narrowed toward the ends. Valves lanceolate to linear-lanceolate with attenuated, rostrate or subcapitate ends. Specimens from Lake Michigan 46-100μ long, 5-7μ broad. Valves strongly silicified, all structures distinct and robust in appearance. Axial area narrow, slightly lanceolate, broader toward the mid-portion of the valve. Central area quadrate extending entirely across the mid-portion of the valve, distinctly thickened at the margins with an ovoid, less thickened region occupying the center. This area sometimes contains ornamentation appearing as partially developed striae. Striae well defined, distinctly punctate, parallel through most of the length of the valve, becoming slightly radiate near the apices, 12-16 in 10μ.

This species is most often reported from mineralized inland waters or from brackish waters. It is very rare in Lake Michigan at the present time but can be expected to become more abundant in areas receiving heavy pollution from wastes high in chlorides.

678 SYPULCHE TOT NO OF STATIONS 5

(1504	A 3	28AU1967	0.00247)	(1428	MU 2	29MY1967	0.01205)	(1426	MS 2	29MY1967	0.01050)
(1350	BH 2	19AP1967	0.00220)	(1406	GB 2	13MY1967	0.00539)	(			

Synedra rumpens Kütz.

Synedra rumpens Kützing, Bacill., p. 69, pl. 16, fig. 6(6), figs. 4-5. 1844.

Cells in girdle view linear, very slightly narrowed toward the ends. Valves linear-lanceolate with somewhat protracted, rostrate to subcapitate ends. Specimens from Lake Michigan 30-70μ long, 2-4μ broad. Axial area narrow, linear through most of the length of the valve, in some specimens widened near the midportion of the valve. Central area a structureless transverse fascia extending to the margins of the valve, not visibly thickened.

675 SYRUMPEN TOT NO OF STATIONS 46

(60973	CH	1876	0.07085)	(46517	CH	12JA1946	0.00083)	(46914	CH	19AP1946	0.00214)
(46920	CH	20DE1946	0.00123)	(46516	CH	4MY1947	0.00034)	(46919	CH	5JN1947	0.00455)
(46922	CH	21AU1947	0.00097)	(46764	EV	17JL1937	0.00806)	(46747	EV	1AU1937	0.00743)
(46765	EV	30AU1937	0.00558)	(46752	EV	15SE1937	0.02177)	(46750	EV	24SE1937	0.00471)
(46749	EV	12MR1938	0.01214)	(46768	EV	16MR1938	0.01470)	(46756	EV	27AP1938	0.00168)
(1284	E 6	17SE1964	0.00635)	(1302	E 5	13OC1964	0.02429)	(1311	D 1	8NO1964	0.00516)
(1313	D 3	9NO1964	0.00579)	(1314	D 4	9NO1964	0.00574)	(1317	E 1	6NO1964	0.00383)
(1318	E 2	7NO1964	0.00380)	(1319	E 3	7NO1964	0.01571)	(1320	E 4	7NO1964	0.01861)
(1321	E 5	7NO1964	0.00638)	(1322	E 6	7NO1964	0.00667)	(1324	F 2	6NO1964	0.00466)
(1342	A 4	19AP1967	0.00180)	(1371	C 3	4MY1967	0.00231)	(1395	GS19	13MY1967	0.00117)
(1396	GS20	13MY1967	0.00148)	(1574	GS22	6OC1967	0.00288)	(1544	MU 1	2OC1967	0.00715)
(1547	MS 1	2OC1967	0.00798)	(1522	BH 1	18SE1967	0.00365)	(1527	TR 1	20SE1967	0.00629)
(1531	GH 1	25SE1967	0.00845)	(1545	WL 1	2OC1967	0.01351)	(1549	MQ 1	4OC1967	0.01370)
(1550	MR 1	5OC1967	0.18585)	(1428	MU 2	29MY1967	0.01205)	(1427	LU 2	29MY1967	0.02421)
(1417	HO 2	22MY1967	0.01122)	(1350	BH 2	19AP1967	0.03084)	(1353	FR 2	23AP1967	0.01055)
(1354	GH 2	25AP1967	0.00863)	(							

Synedra rumpens var. *familiaris* (Kütz.) Hust.

Synedra familiaris Kützing, Bacill., p. 68, pl. 15, fig. 12. 1844.
Synedra rumpens var. *familiaris* (Kütz.) Hustedt *in*: Pascher, Sussw.-Fl. Mitteleuropas, Heft 10, Aufl. 2, p. 156, fig. 176. 1930.

Valves linear-lanceolate, somewhat constricted in the middle and slightly swollen on either side of the central area. Striae parallel throughout, about 18-20 in 10μ, appearing more delicate than in the nominate variety.

680 SYRUMPVF TOT NO OF STATIONS 9

(46757	EV	25JL1937	0.00481)	(46763	EV	23AU1937	0.12175)	(46761	EV	27MY1938	0.00273)
(1236	C 1	8JN1964	0.00175)	(1522	BH 1	18SE1967	0.00182)	(1526	MO 1	20SE1967	0.01138)
(1527	TR 1	20SE1967	0.00629)	(1428	MU 2	29MY1967	0.00301)	(1350	BH 2	19AP1967	0.00220)

Synedra rumpens var. *fragilarioides* Grun.

Synedra rumpens var. *fragilarioides* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 40, fig. 12. 1881.

Frustules more strongly silicified than in the nominate variety. Striae 10-12 in 10μ, visibly cross-lineate. Central area appears thickened and often contains irregular markings appearing as partially developed striae. In some specimens the central area is somewhat expanded. Shape, size range and general morphology of the frustule essentially similar to the nominate variety.

682 SYRUMPVR TOT NO OF STATIONS 8

(1235	C 7	16JN1964	0.00565)	(1240	D 6	10JN1964	0.00767)	(1243	E 6	13JN1964	0.00209)
(1338	C 3	28MR1967	0.00132)	(1341	A 3	19AP1967	0.00108)	(1343	A 6	19AP1967	0.00069)
(1346	C 7	21AP1967	0.00134)	(1408	A 3	23MY1967	0.00447)	(			

Synedra rumpens var. *meneghiniana* Grun.

Synedra rumpens var. ? *meneghiniana* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 40, fig. 13. 1881.

Valves linear with rostrate ends. Striae 13-15 in 10μ, without visible substructure. Other morphologic features of the frustule essentially similar to the nominate variety.

These entities are all found in periphyton communities in a variety of habitats. Occasional specimens are noted in offshore plankton collections from Lake Michigan.

681 SYRUMPVM TOT NO OF STATIONS 1

(1341	A 3	19AP1967	0.00217)	(

Synedra ulna (Nitz.) Ehr.

Bacillaria ulna Nitzsch, Neue Schrift. Naturf. Ges. Halle, 3(1):99, pl. 5. 1817.

Synedra ulna (Nitz.) Ehrenberg, Ber. Akad. Wiss. Berlin 1836:53. 1836.

Cells in girdle view very elongate-rectangular, usually slightly expanded at the ends. Valves linear to linear-lanceolate with rostrate ends. Specimens from Lake Michigan 75-220μ long, 5-8μ broad. Axial area narrow, linear. Central area usually a hyaline fascia reaching both margins of the valve, in some specimens reduced or entirely lacking. Striae parallel throughout, finely but distinctly lineate-punctate, 8-12 in 10μ. A distinct "jelly pore" is present at one end of each valve.

This species finds its primary habitat in the periphyton but is often found in plankton collections, often in considerable abundance. Numerous varieties have been described. The majority of these are also usually found in periphyton communities but some are adapted to planktonic existence.

683 SYULNA TOT NO OF STATIONS 127

(3540	CH	11MY1879	0.01398)	(3541	CH	1FE1881	0.12716)	(46910	CH	0C1945	0.00109)
(46921	CH	23NO1945	0.00388)	(46917	CH	12JA1946	0.00083)	(46915	CH	20FE1946	0.00569)
(46914	CH	19AP1946	0.00107)	(46924	CH	10MY1946	0.00282)	(46923	CH	22NO1946	0.01530)
(46920	CH	20DE1946	0.01048)	(46905	CH	JA1947	0.00613)	(46912	CH	AP1947	0.01150)
(46916	CH	4MY1947	0.00645)	(46906	CH	MY1947	0.00199)	(46919	CH	5JN1947	0.05766)
(46907	CH	JL1947	0.00049)	(46513	CH	6AU1947	0.03138)	(46922	CH	21AU1947	0.00679)
(46758	EV	5JN1937	0.64903)	(46771	EV	11JN1937	0.03566)	(46743	EV	20JN1937	0.43676)
(46745	EV	3JL1937	0.04180)	(46770	EV	9JL1937	0.23855)	(46764	EV	17JL1937	0.05670)
(46757	EV	25JL1937	0.06740)	(46747	EV	1AU1937	0.13862)	(46763	EV	23AU1937	0.04058)
(46752	EV	15SE1937	0.04354)	(46760	EV	22SE1937	0.01477)	(46750	EV	24SE1937	0.01414)
(46748	EV	13OC1937	0.02135)	(46767	EV	27OC1937	0.01160)	(46749	EV	12MR1938	0.01214)
(46768	EV	16MR1938	0.01470)	(46762	EV	18MR1938	0.06617)	(46772	EV	18AP1938	0.00710)
(46756	EV	27AP1938	0.00336)	(46761	EV	27MY1938	0.01090)	(46766	EV	14DE1938	0.03169)
(1225	C 6	15MY1964	0.00392)	(1226	C 7	16MY1964	0.00381)	(1230	E 2	16MY1964	0.00889)
(1231	E 3	16MY1964	0.00734)	(1232	E 5	16MY1964	0.00174)	(1236	C' 1	8JN1964	0.00175)
(1240	D 6	10JN1964	0.00153)	(1243	E 6	13JN1964	0.00209)	(1244	F 1	11JN1964	0.00329)
(1245	F 2	11JN1964	0.00346)	(1246	F 3	11JN1964	0.00598)	(1254	D 2	15JL1964	0.00192)
(1258	F 1	6JL1964	0.00472)	(1259	F 2	6JL1964	0.00310)	(1260	F 3	6JL1964	0.00764)
(1267	D 6	18AU1964	0.00432)	(1270	F 1	10AU1964	0.00272)	(1272	C' 1	10SE1964	0.00821)
(1284	E 6	17SE1964	0.00318)	(1285	F 1	15SE1964	0.00582)	(1298	E 1	12OC1964	0.00269)
(1304	F 1	11OC1964	0.00494)	(1337	C 3	2MR1967	0.00147)	(1338	C 3	28MR1967	0.00132)
(1341	A 3	19AP1967	0.00868)	(1342	A 4	19AP1967	0.00361)	(1347	E 2	23AP1967	0.00325)
(1371	C 3	4MY1967	0.00231)	(1373	C 7	5MY1967	0.00285)	(1413	C 7	25MY1967	0.00316)
(1416	E 5	28MY1967	0.00656)	(1431	A 3	12JN1967	0.00257)	(1449	C 3	16JL1967	0.00764)
(1452	E 2	14JL1967	0.00639)	(1453	E 3	15JL1967	0.00253)	(1537	E 3	24SE1967	0.00431)
(1378	GS 2	9MY1967	0.00421)	(1386	GS10	12MY1967	0.00287)	(1387	GS11	12MY1967	0.02772)
(1388	GS12	12MY1967	0.03017)	(1389	GS13	12MY1967	0.00774)	(1390	GS14	12MY1967	0.01174)
(1392	GS16	12MY1967	0.02157)	(1394	GS18	13MY1967	0.00860)	(1396	GS20	13MY1967	0.00222)
(1397	GS21	13MY1967	0.00065)	(1555	GS 2	30OC1967	0.00353)	(1559	GS 7	40OC1967	0.00350)
(1561	GS 9	40OC1967	0.00587)	(1567	GS15	50OC1967	0.00318)	(1569	GS17	50OC1967	0.00446)
(1570	GS18	50OC1967	0.00992)	(1571	GS19	60OC1967	0.00234)	(1572	GS20	60OC1967	0.00270)
(1573	GS21	60OC1967	0.00112)	(1575	GS28	60OC1967	0.01032)	(1544	MU 1	20OC1967	0.00477)
(1547	MS 1	20OC1967	0.00798)	(1520	HO 1	18SE1967	0.01414)	(1521	SH 1	18SE1967	0.00577)
(1522	BH 1	18SE1967	0.04559)	(1526	MO 1	20SE1967	0.00569)	(1527	TR 1	20SE1967	0.00629)
(1529	KW 1	20SE1967	0.01199)	(1531	GH 1	25SE1967	0.20287)	(1545	WL 1	20OC1967	0.00676)
(1549	MQ 1	40OC1967	0.06852)	(1550	MR 1	50OC1967	0.56994)	(1428	MU 2	29MY1967	0.09039)
(1426	MS 2	29MY1967	0.45144)	(1351	MI 2	21AP1967	0.05586)	(1427	LU 2	29MY1967	0.09685)
(1417	HO 2	22MY1967	0.16824)	(1418	SH 2	22MY1967	0.01555)	(1350	BH 2	19AP1967	0.35867)
(1425	RA 2	25MY1967	0.01768)	(1399	PW 2	5MY1967	0.01360)	(1401	MO 2	6MY1967	0.01764)
(1402	TR 2	6MY1967	0.15703)	(1400	SB 2	6MY1967	1.90612)	(1353	FR 2	23AP1967	0.01055)
(1354	GH 2	25AP1967	0.19677)	(1429	WL 2	29MY1967	0.07432)	(1403	CA 2	10MY1967	0.01308)
(1404	MQ 2	10MY1967	0.29217)	(1405	ES 2	12MY1967	0.03870)	(1406	GB 2	13MY1967	0.00539)
(1423	WA 2	25MY1967	0.00428)	(							

Synedra ulna var. *aequalis* (Kütz.) Hust.

Frustulia aequalis Kützing, Syn. Diat., p. 18, fig. 30. 1834.
Synedra ulna var. *aequalis* (Kütz.) Hustedt *in*: Rabenhorst, Kryptog.-Fl. Deutschland, 7(2)2:199, fig. 691A, d. 1932.

Valves linear without special morphological demarcation of the ends. Other characteristics essentially similar to the nominate variety.

684 SYULNAVA TOT NO OF STATIONS 6

(3540	CH	11MY1879	0.00466)	(46743	EV	20JN1937	0.01285)	(46747	EV	1AU1937	0.00743)
(1522	BH 1	18SE1967	0.00182)	(1531	GH 1	25SE1967	0.00845)	(1350	BH 2	19AP1967	0.01982)

Synedra ulna var. *amphirhynchus* (Ehr.) Grun.

Synedra amphirhynchus Ehrenberg, Phys. Abh. Akad. Wiss. Berlin, 1841:425, pl. 3(1), fig. 25. 1843.
Synedra ulna var. *amphirhynchus* (Ehr.) Grunow, Verh. Zool.-Bot. Ges. Wien, 12:397. 1862.

Valves lanceolate with very narrow and much produced rostrate to capitate ends. Other morphologic features of the frustule and ornamentation of the valve essentially similar to the nominate variety. Specimens so far observed from Lake Michigan are in the lower size range (75-190μ long).

This entity is rare in our collections and the specimens observed are probably derived from periphyton communities.

688 SYULNAVM TOT NO OF STATIONS 7

(3540	CH	11MY1879	0.00932)	(3541	CH	1FE1881	0.02535)	(3507	CH	19FE1881	0.01132)
(1378	GS 2	9MY1967	0.00421)	(1380	GS 4	9MY1967	0.00168)	(1393	GS17	13MY1967	0.00274)
(1404	MQ 2	10MY1967	0.01270)	(							

Synedra ulna var. *chaseana* Thomas

Synedra ulna var. *chaseana* Thomas *in*: Walker and Chase, New and rare diatoms, Ser. 1, p. 4, pl. 2, fig. 3. 1886.

Valves very elongate, narrowly linear-lanceolate, with slightly expanded, subcapitate ends which are cuneately rounded at the tip. Central area usually completely lacking, sometimes marked by a few less-developed striae in the mid-portion of the valve. Specimens from Lake Michigan 380-600+μ long, only 3-5μ broad. Striae coarse, 8-11 in 10μ.

This entity is euplanktonic and is abundant in many collections from Lake Michigan. It may be viewed as the extreme adaptation to planktonic existence in this group. In some respects its morphology is distinct from the *S. ulna* and some authors (Boyer 1927) consider it to be a separate species.

685 SYULNAVC TCT NO OF STATIONS 317

(60973	CH	1876	0.25980)	(3540	CH	11MY1879	2.02208)	(3541	CH	1FE1881	8.92106)
(3507	CH	19FE1881	2.51302)	(46910	CH	0C1945	C.78101)	(46921	CH	23NO1945	1.72348)
(46908	CH	DE1945	0.93656)	(46517	CH	12JA1946	0.99114)	(46915	CH	20FE1946	1.47954)
(46914	CH	19AP1946	0.34703)	(46924	CH	10MY1946	0.41269)	(46923	CH	22NO1946	1.27858)
(46920	CH	20DE1946	0.32042)	(46505	CH	JA1947	0.51845)	(46909	CH	MR1947	1.77588)
(46912	CH	AP1947	1.06933)	(46916	CH	4MY1947	1.14680)	(46906	CH	MY1947	C.73338)
(46919	CH	5JN1947	0.69043)	(46507	CH	JL1947	1.60262)	(46913	CH	6AU1947	1.63163)
(46922	CH	21AU1947	0.34652)	(46758	EV	5JN1937	2.19670)	(46771	EV	11JN1937	3.06215)
(46743	EV	20JN1937	2.63766)	(46745	EV	3JL1937	4.30512)	(46770	EV	9JL1937	1.44322)
(46764	EV	17JL1937	1.65995)	(46757	EV	25JL1937	2.02205)	(46747	EV	1AU1937	2.07936)
(46763	EV	23AU1937	0.68994)	(46765	EV	30AU1937	0.59119)	(46769	EV	7SE1937	1.43291)
(46752	EV	15SE1937	1.21898)	(46760	EV	22SE1937	0.60564)	(46750	EV	24SE1937	C.72583)
(46744	EV	6OC1937	0.22435)	(46748	EV	13OC1937	0.72588)	(46767	EV	27OC1937	C.43325)
(46749	EV	12MR1938	0.87389)	(46768	EV	16MR1938	1.17595)	(46762	EV	18MR1938	3.46273)
(46751	EV	30MR1938	2.30013)	(46772	EV	18AP1938	0.15614)	(46756	EV	27AP1938	C.51715)
(46759	EV	19MY1938	0.24983)	(46761	EV	27MY1938	C.86667)	(46766	EV	14DE1938	0.47529)
(1223	B 3	18MY1964	1.42199)	(1224	B 4	18MY1964	2.19586)	(1225	C 6	15MY1964	3.56723)
(1226	C 7	16MY1964	0.89041)	(1227	C* 2	13MY1964	1.84231)	(1228	D 2	14MY1964	2.58861)
(1229	D 5	14MY1964	4.73663)	(1230	E 2	16MY1964	1.45207)	(1231	E 3	16MY1964	2.16711)
(1232	E 5	16MY1964	2.75836)	(1233	B 3	5JN2964	2.33383)	(1234	B 3	18JN1964	0.78722)
(1235	C 7	16JN1964	1.84709)	(1439	B 6	5JN1964	1.77023)	(1236	C* 1	8JN1964	1.51229)
(1237	C* 2	8JN1964	3.06780)	(1238	D 3	11JN1964	2.70800)	(1239	D 4	11JN1964	1.19060)
(1240	D 6	10JN1964	2.00334)	(1241	E 2	13JN1964	1.51699)	(1242	E 3	13JN1964	3.00632)
(1243	E 6	13JN1964	3.89627)	(1244	F 1	11JN1964	1.33110)	(1245	F 2	11JN1964	1.03727)
(1246	F 3	11JN1964	1.00400)	(1247	B 3	14JL1964	1.39156)	(1248	B 3	24JL1964	3.03460)
(1440	B 6	11JL1964	3.61131)	(1441	B 6	24JL1964	6.26886)	(1249	C 3	8JL1964	1.90114)
(1250	C 6	10JL1964	5.36896)	(1251	C 7	16JL1964	1.52095)	(1252	C* 1	16JL1964	1.29986)
(1253	C* 2	16JL1964	5.32682)	(1254	D 2	15JL1964	4.11032)	(1255	D 5	15JL1964	6.46784)
(1256	E 2	14JL1964	3.07760)	(1257	E 3	14JL1964	4.01962)	(1258	F 1	6JL1964	2.20403)
(1259	F 2	6JL1964	1.73525)	(1260	F 3	6JL1964	1.87176)	(1261	B 3	2AU1964	C.37287)
(1262	B 3	17AU1964	0.29399)	(1442	B 6	2AU1964	6.68714)	(1443	B 6	16AU1964	2.76756)
(1263	C 7	15AU1964	0.56045)	(1264	C* 1	10AU1964	C.45181)	(1265	C* 2	10AU1964	4.69452)
(1266	D 3	18AU1964	7.69608)	(1267	D 6	18AU1964	0.10808)	(1268	E 2	15AU1964	4.55569)
(1269	E 3	15AU1964	5.37192)	(1270	F 1	10AU1964	1.04833)	(1444	B 6	19SE1964	7.63891)
(1271	C 7	22SE1964	0.52882)	(1272	C* 1	10SE1964	2.29857)	(1273	C* 2	10SE1964	3.76364)
(1274	D 1	17SE1964	1.09792)	(1275	D 2	17SE1964	1.06445)	(1276	D 3	18SE1964	13.C3C84)
(1277	D 4	18SE1964	3.03631)	(1278	D 6	18SE1964	2.86714)	(1279	E 1	16SE1964	2.19892)
(1280	E 2	16SE1964	10.17088)	(1281	E 3	16SE1964	11.16823)	(1282	E 4	16SE1964	8.26593)
(1283	E 5	16SE1964	10.87409)	(1284	E 6	17SE1964	0.66724)	(1285	F 1	15SE1964	6.25473)
(1286	F 2	15SE1964	6.12960)	(1287	F 3	15SE1964	3.97318)	(1288	B 3	15OC1964	C.06313)
(1445	B 6	14OC1964	0.68493)	(1289	C 7	14OC1964	3.69377)	(1290	C* 1	16CC1964	0.13644)
(1291	C* 2	16OC1964	1.60951)	(1292	D 1	15OC1964	0.14162)	(1293	D 2	15OC1964	1.65079)
(1294	D 3	15OC1964	2.76890)	(1295	D 4	15OC1964	1.39137)	(1296	D 5	14OC1964	0.68852)
(1297	D 6	14OC1964	3.01969)	(1298	E 1	12OC1964	0.65974)	(1299	E 2	12OC1964	4.53032)
(1300	E 3	13OC1964	9.37176)	(1301	E 4	13OC1964	5.97898)	(1302	E 5	13OC1964	4.72103)
(1303	E 6	13OC1964	2.89936)	(1304	F 1	11OC1964	1.84234)	(1305	F 2	11OC1964	1.20760)
(1306	F 3	11OC1964	2.84384)	(1307	B 6	NO1964	0.50512)	(1308	C 7	6NO1964	0.38626)
(1309	C* 1	10NO1964	0.02733)	(1310	C* 2	10NO1964	0.34240)	(1311	D 1	8NO1964	C.24251)
(1312	D 2	8NO1964	0.43458)	(1313	D 3	9NO1964	1.35135)	(1314	D 4	9NO1964	1.48709)
(1315	D 5	9NO1964	1.16469)	(1316	D 6	9NO1964	3.34693)	(1317	E 1	6NO1964	C.24891)
(1318	E 2	7NO1964	1.77691)	(1319	E 3	7NO1964	2.68636)	(1320	E 4	7NO1964	3.28025)
(1321	E 5	7NO1964	2.10049)	(1322	E 6	7NO1964	2.79935)	(1323	F 1	6NO1964	C.73171)
(1324	F 2	6NO1964	1.08541)	(1325	F 3	6NO1964	1.49878)	(1336	C 3	27JA1967	C.37163)
(1337	C 3	2MR1967	2.53678)	(1338	C 3	28MR1967	2.28222)	(1339	C 5	28MR1967	2.91202)
(1340	C 7	28MR1967	1.01804)	(1341	A 3	19AP1967	1.56862)	(1342	A 4	19AP1967	2.6C950)
(1343	A 6	19AP1967	0.17785)	(1344	C 3	25AP1967	2.62387)	(1345	C 5	25AP1967	1.45411)
(1346	C 7	21AP1967	2.11769)	(1347	E 2	23AP1967	1.97382)	(1348	E 5	23AP1967	0.89650)
(1368	A 3	4MY1967	2.63902)	(1369	A 4	4MY1967	2.60912)	(1370	A 6	3MY1967	0.40281)
(1371	C 3	4MY1967	2.15615)	(1372	C 5	5MY1967	4.46872)	(1373	C 7	5MY1967	2.66416)
(1374	E 2	7MY1967	4.04662)	(1375	E 3	7MY1967	4.04245)	(1376	E 5	6MY1967	1.96762)
(1408	A 3	23MY1967	1.56508)	(1409	A 4	23MY1967	6.24888)	(1410	A 6	24MY1967	1.44339)
(1411	C 3	31MY1967	6.12973)	(1412	C 5	31MY1967	4.71420)	(1413	C 7	25MY1967	2.50813)
(1414	E 2	28MY1967	5.32662)	(1415	E 3	28MY1967	4.19571)	(1416	E 5	28MY1967	2.96967)
(1431	A 3	12JN1967	1.80240)	(1432	A 4	13JN1967	4.64902)	(1433	C 3	17JN1967	3.91422)
(1434	C 5	17JN1967	1.95598)	(1435	C 7	13JN1967	2.35532)	(1436	E 2	15JN1967	6.41916)
(1437	E 3	15JN1967	5.27548)	(1438	E 5	14JN1967	2.03341)	(1446	A 3	11JL1967	1.36980)
(1447	A 4	11JL1967	3.70977)	(1448	A 6	10JL1967	1.81786)	(1449	C 3	16JL1967	6.06061)
(1450	C 5	16JL1967	5.59840)	(1451	C 7	16JL1967	1.37790)	(1452	E 2	14JL1967	3.87448)
(1453	E 3	15JL1967	4.60026)	(1454	E 5	15JL1967	1.12022)	(1504	A 3	28AU1967	0.69127)
(1505	A 4	28AU1967	0.07730)	(1506	A 6	29AU1967	0.01046)	(1508	C 3	2SE1967	0.69938)

(1509	C 5	2SE1967	3.76501)	(1510	C 7	29AU1967	0.12962)	(1511	E 2	1SE1967	3.57921)
(1512	E 3	1SE1967	8.61473)	(1513	E 5	31AU1967	5.90858)	(1532	A 3	18SE1967	C.02628)
(1533	A 4	19SE1967	0.03249)	(1534	A 6	19SE1967	0.00931)	(1535	C 7	20SE1967	0.04506)
(1536	E 2	24SE1967	3.43568)	(1537	E 3	24SE1967	11.27404)	(1538	E 5	23SE1967	3.61266)
(1539	C 3	40C1967	0.00503)	(1540	C 5	40C1967	0.01985)	(1541	E 2	110C1967	C.50024)
(1542	E 3	110C1967	4.50570)	(1543	E 5	100C1967	0.25858)	(1377	GS 1	9MY1967	5.35919)
(1378	GS 2	9MY1967	2.64917)	(1379	GS 3	9MY1967	0.33424)	(1380	GS 4	9MY1967	1.25441)
(1381	GS 5	10MY1967	1.11148)	(1382	GS 6	10MY1967	0.64948)	(1383	GS 7	10MY1967	C.58811)
(1384	GS 8	10MY1967	0.51761)	(1385	GS 9	10MY1967	1.21024)	(1386	GS10	12MY1967	C.60327)
(1387	GS11	12MY1967	2.21800)	(1388	GS12	12MY1967	2.74510)	(1389	GS13	12MY1967	C.33262)
(1390	GS14	12MY1967	0.19965)	(1391	GS15	12MY1967	0.37351)	(1392	GS16	12MY1967	0.08938)
(1393	GS17	13MY1967	0.24107)	(1394	GS18	13MY1967	0.05333)	(1395	GS19	13MY1967	C.00470)
(1396	GS20	13MY1967	0.00592)	(1397	GS21	13MY1967	0.00523)	(1398	GS22	14MY1967	1.56055)
(1554	GS 1	30C1967	3.32313)	(1555	GS 2	30C1967	1.23588)	(1556	GS 3	30C1967	0.07822)
(1557	GS 4	30C1967	0.57922)	(1558	GS 5	40C1967	0.67782)	(1559	GS 7	40C1967	C.53508)
(1560	GS 8	40C1967	0.33061)	(1561	GS 9	40C1967	0.37565)	(1562	GS10	50C1967	0.86347)
(1563	GS11	50C1967	1.30945)	(1564	GS12	50C1967	0.02963)	(1565	GS13	50C1967	0.03549)
(1566	GS14	50C1967	0.36691)	(1567	GS15	50C1967	0.81608)	(1568	GS16	50C1967	C.12698)
(1569	GS17	50C1967	0.06243)	(1570	GS18	50C1967	0.06942)	(1571	GS19	60C1967	C.00820)
(1573	GS21	60C1967	0.00672)	(1574	GS22	60C1967	1.61077)	(1575	GS28	60C1967	C.00903)
(1544	MU 1	20C1967	0.00715)	(1547	MS 1	20C1967	0.11178)	(1546	LU 1	20C1967	C.06002)
(1520	HO 1	18SE1967	0.00943)	(1521	SH 1	18SE1967	0.00577)	(1523	RA 1	19SE1967	C.00923)
(1525	PW 1	20SE1967	0.05570)	(1526	MO 1	20SE1967	0.24464)	(1527	TR 1	20SE1967	C.07547)
(1528	SB 1	20SE1967	0.23101)	(1529	KW 1	20SE1967	C.33577)	(1530	FR 1	24SE1967	C.35003)
(1548	CA 1	30C1967	0.01272)	(1549	MQ 1	40C1967	0.32890)	(1551	ES 1	50C1967	0.03994)
(1552	SM 1	6CC1967	0.09904)	(1550	MR 1	50C1967	0.04956)	(1553	SG 1	60C1967	C.02938)
(1428	MU 2	29MY1967	0.07533)	(1426	MS 2	29MY1967	1.79527)	(1351	MI 2	21AP1967	C.33204)
(1427	LU 2	29MY1967	4.39467)	(1417	HO 2	22MY1967	0.02243)	(1418	SH 2	22MY1967	C.54432)
(1350	BH 2	19AP1967	0.35242)	(1425	RA 2	25MY1967	0.50393)	(1399	PW 2	5MY1967	1.66621)
(1401	MO 2	6MY1967	0.75259)	(1402	TR 2	6MY1967	0.57938)	(1400	SB 2	6MY1967	1.64999)
(1352	KW 2	21AP1967	0.30064)	(1353	FR 2	23AP1967	3.25949)	(1354	GH 2	25AP1967	C.05696)
(1429	WL 2	29MY1967	0.45652)	(1403	CA 2	10MY1967	0.62770)	(1404	MQ 2	10MY1967	C.31758)
(1405	ES 2	12MY1967	0.07740)	(1407	SM 2	14MY1967	0.37619)	(1349	CI 2	19AP1967	C.38437)
(1406	GB 2	13MY1967	0.01348)	(1419	BU 2	23MY1967	0.09154)	(1420	IH 2	23MY1967	C.30211)
(1421	CH 2	23MY1967	0.36433)	(1422	GA 2	23MY1967	0.12262)	(1423	WA 2	25MY1967	C.50101)
(1424	KN 2	25MY1967	0.50626)	(1430	MC 2	12JN1967	0.71552)	(			

Synedra ulna var. *claviceps* Hust.

Synedra ulna var. *claviceps* Hustedt, Arch. Hydrobiol., Suppl. 15:157, pl. 10, fig. 36. 1938.

Valves linear with slightly expanded terminal portions and bluntly rounded ends. Striae coarse, usually 8-9 in 10μ. Specimens from Lake Michigan 109-520μ long.

Some authorities have speculated that specimens having this morphology are auxospore stages of *S. ulna*. The size range of specimens noted in this study seems to preclude this possibility.

687 SYULNAVL TCT NO OF STATIONS 90

(3540	CH	11MY1879	0.00932)	(3541	CH	1FE1881	0.03913)	(46909	CH	MR1947	0.00455)
(46771	EV	11JN1937	0.00475)	(46760	EV	22SE1937	0.00492)	(46751	EV	30MR1938	0.01117)
(46756	EV	27AP1938	0.00840)	(46761	EV	27MY1938	0.01090)	(1240	D 6	10JN1964	0.00307)
(1250	C 6	10JL1964	0.00411)	(1254	D 2	15JL1964	0.00192)	(1259	F 2	6JL1964	0.02169)
(1260	F 3	6JL1964	0.02865)	(1266	D 3	18AU1964	0.00351)	(1277	D 4	18SE1964	0.00620)
(1279	E 1	16SE1964	0.00393)	(1280	E 2	16SE1964	0.00681)	(1285	F 1	15SE1964	0.02330)
(1286	F 2	15SE1964	0.01095)	(1287	F 3	15SE1964	0.01001)	(1298	E 1	12DC1964	0.00269)
(1299	E 2	12DC1964	0.00628)	(1300	E 3	13DC1964	0.00716)	(1304	F 1	11DC1964	C.00247)
(1306	F 3	11DC1964	0.00277)	(1316	D 6	9NO1964	0.01133)	(1340	C 7	28MR1967	0.00073)
(1342	A 4	19AP1967	0.00361)	(1343	A 6	19AP1967	0.00139)	(1374	E 2	7MY1967	C.00598)
(1375	E 3	7MY1967	0.00241)	(1408	A 3	23MY1967	0.00894)	(1431	A 3	12JN1967	C.00772)
(1432	A 4	13JN1967	0.00255)	(1433	C 3	17JN1967	0.01292)	(1434	C 5	17JN1967	C.00299)
(1446	A 3	11JL1967	0.00245)	(1448	A 6	10JL1967	0.00354)	(1449	C 3	16JL1967	C.00382)
(1450	C 5	16JL1967	0.00381)	(1451	C 7	16JL1967	0.00394)	(1452	E 2	14JL1967	C.00426)
(1504	A 3	28AU1967	0.00247)	(1536	E 2	24SE1967	0.00273)	(1537	E 3	24SE1967	C.01725)
(1542	E 3	110C1967	0.01526)	(1543	E 5	100C1967	0.00718)	(1377	GS 1	9MY1967	C.01187)
(1379	GS 3	9MY1967	0.00619)	(1380	GS 4	9MY1967	0.02186)	(1381	GS 5	10MY1967	C.01431)
(1382	GS 6	10MY1967	0.02776)	(1383	GS 7	10MY1967	0.00535)	(1384	GS 8	10MY1967	C.00370)
(1385	GS 9	10MY1967	0.00942)	(1386	GS10	12MY1967	0.01436)	(1387	GS11	12MY1967	C.03169)
(1388	GS12	12MY1967	0.47059)	(1389	GS13	12MY1967	0.10572)	(1390	GS14	12MY1967	C.09982)
(1391	GS15	12MY1967	0.15323)	(1392	GS16	12MY1967	0.05239)	(1393	GS17	13MY1967	C.16163)
(1394	GS18	13MY1967	0.02408)	(1395	GS19	13MY1967	0.00352)	(1397	GS21	13MY1967	C.00065)
(1398	GS22	14MY1967	0.01518)	(1554	GS 1	30C1967	0.00712)	(1558	GS 5	40C1967	C.00396)
(1559	GS 7	40C1967	0.00699)	(1563	GS11	50C1967	0.00468)	(1564	GS12	50C1967	C.00165)
(1567	GS15	50C1967	0.02223)	(1569	GS17	50C1967	0.00743)	(1571	GS19	60C1967	C.00293)
(1573	GS21	60C1967	0.00112)	(1574	GS22	60C1967	0.00863)	(1575	GS28	60C1967	C.00645)
(1526	MO 1	20SE1967	0.00569)	(1552	SM 1	60C1967	0.01321)	(1550	MR 1	50C1967	C.02478)
(1428	MU 2	29MY1967	0.00603)	(1426	MS 2	29MY1967	0.05249)	(1427	LU 2	29MY1967	C.02421)
(1350	BH 2	19AP1967	0.01762)	(1399	PW 2	5MY1967	0.02040)	(1401	MO 2	6MY1967	C.01176)
(1402	TR 2	6MY1967	0.00541)	(1400	SB 2	6MY1967	0.01787)	(1419	BU 2	23MY1967	C.01831)

Synedra ulna var. *constricta* Venkt.

Synedra ulna var. *constricta* Venkataraman, Proc. Indian Acad. Sci., 10 (B6):308, fig. 36. 1939.

Valves relatively broadly lanceolate, constricted in the center, with narrowly produced, rostrate ends. Specimens from Lake Michigan 75-180μ long, 6-8μ broad. Central area more or less elliptical, either reaching to the margins of the valve or bordered by shortened striae. Striae somewhat finer than in the nominate variety, 10-13 in 10μ.

This entity is abundant and widely distributed in periphyton collections. Occasional specimens are noted in plankton collections from Lake Michigan. Its distinctive morphology may warrant its treatment as a separate species.

691 SYULNAVC TCT NC OF STATIONS 7

(46923	CH	22NO1946	0.00437)	(46758	EV	5JN1937	0.00357)	(1388	GS12	12MY1967	0.00603)
(1522	BH 1	18SE1967	0.00182)	(1531	GH 1	25SE1967	0.00845)	(1550	MR 1	5OC1967	0.04956)
(1428	MU 2	29MY1967	0.00301)	(							

Synedra ulna var. *danica* (Kütz.) V. H.

Synedra danica Kützing, Bacill., p. 66, pl. 14, fig. 13. 1844.
Synedra ulna var. *danica* (Kütz.) Van Heurck, Syn. Diat. Belgique, p. 151. 1885.

Valves elongate, linear-lanceolate with protracted, subcapitate ends. Specimens from Lake Michigan 180-350μ long, 5-6μ broad. Striae coarse, 9-11 in 10μ. Central area usually present, rather small and rectangular in outline, sometimes containing faint ornamentation with the appearance of partially developed striae.

This entity is common in our collections from Lake Michigan, especially those taken from areas that have undergone enrichment. In some respects, it resembles *S. ulna* var. *chaseana* but may be distinguished from that taxon by its slightly broader valves, the presence of a central area and the shape of the ends of the valves which are smoothly rounded rather than more or less lanceolate as in *S. ulna* var. *chaseana*. In several of our collections from Lake Michigan populations of *S. ulna* var. *danica* occur together with unusual specimens with elongate expanded ends similar to the specimens Gemeinhardt (1926) cites as "regeneration forms."

686 SYULNAVD TCT NC OF STATICNS 306

(60973	CH	1876	0.04724)	(3540	CH	11MY1879	0.07455)	(3541	CH	1FE1881	0.36193)
(3507	CH	19FE1881	0.01132)	(46910	CH	OC1945	0.07100)	(46921	CH	23NO1945	0.10477)
(46908	CH	DE1945	0.05035)	(46917	CH	12JA1946	0.09898)	(46915	CH	20FE1946	0.33574)
(46914	CH	19AP1946	0.45167)	(46924	CH	10MY1946	0.15097)	(46923	CH	22NO1946	0.03497)
(46920	CH	20DE1946	0.06655)	(46905	CH	JA1947	0.03922)	(46909	CH	MR1947	0.11839)
(46912	CH	AP1947	0.13798)	(46916	CH	4MY1947	0.17643)	(46906	CH	MY1947	0.10354)
(46919	CH	5JN1947	0.02883)	(46907	CH	JL1947	0.54489)	(46913	CH	6AU1947	0.03138)
(46922	CH	21AU1947	0.03829)	(46758	EV	5JN1937	0.08559)	(46771	EV	11JN1937	0.14740)
(46743	EV	20JN1937	0.26548)	(46745	EV	3JL1937	0.35528)	(46770	EV	9JL1937	0.01193)
(46764	EV	17JL1937	0.10475)	(46757	EV	25JL1937	0.13480)	(46747	EV	1AU1937	0.33171)
(46763	EV	23AU1937	0.06088)	(46765	EV	30AU1937	0.02789)	(46769	EV	7SE1937	0.08684)
(46752	EV	15SE1937	0.04354)	(46760	EV	22SE1937	0.03447)	(46750	EV	24SE1937	0.22623)
(46744	EV	6OC1937	0.54623)	(46748	EV	13OC1937	0.44833)	(46767	EV	27OC1937	0.01547)
(46749	EV	12MR1938	0.48550)	(46768	EV	16MR1938	0.16169)	(46762	EV	18MR1938	0.06617)
(46751	EV	30MR1938	0.22331)	(46772	EV	18AP1938	0.06388)	(46756	EV	27AP1938	0.03694)
(46759	EV	19MY1938	0.06752)	(46761	EV	27MY1938	0.50692)	(46766	EV	14DE1938	0.04753)
(1223	B 3	18MY1964	0.03750)	(1224	B 4	18MY1964	0.05294)	(1225	C 6	15MY1964	0.42336)
(1226	C 7	16MY1964	0.33486)	(1227	C' 2	13MY1964	0.02632)	(1228	D 2	14MY1964	0.10315)
(1229	D 5	14MY1964	0.36159)	(1230	E 2	16MY1964	0.21633)	(1231	E 3	16MY1964	0.33265)
(1232	E 5	16MY1964	0.30436)	(1233	B 3	5JN2964	0.05239)	(1234	B 3	18JN1964	0.11527)
(1235	C 7	16JN1964	0.04236)	(1439	B 6	5JN1964	0.04995)	(1236	C' 1	8JN1964	0.11027)
(1237	C' 2	8JN1964	0.16495)	(1238	D 3	11JN1964	0.16600)	(1239	D 4	11JN1964	0.06150)
(1240	D 6	10JN1964	0.13499)	(1241	E 2	13JN1964	0.12568)	(1242	E 3	13JN1964	0.19033)
(1243	E 6	13JN1964	0.73081)	(1244	F 1	11JN1964	0.06908)	(1245	F 2	11JN1964	0.30427)
(1246	F 3	11JN1964	0.37053)	(1247	B 3	14JL1964	0.07257)	(1248	B 3	24JL1964	0.16355)
(1440	B 6	11JL1964	0.09950)	(1441	B 6	24JL1964	0.11674)	(1249	C 3	8JL1964	0.04617)
(1250	C 6	10JL1964	0.07400)	(1251	C 7	16JL1964	0.03766)	(1252	C' 1	16JL1964	0.02232)
(1253	C' 2	16JL1964	0.13465)	(1254	D 2	15JL1964	0.18004)	(1255	D 5	15JL1964	0.11550)
(1256	E 2	14JL1964	0.25647)	(1257	E 3	14JL1964	0.22491)	(1258	F 1	6JL1964	0.25486)
(1259	F 2	6JL1964	0.25719)	(1260	F 3	6JL1964	0.26739)	(1261	B 3	2AU1964	0.00981)
(1262	B 3	17AU1964	0.00630)	(1442	B 6	2AU1964	0.05800)	(1263	C 7	15AU1964	0.01201)
(1264	C' 1	10AU1964	0.03282)	(1265	C' 2	10AU1964	0.07824)	(1266	D 3	18AU1964	0.22450)

(1267	D 6	18AU1964	0.01513)	(1268	E 2	15AU1964	C.70030)	(1269	E 8	15AU1964	C.35356)
(1270	F 1	10AU1964	0.09258)	(1444	B 6	19SE1964	0.16066)	(1272	C' 1	10SE1964	0.01231)
(1273	C' 2	10SE1964	0.01613)	(1274	D 1	17SE1964	0.04223)	(1275	D 2	17SE1964	C.C2580)
(1276	D 3	18SE1964	0.45820)	(1277	D 4	18SE1964	C.03718)	(1278	D 6	18SE1964	C.29594)
(1279	E 1	16SE1964	0.02356)	(1280	E 2	16SE1964	C.32678)	(1281	E 3	16SE1964	C.31786)
(1282	E 4	16SE1964	0.14404)	(1283	E 5	16SE1964	C.66201)	(1284	E 6	17SE1964	C.05719)
(1285	F 1	15SE1964	0.43096)	(1286	F 2	15SE1964	0.14229)	(1287	F 3	15SE1964	C.10508)
(1445	B 6	14OC1964	0.02283)	(1289	C 7	14OC1964	0.06596)	(1290	C' 1	16OC1964	C.CC758)
(1291	C' 2	16OC1964	C.0C978)	(1293	D 2	15OC1964	C.01887)	(1294	D 3	15OC1964	C.C4615)
(1295	D 4	15OC1964	0.06541)	(1296	D 5	14OC1964	0.05115)	(1297	D 6	14OC1964	C.14089)
(1298	E 1	12OC1964	C.01077)	(1299	E 2	12OC1964	0.04398)	(1300	E 3	13OC1964	C.45463)
(1301	E 4	13OC1964	0.61821)	(13C2	E 5	13OC1964	0.15386)	(1303	E 6	13OC1964	C.17911)
(1304	F 1	11OC1964	0.20498)	(1305	F 2	11OC1964	0.12766)	(1306	F 3	11OC1964	C.10810)
(1307	B 6	NO1964	0.00722)	(1308	C 7	6NO1964	0.02129)	(1310	C' 2	10NO1964	C.CC227)
(1312	D 2	8NO1964	0.00310)	(1313	D 3	9NO1964	C.02510)	(1314	D 4	9NO1964	0.04306)
(1315	D 5	9NO1964	0.02275)	(1316	D 6	9NO1964	0.18888)	(1317	E 1	6NO1964	C.0C191)
(1318	E 2	7NO1964	0.02093)	(1319	E 3	7NO1964	0.02880)	(1320	E 4	7NO1964	0.C8687)
(1321	E 5	7NO1964	0.04469)	(1322	E 6	7NO1964	0.12664)	(1323	F 1	6NO1964	0.02509)
(1324	F 2	6NO1964	0.03028)	(1325	F 3	6NO1964	0.12595)	(1336	C 3	27JA1967	C.02118)
(1337	C 3	2MR1967	0.51441)	(1338	C 3	28MR1967	0.33850)	(1339	C 5	28MR1967	C.72956)
(1340	C 7	28MR1967	0.50902)	(1341	A 3	19AP1967	0.60749)	(1342	A 4	19AP1967	C.25265)
(1343	A 6	19AP1967	0.48632)	(1344	C 3	25AP1967	0.63694)	(1345	C 5	25AP1967	C.45611)
(1346	C 7	21AP1967	0.93467)	(1347	E 2	23AP1967	0.34144)	(1348	E 5	23AP1967	C.31254)
(1368	A 3	4MY1967	1.42947)	(1369	A 4	4MY1967	1.82638)	(1370	A 6	3MY1967	1.39487)
(1371	C 3	4MY1967	2.26234)	(1372	C 5	5MY1967	0.99305)	(1373	C 7	5MY1967	C.59901)
(1374	E 2	7MY1967	1.39271)	(1375	E 3	7MY1967	0.92639)	(1408	A 3	23MY1967	2.67406)
(1409	A 4	23MY1967	1.14563)	(1410	A 6	24MY1967	3.15742)	(1411	C 3	31MY1967	2.15402)
(1412	C 5	31MY1967	0.98493)	(1413	C 7	25MY1967	1.21616)	(1414	E 2	28MY1967	C.94039)
(1415	E 3	28MY1967	1.36259)	(1416	E 5	28MY1967	C.19900)	(1431	A 3	12JN1967	1.56037)
(1432	A 4	13JN1967	2.14570)	(1433	C 3	17JN1967	3.31998)	(1434	C 5	17JN1967	1.67484)
(1435	C 7	13JN1967	1.02927)	(1436	E 2	15JN1967	2.36648)	(1437	E 3	15JN1967	C.47103)
(1438	E 5	14JN1967	0.43210)	(1446	A 3	11JL1967	0.57238)	(1447	A 4	11JL1967	5.99270)
(1448	A 6	10JL1967	0.36074)	(1449	C 3	16JL1967	1.60495)	(1450	C 5	16JL1967	1.42055)
(1451	C 7	16JL1967	1.28735)	(1452	E 2	14JL1967	0.49815)	(1453	E 3	15JL1967	C.64707)
(1454	E 5	15JL1967	1.02820)	(1504	A 3	28AU1967	0.31354)	(1505	A 4	28AU1967	0.01031)
(1506	A 6	29AU1967	0.05754)	(1508	C 3	2SE1967	0.21181)	(1509	C 5	2SE1967	C.54507)
(1510	C 7	29AU1967	0.04742)	(1511	E 2	1SE1967	0.53719)	(1512	E 3	1SE1967	1.00518)
(1513	E 5	31AU1967	0.24323)	(1532	A 3	18SE1967	0.02957)	(1533	A 4	19SE1967	C.01393)
(1534	A 6	19SE1967	0.00931)	(1535	C 7	20SE1967	0.00322)	(1536	E 2	24SE1967	C.38174)
(1537	E 3	24SE1967	1.40602)	(1538	E 5	23SE1967	0.35353)	(1540	C 5	4OC1967	0.00496)
(1542	E 3	11OC1967	0.24410)	(1543	E 5	10OC1967	0.03591)	(1377	GS 1	9MY1967	2.95270)
(1378	GS 2	9MY1967	1.07649)	(1379	GS 3	9MY1967	C.51993)	(1380	GS 4	9MY1967	0.94165)
(1381	GS 5	10MY1967	0.46033)	(1382	GS 6	10MY1967	0.53568)	(1383	GS 7	10MY1967	C.41435)
(1384	GS 8	10MY1967	0.36972)	(1385	GS 9	10MY1967	1.31855)	(1386	GS10	12MY1967	C.29302)
(1387	GS11	12MY1967	1.01394)	(1388	GS12	12MY1967	2.81146)	(1389	GS13	12MY1967	C.99270)
(1390	GS14	12MY1967	2.05520)	(1391	GS15	12MY1967	2.46133)	(1392	GS16	12MY1967	1.C7868)
(1393	GS17	13MY1967	1.40806)	(1394	GS18	13MY1967	0.52293)	(1395	GS19	13MY1967	C.20081)
(1396	GS20	13MY1967	0.01332)	(1397	GS21	13MY1967	0.00523)	(1398	GS22	14MY1967	1.41482)
(1554	GS 1	3OC1967	0.26329)	(1555	GS 2	3OC1967	0.12712)	(1556	GS 3	3OC1967	C.09386)
(1557	GS 4	3OC1967	0.17937)	(1558	GS 5	4OC1967	0.06739)	(1559	GS 7	4OC1967	C.54207)
(1560	GS 8	4OC1967	0.19364)	(1561	GS 9	4OC1967	0.14087)	(1562	GS10	5OC1967	C.63157)
(1563	GS11	5OC1967	0.51443)	(1564	GS12	5OC1967	0.00988)	(1565	GS13	5OC1967	C.02028)
(1566	GS14	5OC1967	0.19263)	(1567	GS15	5OC1967	0.81608)	(1568	GS16	5OC1967	C.28860)
(1569	GS17	5OC1967	0.29730)	(1570	GS18	5OC1967	0.21817)	(1571	GS19	6OC1967	C.01815)
(1573	GS21	6OC1967	0.01680)	(1574	GS22	6OC1967	0.37105)	(1575	GS28	6OC1967	0.07354)
(1544	MU 1	2OC1967	0.00238)	(1547	MS 1	2OC1967	0.02395)	(1546	LU 1	2OC1967	C.01000)
(1520	HO 1	18SE1967	0.05186)	(1521	SH 1	18SE1967	0.02308)	(1525	PW 1	20SE1967	0.02785)
(1526	MO 1	20SE1967	0.29584)	(1527	TR 1	20SE1967	0.23899)	(1528	SB 1	20SE1967	0.11551)
(1530	FR 1	24SE1967	0.25002)	(1531	GH 1	25SE1967	0.04227)	(1545	WL 1	2OC1967	C.02027)
(1549	MQ 1	4OC1967	0.19186)	(1551	ES 1	5OC1967	0.03994)	(1552	SM 1	6OC1967	0.07923)
(1550	MR 1	5OC1967	0.16107)	(1553	SG 1	6OC1967	C.02938)	(1428	MU 2	29MY1967	0.12655)
(1426	MS 2	29MY1967	0.83990)	(1351	MI 2	21AP1967	0.22964)	(1427	LU 2	29MY1967	1.41646)
(1417	HO 2	22MY1967	0.59818)	(1418	SH 2	22MY1967	1.83515)	(1350	BH 2	19AP1967	C.23568)
(1425	RA 2	25MY1967	0.50393)	(1401	MO 2	6MY1967	0.47037)	(1402	TR 2	6MY1967	0.24908)
(1400	SB 2	6MY1967	1.14367)	(1352	KW 2	21AP1967	0.32640)	(1353	FR 2	23AP1967	0.36920)
(1354	GH 2	25AP1967	0.05006)	(1429	WL 2	29MY1967	0.19110)	(1403	CA 2	10MY1967	C.68001)
(1404	MQ 2	10MY1967	2.17226)	(1405	ES 2	12MY1967	0.16125)	(1407	SM 2	14MY1967	0.25676)
(1349	CI 2	19AP1967	0.49932)	(1406	GB 2	13MY1967	0.00270)	(1419	BU 2	23MY1967	3.51520)
(1420	IH 2	23MY1967	2.73414)	(1421	CH 2	23MY1967	2.58501)	(1422	GA 2	23MY1967	1.96189)
(1423	WA 2	25MY1967	0.82216)	(1424	KN 2	25MY1967	0.75939)	(1430	MC 2	12JN1967	0.93758)

Synedra ulna var. *longissima* (Wm. Smith) Brun

Synedra longissima Wm. Smith, Syn. British Diat., vol. 1, p. 72, pl. 12, fig. 95. 1853.
Synedra ulna var. *longissima* (Wm. Smith) Brun, Diat. Alpes Jura, p. 126, pl. 4, fig. 21. 1880.

Valves linear to linear-lanceolate with expanded, bluntly rounded ends. Frustules are often extremely elongate and many are more or less curved. Other features as in the nominate variety.

685 SYULNAVB TOT NO OF STATIONS 3

(1568	GS16	5OC1967	0.00144)	(1403	CA 2	10MY1967	0.09154)	(1404	MQ 2	10MY1967	C.22866)

690 SYULNAVN TOT NO OF STATIONS 3

(1522	BH 1	18SE1967	0.48686)	(1531	GH 1	25SE1967	8.25021)	(1350	BH 2	19AP1967	C.C2423)

Synedra ulna var. *oxyrhynchus* (Kütz.) V. H.

Synedra oxyrhynchus Kützing, Bacill., p. 66, pl. 14, fig. 8. 1844.
Synedra ulna var. *oxyrhynchus* (Kütz.) Van Heurck, Syn. Diat. Belgique, p. 151. 1885.

Valves linear with narrowly rostrate apices. The maximum length of this entity is less than 150μ and the striae tend to be finer than in the nominate variety, usually about 14-15 in 10μ.

693 SYULNAVX TOT NO OF STATIONS 11

(46916	CH	4MY1947	0.00034)	(46906	CH	MY1947	0.00066)	(46919	CH	5JN1947	0.00303)
(46907	CH	JL1947	0.00049)	(46922	CH	21AU1947	0.00048)	(46743	EV	20JN1937	0.01285)
(1257	E 3	14JL1964	0.00239)	(1394	GS18	13MY1967	0.00344)	(1395	GS19	13MY1967	0.00235)
(1426	MS 2	29MY1967	0.02100)	(1427	LU 2	29MY1967	0.01211)	(			

Synedra ulna var. *spathulifera* (Grun.) V. H.

Synedra spathulifera Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 38, fig. 4. 1881.
Synedra ulna var. *spathulifera* (Grun.) Van Heurck, Syn. Diat. Belgique, p. 151. 1885.

Valves linear through most of their length, at the ends broadly expanded to a width greater than the center of the valve, then abruptly narrowed to produced, subcapitate ends. Other features of the morphology and ornamentation of the frustule are essentially similar to the nominate variety.

This entity is common in some periphyton collections from Lake Michigan. It is rarely taken in plankton collections and the specimens observed in our collections are undoubtedly derived from benthic habitats. As pointed out by other authors (Boyer 1927; Hustedt 1932) this entity is not related to the "regeneration forms" discussed above.

695 SYULNAVS TOT NO OF STATIONS 8

(46767	EV	27OC1937	0.00387)	(1258	F 1	6JL1964	0.00236)	(1567	GS15	5OC1967	0.00159)
(1522	BH 1	18SE1967	0.00912)	(1531	GH 1	25SE1967	0.10144)	(1553	SG 1	6OC1967	0.01469)
(1417	HO 2	22MY1967	0.00374)	(1350	BH 2	19AP1967	0.02203)	(			

Species *incertae sedis*

Synedra sp. (aff. *S. hyperborea* var. *rostellata*)

674 SYHYPEVR TOT NO OF STATIONS 32

(46908	CH	DE1945	0.01007)	(46915	CH	20FE1946	0.00569)	(46916	CH	4MY1947	0.00034)
(46922	CH	21AU1947	0.00048)	(46749	EV	12MR1938	0.01214)	(46761	EV	27MY1938	0.00818)
(1441	B 6	24JL1964	0.00220)	(1257	E 3	14JL1964	0.00239)	(1258	F 1	6JL1964	0.00708)
(1259	F 2	6JL1964	0.00310)	(1260	F 3	6JL1964	0.00382)	(1264	C' 1	10AU1964	0.00193)
(1291	C' 2	16OC1964	0.00245)	(1299	E 2	12OC1964	0.00943)	(1300	E 3	13OC1964	0.00358)
(1303	E 6	13OC1964	0.00560)	(1305	F 2	11OC1964	0.00345)	(1307	B 6	NO1964	0.00361)
(1311	D 1	8NO1964	0.00516)	(1315	D 5	9NO1964	0.01365)	(1319	E 3	7NO1964	0.00524)
(1320	E 4	7NO1964	0.00620)	(1321	E 5	7NO1964	0.00638)	(1347	E 2	23AP1967	0.00650)
(1348	E 5	23AP1967	0.00137)	(1370	A 6	3MY1967	0.00460)	(1376	E 5	6MY1967	0.00281)
(1432	A 4	13JN1967	0.00255)	(1448	A 6	10JL1967	0.00354)	(1539	C 3	4OC1967	0.01006)
(1381	GS 5	10MY1967	0.00954)	(1382	GS 6	10MY1967	0.00278)	(			

Synedra sp. #7.

704 SYSPECOG TOT NO OF STATIONS 7

(46915	CH	5JN1947	0.00152)	(1236	C' 1	8JN1964	0.01050)	(1243	E 6	13JN1964	0.00209)
(1284	E 6	17SE1964	0.00318)	(1285	F 1	15SE1964	0.03494)	(1287	F 3	15SE1964	0.00500)
(1382	GS 6	10MY1967	0.00278)	(							

Synedra sp. #12.

709 SYSPECOL TCT NC OF STATIONS 1

(1315 D 5 9NO1964 0.00455) (

Synedra sp. #13.

710 SYSPECOM TCT NC OF STATIONS 1

(1258 F 1 6JL1964 0.00472) (

Synedra "*capitata* var. *fossilis*" (not validly described).

667 SYCAPIVF TCT NC OF STATIONS 1

(1400 SB 2 6MY1967 0.00596) (

Genus *Tabellaria* Ehr.
Ehrenberg, Ber. Akad. Wiss. Berlin, 1840:217. 1840.

All members of the genus *Tabellaria* reported below occur in plankton collections from Lake Michigan in abundance. The populations observed are highly variable and specific determinations are often obtained with difficulty. It appears probable that some of these variable populations may contain more than one genetic entity, however we have found no way that they can be consistently separated on the basis of morphologic characteristics visible with the light microscope. Knudson (1952) has revised the genus, largely on the basis of the type of colony formation. In our experience this is the least stable of all morphologic characteristics. Any of the entities reported below will, in some instances, adopt any or all of the colony forms reported by Knudson.

Tabellaria fenestrata (Lyngb.) Kütz.

Diatoma fenestratum Lyngbye, Tent. Hydropht. Danicae, p. 180, pl. 61, fig. E(3). 1819.
Tabellaria fenestrata (Lyngb.) Kützing, Bacill., p. 127, pl. 18, fig. 2. 1844.

Cells in girdle view elongate-rectangular with rounded ends, united by gelatinous pads at the corners into zig-zag or, more rarely, linear or stellate colonies. Usually four conspicuous septae, lying in the valvar plane, are evident. Valves elongate, linear, slightly expanded at the middle and at the ends. Expanded areas subequal, middle only slightly broader than the ends. Valves of specimens from Lake Michigan 24-134μ long, 4-8μ broad at the middle. Striae fine, 18-22 in 10μ, perpendicular to the midline throughout. Axial area narrow, linear, without any specially demarcated central area. At the ends of the valves there are pore fields composed of very fine and irregularly arranged puncta. A conspicuous slime pore is present just to one side of the axial area near the center of the valve. In some populations very fine marginal spines are present at the margins of the valve.

711 TAFENEST TCT NC OF STATIONS 320

(60973	CH	1876	9.84884)	(3540	CH	11MY1879	52.13623)	(3541	CH	1FE1881	53.07639)
(3507	CH	19FE1881	69.66266)	(46910	CH	OC1945	12.17613)	(46921	CH	23NO1945	36.46599)
(46908	CH	DE1945	37.96576)	(46917	CH	12JA1946	34.79790)	(46915	CH	20FE1946	30.14282)
(46914	CH	19AP1946	15.09508)	(46924	CH	10MY1946	8.50570)	(46923	CH	22NO1946	21.87785)
(46920	CH	20DE1946	10.85439)	(46905	CH	JA1947	29.91420)	(46909	CH	MR1947	42.02904)
(46912	CH	AP1947	11.95815)	(46916	CH	4MY1947	6.04276)	(46906	CH	MY1947	2.97666)
(46915	CH	5JN1947	3.79660)	(46907	CH	JL1947	23.87903)	(46913	CH	6AU1947	10.53237)

(46922	CH	21AU1947	33.39197)	(46758	EV	5JN1937	11.08337)	(46771	EV	11JN1937	3.46156)
(46743	EV	20JN1937	18.22385)	(46745	EV	3JL1937	28.67293)	(46770	EV	9JL1937	39.40839)
(46764	EV	17JL1937	18.72682)	(46757	EV	25JL1937	32.62241)	(46747	EV	1AU1937	16.91214)
(46763	EV	23AU1937	26.13635)	(46765	EV	30AU1937	44.66257)	(46769	EV	7SE1937	21.88449)
(46752	EV	15SE1937	19.50369)	(46760	EV	22SE1937	18.47456)	(46750	EV	24SE1937	18.73969)
(46744	EV	6OC1937	12.01717)	(46748	EV	13OC1937	1.19556)	(46767	EV	27OC1937	6.06553)
(46749	EV	12MR1938	7.13679)	(46768	EV	16MR1938	6.58533)	(46762	EV	18MR1938	8.02823)
(46751	EV	30MR1938	4.06431)	(46772	EV	18AP1938	3.57700)	(46756	EV	27AP1938	2.16263)
(46759	EV	19MY1938	4.15935)	(46761	EV	27MY1938	15.26218)	(46766	EV	14DE1938	11.53359)
(1223	B 3	18MY1964	6.54270)	(1224	B 4	18MY1964	7.68552)	(1225	C 6	15MY1964	22.77538)
(1226	C 7	16MY1964	31.96346)	(1227	C' 2	13MY1964	40.76105)	(1228	D 2	14MY1964	27.79344)
(1229	D 5	14MY1964	26.05147)	(1230	E 2	16MY1964	24.23766)	(1231	E 3	16MY1964	8.08874)
(1232	E 5	16MY1964	21.12769)	(1233	B 3	5JN2964	25.67216)	(1234	B 3	18JN1964	32.66982)
(1235	C 7	16JN1964	41.51721)	(1439	B 6	5JN1964	14.68531)	(1236	C' 1	8JN1964	26.71007)
(1237	C' 2	8JN1964	34.46764)	(1238	D 3	11JN1964	8.96000)	(1239	D 4	11JN1964	22.82564)
(1240	D 6	10JN1964	16.42863)	(1241	E 2	13JN1964	12.21279)	(1242	E 3	13JN1964	2.51776)
(1243	E 6	13JN1964	17.97794)	(1244	F 1	11JN1964	39.52721)	(1245	F 2	11JN1964	45.98575)
(1246	F 3	11JN1964	44.34351)	(1247	B 3	14JL1964	34.95966)	(1248	B 3	24JL1964	35.58760)
(1440	B 6	11JL1964	19.60422)	(1441	B 6	24JL1964	12.79764)	(1249	C 3	8JL1964	32.12927)
(1250	C 6	10JL1964	14.10072)	(1251	C 7	16JL1964	40.55855)	(1252	C' 1	16JL1964	38.85634)
(1253	C' 2	16JL1964	21.24794)	(1254	D 2	15JL1964	8.84888)	(1255	D 5	15JL1964	6.46784)
(1256	E 2	14JL1964	13.59273)	(1257	E 3	14JL1964	3.01471)	(1258	F 1	6JL1964	19.32651)
(1259	F 2	6JL1964	19.73846)	(1260	F 3	6JL1964	25.40251)	(1261	B 3	2AU1964	38.46455)
(1262	B 3	17AU1964	14.84670)	(1442	B 6	2AU1964	20.30023)	(1443	B 6	16AU1964	9.96323)
(1263	C 7	15AU1964	28.58286)	(1264	C' 1	10AU1964	36.62727)	(1265	C' 2	10AU1964	30.20142)
(1266	D 3	18AU1964	11.54062)	(1267	D 6	18AU1964	43.57976)	(1268	E 2	15AU1964	15.12747)
(1269	E 3	15AU1964	5.56378)	(1270	F 1	10AU1964	17.91695)	(1444	B 6	19SE1964	11.45836)
(1271	C 7	22SE1964	68.55127)	(1272	C' 1	10SE1964	28.73209)	(1273	C' 2	10SE1964	21.45276)
(1274	D 1	17SE1964	28.90254)	(1275	D 2	17SE1964	23.93393)	(1276	D 3	18SE1964	23.46892)
(1277	D 4	18SE1964	49.44850)	(1278	D 6	18SE1964	52.99973)	(1279	E 1	16SE1964	28.86087)
(1280	E 2	16SE1964	11.91368)	(1281	E 3	16SE1964	8.79017)	(1282	E 4	16SE1964	27.14680)
(1283	E 5	16SE1964	18.45041)	(1284	E 6	17SE1964	17.57060)	(1285	F 1	15SE1964	11.41459)
(1286	F 2	15SE1964	19.15498)	(1287	F 3	15SE1964	19.61569)	(1288	B 3	15OC1964	11.73320)
(1445	B 6	14OC1964	46.57533)	(1289	C 7	14OC1964	56.94560)	(1290	C' 1	16OC1964	27.85674)
(1291	C' 2	16OC1964	39.72408)	(1292	D 1	15OC1964	37.04532)	(1293	D 2	15OC1964	47.87283)
(1294	D 3	15OC1964	41.07195)	(1295	D 4	15OC1964	40.78963)	(1296	D 5	14OC1964	56.73367)
(1297	D 6	14OC1964	51.31183)	(1298	E 1	12OC1964	32.42136)	(1299	E 2	12OC1964	31.00847)
(1300	E 3	13OC1964	23.80525)	(1301	E 4	13OC1964	17.92810)	(1302	E 5	13OC1964	11.62037)
(1303	E 6	13OC1964	25.85916)	(1304	F 1	11OC1964	9.50805)	(1305	F 2	11OC1964	8.09095)
(1306	F 3	11OC1964	9.89523)	(1307	B 6	NO1964	30.30740)	(1308	C 7	6NO1964	50.67064)
(1309	C' 1	10NO1964	15.64510)	(1310	C' 2	10NO1964	20.00000)	(1311	D 1	8NO1964	24.74072)
(1312	D 2	8NO1964	25.42293)	(1313	D 3	9NO1964	38.24324)	(1314	D 4	9NO1964	32.15341)
(1315	D 5	9NO1964	48.40764)	(1316	D 6	9NO1964	24.06316)	(1317	E 1	6NO1964	24.66109)
(1318	E 2	7NO1964	26.50153)	(1319	E 3	7NO1964	21.26044)	(1320	E 4	7NO1964	17.95242)
(1321	E 5	7NO1964	16.75923)	(1322	E 6	7NO1964	11.43067)	(1323	F 1	6NO1964	9.17073)
(1324	F 2	6NO1964	12.55445)	(1325	F 3	6NO1964	27.15433)	(1336	C 3	27JA1967	78.58202)
(1337	C 3	2MR1967	8.43634)	(1338	C 3	28MR1967	8.97816)	(1339	C 5	28MR1967	21.82452)
(1340	C 7	28MR1967	4.47938)	(1341	A 3	19AP1967	19.51552)	(1342	A 4	19AP1967	20.21185)
(1343	A 6	19AP1967	1.84800)	(1344	C 3	25AP1967	14.93920)	(1345	C 5	25AP1967	12.55287)
(1346	C 7	21AP1967	8.13160)	(1347	E 2	23AP1967	8.99114)	(1348	E 5	23AP1967	14.77724)
(1368	A 3	4MY1967	17.81337)	(1369	A 4	4MY1967	9.91464)	(1370	A 6	3MY1967	14.82334)
(1371	C 3	4MY1967	14.86680)	(1372	C 5	5MY1967	12.41311)	(1373	C 7	5MY1967	9.18478)
(1374	E 2	7MY1967	10.04184)	(1375	E 3	7MY1967	14.99074)	(1376	E 5	6MY1967	34.63008)
(1408	A 3	23MY1967	35.95695)	(1409	A 4	23MY1967	25.20383)	(1410	A 6	24MY1967	29.99548)
(1411	C 3	31MY1967	19.24260)	(1412	C 5	31MY1967	10.31231)	(1413	C 7	25MY1967	7.29696)
(1414	E 2	28MY1967	14.10579)	(1415	E 3	28MY1967	11.01767)	(1416	E 5	28MY1967	21.12444)
(1431	A 3	12JN1967	34.42593)	(1432	A 4	13JN1967	10.01328)	(1433	C 3	17JN1967	23.96330)
(1434	C 5	17JN1967	7.74614)	(1435	C 7	13JN1967	11.49244)	(1436	E 2	15JN1967	7.09220)
(1437	E 3	15JN1967	4.33343)	(1438	E 5	14JN1967	7.87945)	(1446	A 3	11JL1967	27.22469)
(1447	A 4	11JL1967	10.64278)	(1448	A 6	10JL1967	62.63483)	(1449	C 3	16JL1967	6.15232)
(1450	C 5	16JL1967	8.93078)	(1451	C 7	16JL1967	26.59343)	(1452	E 2	14JL1967	16.24303)
(1453	E 3	15JL1967	1.50393)	(1454	E 5	15JL1967	36.82736)	(1504	A 3	28AU1967	46.48808)
(1505	A 4	28AU1967	31.38203)	(1506	A 6	29AU1967	61.51591)	(1508	C 3	2SE1967	42.24281)
(1509	C 5	2SE1967	10.24528)	(1510	C 7	29AU1967	48.46664)	(1511	E 2	1SE1967	12.67766)
(1512	E 3	1SE1967	4.35768)	(1513	E 5	31AU1967	13.47927)	(1532	A 3	18SE1967	36.10262)
(1533	A 4	19SE1967	32.49466)	(1534	A 6	19SE1967	31.92380)	(1535	C 7	20SE1967	63.99072)
(1536	E 2	24SE1967	25.57669)	(1537	E 3	24SE1967	11.77435)	(1538	E 5	23SE1967	37.89426)
(1539	C 3	4OC1967	28.52972)	(1540	C 5	4OC1967	39.95631)	(1541	E 2	11OC1967	28.68393)
(1543	E 5	10OC1967	48.77171)	(1377	GS 1	9MY1967	12.46784)	(1378	GS 2	9MY1967	25.14090)
(1379	GS 3	9MY1967	37.91161)	(1380	GS 4	9MY1967	39.31393)	(1381	GS 5	10MY1967	36.39746)
(1382	GS 6	10MY1967	20.98309)	(1383	GS 7	10MY1967	26.57185)	(1384	GS 8	10MY1967	18.24567)
(1385	GS 9	10MY1967	34.94148)	(1386	GS10	12MY1967	22.52226)	(1387	GS11	12MY1967	26.06146)
(1388	GS12	12MY1967	24.91704)	(1389	GS13	12MY1967	12.81489)	(1390	GS14	12MY1967	20.14091)
(1391	GS15	12MY1967	26.48087)	(1392	GS16	12MY1967	15.10155)	(1393	GS17	13MY1967	21.47710)
(1394	GS18	13MY1967	13.72691)	(1395	GS19	13MY1967	2.87714)	(1396	GS20	13MY1967	0.06289)
(1397	GS21	13MY1967	0.64097)	(1398	GS22	14MY1967	37.82979)	(1554	GS 1	3OC1967	19.92456)
(1555	GS 2	3OC1967	24.71751)	(1556	GS 3	3OC1967	40.15225)	(1557	GS 4	3OC1967	14.91031)
(1558	GS 5	4OC1967	11.93119)	(1559	GS 7	4OC1967	14.93320)	(1560	GS 8	4OC1967	18.18353)
(1561	GS 9	4OC1967	29.17180)	(1562	GS10	5OC1967	23.31375)	(1563	GS11	5OC1967	20.62386)
(1564	GS12	5OC1967	8.87155)	(1565	GS13	5OC1967	3.90427)	(1566	GS14	5OC1967	16.56577)
(1567	GS15	5OC1967	22.67242)	(1568	GS16	5OC1967	2.82824)	(1569	GS17	5OC1967	6.03511)
(1570	GS18	5OC1967	8.23003)	(1571	GS19	6OC1967	1.59811)	(1572	GS20	6OC1967	0.05047)
(1573	GS21	6OC1967	0.26206)	(1574	GS22	6OC1967	24.96692)	(1575	GS28	6OC1967	1.08376)
(1544	MU 1	2OC1967	0.15012)	(1547	MS 1	2OC1967	5.23752)	(1524	MI 1	20SE1967	38.87915)
(1546	LU 1	2OC1967	1.60056)	(1520	HO 1	18SE1967	15.61601)	(1521	SH 1	18SE1967	5.90815)
(1522	BH 1	18SE1967	0.00912)	(1523	RA 1	19SE1967	17.12177)	(1525	FW 1	20SE1967	47.68138)
(1526	MO 1	20SE1967	5.27963)	(1527	TR 1	20SE1967	1.91195)	(1528	SB 1	20SE1967	30.03175)
(1529	KW 1	20SE1967	6.52356)	(1530	FR 1	24SE1967	11.52115)	(1531	GH 1	25SE1967	1.75824)
(1545	WL 1	2OC1967	2.91912)	(1548	CA 1	3OC1967	7.32731)	(1549	MC 1	4OC1967	21.70755)
(1551	ES 1	5OC1967	3.45075)	(1552	SM 1	6OC1967	0.66689)	(1550	MR 1	5OC1967	2.77537)
(1553	SG 1	6OC1967	0.41863)	(1428	MU 2	29MY1967	1.01238)	(1426	MS 2	29MY1967	10.75066)
(1351	MI 2	21AP1967	1.39022)	(1427	LU 2	29MY1967	17.62711)	(1417	HO 2	22MY1967	3.40960)
(1418	SH 2	22MY1967	35.83203)	(1350	BH 2	19AP1967	0.35242)	(1425	RA 2	25MY1967	17.11607)
(1399	PW 2	5MY1967	8.70511)	(1401	MO 2	6MY1967	5.26811)	(1402	TR 2	6MY1967	4.85163)
(1400	SB 2	6MY1967	6.67143)	(1352	KW 2	21AP1967	6.32194)	(1353	FR 2	23AP1967	46.24472)
(1354	GH 2	25AP1967	0.66281)	(1429	WL 2	29MY1967	5.26595)	(1403	CA 2	10MY1967	22.17862)
(1404	MO 2	10MY1967	21.13820)	(1405	ES 2	12MY1967	7.32714)	(1407	SM 2	14MY1967	6.68776)
(1349	CI 2	19AP1967	2.64387)	(1419	BU 2	23MY1967	33.98022)	(1420	IH 2	23MY1967	39.39577)
(1421	CH 2	23MY1967	36.64122)	(1422	GA 2	23MY1967	35.72267)	(1423	WA 2	25MY1967	18.77274)
(1424	KN 2	25MY1967	17.05301)	(1430	MC 2	12JN1967	72.63754)	(			

Tabellaria fenestrata var. *geniculata* A. Cleve

Tabellaria fenestrata var. *geniculata* A. Cleve, Ofv. K. Svenska Vet.-Akad. Forhandl., 8:831, fig. 1-5. 1899.

Distinguished from the nominate variety by valves which are rather strongly bent in the apical axis. In most specimens the midportion of the valve is more strongly expanded on the side opposite the arc of the ends. This entity is highly variable in both frustule structure and colony formation. The valves are often somewhat constricted near the central and terminal expansions. Perhaps best treated as a separate species of subspecies (Skabitschewsky 1960).

(12 TAFENEVG TOT NC OF STATIONS 228

(6C973	CH	1876	0.02362)	(3540	CH	11MY1879	C.40069)	(3541	CH	1FE1881	C.44018)
(3507	CH	19FE1881	0.29432)	(46910	CH	0C1945	0.00218)	(46921	CH	23N01945	0.00259)
(46917	CH	12JA1946	0.01636)	(46915	CH	20FE1946	0.05121)	(46914	CH	19AP1946	C.00214)
(46924	CH	10MY1946	0.00141)	(46923	CH	22N01946	0.00219)	(46920	CH	20DE1946	C.00062)
(46905	CH	JA1947	0.00123)	(46909	CH	MR1947	0.01821)	(46912	CH	AP1947	C.01150)
(46916	CH	4MY1947	0.00068)	(46919	CH	5JN1947	0.00303)	(46907	CH	JL1947	0.04586)
(46922	CH	21AU1947	0.01551)	(46758	EV	5JN1937	0.00357)	(46771	EV	11JN1937	C.0C238)
(46743	EV	20JN1937	0.01713)	(46745	EV	3JL1937	0.04180)	(46770	EV	9JL1937	C.03578)
(46764	EV	17JL1937	0.0C806)	(46757	EV	25JL1937	0.05296)	(46747	EV	1AU1937	C.0C743)
(46765	EV	30AU1937	0.02231)	(46767	EV	27OC1937	0.00387)	(46761	EV	27MY1938	C.00545)
(1223	B 3	18MY1964	0.00156)	(1224	B 4	18MY1964	0.00196)	(1225	C 6	15MY1964	C.0C392)
(1226	C 7	16MY1964	0.01142)	(1227	C' 2	13MY1964	0.00548)	(1228	D 2	14MY1964	C.0C973)
(1229	D 5	14MY1964	0.03806)	(1230	E 2	16MY1964	0.00889)	(1231	E 3	16MY1964	C.02201)
(1232	E 5	16MY1964	0.06261)	(1233	B 3	5JN2964	0.01667)	(1234	B 3	18JN1964	C.C2530)
(1235	C 7	16JN1964	0.01130)	(1439	B 6	5JN1964	0.00799)	(1236	C' 1	8JN1964	0.00525)
(1237	C' 2	8JN1964	0.00258)	(1239	D 4	11JN1964	0.02321)	(1240	D 6	10JN1964	C.0C153)
(1241	E 2	13JN1964	0.00444)	(1242	E 3	13JN1964	C.00150)	(1243	E 6	13JN1964	C.01879)
(1244	F 1	11JN1964	0.02193)	(1245	F 2	11JN1964	0.01037)	(1246	F 3	11JN1964	C.C2988)
(1247	B 3	14JL1964	0.02134)	(1248	B 3	24JL1964	0.01379)	(1440	B 6	11JL1964	C.01843)
(1441	B 6	24JL1964	0.01762)	(1249	C 3	8JL1964	0.00815)	(1250	C 6	10JL1964	C.01644)
(1251	C 7	16JL1964	0.00579)	(1252	C' 1	16JL1964	0.08647)	(1253	C' 2	16JL1964	C.C3880)
(1254	D 2	15JL1964	0.01341)	(1255	D 5	15JL1964	0.01797)	(1256	E 2	14JL1964	C.0C550)
(1257	E 3	14JL1964	0.00718)	(1258	F 1	6JL1964	C.02360)	(1259	F 2	6JL1964	C.02789)
(1260	F 3	6JL1964	0.05348)	(1261	B 3	2AU1964	0.00589)	(1262	B 3	17AU1964	C.C8190)
(1442	B 6	2AU1964	0.02388)	(1443	B 6	16AU1964	0.00593)	(1264	C' 1	10AU1964	C.13516)
(1265	C' 2	10AU1964	0.1073C)	(1266	D 3	18AU1964	0.04911)	(1267	D 6	18AU1964	0.08214)
(1268	E 2	15AU1964	0.C4650)	(1269	E 3	15AU1964	0.02193)	(1270	F 1	10AU1964	0.07352)
(1444	B 6	19SE1964	0.0C909)	(1271	C 7	22SE1964	0.01306)	(1272	C' 1	10SE1964	C.25859)
(1273	C' 2	10SE1964	0.09678)	(1274	D 1	17SE1964	C.36128)	(1275	D 2	17SE1964	C.24515)
(1276	D 3	18SE1964	0.06705)	(1277	D 4	18SE1964	0.05577)	(1278	D 6	18SE1964	0.22676)
(1279	E 1	16SE1964	0.54973)	(1280	E 2	16SE1964	C.10212)	(1281	E 3	16SE1964	C.05494)
(1282	E 4	16SE1964	0.06648)	(1283	E 5	16SE1964	0.06743)	(1284	E 6	17SE1964	0.06355)
(1285	F 1	15SE1964	0.48337)	(1286	F 2	15SE1964	0.52539)	(1287	F 3	15SE1964	C.45536)
(1288	B 3	15OC1964	0.01306)	(1445	B 6	14OC1964	0.03588)	(1289	C 7	14OC1964	0.03078)
(1290	C' 1	16OC1964	0.06822)	(1291	C' 2	16OC1964	0.01712)	(1292	D 1	15OC1964	C.C2609)
(1293	D 2	15OC1964	0.03302)	(1294	D 3	15OC1964	0.01319)	(1295	D 4	15OC1964	C.02378)
(1296	D 5	14OC1964	0.C1967)	(1297	D 6	14OC1964	0.01333)	(1298	E 1	12OC1964	0.02154)
(1299	E 2	12OC1964	0.04084)	(1300	E 3	13OC1964	0.02148)	(1301	E 4	13OC1964	C.05741)
(1302	E 5	13OC1964	0.02429)	(1303	E 6	13OC1964	C.00560)	(1304	F 1	11OC1964	0.03704)
(1305	F 2	11OC1964	0.03105)	(1306	F 3	11OC1964	C.03603)	(1307	B 6	N01964	C.21287)
(1308	C 7	6N01964	C.04562)	(1309	C' 1	10N01964	0.14150)	(1310	C' 2	10NO1964	C.11338)
(1311	D 1	8N01964	0.05160)	(1312	D 2	8N01964	C.09002)	(1313	D 3	9NO1964	0.02896)
(1314	D 4	9N01964	0.04306)	(1315	D 5	9NO1964	0.03185)	(1316	D 6	9NO1964	C.01133)
(1317	E 1	6N01964	0.08042)	(1318	E 2	7N01964	0.05327)	(1319	E 3	7N01964	0.01047)
(1320	E 4	7N01964	0.03102)	(1321	E 5	7N01964	0.02554)	(1322	E 6	7NO1964	C.01333)
(1323	F 1	6N01964	0.05854)	(1324	F 2	6N01964	0.04891)	(1325	F 3	6N01964	C.03778)
(1337	C 3	2MR1967	0.00147)	(1338	C 3	28MR1967	0.00264)	(1340	C 7	28MR1967	C.0C218)
(1342	A 4	19AP1967	0.00180)	(1343	A 6	19AP1967	C.00069)	(1345	C 5	25AP1967	C.0C195)
(1346	C 7	21AP1967	0.00534)	(1347	E 2	23AP1967	0.00163)	(1348	E 5	23AP1967	C.0C548)
(1368	A 3	4MY1967	0.00628)	(1371	C 3	4MY1967	0.00462)	(1375	E 3	7MY1967	0.00241)
(1376	E 5	6MY1967	0.01687)	(1409	A 4	23MY1967	0.00298)	(1410	A 6	24MY1967	C.01128)
(1411	C 3	31MY1967	0.00410)	(1414	E 2	28MY1967	0.00336)	(1415	E 3	28MY1967	C.0C225)
(1416	E 5	28MY1967	0.00219)	(1438	E 5	14JN1967	C.C0363)	(1446	A 3	11JL1967	C.00734)
(1448	A 6	10JL1967	0.00354)	(1449	C 3	16JL1967	0.14903)	(1450	C 5	16JL1967	C.0C190)
(1451	C 7	16JL1967	0.00394)	(1452	E 2	14JL1967	0.00213)	(1453	E 3	15JL1967	C.00253)
(1454	E 5	15JL1967	0.03601)	(1504	A 3	28AU1967	0.00741)	(1509	C 5	2SE1967	C.01514)
(1510	C 7	29AU1967	0.00632)	(1511	E 2	1SE1967	0.04298)	(1512	E 3	1SE1967	C.06675)
(1513	E 5	31AU1967	0.29898)	(1534	A 6	19SE1967	0.00931)	(1535	C 7	20SE1967	C.00322)
(1536	E 2	24SE1967	0.22632)	(1537	E 3	24SE1967	0.31916)	(1538	E 5	23SE1967	C.C3867)
(1540	C 5	4OC1967	0.00496)	(1541	E 2	11OC1967	C.22883)	(1542	E 3	11OC1967	C.18308)
(1543	E 5	10OC1967	0.00718)	(1377	GS 1	9MY1967	0.00396)	(1378	GS 2	9MY1967	C.01262)
(1379	GS 3	9MY1967	C.04023)	(1380	GS 4	9MY1967	0.06558)	(1381	GS 5	10MY1967	C.C7632)
(1382	GS 6	10MY1967	0.06661)	(1383	GS 7	10MY1967	0.07218)	(1384	GS 8	10MY1967	C.01294)
(1385	GS 9	10MY1967	C.03296)	(1386	GS10	12MY1967	0.02585)	(1387	GS11	12MY1967	C.C4357)
(1388	GS12	12MY1967	0.03017)	(1389	GS13	12MY1967	0.01289)	(1390	GS14	12MY1967	C.00587)
(1391	GS15	12MY1967	0.00958)	(1393	GS17	13MY1967	C.00274)	(1398	GS22	14MY1967	C.C1214)
(1554	GS 1	3OC1967	0.26329)	(1555	GS 2	3OC1967	0.61794)	(1556	GS 3	3OC1967	C.01043)
(1557	GS 4	3OC1967	0.02990)	(1558	GS 5	4OC1967	C.03567)	(1559	GS 7	4OC1967	C.16087)
(1560	GS 8	4OC1967	0.11335)	(1561	GS 9	4OC1967	C.10565)	(1562	GS10	5OC1967	0.01727)
(1563	GS11	5CC1967	0.01637)	(1564	GS12	5OC1967	0.00165)	(1567	GS15	5OC1967	C.02382)
(1568	GS16	5OC1967	0.00144)	(1569	GS17	5OC1967	0.00297)	(1570	GS18	5OC1967	C.01983)
(1571	GS19	6CC1967	0.00059)	(1574	GS22	6OC1967	0.03164)	(1547	MS 1	2OC1967	C.03992)
(1546	LU 1	2OC1967	0.01000)	(1526	MO 1	20SE1967	0.00569)	(1528	SB 1	20SE1967	C.C1444)
(1530	FR 1	24SE1967	C.24002)	(1545	WL 1	2OC1967	C.00676)	(1549	WC 1	4OC1967	C.04111)
(1427	LU 2	29MY1967	0.01211)	(1352	KW 2	21AP1967	0.00859)	(1404	WQ 2	10MY1967	C.12703)
(1405	ES 2	12MY1967	0.00645)	(1421	CH 2	23MY1967	C.01735)	(1422	GA 2	23MY1967	C.0C511)

Tabellaria fenestrata var. *intermedia* Grun.

Tabellaria fenestrata var. *intermedia* Grunow *in*: Van Heurck, Syn. Diat. Belgique, pl. 52, fig. 6-8. 1881.

Distinguished from the nominate variety by its shorter valves which are usually much wider in girdle view and which usually contain more than 4 septae. Maximum length of observed specimens less than 100μ. Perhaps best treated as a separate species.

713 TAFENEVI TCT NO OF STATIONS 29

(3540	CH	11MY1879	0.07455)	(3541	CH	1FE1881	0.03913)	(46912	CH	AP1947	C.C1150)
(46919	CH	5JN1947	0.00303)	(1449	C 3	16JL1967	0.03439)	(1454	E 5	15JL1967	C.00200)
(1511	E 2	1SE1967	0.00614)	(1513	E 5	31AU1967	C.02027)	(1537	E 3	24SE1967	C.00863)
(1541	E 2	11CC1967	C.00532)	(1542	E 3	11CC1967	C.01017)	(1380	GS 4	9MY1967	C.CC336)
(1381	GS 5	10MY1967	0.C0239)	(1382	GS 6	10MY1967	0.00278)	(1386	GS10	12MY1967	C.00575)
(1388	GS12	12MY1567	0.01207)	(1389	GS13	12MY1967	0.00516)	(1393	GS17	13MY1967	C.CC274)
(1554	GS 1	30C1967	0.00356)	(1555	GS 2	30C1967	0.01412)	(1556	GS 3	30C1967	C.00521)
(1557	GS 4	30C1967	0.00374)	(1558	GS 5	40C1967	C.00793)	(1559	GS 7	40C1967	C.01049)
(1560	GS 8	40C1967	0.00945)	(1574	GS22	60C1967	0.00288)	(1547	MS 1	20C1967	C.00798)
(1548	CA 1	30C1967	0.01272)	(1349	CI 2	19AP1967	0.00359)	(			

Tabellaria flocculosa (Roth) Kütz.

Conferva flocculosa Roth, Catalecta Bot., Fasc. 1, p. 192, pl. 4, fig. 4; pl. 5, fig. 6. 1797.
Tabellaria flocculosa (Roth) Kützing, Bacill., p. 127, pl. 17, fig. 21. 1844.

Cells in girdle view short, rectangular with rounded ends, united by gelatinous pads at the corners into zig-zag colonies. Usually more than 8 conspicuous septae, lying in the valvar plane, are evident in each cell. Valves linear, strongly expanded at the middle and less expanded at the ends. Valves often slightly asymmetric to the transverse axis, being wider at one side of the central expansion than at the other. Valves of specimens from Lake Michigan 15-65μ long, 7-12μ broad at the widest extremity. Striae fine, perpendicular to the midline throughout, 18-20 in 10μ. Axial area narrow, linear, in some instances lanceolately widened at the middle of the valve. At the ends of the valves there are pore fields composed of very fine, irregularly arranged puncta. A conspicuous slime pore is present, usually lying to one side of the axial area at about the level of the beginning of the central expansion. In asymmetric valves the slime pore is usually toward the broader end of the valve. In some populations fine marginal spines are present at the ends of the valves.

714 TAFLCCCU TCT NO OF STATIONS 318

(60973	CH	1876	1.62966)	(3540	CH	11MY1879	17.06192)	(3541	CH	1FE1881	14.47716)
(3507	CH	19FE1881	7.99185)	(46910	CH	OC1945	C.78101)	(46921	CH	23NO1945	1.87028)
(46908	CH	DE1945	5.23666)	(46917	CH	12JA1946	3.15362)	(46915	CH	20FE1946	4.62642)
(46914	CH	19AP1946	3.50443)	(46924	CH	10MY1946	2.24688)	(46923	CH	22NO1946	4.83018)
(46920	CH	20DE1946	2.12282)	(46905	CH	JA1947	8.16644)	(46909	CH	MR1947	8.87938)
(46912	CH	AP1947	2.98954)	(46916	CH	4MY1947	1.10269)	(46906	CH	MY1947	C.56082)
(46919	CH	5JN1947	0.78906)	(46907	CH	JL1947	4.87196)	(46913	CH	6AU1947	C.C5230)
(46922	CH	21AU1947	3.43370)	(46758	EV	5JN1937	3.19521)	(46771	EV	11JN1937	2.26332)
(46743	EV	20JN1937	5.27533)	(46745	EV	3JL1937	12.87356)	(46770	EV	9JL1937	18.53529)
(46764	EV	17JL1937	11.05560)	(46757	EV	25JL1937	7.00977)	(46747	EV	1AU1937	2.77248)
(46763	EV	23AU1937	4.54545)	(46765	EV	30AU1937	12.18070)	(46769	EV	7SE1937	10.94225)
(46752	EV	15SE1937	4.48411)	(46760	EV	22SE1937	4.27397)	(46750	EV	24SE1937	9.23787)
(46744	EV	6CC1937	2.73117)	(46748	EV	13OC1937	0.44833)	(46767	EV	27OC1937	2.92445)
(46749	EV	12MR1938	4.41801)	(46768	EV	16MR1938	1.96972)	(46762	EV	18MR1938	2.24967)
(46751	EV	30MR1938	2.07682)	(46772	EV	18AP1938	3.37828)	(46756	EV	27AP1938	C.89326)
(46759	EV	19MY1938	1.98514)	(46761	EV	27MY1938	3.96817)	(46766	EV	14DE1938	6.65399)
(1223	B 3	18MY1964	13.01664)	(1224	B 4	18MY1964	4.39173)	(1225	C 6	15MY1964	3.56723)
(1226	C 7	16MY1964	6.12633)	(1227	C' 2	13MY1964	7.82981)	(1228	D 2	14MY1964	4.08727)
(1229	D 5	14MY1964	6.66089)	(1230	E 2	16MY1964	7.05290)	(1231	E 3	16MY1964	5.82135)
(1232	E 5	16MY1964	6.45240)	(1233	B 3	5JN2964	21.17119)	(1234	B 3	18JN1964	15.54129)
(1235	C 7	16JN1964	23.72412)	(1439	B 6	5JN1964	13.84615)	(1236	C' 1	8JN1964	22.85203)
(1237	C' 2	8JN1964	11.36891)	(1238	D 3	11JN1964	2.66000)	(1239	D 4	11JN1964	13.32173)

(1240	D 6	10JN1964	12.34833)	(1241	E 2	13JN1964	11.07431)	(1242	E 3	13JN1964	1.78341)
(1243	E 6	13JN1964	13.30076)	(1244	F 1	11JN1964	17.49942)	(1245	F 2	11JN1964	22.26678)
(1246	F 3	11JN1964	19.24341)	(1247	B 3	14JL1964	13.44602)	(1248	B 3	24JL1964	12.00047)
(1440	B 6	11JL1964	14.44522)	(1441	B 6	24JL1964	9.55968)	(1249	C 3	8JL1964	14.25855)
(1250	C 6	10JL1964	14.10072)	(1251	C 7	16JL1964	36.29990)	(1252	C' 1	16JL1964	23.43095)
(1253	C' 2	16JL1964	14.05879)	(1254	D 2	15JL1964	4.82666)	(1255	D 5	15JL1964	2.87460)
(1256	E 2	14JL1964	4.23170)	(1257	E 3	14JL1964	2.17729)	(1258	F 1	6JL1964	12.22361)
(1259	F 2	6JL1964	13.23128)	(1260	F 3	6JL1964	12.83496)	(1261	B 3	2AU1964	11.67674)
(1262	B 3	17AU1964	5.73288)	(1442	B 6	2AU1964	19.10609)	(1443	B 6	16AU1964	5.25837)
(1263	C 7	15AU1964	8.68695)	(1264	C' 1	10AU1964	20.94917)	(1265	C' 2	10AU1964	10.79740)
(1266	D 3	18AU1964	3.19209)	(1267	D 6	18AU1964	16.49373)	(1268	E 2	15AU1964	4.55569)
(1269	E 3	15AU1964	0.64134)	(1270	F 1	10AU1964	11.24574)	(1444	B 6	19SE1964	2.54630)
(1271	C 7	22SE1964	20.56538)	(1272	C' 1	10SE1964	11.49284)	(1273	C' 2	10SE1964	8.28001)
(1274	D 1	17SE1964	10.51002)	(1275	D 2	17SE1964	9.48326)	(1276	D 3	18SE1964	9.38757)
(1277	D 4	18SE1964	15.61532)	(1278	D 6	18SE1964	25.28920)	(1279	E 1	16SE1964	14.84274)
(1280	E 2	16SE1964	8.57785)	(1281	E 3	16SE1964	3.57101)	(1282	E 4	16SE1964	10.08310)
(1283	E 5	16SE1964	7.72343)	(1284	E 6	17SE1964	9.11893)	(1285	F 1	15SE1964	7.74562)
(1286	F 2	15SE1964	8.42820)	(1287	F 3	15SE1964	8.75700)	(1288	B 3	15OC1964	7.46659)
(1445	B 6	14OC1964	18.94977)	(1289	C 7	14OC1964	20.00790)	(1290	C' 1	16OC1964	6.63256)
(1291	C' 2	16OC1964	11.98571)	(1292	D 1	15OC1964	13.56589)	(1293	D 2	15OC1964	15.84756)
(1294	D 3	15OC1964	15.22893)	(1295	D 4	15OC1964	18.72992)	(1296	D 5	14OC1964	19.00302)
(1297	D 6	14OC1964	21.59094)	(1298	E 1	12OC1964	17.34166)	(1299	E 2	12OC1964	12.75526)
(1300	E 3	13OC1964	9.27152)	(1301	E 4	13OC1964	6.80032)	(1302	E 5	13OC1964	6.51875)
(1303	E 6	13OC1964	21.94112)	(1304	F 1	11OC1964	4.49471)	(1305	F 2	11OC1964	4.46814)
(1306	F 3	11OC1964	2.71634)	(1307	B 6	NO1964	18.43700)	(1308	C 7	6NO1964	22.14178)
(1309	C' 1	10NO1964	6.07795)	(1310	C' 2	10NO1964	6.98413)	(1311	D 1	8NO1964	6.68180)
(1312	D 2	8NO1964	8.47431)	(1313	D 3	9NO1964	10.54054)	(1314	D 4	9NO1964	14.06712)
(1315	D 5	9NO1964	13.05732)	(1316	D 6	9NO1964	20.09669)	(1317	E 1	6NO1964	8.04166)
(1318	E 2	7NO1964	9.45532)	(1319	E 3	7NO1964	5.86495)	(1320	E 4	7NO1964	7.52844)
(1321	E 5	7NO1964	6.48024)	(1322	E 6	7NO1964	6.53181)	(1323	F 1	6NO1964	7.90244)
(1324	F 2	6NO1964	8.96746)	(1325	F 3	6NO1964	17.28003)	(1336	C 3	27JA1967	7.27861)
(1337	C 3	2MR1967	4.42393)	(1338	C 3	28MR1967	4.16512)	(1339	C 5	28MR1967	8.29332)
(1340	C 7	28MR1967	1.98518)	(1341	A 3	19AP1967	6.15081)	(1342	A 4	19AP1967	5.81091)
(1343	A 6	19AP1967	1.26442)	(1344	C 3	25AP1967	3.24262)	(1345	C 5	25AP1967	2.18311)
(1346	C 7	21AP1967	1.68240)	(1348	E 5	23AP1967	4.22207)	(1368	A 3	4MY1967	6.37763)
(1369	A 4	4MY1967	1.30456)	(1370	A 6	3MY1967	5.96156)	(1371	C 3	4MY1967	3.39351)
(1372	C 5	5MY1967	3.22741)	(1373	C 7	5MY1967	0.49917)	(1374	E 2	7MY1967	4.81172)
(1375	E 3	7MY1967	5.05306)	(1376	E 5	6MY1967	10.23162)	(1408	A 3	23MY1967	13.77275)
(1409	A 4	23MY1967	5.41570)	(1410	A 6	24MY1967	5.92016)	(1411	C 3	31MY1967	7.75448)
(1412	C 5	31MY1967	2.94638)	(1413	C 7	25MY1967	5.08576)	(1414	E 2	28MY1967	4.93703)
(1415	E 3	28MY1967	3.93488)	(1416	E 5	28MY1967	4.13304)	(1431	A 3	12JN1967	11.53539)
(1432	A 4	13JN1967	3.39736)	(1433	C 3	17JN1967	17.63338)	(1434	C 5	17JN1967	3.97775)
(1435	C 7	13JN1967	5.74622)	(1436	E 2	15JN1967	3.03951)	(1446	A 3	11JL1967	13.52674)
(1447	A 4	11JL1967	3.60217)	(1448	A 6	10JL1967	11.88329)	(1449	C 3	16JL1967	1.33746)
(1450	C 5	16JL1967	2.39931)	(1451	C 7	16JL1967	9.09413)	(1452	E 2	14JL1967	5.81173)
(1453	E 3	15JL1967	0.25782)	(1454	E 5	15JL1967	11.76235)	(1504	A 3	28AU1967	10.54191)
(1505	A 4	28AU1967	4.32856)	(1506	A 6	29AU1967	9.52032)	(1508	C 3	2SE1967	10.35089)
(1509	C 5	2SE1967	3.05844)	(1510	C 7	29AU1967	8.18843)	(1511	E 2	1SE1967	4.08263)
(1512	E 3	1SE1967	0.46725)	(1513	E 5	31AU1967	7.09435)	(1532	A 3	18SE1967	6.20873)
(1533	A 4	19SE1967	7.14882)	(1534	A 6	19SE1967	8.90392)	(1535	C 7	20SE1967	12.84321)
(1536	E 2	24SE1967	6.48961)	(1537	E 3	24SE1967	0.60381)	(1538	E 5	23SE1967	6.96017)
(1539	C 3	4OC1967	6.69216)	(1540	C 5	4OC1967	9.72849)	(1541	E 2	11OC1967	6.70534)
(1542	E 3	11OC1967	0.37632)	(1543	E 5	10OC1967	9.55322)	(1377	GS 1	9MY1967	6.09539)
(1378	GS 2	9MY1967	12.95152)	(1379	GS 3	9MY1967	19.93066)	(1380	GS 4	9MY1967	15.77266)
(1381	GS 5	10MY1967	15.52736)	(1382	GS 6	10MY1967	6.99436)	(1383	GS 7	10MY1967	11.22754)
(1384	GS 8	10MY1967	6.98771)	(1385	GS 9	10MY1967	10.71319)	(1386	GS10	12MY1967	5.22838)
(1387	GS11	12MY1967	4.99049)	(1388	GS12	12MY1967	6.75716)	(1389	GS13	12MY1967	3.60983)
(1390	GS14	12MY1967	4.52143)	(1391	GS15	12MY1967	6.03362)	(1392	GS16	12MY1967	3.23605)
(1393	GS17	13MY1967	4.21872)	(1394	GS18	13MY1967	1.68576)	(1395	GS19	13MY1967	0.45212)
(1396	GS20	13MY1967	0.00666)	(1397	GS21	13MY1967	0.02224)	(1398	GS22	14MY1967	7.65097)
(1554	GS 1	30OC1967	8.71700)	(1555	GS 2	30OC1967	8.65113)	(1556	GS 3	30OC1967	14.45481)
(1557	GS 4	30OC1967	3.40060)	(1558	GS 5	4OC1967	6.65927)	(1559	GS 7	4OC1967	6.60978)
(1560	GS 8	4OC1967	12.56317)	(1561	GS 9	4OC1967	18.48917)	(1562	GS10	5OC1967	8.63473)
(1563	GS11	5OC1967	9.16616)	(1564	GS12	5OC1967	2.30430)	(1565	GS13	5OC1967	0.70987)
(1566	GS14	5OC1967	5.13667)	(1567	GS15	5OC1967	7.11292)	(1568	GS16	5OC1967	0.17171)
(1569	GS17	5OC1967	1.24864)	(1570	GS18	5OC1967	1.24950)	(1571	GS19	6OC1967	0.00761)
(1572	GS20	6OC1967	0.01172)	(1573	GS21	6OC1967	0.01568)	(1574	GS22	6OC1967	7.65115)
(1575	GS28	6OC1967	0.16385)	(1544	MU 1	2OC1967	0.00953)	(1547	MS 1	2OC1967	2.29940)
(1524	MI 1	20SE1967	10.85814)	(1546	LU 1	2OC1967	0.21508)	(1520	HO 1	18SE1967	4.67726)
(1521	SH 1	18SE1967	1.75398)	(1522	BH 1	18SE1967	0.00182)	(1523	RA 1	19SE1967	6.49446)
(1525	PW 1	20SE1967	14.92828)	(1526	MO 1	20SE1967	3.18598)	(1527	TR 1	20SE1967	0.58491)
(1528	SB 1	20SE1967	9.70257)	(1529	KW 1	20SE1967	2.87804)	(1530	FR 1	24SE1967	4.16042)
(1531	GH 1	25SE1967	0.18597)	(1545	WL 1	2OC1967	0.32435)	(1548	CA 1	3OC1967	3.25658)
(1549	MQ 1	4OC1967	10.52487)	(1551	ES 1	5OC1967	0.87068)	(1552	SM 1	6OC1967	0.37636)
(1550	MR 1	5OC1967	0.39648)	(1553	SG 1	6OC1967	0.23502)	(1428	MU 2	29MY1967	0.62671)
(1426	MS 2	29MY1967	3.19160)	(1351	MI 2	21AP1967	0.79441)	(1427	LU 2	29MY1967	8.71671)
(1417	HO 2	22MY1967	2.39270)	(1418	SH 2	22MY1967	17.16951)	(1350	BH 2	19AP1967	0.07929)
(1425	RA 2	25MY1967	9.76041)	(1399	PW 2	5MY1967	4.67900)	(1401	MO 2	6MY1967	2.06961)
(1402	TR 2	6MY1967	1.99264)	(1400	SB 2	6MY1967	3.52633)	(1352	KW 2	21AP1967	2.06150)
(1353	FR 2	23AP1967	11.64557)	(1354	GH 2	25AP1967	0.00141)	(1429	WL 2	29MY1967	2.71791)
(1403	CA 2	10MY1967	11.92624)	(1404	MQ 2	10MY1967	11.58537)	(1405	ES 2	12MY1967	3.92157)
(1407	SM 2	14MY1967	3.34388)	(1349	CI 2	19AP1967	1.26446)	(1419	BU 2	23MY1967	12.88905)
(1420	IH 2	23MY1967	18.85196)	(1421	CH 2	23MY1967	13.60167)	(1422	GA 2	23MY1967	13.89669)
(1423	WA 2	25MY1967	8.90678)	(1424	KN 2	25MY1967	6.39488)	(1430	MC 2	12JN1967	16.18553)

Genus *Thalassiosira* Cleve

Cleve, Bih. K. Svenska Vet.-Akad. Handl., 1(13):6. 1873.

Members of the genus *Thalassiosira* find their primary habitat in marine and brackish-water plankton communities. The species occurring in Lake Michigan are usually associated with areas receiving considerable chloride contamination.

Thalassiosira fluviatilis Hust.

Thalassiosira fluviatilis Hustedt, Ber. Deutsch. Bot. Ges., 43:565, figs. 1-4. 1926.

Cells short cylindric with either concave or convex valve faces. Specimens from Lake Michigan 12-27μ in diameter. Ornamentation of the valve surface composed of fine areolae which are arranged in single, more or less sinuous, rows of varying lengths. A corona of short submarginal spines, about 14 in 10μ, is present and in addition a single (very rarely 2 or 3) much larger spine arises just interior to the level of the smaller spines. Usually 2-5 more or less conspicuous slime pores occur around the center of the valve about one-fourth the distance from the center to the edge of the valve.

Previous records indicate that this species is a halophilous freshwater form of wide distribution. It is occasionally in samples from regions of Lake Michigan subjected to chloride contamination. In rare instances it occurs in considerable abundance.

715 THFLUVIA TCT NO OF STATIONS 4

(1544	MU 1	20C1967	0.00238)	(1522	BH 1	18SE1967	0.11123)	(1531	GH 1	25SE1967	0.02536)
(1350	BH 2	19AP1967	0.00220)	(							

Thalassiosira levanderi Van Goor

Thalassiosira levanderi Van Goor, Rec. Trav. Bot. Néerlandis, 21:322, fig. 11. 1924.

Cells cylindrical with slightly convex valve surfaces, specimens from Lake Michigan 8-19μ in diameter. Ornamentation of the valve surface composed of irregularly-arranged areolae, about 20-22 in 10μ near the center of the valve, becoming finer near the margins. At the margins of the valve there is a corona of spines, about 10 in 10μ. These spines appear to be of two varieties, larger, tubular spines rather evenly spaced with 3-4 smaller, apparently solid spines between. Two to three conspicuous slime pores occur near the center of the valve.

Only occasional specimens of this entity have been noted in collections from Lake Michigan.

Coll: 1197.

Thalassiosira visurgis Hust.

Thalassiosira visurgis Hustedt, Abh. Naturw. Ver. Bremen, 34(3):207, pl. 1, figs. 1-4. 1957.

Cells cylindric with slightly convex valve faces. Specimens from Lake Michigan 14-23μ in diameter. Ornamentation of the valve surface composed of more or less radially-arranged areolae, about 16 in 10μ near the center of the valve, becoming slightly finer near the margins. A submarginal corona of small spines, 14-15 in 10μ, is present and in addition 2 (rarely 1-4) much larger spines arise just interior to the circlet of smaller spines. These spines are usually about 120° from one another. Usually a single slime pore is present near the geometric center of the valve.

The limited number of previous reports available indicates that this entity occurs in inland waters of relatively high dissolved solids content as well as in brackish water.

717 THSPECOA TOT NO OF STATIONS 12

(1317	E 1	6NO1964	0.00191)	(1557	GS 4	30C1967	C.00747)	(1559	GS 7	40C1967	C.C0350)
(1560	GS 8	40C1967	0.00472)	(1563	GS11	50C1967	0.00234)	(1575	GS28	60C1967	C.00129)
(1544	MU 1	20C1967	0.00238)	(1531	GH 1	25SE1967	C.20287)	(1545	WL 1	20C1967	C.0C676)
(1548	CA 1	30C1967	0.01272)	(14C1	MC 2	6MY1967	C.00588)	(1422	GA 2	23MY1967	C.00511)

Genus *Tropidoneis* Cleve
Cleve, Diatomist, 1:22. 1890.

Although most members of the genus *Tropidoneis* are restricted to marine or brackish-water habitats, the single representative that occurs in our collections is widely reported from strictly freshwater situations. It reaches its maximum abundance in benthic communities but apparently adopts planktonic existence with facility and is often taken in plankton collections.

Tropidoneis lepidoptera var. *proboscidea* Cleve

Tropidoneis lepidoptera var. *proboscidea* Cleve, K. Svenska Vet.-Akad. Handl., Ny Följd, 26(2):25. 1894.

718 TRLEPIVP TOT NO OF STATIONS 5

(46750	EV	24SE1937	0.0C471)	(46762	EV	18MR1938	0.02206)	(1571	GS19	60C1967	C.CC059)
(1553	SG 1	60C1967	0.00734)	(1421	CH 2	23MY1967	0.01735)	(			

Species *incertae sedis*

Tropidoneis sp. #1.

715 TRSPECOA TOT NO OF STATIONS 2

(1240	D 6	1CJN1964	0.0C153)	(1268	E 2	15AU1964	0.00274)	(

73.202 SEC. CPU TIME

CONCLUSIONS

It is apparent from the areal and temporal distribution of dominant plankton diatoms in Lake Michigan that certain entities are associated with certain broadly defined conditions of water quality. Certain taxa, notably *Cyclotella comta*, *C. operculata*, *C. ocellata* and *Melosira distans*, are apparently relatively important constituents of only extremely oligotrophic floras and are rapidly replaced in disturbed portions of the lake. These entities, with the exception of *M. distans*, are still found in the offshore flora of Lake Michigan although they appear to be relatively less abundant than they previously were, particularly in the southern basin of the lake. Reduction in the relative abundance of these entities is among the first indications of disturbance of the ecosystem that appears in phytoplankton assemblages.

Several entities which are relatively more abundant in the plankton flora appear to be somewhat more tolerant of changing conditions but are rapidly reduced in abundance with extensive chemically measurable change. Notable examples of this tendency are found among some of the modern offshore plankton dominants such as *Tabellaria fenestrata*, *Melosira islandica*, *Rhizosolenia eriensis*, *Stephanodiscus transilvanicus*, *Synedra ulna* var. *chaseana*, *C. michiganiana* and *C. kuetzingiana*. Decline in relative abundance of these taxa is the first indication of serious disturbance of areas within the Lake Michigan ecosystem.

Other entities which are relatively abundant in undisturbed portions of the lake appear to be favored by slight increases in trophic level and flourish in moderately disturbed portions of the lake. They initially show an increase in relative abundance only to decline if pollution increases. Some notable examples of this tendency are *Asterionella formosa*, *Fragilaria crotonensis*, *Stephanodiscus alpinus*, *S. minutus*, *S. niagarae*, *S. hantzschii*, *Synedra delicatissima*, *S. ulna* var. *danica*, *S. ostenfeldii* and *S. filiformis*. Decline in the relative abundance of these species in the plankton flora is usually accompanied by obvious decline in water quality and disturbance in higher trophic levels of the ecosystem such as the fish and benthic invertebrate faunas.

A number of species which were formerly apparently able to thrive only in naturally eutrophic estuaries and inshore areas of the lake are favored by increasing pollution and are able to flourish in highly disturbed portions of the open lake. Some of the more abundant entities showing this pattern of distribution are *Melosira granulata* and its varieties, *Fragilaria capucina* and its varieties, *F. construens*, *F. intermedia* and *Stephanodiscus tenuis*. Within this group *Melosira granulata* appears to be less successful in the offshore flora than might be expected from its usual dominance in smaller eutrophic lakes, probably due to its temperature tolerance. Its varieties appear to favor even higher trophic levels and become most abundant in extremely disturbed environments. On the other hand, the varieties of *Fragilaria capucina* appear to be better

adapted to existence in the offshore flora than the nominate variety. The species in this group presently are dominant in highly disturbed areas such as the nearshore waters of the southern basin of Lake Michigan and Green Bay. Most of them are best adapted to the ecosystem of smaller lakes, and with further disturbance of the system they will likely be replaced by entities in the following category. The single exception to this is *Stephanodiscus tenuis* which is well adapted to existence in the Great Lakes and which has become dominant in the plankton floras of Lake Ontario and Lake Erie.

The final general group of dominant plankton species includes those taxa which were apparently not able to live in Lake Michigan in its original condition and which have been introduced following pollution. Included in this group are such species as *Asterionella bleakleyi*, *Diatoma tenue* var. *elongatum*, *Stephanodiscus binderanus*, *S. subtilis*, *Nitzschia dissipata* and finally the species of *Thalassiosira* and *Coscinodiscus* now present. Within this group *Diatoma tenue* var. *elongatum*, *Nitzschia dissipata*, *Stephanodiscus binderanus* and *S. subtilis* first appear in our samples from the late 1930's. Ahlstrom (1936) reported *Diatoma tenue* var. *elongatum* from samples taken in the early 1930's and it is possible that some of the populations he reported as *Stephanodiscus hantzschii* may belong to either *S. binderanus* or *S. subtilis*. *Nitzschia dissipata* is a very widely distributed organism and seems to become moderately abundant in eutrophic lakes in many localities. Perhaps the most interesting taxon in this group from the standpoint of direct effects on water quality is *S. binderanus*. From the time of its introduction, probably sometime in the early 1930's, it increased in abundance to the point that it caused serious problems with short filter runs at the Chicago filtration plant in the mid and late 1950's (Vaughn 1961). At the present time it is dominant in the spring flora at some stations in the extreme southern basin and in Green Bay. It also seems to be increasing at the offshore stations as a considerable increase was noted between comparable stations in 1964 and 1967. It should be pointed out that estimates of the increase in abundance in this particular nuisance organism are probably highly conservative because its peak abundance is associated with the development of the thermal bar (Stoermer 1968). The final series of taxa, members of the genera *Thalassiosira* and *Coscinodiscus*, which appear to have been introduced into Lake Michigan sometime after 1945, apparently represent the end members of the pollution sequence in the Great Lakes, so far as the plankton diatom flora is concerned. At the present time the distribution of these entities in Lake Michigan is quite restricted. *Coscinodiscus subsalsus* has become one of the dominant species in Lake Erie and can be expected to increase dramatically as pollution of the lake continues.

Consideration of distribution and relative abundance of the major components of the plankton flora leads one to the conclusion that Lake Michigan is probably at the present time about at the "break point" between rather moderate and transient algal nuisances, largely confined to the inshore waters, and drastic and most likely irreversible changes in the entire ecosystem. As pointed out above, all of the plankton diatoms associated with extreme water quality degradation in the Great Lakes

system are now present in Lake Michigan. While the end members of the sequence are now present in only negligible numbers, the apparently accelerating increase in *S. binderanus* is disturbing both from the standpoint of its direct effect on water quality and because of the effects on the total system its presence indicates. Based on our qualitative evaluation of floristic changes in Lake Michigan it appears that reversal of the present trends will depend largely upon actions taken within the next, at most, ten years. It should be emphasized here that the samples available to us tend to introduce a conservative bias to these considerations. The early samples are all from the area which was earliest and most severely affected. Many of our recent samples come from the areas of the lake furthest removed from, and least affected by man's activities. This, unfortunately, shows only the worst conditions in Lake Michigan at the early dates and a spectrum including the best conditions in the recent samples. While local pollution problems affecting the qualitative aspects of the plankton diatom flora have been present for a long time, it should be pointed out that the floras of these inshore areas have now been very drastically altered and, more importantly, that the effects of pollution now are becoming increasingly evident throughout the system.

The areal distribution of the major plankton dominant taxa follows the trends one would expect from consideration of the location of major effluent sources with one striking exception. The plankton floras of southern Green Bay and local areas surrounding harbors and major stream mouths most strongly differ from the flora of the open lake. The extreme southern crescent of the lake, from Chicago to Benton Harbor, Michigan, is also obviously and strongly affected. Somewhat surprisingly, it also appears that the Ludington-Manistee-Frankfort area of the northern Michigan coast is apparently quite substantially disturbed. From the qualitative aspects of the flora it is suggested that this disturbance is largely the result of shifts in the conservative element balance rather than particularly high nutrient levels. From considerations of effluent sources and the morphometry of Lake Michigan, it is tempting to assume that the southern basin of the lake might be much more strongly affected by pollution than the northern basin. Our results tend to indicate that this is only partially true. It appears that the nearshore floras of the southern basin are more strongly affected than similar areas in the northern basin. On the other hand, more recent blooms of introduced organisms appear at stations in the northern basin also.

One of the striking observations from the present study is the large number of rare species that were recorded from our collections. We entered this study with the apparently rather naive assumption that the offshore plankton of Lake Michigan would not be available to other than euplanktonic forms and thus the plankton assemblages would resemble true oceanic plankton more than limnoplankton. This assumption proved to be, at best, only partially correct. On a quantitative basis it is true that ten or less entities usually comprise more than ninty percent of the total assemblage. It is also true, however, that these major dominants rarely exceed twenty percent of the species noted at a given station. In a given

assemblage a certain fraction of these minor species are euplanktonic forms present in low abundance. In almost all collections there are also sizable fractions of entities that are obviously derived from habitats other than the plankton. As would be expected, these entities are most abundant in collections taken from shallow water areas but they are also represented in the majority of collections taken even from midlake stations. The significance of this component of the flora is very difficult to determine. Included in it are a large number of apparent new records for the United States and a number of entities which are apparently undescribed. I have previously speculated (1967) that one of the effects of nutrient pollution in Lake Michigan is to render the plankton environment more accessible to entities which find their primary habitat in benthic assemblages. The results of this study would tend to support this contention. Any assessment of the impact this component of the flora has on practical problems in water quality control, or even of their value as indicators of environmental conditions, is extremely difficult at the present time. A good deal of further work will be necessary before this information can be reduced to a useful context. It is, however, obvious that any realistic attempt to treat the factors operational in the Great Lakes ecosystem must account for this component of the biota which has never, as yet, been investigated in a systematic manner.

Prior to 1966 slightly less than 350 taxa of diatoms had been reported from Lake Michigan. Removal of the obvious synonyms from this list reduces this number to something less than 300. In the present study more than 700 morphologically distinguishable entities were noted. Considering the fact that only plankton collections, which are depauperate in species compared to periphyton collections, were examined, it is obvious that our knowledge of the biological operators at this level of the Lake Michigan ecosystem is still quite primitive. There is still need for critical taxonomic revision of some of the genera present. This is particularly true of some of the highly variable planktonic genera such as *Synedra* and *Fragilaria*. Even for the entities well enough known so that it is possible to make firm statements about their taxonomic relationships, there is still a critical lack of knowledge regarding life cycles and quantitative environmental requirements. Of the entities treated here, the complete life cycles of less than twenty are fully known. For even fewer is there any trustworthy experimental information regarding nutrient and other environmental requirements. If we are ever to be able to gain the necessary insight to understand and manage large aquatic ecosystems, such as Lake Michigan, such information must be forthcoming. It is hoped that this study will furnish part of the necessary background to implement such studies.

When working with large, complex and variable assemblages as was necessary in this study, it is tempting to seek some measure of the distribution of populations within the various assemblages which will furnish insight into the factors affecting them. One of the obvious statistical devices to employ in this context is diversity analysis. One approach to this has been used by a group at the Academy of Natural Sciences of Philadelphia with apparent success in determining the effects of pollution on

stream diatom populations (Patrick, Hohn and Wallace 1954; Patrick 1963, 1964). In the present study, preliminary analysis of the method utilized by these workers indicated serious difficulty in applying it to plankton diatom populations in Lake Michigan. Their diversity calculations are based on the log normal population model advanced by Preston (1948). Hutchinson (1967) has pointed out that in plankton assemblages tolerable fit to a log normal curve may be achieved but that the mode remains at the origin even if very large assemblages are considered. In our analysis we adopted an information theory based diversity estimate which has been used, with apparent success, in determining shifts in subfossil diatom populations (Stockner and Benson 1967; Stoermer and Yang 1968). The results of this analysis are presented in appendix "A." Although this manipulation brought to light some points of interest, it is emphasized that diversity alone furnishes very little information regarding the trophic status of Lake Michigan plankton diatom populations. If all the assemblages are considered, the modal diversity values fall at 1.80 and the modal redundancy values fall at 0.60. If localities are considered it is apparent that the extremes, both high and low, of diversity and redundancy are found in harbor collections. If the offshore stations are considered it is apparent that the range of diversity values recorded at a given sampling station on successive sampling dates is, in most instances, fully as great as the difference between any two offshore sampling stations at a given date. On the basis of our observations there is a slight tendency for the average diversity, as measured by the index employed, to increase with eutrophication in Lake Michigan and for redundancy values to be reduced. This picture is complicated by the fact that most areas of the lake that are appreciably affected are also in nearshore localities which are more easily invaded by entities arising from benthic communities.

The following picture emerges from our consideration of diversity plankton diatom assemblages in Lake Michigan. Before the influence of man's activities, nutrients were at such low levels that many potential occupants of the habitat were effectively excluded. This is reflected in assemblages of rather low diversity. In addition plankton populations are strongly affected by seasonal succession. The dominant populations wax and wane during the seasonal cycle and these shifts are strongly reflected in diversity estimates derived from samples taken at successive points in time. It will be noted that the spring bloom tends to depress diversity and the progression of this bloom can be traced from south to north during 1964 and 1967 by reference to the diversity values given in appendix "A." During this stage in succession average diversity values will be low and extremes, both high and low, will be minimized. With addition of nutrients to such an environment it will be rendered available to more taxa, but the added nutrients will also allow increased population densities of the dominant taxa during blooms. This produces the effect that we presently see in Lake Michigan. There is a slight average increase in diversity but the extreme high and low values found in specific spot samples both exceed those found in the unaltered environment. As further nutrients are added, the favored species will occur in increasing densities but fewer taxa will be added to the total assemblage.

This would produce further spread in the possible values from spot samples, but average diversity values from many samples taken during a given season would closely approximate the values derived from samples from the unaltered environment. With gross pollution the plankton habitat would be denied to many species and those tolerant of such conditions would occur in very high density, hence diversity would be strongly depressed.

In previous studies related to water quality, diversity information has largely been used to detect exactly these conditions. This would certainly not be a viable context for the Great Lakes. Because of the extremely long residency time of water in the lakes and because their main utility lies in their aesthetic appeal and as a source for very high-quality potable water, adequate indicative criteria of water quality should be based on more subtle assessments. If the problem of time course considerations could be escaped, diversity measurements would be of much greater value in plankton studies. It should be pointed out that this is exactly the case in studies of fossil assemblages where an integration of the yearly floristic succession is obtained. It would appear that this is the reason why diversity measurements are a much more satisfactory tool in these studies.

SUMMARY

1. The present study shows a considerably more diverse diatom flora in Lake Michigan than had been reported previously. Contrary to expectations, a substantial number of the entities taken in plankton collections are obviously derived from benthic communities.

2. There has been an increase in the relative numbers of entities associated with degradation of water quality during the period of study. Certain entities associated with moderate to high levels of pollution which were not noted in earlier collections were apparently introduced prior to 1937 and now cause nuisances in certain inshore areas and are becoming increasingly abundant at offshore stations throughout the lake. Certain entities associated with extreme degradation of water quality in the Great Lakes system were introduced into Lake Michigan between 1947 and 1964. Although now present in only low numbers, they indicate the pollution of Lake Michigan is reaching critical levels.

3. Extreme differences exist, particularly at certain times of the year, between the coastal areas and open waters of the lake in terms of both abundance and species composition of the phytoplankton flora.

4. On the basis of the plankton diatom assemblages present, it appears that the most strongly affected areas of Lake Michigan are: the extreme southern crescent of the lake, from Chicago, Illinois, to Benton Harbor, Michigan; the southern portion of Green Bay; the northern Michigan coast in the Ludington-Manistee-Frankfort area. In addition, local problems exist around most of the major harbors.

5. Our study suggests that diversity estimates, based on single plankton collections, offer relatively little information regarding the condition of the waters sampled.

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Appendix A

List of Collections

Collections listed without alphabetical prefix are housed in the collection of the Great Lakes Research Division. Those with the prefix ANSP are the property of and are housed at the Academy of Natural Sciences, Philadelphia. In the case of collections in which the diatom assemblage has been analyzed in detail the following characteristics are listed: the total number of species present, the total number of specimens in the assemblage, an estimate of diversity computed as $H = -\sum_{i=1}^{S} pi \ln pi$ where pi represents an estimate of the proportion of the ith species, and an estimate of redundancy computed as $R = 1 - H/\ln S$. Other collections have been examined in greater or lesser detail but have not been counted.

804 Shore plankton from beach near entrance to Wilderness St. Park, Michigan. Coll: E. F. Stoermer. 28 Sept. 1965.

810 Surface plankton from north side of Mackinaw City Public Dock, Mackinaw City, Michigan. Coll: E. F. Stoermer. 28 Sept. 1965.

826 Surface plankton from river side of breakwater, Elk River. Coll: E. F. Stoermer. 29 Sept. 1965.

827 Surface plankton from Lake Michigan side of breakwater, Elk River, Michigan. Coll: E. F. Stoermer. 29 Sept. 1965.

841 Surface plankton, Muskegon Lake, Michigan, near harbor entrance. Coll: E. F. Stoermer. 4 Oct. 1965.

842 Surface plankton, Lake Michigan, 7 mi at 210° from White Lake, Michigan, inlet, 9 mi 300° from Muskegon, Michigan, inlet. Coll: E. F. Stoermer. 5 Oct. 1965.

844 Plankton, surface, Station A-3. 42°05'30"N; 86°43'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

845 Plankton, 5 meters, Station A-3. 42°05'30"N; 86°43'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

846 Plankton, 15 meters, Station A-3. 42°05'30"N; 86°43'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

847 Plankton, surface, Station A-4. 42°03'30"N; 87°06'30"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

848 Plankton, 5 meters, Station A-4. 42°03'30"N; 87°06'30"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

849 Plankton, 15 meters, Station A-4. 42°03'30"N; 87°06'30"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

850 Plankton, surface, Station A-6. 41°52'00"N; 87°27'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

851 Plankton, 5 meters, Station A-6. 41°52'00"N; 87°27'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

852 Plankton, 15 meters, Station A-6. 41°52'00"N; 87°27'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

853 Plankton, surface, Station C-3. 42°49'10"N; 86°28'25"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

854 Plankton, 5 meters, Station C-3. 42°49'10"N; 86°28'25"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

855 Plankton, 15 meters, Station C-3. 42°49'10"N; 86°28'25"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

856 Plankton, surface, Station C-5. 42°49'00"N; 86°50'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

857 Plankton, 5 meters, Station C-5. 42°49'00"N; 86°50'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

858 Plankton, 15 meters, Station C-5. 42°49'00"N; 86°50'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

859 Plankton, surface, Station C-7. 42°47'30"N; 87°34'30"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

860 Plankton, 5 meters, Station C-7. 42°47'30"N; 87°34'30"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

861 Plankton, 15 meters, Station C-7. 42°47'30"N; 87°34'30"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

862 Plankton, surface, Station D-2. 43°56'00"N; 86°39'30"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

863 Plankton, 5 meters, Station D-2. 43°56'00"N; 86°39'30"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

864 Plankton, 15 meters, Station D-2. 43°56'00"N; 86°39'30"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

865 Plankton, surface, Station D-4. 43°48'00"N; 87°03'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

866 Plankton, 5 meters, Station D-4. 43°48'00"; 87°03'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

867 Plankton, 15 meters, Station D-4. 43°48'00"N; 87°03'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

868 Plankton, surface, Station D-5. 43°38'40"N; 87°31'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

869 Plankton, 5 meters, Station D-5. 43°38'40"N; 87°31'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

870 Plankton, 15 meters, Station D-5. 43°38'40"N; 87°31'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

871 Plankton, surface, Station E-2. 44°37'00"N; 86°21'42"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

872 Plankton, 5 meters, Station E-2. 44°37'00"N; 86°21'42"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

873 Plankton, 15 meters, Station E-2. 44°37'00"N; 86°21'42"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

874 Plankton, surface, Station E-3. 44°34'00"N; 86°40'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

875 Plankton, 5 meters, Station E-3. 44°34'00"N; 86°40'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

876 Plankton, 15 meters, Station E-3. 44°34'00"N; 86°40'00"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

877 Plankton, surface, Station E-5. 44°25'30"N; 87°10'18"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

878 Plankton, 5 meters, Station E-5. 44°25'30"N; 87°10'18"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

879 Plankton, 15 meters, Station E-5. 44°25'30"N; 87°10'18"W. Coll: E. F. Stoermer. 12 Nov. 1965 (500 ml).

883 #25 net surface plankton, 8 mi. at 269° off Grand Haven, Michigan. Coll: E. F. Stoermer. 12 Jan. 1966.

896 Plankton from Grand River in town of Spring Lake, Ottawa County, Michigan. Coll: E. F. Stoermer. 13 April 1966.

898 Plankton, surface, Station A-3. 42°05'30"N; 86°43'00"W. Coll: E. F. Stoermer. 28 March 1966 (500 ml).

899 Plankton, 5 meters, Station A-3. 42°05'30"N; 86°43'00"W. Coll: E. F. Stoermer. 28 March 1966 (500 ml).

900 Plankton, 15 meters, Station A-3. 42°05'30"N; 86°43'00"W. Coll: E. F. Stoermer. 28 March 1966 (500 ml).

901 Plankton, surface, Station A-4. 42°03'30"N; 87°06'30"W. Coll: E. F. Stoermer. 28 March 1966 (500 ml).

902 Plankton, 5 meters, Station A-4. 42°03'30"N: 87°06'30"W. Coll: E. F. Stoermer. 28 March 1966 (500 ml).

903 Plankton, 15 meters, Station A-4. 42°03'30"N: 87°06'30"W. Coll: E. F. Stoermer. 28 March 1966 (500 ml).

904 Plankton, surface, Station A-6. 41°52'00"N; 87°27'00"W. Coll: E. F. Stoermer. 28 March 1966 (500 ml).

905 Plankton, 5 meters, Station A-6. 41°52'00"N; 87°27'00"W. Coll: E. F. Stoermer. 28 March 1966 (500 ml).

906 Plankton, 15 meters, Station A-6. 41°52'00"N; 87°27'00"W. Coll: E. F. Stoermer. 28 March 1966 (500 ml).

907 Plankton, surface, Station C-3. 42°49'10"N; 86°28'25"W. Coll: E. F. Stoermer. 20 March 1966 (500 ml).

908 Plankton, 5 meters, Station C-3. 42°49'10"N; 86°28'25"W. Coll: E. F. Stoermer. 20 March 1966 (500 ml).

909 Plankton, 15 meters, Station C-3. 42°49'10"N; 86°28'25"W. Coll: E. F. Stoermer. 20 March 1966 (500 ml).

910 Plankton, surface, Station C-5. 42°49'00"N; 86°50'00"W. Coll: E. F. Stoermer. 20 March 1966 (500 ml).

911 Plankton, 5 meters, Station C-5. 42°49'00"N; 86°50'00"W. Coll: E. F. Stoermer. 20 March 1966 (500 ml).

912 Plankton, 15 meters, Station C-5. 42°49'00"N; 86°50'00"W. Coll: E. F. Stoermer. 20 March 1966 (500 ml).

913 Plankton, surface, Station C-7. 42°47'30"N; 87°34'30"W. Coll: E. F. Stoermer. 20 March 1966 (500 ml).

914 Plankton, 5 meters, Station C-7. 42°47'30"N; 87°34'30"W. Coll: E. F. Stoermer. 20 March 1966 (500 ml).

915 Plankton, 15 meters, Station C-7. 42°47'30"N; 87°34'30"W. Coll: E. F. Stoermer. 20 March 1966 (500 ml).

916 Plankton, surface, Station D-2. 43°56'00"N; 86°39'30"W. Coll: E. F. Stoermer. 3 April 1966 (500 ml).

917 Plankton, 5 meters, Station D-2. 43°56'00"N; 86°39'30"W. Coll: E. F. Stoermer. 3 April 1966 (500 ml).

918 Plankton, 15 meters, Station D-2. 43°56'00"N; 86°39'30"W. Coll: E. F. Stoermer. 3 April 1966 (500 ml).

919 Plankton, surface, Station D-4. 43°48'00"N; 87°03'00"W. Coll: E. F. Stoermer. 3 April 1966 (500 ml).

920 Plankton, 5 meters, Station D-4. 43°48'00"N; 87°03'00"W. Coll: E. F. Stoermer. 3 April 1966 (500 ml).

921 Plankton, 15 meters, Station D-4. 43°48'00"N; 87°03'00"W. Coll: E. F. Stoermer. 3 April 1966 (500 ml).

922 Plankton, surface, Station D-5. 43°38'40"N; 87°31'00"W. Coll: E. F. Stoermer. 3 April 1966 (500 ml).

923 Plankton, 5 meters, Station D-5. 43°38'40"N; 87°31'00"W. Coll: E. F. Stoermer. 3 April 1966 (500 ml).

924 Plankton, 15 meters, Station D-5. 43°38'40"N; 87°31'00"W. Coll: E. F. Stoermer. 3 April 1966 (500 ml).

925 Plankton, surface, Station E-2. 44°37'00"N; 86°21'42"W. Coll: E. F. Stoermer. 6 April 1966 (500 ml).

926 Plankton, 5 meters. Station E-2. 44°37'00"N; 86°21'42"W. Coll: E. F. Stoermer. 6 April 1966 (500 ml).

927 Plankton, 15 meters, Station E-2. 44°37'00"N; 86°21'42"W. Coll: E. F. Stoermer. 6 April 1966 (500 ml).

928 Plankton, surface, Station E-3. 44°34'00"N; 86°40'00"W. Coll: E. F. Stoermer. 6 April 1966 (500 ml).

929 Plankton, 5 meters, Station E-3. 44°34'00"N; 86°40'00"W. Coll: E. F. Stoermer. 6 April 1966 (500 ml).

930 Plankton, 15 meters, Station E-3. 44°34'00"N; 86°40'00"W. Coll: E. F. Stoermer. 6 April 1966 (500 ml).

931 Plankton, surface, Station E-5. 44°25'30"N; 87°10'18"W. Coll: E. F. Stoermer. 6 April 1966 (500 ml).

932 Plankton, 5 meters, Station E-5. 44°25'30"N; 87°10'18"W. Coll: E. F. Stoermer. 6 April 1966 (500 ml).

933 Plankton, 15 meters, Station E-5. 44°25'30"N; 87°10'18"W. Coll: E. F. Stoermer. 6 April 1966 (500 ml).

938 Plankton, surface, Station A-3. 42°05'30"N; 86°43'00"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

939 Plankton, 5 meters, Station A-3. 43°05'30"N; 86°43'00"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

940 Plankton, 15 meters, Station A-3. 42°05'30"N; 86°43'00"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

941 Plankton, surface, Station A-4. 42°03'30"N; 87°06'30"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

942 Plankton, 5 meters, Station A-4. 42°03'30"N; 87°06'30"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

943 Plankton, 15 meters, Station A-4. 42°03'30"N; 87°06'30"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

944 Plankton, surface, Station A-6. 41°52'00"N; 87°27'00"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

945 Plankton, 5 meters, Station A-6. 41°52'00"N; 87°27'00"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

946 Plankton, 15 meters, Station A-6. 41°52'00"N; 87°27'00"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

947 Plankton, surface, Station B-3. 42°24'00"N; 86°35'20"W. Coll: C. F. Powers. 25 April 1966 (500 ml).

948 Plankton, 5 meters, Station B-3. 42°24'00"N; 86°35'20"W. Coll: C. F. Powers. 25 April 1966 (500 ml).

949 Plankton, 15 meters, Station B-3. 42°24'00"N; 86°35'20"W. Coll: C. F. Powers. 25 April 1966 (500 ml).

950 Plankton, surface, Station B-4. 42°23'30"N; 87°01'30"W. Coll: C. F. Powers. 25 April 1966 (500 ml).

951 Plankton, 5 meters, Station B-4. 42°23'30"N; 87°01'30"W. Coll: C. F. Powers. 25 April 1966 (500 ml).

952 Plankton, 15 meters, Station B-4. 42°23'30"N; 87°01'30"W. Coll: C. F. Powers. 25 April 1966 (500 ml).

953 Plankton, surface, Station B-6. 42°22'30"N; 87°30'00"W. Coll: C. F. Powers. 25 April 1966 (500 ml).

954 Plankton, 5 meters, Station B-6. 42°22'30"N; 87°30'00"W. Coll: C. F. Powers. 25 April 1966 (500 ml).

955 Plankton, 15 meters, Station B-6. 42°22'30"N; 87"30'00"W. Coll: C. F. Powers. 25 April 1966 (500 ml).

956 Plankton, surface, Station C-3. 42°49'10"N; 86°28'25"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

957 Plankton, 5 meters, Station C-3. 42°49'10"N; 86°28'25"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

958 Plankton, 15 meters, Station C-3. 42°49'10"N; 86°28'25"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

959 Plankton, surface, Station C-5. 42°49'00"N; 86°50'00"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

960 Plankton, 5 meters, Station C-5. 42°49'00"N; 86°50'00"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

961 Plankton, 15 meters, Station C-5. 42°49'00"N; 86°50'00"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

962 Plankton, surface, Station C-7. 42°47'30"N; 87°34'30"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

963 Plankton, 5 meters, Station C-7. 42°47'30"N; 87°34'30"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

964 Plankton, 15 meters, Station C-7. 42°47'30"N; 87°34'30"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

965 Plankton, surface, Station D-2. 43°56'00"N; 86°39'30"W. Coll. E. F. Stoermer. 28 April 1966 (500 ml).

966 Plankton, 5 meters, Station D-2. 43°56'00"N; 86°39'30"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

967 Plankton, 15 meters, Station D-2. 43°56'00"N; 86°39'30"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

968 Plankton, surface, Station D-4. 43°48'00"N; 87°03'00"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

969 Plankton, 5 meters, Station D-4. 43°48'00"N; 87°03'00"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

970 Plankton, 15 meters, Station D-4. 43°48'00"N; 87°03'00"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

971 Plankton, surface, Station D-5. 43°38'40"N; 87°31'00"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

972 Plankton, 5 meters, Station D-5. 43°38'40"N; 87°31'00"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

973 Plankton, 15 meters, Station D-5. 43°38'40"N; 87°31'00"W. Coll: E. F. Stoermer. 28 April 1966 (500 ml).

974 Plankton, surface, Station E-2. 44°37'00"N; 86°21'42"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

975 Plankton, 5 meters, Station E-2. 44°37'00"N; 86°21'42"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

976 Plankton, 15 meters, Station E-2. 44°37'00"N; 86°21'42"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

977 Plankton, surface, Station E-3. 44°34'00"N; 86°40'00"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

978 Plankton, 5 meters, Station E-3. 44°34'00"N; 86°40'00"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

979 Plankton, 15 meters, Station E-3. 44°34'00"N; 86°40'00"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

980 Plankton, surface, Station E-5. 44°25'30"N; 87°10'18"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

981 Plankton, 5 meters, Station E-5. 44°25'30"N; 87°10'18"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

982 Plankton, 15 meters, Station E-5. 44°25'30"N; 87°10'18"W. Coll: E. F. Stoermer. 26 April 1966 (500 ml).

983 Plankton, surface, Station A-3. 42°05'30"N; 86°43'00"W. Coll: E. F. Stoermer. 15 May 1966 (500 ml).

984 Plankton, 5 meters, Station A-3. 42°05'30"N; 86°43'00"W. Coll: E. F. Stoermer. 15 May 1966 (500 ml).

985 Plankton, 15 meters, Station A-3. 42°05'30"N; 86°43'00"W. Coll: E. F. Stoermer. 15 May 1966 (500 ml).

986 Plankton, surface, Station A-4. 42°03'30"N; 87°06'30"W. Coll: E. F. Stoermer. 15 May 1966 (500 ml).

987 Plankton, 5 meters, Station A-4. 42°03'30"N; 87°06'30"W. Coll: E. F. Stoermer. 15 May 1966 (500 ml).

988 Plankton, 15 meters, Station A-4. 42°03'30"N; 87°06'30"W. Coll: E. F. Stoermer. 15 May 1966 (500 ml).

989 Plankton, surface, Station A-6. 41°52'00"N; 87°27'00"W. Coll: E. F. Stoermer. 15 May 1966 (500 ml).

990 Plankton, 5 meters, Station A-6. 41°52'00"N; 87°27'00"W. Coll: E. F. Stoermer. 15 May 1966 (500 ml).

991 Plankton, 15 meters, Station A-6. 41°52'00"N; 87°27'00"W. Coll: E. F. Stoermer. 15 May 1966 (500 ml).

992 Plankton, surface, Station B-3. 42°24'00"N; 86°35'20"W. Coll: C. F. Powers. 16 May 1966 (500 ml).

993 Plankton, 5 meters, Station B-3. 42°24'00"N; 86°35'20"W. Coll: C. F. Powers. 16 May 1966 (500 ml).

994 Plankton, 15 meters, Station B-3. 42°24'00"N; 86°35'20"W. Coll: C. F. Powers. 16 May 1966 (500 ml).

995 Plankton, surface, Station B-4. 42°23'30"N; 87°01'30"W. Coll: C. F. Powers. 16 May 1966 (500 ml).

996 Plankton, 5 meters, Station B-4. 42°23'30"N; 87°01'30"W. Coll: C. F. Powers. 16 May 1966 (500 ml).

997 Plankton, 15 meters, Station B-4. 42°23'30"N; 87°01'30"W. Coll: C. F. Powers. 16 May 1966 (500 ml).

998 Plankton, surface, Station B-6. 42°22'30"N; 87°30'00"W. Coll: C. F. Powers. 16 May 1966 (500 ml).

999 Plankton, 5 meters, Station B-6. 42°22'30"N; 87°30'00"W. Coll: C. F. Powers. 16 May 1966 (500 ml).

1000 Plankton, 15 meters, Station B-6. 42°22'30"N; 87°30'00"W. Coll: C. F. Powers. 16 May 1966 (500 ml).

1001 Plankton, surface, Station C-3. 42°49'10"N; 86°28'25"W. Coll: E. F. Stoermer. 16 May 1966 (500 ml).

1002 Plankton, 5 meters, Station C-3. 42°49'10"N; 86°28'25"W. Coll: E. F. Stoermer. 16 May 1966 (500 ml).

1003 Plankton, 15 meters, Station C-3. 42°49'10"N; 86°28'25"W. Coll: E. F. Stoermer. 16 May 1966 (500 ml).

1004 Plankton, surface, Station C-5. 42°49'00"N; 86°50'00"W. Coll: E. F. Stoermer. 16 May 1966 (500 ml).

1005 Plankton, 5 meter, Station C-5. 42°49'00"N; 86°50'00"W. Coll: E. F. Stoermer. 16 May 1966 (500 ml).

1006 Plankton, 15 meters, Station C-5. 42°49'00"N; 86°50'00"W. Coll: E. F. Stoermer. 16 May 1966 (500 ml).

1007 Plankton, surface, Station C-7. 42°47'30"N; 87°34'30"W. Coll: E. F. Stoermer. 16 May 1966 (500 ml).

1008 Plankton, 5 meters, Station C-7. 42°47'30"N; 87°34'30"W. Coll: E. F. Stoermer. 16 May 1966 (500 ml).

1009 Plankton, 15 meters, Station C-7. 42°47'30"N; 87°34'30"W. Coll: E. F. Stoermer. 16 May 1966 (500 ml).

1010 Plankton, surface, Station D-2. 43°56'00"N; 86°39'30"W. Coll: E. F. Stoermer. 17 May 1966 (500 ml).

1011 Plankton, 5 meters, Station D-2. 43°56'00"N; 86°39'30"W. Coll: E. F. Stoermer. 17 May 1966 (500 ml).

1012 Plankton, 15 meters, Station D-2. 43°56'00"N; 86°39'30"W. Coll: E. F. Stoermer. 17 May 1966 (500 ml).

1013 Plankton, surface, Station D-4. 43°48'00"N; 87°03'00"W. Coll: E. F. Stoermer. 17 May 1966 (500 ml).

1014 Plankton, 5 meters, Station D-4. 43°48'00"N; 87°03'00"W. Coll: E. F. Stoermer. 17 May 1966 (500 ml).

1015 Plankton, 15 meters, Station D-4. 43°48'00"N; 87°03'00"W. Coll: E. F. Stoermer. 17 May 1966 (500 ml).

1016 Plankton, surface, Station D-5. 43°38'40"N; 87°31'00"W. Coll: E. F. Stoermer. 17 May 1966 (500 ml).

1017 Plankton, 5 meters, Station D-5. 43°38'40"N; 87°31'00"W. Coll: E. F. Stoermer. 17 May 1966 (500 ml).

1018 Plankton, 15 meters, Station D-5. 43°38'40"N; 87°31'00"W. Coll: E. F. Stoermer. 17 May 1966 (500 ml).

1019 Plankton, surface, Station E-2. 44°37'00"N; 86°21'42"W. Coll: E. F. Stoermer. 20 May 1966 (500 ml).

1020 Plankton, 5 meters, Station E-2. 44°37'00"N; 86°21'42"W. Coll: E. F. Stoermer. 20 May 1966 (500 ml).

1021 Plankton, 15 meters, Station E-2. 44°37'00"N; 86°21'42"W. Coll: E. F. Stoermer. 20 May 1966 (500 ml).

1022 Plankton, surface, Station E-3. 44°34'00"N; 86°40'00"W. Coll: E. F. Stoermer. 20 May 1966 (500 ml).

1023 Plankton, 5 meters, Station E-3. 44°34'00"N; 86°40'00"W. Coll: E. F. Stoermer. 20 May 1966 (500 ml).

1024 Plankton, 15 meters, Station E-3. 44°34'00"N; 86°40'00"W. Coll: E. F. Stoermer. 20 May 1966 (500 ml).

1025 Plankton, surface, Station E-5. 44°25'30"N; 87°10'18"W. Coll: E. F. Stoermer. 20 May 1966 (500 ml).

1026 Plankton, 5 meters, Station E-5. 44°25'30"N; 87°10'18"W. Coll: E. F. Stoermer. 20 May 1966 (500 ml).

1027 Plankton, 15 meters, Station E-5. 44°25'30"N; 87°10'18"W. Coll: E. F. Stoermer. 20 May 1966 (500 ml).

1033 Plankton (#25 net), Garden Creek, near outlet in town of Garden, Delta County, Michigan. Sec. 17, R18W, Twp 39N. Coll: E. F. Stoermer. 20 June 1966.

1035 Plankton near shore (#25 net), fishing access site near town of Garden, Delta County, Michigan. Sec. 18, R18W, T39N. Coll: E. F. Stoermer. 20 June 1966.

1042 Shore plankton (#25 net), Sack Bay, Delta County, Michigan. Sec. 30, R19W, T38N. Coll: E. F. Stoermer. 20 June 1966.

1044 Shore plankton (#25 net), Sand Bay, near Fayette State Park, Delta County, Michigan. Sec. 9, R19W, T38N. Coll: E. F. Stoermer. 20 June 1966.

1046 Shore plankton (#25 net), Fayette Harbor, Fayette State Park, Delta County, Michigan. Sec. 4, R19W, T38N. Coll: E. F. Stoermer. 20 June 1966.

1056 Plankton, Harbor of Manistique, Schoolcraft County, Michigan. Sec. 12, R16W, T41. Considerable wood detritus, depauperate algal flora. Coll: E. F. Stoermer. 21 June 1966.

1060 Plankton - from ferry dock, St. Ignace, Mackinac County, Michigan. Sec. 18, R3W, T40N. Coll: E. F. Stoermer. 21 June 1966.

1092 Shore plankton from harbor, Cross Village. Sec. 33, R6W, T38N. Emmet County, Michigan. Coll: E. F. Stoermer. 23 June 1966.

1094 Shore plankton, City Park, Harbor Springs. Sec. 13, R6W, T35N. Emmet County, Michigan. Coll: E. F. Stoermer. 23 June 1966.

1095 Shore plankton, tile outlet just east of "Irish Marina." Sec. 18, R5W, T35N. Harbor Springs, Emmet County, Michigan. Coll: E. F. Stoermer. 23 June 1966.

1096 Plankton, Petoskey Harbor. Sec. 31, R5W, T35N. Emmet County, Michigan. Coll: E. F. Stoermer. 23 June 1966.

1100 Plankton ship channel, Charlevoix. Sec. 27, R8W, T34N. Charlevoix County, Michigan. Coll: E. F. Stoermer. 23 June 1966.

1102 Plankton, Lake Charlevoix, Charlevoix City Dock. Sec. 26, R8W, T34S. Charlevoix County, Michigan. Coll: E. F. Stoermer. 23 June 1966.

1105 Plankton, river side of breakwater, Elk Rapids. Sec. 20, R9W, T29N. Antrim County, Michigan. Coll: E. F. Stoermer. 23 June 1966.

1108 Shore plankton, harbor of Traverse City. Sec. 6, R10W, T27N. Grand Traverse County, Michigan. Coll: E. F. Stoermer. 23 June 1966.

1114 Plankton, Lake Michigan, 100 yds from confluence of Platte River. Sec. 20, R15W, T27N. Benzie State Park, Benzie County, Michigan. Coll: E. F. Stoermer. 23 June 1966.

1116 Plankton, Platte River, at confluence with Lake Michigan. Sec. 20, R15W, T27N. Benzie State Park, Benzie County, Michigan. Coll: E. F. Stoermer. 23 June 1966.

1121 Plankton, Lake Michigan just outside Frankfort breakwater. Sec. 28, R16W, T26N. Benzie County, Michigan. Coll: E. F. Stoermer. 24 June 1966.

1122 Plankton, Frankfort Harbor, just inside breakwater. Sec. 28, R16W, T26N. Benzie County, Michigan. Coll: E. F. Stoermer. 24 June 1966.

1125 Plankton just outside breakwater, Manistee. Sec. 3, R17W, T21N. Manistee County, Michigan. Coll: E. F. Stoermer. 24 June 1966.

1126 Plankton just inside breakwater, Manistee. Sec. 3, R17W, T21N. Manistee County, Michigan. *Melosira* dominant. Coll: E. F. Stoermer. 24 June 1966.

1128 Plankton inside harbor, Ludington. Sec. 16, R18W, T18N. Mason County, Michigan. Coll: E. F. Stoermer. 24 June 1966.

1130 Plankton just outside harbor, Ludington. Sec. 16, R18W, T18N. Mason County, Michigan. Coll: E. F. Stoermer. 24 June 1966.

1132 Shore plankton shallow water in Muskegon Lake, pier across from State Park office. Sec. 22, R17W, T10N. Muskegon State Park, Muskegon County, Michigan. Coll: E. F. Stoermer. 25 June 1966.

1135 Plankton, Muskegon Lake, just inside ship channel, Sec. 28, R17W, T10N. Muskegon County, Michigan. Coll: E. F. Stoermer. 25 June 1966.

1139 Plankton, inside Muskegon north piers. Sec. 29, R17W, T10N, Muskegon County, Michigan. Coll: E. F. Stoermer. 25 June 1966.

1141 Plankton, outside Muskegon north pier. Sec. 29, R17W, T10N. Muskegon County, Michigan. Coll: E. F. Stoermer. 25 June 1966.

1142 Plankton, 10 yds off campground beach, Muskegon State Park. Sec. 17, R17W, T10N. Muskegon County, Michigan. Coll: E. F. Stoermer. 25 June 1966.

1143 Plankton 100 yds off campground beach, Muskegon State Park. Sec. 17, R17W, T10N. Muskegon County, Michigan. Coll: E. F. Stoermer. 25 June 1966.

1144 Surface #20 net tow, Lake Michigan. Station GA-1a. 41°38.4'N; 87°19.0'W. Coll: A. Strong. 19 May 1966.

1145 Surface #20 net tow, Lake Michigan. Station GA-1b. 41°38.4'N; 87°19.0'W. Coll: A. Strong. 19 May 1966.

1164 Vertical #20 net tow, 55ft depth. Sleeping Bear Bay, Lake Michigan. Coll: Robert Anderson. 21 June 1966.

1192 Surface #20 net tow. Station PM-1. 45°46'30"N; 85°08'45"W. Lake Michigan. Coll: E. F. Stoermer. 21 Sept. 1966.

1193 Surface #20 net tow. Station PM-2. 45°24.0'N; 85°15.0'W. Lake Michigan. Mostly zooplankton. Coll: E. F. Stoermer. 21 August 1966.

1194 Surface #20 net tow. Station PM-3. 45°17.2'N; 85°55.0'W. Lake Michigan. Coll: E. F. Stoermer. 21 August 1966.

1195 Surface #20 net tow. Station PM-4. 45°01'18"N; 85°55'00"W. Lake Michigan. Coll: E. F. Stoermer. 22 August 1966.

1196 Vertical #20 net tow. Station MP-2. 44°57'48"N; 86°03'06"W. Lake Michigan. Coll: E. F. Stoermer. 22 August 1966.

1197 Vertical #20 net tow. Station AEC-1. 42°36.0'N; 86°59.0'W. Lake Michigan. Coll: E. F. Stoermer. 19 Sept. 1966.

1198 Vertical #20 net tow. Station AEC-2. 42°46.5'N; 87°02.5'W. Lake Michigan. Coll: E. F. Stoermer. 19 Sept. 1966.

1199 Vertical #20 net tow. Station AEC-3. 43°18.5'N; 86°42.5'W. Lake Michigan. Coll: E. F. Stoermer. 20 Sept. 1966.

1200 Vertical #20 net tow. Station AEC-4. 43°54.4'N; 86°49.0'W. Lake Michigan. Coll: E. F. Stoermer. 20 Sept. 1966.

1201 Vertical #20 net tow. Station AEC-5. 44°08.7'N; 86°42.6'W. Lake Michigan. Coll: E. F. Stoermer. 21 Sept. 1966.

1202 Vertical #20 net tow. Station AEC-6. 44°20.0'N; 86°43.1'W. Lake Michigan. Coll: E. F. Stoermer. 21 Sept. 1966.

1203 Vertical #20 net tow. Station AEC-7. 44°28.7'N; 86°43.1'W. Lake Michigan. Coll: E. F. Stoermer. 21 Sept. 1966.

1204 Vertical #20 net haul. Station A-1. 42°06'30"N; 86°32'00"W. Lake Michigan. Coll: J. Ayers. 26 Sept. 1966.

1205 Vertical #20 net haul. Station A-2. 42°06'00"N; 86°37'00"W. Lake Michigan. Coll: J. Ayers. 26 Sept. 1966.

1206 Vertical #20 net haul. Station A-3. 42°05'30"N; 86°43'00"W. Lake Michigan. Coll: J. Ayers. 27 Sept. 1966.

1207 Vertical #20 net haul. Station A-4. 42°03'30"N; 87°06'30"W. Lake Michigan. Coll: J. Ayers. 27 Sept. 1966.

1208 Vertical #20 net haul. Station A-5. 41°57'00"N; 87°18'30"W. Lake Michigan. Coll: J. Ayers. 27 Sept. 1966.

1209 Vertical #20 net haul. Station A-6. 41°52'00"N; 87°27'00"W. Lake Michigan. Coll: J. Ayers. 27 Sept. 1966.

1210 Vertical #20 net haul. Station C-1. 42°49'40"N; 86°14'50"W. Lake Michigan. Coll: J. Ayers. 26 Sept. 1966.

1211 Vertical #20 net haul. Station C-2. 42°49'40"N; 86°18'25"W. Lake Michigan. Coll: J. Ayers. 26 Sept. 1966.

1212 Vertical #20 net haul. Station C-3. 42°49'10"N; 86°28'25"W. Lake Michigan. Coll: J. Ayers. 26 Sept. 1966 (Extremely sparse phytoplankton).

1213 Vertical #20 net haul. Station C-4. 42°48'50"N; 86°41'30"W. Lake Michigan. Coll: J. Ayers. 28 Sept. 1966.

1214 Vertical #20 net haul. Station C-5. 42°49'00"N; 86°50'00"W. Lake Michigan. Coll: J. Ayers. 28 Sept. 1966.

1215 Vertical #20 net haul. Station C-6. 42°47'40"N; 87°26'50"W. Lake Michigan. Coll: J. Ayers. 28 Sept. 1966.

1216 Vertical #20 net haul. Station C-7. 42°47'30"N; 87°34'30"W. Lake Michigan. Coll: J. Ayers. 28 Sept. 1966.

1217 Vertical #20 net haul. Station E-1. 44°37'30"N; 86°18'12"W. Lake Michigan. Coll: J. Ayers. 2 Oct. 1966.

1218 Vertical #20 net haul. Station E-2. 44°37'00"N; 86°21'42"W. Lake Michigan. Coll: J. Ayers. 2 Oct. 1966.

1219 Vertical #20 net haul. Station E-3. 44°34'00"N; 86°40'00"W. Lake Michigan. Coll: J. Ayers. 2 Oct. 1966.

1220 Vertical #20 net haul. Station E-4. 44°30'18"N; 86°55'18"W. Lake Michigan. Coll: J. Ayers. 2 Oct. 1966.

1221 Vertical #20 net haul. Station #-5. 44°25'30"N; 87°10'18"W. Lake Michigan. Coll: J. Ayers. 1 Oct. 1966.

1222 Vertical #20 net haul. Station E-6. 44°27'48"N; 87°26'25"W. Lake Michigan. Coll: J. Ayers. 1 Oct. 1966.

1223 #20 net sample, vertical haul, 83 m., Station B-3. 42°24'00"N; 86°35'30"W. Coll: C. F. Powers. 18 May 1964.
26 spp. 63995 spec. H=0.848 R=0.740

1224 #20 net sample, vertical haul, 141 m., Station B-4. 42°23'30"N; 87°01'30"W. Coll: C. F. Powers. 18 May 1964.
33 spp. 51005 spec. H=0.721 R=0.794

1225 #20 net sample, vertical haul, Station C-6. 42°47'40"N; 87°26'50"W. Coll: C. F. Powers. 15 May 1964.
40 spp. 25510 spec. H=1.368 R=0.629

1226 #20 net sample, vertical haul, Station C-7. 42°47'30"N; 87°34'30"W. Coll: C. F. Powers. 16 May 1964.
42 spp. 26280 spec. H=1.520 R=0.593

1227 #20 net sample, vertical haul, Station C-2. 43°12'00"N; 86°31'00"W. Coll: C. F. Powers. 13 May 1964.
40 spp. 91190 spec. H=1.264 R=0.657

1228 #20 net sample, vertical haul, Station D-2. 43°56'00"N; 86°39'30"W.
Coll: C. F. Powers. 14 May 1964.
46 spp. 51379 spec. H=1.243 R=0.675

1229 #20 net sample, vertical haul, Station D-5. 43°38'40"N; 87°31'00"W.
Coll: C. F. Powers. 14 May 1964.
52 spp. 47291 spec. H=1.638 R=0.585

1230a #20 net sample, vertical haul, Station E-2. 44°37'00"N; 86°21'42"W.
Coll: C. F. Powers. 16 May 1964.
50 spp. 33745 spec. H=1.416 R=0.638

1231 #20 net sample, vertical haul, Station E-3. 44°34'00"N; 86°40'00"W.
Coll: C. F. Powers. 16 May 1964.
51 spp. 40884 spec. H=1.225 R=0.688

1232 #20 net sample, vertical haul, Station E-5. 44°25'30"N; 87°10'18"W.
Coll: C. F. Powers. 16 May 1964.
59 spp. 57498 spec. H=1.659 R=0.593

1233 #20 net sample, vertical haul, Station B-3. 42°24'00"N; 86°35'30"W.
Coll: C. F. Powers. 5 June 1964.
37 spp. 41991 spec. H=1.673 R=0.537

1234a #20 net sample, vertical haul, Station B-3. 42°24'00"N; 86°35'30"W.
Coll: C. F. Powers. 18 June 1964.
38 spp. 35568 spec. H=1.574 R=0.567

1235a #20 net sample, vertical haul, Station C-7. 42°47'30"N; 87°34'30"W.
Coll: C. F. Powers. 16 June 1964.
35 spp. 35407 spec. H=1.446 R=0.593

1236 #20 net sample, vertical haul, Station C'-1. 43°08'00"N; 86°23'00"W.
Coll: C. F. Powers. 8 June 1964.
64 spp. 57132 spec. H=1.668 R=0.599

1237a #20 net sample, vertical haul, Station C'-2. 43°12'00"N; 86°31'00"W.
Coll: C. F. Powers. 8 June 1964.
49 spp. 38790 spec. H=1.674 R=0.570

1238 #20 net sample, vertical haul, Station D-3. 43°54'00"N; 86°51'30"W.
Coll: C. F. Powers. 11 June 1964.
44 spp. 50000 spec. H=0.972 R=0.743

1239 #20 net sample, vertical haul, Station D-4. 43°48'00"N; 87°03'00"W.
Coll: C. F. Powers. 11 June 1964.
39 spp. 86175 spec. H=1.240 R=0.661

1240 #20 net sample, vertical haul, Station D-6. 43°44'00"N; 87°38'00"W.
Coll: C. F. Powers. 10 June 1964.
83 spp. 65191 spec. H=1.398 R=0.684

1241 #20 net sample, vertical haul, Station E-2. 44°37'00"N; 86°21'42"W.
Coll: C. F. Powers. 13 June 1964.
56 spp. 67634 spec. H=1.418 R=0.648

1242 #20 net sample, vertical haul, Station E-3. 44°34'00"N; 86°40'00"W.
Coll: C. F. Powers. 13 June 1964.
44 spp. 66726 spec. H=0.629 R=0.834

1243 #20 net sample, vertical haul, Station E-6. 44°27'48"N; 87°26'25"W.
Coll: C. F. Powers. 13 June 1964.
78 spp. 47892 spec. H=1.655 R=0.620

1244 #20 net sample, vertical haul, Station F-1. 45°21'45"N; 85°19'45"W.
Coll: C. F. Powers. 11 June 1964.
89 spp. 91203 spec. H=1.500 R=0.666

1245a #20 net sample, vertical haul, Station F-2. 45°28'30"N; 85°26'00"W.
Coll: C. F. Powers. 11 June 1964
68 spp. 28922 spec. H=1.490 R=0.647

1246a #20 net sample, vertical haul, Station F-3. 45°33'40"N; 85°30'45"W.
Coll: C. F. Powers. 11 June 1964.
54 spp. 16733 spec. H=1.554 R=0.610

1247a #20 net sample, vertical haul, Station B-3. 42°24'00"N; 86°35'30"W.
Coll: C. F. Powers. 14 July 1964.
28 spp. 23427 spec. H=1.572 R=0.528

1248 #20 net sample, vertical haul, Station B-3. 42°24'00"N; 86°35'30"W.
Coll: C. F. Powers. 24 July 1964.
34 spp. 50748 spec. H=1.626 R=0.539

1249 #20 net sample, vertical haul, Station C-3. 42°49'10"N; 86°28'25"W.
Coll: C. F. Powers. 8 July 1964.
27 spp. 36820 spec. H=1.520 R=0.539

1250a #20 net sample, vertical haul, Station C-6. 42°47'40"N; 87°26'50"W.
Coll: C. F. Powers. 10 July 1964.
42 spp. 24325 spec. H=1.838 R=0.508

1251 #20 net sample, vertical haul, Station C-7. 42°47'30"N; 87°34'30"W.
Coll: C. F. Powers. 16 July 1964.
37 spp. 34518 spec. H=1.422 R=0.606

1252 #20 net sample, vertical haul, Station C'-1. 43°08'00"N; 86°23'00"W.
Coll: C. F. Powers. 16 July 1964.
55 spp. 35850 spec. H=1.682 R=0.580

1253 #20 net sample, vertical haul, Station C'-2. 43°12'00"N; 86°31'00"W.
Coll: C. F. Powers. 16 July 1964.
43 spp. 43816 spec. H=1.647 R=0.562

1254 #20 net sample, vertical haul, Station D-2. 43°56'00"N; 86°39'30"W.
Coll: C. F. Powers. 15 July 1964.
56 spp. 52210 spec. H=1.722 R=0.572

1255 #20 net sample, vertical haul, Station D-5. 43°38'40"N; 87°31'00"W.
Coll: C. F. Powers. 15 July 1964.
55 spp. 38962 spec. H=2.048 R=0.489

1256 #20 net sample, vertical haul, Station E-2. 44°37'00"N; 86°21'42"W.
Coll: C. F. Powers. 14 July 1964.
73 spp. 54588 spec. H=1.533 R=0.638

1257 #20 net sample, vertical haul, Station E-3. 44°34'00"N; 86°40'00"W.
Coll: C. F. Powers. 14 July 1964.
63 spp. 41795 spec. H=1.464 R=0.647

1258 #20 net sample, vertical haul, Station F-1. 45°21'45"N; 85°19'45"W.
Coll: C. F. Powers. 6 July 1964.
117 spp. 42377 spec. H-1.984 R=0.583

1259 #20 net sample, vertical haul, Station F-2. 45°28'30"N; 85°26'00"W.
Coll: C. F. Powers. 6 July 1964.
78 spp. 32272 spec. H=1.988 R=0.544

1260 #20 net sample, vertical haul, Station F-3. 45°33'40"N; 85°30'45"W.
Coll: C. F. Powers. 6 July 1964.
89 spp. 52357 spec. H=2.012 R=0.552

1261 #20 net sample, vertical haul, Station B-3. 42°24'00"N; 86°35'30"W.
Coll: C. F. Powers. 2 August 1964.
31 spp. 50956 spec. H=1.278 R=0.628

1262 #20 net sample, vertical haul, Station B-3. 42°24'00"N; 86°35'30"W.
Coll: C. F. Powers. 17 August 1964.
31 spp. 47620 spec. H=1.254 R=0.635

1263 #20 net sample, vertical haul, Station C-7. 42°47'30"N; 87°34'30"W.
Coll: C. F. Powers. 15 August 1964.
20 spp. 24980 spec. H=1.214 R=0.595

1264 #20 net sample, vertical haul, Station C'-1. 43°08'00"N; 86°23'00"W.
Coll: C. F. Powers. 10 August 1964.
74 spp. 51792 spec. H=1.705 R=0.604

1265 #20 net sample, vertical haul, Station C'-2. 43°12'00"N; 86°31'00"W.
Coll: C. F. Powers. 10 August 1964.
52 spp. 44733 spec. H=1.571 R=0.602

1266 #20 net sample, vertical haul, Station D-3. 43°54'00"N; 86°51'30"W.
Coll: C. F. Powers. 18 August 1964.
44 spp. 28508 spec. H-2.259 R=0.403

1267 #20 net sample, vertical haul, Station D-6. 43°44'00"N; 87°38'00"W.
Coll: C. F. Powers. 18 August 1964.
38 spp. 46260 spec. H=1.289 R=0.646

1268 #20 net sample, vertical haul, Station E-2. 44°37'00"N; 86°21'42"W.
Coll: C. F. Powers. 15 August 1964.
82 spp. 36556 spec. H=2.081 R=0.528

1269 #20 net sample, vertical haul, Station E-3. 44°34'00"N; 86°40'00"W.
Coll: C. F. Powers. 15 August 1964.
50 spp. 36486 spec. H=2.007 R=0.487

1270 #20 net sample, vertical haul, Station F-1. 45°21'45"N; 85°19'45"W.
Coll: C. F. Powers. 10 August 1964.
84 spp. 36725 spec. H=1.817 R=0.590

1271a #20 net sample, vertical haul, Station C-7. 42°47'30"N; 87°34'30"W.
Coll: C. F. Powers. 22 Sept. 1964.
39 spp. 15317 spec. H=0.984 R=0.731

1272 #20 net sample, vertical haul, Station C'-1. 43°08'00"N; 86°23'00"W.
Coll: C. F. Powers. 10 Sept. 1964.
57 spp. 24363 spec. H=1.732 R=0.572

1273a #20 net sample, vertical haul, Station C'-2. 43°12'00"N; 86°31'00"W.
Coll: C. F. Powers. 10 Sept. 1964.
39 spp. 18599 spec. H=1.703 R=0.535

1274a #20 net sample, vertical haul, Station D-1. 43°57'00"N; 86°33'00"W.
Coll: C. F. Powers. 17 Sept. 1964.
49 spp. 21313 spec. H=1.700 R=0.563

1275 #20 net sample, vertical haul, Station D-2. 43°56'00"N; 86°39'30"W.
Coll: C. F. Powers. 17 Sept. 1964.
52 spp. 15501 spec. H=1.770 R=0.552

1276a #20 net sample, vertical haul, Station D-3. 43°54'00"N; 86°51'30"W.
Coll: C. F. Powers. 18 Sept. 1964.
28 spp. 8948 spec. H=1.860 R=0.442

1277 #20 net sample, vertical haul, Station D-4. 43°48'00"N; 87°03'00"W.
Coll: C. F. Powers. 18 Sept. 1964.
29 spp. 16138 spec. H=1.446 R=0.571

1278a #20 net sample, vertical haul, Station D-6. 43°44'00"N; 87°38'00"W.
Coll: C. F. Powers. 18 Sept. 1964.
44 spp. 26019 spec. H=1.388 R=0.633

1279a #20 net sample, vertical haul, Station E-1. 44°37'30"N; 86°18'12"W.
Coll: C. F. Powers. 16 Sept. 1964.
109 spp. 25467 spec. H=1.832 R=0.610

1280a #20 net sample, vertical haul, Station E-2. 44°37'00"N; 86°21'42"W.
Coll: C. F. Powers. 16 Sept. 1964.
42 spp. 14689 spec. H=1.558 R=0.583

1281a #20 net sample, vertical haul, Station E-3. 44°34'00"N; 86°40'00"W.
Coll: C. F. Powers. 16 Sept. 1964.
40 spp. 25483 spec. H=1.951 R=0.471

1282 #20 net sample, vertical haul, Station E-4. 44°30'18"N; 86°55'18"W.
Coll: C. F. Powers. 16 Sept. 1964.
34 spp. 9025 spec. H=1.772 R=0.497

1283a #20 net sample, vertical haul, Station E-5. 44°25'30"N; 87°10'18"W.
Coll: C. F. Powers. 16 Sept. 1964.
38 spp. 16314 spec. H=2.064 R=0.432

1284a #20 net sample, vertical haul, Station E-6. 44°27'48"N; 87°26'25"W.
Coll: C. F. Powers. 17 Sept. 1964.
77 spp. 31473 spec. H=1.900 R=0.563

1285a #20 net sample, vertical haul, Station F-1. 45°21'45"N; 85°19'45"W.
Coll: C. F. Powers. 15 Sept. 1964.
151 spp. 17171 spec. H=2.374 R=0.527

1286a #20 net sample, vertical haul, Station F-2. 45°28'30"N; 85°26'00"W.
Coll: C. F. Powers. 15 Sept. 1964.
44 spp. 9136 spec. H=1.864 R=0.507

1287a #20 net sample, vertical haul, Station F-3. 45°33'40"N; 85°30'45"W.
Coll: C. F. Powers. 15 Sept. 1964.
48 spp. 19984 spec. H=1.821 R=0.530

1288a #20 net sample, vertical haul, Station B-3. 42°24'00"N; 86°35'30"W.
Coll: C. F. Powers. 15 Oct. 1964.
35 spp. 45938 spec. H=1.406 R=0.605

1289 #20 net sample, vertical haul. Station C-7. 42°47'30"N; 87°34'30"W.
Coll: C. F. Powers. 14 Oct. 1964.
40 spp. 22741 spec. H=1.343 R=0.636

1290a #20 net sample, vertical haul, Station C'-1. 43°08'00"N; 86°23'00"W.
Coll: C. F. Powers. 16 Oct. 1964.
32 spp. 26385 spec. H=1.331 R=0.616

1291a #20 net sample, vertical haul, Station C'-2. 43°12'00"N; 86°31'00"W.
Coll: C. F. Powers. 16 Oct. 1964.
29 spp. 40878 spec. H=1.340 R=0.602

1292a #20 net sample, vertical haul, Station D-1. 43°57'00"N; 86°33'00"W.
Coll: C. F. Powers. 15 Oct. 1964.
30 spp. 26832 spec. H=1.381 R=0.594

1293a #20 net sample, vertical haul, Station D-2. 43°56'00"N; 86°39'30"W.
Coll: C. F. Powers. 15 Oct. 1964.
34 spp. 21202 spec. H=1.408 R=0.601

1294a #20 net sample, vertical haul, Station D-3. 43°54'00"N; 86°51'30"W.
Coll: C. F. Powers. 15 Oct. 1964.
37 spp. 30337 spec. H=1.564 R=0.567

1295 #20 net sample, vertical haul, Station D-4. 43°48'00"N; 87°03'00"W.
Coll: C. F. Powers. 15 Oct. 1964.
33 spp. 16818 spec. H=1.605 R=0.541

1296 #20 net sample, vertical haul, Station D-5. 43°38'40"N; 87°31'00"W.
Coll: C. F. Powers. 14 Oct. 1964.
31 spp. 25417 spec. H=1.306 R=0.620

1297a #20 net sample, vertical haul, Station D-6. 43°44'00"N; 87°38'00"W.
Coll: C. F. Powers. 14 Oct. 1964.
60 spp. 52522 spec. H=1.512 R=0.631

1298 #20 net sample, vertical haul, Station E-1. 44°37'30"N; 86°18'12"W.
Coll: C. F. Powers. 12 Oct. 1964.
48 spp. 37136 spec. H=1.461 R=0.622

1299a #20 net sample, vertical haul, Station E-2. 44°37'00"N; 86°21'42"W.
Coll: C. F. Powers. 12 Oct. 1964.
50 spp. 31830 spec. H=1.677 R=0.571

1300 #20 net sample, vertical haul, Station E-3. 44°34'00"N; 86°40'00"W.
Coll: C. F. Powers. 13 Oct. 1964.
61 spp. 27935 spec. H=2.000 R=0.513

1301a #20 net sample, vertical haul, Station E-4. 44°30'18"N; 86°55'18"W.
Coll: C. F. Powers. 13 Oct. 1964.
46 spp. 22646 spec. H=1.953 R=0.490

1302a #20 net sample, vertical haul, Station E-5. 44°25'30"N; 87°10'18"W.
Coll: C. F. Powers. 13 Oct. 1964.
61 spp. 24698 spec. H=2.049 R=0.502

1303 #20 net sample, vertical haul, Station E-6. 44°27'48"N; 87°26'25"W.
Coll: C. F. Powers. 13 Oct. 1964.
54 spp. 17866 spec. H=2.097 R=0.474

1304a #20 net sample, vertical haul, Station F-1. 45°21'45"N; 85°19'45"W.
Coll: C. F. Powers. 11 Oct. 1964.
83 spp. 40492 spec. H=1.038 R=0.765

1305a #20 net sample, vertical haul, Station F-2. 45°28'30"N; 85°26'00"W.
Coll: C. F. Powers. 11 Oct. 1964.
74 spp. 57966 spec. H=0.870 R=0.798

1306a #20 net sample, vertical haul, Station F-3. 45°33'40"N; 85°30'45"W.
Coll: C. F. Powers. 11 Oct. 1964.
56 spp. 36078 spec. H=0.998 R=0.752

1307 #20 net sample, vertical haul, Station B-6. 42°22'30"N; 87°30'00"W.
Coll: C. F. Powers. Probably Nov. 1964.
39 spp. 27716 spec. H=1.493 R=0.593

1308a #20 net sample, vertical haul, Station C-7. 42°47'30"N; 87°34'30"W.
Coll: C. F. Powers. 6 Nov. 1964.
42 spp. 32879 spec. H=1.366 R=0.635

1309a #20 net sample, vertical haul, Station C'-1. 43°08'00"N; 86°23'00"W.
Coll: C. F. Powers. 10 Nov. 1964.
35 spp. 62192 spec. H=1.202 R=0.662

1310 #20 net sample, vertical haul, Station C'-2. 43°12'00"N; 86°31'00"W.
Coll: C. F. Powers. 10 Nov. 1964.
32 spp. 44100 spec. H=1.371 R=0.604

1311 #20 net sample, vertical haul, Station D-1. 43°57'00"N; 86°33'00"W.
Coll: C. F. Powers. 8 Nov. 1964.
41 spp. 38762 spec. H=1.362 R=0.633

1312 #20 net sample, vertical haul, Station D-2. 43°56'00"N; 86°39'30"W.
Coll: C. F. Powers. 8 Nov. 1964.
33 spp. 32215 spec. H=1.410 R=0.597

1313 #20 net sample, vertical haul, Station D-3. 43°54'00"N; 86°51'30"W.
Coll: C. F. Powers. 9 Nov. 1964.
38 spp. 51800 spec. H=1.493 R=0.590

1314a #20 net sample, vertical haul, Station D-4. 43°48'00"N; 87°03'00"W.
Coll: C. F. Powers. 9 Nov. 1964.
31 spp. 34833 spec. H=1.482 R=0.568

1315 #20 net sample, vertical haul, Station D-5. 43°38'40"N; 87°31'00"W.
Coll: C. F. Powers. 9 Nov. 1964.
33 spp. 21980 spec. H=1.404 R=0.598

1316 #20 net sample, vertical haul, Station D-6. 43°44'00"N; 87°38'00"W.
Coll: C. F. Powers. 9 Nov. 1964.
48 spp. 26472 spec. H=1.608 R=0.585

1317 #20 net sample, vertical haul, Station E-1. 44°37'30"N; 86°18'12"W.
Coll: C. F. Powers. 6 Nov. 1964.
48 spp. 52228 spec. H=1.394 R=0.640

1318a #20 net sample, vertical haul, Station E-2. 44°37'00"N; 86°21'42"W.
Coll: C. F. Powers. 7 Nov. 1964.
51 spp. 52563 spec. H=1.544 R=0.607

1319 #20 net sample, vertical haul, Station E-3. 44°34'00"N; 86°40'00"W.
Coll: C. F. Powers. 7 Nov. 1964.
43 spp. 38193 spec. H=1.620 R=0.569

1320a #20 net sample, vertical haul, Station E-4. 44°30'18"N; 86°55'18"W.
Coll: C. F. Powers. 7 Nov. 1964.
63 spp. 48350 spec. H=1.646 R=0.603

1321 #20 net sample, vertical haul, Station E-5. 44°25'30"N; 87°10'18"W.
Coll: C. F. Powers. 7 Nov. 1964.
50 spp. 31326 spec. H=1.616 R=0.587

1322a #20 net sample, vertical haul, Station E-6. 44°27'48"N; 87°26'25"W.
Coll: C. F. Powers. 7 Nov. 1964.
57 spp. 30007 spec. H=1.674 R=0.586

1323a #20 net sample, vertical haul, Station F-1. 45°21'45"N; 85°19'45"W.
Coll: C. F. Powers. 6 Nov. 1964.
56 spp. 71750 spec. H=1.152 R=0.714

1324 #20 net sample, vertical haul, Station F-2. 45°28'30"N; 85°26'00"W.
Coll: C. F. Powers. 6 Nov. 1964.
49 spp. 42933 spec. H=1.192 R=0.694

1325a #20 net sample, vertical haul, Station F-3. 45°33'40"N; 85°30'45"W.
Coll: C. F. Powers. 6 Nov. 1964.
33 spp. 39699 spec. H=1.346 R=0.615

1331 Plankton, #20 net vertical haul. Sta. MIL-1D. Milwaukee, Wisconsin.
Coll: J. Ayers. 21 July 1965.

1332 Vertical #20 net haul. Sta. MHKE-16. Milwaukee, Wisconsin. Lk. Mich.
Coll: J. Ayers. 23 July 1965.

1333 Oblique #20 net haul. Sta. MIL-KE. Milwaukee, Wisconsin. Lk. Mich.
Coll: J. Ayers. 24 July 1965.

1334 Oblique #20 net haul. Sta. MIL-35. Milwaukee, Wisconsin. Lk. Mich.
Coll: J. Ayers. 27 July 1965.

1335 #20 net oblique haul. Sta. MH-29. Milwaukee, Wisconsin. Lk. Mich.
Coll: J. Ayers. 28 July 1965.

1336 Vertical #20 net haul. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: C. F. Powers. 27 Jan. 1967.
41 spp. 51933 spec. H=0.893 R=0.759

1337 Vertical #20 net haul. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: C. F. Powers. 2 March 1967.
60 spp. 68039 spec. H=1.884 R=0.540

1338a Vertical #20 net haul. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: C. F. Powers. 28 March 1967.
58 spp. 75628 spec. H=2.002 R=0.507

1339 Vertical #20 net haul. Sta. C-5. 42°49'00"N; 86°50'00"W. Lake Mich.
Coll: C. F. Powers. 28 March 1967.
52 spp. 32074 spec. H=1.747 R=0.558

1340a Vertical #20 net haul. Sta. C-7. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: C. F. Powers. 28 March 1967.
67 spp. 137519 spec. H=1.793 R=0.574

1341a Vertical #20 net haul. Sta. A-3-A. 42°05'30"N; 86°43'00"W. Lake Mich.
Coll: E. Dunster. 19 April 1967.
102 spp. 92183 spec. H=1.700 R=0.632

1342 Vertical #20 net haul. Sta. A-4-A. 42°03'30"N; 87°06'30"W. Lake Mich.
Coll: E. Dunster. 19 April 1967.
72 spp. 55413 spec. H=1.930 R=0.549

1343 Vertical #20 net haul. Sta. A-6-A. 41°52'00"N; 87°27'00"W. Lake Mich.
Coll: E. Dunster. 19 April 1967.
77 spp. 143939 spec. H=1.409 R=0.676

1344a Vertical #20 net haul. Sta. C-3-E. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: E. Dunster. 25 April 1967.
48 spp. 60445 spec. H=1.324 R=0.658

1345a Vertical #20 net haul. Sta. C-5-E. 42°49'00"N; 86°50'00"W. Lake Mich.
Coll: E. Dunster. 25 April 1967.
60 spp. 51303 spec. H=2.073 R=0.494

1346a Vertical #20 net haul. Sta. C-7-E. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: E. Dunster. 21 April 1967.
76 spp. 74893 spec. H=1.471 R=0.660

1347a Vertical #20 net haul. Sta. E-2-E. 44°37'00"N; 86°21'40"W. Lake Mich. Coll: E. Dunster. 23 April 1967.
53 spp. 61505 spec. H=1.760 R=0.557

1348a Vertical #20 net haul. Sta. E-5-E. 44°25'30"N; 87°10'18"W. Lake Mich. Coll: E. Dunster. 23 April 1967.
72 spp. 72950 spec. H=1.758 R=0.589

1349 Vertical #20 net haul. Off Chicago--Pierhead, Illinois. CI: 41°53.3'N; 87°35.4'W. Lake Mich. Coll: E. Dunster. 19 April 1967.
70 spp. 27838 spec. H=1.752 R=0.588

1350a Surface #20 net tow. Benton Harobr, Michigan. BH: 42°06.9'N; 86°29.7'W. Lake Mich. Coll: E. Dunster. 19 April 1967.
237 spp. 45401 spec. H=2.572 R=0.530

1351 Surface #20 net tow. Milwaukee entrance, Wisconsin. MI: 43°01,6'N; 87°52.9'W. Lake Mich. Coll: E. Dunster. 21 April 1967.
72 spp. 32225 spec. H=2.123 R=0.504

1352 Surface #20 net tow. Kewaunee Harbor entrance, Wisconsin KW: 44°27.5'N; 87°29.6'W. Lake Mich. Coll: E. Dunster. 21 April 1967.
80 spp. 11642 spec. H=2.635 R=0.399

1353 Surface #20 net tow. Frankfort---off piers, Michigan. FR: 44°37.8'N; 86°15.0'W. Lake Mich. Coll: E. Dunster. 23 April 1967.
49 spp. 9480 spec. H=1.876 R=0.518

1354 Surface #20 net tow. Outside, Grand Haven pierheads, Michigan. GH: 43°03.5'N; 86°15.4'W. Lake Mich. Coll: E. Dunster. 25 April 1967.
133 spp. 57942 spec. H=1.693 R=0.654

1355 Vertical #20 net tow. Sta. #1, off Grand Haven. 43°08.6'N; 86°19.6'W. Lake Mich. Coll: V. E. Noble. 28 April 1967.

1356 Vertical #20 net tow. Sta. #2, off Grand Haven. 43°08.6'N; 86°19.8'W. Lake Mich. Coll: V. E. Noble. 28 April 1967.

1357 Vertical #20 net tow. Sta. #3, off Grand Haven. 43°03.8'N; 86°20.0'W. Lake Mich. Coll: V. E. Noble. 28 April 1967.

1358 Vertical #20 net tow. Sta. #4, off Grand Haven. 43°03.8'N; 86°19.5'W. Lake Mich. Coll: V. E. Noble. 29 April 1967.

1359 Vertical #20 net tow. Sta. #5, off Grand Haven. 43°03.7'N; 86°18.9'W. Lake Mich. Coll: V. E. Noble. 29 April 1967.

1360 Vertical #20 net tow. Sta. #6, off Grand Haven. 43°03.7'N; 86°15.9'W. Lake Mich. Coll: V. E. Noble. 29 April 1967.

1361 Vertical #20 net tow. Sta. #7, off Grand Haven. 43°01.9'N; 86°16.6'W. Lake Mich. Coll: V. E. Noble. 30 April 1967.

1362 Vertical #20 net tow. Sta. #8, off Grand Haven. 43°02.1'N; 86°16.3'W. Lake Mich. Coll: V. E. Noble. 30 April 1967.

1363 Vertical #20 net tow. Sta. #9, off Grand Haven. 43°02.6'N; 86°16.0'W. Lake Mich. Coll: V. E. Noble. 30 April 1967.

1364 Vertical #20 net tow. Sta. #10, off Grand Haven. 43°02.6'N; 86°15.4'W. Lake Mich. Coll: V. E. Noble. 30 April 1967.

1365 Vertical #20 net tow. Sta. #11, off Grand Haven. 43°02.5'N; 86°18.0'W. Lake Mich. Coll: V. E. Noble. 30 April 1967.

1366 Vertical #20 net tow. Inside Grand Haven Piers -A, Mich. Lake Mich. Coll: V. E. Noble. 29 April 1967.

1367 Vertical #20 net tow. Inside Grand Haven Piers -B, Mich. Lake Mich. Coll: V. E. Noble. 29 April 1967.

1368a Vertical #20 net haul. Sta. A-3-E. 42°05'30"N; 86°43'00"W. Lake Mich. Coll: E. F. Stoermer. 4 May 1967.
48 spp. 31830 spec. H=1.731 R=0.553

1369 Vertical #20 net haul. Sta. A-4-E. 42°03'30"N; 87°06'30"W. Lake Mich. Coll: E. F. Stoermer. 4 May 1967.
46 spp. 26829 spec. H=1.103 R=0.712

1370 Vertical #20 net haul. Sta. A-6-E. 41°52'00"N; 87°27'00"W. Lake Mich. Coll: E. F. Stoermer. 3 May 1967.
53 spp. 43445 spec. H=1.349 R=0.660

1371a Vertical #20 net haul. Sta. C-3-E. 42°49'10"N; 86°28'25"W. Lake Mich. Coll: E. F. Stoermer. 4 May 1967.
40 spp. 43318 spec. H=1.236 R=0.665

1372a Vertical #20 net haul. Sta. C-5-E. 42°49'00"N; 86°50'00"W. Lake Mich. Coll: E. F. Stoermer. 5 May 1967.
45 spp. 28196 spec. H=1.458 R=0.617

1373 Vertical #20 net haul. Sta. C-7-E. 42°47'30"N; 87°34'30"W. Lake Mich. Coll: E. F. Stoermer. 5 May 1967.
40 spp. 35058 spec. H=1.011 R=0.726

1374 Vertical #20 net haul. Sta. E-2-E. 44°37'00"N; 86°21'42"W. Lake Mich. Coll: E. F. Stoermer. 7 May 1967.
59 spp. 33460 spec. H=1.676 R=0.589

1375a Vertical #20 net haul. Sta. E-3-E. 44°34'00"N; 86°40'00"W. Lake Mich. Coll: E. F. Stoermer. 7 May 1967.
57 spp. 41559 spec. H=1.418 R=0.649

1376 Vertical #20 net haul. Sta. E-5-E. 44°25'30"N; 87°10'18"W. Lake Mich. Coll: E. F. Stoermer. 6 May 1967.
55 spp. 35576 spec. H=1.764 R=0.560

1377a Vertical #20 net haul. Sta. GS-67-1. 44°46.9'N; 86°13.7'W. Lake Mich. Coll: E. F. Stoermer. 9 May 1967.
39 spp. 25265 spec. H=1.462 R=0.601

1378 Vertical #20 net haul. Sta. GS-67-2. 45°00.6N; 85°56.5W. Lake Mich.
Coll: E. F. Stoermer. 9 May 1967.
34 spp. 23781 spec. H=1.693 R=0.520

1379 Vertical #20 net haul. Sta. GS-67-3. 45°04.4N; 85°26.6W. Lake Mich.
Coll: E. F. Stoermer. 9 May 1967.
54 spp. 32312 spec. H=1.748 R=0.562

1380a Vertical #20 net haul. Sta. GS-67-4. 45°25.2N; 85°19.0W. Lake Mich.
Coll: E. F. Stoermer. 9 May 1967.
63 spp. 59470 spec. H=1.872 R=0.548

1381a Vertical #20 net haul. Sta. GS-67-5. 45°30.5N; 85°23.5W. Lake Mich.
Coll: E. F. Stoermer. 10 May 1967.
55 spp. 41926 spec. H=1.783 R=0.555

1382 Vertical #20 net haul. Sta. GS-67-6. 45°33.0N; 85°34.5W. Lake Mich.
Coll: E. F. Stoermer. 10 May 1967.
64 spp. 36026 spec. H=1.553 R=0.626

1383 Vertical #20 net haul. Sta. GS-67-7. 45°34.5N; 85°41.2W. Lake Mich.
Coll: E. F. Stoermer. 10 May 1967.
61 spp. 37408 spec. H=1.855 R=0.549

1384 Vertical #20 net haul. Sta. GS-67-8. 45°44.7N; 85°46.5W. Lake Mich.
Coll: E. F. Stoermer. 10 May 1967.
67 spp. 54095 spec. H=1.651 R=0.607

1385 Vertical #20 net haul. Sta. GS-67-9. 45°54.6N; 86°11.5W. Lake Mich.
Coll: E. F. Stoermer. 10 May 1967.
50 spp. 42471 spec. H=1.660 R=0.576

1386 Vertical #20 net haul. Sta. GS-67-10. 45°34.0N; 86°25.7W. Lake Mich.
Coll: E. F. Stoermer. 12 May 1967.
62 spp. 34810 spec. H=1.614 R=0.609

1387 Vertical #20 net haul. Sta. GS-67-11. 45°31.7N; 86°41.4W. Lake Mich.
Coll: E. F. Stoermer. 12 May 1967.
106 spp. 26248 spec. H=2.075 R=0.555

1388 Vertical #20 net haul. Sta. GS-67-12. 45°47.1N; 86°36.1W. Lake Mich.
Coll: E. F. Stoermer. 12 May 1967.
126 spp. 16575 spec. H=2.212 R=0.543

1389 Vertical #20 net haul. Sta. GS-67-13. 45°43.8N; 86°41.6W. Lake Mich.
Coll: E. F. Stoermer. 12 May 1967.
103 spp. 38783 spec. H=1.644 R=0.645

1390 Vertical #20 net haul. Sta. GS-67-14. 45°40.5N; 86°48.8W. Lake Mich.
Coll: E. F. Stoermer. 12 May 1967.
78 spp. 17030 spec. H=1.823 R=0.582

1391 Vertical #20 net haul. Sta. GS-67-15. 45°36.2N; 86°58.5 W. Lake Mich.
Coll: E. F. Stoermer. 12 May 1967.
66 spp. 20883 spec. H=2.091 R=0.501

1392 Vertical #20 net haul. Sta. GS-67-16. 45°47.4N; 87°02.2W. Lake Mich.
Coll: E. F. Stoermer. 12 May 1967.
93 spp. 32447 spec. H=2.114 R=0.534

1393 Vertical #20 net haul. Sta. GS-67-17. 45°34.0N; 87°09.0W. Lake Mich.
Coll: E. F. Stoermer. 13 May 1967.
71 spp. 36504 spec. H=2.077 R=0.513

1394a Vertical #20 net haul. Sta. GS-67-18. 45°23.5N; 87°17.5W. Lake Mich.
Coll: E. F. Stoermer. 13 May 1967.
108 spp. 58134 spec. H=1.955 R=0.583

1395 Vertical #20 net haul. Sta. GS-67-19. 45°05.0N; 87°32.3W. Lake Mich.
Coll: E. F. Stoermer. 13 May 1967.
82 spp. 85154 spec. H=1.423 R=0.677

1396 Vertical #20 net haul. Sta. GS-67-20. 44°40.2N; 87°52.8W. Lake Mich.
Coll: E. F. Stoermer. 13 May 1967.
78 spp. 135155 spec. H=1.359 R=0.688

1397 Vertical #20 net haul. Sta. GS-67-21. 44°54.7N; 87°25,8W. Lake Mich.
Coll: E. F. Stoermer. 13 May 1967.
70 spp. 152893 spec. H=1.296 R=0.695

1398 Vertical #20 net haul. Sta. GS-67-22. 44°46.6N; 87°17.4W. Lake Mich.
Coll: E. F. Stoermer. 14 May 1967.
77 spp. 32937 spec. H=1.873 R=0.569

1399a Surface #20 net tow. Harbor entrance, Port Washington, Wisconsin.
PW: 43°23.2'N; 87°51.7'W. Coll: E. F. Stoermer. 5 May 1967.
64 spp. 14704 spec. H=2.041 R=0.509

1400a Surface #20 net tow. Harbor entrance, Sheboygan, Wisconsin, Lake Mich.
SB: 43°45.0'N; 87°41.5'W. Coll: E. F. Stoermer. 6 May 1967.
96 spp. 16788 spec. H=2.297 R=0.497

1401 Surface #20 net tow. Harbor entrance, Manitowoc, Wisconsin, Lake Mich.
MO: 44°05.6'N; 87°38.6'W. Coll: E. F. Stoermer. 6 May 1967.
101 spp. 17008 spec. H=2.029 R=0.560

1402 Surface #20 net tow. Harbor entrance, Two Rivers, Wisconsin, Lake Mich.
TR: 44°08.6'N; 87°33.6'W. Coll: E. F. Stoermer. 6 May 1967.
108 spp. 18468 spec. H=2.055 R=0.561

1403 Surface #20 net tow. Harbor entrance, Charlevoix, Michigan, Lake Mich.
CA: 45°19.3'N; 85°15.9'W. Coll: E. F. Stoermer. 10 May 1967.
123 spp. 7653 spec. H=2.859 R=0.406

1404 Surface #20 net tow. Harbor entrance, Manistique, Michigan, Lake Mich.
MQ: 45°56.7'N; 86°14.8'W. Coll: E. F. Stoermer. 10 May 1967.
163 spp. 7872 spec. H=2.327 R=0.543

1405 Surface #20 net tow. Harbor entrance, Escanaba, Michigan, Lake Mich.
ES: 45°44.7'N; 87°02.2'W. Coll: E. F. Stoermer. 12 May 1967.
92 spp. 15504 spec. H=1.534 R=0.661

1406a Surface #20 net tow. Harbor entrance, Green Bay, Wisconsin, Lake Mich.
GB: 44°39.2'N; 87°54.1'W. Coll: E. F. Stoermer. 13 May 1967.
75 spp. 37095 spec. H=0.513 R=0.881

1407 Surface #20 net tow. Harbor entrance, Sturgeon Bay, Wisconsin, Lake Mich.
SM: 44°47.5'N; 87°18.6'W. Coll: E. F. Stoermer. 14 May 1967.
116 spp. 16747 spec. H=2.393 R=0.497

1408a Vertical #20 net tow. Sta. A-3-E. 42°05'30"N; 86°43'00"W. Lake Mich.
Coll: E. Dunster. 23 May 1967.
48 spp. 22363 spec. H=1.694 R=0.562

1409a Vertical #20 net tow. Sta. A-4-E. 42°03'30"N; 87°06'30"W. Lake Mich.
Coll: E. Dunster. 23 May 1967.
32 spp. 33606 spec. H=1.553 R=0.556

1410a Vertical #20 net haul. Sta. A-6-E. 41°52'00"N; 87°27'00"W. Lake Mich.
Coll: E. Dunster. 24 May 1967.
48 spp. 17736 spec. H=1.555 R=0.598

1411a Vertical #20 net haul. Sta. C-3-E. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: E. Dunster. 31 May 1967.
48 spp. 24373 spec. H=1.558 R=0.597

1412a Vertical #20 net haul. Sta. C-5-E. 42°49'00"N; 86°50'00"W. Lake Mich.
Coll: E. Dunster. 31 May 1967.
44 spp. 23758 spec. H=1.480 R=0.609

1413a Vertical #20 net haul. Sta. C-7-E. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: E. Dunster. 25 May 1967.
37 spp. 31657 spec. H=1.185 R=0.672

1414a Vertical #20 net haul. Sta. E-2-E. 44°37'00"N; 86°21'42"W. Lake Mich.
Coll: E. Dunster. 28 May 1967.
37 spp. 29775 spec. H=1.363 R=0.623

1415 Vertical #20 net haul. Sta.E-3-E. 44°34'00"N; 86°40'00"W. Lake Mich.
Coll: E. Dunster. 28 May 1967.
38 spp. 44474 spec. H=1.244 R=0.658

1416 Vertical #20 net haul. Sta. E-5-E. 44°25'30"N; 87°10'18"W. Lake Mich.
Coll: E. Dunster. 28 May 1967.
58 spp. 45729 spec. H=1.472 R=0.637

1417 Surface #20 net tow. Harbor entrance, Holland, Michigan, Lake Mich.
HO: 42°46.4'N; 86°12.9'W. Coll: E. Dunster. 22 May 1967.
138 spp. 26748 spec. H=2.574 R=0.478

1418a Surface #20 net tow. Harbor entrance, South Haven, Michigan, Lake Mich.
SH: 42°24.0'N; 86°17.3'W. Coll: E. Dunster. 22 May 1967.
50 spp. 6430 spec. H=1.829 R=0.532

1419a Surface #20 net tow. Harbor entrance, Buffington, Indiana, Lake Mich.
BU: 41°38.8'N; 87°24.6'W. Coll: E. Dunster. 23 May 1967.
42 spp. 5462 spec. H=2.098 R=0.439

1420 Surface #20 net tow. Harbor entrance, Indiana Harbor, Indiana, Lake Mich. IH: 41°40.9'N; 87°26.5'W. Coll: E. Dunster. 23 May 1967.
40 spp. 6620 spec. H=1.938 R=0.475

1421a Surface #20 net tow. Harbor entrance, Calumet Harbor, Indiana, Lake Mich. CH: 41°43.5'N; 87°29.6'W. Coll: E. Dunster. 23 May 1967.
48 spp. 5764 spec. H=2.011 R=0.480

1422a Surface #20 net tow. Harbor entrance, Gary, Indiana, Lake Mich. GA: 41°37.5'N; 87°19.4'W. Coll: E. Dunster. 23 May 1967.
69 spp. 19573 spec. H=2.037 R=0.519

1423 Surface #20 net tow. Harbor entrance, Waukegan, Illinois, Lake Mich. WA: 42°21.7'N; 87°48.8'W. Coll: E. Dunster. 25 May 1967.
80 spp. 23353 spec. H=2.195 R=0.499

1424a Surface #20 net tow. Harbor entrance, Kenosha, Wisconsin, Lake Mich. KN: 42°35.7'N; 87°48.5'W. Coll: E. Dunster. 25 May 1967.
42 spp. 7506 spec. H=2.214 R=0.408

1425 Surface #20 net tow. Harbor entrance, Racine, Wisconsin, Lake Mich. RA: 42°44.1'N; 87°46.3'W. Coll: E. Dunster. 25 May 1967.
41 spp. 11311 spec. H=2.111 R=0.432

1426 Surface #20 net tow. Harbor entrance, Manistee, Michigan, Lake Mich. MS: 44°15.1'N; 86°20.8'W. Coll: E. Dunster. 29 May 1967.
135 spp. 9525 spec. H=2.896 R=0.410

1427 Surface #20 net tow. Harbor entrance, Ludington, Michigan, Lake Mich. LU: 43°57.2'N; 86°27.8'W. Coll: E. Dunster. 29 May 1967.
96 spp. 8260 spec. H=2.726 R=0.403

1428a Surface #20 net tow. Harbor entrance, Muskegon, Michigan, Lake Mich. MU: 43°13.5'N; 86°20.8'W. Coll: E. Dunster. 29 May 1967.
96 spp. 33189 spec. H=1.346 R=0.705

1429a Surface #20 net tow. Harbor entrance, White Lake, Michigan, Lake Mich. WL: 43°22.5'N; 86°25.3'W. Coll: E. Dunster. 29 May 1967.
75 spp. 9421 spec. H=2.399 R=0.444

1430a Surface #20 net tow. Michigan City, Indiana, Lake Mich. MC: 41°43.7'N; 87°54.7'W. Coll: J. Ayers. 12 June 1967.
18 spp. 4053 spec. H=0.969 R=0.665

1431 Vertical #20 net tow. Sta. A-3-E. 42°05'30"N; 86°43'00"W. Lake Mich. Coll: J. Ayers. 12 June 1967.
44 spp. 38837 spec. H=1.760 R=0.535

1432 Vertical #20 net tow. Sta. A-4-E. 42°03'30"N; 87°06'30"W. Lake Mich. Coll: J. Ayers. 13 June 1967.
55 spp. 39148 spec. H=1.876 R=0.532

1433 Vertical #20 net tow. Sta. C-3-E. 42°49'10"N; 86°28'25"W. Lake Mich. Coll: J. Ayers. 17 June 1967.
48 spp. 15482 spec. H=2.321 R=0.400

1434 Vertical #20 net tow. Sta. C-5-E. 42°49'00"N; 86°50'00"W. Lake Mich.
Coll: J. Ayers. 17 June 1967.
45 spp. 33436 spec. H=1.453 R=0.618

1435 Vertical #20 net tow. Sta. C-7-E. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: J. Ayers. 13 June 1967.
46 spp. 31673 spec. H=1.695 R=0.557

1436 Vertical #20 net tow. Sta. E-2-E. 44°37'00"N; 86°21'42"W. Lake Mich.
Coll: J. Ayers. 15 June 1967.
42 spp. 27636 spec. H=1.894 R=0.493

1437 Vertical #20 net tow. Sta. E-3-E. 44°34'00"N; 86°40'00"W. Lake Mich.
Coll: J. Ayers. 15 June 1967.
31 spp. 37153 spec. H=1.293 R=0.623

1438 Vertical #20 net tow. Sta. E-5-E. 44°25'30"N; 87°10'18"W. Lake Mich.
Coll: J. Ayers. 14 June 1967.
38 spp. 27540 spec. H=1.307 R=0.641

1439a Vertical #20 net tow. Sta. B-6. 42°22'30"N; 87°30'00"W. Lake Mich.
Coll: C. F. Powers. 5 June 1964.
52 spp. 50050 spec. H=1.787 R=0.548

1440a Vertical #20 net tow. Sta. B-6. 42°22'30"N; 87°30'00"W. Lake Mich.
Coll: C. F. Powers. 11 July 1964.
46 spp. 27137 spec. H=2.152 R=0.438

1441a Vertical #20 net tow. Sta. B-6. 42°22'30"N; 87°30'00"W. Lake Mich.
Coll: C. F. Powers. 24 July 1964.
41 spp. 45399 spec. H=1.842 R=0.504

1442a Vertical #20 net tow. Sta. B-6. 42°22'30"N; 87°30'00"W. Lake Mich.
Coll: C. F. Powers. 2 Aug. 1964.
32 spp. 29310 spec. H=1.895 R=0.453

1443 Vertical #20 net tow. Sta. B-6. 42°22'30"N; 87°30'00"W. Lake Mich.
Coll: C. F. Powers. 16 Aug. 1964.
23 spp. 50586 spec. H=1.361 R=0.566

1444a Vertical #20 net tow. Sta. B-6. 42°22'30"N; 87°30'00"W. Lake Mich.
Coll: C. F. Powers. 19 Sept. 1964.
27 spp. 32989 spec. H=1.523 R=0.538

1445a Vertical #20 net tow. Sta. B-6. 42°22'30"N; 87°30'00"W. Lake Mich.
Coll: C. F. Powers. 14 Oct. 1964.
40 spp. 30660 spec. H=1.500 R=0.593

1446a Vertical #20 net tow. Sta. A-3. 42°05'30"N; 86°43'00"W. Lake Mich.
Coll: E. Dunster. 11 July 1967.
45 spp. 40882 spec. H=2.143 R=0.437

1447a Vertical #20 net tow. Sta. A-4. 42°03'30"N; 87°06'30"W. Lake Mich.
Coll: E. Dunster. 11 July 1967.
35 spp. 42752 spec. H=2.284 R=0.358

1448a Vertical #20 net tow. Sta. A-6. 41°52'00"N; 87°27'00"W. Lake Mich.
Coll: E. Dunster. 10 July 1967.
32 spp. 28275 spec. H=1.311 R=0.622

1449a Vertical #20 net tow. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: E. Dunster. 16 July 1967.
64 spp. 26169 spec. H=2.568 R=0.383

1450a Vertical #20 net tow. Sta. C-5. 42°49'00"N; 86°50'00"W. Lake Mich.
Coll: E. Dunster. 16 July 1967.
49 spp. 52515 spec. H=2.278 R=0.415

1451a Vertical #20 net tow. Sta. C-7. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: E. Dunster. 16 July 1967.
52 spp. 50802 spec. H=2.193 R=0.445

1452a Vertical #20 net tow. Sta. E-2. 44°37'00"N; 86°21'42"W. Lake Mich.
Coll: E. Dunster. 14 July 1967.
68 spp. 46974 spec. H=2.464 R=0.416

1453a Vertical #20 net tow. Sta. E-3. 44°34'00"N; 86°40'00"W. Lake Mich.
Coll: E. Dunster. 15 July 1967.
47 spp. 39563 spec. H=1.843 R=0.521

1454a Vertical #20 net tow. Sta. E-5. 44°25'30"N; 87°10'18"W. Lake Mich.
Coll: E. Dunster. 15 July 1967.
46 spp. 49990 spec. H=1.858 R=0.515

1455 Surface #20 net tow. CH-1, Chicago, Illinois, Lake Mich. Coll: E. Dunster. 10 July 1967.

1504a Vertical #20 net tow. Sta. A-3. 42°05'30"N; 86°43'00"W. Lake Mich.
Coll: E. Dunster. 28 Aug. 1967.
45 spp. 40505 spec. H=1.404 R=0.631

1505 Vertical #20 net tow. Sta. A-4. 42°03'30"N; 87°06'30"W. Lake Mich.
Coll: E. Dunster. 28 Aug. 1967.
19 spp. 19406 spec. H=1.484 R=0.496

1506 Vertical #20 net tow. Sta. A-6. 41°52'00"N; 87°27'00"W. Lake Mich.
Coll: E. Dunster. 29 Aug. 1967.
17 spp. 19117 spec. H=1.123 R=0.603

1508 Vertical #20 net tow. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: E. Dunster. 2 Sept. 1967.
23 spp. 25022 spec. H=1.530 R=0.512

1509 Vertical #20 net tow. Sta. C-5. 42°49'00"N; 86°40'00"W. Lake Mich.
Coll: E. Dunster. 2 Sept. 1967.
30 spp. 19814 spec. H=2.066 R=0.393

1510 Vertical #20 net tow. Sta. C-7. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: E. Dunster. 29 Aug. 1967.
25 spp. 31630 spec. H=1.375 R=0.573

1511 Vertical #20 net tow. Sta. E-2. 44°37'00"N; 86°21'42"W. Lake Mich. Coll: E. Dunster. 1 Sept. 1967.
59 spp. 32577 spec. H=2.351 R=0.423

1512 Vertical #20 net tow. Sta. E-3. 44°34'00"N; 86°40'00"W. Lake Mich. Coll: E. Dunster. 1 Sept. 1967.
59 spp. 25468 spec. H=2.396 R=0.412

1513 Vertical #20 net tow. Sta. E-5. 44°25'30"N; 87°10'18"W. Lake Mich. Coll: E. Dunster. 31 Aug. 1967.
33 spp. 19734 spec. H=1.813 R=0.482

1520 Surface #20 net tow. Holland, Michigan, Lake Mich. HO: 42°46.4'N; 86°12.9'W. Coll: J. Ayers. 18 Sept. 1967.
76 spp. 21209 spec. H=1.917 R=0.557

1521 Surface #20 net tow. South Haven, Michigan, Lake Mich. SH: 42°24.0'N; 86°17.3'W. Coll: J. Ayers. 18 Sept. 1967.
89 spp. 17332 spec. H=1.451 R=0.677

1522 Surface #20 net tow. Benton Harbor, Michigan, Lake Mich. BH: 42°06.9'N; 86°29.7'W. Coll: J. Ayers. 18 Sept. 1967.
102 spp. 54841 spec. H=1.452 R=0.686

1523a Surface #20 net tow. Racine, Wisconsin, Lake Mich. RA: 42°44.1'N; 87°46.3'W. Coll: J. Ayers. 19 Sept. 1967.
54 spp. 10840 spec. H=1.653 R=0.586

1524 Surface #20 net tow. Milwaukee, Wisconsin, Lake Mich. MI: 43°01.6'N; 87°52.9'W. Coll: J. Ayers. 20 Sept. 1967.
38 spp. 4568 spec. H=1.595 R=0.561

1525a Surface #20 net tow. Port Washington, Wisconsin, Lake Mich. PW: 43° 23.2'N; 87°51.7'W. Coll: J. Ayers. 20 Sept. 1967.
27 spp. 7181 spec. H=1.426 R=0.567

1526 Surface #20 net tow. Manitowoc, Wisconsin, Lake Mich. MO: 44°05.6'N; 87°38.6'W. Coll: J. Ayers. 20 Sept. 1967.
121 spp. 17577 spec. H=2.230 R=0.535

1527 Surface #20 net tow. Two Rivers, Wisconsin, Lake Mich. TR: 44°08.6'N; 87°33.6'W. Coll: J. Ayers. 20 Sept. 1967.
135 spp. 15900 spec. H=1.820 R=0.629

1528a Surface #20 net tow. Sheboygan, Wisconsin, Lake Mich. SB: 43°45.0'N; 87°41.5'W. Coll: J. Ayers. 20 Sept. 1967.
65 spp. 6926 spec. H=2.057 R=0.507

1529 Surface #20 net tow. Kewaunee, Wisconsin, Lake Mich. KW: 44°27.5'N; 87°29.6'W. Coll: J. Ayers. 20 Sept. 1967.
95 spp. 8339 spec. H=2.389 R=0.475

1530a Surface #20 net tow. Frankfort, Michigan, Lake Mich. FR: 44°37.8'N; 86°15.0'W. Coll: J. Ayers. 24 Sept. 1967.
94 spp. 9999 spec. H=1.856 R=0.591

1531 Surface #20 net tow. Grand Haven, Michigan, Lake Mich. GH: 43°03.5'N; 86°15.4'W. Coll: J. Ayers. 25 Sept. 1967.
70 spp. 11830 spec. H=1.762 R=0.585

1532 Vertical #20 net tow. Sta. A-3. 42°05'30"N; 86°43'00"W. Lake Mich. Coll: J. Ayers. 18 Sept. 1967.
49 spp. 30441 spec. H=1.380 R=0.645

1533 Vertical #20 net tow. Sta. A-4. 42°03'30"N; 87°06'30"W. Lake Mich. Coll: J. Ayers. 19 Sept. 1967.
49 spp. 21542 spec. H=1.362 R=0.650

1534 Vertical #20 net tow. Sta. A-6. 41°52'00"N; 87°27'00"W. Lake Mich. Coll: J. Ayers. 19 Sept. 1967.
39 spp. 32233 spec. H=1.433 R=0.609

1535 Vertical #20 net tow. Sta. C-7. 42°47'30"N; 87°34'30"W. Lake Mich. Coll: J. Ayers. 20 Sept. 1967.
32 spp. 31067 spec. H=1.109 R=0.680

1536 Vertical #20 net tow. Sta. E-2. 44°37'00"N; 86°21'42"W. Lake Mich. Coll: J. Ayers. 24 Sept. 1967.
85 spp. 36674 spec. H=2.199 R=0.505

1537a Vertical #20 net tow. Sta. E-3. 44°34'00"N; 86°40'00"W. Lake Mich. Coll: J. Ayers. 24 Sept. 1967.
63 spp. 23186 spec. H=2.575 R=0.378

1538a Vertical #20 net tow. Sta. E-5. 44°25'30"N; 87°10'18"W. Lake Mich. Coll: J. Ayers. 23 Sept. 1967.
70 spp. 18103 spec. H=2.003 R=0.529

1539a Vertical #20 net tow. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich. Coll: C. F. Powers. 4 Oct. 1967.
31 spp. 19874 spec. H=1.462 R=0.574

1540 Vertical #20 net tow. Sta. C-5. 42°49'00"N; 86°50'00"W. Lake Mich. Coll: C. F. Powers. 4 Oct. 1967.
41 spp. 20147 spec. H=1.401 R=0.623

1541a Vertical #20 net tow. Sta. E-2. 44°37'00"N; 86°21'42"W. Lake Mich. Coll: E. F. Stoermer. 11 Oct. 1967.
85 spp. 18791 spec. H=1.854 R=0.583

1542 Vertical #20 net tow. Sta. E-3. 44°34'00"N; 86"40'00"W. Lake Mich. Coll: E. F. Stoermer. 11 Oct. 1967.
72 spp. 19664 spec. H=2.417 R=0.435

1543 Vertical #20 net tow. Sta. E-5. 44°25'30"N; 87°10'18"W. Lake Mich. Coll: E. F. Stoermer. 10 Oct. 1967.
52 spp. 13922 spec. H=1.460 R=0.631

1544 Surface #20 net tow. Muskegon, Michigan, Lake Mich. MU: 43°13.5'N; 86°20.8'W. Coll: E. F. Stoermer. 2 Oct. 1967.
111 spp. 41967 spec. H=0.821 R=0.826

1545 Surface #20 net tow. White Lake, Michigan, Lake Mich. WL: 43°22.5'N; 86°25.3'W. Coll: E. F. Stoermer. 2 Oct. 1967.
159 spp. 14799 spec. H=2.579 R=0.491

1546 Surface #20 net tow. Ludington, Michigan, Lake Mich. LU: 43°57.2'N; 86°27.8'W. Coll: E. F. Stoermer. 2 Oct. 1967.
129 spp. 19993 spec. H=1.155 R=0.762

1547 Surface #20 net tow. Manistee, Michigan, Lake Mich. MS: 44°15.1'N; 86°20.8'W. Coll: E. F. Stoermer. 2 Oct. 1967.
71 spp. 12525 spec. H=1.339 R=0.686

1548 Surface #20 net tow. Charlevoix, Michigan, Lake Mich. CA: 45°19.3'N; 85°15.9'W. Coll: E. F. Stoermer. 3 Oct. 1967.
50 spp. 7861 spec. H=1.328 R=0.661

1549 Surface #20 net tow. Manistique, Michigan, Lake Mich. MQ: 45°56.7'N; 86°14.8'W. Coll: E. F. Stoermer. 4 Oct. 1967.
85 spp. 7297 spec. H=2.287 R=0.485

1550 Surface #20 net tow. Marinette, Wisconsin and Menominee, Michigan. Green Bay. MR: 45°05.8'N; 87°35.1'W. Coll: E. F. Stoermer. 5 Oct. 1967.
233 spp. 8071 spec. H=3.574 R=0.344

1551 Surface #20 net tow. Escanaba, Michigan, Little Bay De Noc. ES: 45° 44.7'N; 87°02.2'W. Coll: E. F. Stoermer. 5 Oct. 1967.
77 spp. 12519 spec. H=1.980 R=0.544

1552 Surface #20 net tow. Sturgeon Bay, Wisconsin, Lake Mich. SM: 44° 47.5'N; 87°18.6'W. Coll: E. F. Stoermer. 6 Oct. 1967.
88 spp. 15145 spec. H=1.850 R=0.587

1553 Surface #20 net tow. Sturgeon Bay, Wisconsin, Green Bay. SG: 44° 50.1N; 87°22.9'W. Coll: E. F. Stoermer. 6 Oct. 1967.
114 spp. 13616 spec. H=2.024 R=0.573

1554a Vertical #20 net tow. Sta. GS-1A. 44°46.9'N; 86°13.7'W. Lake Mich. Coll: E. F. Stoermer. 3 Oct. 1967.
91 spp. 28106 spec. H=2.212 R=0.510

1555 Vertical #20 net tow. Sta. GS-2A. 45°00.6'N; 85°56.5'W. Lake Mich. Coll: E. F. Stoermer. 3 Oct. 1967.
81 spp. 28320 spec. H=1.973 R=0.551

1556 Vertical #20 net tow. Sta. GS-3A. 45°04.4'N; 85°26.6'W. Lake Mich. Coll: E. F. Stoermer. 3 Oct. 1967.
56 spp. 19177 spec. H=1.767 R=0.561

1557 Vertical #20 net tow. Sta. GS-4A. 45°25.2'N; 85°19.0'W. Lake Mich. Coll: E. F. Stoermer. 3 Oct. 1967.
81 spp. 26760 spec. H=1.705 R=0.612

1558 Vertical #20 net tow. Sta. GS-5A. 45°30.5'N; 85°23.5'W. Lake Mich. Coll: E. F. Stoermer. 4 Oct. 1967.
69 spp. 25228 spec. H=1.775 R=0.581

1559 Vertical #20 net tow. Sta. GS-7A. 45°34.5'N; 85°41.2'W. Lake Mich.
Coll: E. F. Stoermer. 4 Oct. 1967.
68 spp. 28594 spec. H=1.682 R=0.601

1560 Vertical #20 net tow. Sta. GS-8A. 45°44.7'N; 85°46.5'W. Lake Mich.
Coll: E. F. Stoermer. 4 Oct. 1967.
63 spp. 21173 spec. H=1.992 R=0.519

1561 Vertical #20 net tow. Sta. GS-9A. 45°54.6'N; 86°11.5'W. Lake Mich.
Coll: E. F. Stoermer. 4 Oct. 1967.
49 spp. 17037 spec. H=1.859 R=0.522

1562 Vertical #20 net tow. Sta. GS-10A. 45°34.0'N; 86°25.7'W. Lake Mich.
Coll: E. F. Stoermer. 5 Oct. 1967.
54 spp. 40534 spec. H=1.882 R=0.528

1563 Vertical #20 net tow. Sta. GS-11A. 45°31.7'N; 86°41.4'W. Lake Mich.
Coll: E. F. Stoermer. 5 Oct. 1967.
60 spp. 42766 spec. H=1.711 R=0.582

1564 Vertical #20 net tow. Sta. GS-12A. 45°47.1'N; 86°36.1'W. Lake Mich.
Coll: E. F. Stoermer. 5 Oct. 1967.
46 spp. 60756 spec. H=1.066 R=0.722

1565 Vertical #20 net tow. Sta. GS-13A. 45°43.8'N; 86°41.6'W. Lake Mich.
Coll: E. F. Stoermer. 5 Oct. 1967.
155 spp. 19722 spec. H=1.653 R=0.672

1566 Vertical #20 net tow. Sta. GS-14A. 45°40.5'N; 86°48.8'W. Green Bay.
Coll: E. F. Stoermer. 5 Oct. 1967.
70 spp. 54510 spec. H=1.493 R=0.649

1567 Vertical #20 net tow. Sta. GS-15A. 45°36.2'N; 86°58.5'W. Green Bay.
Coll: E. F. Stoermer. 5 Oct. 1967.
115 spp. 62984 spec. H=1.832 R=0.614

1568 Vertical #20 net tow. Sta. GS-16A. 45°47.4'N; 87°02.2'W. Little Bay De Noc. Coll: E. F. Stoermer. 5 Oct. 1967.
73 spp. 69301 spec. H=1.517 R=0.646

1569 Vertical #20 net tow. Sta. GS-17A. 45°34.0'N; 87°09.0'W. Green Bay.
Coll: E. F. Stoermer. 5 Oct. 1967.
106 spp. 67273 spec. H=1.685 R=0.639

1570 Vertical #20 net tow. Sta. GS-18A. 45°23.5'N; 87°17.5'W. Green Bay.
Coll: E. F. Stoermer. 5 Oct. 1967.
57 spp. 10084 spec. H=1.813 R=0.552

1571 Vertical #20 net tow. Sta. GS-19A. 45°05.1'N; 87°32.3'W. Green Bay.
Coll: E. F. Stoermer. 6 Oct. 1967.
102 spp. 170827 spec. H=1.233 R=0.733

1572 Vertical #20 net tow. Sta. GS-20A. 44°40.2'N; 87°52.9'W. Green Bay.
Coll: E. F. Stoermer. 6 Oct. 1967.
66 spp. 110952 spec. H=1.146 R=0.727

1573 Vertical #20 net tow. Sta. GS-21A. 44°55.3'N; 87°26.0'W. Green Bay. Coll: E. F. Stoermer. 6 Oct. 1967.
91 spp. 89293 spec. H=1.423 R=0.685

1574 Vertical #20 net tow. Sta. GS-22A. 44°46.6'N; 87°17.2'W. Lake Mich. Coll: E. F. Stoermer. 6 Oct. 1967.
161 spp. 34766 spec. H=2.155 R=0.576

1575 Vertical #20 net tow. Sta. GS-28A. 44°52.2'N; 87°39.0'W. Green Bay. Coll: E. F. Stoermer. 6 Oct. 1967.
98 spp. 77508 spec. H=1.465 R=0.680

1580 Surface #20 net tow. Indiana Harbor, Indiana, Lake Mich. Coll: J. Ayers. 8 Nov. 1967.

1581 Surface #20 net tow. Gary, Indiana, Lake Mich. Coll: J. Ayers. 8 Nov. 1967.

1582 Surface #20 net tow. Calumet Harbor, Indiana, Lake Mich. Coll: J. Ayers. 10 Nov. 1967.

1583 Surface #20 net tow. Michigan City Harbor, Indiana, Lake Mich. Coll: J. Ayers. 10 Nov. 1967.

1584 Surface #20 net tow. Chicago Harbor, Illinois, Lake Mich. Coll: J. Ayers. 10 Nov. 1967.

1589 Vertical #20 net tow. 1/4 mi west of GH pierhead. Lake Mich. Coll: E. Dunster. 19 March 1968.

1590 Vertical #20 net tow. 2.8 mi N GH pierhead, 3/4 mi from shore. Lake Mich. Coll: E. Dunster. 19 March 1968.

1591 Vertical #20 net tow. Open water area in center of ice flow 1 1/4 mi from shore. Lake Mich. Coll: E. Dunster. 19 March 1968.

1592 Vertical #20 net tow. Sta. C-1. 42°49'40"N; 86°14'50"W. Lake Mich. Coll: E. Dunster. 26 March 1968.

1593 Vertical #20 net tow. Sta. C-2. 42°49'40"N; 86°18'25"W. Lake Mich. Coll: E. Dunster. 26 March 1968.

1594 Vertical #20 net tow. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich. Coll: E. Dunster. 26 March 1968.

1595 Vertical #20 net tow. Sta. A-1. 42°06'30"N; 86°32'00"W. Lake Mich. Coll: E. Dunster. 5 April 1968.

1596 Vertical #20 net tow. Sta. A-1. 42°06'30"N; 86°32'00"W. Lake Mich. Coll: E. Dunster. 16 April 1968.

1597 Vertical #20 net tow. Sta. A-2. 42°06'00"N; 86°37'00"W. Lake Mich. Coll: E. Dunster. 5 April 1968.

1598 Vertical #20 net tow. Sta. A-2. 42°06'00"N; 86°37'00"W. Lake Mich. Coll: E. Dunster. 16 April 1968.

1599 Vertical #20 net tow. Sta. A-3. 42°05'30"N; 86°43'00"W. Lake Mich.
Coll: E. Dunster. 5 April 1968.

1600 Vertical #20 net tow. Sta. A-3. 42°05'30"N; 86°43'00"W. Lake Mich.
Coll: E. Dunster. 16 April 1968.

1601 Vertical #20 net tow. Sta. A-4. 42°03'30"N; 87°06'30"W. Lake Mich.
Coll: E. Dunster. 5 April 1968.

1602 Vertical #20 net tow. Sta. A-4. 42°03'30"N; 87°06'30"W. Lake Mich.
Coll: E. Dunster. 17 April 1968.

1603 Vertical #20 net tow. Sta. A-5. 41°57'00"N; 87°18'30"W. Lake Mich.
Coll: E. Dunster. 3 April 1968.

1604 Vertical #20 net tow. Sta. A-5. 41°57'00"N; 87°18'30"W. Lake Mich.
Coll: E. Dunster. 17 April 1968.

1605 Vertical #20 net tow. Sta. A-6. 41°52'00"N; 87°27'00"W. Lake Mich.
Coll: E. Dunster. 3 April 1968.

1606 Vertical #20 net tow. Sta. A-6. 41°52'00"N; 87°27'00"W. Lake Mich.
Coll: J. Ayers. 13 June 1967.

1607 Vertical #20 net tow. Sta. A-6. 41°52'00"N; 87°27'00"W. Lake Mich.
Coll: E. Dunster. 17 April 1968.

1608 Vertical #20 net tow. Sta. C-1. 42°49'40"N; 86°14'50"W. Lake Mich.
Coll: E. Dunster. 16 April 1968.

1609 Vertical #20 net tow. Sta. C-2. 42°49'40"N; 86°18'25"W. Lake Mich.
Coll: E. Dunster. 16 April 1968.

1610 Vertical #20 net tow. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: E. Dunster. 16 April 1968.

1611 Vertical #20 net tow. Sta. C-4. 42°48'50"N; 86°41'30"W. Lake Mich.
Coll: E. Dunster. 2 April 1968.

1612 Vertical #20 net tow. Sta. C-4. 42°48'50"N; 86°41'30"W. Lake Mich.
Coll: E. Dunster. 16 April 1968.

1613 Vertical #20 net tow. Sta. C-5. 42°49'00"N; 86°50'00"W. Lake Mich.
Coll: E. Dunster. 2 April 1968.

1614 Vertical #20 net tow. Sta. C-5. 42°49'00"N; 86°50'00"W. Lake Mich.
Coll: E. Dunster. 16 April 1968.

1615 Vertical #20 net tow. Sta. C-6. 42°47'40"N; 87°26'50"W. Lake Mich.
Coll: E. Dunster. 2 April 1968.

1616 Vertical #20 net tow. Sta. C-6. 42°47'40"N; 87°26'50"W. Lake Mich.
Coll: E. Dunster. 17 April 1968.

1617 Vertical #20 net tow. Sta. C-7. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: E. Dunster. 2 April 1968.

1618 Vertical #20 net tow. Sta. C-7. 42°47'30"N; 87°34'30"W. Lake Mich. Coll: E. Dunster. 17 April 1968.

1619 Vertical #20 net tow. Sta. E-1. 44°37'30"N; 86°18'12"W. Lake Mich. Coll: E. Dunster. 22 April 1968.

1620 Vertical #20 net tow. Sta. E-2. 44°37'00"N; 86°21'42"W. Lake Mich. Coll: E. Dunster. 22 April 1968.

1621 Vertical #20 net tow. Sta. E-3. 44°34'00"N; 86°40'00"W. Lake Mich. Coll: E. Dunster. 22 April 1968.

1622 Vertical #20 net tow. Sta. E-4. 44°30'18"N; 86°55'18"W. Lake Mich. Coll: E. Dunster. 22 April 1968.

1623 Vertical #20 net tow. Sta. E-5. 44°25'30"N; 87°10'18"W. Lake Mich. Coll: E. Dunster. 21 April 1968.

1624 Vertical #20 net tow. Sta. E-6. 44°27'48"N; 87°26'25"W. Lake Mich. Coll: E. Dunster. 21 April 1968.

1625 One minute surface #20 net tow 1 mile from Grand Haven, Michigan pierheads bearing 260°. Sta. 1. Lake Mich. Coll: E. F. Stoermer. 7 May 1968.

1626 One minute surface #20 net tow 2 miles offshore from Grand Haven, Michigan pierheads bearing 260°. Sta. 2. Lake Mich. Coll: E. F. Stoermer. 7 May 1968.

1627 One minute surface #20 net tow 3 miles offshore from Grand Haven, Michigan pierheads bearing 260°. Sta. 3. Lake Mich. Coll: E. F. Stoermer. 7 May 1968.

1628 One minute surface #20 net tow 4 miles offshore from Grand Haven, Michigan pierheads bearing 260°. Sta. 4. Lake Mich. Coll: E. F. Stoermer. 7 May 1968.

1629 One minute surface #20 net tow 5 miles from Grand Haven, Michigan pierheads bearing 260°. Sta. 5. Lake Mich. Coll: E. F. Stoermer. 7 May 1968.

1630 Surface #20 net tow in Port Sheldon thermal discharge. Coll: E. F. Stoermer. 7 May 1968.

1631 Surface #20 net tow in Muskegon, Michigan plume 1/2 mi from pierheads. Coll: E. F. Stoermer. 7 May 1968.

1632 Vertical #20 net tow. Sta. A-1. 42°06'30"N; 86°32'00"W. Lake Mich. Coll: E. Dunster. 13 May 1968.

1633 Vertical #20 net tow. Sta. A-2. 42°06'00"N; 86°37'00"W. Lake Mich. Coll: E. Dunster. 13 May 1968.

1634 Vertical #20 net tow. Sta. A-3. 42°05'30"N; 86°43'00"W. Lake Mich. Coll: E. Dunster. 13 May 1968.

1635 Vertical #20 net tow. Sta. A-4. 42°03'30"N; 87°06'30"W. Lake Mich.
Coll: E. Dunster. 14 May 1968.

1636 Vertical #20 net tow. Sta. A-5. 41°57'00"N; 87°18'30"W. Lake Mich.
Coll: E. Dunster. 14 May 1968.

1637 Vertical #20 net tow. Sta. A-6. 41°52'00"N; 87°27'00"W. Lake Mich.
Coll: E. Dunster. 14 May 1968.

1638 Vertical #20 net tow. Sta. C-1. 42°49'40"N; 86°14'50"W. Lake Mich.
Coll: E. Dunster. 13 May 1968.

1639 Vertical #20 net tow. Sta. C-1. 42°49'40"N; 86°14'50"W. Lake Mich.
Coll: E. Dunster. 27 May 1968.

1640 Vertical #20 net tow. Sta. C-2. 42°49'40"N; 86°18'25"W. Lake Mich.
Coll: E. Dunster. 13 May 1968.

1641 Vertical #20 net tow. Sta. C-2. 42°49'40"N; 86°18'25"W. Lake Mich.
Coll: E. Dunster. 27 May 1968.

1642 Vertical #20 net tow. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: E. Dunster. 13 May 1968.

1643 Vertical #20 net tow. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: E. Dunster. 27 May 1968.

1644 Vertical #20 net tow. Sta. C-4. 42°48'50"N; 86°41'30"W. Lake Mich.
Coll: E. Dunster. 13 May 1968.

1645 Vertical #20 net tow. Sta. C-5. 42°49'00"N; 86°50'00"W. Lake Mich.
Coll: E. Dunster. 13 May 1968.

1646 Vertical #20 net tow. Sta. C-5. 42°49'00"N; 86°50'00"W. Lake Mich.
Coll: E. Dunster. 27 May 1968.

1647 Vertical #20 net tow. Sta. C-6. 42°47'40"N; 87°26'50"W. Lake Mich.
Coll: E. Dunster. 14 May 1968.

1648 Vertical #20 net tow. Sta. C-6. 42°47'40"N; 87°26'50"W. Lake Mich.
Coll: E. Dunster. 27 May 1968.

1649 Vertical #20 net tow. Sta. C-7. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: E. Dunster. 14 May 1968.

1650 Vertical #20 net tow. Sta. C-7. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: E. Dunster. 27 May 1968.

1651 Vertical #20 net tow. Sta. E-1. 44°37'30"N; 86°18'12"W. Lake Mich.
Coll: E. Dunster. 15 May 1968.

1652 Vertical #20 net tow. Sta. E-2. 44°37'00"N; 86°21'42"W. Lake Mich.
Coll: E. Dunster. 15 May 1968.

1653 Vertical #20 net tow. Sta. E-3. 44°34'00"N; 86°40'00"W. Lake Mich.
Coll: E. Dunster. 15 May 1968.

1654 Vertical #20 net tow. Sta. E-4. 44°30'18"N; 86°55'18"W. Lake Mich.
Coll: E. Dunster. 15 May 1968.

1655 Vertical #20 net tow. Sta. E-5. 44°25'30"N; 87°10'18"W. Lake Mich.
Coll: E. Dunster. 15 May 1968.

1656 Vertical #20 net tow. Sta. E-6. 44°27'48"N; 87°26'25"W. Lake Mich.
Coll: E. Dunster. 15 May 1968.

1657 Vertical #20 net tow. Sta. A-1. 42°06'30"N; 86°32'00"W. Lake Mich.
Coll: E. Dunster. 15 July 1968.

1658 Vertical #20 net tow. Sta. A-2. 42°06'00"N; 86°37'00"W. Lake Mich.
Coll: E. Dunster. 15 July 1968.

1659 Vertical #20 net tow. Sta. A-3. 42°05'30"N; 86°43'00"W. Lake Mich.
Coll: E. Dunster. 15 July 1968.

1660 Vertical #20 net tow. Sta. A-4. 42°03'30"N; 87°06'30"W. Lake Mich.
Coll: E. Dunster. 16 July 1968.

1661 Vertical #20 net tow. Sta. A-5. 41°57'00"N; 87°18'30"W. Lake Mich.
Coll: E. Dunster. 16 July 1968.

1662 Vertical #20 net tow. Sta. A-6. 41°52'00"N; 87°27'00"W. Lake Mich.
Coll: E. Dunster. 16 July 1968.

1663 Vertical #20 net tow. Sta. C-1. 42°49'40"N; 86°14'50"W. Lake Mich.
Coll: E. Dunster. 15 July 1968.

1664 Vertical #20 net tow. Sta. C-2. 42°49'40"N; 86°18'25"W. Lake Mich.
Coll: E. Dunster. 15 July 1968.

1665 Vertical #20 net tow. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: E. Dunster. 15 July 1968.

1666 Vertical #20 net tow. Sta. C-4. 42°48'50"N; 86°41'30"W. Lake Mich.
Coll: E. Dunster. 15 July 1968.

1667 Vertical #20 net tow. Sta. C-5. 42°49'00"N; 86°50'00"W. Lake Mich.
Coll: E. Dunster. 15 July 1968.

1668 Vertical #20 net tow. Sta. C-6. 42°47'50"N; 87°26'50"W. Lake Mich.
Coll: E. Dunster. 16 July 1968.

1669 Vertical #20 net tow. Sta. C-7. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: E. Dunster. 16 July 1968.

1670 Vertical #20 net tow. Sta. E-1. 44°37'30"N; 86°18'12"W. Lake Mich.
Coll: E. Dunster. 18 July 1968.

1671 Vertical #20 net tow. Sta. E-2. 44°37'00"N; 86°21'42"W. Lake Mich.
Coll: E. Dunster. 18 July 1968.

1672 Vertical #20 net tow. Sta. E-3. 44°34'00"N; 86°40'00"W. Lake Mich.
Coll: E. Dunster. 17 July 1968.

1673 Vertical #20 net tow. Sta. E-4. 44°30'18"N; 86°55'18"W. Lake Mich.
Coll: E. Dunster. 17 July 1968.

1674 Vertical #20 net tow. Sta. E-5. 44°25'30"N; 87°10'18"W. Lake Mich.
Coll: E. Dunster. 17 July 1968.

1675 Vertical #20 net tow. Sta. E-6. 44°27'48"N; 87°26'25"W. Lake Mich.
Coll: E. Dunster. 17 July 1968.

1676 Vertical #20 net tow. Sta. A-1. 42°06'30"N; 86°32'00"W. Lake Mich.
Coll: E. Dunster. 6 Aug. 1968.

1677 Vertical #20 net tow. Sta. A-2. 42°06'00"N; 86°37'00"W. Lake Mich.
Coll: E. Dunster. 6 Aug. 1968.

1678 Vertical #20 net tow. Sta. A-3. 42°05'30"N; 86°43'00"W. Lake Mich.
Coll: E. Dunster. 6 Aug. 1968.

1679 Vertical #20 net tow. Sta. A-4. 42°03'30"N; 87°06'30"W. Lake Mich.
Coll: E. Dunster. 7 Aug. 1968.

1680 Vertical #20 net tow. Sta. A-5. 41°57'00"N; 87°18'30"W. Lake Mich.
Coll: E. Dunster. 7 Aug. 1968.

1681 Vertical #20 net tow. Sta. A-6. 41°52'00"N; 87°27'00"W. Lake Mich.
Coll: E. Dunster. 7 Aug. 1968.

1682 Vertical #20 net tow. Sta. C-1. 42°49'40"N; 86°14'50"W. Lake Mich.
Coll: E. Dunster. 6 Aug. 1968.

1683 Vertical #20 net tow. Sta. C-2. 42°49'40"N; 86°18'25"W. Lake Mich.
Coll: E. Dunster. 6 Aug. 1968.

1684 Vertical #20 net tow. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: E. Dunster. 6 Aug. 1968.

1685 Vertical #20 net tow. Sta. C-4. 42°48'50"N; 86°41'30"W. Lake Mich.
Coll: E. Dunster. 6 Aug. 1968.

1686 Vertical #20 net tow. Sta. C-5. 42°49'00"N; 86°50'00"W. Lake Mich.
Coll: E. Dunster. 6 Aug. 1968.

1687 Vertical #20 net tow. Sta. C-6. 42°47'40"N; 87°26'50"W. Lake Mich.
Coll: E. Dunster. 8 Aug. 1968.

1688 Vertical #20 net tow. Sta. C-7. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: E. Dunster. 8 Aug. 1968.

1689 Vertical #20 net tow. Sta. E-3. 44°34'00"N; 86°40'00"W. Lake Mich.
Coll: E. Dunster. 9 Aug. 1968.

1690 Vertical #20 net tow. Sta. E-4. 44°30'18"N; 86°55'18"W. Lake Mich.
Coll: E. Dunster. 9 Aug. 1968.

1691 Vertical #20 net tow. Sta. E-5. 44°25'30"N; 87°10'18"W. Lake Mich.
Coll: E. Dunster. 9 Aug. 1968.

1692 Vertical #20 net tow. Sta. E-6. 44°27'48"N; 87°26'25"W. Lake Mich.
Coll: E. Dunster. 9 Aug. 1968.

1693 Vertical #20 net tow. Sta. A-1. 42°06'30"N; 86°32'00"W. Lake Mich.
Coll: E. Dunster. 12 Sept. 1968.

1694 Vertical #20 net tow. Sta. A-2. 42°06'00"N; 86°37'00"W. Lake Mich.
Coll: E. Dunster. 12 Sept. 1968.

1695 Vertical #20 net tow. Sta. A-3. 42°05'30"N; 86°43'00"W. Lake Mich.
Coll: E. Dunster. 12 Sept. 1968.

1696 Vertical #20 net tow. Sta. A-4. 42°03'30"N; 87°06'30"W. Lake Mich.
Coll: E. Dunster. 13 Sept. 1968.

1697 Vertical #20 net tow. Sta. A-5. 41°57'00"N; 87°18'30"W. Lake Mich.
Coll: E. Dunster. 13 Sept. 1968.

1698 Vertical #20 net tow. Sta. A-6. 41°52'00"N; 87°27'00"W. Lake Mich.
Coll: E. Dunster. 13 Sept. 1968.

1699 Vertical #20 net tow. Sta. C-1. 42°49'40"N; 86°14'50"W. Lake Mich.
Coll: E. Dunster. 11 Sept. 1968.

1700 Vertical #20 net tow. Sta. C-2. 42°49'40"N; 86°18'25"W. Lake Mich.
Coll: E. Dunster. 11 Sept. 1968.

1701 Vertical #20 net tow. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: E. Dunster. 12 Sept. 1968.

1702 Vertical #20 net tow. Sta. C-4. 42°48'50"N; 86°41'30"W. Lake Mich.
Coll: E. Dunster. 12 Sept. 1968.

1703 Vertical #20 net tow. Sta. C-5. 42°49'00"N; 86°50'00"W. Lake Mich.
Coll: E. Dunster. 12 Sept. 1968.

1704 Vertical #20 net tow. Sta. C-6. 42°47'40"N; 87°26'50"W. Lake Mich.
Coll: E. Dunster. 13 Sept. 1968.

1705 Vertical #20 net tow. Sta. C-7. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: E. Dunster. 13 Sept. 1968.

1706 Vertical #20 net tow. Sta. E-1. 44°37'30"N; 86°18'12"W. Lake Mich.
Coll: E. Dunster. 14 Sept. 1968.

1707 Vertical #20 net tow. Sta. E-2. 44°37'00"N; 86°21'42"W. Lake Mich.
Coll: E. Dunster. 14 Sept. 1968.

1708 Vertical #20 net tow. Sta. E-3. 44°34'00"N; 86°40'00"W. Lake Mich.
Coll: E. Dunster. 14 Sept. 1968.

1709 Vertical #20 net tow. Sta. E-4. 44°30'18"N; 86°55'18"W. Lake Mich.
Coll: E. Dunster. 14 Sept. 1968.

1710 Vertical #20 net tow. Sta. E-5. 44°25'30"N; 87°10'18"W. Lake Mich.
Coll: E. Dunster. 14 Sept. 1968.

1711 Vertical #20 net tow. Sta. E-6. 44°27'48"N; 87°26'25"W. Lake Mich.
Coll: E. Dunster. 14 Sept. 1968.

1712 Vertical #20 net tow. Sta. A-1. 42°06'30"N; 86°32'00"W. Lake Mich.
Coll: E. F. Stoermer. 7 Oct. 1968.

1713 Vertical #20 net tow. Sta. A-2. 42°06'00"N; 86°37'00"W. Lake Mich.
Coll: E. F. Stoermer. 7 Oct. 1968.

1714 Vertical #20 net tow. Sta. A-3. 42°05'30"N; 86°43'00"W. Lake Mich.
Coll: E. F. Stoermer. 7 Oct. 1968.

1715 Vertical #20 net tow. Sta. A-4. 42°03'30"N; 87°06'30"W. Lake Mich.
Coll: E. F. Stoermer. 8 Oct. 1968.

1716 Vertical #20 net tow. Sta. A-5. 41°57'00"N; 87°18'30"W. Lake Mich.
Coll: E. F. Stoermer. 8 Oct. 1968.

1717 Vertical #20 net tow. Sta. A-6. 41°52'00"N; 87°27'00"W. Lake Mich.
Coll: E. F. Stoermer. 8 Oct. 1968.

1718 Vertical #20 net tow. Sta. C-1. 42°49'40"N; 86°14'50"W. Lake Mich.
Coll: E. F. Stoermer. 7 Oct. 1968.

1719 Vertical #20 net tow. Sta. C-2. 42°49'40"N; 86°18'25"W. Lake Mich.
Coll: E. F. Stoermer. 7 Oct. 1968.

1720 Vertical #20 net tow. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: E. F. Stoermer. 7 Oct. 1968.

1721 Vertical #20 net tow. Sta. C-4. 42°48'50"N; 86°41'30"W. Lake Mich.
Coll: E. F. Stoermer. 7 Oct. 1968.

1722 Vertical #20 net tow. Sta. C-5. 42°49'00"N; 86°50'00"W. Lake Mich.
Coll: E. F. Stoermer. 7 Oct. 1968.

1723 Vertical #20 net tow. Sta. C-6. 42°47'40"N; 87°26'50"W. Lake Mich.
Coll: E. F. Stoermer. 8 Oct. 1968.

1724 Vertical #20 net tow. Sta. C-7. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: E. F. Stoermer. 8 Oct. 1968.

1725 Vertical #20 net tow. Sta. E-1. 44°37'30"N; 86°18'12"W. Lake Mich.
Coll: E. F. Stoermer. 11 Oct. 1968.

1726 Vertical #20 net tow. Sta. E-2. 44°37'00"N; 86°21'42"W. Lake Mich.
Coll: E. F. Stoermer. 11 Oct. 1968.

1727 Vertical #20 net tow. Sta. E-3. 44°34'00"N; 86°40'00"W. Lake Mich.
Coll: E. F. Stoermer. 11 Oct. 1968.

1728 Vertical #20 net tow. Sta. E-4. 44°30'18"N; 86°55'18"W. Lake Mich.
Coll: E. F. Stoermer. 11 Oct. 1968.

1729 Vertical #20 net tow. Sta. E-5. 44°25'30"N; 87°10'18"W. Lake Mich.
Coll: E. F. Stoermer. 11 Oct. 1968.

1730 Vertical #20 net tow. Sta. E-6. 44°27'48"N; 87°26'25"W. Lake Mich.
Coll: E. F. Stoermer. 10 Oct. 1968.

1731 Vertical #20 net tow. Sta. A-3. 42°05'30"N; 86°43'00"W. Lake Mich.
Coll: E. Dunster. 8 Nov. 1968.

1732 Vertical #20 net tow. Sta. A-4. 42°03'30"N; 87°06'30"W. Lake Mich.
Coll: E. Dunster. 13 Nov. 1968.

1733 Vertical #20 net tow. Sta. A-6. 41°52'00"N; 87°27'00"W. Lake Mich.
Coll: E. Dunster. 13 Nov. 1968.

1734 Vertical #20 net tow. Sta. C-1. 42°49'40"N; 86°14'50"W. Lake Mich.
Coll: E. Dunster. 10 Nov. 1968.

1735 Vertical #20 net tow. Sta. C-2. 42°49'40"N; 86°18'25"W. Lake Mich.
Coll: E. Dunster. 10 Nov. 1968.

1736 Vertical #20 net tow. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: E. Dunster. 10 Nov. 1968.

1737 Vertical #20 net tow. Sta. C-4. 42°48'50"N; 86°41'30"W. Lake Mich.
Coll: E. Dunster. 10 Nov. 1968.

1738 Vertical #20 net tow. Sta. C-5. 42°49'00"N; 86°50'00"W. Lake Mich.
Coll: E. Dunster. 10 Nov. 1968.

1739 Vertical #20 net tow. Sta. C-6. 42°47'40"N; 87°26'50"W. Lake Mich.
Coll: E. Dunster. 10 Nov. 1968.

1740 Vertical #20 net tow. Sta. C-7. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: E. Dunster. 10 Nov. 1968.

1741 Vertical #20 net tow. Sta. E-1. 44°37'30"N; 86°18'12"W. Lake Mich.
Coll: E. Dunster. 9 Nov. 1968.

1742 Vertical #20 net tow. Sta. E-2. 44°37'00"N; 86°21'42"W. Lake Mich.
Coll: E. Dunster. 9 Nov. 1968.

1743 Vertical #20 net tow. Sta. E-3. 44°34'00"N; 86°40'00"W. Lake Mich.
Coll: E. Dunster. 9 Nov. 1968.

1744 Vertical #20 net tow. Sta. E-4. 44°30'18"N; 86°55'18"W. Lake Mich.
Coll: E. Dunster. 9 Nov. 1968.

1800 Vertical #20 net tow. Sta. E-1. 44°37'30"N; 86°18'12"W. Lake Mich.
Coll: E. Dunster. 9 Aug. 1968.

1801 Vertical #20 net tow. Sta. E-2. 44°37'00"N; 86°21'42"W. Lake Mich.
Coll: E. Dunster. 9 Aug. 1968.

1802 Vertical #20 net tow. Sta. A-1. 42°06'30"N; 86°32'00"W. Lake Mich.
Coll: J. Ayers. 24 April 1969.

1803 Vertical #20 net tow. Sta. A-2. 42°06'00"N; 86°37'00"W. Lake Mich.
Coll: J. Ayers. 25 April 1969.

1804 Vertical #20 net tow. Sta. A-3. 42°05'30"N; 86°43'00"W. Lake Mich.
Coll: J. Ayers. 25 April 1969.

1805 Vertical #20 net tow. Sta. A-4. 42°03'30"N; 87°06'30"W. Lake Mich.
Coll: J. Ayers. 25 April 1969.

1806 Vertical #20 net tow. Sta. A-5. 41°57'00"N; 87°18'30"W. Lake Mich.
Coll: J. Ayers. 25 April 1969.

1807 Vertical #20 net tow. Sta. A-6. 41°52'00"N; 87°27'00"W. Lake Mich.
Coll: J. Ayers. 25 April 1969.

1808 Vertical #20 net tow. Sta. C-1. 42°49'40"N; 86°14'50"W. Lake Mich.
Coll: J. Ayers. 23 April 1969.

1809 Vertical #20 net tow. Sta. C-2. 42°49'40"N; 86°18'25"W. Lake Mich.
Coll: J. Ayers. 23 April 1969.

1810 Vertical #20 net tow. Sta. C-3. 42°49'10"N; 86°28'25"W. Lake Mich.
Coll: J. Ayers. 23 April 1969.

1811 Vertical #20 net tow. Sta. C-6. 42°47'40"N; 87°26'50"W. Lake Mich.
Coll: J. Ayers. 26 April 1969.

1812 Vertical #20 net tow. Sta. C-7. 42°47'30"N; 87°34'30"W. Lake Mich.
Coll: J. Ayers. 26 April 1969.

1813 Vertical #20 net tow. Sta. E-1. 44°37'30"N; 86°18'12"W. Lake Mich.
Coll: J. Ayers. 27 April 1969.

1814 Vertical #20 net tow. Sta. E-2. 44°37'00"N; 86°21'42"W. Lake Mich.
Coll: J. Ayers. 27 April 1969.

1815 Vertical #20 net tow. Sta. E-3. 44°34'00"N; 86°40'00"W. Lake Mich.
Coll: J. Ayers. 27 April 1969.

1816 Vertical #20 net tow. Sta. E-4. 44°30'18"N; 86°55'18"W. Lake Mich.
Coll: J. Ayers. 27 April 1969.

1817 Vertical #20 net tow. Sta. E-5. 44°25'30"N; 87°10'18"W. Lake Mich. Coll: J. Ayers. 27 April 1969.

1818 Vertical #20 net tow. Sta. E-6. 44°27'48"N; 87°26'25"W. Lake Mich. Coll: J. Ayers. 27 April 1969.

ANSP 60973 Lake Michigan. 1876.
88 spp. 4234 spec. H=2.065 R=0.539

ANSP 3540 Diatomaceae. Chicago Water Supply. Coll: B. W. Thomas. 11 May 1879.
66 spp. 21463 spec. H=1.539 R=0.633

ANSP 3541 Chicago Water Supply. Coll: B. W. Thomas. 1 Feb. 1881.
89 spp. 10223 spec. H=1.765 R=0.607

ANSP 3507 Chicago Water Supply. Coll: B. W. Thomas. 19 Feb. 1881.
38 spp. 8834 spec. H=1.159 R=0.681

ANSP 46910a Plankton tow in Lake Mich. Chicago, Ill. From Field Museum Sheet #1239246. Coll: K. E. Damann. Oct. 1945.
62 spp. 91551 spec. H=1.282 R=0.689

ANSP 46921a Plankton tow in Lake Mich. Ill. From Field Museum Sheet #1239302. Coll: K. E. Damann. 23 Nov. 1945.
106 spp. 154634 spec. H=1.801 R=0.614

ANSP 46908a Plankton tow in Lake Mich. Chicago, Ill. From Field Museum Sheet #1239241. Coll: K. E. Damann. Dec. 1945.
32 spp. 9932 spec. H=1.762 R=0.492

ANSP 46917a Plankton tow in Lake Mich. Ill. From Field Museum Sheet #1239297. Coll: K. E. Damann. 12 Jan. 1946.
108 spp. 360701 spec. H=1.640 R=0.650

ANSP 46915a Plankton tow in Lake Mich. Ill. From Field Museum Sheet #1239277. Coll: K. E. Damann. 20 Feb. 1946.
87 spp. 17575 spec. H=1.982 R=0.556

ANSP 46914a Plankton tow in Lake Mich. Chicago, Ill. From Field Museum Sheet #1239263. Coll: K. E. Damann. 19 April 1946.
103 spp. 93661 spec. H=2.055 R=0.557

ANSP 46924a Plankton tow in Lake Mich. Ill. From Field Museum Sheet #1239315. Coll: K. E. Damann. 10 May 1946.
113 spp. 141756 spec. H=1.777 R=0.624

ANSP 46923a Plankton tow in Lake Mich. From Field Museum Sheet #1239312. Coll: K. E. Damann. 20 Nov. 1946.
104 spp. 45758 spec. H=2.103 R=0.547

ANSP 46920a Plankton tow in Lake Mich. From Field Museum Sheet #1239301. Coll: K. E. Damann. 20 Dec. 1946.
110 spp. 324569 spec. H=1.227 R=0.739

ANSP 46905a Plankton tow in Lake Mich. Chicago, Ill. From Field Museum Sheet #1239231. Coll: K. E. Damann. Jan. 1947.
82 spp. 81596 spec. H=1.631 R=0.630

ANSP 46909a Plankton tow in Lake Mich. Chicago, Ill. From Field Museum Sheet #1239244. Coll: K. E. Damann. March 1947.
96 spp. 21963 spec. H=1.942 R=0.575

ANSP 46912a Plankton tow in Lake Mich. Chicago, Ill. From Field Museum Sheet #1239257. Coll: K. E. Damann. April 1947.
44 spp. 8698 spec. H=1.851 R=0.511

ANSP 46916a Plankton tow in Lake Mich. Ill. From Field Museum Sheet #1239296. Coll: K. E. Damann. 4 May 1947.
122 spp. 294734 spec. H=2.059 R=0.571

ANSP 46906a Plankton tow in Lake Mich. Chicago, Ill. From Field Museum Sheet #1239232. Coll: K. E. Damann. May 1947.
111 spp. 150672 spec. H=2.428 R=0.485

ANSP 46919a Plankton tow in Lake Mich. Ill. From Field Museum Sheet #1239300. Coll: K. E. Damann. 5 June 1947.
130 spp. 65909 spec. H=2.534 R=0.479

ANSP 46907a Plankton tow in Lake Mich. Chicago, Ill. From Field Museum Sheet #1239234. Coll: K. E. Damann. July 1947.
106 spp. 202793 spec. H=2.083 R=0.553

ANSP 46913 Plankton tow in Lake Mich. Chicago, Ill. From Field Museum Sheet #1239258. Coll: K. E. Damann. 6 Aug. 1947.
36 spp. 9562 spec. H=0.947 R=0.736

ANSP 46922a Plankton tow in Lake Mich. Ill. From Field Museum Sheet #1239309. Coll: K. E. Damann. 21 Aug. 1947.
136 spp. 206338 spec. H=1.859 R=0.622

ANSP 46758a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120598. Coll: E. S. Ford. 5 June 1937.
154 spp. 28042 spec. H=2.595 R=0.485

ANSP 46771a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120613. Coll: E. S. Ford. 11 June 1937.
63 spp. 42062 spec. H=1.821 R=0.561

ANSP 46743a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120580. Coll: E. S. Ford. 20 June 1937.
92 spp. 23354 spec. H=2.095 R=0.537

ANSP 46745a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120584. Coll: E. S. Ford. 3 July 1937.
34 spp. 4785 spec. H=1.878 R=0.467

ANSP 46770a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120612. Coll: E. S. Ford. 9 July 1937.
72 spp. 16768 spec. H=1.642 R=0.616

ANSP 46764a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120606. Coll: E. S. Ford. 17 July 1937.
155 spp. 12410 spec. H=2.570 R=0.490

ANSP 46757a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120597. Coll: E. S. Ford. 25 July 1937.
141 spp. 20771 spec. H=1.752 R=0.646

ANSP 46747a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120586. Coll: E. S. Ford. 1 Aug. 1937.
156 spp. 40397 spec. H=1.733 R=0.657

ANSP 46763a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120605. Coll: E. S. Ford. 23 Aug. 1937.
128 spp. 4928 spec. H=2.571 R=0.470

ANSP 46765a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120607. Coll: L. H. Trffany. 2nd Daily. 30 Aug. 1937.
59 spp. 17930 spec. H=1.486 R=0.636

ANSP 46769a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120611. Coll: L. H. Trffany. 7 Sept. 1937.
29 spp. 4606 spec. H=1.334 R=0.604

ANSP 46752a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120591. Coll: E. S. Ford. 15 Sept. 1937.
113 spp. 4594 spec. H=2.229 R=0.528

ANSP 46760a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120602. Coll: W. A. Daily. 22 Sept. 1937.
75 spp. 20309 spec. H=1.723 R=0.601

ANSP 46750a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120589. Coll: W. A. Daily. 24 Sept. 1937.
90 spp. 21217 spec. H=1.872 R=0.584

ANSP 46744a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120583. Coll: W. A. Daily. 6 Oct. 1937.
73 spp. 20504 spec. H=1.705 R=0.603

ANSP 46748a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120587. Coll: W. A. Daily. 13 Oct. 1937.
83 spp. 4684 spec. H=1.169 R=0.735

ANSP 46767a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120609. Coll: W. A. Daily. 27 Oct. 1937.
104 spp. 25851 spec. H=1.329 R=0.714

ANSP 46749a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120588. Coll: W. A. Daily. 12 March 1938.
71 spp. 8239 spec. H=1.829 R=0.571

ANSP 46768a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120610. Coll: W. A. Daily. 16 March 1938.
109 spp. 6803 spec. H=1.661 R=0.646

ANSP 46762a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120604. Coll: W. A. Daily. 18 March 1938.
107 spp. 4534 spec. H=2.210 R=0.527

ANSP 46751a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120590. Coll: W. A. Daily. 30 March 1938.
63 spp. 8956 spec. H=1.615 R=0.610

ANSP 46772a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120614. Coll: W. A. Daily. 18 April 1938.
34 spp. 14090 spec. H=1.361 R=0.614

ANSP 46756a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120596. Coll: W. A. Daily. 27 April 1938.
71 spp. 59557 spec. H=1.772 R=0.584

ANSP 46759a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120601. Coll: W. A. Daily. 19 May 1938.
63 spp. 29620 spec. H=0.938 R=0.774

ANSP 46761a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120603. Coll: W. A. Daily. 27 May 1938.
72 spp. 36692 spec. H=1.669 R=0.610

ANSP 46766a Net collection. Lake Mich. Evanston, Ill. From Field Museum Sheet #1120608. Coll: K. Seamann. 14 Dec. 1938.
58 spp. 6312 spec. H=2.121 R=0.478

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