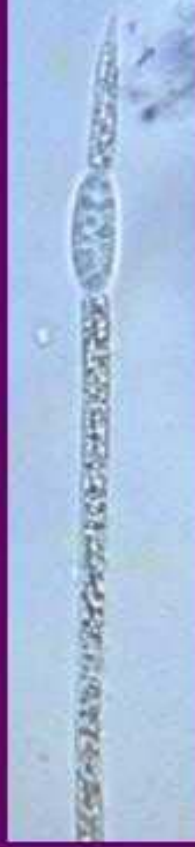


9th USGS NAWQA Workshop
on
Harmonization of Algal Taxonomy



December 13-15, 2002
The Academy of Natural Sciences
Philadelphia, PA



Ninth USGS NAWQA Workshop on Harmonization of Algal Taxa

December 13-15, 2002

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Academy of Natural Sciences
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Table of Contents

Introduction and Agenda	1
Cyanophytes – Jeff Johansen	2
References for the Taxonomy of Non Diatom Algae – Rex Lowe	3
Red Algae – Julie Hambrook	4
USGS NAWQA Non-Diatom Algae List	5
Appendices:	
Appendix A	
Agenda for the 9 th USGS NAWQA Workshop on Harmonization of Algal Taxonomy ...	6
Appendix B	
Outline of Cyanophyte Taxonomy	8
Appendix C	
Annotated List of Non-Diatom Algae References and Monographs	26
Appendix D	
2001-Start NAWQA Non-Diatom Algal Taxa List	36
Appendix E	
2001- Start NAWQA Non-Diatom Algae Taxonomic Changes	78

Introduction and Agenda

The Ninth USGS NAWQA Workshop on Harmonization of Algal Taxonomy was held in the Patrick Center for Environmental Research (PCER) at the Academy of Natural Sciences (ANS) December 13th through 15th, 2002. Participants in the workshop included algal taxonomic specialists Dr. Rex L. Lowe, Bowling Green State University, Dr. Jeffrey Johansen, John Carroll University, Julie Hambrook, USGS, Kalina Manoylov, Dr. R. Jan Stevenson, Michigan State University, and Dr. Thomas Smith, Waynesburg College. Frank W. Acker, Dr. Marina Potapova, Dr. Donald Charles, Dr. Eduardo Morales, Mark Schadler, Diane M. Winter, and Michael E. Kachur from the PCER's Phycology Section also participated in the workshop.

Previous NAWQA Algal Taxonomy Workshops focused on harmonization of diatom names; the objective of this workshop was to review taxonomy of the soft-bodied, non-diatom algal forms found in NAWQA samples. The taxonomic groups reviewed included cyanophytes (also referred to as blue-green algae or cyanobacteria) and red algae. Updating of primary algal references and monographs used for NAWQA sample analyses was also accomplished (see agenda in Appendix A). A major goal of the workshop was to review the list of species from USGS NAWQA algal analyses and develop a consistent list of soft-bodied algae to be used for current analyses (i.e., the 2001-Start NAWQA Non-Diatom Taxonomic List). Another goal was to produce a table of nomenclatural changes that will be applied to previous algal results.

Cyanophytes – Jeff Johansen

Most of the discussions on cyanophytes (also called cyanobacteria and blue-green algae) involved the filamentous Oscillatoriales, a very common group in periphytic samples analyzed in the USGS NAWQA Program. The revisions of Komárek and Anagnostidis, a series of five papers entitled “Modern approach to the classification system of cyanophytes” formed the basis of the discussions (Anagnostidis and Komárek 1985, Komárek 1986, Anagnostidis and Komárek 1988, Komárek and Anagnostidis 1989, and Anagnostidis, and Komárek 1990). Characteristics of the most common coccoid and filamentous non-Oscillatoria genera were presented. In addition, an important genus, *Homoeothrix* (also referred to as *Amphithrix*), was the topic of specific discussions and laboratory reviews. A comprehensive list of cyanophyte genera arranged by family and subfamily characters is presented (Appendix B).

The families of Oscillatoriales are differentiated mostly on size, division types, and thylakoid structure. The major Oscillatoriales families range in size as well as in type of cell division. The smallest group, less than 3µm in diameter, is known as the Pseudanabaenaceae. This group includes the genera *Pseudanabaena*, *Geitlerinema*, *Leptolyngbya* and *Homoeothrix* and has the most simple form of cell division (division after growth). The medium-sized group, 3-8µm in size, is known as the Phormidiaceae. The Phormidiaceae include the genus *Phormidium*, and has a more complex form of growth (division starts before growth is complete). The largest group of Oscillatoriales, greater than 6µm, are the Oscillatoriaceae, which includes *Oscillatoria* and *Lyngbya*. Not surprisingly, the large Oscillatoriaceae also have the most complex form of growth (division in fast dividing meristematic zones). In general, many of the older and larger genera (i.e., *Oscillatoria* and *Lyngbya*) have been revised by placing the smaller and less complex species into new and/or revised genera. The literature of the modern concept of Oscillatoriales is limited; the list of Anagnostidis and Komárek (1988) and Anagnostidis (2001) should be consulted until larger monographs are prepared.

Homoeothrix is a wide-spread, abundant alga that has been confused with several taxa, most notably *Amphithrix*. The highly variable character of basal parenchyma cells of the *Amphithrix* is actually several other coccoid cyanophytes. The many abundant populations of *Amphithrix* (usually as *A. janthina*) in the NAWQA samples actually include several species of *Homoeothrix*. Starmach (1966) is probably the most comprehensive taxonomic reference for

species of *Homeothrix*. In addition to the taxa covered there, the NAWQA samples probably have unique (and probably undescribed) North American forms.

The filamentous non-Oscillatoriales, including Nostocales and Stigonematales, are differentiated by branching (none, true, or false), position of the heterocyte (intercalary, lateral, or apical) and polarity of the trichome (heteropolar or isopolar). The Nostocales have no branching or false branching and differ by polarity (Scytonemataceae are isopolar with false branching; Rivulariaceae are heteropolar; Nostocaceae are isopolar without any branching). Stigonematales have true branching and differ by the position of the heterocyte (e.g., Stigonemataceae have intercalary heterocytes; Nostochopsaceae have lateral or apical heterocytes). Similar to the Oscillatoriales, the revisions in this group are incomplete and there are probably North American forms that are not included in the traditional European literature.

The coccoid cyanophytes or Chroococcales are classified by division patterns (in one to three planes), shape of cells (from spherical to ovoid to nearly cylindrical) and connecting materials (range from randomly in gelatinous sheaths to arranged at the periphery by mucilage strands). Most Chroococcales are planktonic, with only a few forms found in periphyton samples similar to the NAWQA samples. In addition to the Komárek and Anagnostidis (1989) paper describing the current taxonomic approach with several species revisions and transfers, Chroococcales were updated in the “Süßwasserflora von Mitteleuropa” (Komárek and Anagnostidis 1999) with descriptions of a wide range of species. Since this reference is comprehensive (includes references to the known North American forms), is relatively easy to use (many keys to genera and subgenera), and is in English, it will serve as the basis for analyzing Chroococcales in NAWQA samples.

References for the Taxonomy of Non Diatom Algae – Rex Lowe

A revision of chroococcales cyanophyte taxonomy (Komárek and Anagnostidis 1999) and a new reference for North American freshwater algae (Wehr and Sheath 2003) were the major additions to the literature covering taxonomy of non-diatom algae used during the analysis of NAWQA samples. The annotated list of non-diatom algal references (Appendix C) is a compilation of books and monographs that are relevant to analyzing samples collected in the NAWQA Program.

Several of the classical and comprehensive references, including the current “Binnegewasser” and “Süßwasserflora von Mitteleuropa” include algal species from Europe that may not occur in North America. However, several North American references are available, including those by Gerald Prescott and Gary Dillard, and may be used as primary references (after taxonomic updates) for the NAWQA samples. The Polish Freshwater Flora (in Polish, primarily authored by Karol Starmach) has illustrations and descriptions of many species (Starmach 1963-1985).

Red Algae – Julie Hambrook

Freshwater red algae species (listed by Sheath [1984] at 178 worldwide, 65 in North America) are a small portion of the total number of freshwater algal species and a small portion of the total number of red algal species (most of the red algal species are marine and estuarine). Most freshwater algal species are found in lotic (riverine) rather than lentic (slow and stagnant) waters. Most freshwater species have a heteromorphic life history – a microscopic “chantransia” stage of prostrate filaments, and a macroscopic gametophyte stage of upright filaments. The coccoid, tetrasporale stage, common in marine red algae is not common in freshwater red algae. Freshwater red algae have a negative relation to pH (i.e., better growth in slightly acidic waters) and temperature (best growth of freshwater red algae in temperate regions is from fall to early summer). There are exceptions to these generalizations, mostly exhibited by tropical and subtropical freshwater red algae (e.g. *Compsopogon*)

Many NAWQA algal samples include abundant populations of red algae in the “chantransia” stage; only rarely have gametophyte stages been documented. Identification to species is done by examining the gametophyte, with only a few forms identifiable to species in the “chantransia” stage. Necchi (1993a and 1993b) discusses North American *Audouinella*, and discusses the “bluish” and “reddish” chantransia stages. The “bluish” chantransia can be either *Audouinella* or *Batrachospermum*. An artificial genera, *Pseudochantransia*, was once proposed to deal with these forms. The chantransia stages in NAWQA samples that were examined (before, during and after the workshop) were all “bluish.” Thus, most forms in NAWQA samples could be either *Audouinella* or *Batrachospermum* and will be designated “Unknown Rhodophyte Florideophycidae (chantransia).” The “reddish” forms are species in the genus

Audouinella; the predominant North American *Audouinella*, *A. hermanii*, is “reddish” as a chantransia.

Other red algal forms were few and infrequently found. There was confirmation and documentation for the species *Compsopogon coeruleus* (considered subtropical and found in warmer temperatures) and *Bangia atropurpurea* (common in the lower Great Lakes) in NAWQA samples, though they were rarely found. Other red algal taxa reported in NAWQA samples, including *Kylinia rosula*, *Batrachospermum vagum*, *Thorea* sp. and *Boldia* sp., were not examined and the validity of their identifications could therefore not be confirmed. But the names are valid for use in NAWQA analyses, should specimens ever be encountered. No specimens of the taxon *Phragmonema* sp. were found and there is a good possibility the original identification was incorrect because this taxon is not reported to be found in fresh water.

USGS NAWQA Non-Diatom Algae List

A major goal of this workshop was to update the taxonomy of the non-diatom algae list used in the analysis of USGS NAWQA periphyton samples. With the start of a new series of sampling events (usually at intervals of three years), a new list of non-diatom algae is compiled and the previous taxa list is updated. Based on the discussions at the workshop, current taxonomic references (e.g., Wehr and Sheath, 2003; Anagnostidis, 2001) and extended email discussions, taxa from the current list (1997-Start NAWQA Non-Diatom Algal Taxa List) were updated and a new list was produced in January 2003. This list, the 2001-NAWQA Non-Diatom Algal Taxa Start List, (Appendix D) includes the taxa names that will be used during the analysis of 2001 NAWQA start samples until a new list is generated. During analyses in this three-year period, only newly observed taxa will be added to this list. An index of the taxonomic changes, “2001-Start NAWQA Non-Diatom Algae Taxonomic Changes” is presented as Appendix E.

Appendix A

Agenda for the
9th USGS NAWQA Workshop on Harmonization of Algal Taxonomy
13-15 December 2002 at The Academy of Natural Sciences

(PCER = Conference room of the Patrick Center for Environmental Research, 2nd floor)
(Phyc = Diatom Analysis Laboratory, Room 333)

Friday December 13th

- | | |
|------------------|---|
| 9-9:45 (PCER) | Assemble, continental breakfast
Welcome, introduction, review workshop agenda, goals |
| 9:45-10 (PCER) | Overview of the soft-algae taxa lists from the USGS NAWQA Program |
| 10-11:15 (PCER) | Jeff Johansen's guidance on Oscillatoriales |
| 11:15-12 (PCER) | Discussion of problematic Oscillatoriales and approaches used in the USGS NAWQA Program |
| 12-1:30 | Lunch |
| 1:30-1:45 (Phyc) | Laboratory orientation (microscopes, cameras, database, samples, etc.) |
| 1:45-4:30 (Phyc) | Laboratory work on Oscillatoriales |
| 4:30-5:30 (PCER) | Review of decisions concerning Oscillatoriales species |
| Evening | Group dinner (location to be decided) |

Saturday December 14th

- | | |
|--------------------|--|
| 9-9:30 (PCER) | Assemble, continental breakfast
Review Saturday's agenda |
| 9:30-10 :15 (PCER) | Jeff Johansen's guidance on filamentous non-Oscillatoriales (Nostocaceae, Rivulariaceae, Stigonematales, etc.) |
| 10:15-10:45 (PCER) | Discussion of the problematic <i>Homoeothrix/Ampithrix/Calothrix</i> forms |
| 1045-11:45 (Phyc) | Laboratory work on filamentous non-Oscillatoriales |

Agenda for the 9th USGS NAWQA Workshop on Harmonization of Algal Taxonomy
(cont'd)

- | | |
|------------------|--|
| 11:45-1:00 | Lunch (choice of Center City delicatessens, sandwich shops, etc.) |
| 1:00-2 (Phyc) | Continuing laboratory work on filamentous non-Oscillatoriales |
| 2-2:45 (PCER) | Jeff Johansen's guidance on Chroococcales (cocoid cyanobacteria) |
| 2:45-4:30 (Phyc) | Laboratory work on Chroococcales |
| 4:30-5:30 (PCER) | Review of decisions concerning filamentous non-Oscillatoriales and Chroococcales |
| Evening | Group dinner at Don and Mindy's in Huntingdon Valley, PA |

Sunday December 15th

- | | |
|--------------------|--|
| 8:15-8:45 (PCER) | Assemble, continental breakfast
Review Sunday's agenda |
| 8:45-9:30 (PCER) | Rex Lowe's guidance on the taxonomic reference list for soft-algae and original data sources for North American soft-algal forms |
| 9:30-10:15 (PCER) | Julie Hambrook's guidance on red algae encountered in USGS NAWQA program samples |
| 10:15-11:45 (Phyc) | Laboratory work on red algae |
| 11:45-1:30 (Phyc) | Final Discussions and lunch (catered in laboratory)
Review workshop, future needs |

Appendix B

Outline of Cyanophyte Taxonomy

^{CUL} found in culture, not in nature, ^{MAR} found in marine environs, ^{NNA} has not been found in North America, ^{PP} phytoplanktonic, ^{QUS} questionable taxa, usually without type specimen or vouchered collection, ^{RARE} rare usually only found from original collection or site, ^{SAT} sub-aerial, terrestrial, ^{SYN} synonym of another, valid taxon.

Order Chroococcales: Unicellular or colonial coccoid forms (non-filamentous)

Family Gloeobacteraceae: Cell division in only 1 plane, perpendicular to longitudinal axis, mostly circular cells with irregularly agglomerated cells, without thylakoids.

Gloeobacter^{CUL}

Family Synechococcaceae: Cell division in only 1 plane, perpendicular to longitudinal axis, mostly elongate cells.

Subfamily Aphanotheceoidae: Involution cells, if present, are irregular, not filamentous, facultative nanocytes in some species, colonies usually formless and not arranged in pseudofilaments.

Anacystis^{QUS} – Not a valid genus, original type material is *Aphanothece*, however, the well used (physiological studies) taxa, *A. nidulans* = *Synechococcus nidulans*. Other transfers and synonymies of *Anacystis* species include:

A. aeruginosa (Nägeli) Drouet & Dailey = *Cyanothece aeruginosa* (Nägeli) Komárek

A. cyanea (Kützing) Drouet & Dailey = *Microcystis aeruginosa* (Kützing) Kützing

A. cylindracea Gardner = *Aphanothece cylindracea* (Gardner) Komárek & Anagnostidis

A. dimidiata (Kützing) Drouet & Dailey = *Chroococcus turgidus* (Kützing) Nägeli

A. incerta (Lemmermann) Drouet & Dailey = *Aphanocapsa incerta* (Lemmermann) Cronberg & Komárek

A. limnetica (Lemmermann) Drouet & Dailey = *Chroococcus limneticus* Lemmermann

A. magnifica Gardner = *Asterocapsa magnifica* (Gardner) Komárek

A. marginata Meneghini = *Microcystis novacekii* (Komárek) Compère

A. marina Drouet & Dailey = *Aphanocapsa marina* Hansgirg

A. montana (Lightfoot) Drouet & Dailey = *Gloeocapsa atrata* Kützing

A. parasitica (Kützing) Trevisan = *Aphanocapsa parasitica* (Kützing) Komárek & Anagnostidis

A. peniocystis (Kützing) Drouet & Dailey = *Gloeocapsa peniocystis*
Kützing
A. pulchra Gardner = *Asterocapsa pulchra* (Gardner) Komárek
A. purpurea Jao = *Asterocapsa pulchra* (Jao) Chu
A. reinboldii Richter ex Reinbold = *Aphanocapsa reinboldii* (Richter ex
Reinbold) Komárek & Anagnostidis
A. rupestris GM Smith = *Aphanothece castagnei* (Brébisson) Rabenhorst
A. thermalis f. *major* (Lagerheim) Drouet & Dailey = *Chroococcus*
limneticus Lemmermann
A. trochiscioides Jao = *Asterocapsa trochiscioides* (Jao) Chu
Several *Anacystis* species (*A. amplivesticulatus* Gardner [possible a
Asterocapsa], *A. anomala* Gardner [Chlorogloea?], *A. gloeocapsoides*
Gardner [*Chroococciopsis* ?], *A. microsphaeria* Gardner
[*Chroococciopsis* ?], *A. minutissima* Gardner [*Chroococciopsis* ?])
need to be transferred.

Aphanothece

Coccochlorus^{SYN} – Komárek & Anagnostidis (2000) rejected this taxon; most of
its taxa have been transferred to other Aphanotheceidae genera (mostly
Aphanothece) including the following transfer:

C. stagnina Sprengel = *Aphanothece stagnina* (Sprengel) Braun

Cyanobacterium

Cyanobium

Cyanodictyon

Cyanogranis

Cyanothece

Epigloeosphaera

Gloeothece

Hormothece

Lemmermanniella

Lithococcus

Lithomyxa

Radiocystis

Subfamily Synechococcoideae: Involution cells long, cylindrical, filamentous,
without nanocytes, arranged in 1 direction (sometimes pseudofilamentous rows).

Alternantia^{QUS} Listed in Komárek & Anagnostidis (1986) but not elaborated on
and was not mentioned in Komárek & Anagnostidis (2000) or Wehr and
Sheath (2003)

Bacularia

Cyanothamnos

Catella^{SYN} Komárek and Anagnostidis (2000) placed *Catella* species in the
genera *Rhabdoderma* (*C. rubra* Alvik = *Rhabdoderma rubrum* (Alvik)
Komárek & Anagnostidis [transfer was made in Komárek & Anagnostidis
1995]).

Dactylococcopsis^{QUS} – According to Komárek & Anagnostidis (2000), most of the species in this genera belong to green algal genera. The following transfers should be made:

D. raphidioides Hansgirg = *Rhabdogloea smithii* (Chodat) Komárek

D. acicularis Lemmermann = *Myxobaktron* sp.

D. fascicularis Lemmermann = Unknown Cyanophyte coccoid

Dzensia

Johannesbaptistia

Myxobaktron

Pseudoncobyrsa

Rhabdoderma (*Catella*) – Current revisions within the family Synechococcaceae

necessitated a couple of transfers:

R. gorskii Woloszyńska = *R. lineare* Schmidle & Lauterborn

R. sigmoidea fo. *minor* Moore & Carter = *Synechococcus sigmoideus* (Moore & Carter) Komárek

Rhabdogloea

Rhodostichus

Synechococcus – The concept of this taxon has narrowed necessitating several new taxa and the following transfers:

S. aeruginosus Nägeli = *Cyanothece aeruginosa* (Nägeli) Komárek

S. cedrorum Sauvageau = *Cyanobacterium cedrorum* (Sauvageau) Komárek

S. major fo. *crassior* Lagerheim

Tetrarcus^{QUS} – Komárek and Anagnostidis (1986) rejected this genus as a cyanophyte (Rhodobacteria?).

Tubiella

Wolskyella

Family Merismopediaceae: Cell division in 2 planes, in one cell layer colonies.

Subfamily Merismopedioideae: In flat or irregular colonies.

Agmenellum^{QUS} Komárek and Anagnostidis (1986) synonymized this genus with *Merismopedia* (suggested conservation of the name *Merismopedia* if the taxon *Agmenellum* was described earliest) and transferred the following:

A. quadruplicatum (Meneghini) Brébisson = *Merismopedia punctata* Meyen

A. thermale (Kützing) Drouet & Daily = *Merismopedia thermalis* Kützing

Aphanocapsa – Komárek and Anagnostidis revised the definition of this genera and made the following transfers:

A. pulchra (Kützing) Rabenhorst = *Microcystis smithii* Komárek & Anagnostidis

A. endolithica Ercegovic = *Aphanocapsa rivularis* (Carmichael) Rabenhorst

A. roeseana deBary = *Microcystis roeseana* (De Bary) Elenkin
A. elachista var. *planctonica* GM Smith = *Aphanocapsa planctonica* (GM Smith) Komárek & Anagnostidis

Chroostipes^{QUS} Genus with one species, *C. linearis*, is listed in Komárek and Anagnostidis (1986) and described (solitary rod dividing lengthwise), as a footnote, in Komárek and Anagnostidis (2000). Was not mentioned in Wehr and Sheath (2003). However, it may be a eubacterium.

Coccopedia

Cyanotetras

Mantellum

Merismopedia

Microcrocis

Pilgeria^{RARE} Spherical colonies with densely aggregated cells in the peripheral layer, cells radially elongated. Has not been observed since original publication (1901 from Brazil). Was listed as a Hydrococcaceae in Komárek and Anagnostidis (1986).

Pannus

Synechocystis

Subfamily Gomphosphaerioidae: Cells located at periphery of more or less spherical, oval or irregularly spherical colonies.

Coelomoron

Coelosphaeriopsis

Coelosphaerium – The definition of *Coelosphaerium* was narrowed facilitating the following transfers:

C. naegelianum Unger = *Woronichinia naegeliana* (Unger) Elenkin

C. pallidum Lemmermann = *Coelomoron* sp

Gomphosphaeria – Similar to *Coelosphaerium*, the genus *Gomphosphaeria* was divided into several genera facilitating the following transfers:

G. lacustris Chodat = *Snowella lacustris* (Chodat) Komárek & Hindák

G. aponina var. *delicatula* Virieux = *Gomphosphaeria virieuxii* Komárek & Hindák

G. lacustris var. *compacta* Lemmermann = *Woronichinia compacta* (Lemmermann) Komárek & Hindák

Siphonosphaera

Snowella

Woronichinia

Family Microcystaceae: Cell division in 3 planes, facultative nanocyte production.

Chondrocystis

Eucapsis

Gloeocapsa – The definition of *Gloeocapsa* was narrowed and Komárek & Anagnostidis (1986) made the following transfers:

G. dermochroa Nägeli = *Chondrocystis dermochroa* (Nägeli) Komárek & Anagnostidis

G. polydermatica Kützing = *Gloeocapsa atrata* Kützing

G. pleurocapsoides Nováček = *Gloeocapsopsis pleurocapsoides* (Nováček) Komárek & Anagnostidis

Microcystis – Similar to other coccoid genera, this older and traditional genus has been re-defined on a narrow concept; several new genera are used for taxa that do not fit this definition. Komárek & Anagnostidis (1986) listed most of the following transfers:

M. incerta Lemmermann = *Aphanocapsa incerta* (Lemmermann) Cronberg & Komárek

M. elabens (Brébisson) Kützing = *Aphanothece elebens* (Brébisson) Elenkin

M. holsatica Lemmermann = *Aphanocapsa holsatica* (Lemmermann) Cronberg & Komárek

M. marginata Kützing = *Microcystis novacekii* (Komárek) Compère

M. pulverea var. *incerta* (Lemmermann) Crow = *Aphanocapsa incerta* (Lemmermann) Cronberg & Komárek

Family Chroococcaceae: Cell division in 3 planes and flattened to form tight colony.

Asterocapsa

Chroococcus – The revision of the coccoid cyanophytes (Komárek and Anagnostidis 2000) included the following synonymies:

C. limneticus var. *subsalsus* Lemmermann = *Chroococcus dispersus* (Keissler) Lemmermann

C. limneticus var. *distans* GM Smith = *Chroococcus distans* (GM Smith) Komárková-Legnerová

Cyanokybus

Cyanosarcina

Cyanostylon

Gloeocapsopsis

Nephrococcus

Pseudocapsa

Family Entophysalidaceae: Cell division in 3 planes, form polarized colonial forms (radially or serially)

Subfamily Entophysalidoideae: Early stages (cells) and colonies are polarized.

Chlorogloea

Cyanoarbor

Entophysalis – The definition of this genera was narrowed by Komárek and Anagnostidis (2000) resulting in the following transfers:

E. rivularis (Kützing) Drouet = *Entophysalis* sp.

E. lemaniae (CA Agardh) Drouet & Daily = *Entophysalis* sp.

E. lemaniae var. *elongata* Wille = *Entophysalis* sp.

Lithocapsa

Paracapsa

Subfamily Siphononematoideae: Early stages (cells) not polarized, colonies polarized

Siphononema

Family Hydrococcaceae: Thallus radially differentiated/polarized with pseudofilamentous rows or layers of cells (variable types).

Cyanodermatium

Hormathonema

Hydrococcus

Myxohyella

Onkonema

Placoma

Tryponema

Family Chamaesiphonaceae: Exocyte (exospores) formation, sessile, solitary (but at times in large groups), polarized pseudofilaments (one row of cells).

Aspalatia – ^{QUS} Listed in Komárek & Anagnostidis (1986) but not elaborated on and was not mentioned in Komárek & Anagnostidis (2000) or Wehr and Sheath (2003).

Chamaecalyx

Chamaesiphon – Anagnostidis & Komárek (1995) made the following transfer:

C. regularis (Fritsch) Geitler = *Chamaesiphon britannicus* (Kützing ex Gomont) Komárek & Anagnostidis

Clastidium

Cyanophanon

Geitleribactron

Stichosiphon

Family Dermocarpellaceae: Cell division by multiple fission into baeocytes; cell differentiation is simultaneous or in rapid succession.

Cyanocystis

Dermocarpa ^{QUS} – As noted by Komárek & Anagnostidis (1986) there are several problems with the genus *Dermocarpa*, mostly due to a broad and ambiguous definition. This genus name was eliminated with various transfers, mostly to *Cyanocystis*, *Chamaecalyx* and *Xenococcus*.

Dermocarpella

Stanieria

Family Xenococcaceae: Irregular cell division by successive binary fission; special cells of older colonies divide into baeocytes or nanocytes.

Chroococciopsis
Chroococcidium
Chroococcopsis
Epilithia – ^{MAR}
Myxosarcina
Xenococcus
Xenotholos

Family Hyellaceae: Thallus consisting of physiologically unconnected cells (not true filaments) but diversified and polarized.

Subfamily Podocapsoidae: Pseudofilaments short (a few cells), apical cells greatly widened

Cyanosaccus
Ercegovicia
Podocapsa

Subfamily Hyelloideae: Pseudofilaments composed of rows of cells.

Cyanoderma (*Radaisiella*)
Dalmatella
Hyella
Pascherinema
Pleurocapsa
Radaisia
Radaisiella – ^{SYN} Komárek and Anagnostidis (2000) placed *Radaisiella* species in the genera *Cyanoderma*.
Solentia

Order Oscillatoriales: Filamentous, no true branching.

Family Borziaceae: Short filaments (usually 5-8 cells, maximum of 20), deeply constricted at cross walls, no sheaths, shorter than wide, no granulation at cross walls, no aerotypes, thylakoids peripheral and parallel.

Borzia
Komvophoron
Sinaiella

Family Pseudanabaenaceae: Long and thin trichomes generally less than 3 µm with peripheral thylakoids.

Subfamily Pseudanabaenoideae: Trichomes straight, no branching, no sheaths.

Arthronema – Single species: *A. africanum* (*Pseudanabaena africana*).

Geitlerinema

Jaaginema

Limnothrix

Palikiella

Pseudanabaena – The current taxonomic system has placed short trichomes in another family and necessitated the following transfer:

P. schmidlei Jaag = *Komvophoron schmidlei* (Jaag) Anagnostidis & Komárek

Romeria

Subfamily Spirulinoideae: Trichomes coiled, no branching, no sheaths.

Glaucospira

Spirulina

Subfamily Leptolyngbyoideae: Filaments isopolar, free-living, with sheaths (facultative), rare false branching

Leibleinia

Leptolyngbya

Planktolyngbya

Subfamily Heteroleibleinioideae: Filaments heteropolar with one end attached to substrate, always with sheaths and rarely false branching.

Amphithrix^{QUS} – The basal “parenchymous” material was discovered to be separate, coccoid taxa, leaving this genus very similar to *Homeothrix*. Starmach (1966) made the following transfer:

A. janthina (Montagne) Bornet and Flahault = *Homoeothrix janthina* (Bornet et Flahault) Starmach

Heteroleibleinia

Homeothrix

Sokolovia

Family Schizothrichaceae: Wide sheaths with several to many trichomes, sheaths conical to closed at apex, trichomes immotile.

Schizothrix

Trichocoleus

Family Phormidiaceae: Cell division complete, generally greater than 3 µm, radial thylakoids, cells isodiametric (or slightly longer or shorter than wide), when present sheaths are open.

Subfamily Phormidioideae: Sheaths lacking or containing 1 trichome.

Arthrospira

Phormidium – The definition of this genus was narrowed; several of the smaller *Phormidium* taxa were placed in Pseudanabaenaceae genera. As noted for *Oscillatoria* and *Lyngbya*, many species from these larger taxa were transferred to *Phormidium*. The following species were transferred from this genus:

P. angustissimum West & West = *Leptolyngbya angustissima* (West & West) Anagnostidis & Komárek

P. antarcticum West & West = *Leptolyngbya antarctica* (West & West) Anagnostidis & Komárek

P. faveolarum Rabenhorst ex Gomont = *Leptolyngbya foveolarum* (Rabenhorst ex Gomont) Anagnostidis & Komárek

P. fragile Gomont = *Leptolyngbya fragilis* (Gomont) Anagnostidis & Komárek

P. frigidum Fritsch = *Pseudanabaena frigida* (Fritsch) Anagnostidis

P. laminosum Gomont = *Leptolyngbya laminosa* (Gomont) Anagnostidis & Komárek

P. microtomum Skuja = *Lyngbya microtoma* (Skuja) Anagnostidis

P. mucicola Huber-Pestalozzi & Naumann = *Pseudanabaena mucicola* (Naumann et Huber-Pestalozzi) Schwabe

P. mucosum Gardner = *Leptolyngbya mucosa* (Gardner) Anagnostidis & Komárek

P. orientale West & West = *Leptolyngbya orientalis* (West & West) Anagnostidis & Komárek

P. purpurascens Gomont = *Leptolyngbya purpurascens* (Gomont) Anagnostidis & Komárek

P. tenue Gomont = *Leptolyngbya tenue* (Gomont) Anagnostidis & Komárek

Planktothrix

Porphyrosiphon – The current definition of this taxon does not include several smaller forms and includes the following transfer:

P. splendidus (Greville) Drouet = *Geitlerinema splendidum* (Greville) Anagnostidis. Note that this taxon was transferred to *Phormidium* (Anagnostidis & Komárek 1988) prior to the creation of the genus *Geitlerinema* (Anagnostidis 1989)

Proterendothrix

Pseudophormidium

Symploca

Trichodesmium

Tychonema

Subfamily Microcoleoideae: More than one trichome in a sheath

Dasygloea

Hydrocoleum – The current definition of *Hydrocoleum* does not include a few taxa that have commonly been found. Anagnostidis & Komárek (1988) made the following transfers:

H. brebissonii Kützing ex Gomont = *Blennothrix brebissonii* (Kützing ex Gomont) Anagnostidis & Komárek

H. sp. = *Blennothrix sp.*

Lyngbyopsis

Microcoleus

Sirocoleum

Symplocastrum

Subfamily Ammatoideoideae: Filaments iso- or heteropolar, widened or narrowed at ends, with sheaths and frequent false branching.

Ammatoidea

Pseudoscytonema

Family Oscillatoriaceae: Cells short and rarely isodiametrical (cell division rapid transverse to trichome axis), apical cell thickened or with calyptra, trichomes 6-35µm with or without sheaths and motile or immotile, false branching lacking to occasional to frequently obligatorily.

Subfamily Hormoscilloideae: Immotile, ensheathed trichomes produced by successive fragmentation by necridic cells, short filament length, no false branching.

Camptothrix

Hormoscilla

Katagnymene

Subfamily Starrioideae: Immotile, laterally flattened trichomes, without sheaths and without false branching.

Crinalium

Cyanarcus

Gomontiella

Starria

Subfamily Oscillatorioideae: Trichomes 6-35µm wide, motile, with or without sheaths, rare false branching, trichomes disintegrate with necridia.

Blennothrix

Lyngbya – This is an old genus; the concept was narrowed considerably (most of the smaller forms were transferred to genera in the Phormidiaceae and

Pseudoanabaenaceae). The current taxonomic system encompasses many transfers including the following:

- L. diguetii* Gomont = *Phormidium diguetii* (Gomont) Anagnostidis & Komárek
- L. martensiana* Meneghini = *Porphyrosiphon martensianus* (Meneghini) Anagnostidis & Komárek
- L. lutea* (Agardh) Gomont = *Porphyrosiphon luteus* (Gomont) Anagnostidis & Komárek
- L. epiphytica* Hieronymus = *Leibleinia epiphytica* (Hieronymus) Anagnostidis & Komárek
- L. limnetica* Lemmermann = *Planktolyngbya subtilis* (Lemmermann) Anagnostidis & Komárek
- L. aerugineo-caerulea* (Kützing) Gomont = *Phormidium aerugineo-caeruleum* (Gomont) Anagnostidis & Komárek
- L. contorta* Lemmermann = *Planktolyngbya contorta* (Lemmermann) Anagnostidis & Komárek
- L. taylorii* Drouet & Strickland = *Phormidium taylori* (Drouet & Strickland) Anagnostidis
- L. borgerti* Lemmermann = *Limnothrix borgerti* (Lemmermann) Anagnostidis
- L. chaetomorphae* Iyengarand & Desikchary = *Heteroleibleinia chaetomorphae* (Iyengarand & Desikachary) Anagnostidis & Komárek
- L. cryptovaginata* Schkorbatow = *Planktothrix cryptovaginata* (Schkorbatow) Anagnostidis & Komárek
- L. gardneri* Geitler = *Heteroleibleinia gardneri* (Geitler) Anagnostidis & Komárek
- L. gracilis* Rabenhorst = *Leibleinia gracilis* (Rabenhorst) Anagnostidis & Komárek
- L. holdenii* Forti = *Phormidium holdenii* (Forti) Anagnostidis
- L. infixa* Frémy = *Heteroleibleinia infixa* (Frémy) Anagnostidis & Komárek
- L. kuetzingii* Schmidle = *Heteroleibleinia kuetzingii* (Schmidle) Anagnostidis & Komárek
- L. lagerheimii* (Moebius) Gomont = *Leptolyngbya lagerheimii* (Gomont) Anagnostidis & Komárek
- L. mesotrichia* Skuja = *Heteroleibleinia mesotricha* (Skuja) Anagnostidis & Komárek
- L. nordgardhii* Wille = *Leibleinia nordgaardii* (Wille) Anagnostidis & Komárek
- L. ochracea* Thuret = *Leptolyngbya ochracea* (Thuret) Anagnostidis & Komárek
- L. perelegans* Lemmermann = *Leptolyngbya perelegans* (Lemmermann) Anagnostidis & Komárek
- L. polysiphoniae* Frémy = *Leptolyngbya polysiphoniae* (Frémy) Anagnostidis

- L. porphyrosiphoni* Frémy = *Leibleinia porphyrosiphonis* (Frémy)
Anagnostidis & Komárek
- L. rivularium* Gomont = *Leptolyngbya rivulariarum* (Gomont)
Anagnostidis & Komárek
- L. rubida* Frémy = *Phormidium rubidium* (Frémy) Anagnostidis &
Komárek
- L. versicolor* (Wartmann) Gomont = *Porphyrosiphon versicolor* (Gomont)
Anagnostidis & Komárek
- L. putealis* Montagne = *Phormidium puteale* (Montagne) Anagnostidis &
Komárek

Oscillatoria – For the same reason as *Lyngbya* the definition of this genus was narrowed considerably resulting in the following transfers:

- O. terebriformis* Agardh ex Gomont = *Phormidium terebriforme* (Agardh
ex Gomont) Anagnostidis & Komárek
- O. articulata* Gardner = *Phormidium articulatum* (Gardner) Anagnostidis
& Komárek
- O. splendida* Greville = *Geitlerinema splendidum* (Greville) Anagnostidis
- O. tenuis* Agardh ex Gomont = *Phormidium tenue* (Agardh ex Gomont)
Anagnostidis & Komárek
- O. prolifica* (Greville) Gomont = *Planktothrix prolifica* (Gomont)
Anagnostidis & Komárek
- O. amoena* (Kützing) Gomont = *Phormidium amoenum* Kützing
- O. acuminata* Gomont = *Phormidium acuminatum* (Gomont) Anagnostidis
& Komárek
- O. acutissima* Kufferath = *Phormidium acutissimum* (Kufferath)
Anagnostidis & Komárek
- O. agardhii* Gomont = *Planktothrix agardhii* (Gomont) Anagnostidis &
Komárek
- O. amphibia* Agardh = *Phormidium amphibium* (Agardh) Anagnostidis &
Komárek
- O. amphigranulata* Van Goor = *Pseudanabaena amphigranulata* (Van
Goor) Anagnostidis
- O. angusta* Koppe = *Jaaginema metaphyticum* Komárek
- O. animalis* fo. *tenuior* Stockmeyer = *Geitlerinema tenuius* (Stockmeyer)
Anagnostidis
- O. bornettii* Zikal = *Tychonema bornettii* (Zikal) Anagnostidis &
Komárek
- O. boryana* Bory = *Phormidium boryanum* (Bory) Anagnostidis &
Komárek
- O. brevis* Gomont = *Phormidium breve* (Gomont) Anagnostidis &
Komárek
- O. calcuttensis* Biswas = *Jaaginema calcuttense* (Biswas) Anagnostidis &
Komárek
- O. chalybea* Mertens ex Juergens = *Phormidium chalybeum* Anagnostidis
& Komárek

- O. chlorina* Brühl et Biswas = *Phormidium chlorinum* Anagnostidis
O. claricentrosa Gardner = *Phormidium claricentrosus* (Gardner)
 Anagnostidis & Komárek
O. corallinae Gomont = *Phormidium corallinae* (Gomont) Anagnostidis
 & Komárek
O. cortiana Meneghini ex Gomont = *Phormidium cortianum* (Meneghini
 ex Gomont) Anagnostidis & Komárek
O. deflexa West & West = *Phormidium deflexum* (West & West)
 Anagnostidis & Komárek
O. earlei Gardner = *Jaaginema earlei* (Gardner) Anagnostidis & Komárek
O. formosa Bory = *Phormidium formosum* (Bory) Anagnostidis &
 Komárek
O. granulata Gardner = *Phormidium granulatum* (Gardner) Anagnostidis
O. grunowiana Gomont = *Phormidium grunowianum* (Gomont)
 Anagnostidis & Komárek
O. guttulata Van Goor = *Limnothrix guttulata* (Van Goor) Anagnostidis
O. hamelii Frémy = *Phormidium hamelii* (Frémy) Anagnostidis &
 Komárek
O. jatorvensis Vouk = *Phormidium jatorvense* (Vouk) Anagnostidis &
 Komárek
O. koettlitzii Fritsch = *Phormidium koettlitzii* (Fritsch) Anagnostidis &
 Komárek
O. laete-virens Gomont = *Phormidium laetevirens* (Gomont) Anagnostidis
 & Komárek
O. lemmermannii Woloszyńska = *Jaaginema lemmermannii*
 (Woloszyńska) Anagnostidis & Komárek
O. meslini Frémy = *Phormidium meslinii* (Frémy) Anagnostidis &
 Komárek
O. minima Gicklhorn = *Jaaginema minimum* (Gicklhorn) Anagnostidis &
 Komárek
O. minnesotensis Tilden = *Phormidium minnesotense* (Tilden) Drouet
O. nigra Vaucher = *Phormidium nigrum* (Vaucher) Anagnostidis &
 Komárek
O. nigroviridis Thwaites ex Gomont = *Phormidium nigro-viride* (Thwaites
 ex Gomont) Anagnostidis & Komárek
O. ornata Kützing = *Phormidium ornatum* (Kützing) Anagnostidis &
 Komárek
O. paucigranata Brühl & Biswas = *Phormidium paucigranatum* (Brühl &
 Biswas) Anagnostidis & Komárek
O. planctonica Woloszyńska = *Limnothrix planctonica* (Woloszyńska)
 Anagnostidis & Komárek
O. priestleyi West & West = *Phormidium pseudopriestleyi* Anagnostidis
 & Komárek
O. pseudogeminata Schmid = *Jaaginema pseudogeminatum* (Schmidle)
 Anagnostidis & Komárek

- O. pseudogeminata* var. *unigranulata* Biswas = *Jaaginema unigranulatum*
(Biswas) Anagnostidis
- O. quadripunctulata* Brühl et Biswas = *Jaaginema quadripunctulatum*
(Brühl et Biswas) Anagnostidis & Komárek
- O. rubescens* Gomont = *Planktothrix rubescens* (Gomont) Anagnostidis &
Komárek
- O. schultzii* Lemmermann = *Phormidium schultzii* (Lemmermann)
Anagnostidis & Komárek
- O. simplicissima* Gomont = *Phormidium simplicissimum* (Gomont)
Anagnostidis & Komárek
- O. subtilissima* Kützing = *Jaaginema subtilissima* (Kützing) Anagnostidis
& Komárek
- O. subuliformis* Thwaites ex Gomont = *Phormidium subuliforme*
(Thwaites ex Gomont) Anagnostidis & Komárek
- O. tenuis* var. *levis* Gardner = *O. laevis* (Gardner) Anagnostidis
- O. willei* Gardner emend. Drouet = *Phormidium willei* (Gardner emend.
Drouet) Anagnostidis & Komárek
- O. animalis* Agardh = *Phormidium animale* (Agardh) Anagnostidis &
Komárek

Subfamily Plectonematoideae: Immotile, 8-25µm wide trichomes with sheaths and obligatorily, frequent false branching.

Plectonema – The smaller forms of this taxon were placed in Phormidiaceae taxa (Anagnostidis & Komárek 1988), necessitating the following transfer:

P. notatum Schmidle = *Leptolyngbya notata* (Schmidle) Anagnostidis & Komárek

Order Nostocales: Filamentous, with heterocytes (heterocysts), no true branching.

Family Scytonemataceae: Isopolar false branching, trichomes with upright (double) false branches

Kyrtuthrix
Scytonema
Scytonematopsis
Spirirestis^{SAT}

Family Microchaetaceae: Heteropolar false branching, untapered (or only very slightly so) trichomes

Subfamily Tolypotrichoideae: Obligatory common false branches.

Coleodesmium
Coleodesmiumopsis
Hassallia^{SAT}

Petalonema
Tolypothrix

Subfamily Microchaetoideae: Filaments with scarce, transitional, or lacking false lateral branches.

Camptylonemopsis
Frémyella^{SYN} Komárek & Anagnostidis (1989) lists *Frémyella* as *Microchaete*.
Fortiea
Microchaete (*Frémyella*)

Family Rivulariaceae: Tapered, with basal heterocytes, infrequent false-branching.

Calothrix
Dichothrix
Gardnerula
Gloeotrichia
Isactis
Rivularia
Sacconema^{SAT}

Family Nostocaceae: No false branching, isopolar.

Anabaena – The revisions of Komárek & Anagnostidis (1989) narrowed the definition of this genera; they made the following transfers:
A. anomala Fritsch = *Trichormus anomalus* (Fritsch) Komárek & Anagnostidis
A. fertilissima Rao = *Trichormus fertissimus* (Rao) Komárek & Anagnostidis
A. naviculoides Fritsch = *Trichormus naviculoides* (Fritsch) Komárek & Anagnostidis
A. oryzae Fritsch = *Nostoc oryzae* (Fritsch) Komárek & Anagnostidis
A. variabilis Kützing = *Trichormus variabilis* (Kützing) Komárek & Anagnostidis

Anabaenopsis^{PP}
Aphanizomenon^{PP}
Aulosira
Cylindrospermopsis
Cylindrospermum
Hydrocoryne
Isocystis
Nodularia
Nostoc
Rhaphidiopsis^{PP}
Richelia
Trichormus

Wollea

Order Stigonematales: Filamentous, with heterocytes, true branching.

Family Chlorogloeopsaceae: Trichomes short, uni- and multiseriate, heterocytes terminal and intercalary, no branches (no secondary main branch)

Chlorogloeopsis^{CUL}
Heterocyanococcus^{QUS}

Family Capsosiraceae: Trichomes multiseriate, no differentiation of main trichome and branches, has “chroococcoid” stages at basal portions

Capsosira^{SAT}
Desmosiphon^{QUS}
Hyphomorpha^{QUS}
Letestuinema^{QUS}
Nematoplaca
Stauromatonema

Family Stigonemataceae: Main trichome and branches uniseriate or polyseriate (i.e., main trichome and branches are the same morphologically), heterocytes intercalary

Homoeoptycha
Pulvinularia
Stigonema

Family Fischerellaceae: Main trichome polyseriate and isopolar, branches uniseriate (i.e., main trichome and branches are different morphologically) with some true branching.

Doliocatella
Fischerella
Fischerellopsis
Leptopogon
Parthasarathiella^{CUL}
Westiellopsis^{CUL}

Family Borzinemataceae: Both true and false branching, main trichome polyseriate and heteropolar, branches are uniseriate have only false branching.

Borzinema (*Diplonema*)
Camptylonema^{SYN} Anagnostidis & Komárek (1990) listed *Camptylonema* as a synonym of *Schmidleinema*.
Diplonema^{SYN} Anagnostidis & Komárek (1990) listed *Diplonema* as a synonym of *Borzinema*.

Handeliella
Pseudospelaeopogon^{SYN} Agnagnostidis & Komárek (1990) listed
Pseudospelaeopogon as a synonym of *Spelaeopogon*.
Schmidleinema (*Camptylonema*)
Seguenzaea
Spelaeopogon (*Pseudospelaeopogon*)

Family Loriellaceae: Trichomes uniseriate with single branching (T and in most cases V), cylindrical cells constricted at cross walls (i.e., narrowed at each end of the cell), lacking heterocytes.

Albrightia – Only one species, *A. tortuosa* found in slightly alkaline thermal springs (Yellowstone National Park).

Brachytrichiopsis –^{NNA}

Colteronema^{SAT} - Only one species, *C. funebre*, found near thermal springs (influenced by hot steam; Yellowstone National Park).

Geitleria^{SAT}

Loefgrenia^{QUS} Drouet (1981) and co-workers, examined several different portions of the type material (type material had been distributed widely in duplicate) and did not observe branching (described as having “ramifications” by Gomont). Without branching, Drouet placed *L. anomala* in the same genera as *Rhaphidiopsis* and by the rule of priority called species described in both genera as *Loefgrenia*. Specifically, *L. anomala* is the same as *R. curvata*. To conform with current usage, *Loefgrenia anomala* should be changed to *Rhaphidiopsis curvata*.

Loriella^{NNA}

Mastigocoleopsis^{QUS}

Matteia^{QUS}

Family Nostochopsaceae: Trichomes uniseriate, heterocytes are lateral or apical.

Baradlaia^{QUS}

Mastigocladopsis^{QUS}

Mastigocoleus

Myxoderma^{SYN} Anagnostidis & Komárek (1990) list *Myxoderma* as a synonym of *Nostochopsis*.

Nostochopsis (*Myxoderma*)

Family Mastigocladaceae: Trichomes uniseriate, branching “T,” “Y” or “V,” heterocytes intercalary.

Subfamily Mastigocladoideae: Terminal parts of trichomes and branches cylindrical, rounded apical cells, “T” and “V” branching, rare “Y” branching.

Adrianema (*Lithonema*)

Chondrogloea^{QUS}

Hapalosiphon

Mastigocladus

Symphyonema

Lithonema^{SYN} Anagnostidis & Komárek (1990) list *Lithonema* as a synonym of
Adrianema.

Thalpophila

Umezakia

Voukiella

Westiella

Subfamily Brachytrichioideae: Terminal parts of trichomes and branches attenuated to hair-like, mostly “V” and “Y” branching.

Brachytrichia

Herpyzonema

Iyengariella

Parenchymorpha

Symphyonemopsis

Appendix C

Annotated List of Non-Diatom Algae References and Monographs

Anagnostidis, K., Komárek, J. 1985. Modern approach to the classification system of cyanophytes. 1. Introduction. Archiv für Hydrobiologie/Algological Studies 38/39:291–302.

Anagnostidis, K., Komárek, J. 1988. Modern approach to the classification system of cyanophytes. 3. Oscillatoriales. Archiv für Hydrobiologie/Algological Studies 50/53:327–472.

Anagnostidis, K., Komárek, J. 1990. Modern approach to the classification system of cyanophytes. 5. Stigonematales. Archiv für Hydrobiologie/Algological Studies 59:1-73.

The five article series on the “Modern approach to the classification system of cyanophytes” (includes an article by Komárek and Anagnostidis and an article by Komárek) is the basis for the current systematics of blue-green algae (cyanobacteria) and will be used starting with the “2001 NAWQA Non-Diatom Taxa Listing.”

Bourrelly, P. 1966. Les Algues d'eau douce. Initiation à la systématique. I. Les algues vertes. N. Boubée and Cie., Paris. 511pp.

Bourrelly, P. 1968. Les Algues d'eau douce. Initiation à la systématique. II. Les algues jaunes et brunes, Chrysophycées, Phaéophycées, Xanthophycées et Diatomées. N. Boubée and Cie., Paris. 438pp.

Bourrelly, P. 1970. Les Algues d'eau douce. Initiation à la systématique. III. Les algues bleues et rouges, les Eugléniens, Peridiniens et Cryptomonadines. N. Boubée and Cie., Paris. 569pp.

Bourrelly, P. 1988. Compléments Les Algues d'eau douce. Initiation à la systématique. I. Les algues vertes. N. Boubée and Cie., Paris. 182pp.

The Bourrelly series (three volumes and supplement) is comprehensive for freshwater algae to the genera level. There are several species illustrations for each genera.

Butcher, R.W. 1967. An Introductory Account of the Smaller Algae of British Coastal Waters. Part IV: Cryptophyceae. Ministry Agric., Fish. & Food. Fishery Investigations Series IV. London. 54pp.

Canter-Lund, H., Lund, J. W. G. 1995. Freshwater algae: Their microscopic world explored. Biopress, Bristol, UK.

Is considered the “coffee table” algae book with many very good photographs but few species determinations.

Campbell, P. H. 1973. Studies of Brackish Water Phytoplankton. I. The Phytoplankton of Gales Creek with Emphasis on the taxonomy and ecology of estuarine phytoflagellates. PhD. Dissertation, Univ. North Carolina, Chapel Hill. 278 pp.

Carty, S. 2002. Dinoflagellates. In Wehr, J. and Sheath, R. Eds. Freshwater Algae of North America, Ecology and Classification. Academic Press, San Diego, CA, USA 918 pp.

Cooke, E. C. 1967. The Myxophyceae of North Carolina. Publ. by the Author, Winston-Salem, NC. 206 pp.

Follows Drouet’s taxonomic system for the Chroococcales and Geitler’s system for the other blue-green orders. Has many illustrations of North American (North Carolina) forms.

Croasdale, H. T. 1973. Freshwater Algae of Ellesmere Island, N.W.T. Nat. Mus. Nat. Sci. Publ. Bot. #3. Ottawa, Ontario. 131pp.

Many of the species of the desmids are comparable with northern US forms.

Croasdale, H.T., Bicudo, C. E. de M. & Prescott, G. W. 1983. A Synopsis of North American Desmids. Part II Desmidiaceae: Placodermatae Section 5. University of Nebraska Press, Lincoln. 117 pp.

The desmid series "A Synopsis of North American Desmids" (the other sections are authored by Prescott) was published in two parts with a total of five sections. It is the authoritative reference for desmids in the United States. It was reprinted by reproduction (2001) in India by Bishen Singh Mahendra Pal Singh (Dehra Dun).

Cronberg, G., Komárek, J. 1994. Planktic cyanoprokaryotes found in South Swedish lakes during the 12th International Symposium of Cyanophyte Research, 1992. Archiv für Hydrobiologie/Algological Studies 75:323–352.

Cronberg, G., Komárek, J. 2002. Some nostocalean cyanoprokaryotes from lentic habitats of central and southern Africa. Nova Hedwigia, in press.

Damska, I. 1964. Charophyta-Ramience. Flora Slodkowodna Polski 13:1-126.

Polish Freshwater Flora: Charophyta

The Polish freshwater algal flora was published in 14 parts (mostly authored by Starmach with single volumes by Damska, Kadlubowska, Mrozinska-Webb and Sieminska), is in polish and has many species descriptions and illustrations.

DeFlandre, G. 1926. Monographie du genre Trachelomonas Ehr. Nemours. Paris. 162 pp.

Desikachary, T. V. 1959. Cyanophyta. Academic Press New York and London. Indian Council of Agricultural Research, New Dehli. 686pp.

Follows Geitler's taxonomic system with updated species determinations. Many forms are specific to India.

Dillard, G. E. 1989a. Freshwater Algae of the Southeastern United States. Part 1. Chlorophyceae: Volvocales, Tetrasporales and Chlorococcales. Bibliotheca Phycologica 81: 1-202.

Dillard, G. E. 1989b. Freshwater Algae of the Southeastern United States. Part 2. Chlorophyceae: Ulotrichales, Microsporales, Cylindrocapsales, Sphaeropleales, Chaetophorales, Cladophorales, Schizogoniales, Siphonales, and Oedogoniales. Bibliotheca Phycologica 82: 1-163.

Dillard, G. E. 1990. Freshwater Algae of the Southeastern United States. Part 3. Chlorophyceae: Zygnematales: Zygnemataceae, Mesotaeniaceae and Desmidiaceae (Section 1). Bibliotheca Phycologica 85: 1-172.

Dillard, G. E. 1991a. Freshwater Algae of the Southeastern United States. Part 4. Chlorophyceae: Desmidiaceae (Section 2). Bibliotheca Phycologica 89: 1-205.

Dillard, G. E. 1991b. Freshwater Algae of the Southeastern United States. Part 5. Chlorophyceae: Desmidiaceae (Section 3). Bibliotheca Phycologica 90: 1-155.

Dillard, G. E. 1993. Freshwater Algae of the Southeastern United States. Part 6. Chlorophyceae: Desmidiaceae (Section 4). Bibliotheca Phycologica 93: 1-166.

Dillard, G. E. 2000. Freshwater Algae of the Southeastern United States. Part 7. Pigmented Euglenophyceae. Bibliotheca Phycologica 106. 134pp.

The seven part "Freshwater Algae of the Southeastern United States" series by Gary Dillard presents many species found in the United States. Its presentation of desmid forms is very helpful in narrowing down choices prior to using the larger North American synopsis (references authored by Prescott and Croasdale).

Drouet, F. 1968. Revision of the classification of the Oscillatoriaceae. Monogr. Acad. Nat. Sci. Philadelphia 15:1-370.

Drouet, F. 1973. Revision of the classification of the Nostocaceae with cylindrical trichomes. Hafner Press (Macmillan), New York. 292pp.

Drouet, F. 1978. Revision of the Nostocaceae with Constricted Trichomes. Nova Hedwigia, Beihefte 57: 1-258.

Drouet, F. 1981. Revision of the Stigonemataceae with a Summary of the Classification of the Blue-green Algae. Nova Hedwigia, Beihefte 66: 1-221.

Drouet, F. & Dailey, W. A. 1956. Revision of the coccooid Mxyophyceae. Butler Univ. Bot. Stud. 12:1-218. Facsimile Edition (1973). Hafner Press (Macmillan), New York.

The five Drouet volumes describe a systematic revision of the blue-green algae, published from the mid-1950s through the early 1980s. Most of this system was not used for analysis of USGS NAWQA Program algal samples. The volumes are useful for the documentation of names and specimens from nearly all the known species of blue-green algae, especially from the United States.

Ettl, H. and Gartner, G. 1995. Syllabus der Boden-, Luft- und Flechtenalgen. G. Fischer, Stuttgart, 721 pp.

Forest, H. S. 1954. Handbook of algae with special reference to Tennessee and the southeastern United States. The University of Tennessee Press, Knoxville, TN.

Förster, K. 1982. Das Phytoplankton des Süßwassers. Systematik und Biologie. In G. Huber-Pestalozzi (Ed.). "Die Binnengewässer". E. Schweizerbart'sche Verlag. Stuttgart. 16(8): 1-543.

Binnengewässer: Conjugatophyceae Zygnematales Desmidiales

Die Binnengewässer" is a set of publications including "Das Phytoplankton des Süßwassers. Systematik und Biologie" written by various authors (see volumes by Huber-Pestalozzi, Fott, Förster and Komárek and Fott), in German, containing comprehensive species descriptions and illustrations of European phytoplankton forms.

Fott, B. 1968. Das Phytoplankton des Süßwassers. Systematik und Biologie. In G. Huber-Pestalozzi (Ed.). "Die Binnengewässer". E. Schweizerbart'sche Verlag. Stuttgart. 16(3): 1-322.

Binnengewässer: Chloromonadophyceae

Fott, B. 1972. Das Phytoplankton des Süßwassers. Systematik und Biologie. In G. Huber-Pestalozzi (Ed.). "Die Binnengewässer". E. Schweizerbart'sche Verlag. Stuttgart. 16(6): 1-116 + 47 tafeln.

Binnengewässer: Chlorophyceae Tetrasporales

Gardner, N. L. 1927. New Myxophyceae from Porto Rico. *Memoirs of the New York Botanical Garden* 7:1–144.

Geitler, L. 1932. Cyanophyceae, in: Rabenhorst's Kryptogamenflora von Deutschland, Österreich und Schweiz, Vol. 14. Akademisches Verlag, Leipzig, pp. 1–1196.

Geitler, L. 1930-1932 (1985 reprint). Cyanophyceae. Koeltz Scientific Books. Koenigstein, West Germany. 1196pp.

This set of reprinted volumes was the basis of the blue-green taxonomy used initially in the analysis of USGS NAWQA Program algal samples. The volumes of Prescott (1962) and Desikachary (1959) were based on this system. Starting with the "2001 NAWQA Non-Diatom Listing," the approach described by Anagnostidis and Komárek will be followed for cyanophytes (blue-green algae, cyanobacteria).

Geitler, L. 1942. Schizophyta (Klasse Schizophyceae), in: Engler, A., Prantl, K., Eds., *Natürliche Pflanzenvamilien* 1b, Berlin, 232 pp.

Geitler, L. 1960. Schizophyceen, in: *Handb. der Pflanzenanatomie* 6, 1. Spez. Teil, Berlin/Nikolassee, 131 pp.

Both of the above volumes will be supplanted by the new Komárek and Anagnostidis *Oscillatoriales* volume of the Süßwasserflora to be published in 2005.

Gerrath, J. F. 2002. Conjugating green algae and desmids. In Wehr, J. and Sheath, R. Eds. *Freshwater Algae of North America, Ecology and Classification*. Academic Press, San Diego, CA, USA 918 pp.

Gojdics, M. 1953. The Genus *Euglena*. The University of Wisconsin Press. Madison, Wisconsin. 268pp.

Hazen, T. E. 1902. The Ulothrichaceae and Chaetophoraceae of the United States. *Memoirs of the Torrey Botany Club* 11:135–250.

Hegewald, E. and P. C. Silva. 1988. Annotated Catalogue of *Scenedesmus* and Nomenclaturally Related Genera, Including Original Descriptions and Figures. *Biblio. Phycologica* 80:1-587.

Hindák, F. 2001. *Fotografický Atlas Mikroskopických Siníc*. VEDA, vyavatelstvo slovenskej akadémie vied, Bratislava, Slovakia. 128pp.

Very good photographs of cyanophytes using the modern taxonomic approach. An English version is now available.

Huber-Pestalozzi, G. 1938. Das Phytoplankton des Süßwassers. Systematik und Biologie. In: A. Thienemann "Die Binnengewässer". E. Schweizerbart'sche Verlag. Stuttgart. 16(1): 1-342.

Binnengewässer: Introduction

Huber-Pestalozzi, G. 1941. Das Phytoplankton des Süßwassers. Systematik und Biologie. In A. Thienemann (Ed.). "Die Binnengewässer". E. Schweizerbart'sche Verlag. Stuttgart. 16(2) Häfte 1
supp.: 1-365.

Binnengewässer: Chrysophyceae I (flagellates)

Huber-Pestalozzi, G. 1942. Das Phytoplankton des Süßwassers. Systematik und Biologie. In A. Thienemann (Ed.). "Die Binnengewässer". E. Schweizerbart'sche Verlag. Stuttgart. 16(2) Häfte 2
supp.: 367-549.

Binnengewässer: Chrysophyceae II (diatoms)

Huber-Pestalozzi, G. 1950. Das Phytoplankton des Süßwassers. Systematik und Biologie. In A. Thienemann (Ed.). "Die Binnengewässer". E. Schweizerbart'sche Verlag. Stuttgart. 16(3): 1-310.

Binnengewässer: Cryptophyceae Chloromonadophyceae Dinophyceae

Huber-Pestalozzi, G. 1955. Das Phytoplankton des Süßwassers. Systematik und Biologie. In: A. Thienemann (Ed.). "Die Binnengewässer". E. Schweizerbart'sche Verlag. Stuttgart. 16(4): 1-606.

Binnengewässer: Euglenophyceae

Huber-Pestalozzi, G. 1961. Das Phytoplankton des Süßwassers. Systematik und Biologie. In: A. Thienemann (Ed.). "Die Binnengewässer". E. Schweizerbart'sche Verlag. Stuttgart. 16(5): 1-744 + 158 tables.

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John, D. M., Whitton, B. A., Brook, A. J. 2002. The Freshwater Algal Flora of the British Isles. Cambridge University Press, Cambridge, 702 p.

The current "standard" or "textbook" of British freshwater algae. Algal forms are described to species with many illustrations (images and drawings) and a CD with color images.

Kadlubowska, J. Z. 1972. Zygnemaceae-Zrostonicowate. Flora Slodkowodna Polski 12a:1-431.

Polish Freshwater Flora: Chlorophyta V: Conjugales: Zygnemaceae

Keeley, F. J. 1884. Desmids of the United States and List of American Pediastrums. Moravian Publ., Bethlehem, Penn.

Komárek, J. 1986. Modern approach to the classification system of cyanophytes. 2. Chroococcales. Archiv für Hydrobiologie/Algological Studies 43:157-226.

Komárek, J. 1989. Studies on the cyanophytes of Cuba. 7–9. Folia Geobotanic Phytotaxonomica 24:131–206.

Komárek, J. 2002. Coccoid and colonial cyanobacteria. *In* Wehr, J. and Sheath, R. Eds. Freshwater Algae of North America, Ecology and Classification. Academic Press, San Diego, CA, USA 918 pp.

Komárek, J. and Anagnostidis, K. 1989. Modern approach to the classification system of cyanophytes. 4. Nostocales. Archiv für Hydrobiologie/Algological Studies 56:247–345.

Komárek, J. and Anagnostidis, K. 1999. (Cyanoprokaryota) Teil 1 (Chroococcales). *In* Ettl, H., Gerloff, J., Heynig, H., & Mollenhauer, D. (Eds.). Süßwasserflora von Mitteleuropa. 19: 1-548. Gustav Fisher Verlag, Germany.

Komárek, J., Cronberg, G. 2001. Some chroococcalean and oscillatoriacean Cyanoprokaryotes from southern African lakes, ponds and pools. Nova Hedwigia 73:129–60.

Komárek, J and Fott, B. 1983. Das Phytoplankton des Süßwassers. Systematik und Biologie. In G. Huber-Pestalozzi (Ed.). "Die Binnengewässer". E. Schweizerbart'sche Verlag. Stuttgart. 7(1): 1-1044.

Binnengewässer: Chlorophyceae Chlorococcales

- Komárek, J. and V. Jankovská. 2001. Review of the Green Algal Genus *Pediastrum*; Implication for Pollen-analytical Research. *Biblio. Phycologia* 108:1-127.
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- Kugrens, P. and Clay, B. L., 2002. Cryptomonads. *In* Wehr, J. and Sheath, R. Eds. *Freshwater Algae of North America, Ecology and Classification*. Academic Press, San Diego, CA, USA 918 pp.
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Polish Freshwater Flora: Chlorophyta IV: Oedogoniales

- Mrozinska, T. 1995. Süßwasserflora von Mitteleuropa, Chlorophyta VI, Oedogoniophyceae: Oedogoniales. 14. G. Fisher, Stuttgart, 624 p.
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A primary source with illustrations to the species level for all groups except diatoms and desmids.

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Schubert, L. E. 2002. Nonmotile coccoid and colonial green algae. In Wehr, J. and Sheath, R. Eds. Freshwater Algae of North America, Ecology and Classification. Academic Press, San Diego, CA, USA 918 pp.

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Starmach, K. 1963. Rosliny Ślaskowodne Wstep ogólny i zarys metod badania. Flora Ślaskowodka Polski 1:1-271.

Polish Freshwater Flora: General Introduction and Study of Methods of Illustration

Starmach, K. 1966. Cyanophyta-Sinice Glaucophyta-Glaukofity. Flora Ślaskowodka Polski 2:1-807.

Polish Freshwater Flora: Cyanophyta Glaucophyta

Starmach, K. 1968. Chrysophyta I Chrysophyceae-Zlotowiciowce Oraz Wiciowce Bezbarwne Zooflagellata Wolnozyjace. Flora Slodkowodna Polski 5:1-598.

Polish Freshwater Flora: Chrysophyta I: Chrysophyceae

Starmach, K. 1968. Xanthophyceae-Roznowiciowe. Flora Slodkowodna Polski 7:1-394.

Polish Freshwater Flora: Chrysophyta III: Xanthophyceae

Starmach, K. 1972. Zielenice-Nitkowate. Flora Slodkowodna Polski 10:1-750.

Polish Freshwater Flora: Chlorophyta III: Ulotrichales Ulvales Prasiolales Sphaeropleales Cladophorales Chaetophorales Trentepohliales Siphonales Dichotomosiphonales

Starmach, K. 1974. Cryptophyceae-Kryptofity Dinophyceae-Dinofity Raphidophyceae-Rafidofity. Flora Slodkowodna Polski 4:1-520.

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Starmach, K. 1983. Euglenophyta-Eugleniny. Flora Slodkowodna Polski 3:1-594.

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Starmach, K. 1985. Chrysophyceae und Haptophyceae. In Ettl, H., Gerloff, J., Heynig, H. & Mollenhauer, D. (Eds.). Süßwasserflora von Mitteleuropa. 1: 1-515. Gustav Fisher Verlag, Germany. 515pp.

Starmach, K. 1972. Chlorophyta III. Ulotrichales, Ulvales, Prasiolales, Sphaeropleales, Cladophorales, Chaetophorales, Trentepohliales, Siphonales, Dichotomosiphonales, in: Starmach, K., Sieminska, J., Eds., Flora Slodkowodna Polski [Freshwater Flora of Poland] 10. Polska Akademia Nauk, Warsaw, pp. 1-714.

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Good source for species descriptions of many Chlorococcales.

Thompson, R. H., Wujek, D. E. 1997. Trentepohliales: *Cephaleuros*, *Phycopeltis*, and *Stromatochroon*: Morphology, taxonomy, and ecology. Science Publishers, Enfield, New Hampshire, 149 pp.

Tiffany, L. H. 1930. The Oedogoniaceae: A Monograph—Including All the Known Species of the Genera *Bulbochaete*, *Oedocladium* and *Oedogonium*. Ohio State University, Ohio, 253 pp.

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Is very useful for the USGS NAWQA Program algal samples, as it describes many algal species found in rivers.

Tilden, J. 1910. Minnesota Algae. Vol. I. The Myxophyceae of North America and adjacent regions including Central America, Greenland, Bermuda, The West Indies and Hawaii. University of Minnesota. Report of the survey Botanical studies VIII. Minneapolis. 328 pp.

Uherkovich, G. 1967. Die Scenedesmus-Arten Ungarns. Akademiai Kiado. Budapest. 173 pp.

Was used as the primary reference for species of Scenedesmus in the USGS NAWQA Program algal samples (see also Hegewald and Silva).

Wailles, G. H. 1934. Freshwater dinoflagellates of North America. Museum and Art Notes, Vancouver City Museum 7, (Supp. II):1–10, 4 plates.

Wehr, J. D., 2002. Brown algae. In Wehr, J. and Sheath, R. Eds. Freshwater Algae of North America, Ecology and Classification. Academic Press, San Diego, CA, USA 918 pp.

Wehr, J. D. and Sheath, R. G. 2003. Freshwater Algae of North America, Ecology and Classification. Academic Press, San Diego, CA, USA 918 pp.

The latest “standard” or “textbook” for North American freshwater algae (many of the chapters are listed separately). Taxonomy is through the genera level with many species illustrations. For each major algal group, there is a section describing references and monographs that can be used to make species determinations.

West, W. and West, G. S. 1904. A Monograph on the British Desmidiaceae. Vol. I. Ray Society. London. 224pp + 32pls.

West, W. and West, G. S. 1905. A Monograph on the British Desmidiaceae. Vol. II. Ray Society. London. 204pp + 32pls.

West, W. and West, G. S. 1908. A Monograph on the British Desmidiaceae. Vol. III. Ray Society. London. 274pp + 31pls.

West, W. and West, G. S. 1912. A Monograph on the British Desmidiaceae. Vol. IV. Ray Society. London. 191pp + 33pls..

West, W., West, G. S. and Carter, N. 1923. A Monograph on the British Desmidiaceae. Vol. V. Ray Society. London. 299pp + 39pls.

The “West & West” monograph on desmids was the premier work on desmids near the beginning of the 20th century. The plates (mostly in color) contain original illustrations of many new forms and are relevant to present day floras. Volume V contains an index to the entire monograph.

Whitford, L. A. & Schumacher, G. J. 1973. A Manual of the Fresh-Water Algae in North Carolina. Sparks Press, Raleigh, N.C. 324 pp.

Wood, R. D. 1967. Charophytes of North America: A guide to the species of Charophyta of North America, Central America and the West Indies. University of Rhode Island Bookstore (Stella's Printing), Kingston, Rhode Island. 72 pp.

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Appendix D

2001- Start NAWQA Non-Diatom Algal Taxa List

naded id	Taxon Name
253000	<i>Acanthosphaera zachariasii</i> Lemmermann
255000	<i>Actinastrum hantzschii</i> Lagerheim
255001	<i>Actinastrum hantzschii</i> var. <i>elongatum</i> GM Smith
255002	<i>Actinastrum hantzschii</i> var. <i>fluviatile</i> Schröder
255003	<i>Actinastrum hantzschii</i> var. <i>subtile</i> Woloszyńska
255004	<i>Actinastrum aciculare</i> Playfair
256000	<i>Actinotaenium cucurbitinum</i> (Bissett) Teiling
256001	<i>Actinotaenium subglobosum</i> Teiling
256002	<i>Actinotaenium truncatum</i> Teiling
256003	<i>Actinotaenium cruciferum</i> (deBary) Teiling
256004	<i>Actinotaenium cucurbita</i> fo. <i>rotundatum</i> (Krieger) Teiling
256005	<i>Actinotaenium wollei</i> (West & West) Teiling
261000	<i>Ankistrodesmus falcatus</i> (Corda) Ralfs
261001	<i>Ankistrodesmus spiralis</i> (Turner) Lemmermann
261002	<i>Ankistrodesmus</i> cf. <i>convolutus</i> Corda
261003	<i>Ankistrodesmus</i> sp. 1 ANS FWA
261004	<i>Ankistrodesmus</i> sp.
261005	<i>Ankistrodesmus braunii</i> Brunthaler
261006	<i>Ankistrodesmus fusiformis</i> Corda
261007	<i>Ankistrodesmus falcatus</i> var. <i>acicularis</i> (Braun) West
261008	<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i> West & West
261009	<i>Ankistrodesmus falcatus</i> var. <i>stipitatus</i> (Chodat) Lemmermann
261010	<i>Ankistrodesmus nannoselene</i> Skuja
261011	<i>Ankistrodesmus falcatus</i> var. <i>tumidus</i> (West & West) GS West
261012	<i>Ankistrodesmus gracilis</i> (Reinsch) Korschikov
261013	<i>Ankistrodesmus stipitatus</i> (Chodat) Komárková-Legnerová
261014	<i>Ankistrodesmus convolutus</i> Corda
261015	<i>Ankistrodesmus fractus</i> West & West
263001	<i>Apatococcus</i> sp. 0A UL NAWQA EJ
264000	<i>Aphanochaete repens</i> Braun
264001	<i>Aphanochaete</i> sp.
268000	<i>Arthrodesmus</i> sp.
268002	<i>Arthrodesmus incus</i> (Brébisson) Hassall
268008	<i>Arthrodesmus ralfsii</i> W. West
270000	<i>Asterococcus limneticus</i> GM Smith
270001	<i>Asterococcus</i> sp.
270002	<i>Asterococcus superbus</i> (Cienkowski) Scherffel
273001	<i>Bambusina</i> sp.
274001	<i>Basycladia chelonum</i> Hoffman & Tilden
275000	<i>Binuclearia</i> sp.
279000	<i>Botryococcus braunii</i> Kützing
279001	<i>Botryococcus sudeticus</i> Lemmermann
279002	<i>Botryococcus protuberans</i> var. <i>minor</i> GM Smith
282000	<i>Bulbochaete</i> sp.
282001	<i>Bulbochaete</i> sp. 0A UL NAWQA EJ
283000	<i>Carteria</i> sp.
283001	<i>Carteria</i> cf. <i>cordiformis</i> (Carter) Diesing
283002	<i>Carteria polychloris</i> Pascher
286000	<i>Cerasterias staurastroides</i> West & West
287000	<i>Chaetobolus</i> sp.
290000	<i>Chaetonema irregulare</i> Nowakowski

naded id	Taxon Name
292000	Chaetophora sp.
292001	Chaetophora incrassata (Huds.) Hazen
292002	Chaetophora pisciformis Agardh
294000	Chara sp.
294001	Chara excelsa Allen
295000	Characium sp.
295001	Characium obtusum Braun
295002	Characium limneticum Lemmermann
295003	Characium acuminatum Braun
295004	Characium ambiguum Hermann
295005	Characium pringsheimii Braun
295006	Characium sp. 1 ANS FWA
295007	Characium cf. hookeri (Reinsch) Hansgirg
295008	Characium Rabenhorstii De Toni
295009	Characium rostratum Reinhard ex Printz
295010	Characium angustum Braun
295011	Characium ensiformae Hermann
295012	Characium strictum Braun
295013	Characium cf. rostratum Reinhard ANDRESEN Reinhard
296001	Chlorellodiopsis separabilis Pascher
297001	Chlorochromonas minuta Lewis
298000	Chlamydomonas sp.
298001	Chlamydomonas cf. nasuta Korschikov
298002	Chlamydomonas angulosa Dill
298003	Chlamydomonas globosa Snow
298004	Chlamydomonas gloeogama Korschikov
298005	Chlamydomonas pseudopertyi Pascher
298006	Chlamydomonas sp. C UL 1996 NAWQA
298007	Chlamydomonas sp. B UL 1996 NAWQA
298008	Chlamydomonas sp. 0A UL NAWQA 1996 TS
298009	Chlamydomonas gracilis Snow
298010	Chlamydomonas spangicola Fritsch & Takeda
298011	Chlamydomonas pertyi Goroschankin
298012	Chlamydomonas sectilis Korschikov
299000	Chlorella sp.
299001	Chlorella vulgaris Beyerinck
299002	Chlorella ellipsoidea Gerneck
299003	Chlorella miniata (Nägeli) Oltmanns
301001	Chlorococcum humicola (Nägeli) Rabenhorst
301002	Chlorococcum sp. 0A UL NAWQA 1996 TS
306001	Chlorotylum cataractum Kützing
307000	Chlamydocapsa sp.
307001	Chlamydocapsa planctonica (West & West) Fott
307002	Chlamydocapsa bacillus (Teiling) Fott
309000	Cladophora glomerata (Linnaeus) Kützing
309001	Cladophora sp.
309002	Cladophora callicoma Kützing
309003	Cladophora sp. 0A UL NAWQA EDJ
309004	Cladophora sp. 0A UL NAWQA EJ
309005	Cladophora sp. 0B UL NAWQA EDJ
309006	Cladophora sp. 0C UL NAWQA EDJ

naded id	Taxon Name
309007	Cladophora sp. 0D UL NAWQA EJ
309008	Cladophora sp. 0E UL NAWQA EJ
309009	Cladophora sp. 0F UL NAWQA EJ
309010	Cladophora sp. 0G UL NAWQA EJ
309011	Cladophora fracta (Dillwyn) Kützing
309012	Cladophora profunda var. nordstedtiana Brand
309013	Cladophora crispata (Roth) Kützing
309014	Cladophora glomerata var. kuetzingiana (Grunow) Heering
309015	Cladophora insignis (CA Agardh) Kützing
315000	Closteriopsis longissima Lemmermann
316000	Closterium moniliferum Ehrenberg
316001	Closterium venus Kützing
316002	Closterium acerosum (Schrank) Ehrenberg
316003	Closterium pseudolunula Borge
316004	Closterium kutzingii Brébisson
316005	Closterium dianaeh Ehrenberg
316006	Closterium cf. cynthia DeNotaris
316007	Closterium tumidum Johnson
316008	Closterium sp.
316009	Closterium lunula (Möller) Nitzsch
316010	Closterium gracile Brébisson
316011	Closterium ralfsii var. hybridum Rabenhorst
316012	Closterium incurvum Brébisson
316014	Closterium leiblienii Kützing
316015	Closterium lineatum Ehrenberg
316016	Closterium intermedium Ralfs
316017	Closterium setaceum Ehrenberg
316018	Closterium ehrenbergii Meneghini
316019	Closterium ulna Focke
316020	Closterium ralfsii Brébisson
316021	Closterium libellula Focke
316022	Closterium littorale Gay
316023	Closterium angustatum Kützing
316024	Closterium rostratum Ehrenberg
316025	Closterium dydymotocum Corda
316026	Closterium parvulum Nägeli
316027	Closterium striolatum Ehrenberg
316028	Closterium acutum Brébisson
316029	Closterium abruptum fo. angustissima West
316030	Closterium baillyanum Brébisson
316031	Closterium costatum Corda
316032	Closterium ehrenbergii var. malinvernianum (DeNotaris) Rabenhorst
316034	Closterium exile West & West
316035	Closterium jenniferi Ralfs
316036	Closterium lanceolatum Kützing
316038	Closterium libellula fo. minus Beck-Mannagetta
316039	Closterium littorale var. crassum Gay
316041	Closterium nilssonii Borge
316042	Closterium planum Hughes
316043	Closterium ralfsii var. gracilius Krieger
316044	Closterium Spp0A UL Naqwa EJ

naded id	Taxon Name
316045	<i>Closterium striolatum</i> var. <i>subtruncatum</i> Krieger
316046	<i>Closterium toxon</i> Brébisson
316047	<i>Closterium libellula</i> var. <i>intermedium</i> (Roy & Bissett) West
316048	<i>Closterium</i> sp. B UL 1996 NAWQA
316049	<i>Closterium</i> sp. A UL 1996 NAWQA
316050	<i>Closterium</i> sp. 0A UL NAWQA 1996 TS
316051	<i>Closterium tumidulum</i> Gay
316052	<i>Closterium aciculare</i> T. West
316053	<i>Closterium abruptum</i> var. <i>brevis</i> West & West
316054	<i>Closterium acerosum</i> var. <i>borgei</i> (Borge) Krieger
316055	<i>Closterium acerosum</i> var. <i>minus</i> Hantzsch
316056	<i>Closterium acerosum</i> var. <i>tumidum</i> Borge
316057	<i>Closterium acutum</i> var. <i>variabile</i> (Lemmermann) Krieger
316058	<i>Closterium cornu</i> Ehrenberg
316059	<i>Closterium diana</i> var. <i>arcuatum</i> (Brébisson) Rabenhorst
316060	<i>Closterium diana</i> var. <i>brevius</i> (Wittrock) Petkoff
316061	<i>Closterium diana</i> var. <i>minor</i> Hieronymus
316062	<i>Closterium eboracense</i> (Ehrenberg) Turner
316064	<i>Closterium idiosporum</i> West & West
316065	<i>Closterium incurvum</i> var. <i>latior</i> Irénée-Marie
316067	<i>Closterium malinvernianiformae</i> var. <i>gracilius</i> Hughes
316068	<i>Closterium minutum</i> Roll
316069	<i>Closterium moniliferum</i> var. <i>concauum</i> Klebs
316071	<i>Closterium peracerosum</i> Gay
316072	<i>Closterium polystictum</i> Nygaard
316073	<i>Closterium pritchardianum</i> Archer
316074	<i>Closterium pygmaeum</i> Gutwinski
316075	<i>Closterium</i> sp. 1 UM NAA
316076	<i>Closterium</i> sp. 2 UM NAA
316077	<i>Closterium strigosum</i> Brébisson
316078	<i>Closterium striolatum</i> var. <i>subpunctatum</i> Hirano
316079	<i>Closterium tumidum</i> var. <i>nylandicum</i> Grönblad
316080	<i>Closterium venus</i> var. <i>crassum</i> Croasdale
316081	<i>Closterium venus</i> fo. <i>major</i> Strom
316082	<i>Closterium</i> aff. <i>strigosum</i> Brébisson
316083	<i>Closterium</i> cf. <i>lanceolatum</i> ANDRESEN Kützing
316084	<i>Closterium</i> cf. <i>libellula</i> ANDRESEN Focke
316085	<i>Closterium</i> cf. <i>rostratum</i> var. <i>extensum</i> ANDRESEN Prescott
316086	<i>Closterium braunii</i> Reinsch
316087	<i>Closterium lunula</i> var. <i>carinthiacum</i> Beck-Mannagetta
316088	<i>Closterium lunula</i> fo. <i>gracilis</i> Messikommer
316089	<i>Closterium gracile</i> var. <i>intermedium</i> Irene-Marie
316090	<i>Closterium abruptum</i> West
316990	<i>Closterium</i> sp. 1?
316991	<i>Closterium</i> sp. 2?
317000	<i>Coccomonas platyformis</i> Jane
321000	<i>Coelastrum microporum</i> Nägeli
321001	<i>Coelastrum sphaericum</i> Nägeli
321002	<i>Coelastrum cambricum</i> Archer
321003	<i>Coelastrum</i> sp.
321004	<i>Coelastrum indicum</i> Turner

naded id	Taxon Name
321005	Coelastrum pulchrum Schmidle
321006	Coelastrum stuhlmanii Schmidle
321007	Coelastrum reticulatum (Dangeard) Senn
321008	Coelastrum astroideum DeNotaris
321009	Coelastrum reticulatum var. cubanum Korschikov
321010	Coelastrum sp. 1 UM NAA
322000	Coenocystis quadriguloides Fott
323000	Coleochaete sp.
323001	Coleochaete scutata Brébisson
327000	Cosmarium subcrenatum Hantzsch
327001	Cosmarium sp.
327002	Cosmarium sp. 2 ANS FWA
327003	Cosmarium margaritatum (Lund) Roy & Bissett
327004	Cosmarium sp. 3 ANS FWA
327005	Cosmarium turpinii Brébisson
327006	Cosmarium galeritum Nordstedt
327007	Cosmarium botrytes Meneghini
327008	Cosmarium impressulum Elfving
327009	Cosmarium trilobulatum Reinsch
327010	Cosmarium notabile Brébisson
327011	Cosmarium punctulatum Brébisson
327012	Cosmarium granatum Brébisson ex Ralfs
327014	Cosmarium undulatum Corda ex Ralfs
327015	Cosmarium moniliforme (Turpin) Ralfs
327017	Cosmarium cf. quinarium Lundell
327018	Cosmarium simonyi
327019	Cosmarium reniforme (Ralfs) Archer
327020	Cosmarium subtumidum Nordstedt
327021	Cosmarium subcostatum Nordstedt
327022	Cosmarium angulosum Brébisson
327023	Cosmarium cf. formosulum Hoffman
327024	Cosmarium tenue Archer
327025	Cosmarium regnesi var. montanum Schmidle
327026	Cosmarium humile (Gay) Nordstedt
327027	Cosmarium circulare Reinsch
327028	Cosmarium protractum (Nägeli) deBary
327029	Cosmarium contractum Kirchner
327030	Cosmarium portianum Archer
327031	Cosmarium microsphinctum Borge
327032	Cosmarium pyramidatum var. convexum Krieger & Gerloff
327033	Cosmarium pyramidatum Brébisson
327035	Cosmarium cf. margaritatum (Lund) Roy & Bissett
327036	Cosmarium bioculatum Brébisson
327037	Cosmarium speciosum Lundell
327038	Cosmarium regnesi Reinsch
327039	Cosmarium binum Nordstedt
327040	Cosmarium pachydermum Lundell
327041	Cosmarium hammeri var. schmidlei Grönblad & Scott
327042	Cosmarium cucumis Corda
327043	Cosmarium ralfsii Brébisson
327044	Cosmarium laeve Rabenhorst

naded id	Taxon Name
327045	Cosmarium subreniforme Nordstedt
327046	Cosmarium hornavense Gutwinski
327048	Cosmarium ornatum Ralfs
327049	Cosmarium obtusatum Schmidle
327050	Cosmarium sp. 1 ANS JWR
327051	Cosmarium cf. repandum Nordstedt
327053	Cosmarium formosulum Hoffman
327054	Cosmarium reinschii Archer
327055	Cosmarium quadrum var. sublatum fo. dilatatum Scott et Grönblad
327057	Cosmarium emarginatum West & West
327058	Cosmarium majae Strom
327059	Cosmarium tinctum Ralfs
327060	Cosmarium regnellii var. minimum Eichler et Gutwinski
327061	Cosmarium botrytes var. gemmiferum Meneghini
327062	Cosmarium regnellii Wille
327063	Cosmarium bireme Nordstedt
327064	Cosmarium calcareum Wittrock
327065	Cosmarium dispersum Johnson
327067	Cosmarium garrolense var. crassum Jao
327068	Cosmarium garrolense Roy et Bissett
327069	Cosmarium granulatum West
327070	Cosmarium hammeri Whitford & Schumacher
327071	Cosmarium meneghini Brébisson
327072	Cosmarium minor
327073	Cosmarium phaseolus Brébisson
327074	Cosmarium phaseolus fo. minus Boldt
327075	Cosmarium pseudoretusum Ducellier
327077	Cosmarium smolandicum Lundell
327078	Cosmarium sp. 0A UL NAWQA EDJ
327079	Cosmarium sp. 0B UL NAWQA EDJ
327080	Cosmarium sp. 0C UL NAWQA EJ
327081	Cosmarium subprotumidum var. pyramidatum Bicudo
327082	Cosmarium subundulatum Wille
327083	Cosmarium tumidum Lundell
327084	Cosmarium undulatum var. wollei West
327085	Cosmarium amoenum (Brébisson) Ralfs
327086	Cosmarium obtusatum var. beanlandii West & West
327087	Cosmarium undulatum var. minutum Wittrock
327088	Cosmarium granatum var. delpontei Gutwinski
327089	Cosmarium sexangulare Lundell
327090	Cosmarium dentatum Wolle
327091	Cosmarium asphaerosporum var. strigosum Nordstedt
327092	Cosmarium geometricum var. sueciacum Borge
327093	Cosmarium quadrum var. minus Nordstedt
327095	Cosmarium boergesenii var. polymorphum Forster
327096	Cosmarium botrytes var. mediolaeeve West
327097	Cosmarium botrytes var. paxillosporum West & West
327098	Cosmarium botrytes var. subtumidum Wittrock
327099	Cosmarium connatum Brébisson
327100	Cosmarium contractum var. minutum (Delponte) West & West
327101	Cosmarium costatum Nordstedt

naded id	Taxon Name
327102	Cosmarium depressum var. granulatum Turner
327103	Cosmarium exiguum Archer
327104	Cosmarium fromulosum var. nathorstii fo. wisenaniense Croasdale
327105	Cosmarium furcatospermum West & West
327106	Cosmarium impressulum var. suborthogonum (West & West) Taft
327107	Cosmarium incertum Schmidle
327108	Cosmarium modestum West & West
327109	Cosmarium monomazum var. polymazum Nordstedt
327110	Cosmarium montrealense Croasdale
327111	Cosmarium nitidulum DeNotaris
327112	Cosmarium obliquum Nordstedt
327113	Cosmarium ochthodes Nordstedt
327114	Cosmarium orthostichum var. subpolonicum Messikommer
327115	Cosmarium pachydermum fo. parvum Croasdale
327116	Cosmarium pokornyianum (Grunow) West & West
327117	Cosmarium praecisum suecicum (Borge) Kreiger & Gerloff
327118	Cosmarium pseudoconnatum Nordstedt
327119	Cosmarium pseudoconnatum var. ornatum Allorge et Allorge
327120	Cosmarium pseudoexiguum Raciborski
327121	Cosmarium pseudopyramidatum Lundell
327122	Cosmarium punctulatum var. subpunctulatum (Nordstedt) Borgesen
327123	Cosmarium quasillas Lundell
327124	Cosmarium reniforme var. apertum West & West
327125	Cosmarium reniforme var. compressum Nordstedt
327126	Cosmarium reniforme var. laeve Irene-Marie
327127	Cosmarium retrosporum Turner
327128	Cosmarium sp. 1 UM 1996 UTEN NAA
327129	Cosmarium sp. 1 UM ALBE NAA
327130	Cosmarium sp. 2 UM 1996 UTEN NAA
327131	Cosmarium sp. 3 UM 1996 UTEN NAA
327132	Cosmarium sp. 4 UM NAA
327133	Cosmarium sp. 5 UM NAA
327134	Cosmarium sp. 6 UM NAA
327135	Cosmarium sp. 7 UM NAA
327136	Cosmarium sp. 8 UM NAA
327137	Cosmarium sp. 9 UM NAA
327138	Cosmarium sp. 1 UM 1996 UTEN
327139	Cosmarium speciosum var. rostafinskii fo. americana (West & West) West & West
327140	Cosmarium speciosum var. simplex simplex Nordstedt
327141	Cosmarium sportella (Corda) Rabenhorst
327142	Cosmarium subarctoum (Lagerheim) Raciborski
327143	Cosmarium subcostatum fo. minor West & West
327144	Cosmarium sublateriundatum West & West
327145	Cosmarium subprotumidum var. gregorii (Roy & Bissett) West & West
327146	Cosmarium subspeciosum var. transiens Messikommer
327147	Cosmarium subtumidum var. minutum (Krieger) Krieger & Gerloff
327148	Cosmarium transiens Gay
327149	Cosmarium transitorium (Heimerl) Ducellier
327150	Cosmarium variolatum var. rotundatum (Krieger) Messikommer
327151	Cosmarium vexatum var. lacustre Messikommer
327152	Cosmarium wembaerense Schmidle

naded id	Taxon Name
327153	Cosmarium zygomorphum Taft
327154	Cosmarium cf. angulosum ANDRESEN Brébisson
327155	Cosmarium cf. aphanichondrum ANDRESEN Nordstedt
327157	Cosmarium cf. binum ANDRESEN Nordstedt in Wittrock & Nordstedt
327158	Cosmarium cf. bioculatum ANDRESEN Brébisson
327159	Cosmarium cf. calcareum ANDRESEN Wittrock
327160	Cosmarium cf. costatum ANDRESEN Nordstedt
327161	Cosmarium cf. difficle var. rotundatum ANDRESEN Scott et Grönblad
327162	Cosmarium cf. findlandicum var. subetchachanense ANDRESEN (Grönblad) Prescott
327163	Cosmarium cf. formulosum ANDRESEN Hoffman in Nordstedt
327165	Cosmarium cf. granatum ANDRESEN Brébisson in Ralfs
327166	Cosmarium cf. logiense var. expansa ANDRESEN West & West
327167	Cosmarium cf. ogiense ANDRESEN Bissit
327168	Cosmarium cf. pseudopyramidatum ANDRESEN Lundell
327169	Cosmarium cf. punctulatum ANDRESEN Brébisson
327170	Cosmarium cf. quadrum ANDRESEN Lundell
327171	Cosmarium cf. quasillus ANDRESEN Lundell
327172	Cosmarium cf. rectangularis var. hexagonum ANDRESEN (Elfving) West & West
327173	Cosmarium cf. retrosporum ANDRESEN Turner
327174	Cosmarium cf. speciosum var. transiens ANDRESEN
327175	Cosmarium cf. speciosum ANDRESEN Lundell
327176	Cosmarium cf. subcostatum var. minor ANDRESEN West & West
327177	Cosmarium cf. subimpresulum ANDRESEN Borge
327178	Cosmarium cf. subtumidum var. rotundatum ANDRESEN Hirano
327179	Cosmarium cf. subtumidum ANDRESEN Nordstedt
327180	Cosmarium cf. transitorium ANDRESEN (Heimerl) Ducellier
327181	Cosmarium cf. tumidum ANDRESEN Lundell
327182	Cosmarium cf. venustum ANDRESEN (Brébisson) Archer in Pritchard
327183	Cosmarium cf. vexatum ANDRESEN W. West
327184	Cosmarium sp. 1 NAWQA Cal Acad
327185	Cosmarium sp. 2 NAWQA Cal Acad
327186	Cosmarium sp. 3 NAWQA Cal Acad
327187	Cosmarium sp. 4 NAWQA Cal Acad
327188	Cosmarium venustum (Brébisson) Archer
327189	Cosmarium exiguum var. maius (Nordstedt) Krieger et Gerloff
327190	Cosmarium naplesiense Scott et Grönblad
327191	Cosmarium botrytes var. tumidum Wolle
327193	Cosmarium margaritatum var. minor (Boldt) West & West
327195	Cosmarium subcucumis Schmidle
327197	Cosmarium pygmaeum Archer
328000	Crucigenia quadrata Morren
328001	Crucigenia crucifera (Wolle) Collins
328002	Crucigenia tetrapedia (Kirchner) West & West
328003	Crucigenia sp.
328004	Crucigenia apiculata (Lemmermann) Schmidle
328005	Crucigenia rectangularis (Braun) Gay
328006	Crucigenia truncata GM Smith
328007	Crucigenia fenestrata Schmidle
328008	Crucigenia irregularis Wille
328009	Crucigenia sp. A UL 1996 NAWQA
328010	Crucigenia neglecta (Fott & Ettl) Komárek

naded id	Taxon Name
330000	<i>Cosmocladium constrictum</i> Archer
331001	<i>Cylindrocapsa geminella</i> var. <i>minor</i> Hansgirg
331002	<i>Cylindrocapsa conferta</i> W. West
332000	<i>Cylindrocystis americana</i> var. <i>minor</i> Cush.
332001	<i>Cylindrocystis brebissonii</i> var. <i>minor</i> Meneghini
333000	<i>Dactylococcus infusionum</i> Nägeli
333001	<i>Dactylococcus</i> sp.
340000	<i>Desmatractum bipyramidatum</i> (Chodat) Pascher
341000	<i>Desmidium swartzii</i> Agardh
341001	<i>Desmidium bailey</i> (Ralfs) Nordstedt
341002	<i>Desmidium quadrangulatum</i> Ralfs
341003	<i>Desmidium swartzii</i> var. <i>amblylodon</i> (Itzigsohn) Rabenhorst
341004	<i>Desmidium swartzii</i> var. <i>quadrangulatum</i> (Ralfs) Roy
341005	<i>Desmidium</i> sp.
341006	<i>Desmidium aequale</i> fo. <i>trigonum</i> West & West
341007	<i>Desmidium aequale</i> West & West
343001	<i>Desmococcus</i> sp. 0A UL NAWQA EJ
343002	<i>Desmococcus</i> sp. 0B UL NAWQA EJ
346001	<i>Dichotomosiphon tuberosus</i> Ernst
348001	<i>Dictyochlorella globosa</i> (Korschikov) Silva
350000	<i>Dictyosphaerium ehrenbergianum</i> Nägeli
350001	<i>Dictyosphaerium pulchellum</i> Wood
350002	<i>Dictyosphaerium</i> sp.
350003	<i>Dictyosphaerium botrytella</i> Komárek & Perman
350004	<i>Dictyosphaerium chlorelloides</i> (Nauman) Komárek & Perman
350005	<i>Dictyosphaerium pulchellum</i> var. <i>minutum</i> Deflandre
350006	<i>Dictyosphaerium sphagnale</i> Hindák
350007	<i>Dictyosphaerium tetrachrotomum</i> Printz
351001	<i>Dimorphococcus lunatus</i> Braun
352000	<i>Didymogenes palatina</i> Schmidle
352001	<i>Didymogenes anomala</i> (GM Smith) Hinkak
355000	<i>Dispora</i> sp.
355001	<i>Dispora crucigenioides</i> Printz
356000	<i>Diplochlorella lunata</i> (Fott) Fott
360000	<i>Draparnaldia glomerata</i> (Vaucher) CA Agardh
360001	<i>Draparnaldia plumosa</i> (Vaucher) CA Agardh
360002	<i>Draparnaldia</i> sp.
360003	<i>Draparnaldia acuta</i> Kützing
360004	<i>Draparnaldia platyzonata</i> Hazen
360005	<i>Draparnaldia</i> sp. 0A UL NAWQA EJ
363000	<i>Dysmorphococcus variabilis</i> Takeda
367000	<i>Elakatothrix gelatinosa</i> Wille
367001	<i>Elakatothrix viridis</i> (Snow) Printz
368000	<i>Ecdysichlamys obliqua</i> GS West
371000	<i>Enteromorpha</i> sp.
378000	<i>Euastropsis richteri</i> (Schmidle) Lagerheim
379000	<i>Euastrum pulchellum</i> Brébisson
379001	<i>Euastrum abruptum</i> Nordstedt
379002	<i>Euastrum insurale</i> Roy
379003	<i>Euastrum turnerii</i> West
379004	<i>Euastrum denticulatum</i> (Kirchner) Gay

naded id	Taxon Name
379005	Euastrum elegans Kützing
379006	Euastrum sp.
379008	Euastrum ansatum Ralfs
379009	Euastrum dubium Nägeli
379010	Euastrum inerme (Ralfs) Lund.
379011	Euastrum binale var. sectum Turner
379012	Euastrum binale (Turpin) Ehrenberg
379013	Euastrum binale var. gutwinskii Krieger
379014	Euastrum binum Prescott
379016	Euastrum cornubiense var. medianum (Nordstedt) Krieger
379017	Euastrum cf. verrucosum ANDRESEN Ehrenberg ex Ralfs
380000	Eudorina elegans Ehrenberg
381000	Eutetramorus fottii (Hindák) Komárek
381001	Eutetramorus sp.
385001	Franceia ovalis (France) Lemmermann
385002	Franceia tuberculata GM Smith
389000	Gloeocystis gigas (Kützing) Lagerheim
389001	Gloeocystis major Gerneck
389002	Gloeocystis vesiculosa Nägeli
389003	Gloeocystis plactonica (West & West) Lemmermann
389004	Gloeocystis sp.
389005	Gloeocystis ampla (Kützing) Lagerheim
390000	Geminella sp.
390001	Geminella minor (Nägeli) Heering
390002	Geminella mutabilis (Brébisson) Wille
390003	Geminella interrupta (Turpin) Lagerheim
395000	Gloeotaenium loitelsbergerianum Hansgirg
397000	Golenkinia paucispina West & West
397001	Golenkinia radiata Wille
400001	Gonatozygon kinahani var. majus Taylor
400002	Gonatozygon brebissonii var. laeve West & West
400003	Gonatozygon kinahani Rabenhorst
400004	Gonatozygon monotaenium deBary
400005	Gonatozygon aculeatum Hastings
401000	Gongrosira sp.
401001	Gongrosira sp. 0A UL NAWQA EJ
402000	Gonium pectorale Möller
402001	Gonium sociale (Dujardin) Warming
405001	Gonyostomum semen (Ehrenberg) Diesing
405002	Gonyostomum cf. semen ANDRESEN (Ehrenberg) Diesing
411000	Gloeocystopsis limneticus GM Smith
418000	Hyalotheca dissiliens (GM Smith) Brébisson
418001	Hyalotheca sp.
418002	Hyalotheca sp. 1 UL NAWQA WHIT
418003	Hyalotheca mucosa (Dillwyn) Ehrenberg
419000	Hydrodictyon reticulatum (Linnaeus) Lagerheim
422000	Keratococcus bicaudatus (Braun) Boye-Petersen
424000	Kirchneriella sp.
424001	Kirchneriella lunaris (Kirchner) Moebius
424002	Kirchneriella obesa (W. West) Schmidle
424003	Kirchneriella subsolitaria GS West

naded id	Taxon Name
424004	<i>Kirchneriella contorta</i> Bohlin
424005	<i>Kirchneriella elongata</i> GM Smith
424006	<i>Kirchneriella diana</i> Comas
424007	<i>Kirchneriella irregularis</i> (GM Smith) Korschikov
424008	<i>Kirchneriella lunaris</i> var. <i>irregularis</i> GM Smith
424009	<i>Kirchneriella aperta</i> Teiling
424010	<i>Kirchneriella subcapitata</i> Korschikov
424011	<i>Kirchneriella obesa</i> var. <i>major</i> (West) Schmidle
426000	<i>Lagerheimia longiseta</i> Lemmermann
426001	<i>Lagerheimia quadriseta</i> (Lemmermann) GM Smith
426002	<i>Lagerheimia ciliata</i> Chodat
426003	<i>Lagerheimia wratislawiensis</i> (Schröder) Ley
426004	<i>Lagerheimia</i> sp.
426005	<i>Lagerheimia chodatii</i> Bernard
426006	<i>Lagerheimia genevensis</i> Chodat
426007	<i>Lagerheimia</i> sp. 0A UL NAWQA KM
426008	<i>Lagerheimia</i> sp. 0B UL NAWQA KM
426010	<i>Lagerheimia subsalsa</i> Lemmermann
426011	<i>Lagerheimia</i> sp. A UL 1996 NAWQA
426012	<i>Lagerheimia balatonica</i> (Scherffe in Kol) Hindák
427000	<i>Korschikoviella limnetica</i> (Lemmermann) Silva
428000	<i>Lauterborniella elegantissima</i> Schmidle
436000	<i>Mesotaenium endlicherianum</i> Nägeli
437000	<i>Micractinium pusillum</i> Fresenius
437001	<i>Micractinium</i> sp.
437002	<i>Micractinium quadrisetum</i> (Lemmermann) GM Smith
438000	<i>Micrasterias truncata</i> (Corda) Brébisson
438001	<i>Micrasterias crux-melitensis</i> (Ehrenberg) Ralfs
438002	<i>Micrasterias americana</i> (Ehrenberg) Ralfs
438003	<i>Micrasterias decemdentata</i> (Nägeli) Archer
438004	<i>Micrasterias pinnatifida</i> (Kützing) Ralfs
438005	<i>Micrasterias pinnatifida</i> fo. <i>inflata</i> (Wolle) Croasdale
438006	<i>Micrasterias pinnatifida</i> var. <i>pseudoscitans</i> Grönblad
438007	<i>Micrasterias radiosa</i> Ralfs
438009	<i>Micrasterias radiata</i> Hassall
440011	<i>Microspora</i> sp. 1 ANS FWA
441000	<i>Microspora stagnorum</i> (Kützing) Lagerheim
441001	<i>Microspora pachyderma</i> (Wille) Lagerheim
441002	<i>Microspora amoena</i> (Kützing) Rabenhorst
441003	<i>Microspora</i> sp.
441004	<i>Microspora quadrata</i> Hazen
441005	<i>Microspora tumidula</i> Hazen
441006	<i>Microspora elegans</i> (Hansgirg) Hazen
441007	<i>Microspora willeana</i> Lagerheim in De Toni
441008	<i>Microspora</i> cf. <i>loefgrenii</i> (Nordstedt) Lagerheim
441009	<i>Microspora</i> sp. A UL 1996 NAWQA
441010	<i>Microspora crassior</i> (Hansgirg) Hazen
442000	<i>Microthamnion</i> sp.
442001	<i>Microthamnion strictissimum</i> Rabenhorst
442002	<i>Microthamnion kuetzingii</i> Nägeli in Kützing
442003	<i>Microthamnion</i> sp. 1 MSU NAWQA KMM

naded id	Taxon Name
443000	Monostroma sp.
444000	Mougeotia sp.
444001	Mougeotia sp. 0A UL
444002	Mougeotia sp. 0A UL NAWQA EJ
444990	Mougeotia sp. 1 MSU NAWQA KMM 1998
444991	Mougeotia sp. 2 MSU NAWQA KMM 1998
444992	Mougeotia sp. 3 MSU NAWQA KMM 1998
446000	Monoraphidium contortum (Thuret) Komárková-Legnerová
446001	Monoraphidium pseudobraunii Belcher & Swale
446002	Monoraphidium pusillum (Printz) Komárková-Legnerová
446003	Monoraphidium sp.
446004	Monoraphidium cf. arcuatum ANDRESEN (Korschikov) Hindák
446005	Monoraphidium subclavatum Nygaard
446006	Monoraphidium tortile (West & West) Komárková-Legnerová
446007	Monoraphidium ondicum Hindák
446008	Monoraphidium obtusum (Korschikov) Komárková-Legnerová
446009	Monoraphidium circinale (Nygard) Nygard
446010	Monoraphidium indicum Hindák
446011	Monoraphidium flexuosum Komárková
446012	Monoraphidium irregulare (GM Smith) Komárková-Legnerová
446013	Monoraphidium convolutum var. pseudosabulosum Hindák
446014	Monoraphidium minutum (Nägeli) Komárková-Legnerová
446016	Monoraphidium arcuatum (Korschikov) Hindák
446017	Monoraphidium caribeum Hindák
446018	Monoraphidium griffithii (Berkeley) Komárková-Legnerová
446019	Monoraphidium fontinale Hindák
446020	Monoraphidium convolutum (Corda) Komárková-Legnerová
448001	Nephrocytium limneticum GM Smith
448002	Nephrocytium agardhiunum Nägeli
450000	Netrium oblongum (deBary) Lütkemüller
450001	Netrium interruptum (Brébisson) Lütkemüller
450003	Netrium digitus Ehrenberg
450004	Netrium digitus var. rectum fo. minus Prescott
453000	Peniococcus sp.
455000	Oedogonium sp.
455001	Oedogonium sp. 1 ANS FWA
455002	Oedogonium sp. 0A UL NAWQA EDJ
455003	Oedogonium sp. 0A UL NAWQA KM
455004	Oedogonium sp. 0B UL NAWQA EJ
455005	Oedogonium sp. 0C UL NAWQA EJ
455006	Oedogonium sp. 0A UL NAWQA 1996 TS
455007	Oedogonium sp. 0B UL NAWQA 1996 TS
455008	Oedogonium sp. 0C UL NAWQA 1996 TS
455009	Oedogonium sp. 1 ANS SJM
455010	Oedogonium nanum Wittrock
455990	Oedogonium sp. 1?
455991	Oedogonium sp. 2?
455992	Oedogonium sp. 3?
458000	Oocystis solitaria Wittrock
458001	Oocystis cf. borgei Snow
458002	Oocystis elliptica var. minor West & West

naded id	Taxon Name
458004	Oocystis sp.
458005	Oocystis pusilla Hansgirg
458006	Oocystis parva West & West
458007	Oocystis submarina Lagerheim
458008	Oocystis eremosphaeria GM Smith
458009	Oocystis lacustris Chodat
458010	Oocystis borgei Snow
458011	Oocystis elliptica West
458012	Oocystis novae-semlicae Wille
458013	Oocystis natans var. major GM Smith
458014	Oocystis crassa Wittrock
460000	Onychonema filiforme (Ehrenberg) Roy & Bissett
460001	Onychonema laeve var. micracanthum Nordstedt
460003	Onychonema laeve Nordstedt
461000	Pachycladon sp.
464000	Pandorina morum Bory
467000	Pediastrum duplex Meyen
467001	Pediastrum boryanum (Turpin) Meneghini
467002	Pediastrum tetras (Ehrenberg) Ralfs
467003	Pediastrum obtusum Lucks
467004	Pediastrum biradiatum Meyen
467005	Pediastrum sculptatum GM Smith
467006	Pediastrum simplex (Meyen) Lemmermann
467007	Pediastrum integrum Nägeli
467008	Pediastrum sp.
467009	Pediastrum muticum Kützing
467010	Pediastrum sp. 1 ANS FWA
467011	Pediastrum tetras var. tetraodon (Corda) Rabenhorst
467012	Pediastrum simplex var. duodenarium (Bailey) Rabenhorst
467013	Pediastrum duplex var. clathratum (Braun) Lagerheim
467014	Pediastrum boryanum var. longicorne Raciborski
467015	Pediastrum duplex var. gracilimum West & West
467017	Pediastrum duplex var. coharence Bohlin
467018	Pediastrum duplex var. reticulatum Lagerheim
467019	Pediastrum duplex var. rotundatum Lucks
467020	Pediastrum boryanum var. brevicorne fo. granulatum (Raciborski) Parra
467021	Pediastrum boryanum var. brevicorne Braun
467022	Pediastrum boryanum var. cornutum (Raciborski) Sulek
467023	Pediastrum integrum var. pearsonii (West) Fritsch
467025	Pediastrum simplex var. echinulatum Wittrock
467027	Pediastrum cf. boryanum var. forcipatum ANDRESEN (Corda) Chodat
467028	Pediastrum braunii Wartman
470000	Penium interruptum Brébisson
470001	Penium margaritaceum (Ehrenberg) Brébisson
470002	Penium sp.
470003	Penium exiguum West
470004	Penium spinospermum Joshua
475000	Planktosphaeria gelatinosa GM Smith
476001	Pithophora sp. 0A UL NAWQA EJ
480000	Pleurodiscus sp.
481000	Pleurotaenium coronatum (Brébisson) Rabenhorst

naded id	Taxon Name
481001	Pleurotaenium sp.
481002	Pleurotaenium ehrenbergi (Brébisson) deBary
481003	Pleurotaenium trabecula Nägeli
481004	Pleurotaenium laevigatum fo. tumidum (Brown) Prescott & Croasdale
481005	Pleurotaenium cf. nodulosum ANDRESEN (Brébisson) deBary
481006	Pleurotaenium subcoronulatum (Turner) West & West
481007	Pleurotaenium minutum (Ralfs) Delponte
486000	Polyedriopsis spinulosa Schmidle
488001	Protoderma viride Kützing
490000	Pseudendoclonium basiliense Vischer
494000	Pseudulvella cf. americana ANDRESEN (Snow) Wille
495000	Protococcus viridis CA Agardh
495001	Protococcus viridis var. 0A UL NAWQA 1996 TS
496000	Pteromonas cruciata Playfair
496001	Pteromonas cordiformis Lemmermann
496002	Pteromonas sp.
497000	Pyramimonas sp.
498001	Pseudochlorella sp. 0A UL NAWQA EJ
500000	Quadrigula lacustris (Tanner-Fullman) GM Smith
500001	Quadrigula chordatii (Corda) GM Smith
500002	Quadrigula sp.
500003	Quadrigula subsalsa Hindák
500004	Quadrigula closterioides (Bohlin) Printz
501000	Palmelococcus miniatus (Kützing) Chodat
503000	Radiococcus sp.
504000	Radiofilum sp.
505001	Raphidonema sp. 0A UL NAWQA EJ
507000	Pseudosphaerocystis laeustris (Lemmermann) Novakova
508000	Rhizoclonium hieroglyphicum (CA Agardh) Kützing
508001	Rhizoclonium sp.
508002	Rhizoclonium crassipellitum West & West
508003	Rhizoclonium sp. 0A UL NAWQA EJ
508004	Rhizoclonium fontanum Kützing
509001	Roya obtusa Brébisson
510000	Scenedesmus dimorphus (Turpin) Kützing
510001	Scenedesmus quadricauda (Turpin) Brébisson
510002	Scenedesmus ecornis (Ralfs) Chodat
510003	Scenedesmus acutus Meyen
510004	Scenedesmus sp. 2 ANS FWA
510005	Scenedesmus spinosus Chodat
510006	Scenedesmus acuminatus (Lagerheim) Chodat
510007	Scenedesmus bicaudatus (Hansgirg) Chodat
510008	Scenedesmus arcuatus Lemmermann
510009	Scenedesmus denticulatus Kirchner
510010	Scenedesmus sp.
510011	Scenedesmus bernardii GM Smith
510012	Scenedesmus abundans (Kirchner) Chodat
510013	Scenedesmus bijuga (Turpin) Lagerheim
510014	Scenedesmus cf. balatonicus Hortobágyi
510015	Scenedesmus obliquus (Turpin) Kützing
510016	Scenedesmus acutiformis Schröder

naded id	Taxon Name
510017	<i>Scenedesmus brasilienses</i> Bohlin
510018	<i>Scenedesmus dispar</i> Brébisson
510019	<i>Scenedesmus serratus</i> (Corda) Bohlin
510020	<i>Scenedesmus hystrix</i> Lagerheim
510021	<i>Scenedesmus quadricauda</i> var. <i>longispina</i> fo. <i>assymmetricus</i> (Hortobágyi) Uherkovich
510022	<i>Scenedesmus bijuga</i> var. <i>alternans</i> (Reinsch) Hansgirg
510023	<i>Scenedesmus armatus</i> (Chodat) GM Smith
510024	<i>Scenedesmus circumfusus</i> Hortobágyi
510025	<i>Scenedesmus ovalternus</i> Chodat
510026	<i>Scenedesmus</i> sp. 1 ANS SPM
510029	<i>Scenedesmus brevispina</i> Chodat
510031	<i>Scenedesmus granulatus</i> West & West
510032	<i>Scenedesmus incrassulatus</i> Bohlin
510034	<i>Scenedesmus perforatus</i> Lemmermann
510035	<i>Scenedesmus obtusus</i> Meyen
510036	<i>Scenedesmus acutus</i> var. <i>globosus</i> Hortobágyi
510037	<i>Scenedesmus acutus</i> fo. <i>costulatus</i> (Chodat) Uherkovich
510038	<i>Scenedesmus acutus</i> fo. <i>tetradesmiformis</i> Uherkovich
510039	<i>Scenedesmus acutus</i> var. <i>alternans</i> Hortobágyi
510040	<i>Scenedesmus arcuatus</i> var. <i>platydisca</i> GM Smith
510041	<i>Scenedesmus arcuatus</i> var. <i>capitatus</i> GM Smith
510042	<i>Scenedesmus armatus</i> var. <i>bicaudatus</i> Chodat
510043	<i>Scenedesmus armatus</i> var. <i>boglariensis</i> Hortobágyi
510044	<i>Scenedesmus armatus</i> var. <i>boglariensis</i> fo. <i>bicaudatus</i> Hortobágyi
510046	<i>Scenedesmus columnatus</i> Hortobágyi
510047	<i>Scenedesmus denticulatus</i> var. <i>linearis</i> Hansgirg
510048	<i>Scenedesmus denticulatus</i> var. <i>linearis</i> fo. <i>costato-granulatus</i> Uherkovich
510049	<i>Scenedesmus denticulatus</i> var. <i>linearis</i> fo. <i>granulatus</i> Hortobágyi
510050	<i>Scenedesmus dispar</i> fo. <i>spinosus</i> Hortobágyi
510051	<i>Scenedesmus ecornis</i> var. <i>disciformis</i> Chodat
510052	<i>Scenedesmus granulatus</i> var. <i>verruco-coatatus</i> Hortobágyi
510053	<i>Scenedesmus gutwinskii</i> var. <i>heterospina</i> Brodrogkozy
510054	<i>Scenedesmus intermedius</i> Chodat
510055	<i>Scenedesmus intermedius</i> var. <i>acaudatus</i> Hortobágyi
510056	<i>Scenedesmus intermedius</i> var. <i>bicaudata</i> Hortobágyi
510057	<i>Scenedesmus lefevrii</i> Deflandre
510058	<i>Scenedesmus lefevrii</i> var. <i>semiserratus</i> Uherkovich
510059	<i>Scenedesmus opoliensis</i> Richter
510060	<i>Scenedesmus opoliensis</i> var. <i>cf aculeatus</i> Richter
510061	<i>Scenedesmus ovalternus</i> var. <i>graevenitzii</i> (Bern.) Chodat
510062	<i>Scenedesmus pecsensis</i> Uherkovich
510063	<i>Scenedesmus quadricauda</i> var. <i>longispina</i> (Chodat) GM Smith
510065	<i>Scenedesmus quadricauda</i> var. <i>longispina</i> fo. <i>granulatus</i> Uherkovich
510066	<i>Scenedesmus quadricauda</i> var. <i>maximus</i> West & West
510067	<i>Scenedesmus quadricauda</i> var. <i>quadrispina</i> (Chodat) GM Smith
510068	<i>Scenedesmus quadricauda</i> var. <i>quadrispina</i> fo. <i>gracillimus</i> Uherkovich
510069	<i>Scenedesmus semicristatus</i> Uherkovich
510070	<i>Scenedesmus serratus</i> var. <i>minor</i> Chodat
510071	<i>Scenedesmus</i> sp. 0A UL NAWQA EDJ
510072	<i>Scenedesmus spicatus</i> West & West
510073	<i>Scenedesmus spinosus</i> var. <i>bicaudatus</i> Hortobágyi

naded id	Taxon Name
510074	<i>Scenedesmus spinosus</i> var. <i>microspinosus</i> Hortobágyi
510075	<i>Scenedesmus tibiscensis</i> Uherkovich
510076	<i>Scenedesmus balatonicus</i> Hortobágyi
510077	<i>Scenedesmus</i> sp. C UL 1996 NAWQA
510078	<i>Scenedesmus</i> sp. 0B UL NAWQA 1996 TS
510079	<i>Scenedesmus</i> sp. 0A UL NAWQA 1996 TS
510080	<i>Scenedesmus soli</i> Hortobágyi
510081	<i>Scenedesmus smithii</i> Teiling
510082	<i>Scenedesmus quadricuada</i> var. <i>Westii</i> GM Smith
510083	<i>Scenedesmus quadricauda</i> var. UL NAWQA 1997 TS (extra spine)
510084	<i>Scenedesmus protuberans</i> Fritsch
510085	<i>Scenedesmus subspicatus</i> Chodat
510086	<i>Scenedesmus disciformis</i> (Chodat) Fott & Kom.
510087	<i>Scenedesmus asymmetricus</i> (Schröder) Chodat
510088	<i>Scenedesmus longus</i> var. <i>ellipticus</i> (West & West) GM Smith
510089	<i>Scenedesmus acuminatus</i> var. <i>bernardii</i> (GM Smith) Deduss
510090	<i>Scenedesmus nanus</i> var. <i>bicaudatus</i> Hortobágyi
510091	<i>Scenedesmus acutus</i> var. <i>antenniformis</i> Uherkovich
510093	<i>Scenedesmus acutus</i> var. <i>semiellipticus</i> Uherkovich
510094	<i>Scenedesmus arcuatus</i> var. <i>antenniformis</i> Uherkovich
510095	<i>Scenedesmus armatus</i> var. <i>ecornis</i> Woloszyńska
510096	<i>Scenedesmus</i> cf. <i>scutatus</i> ANDRESEN Hortobágyi
510097	<i>Scenedesmus carinatus</i> (Lemmermann) Chodat
510098	<i>Scenedesmus circumfusus</i> var. <i>bicaudatus</i> Hortobágyi
510099	<i>Scenedesmus denticulatus</i> var. <i>linearis</i> fo. <i>semicostatus</i> (Hortobágyi) Uherkovich
510100	<i>Scenedesmus disciformis</i> var. <i>granulatus</i> (Hortobágyii) Komárek
510101	<i>Scenedesmus dispar</i> var. <i>castatus</i> Hortobágyi & Nemeth
510102	<i>Scenedesmus lunatus</i> (West & West) Chodat
510103	<i>Scenedesmus microspina</i> Chodat
510104	<i>Scenedesmus nanus</i> var. <i>spinosus</i> Hortobágyi
510105	<i>Scenedesmus opoliensis</i> var. <i>mononensis</i> Chodat
510106	<i>Scenedesmus praetervisus</i> Chodat
510107	<i>Scenedesmus pulloideus</i> Hegwald
510108	<i>Scenedesmus quadricauda</i> var. <i>crassiaculeatus</i> Uherkovich
510109	<i>Scenedesmus quadricauda</i> var. <i>quadripina</i> fo. <i>granulatus</i> (Hortobágyi) Uherkovich
510110	<i>Scenedesmus securiformis</i> Playfair
510111	<i>Scenedesmus semiamputatus</i> var. <i>acaudatus</i> Hortobágyi
510112	<i>Scenedesmus semipulcher</i> Hortobágyi
510113	<i>Scenedesmus tenuispina</i> Chodat
510114	<i>Scenedesmus verrucosus</i> Roll
510115	<i>Scenedesmus</i> cf. <i>aculeolatus</i> ANDRESEN Reinsch
510116	<i>Scenedesmus</i> cf. <i>antillarum</i> ANDRESEN Comas
510117	<i>Scenedesmus</i> cf. <i>apiculatus</i> ANDRESEN (West & West) Chodat
510118	<i>Scenedesmus</i> cf. <i>brevispina</i> ANDRESEN (GM Smith) Chodat
510119	<i>Scenedesmus</i> cf. <i>circumfusus</i> ANDRESEN Hortobágyi
510120	<i>Scenedesmus</i> cf. <i>ecornis</i> ANDRESEN (Ralfs) Chodat
510121	<i>Scenedesmus</i> cf. <i>ginzbergeri</i> ANDRESEN Kammerer
510122	<i>Scenedesmus</i> cf. <i>granulatus</i> var. <i>bigranulatus</i> ANDRESEN Hortobágyi
510123	<i>Scenedesmus</i> cf. <i>granulatus</i> ANDRESEN West & West
510124	<i>Scenedesmus</i> cf. <i>insignis</i> ANDRESEN (West & West) Chodat
510125	<i>Scenedesmus</i> cf. <i>longispina</i> ANDRESEN Chodat

naded id	Taxon Name
510126	Scenedesmus cf. magnus ANDRESEN Meyen
510127	Scenedesmus cf. obliquus ANDRESEN (Turpin) Kützing
510128	Scenedesmus cf. opoliensis ANDRESEN Richter
510129	Scenedesmus cf. perforatus ANDRESEN Lemmermann
510130	Scenedesmus cf. pulloideus ANDRESEN Hegwald
510131	Scenedesmus acunae acunae
510133	Scenedesmus cf. incrassatulus KOCIOLEK Bohlin
510134	Scenedesmus longus Meyen
510135	Scenedesmus protuberans var. danubianus Uherkovich
510138	Scenedesmus obscura
510139	Scenedesmus longus var. naegeli (Brébisson) GM Smith
510140	Scenedesmus abundans var. longicauda GM Smith
510990	Scenedesmus sp. 1?
510991	Scenedesmus sp. 2?
510992	Scenedesmus sp. 3?
510993	Scenedesmus sp. 4?
513000	Schizochlamys gelatinosa Braun
515000	Schizomeris leibleinii Kützing
515001	Schizomeris sp.
516000	Scotiella sp.
517000	Schroederia setigera (Schröder) Lemmermann
517001	Schroederia planctonica (Skuja) Philip.
518000	Selenastrum minutum (Nägeli) Collins
518001	Selenastrum sp.
518002	Selenastrum Westii GM Smith
518003	Selenastrum bibrianum Reinsch
518004	Selenastrum gracile Reinsch
521000	Sirogonium sp.
524000	Sorastrum spinulosum Nägeli
524001	Sorastrum americanum (Bohlin) Schmidle
526001	Sphaerobotrys fluviatilis Butcher
528000	Sphaerocystis schroederii Chodat
528001	Sphaerocystis planktonica (Korschikov) Bourrelly
528002	Sphaerocystis sp.
530000	Sphaerosozma granulatum Roy et Bissett
533000	Spirogyra sp.
533001	Spirogyra sp. 1 ANS FWA
533002	Spirogyra borgeana Transeau
533003	Spirogyra fuelebornei Schmidle
533004	Spirogyra scrobiculata Czurda
533005	Spirogyra sp. 0A UL NAWQA CD
533006	Spirogyra sp. 0A UL NAWQA EJ
533007	Spirogyra sp. 0A UL NAWQA KM
533008	Spirogyra sp. 0B UL NAWQA CD
533009	Spirogyra sp. 0B UL NAWQA EDJ
533010	Spirogyra sp. 0C UL NAWQA EDJ
533011	Spirogyra sp. 0D UL NAWQA EJ
533012	Spirogyra Spp0E UL NAQWA EJ 360X66
533013	Spirogyra sp. A UL 1996 NAWQA
533014	Spirogyra anatinum var. truncatum West
533015	Spirogyra weberi Kützing

naded id	Taxon Name
533016	<i>Spirogyra crassa</i> Kützing
533017	<i>Spirogyra silvicola</i> Britton
533018	<i>Spirogyra pascheriana</i>
534000	<i>Spirotaenia obscura</i>
536000	<i>Spondylosium</i> sp.
536001	<i>Spondylosium planum</i> (Wolle) West & West
536002	<i>Spondylosium pulchrum</i> (Bailey) Archer
536003	<i>Spondylosium papillosum</i> West & West
536004	<i>Spondylosium pygmaeum</i> (Cooke) West
536005	<i>Spondylosium secedens</i> (De Bary) Archer
538000	<i>Staurastrum brevispinum</i> Brébisson
538001	<i>Staurastrum paradoxum</i> var. <i>parvulum</i> W. West
538002	<i>Staurastrum</i> sp.
538003	<i>Staurastrum turgescens</i> DeNotaris
538004	<i>Staurastrum orbiculare</i> (Ehrenberg) Ralfs
538005	<i>Staurastrum punctulatum</i> Brébisson
538006	<i>Staurastrum dilatatum</i> Ehrenberg
538008	<i>Staurastrum</i> cf. <i>natator</i> West
538009	<i>Staurastrum alternans</i> (Brébisson) Ralfs
538010	<i>Staurastrum hirstum</i> (Ehrenberg) Brébisson
538011	<i>Staurastrum sexcostum</i> (Brébisson) Ralfs
538012	<i>Staurastrum</i> cf. <i>muticum</i> Brébisson
538013	<i>Staurastrum aspinosum</i> var. <i>annulosum</i> West & West
538014	<i>Staurastrum furcigerum</i> Brébisson
538015	<i>Staurastrum chaetoceras</i> (Schröder) GM Smith
538016	<i>Staurastrum margaritaceum</i> (Ehrenberg) Meneghini
538017	<i>Staurastrum megacanthum</i> Lundell
538018	<i>Staurastrum subcruciatum</i> Cooke & Wille
538019	<i>Staurastrum tetracerum</i> Ralfs
538020	<i>Staurastrum</i> cf. <i>aspinosum</i> Wolle
538021	<i>Staurastrum coarctatum</i> Brébisson
538022	<i>Staurastrum dickiei</i> Ralfs
538023	<i>Staurastrum gracile</i> var. <i>nanum</i> Wille
538024	<i>Staurastrum granulosum</i> (Ehrenberg) Ralfs
538025	<i>Staurastrum gladiusum</i> Turner
538026	<i>Staurastrum borgeanum</i> Schmidle
538027	<i>Staurastrum hexacerum</i> (Ehrenberg) Wittrock
538028	<i>Staurastrum cornutum</i> Archer
538029	<i>Staurastrum quadrispinatum</i> Scott et Grönblad
538030	<i>Staurastrum paradoxum</i> Meyen
538031	<i>Staurastrum</i> sp. 1 ANS FWA
538032	<i>Staurastrum natator</i> West
538033	<i>Staurastrum gracile</i> Ralfs
538038	<i>Staurastrum clevei</i> Roy et Bissett
538040	<i>Staurastrum curvatum</i> var. <i>elongatum</i> GM Smith
538041	<i>Staurastrum cuspidatum</i> Ralfs
538050	<i>Staurastrum dejectum</i> var. <i>apiculatum</i> (Brébisson) Lundell
538052	<i>Staurastrum muticum</i> Ralfs
538053	<i>Staurastrum retusum</i> Turner
538054	<i>Staurastrum subgrande</i> var. <i>minor</i> GM Smith
538055	<i>Staurastrum</i> sp. A UL 1996 NAWQA

naded id	Taxon Name
538056	Staurastrum americanum (West & West) GM Smith
538057	Staurastrum urinator GM Smith
538058	Staurastrum dejectum (Brébisson) Ralfs
538059	Staurastrum subdenticulatum Nordstedt
538060	Staurastrum botrophilum Wolle
538061	Staurastrum margaritaceum var. robustum West & West
538063	Staurastrum bieneanum Rabenhorst
538064	Staurastrum bieneanum var. ellipticum Wille
538065	Staurastrum bohlinianum Schmidle
538066	Staurastrum brebissonii Archer
538067	Staurastrum chaetoceras var. convexum Grönblad
538068	Staurastrum cyclacanthum var. subacanthum Grönblad
538069	Staurastrum lapponicum (Schmidle) Grönblad
538070	Staurastrum leptocladum Nordstedt
538071	Staurastrum longipes (Nordstedt) Teiling
538072	Staurastrum longiradiatum West & West
538073	Staurastrum manfeldtii var. fluminense Whitford & Schumacher
538074	Staurastrum pingue Teiling
538075	Staurastrum polytrichum (Perty) Rabenhorst
538076	Staurastrum proboscideum (Brébisson) Archer
538077	Staurastrum pseudosebaldii var. simplicium West
538078	Staurastrum punctulatum var. kjellmani Wille
538079	Staurastrum punctulatum var. pygmaeum (Brébisson) West & West
538080	Staurastrum punctulatum var. striatum West & West
538081	Staurastrum rugulosum var. taftii Prescott
538082	Staurastrum sp. 1 UM NAA
538083	Staurastrum sp. 2 UM NAA
538084	Staurastrum cf. alternans ANDRESEN (Brébisson) Ralfs
538085	Staurastrum cf. ellipticum ANDRESEN W. West
538086	Staurastrum cf. muticum ANDRESEN var. minus Rabenhorst
538087	Staurastrum cf. natator ANDRESEN West
538088	Staurastrum cf. polymorphum ANDRESEN Brébisson
538089	Staurastrum alternans var. basichondrum Schmidle
538090	Staurastrum rugosum Irénée-Marie
541000	Tetrachlorella alternans (GM Smith) Korschikov
542000	Stichococcus subtilis (Kützing) Klercher
542001	Stichococcus sp.
542002	Stichococcus bacillaris Nägeli
542003	Stichococcus scopulinus Hazen
543001	Stigeoclonium lubricum (Dillwyn) Kützing
543002	Stigeoclonium sp.
543003	Stigeoclonium subsecundum Kützing
543004	Stigeoclonium sp. 1 ANS FWA
543005	Stigeoclonium flagelliferum Kützing
543006	Stigeoclonium sp. 0A UL NAWQA EJ
543007	Stigeoclonium sp. 0A UL NAWQA KM
543008	Stigeoclonium tenue (Agardh) Kützing
543009	Stigeoclonium sp. 0A UL NAWQA 1996 TS
543010	Stigeoclonium stagnatile (Hazen) Collins
543011	Stigeoclonium attenuatum (Hazen) Collins
543012	Stigeoclonium nanum Kützing

naded id	Taxon Name
543013	Stigeoclonium polymorphum (Franke) Heering
543014	Stigeoclonium pachydermum Prescott
548000	Tetragoniella sp.
549001	Tetmemorus brebissonii (Meneghini) Ralfs
552000	Tetradesmus sp.
552002	Tetradesmus wisconsinense GM Smith
552003	Tetradesmus major (Fischer) Fott & Komárková
553000	Tetraedron trigonum (Nägeli) Hansgirg
553001	Tetraedron sp. 1 ANS FWA
553002	Tetraedron minimum (Braun) Hansgirg
553003	Tetraedron muticum (Braun) Hansgirg
553004	Tetraedron regulare Kützing
553005	Tetraedron caudatum (Corda) Hansgirg
553006	Tetraedron pentaedricum West & West
553007	Tetraedron sp.
553008	Tetraedron gracile (Reinsch) Hansgirg
553009	Tetraedron regulare var. bifurcatum Wille
553010	Tetraedron lunula Wille
553011	Tetraedron trigonum var. papilliferum (Schröder) Lemmermann ex Brunenthaler
553012	Tetraedron sp. B UL 1996 NAWQA
553013	Tetraedron sp. A UL 1996 NAWQA
553014	Tetraedron trigonum var. gracile (Reinsch) Hansgirg
553015	Tetraedron limneticum Borge
553016	Tetraedron planctonicum GM Smith
553017	Tetraedron sp. 1?
553018	Tetraedron triangulare Kossinskaja
553019	Tetraedron cf. longispinum ANDRESEN (Perty) Hansgirg
556000	Tetraspora lubrica (Roth) Agardh
556001	Tetraspora gelatinosa (Vaucher) Desvaux
556002	Tetraspora cylindrica (Wahl) CA Agardh
556003	Tetraspora sp.
557000	Tetrastrum staurogeniaeforme (Schröder) Lemmermann
557001	Tetrastrum heteracanthum (Nordstedt) Chodat
557002	Tetrastrum sp.
557003	Tetrastrum elegans Playfair
557004	Tetrastrum glabrum (Roll) Ahlstrom & Tiffany
557006	Tetrastrum punctatum (Schmidle) Ahlstrom & Tiffany
557007	Tetrastrum triangulare (Chodat) Komárek
563001	Trentepohlia abietina Hansgirg
564000	Treubaria crassipina GM Smith
564001	Treubaria cf. setigerum (Archer) GM Smith
567000	Triploceras gracile Bailey
569000	Ulothrix sp.
569001	Ulothrix zonata (Weber and Mohr) Kützing
569002	Ulothrix cylindricum Prescott
569003	Ulothrix subtilissima Rabenhorst
569004	Ulothrix subconstricta GS West
569005	Ulothrix tenerrima Kützing
569006	Ulothrix tenuissima Kützing
569007	Ulothrix aequalis Kützing
569008	Ulothrix rivularis Kützing

naded id	Taxon Name
569009	Ulothrix sp. 1 UL NAWQA WHIT
569010	Ulothrix variabilis Kützing
569011	Ulothrix cf. subtilissima ANDRESEN Rabenhorst
571000	Uronema elongatum Hodgetts
571001	Uronema sp.
574000	Thelesphaera sp.
575000	Volvox tertias A. Meyer
578000	Westella botryoides (W. West) de Wildemann
578001	Westella linearis GM Smith
580000	Xanthidium armatum (Brébisson) Rabenhorst
580001	Xanthidium antilopaeum (Brébisson) Kützing
580003	Xanthidium sp.
582000	Zygnema sp.
582001	Zygnema sp. 0A UL NAWQA EJ
582002	Zygnema cf. leiospermum ANDRESEN deBary
582990	Zygnema sp. 1?
584000	Willia sp. 1 UM NAA
799000	Unknown Chlorophyte coccoid
799001	Unknown Chlorophyte sp. 1 ANS FWA
799002	Unknown Chlorophyte sp. 2 ANS FWA
799003	Unknown Chlorophyte sp. 3 ANS FWA
799004	Unknown Chlorophyte filament
799005	Unknown Chlorophyte alga
799006	Unknown Chlorophyte sp. 1 ANS RWS
799007	Unknown Chlorophyte flagellate
799008	Unknown Chlorophyte coccoid (1-3 μ)
799009	Unknown Chlorophyte coccoid (3-5 μ)
799010	Unknown Chlorophyte coccoid (5-10 μ)
799011	Unknown Chlorophyte coccoid (<10 μ)
799012	Unknown Chlorophyte sp. 1 ANS SPM
799013	Unknown Chlorophyte filament sp. 1 ANS
799014	Unknown Chlorophyte Und. Ulvaceae sp. 1 ANS USNK
799015	Unknown Chlorophyte Und. Zygnemataceae
799016	Unknown Chlorophyte Und. Palmellaceae
799017	Unknown Chlorophyte Und. Ulotricaceae
799018	Unknown Chlorophyte Und. Ulvaceae sp. 1 ANS CONN
799019	Unknown Chlorophyte colonial coccoid
799021	Unknown Chlorophyte sp. 1 ANS LINJ
799022	Unknown Chlorophyte Chaetophorales
799023	Unknown Chlorophyte 1? UL NAWQA EJ
799026	Unknown Chlorophyte colonial coccoid medium sp. 0A NAWQA EDJ
799027	Unknown Chlorophyte colonial coccoid medium sp. 0B NAWQA EDJ
799028	Unknown Chlorophyte colonial coccoid small 1 sp. 0A NAWQA EDJ
799029	Unknown Chlorophyte cyst sp. 0A UL NAWQA EDJ
799030	Unknown Chlorophyte cyst sp. 0B UL NAWQA EDJ
799031	Unknown Chlorophyte cyst sp. 0C UL NAWQA EDJ
799032	Unknown Chlorophyte sp. 0A UL NAWQA EDJ XGFES10A
799039	Unknown Chlorophyte sp. 0A UL NAWQA EDJ XGUEME0A
799041	Unknown Chlorophyte sp. 0A UL NAWQA EDJ XGUES20A
799042	Unknown Chlorophyte sp. 0A UL NAWQA EDJ
799044	Unknown Chlorophyte sp. 0A UL NAWQA EDJ XGCES!0A

naded id	Taxon Name
799045	Unknown Chlorophyte sp. 0A UL NAWQA EDJ XGFBME0A
799046	Unknown Chlorophyte sp. 0A UL NAWQA EDJ XGCCS20A
799047	Unknown Chlorophyte sp. 0A UL NAWQA EDJ XGCCMI0A
799053	Unknown Chlorophyte sp. 0A UL NAWQA EDJ XGUEVS0A
799057	Unknown Chlorophyte sp. 0B UL NAWQA EDJ
799060	Unknown Chlorophyte sp. 0B UL NAWQA EJ
799061	Unknown Chlorophyte sp. 0C UL NAWQA EDJ
799062	Unknown Chlorophyte sp. 0D UL NAWQA EDJ
799063	Unknown Chlorophyte unicellular coccoid medium sp. 0A NAWQA EDJ
799064	Unknown Chlorophyte unicellular coccoid medium sp. 0B NAWQA EDJ
799065	Unknown Chlorophyte unicellular coccoid medium sp. 0C NAWQA EDJ
799066	Unknown Chlorophyte unicellular coccoid small 1 sp. 0A NAWQA EDJ
799067	Unknown Chlorophyte unicellular coccoid small 2 sp. 0A NAWQA EDJ
799068	Unknown Chlorophyte unicellular coccoid small 2 sp. 0B NAWQA EDJ
799069	Unknown Chlorophyte unicellular ellipsoid huge sp. 0A NAWQA EDJ
799070	Unknown Chlorophyte UL NAWQA 1996 TS (small coccoid, 10 μ) NAWQA 96 TS
799071	Unknown Chlorophyte UL NAWQA 1996 TS (small coccoid, 20 μ) NAWQA 96 TS
799072	Unknown Chlorophyte sp. 0A UL NAWQA TS (green filament)
799073	Unknown Chlorophyte UL NAWQA WHIT (unkn coccoid, 18 μ)
799074	Unknown Chlorophyte UL NAWQA WHIT (unkn coccoid, 15 μ)
799075	Unknown Chlorophyte UL NAWQA TS (unkn coccoid, 10 μ)
799076	Unknown Chlorophyte UL NAWQA WHIT (unkn coccoid, 7 μ) NAWQA WHIT
799077	Unknown Chlorophyte UL NAWQA 1996 TS (triangle shape) NAWQA 96 TS
799078	Unknown Chlorophyte UL NAWQA 1996 TS (T-shape form) NAWQA 96 TS
799079	Unknown Chlorophyte UL NAWQA TS (small coccoid 22 μ)
799080	Unknown Chlorophyte UL NAWQA 1996 TS (small coccoid, 17 μ)
799081	Unknown Chlorophyte UL NAWQA 1996 TS (small coccoid, 16 μ) NAWQA 96 TS
799082	Unknown Chlorophyte UL NAWQA 1996 TS (small coccoid, 14 μ) NAWQA 96 TS
799083	Unknown Chlorophyte UL NAWQA 1996 TS (small coccoid, 5 μ)
799084	Unknown Chlorophyte UL NAWQA 1996 TS (oblong with apex)
799085	Unknown Chlorophyte sp. 0A NAWQA TS (oblong green)
799086	Unknown Chlorophyte UL NAWQA TS (unkn green)
799087	Unknown Chlorophyte UL NAWQA TS (green oval colony)
799088	Unknown Chlorophyte UL NAWQA TS (small coccoid, 25 μ)
799089	Unknown Chlorophyte coccoid (10 μ) UL NAWQA WHIT
799090	Unknown Chlorophyte coccoid (13 μ) UL NAWQA WHIT
799091	Unknown Chlorophyte coccoid (15 μ) UL NAWQA WHIT
799092	Unknown Chlorophyte coccoid (18 μ) UL NAWQA WHIT
799093	Unknown Chlorophyte coccoid (21 μ) UL NAWQA WHIT
799094	Unknown Chlorophyte coccoid (26 μ) UL NAWQA WHIT
799095	Unknown Chlorophyte coccoid (7 μ) UL NAWQA WHIT
799096	Unknown Chlorophyte sp. 1 ANS SCTX (filament)
799098	Unknown Chlorophyte colony
799099	Unknown Chlorophyte green unknown MSU NAWQA KMM 1998
799100	Unknown Chlorophyte sp. 1 UM 1996 NAA UMIS
799101	Unknown Chlorophyte sp. 1 MSU Florida
799102	Unknown Chlorophyte sp. 2 MSU NAWQA
799103	Unknown Chlorophyte sp. 3 MSU NAWQA
799104	Unknown Chlorophyte sp. 1 ANS FWA (volvocales)
799990	Unknown Chlorophyte sp. 1?
799991	Unknown Chlorophyte sp. 2?

naded id	Taxon Name
803000	Anabaena oscillarioides Bory
803001	Anabaena sp.
803002	Anabaena subcylindrica Borge
803003	Anabaena affinis Lemmermann
803004	Anabaena aequalis Borge
803005	Anabaena flos-aquae (Linnaeus) Brébisson
803006	Anabaena ambigua Rao
803008	Anabaena circinalis Rabenhorst
803011	Anabaena fuellebornei Schmidle
803012	Anabaena iyengarii var. attenuata Rao
803013	Anabaena iyengarii var. tenuis Rao
803014	Anabaena lapponica Borge
803015	Anabaena macrospora Klebahn
803018	Anabaena sp. 0A UL NAWQA KM
803019	Anabaena vaginicola Fritsch & Rich
803021	Anabaena wisconsiense Prescott
803022	Anabaena constricta Szafer
803023	Anabaena spiroides Klebahn
803024	Anabaena limnetica GM Smith
803025	Anabaena sp. 1 MSU NAWQA KMM 1998
803026	Anabaena sp. 2 MSU NAWQA KMM 1998
803027	Anabaena sp. 3 MSU NAWQA KMM 1998
803028	Anabaena sp. 4 MSU NAWQA KMM 1998
803029	Anabaena helicoidea Bernard
803030	Anabaena licheniformis Bory
803032	Anabaena inaequalis Bornet & Flahault
804000	Scytonema hoffmanii Agardh
804001	Scytonema sp.
806000	Spirulina subsalsa Öersted
806001	Spirulina major Kützing
806002	Spirulina sp.
806003	Spirulina laxa GM Smith
806004	Spirulina laxissima GS West
806005	Spirulina princeps (West & West) GS West
806006	Aphanizomenon flos-aquae (Linnaeus) Ralfs
806007	Spirulina nordstedtii Gomont
806008	Aphanizomenon sp.
807001	Aphanocapsa sp.
807002	Aphanocapsa rivularis (Carm.) Rabenhorst
807003	Aphanocapsa elachista West & West
807004	Aphanocapsa delicatissima West & West
807005	Aphanocapsa grevillei Rabenhorst
807007	Aphanocapsa muscicola (Meneghini) Wille
807010	Aphanocapsa holsatica (Lemmermann) Cronberg & Komárek
807011	Aphanocapsa incerta (Lemmermann) Cronberg & Komárek
807012	Aphanocapsa marina Hansgirg
807013	Aphanocapsa planctonica (GM Smith) Komárek & Anagnostidis
807014	Aphanocapsa thermalis Brüger
808000	Aphanothece sp.
808001	Aphanothece saxicola Nägeli
808002	Aphanothece microscopica Nägeli

naded id	Taxon Name
808003	Aphanothece nidulans Richter
808004	Aphanothece gelatinosa (Hennings) Lemmermann
808005	Aphanothece castagnei (Brébisson) Rabenhorst
808006	Aphanothece elebens (Brébisson) Elenkin
808007	Aphanothece stagnina (Sprengel) Braun
809001	Blennothrix sp.
809002	Blennothrix brebissonii (Kützing ex Gomont) Anagnostidis & Komárek
810000	Arthrospira jenneri (Kützing) Stizenberger
810001	Arthrospira massartii Kuffareth
810002	Arthrospira spirulinoides fo. tenuis Ghose
810003	Arthrospira sp. A UL 1996 NAWQA
810004	Arthrospira gomontiana Setchell
812000	Bacularia vermicularis (Fedorov) Komárek & Anagnostidis
814000	Calothrix parientina (Nägeli) Thuret
814001	Calothrix fusca (Kützing) Bornet et Flahault
814002	Calothrix sp.
814003	Calothrix braunii Bornet & Flahault
814004	Calothrix epiphytica West & West
814005	Calothrix gardneri De Toni
814006	Calothrix sp. 0A UL NAWQA KM
814007	Calothrix sp. 1 MSU NAWQA KMM 1998
814008	Calothrix sp. 2 MSU NAWQA KMM 1998
814009	Calothrix breviarticulata West & West
814010	Calothrix stellaris Bornet & Flahault
815000	Camptylonemopsis iyengarii Desikachary
818001	Chlorogloea fritschii Mitra
818002	Chlorogloea microcystoides Geitler
818003	Chlorogloea sp.
819001	Chamaesiphon incrustans Grunow
819003	Chamaesiphon sp.
819005	Chamaesiphon amethystinus Lemmermann
819006	Chamaesiphon rostaffinski Hansgirg
819007	Chamaesiphon confervicolus Braun
819008	Chamaesiphon britannicus (Kützing ex Gomont) Anagnostidis & Komárek
820000	Chroococcus pallidus (Nägeli) Nägeli
820002	Chroococcus prescottii Drouet & Daily
820003	Chroococcus dispersus (Keissler) Lemmermann
820004	Chroococcus minutus (Kützing) Nägeli
820005	Chroococcus limneticus Lemmermann
820006	Chroococcus sp.
820007	Chroococcus turgidus (Kützing) Nägeli
820008	Chroococcus dispersus var. minor GM Smith
820009	Chroococcus cohaerens (Brébisson) Nägeli
820013	Chroococcus minimus (Keissler) Lemmermann
820014	Chroococcus minor (Kützing) Nägeli
820015	Chroococcus varius Braun
820016	Chroococcus UL 1996 NAWQA (large)
820017	Chroococcus montanus Hansgirg
820019	Chroococcus refractus Wood
820022	Chroococcus distans (GM Smith) Komárková-Legnerová
821001	Chroococcopsis epiphytica Geitler

naded id	Taxon Name
822000	<i>Coccochloris peniocystis</i> (Kützing) Drouet & Daily
824000	<i>Coelosphaerium kuetzingianum</i> Nägeli
824002	<i>Coelosphaerium</i> sp.
824003	<i>Coelosphaerium dubium</i> Grunow
825001	<i>Cyanobium diatomicola</i> Komárek & Anagnostidis
828000	<i>Cylindrospermum marchicum</i> Lemmermann
828001	<i>Cylindrospermum minutum</i> Wood
828002	<i>Cylindrospermum</i> sp.
829001	<i>Cyanotetras</i> Spp0A UL Naqwa EJ Hindák
834000	<i>Diplocolon hepii</i> Nägeli
835001	<i>Entophysalis</i> sp.
839001	<i>Geitleribactron</i> Spp0A UL Naqwa EJ Komárek
841000	<i>Glaucocystis</i> sp.
842000	<i>Gloeocapsa aeruginosa</i> Kützing
842001	<i>Gloeocapsa punctata</i> Nägeli
842004	<i>Gloeocapsa calcarea</i> Tilden
842005	<i>Gloeocapsa decorticans</i> (Braun) Richter
842007	<i>Gloeocapsa rupestris</i> Kützing
842008	<i>Gloeocapsa</i> sp.
842009	<i>Gloeocapsa atrata</i> Kützing
843000	<i>Gloeothece linearis</i> Nägeli
843001	<i>Gloeothece rupestris</i> (Lyngbye) Bornet
843002	<i>Gloeothece</i> sp.
843003	<i>Gloeothece palea</i> Rabenhorst
844000	<i>Gloeotrichia echinulata</i> (JE Smith) Richter
844001	<i>Gloeotrichia</i> sp.
845001	<i>Gloeocapsopsis cyanea</i> (Krieger) Komárek & Anagnostidis
845002	<i>Gloeocapsopsis pleurocapsoides</i> (Nováček) Komárek & Anagnostidis
846001	<i>Gomphosphaeria aponina</i> Kützing
846002	<i>Gomphosphaeria</i> sp.
846006	<i>Gomphosphaeria virieuxii</i> Komárek & Hindák
847001	<i>Geitlerinema splendidum</i> (Greville) Anagnostidis
847002	<i>Geitlerinema tenuius</i> (Stockmeyer) Anagnostidis
849000	<i>Hapalosiphon flexuosus</i> Borzi
850001	<i>Heteroleibleinia chaetomorphae</i> (Iyengarand & Desikachary) Anagnostidis & Komárek
850002	<i>Heteroleibleinia gardneri</i> (Geitler) Anagnostidis & Komárek
850003	<i>Heteroleibleinia infixa</i> (Frémy) Anagnostidis & Komárek
850004	<i>Heteroleibleinia kuetzingii</i> (Schmidle) Anagnostidis & Komárek
850005	<i>Heteroleibleinia mesotricha</i> (Skuja) Anagnostidis & Komárek
852001	<i>Homoeothrix hansgirgi</i> (Schmidle) Lemmermann
852002	<i>Homoeothrix juliana</i> (Meneghini) Kirchner
852003	<i>Homoeothrix</i> spp
852004	<i>Homoeothrix janthina</i> (Bornet et Flahault) Starmach
853002	<i>Hydrocoleum meneghianum</i> Kützing
854001	<i>Hydrococcus rivularis</i> Kützing
855000	<i>Johannesbaptistia pellucida</i> Taylor & Drouet
856000	<i>Hydrocoryne spongiosa</i> Schwabe ex Bornet & Flahault
858000	<i>Leptochaete stagnalis</i> Hansgirg
860002	<i>Lyngbya</i> sp. 2 ANS FWA
860003	<i>Lyngbya</i> sp. 3 ANS FWA
860007	<i>Lyngbya aestuarii</i> (Mertens) Liebmann

naded id	Taxon Name
860008	Lyngbya sp.
860011	Lyngbya major Meneghini
860014	Lyngbya sp. 4 ANS FWA
860016	Lyngbya allorgei Frémy
860017	Lyngbya birgei GM Smith
860019	Lyngbya ceylanica Wille
860025	Lyngbya hieronymusii Lemmermann
860029	Lyngbya lachneri (Zimmermann) Geitler
860030	Lyngbya lagerheimii var. minor Desik.
860032	Lyngbya martensiana var. minor Gardner
860034	Lyngbya mucicola Lemmermann
860042	Lyngbya sp. 0C UL NAWQA KM
860043	Lyngbya sp. 0D UL NAWQA KM
860044	Lyngbya sp. 0E UL NAWQA KM
860045	Lyngbya spiralis Geitler
860046	Lyngbya truncicola Ghose
860048	Lyngbya cf. latissima ACKER Prescott
860050	Lyngbya sp. 1 UM ALBE NAA
860051	Lyngbya cf. versicolor ANDRESEN (Wartmann) Gomont
860052	Lyngbya lattisima Prescott
860053	Lyngbya sp. 1 NAWQA Cal Acad
860054	Lyngbya sp. 2 NAWQA Cal Acad
860055	Lyngbya sp. 3 NAWQA Cal Acad
860056	Lyngbya sp. 4 NAWQA Cal Acad
860057	Lyngbya nordstedt
860058	Lyngbya microtoma (Skuja) Anagnostidis
860990	Lyngbya sp. 1?
860991	Lyngbya sp. 2?
860992	Lyngbya sp. 3?
860993	Lyngbya sp. 4?
861002	Jaaginema sp.
861003	Jaaginema earlei (Gardner) Anagnostidis & Komárek
861004	Jaaginema lemmermannii (Woloszyńska) Anagnostidis & Komárek
861005	Jaaginema metaphyticum Komárek
861006	Jaaginema minimum (Gicklhorn) Anagnostidis & Komárek
861007	Jaaginema pseudogeminatum (Schmidle) Anagnostidis & Komárek
861008	Jaaginema calcuttense (Biswas) Anagnostidis & Komárek
861009	Jaaginema quadripunctulatum (Brühl et Biswas) Anagnostidis & Komárek
861010	Jaaginema subtilissima (Kützing) Anagnostidis & Komárek
861011	Jaaginema unigranulatum (Biswas) Anagnostidis
862001	Leibleinia epiphytica (Hieronymus) Anagnostidis & Komárek
862002	Leibleinia gracilis (Rabenhorst) Anagnostidis & Komárek
862003	Leibleinia nordgaardii (Wille) Anagnostidis & Komárek
862004	Leibleinia porphyrosiphonis (Frémy) Anagnostidis & Komárek
863001	Leptolyngbya angustissima (West & West) Anagnostidis & Komárek
863002	Leptolyngbya antarctica (West & West) Anagnostidis & Komárek
863003	Leptolyngbya foveolarum (Rabenhorst ex Gomont) Anagnostidis & Komárek
863004	Leptolyngbya fragilis (Gomont) Anagnostidis & Komárek
863005	Leptolyngbya lagerheimii (Gomont) Anagnostidis & Komárek
863006	Leptolyngbya laminosa (Gomont) Anagnostidis & Komárek
863007	Leptolyngbya mucosa (Gardner) Anagnostidis & Komárek

naded id	Taxon Name
863008	Leptolyngbya notata (Schmidle) Anagnostidis & Komárek
863009	Leptolyngbya ochracea (Thuret) Anagnostidis & Komárek
863010	Leptolyngbya orientalis (West & West) Anagnostidis & Komárek
863011	Leptolyngbya perelegans (Lemmermann) Anagnostidis & Komárek
863012	Leptolyngbya polysiphoniae (Frémy) Anagnostidis
863013	Leptolyngbya purpurascens (Gomont) Anagnostidis & Komárek
863014	Leptolyngbya rivulariarum (Gomont) Anagnostidis & Komárek
863015	Leptolyngbya tenuis (Gomont) Anagnostidis & Komárek
867001	Limnothrix borgertii (Lemmermann) Anagnostidis
867002	Limnothrix guttulata (Van Goor) Anagnostidis
867003	Limnothrix planctonica (Woloszyńska) Anagnostidis & Komárek
875000	Merismopedia tenuissima Lemmermann
875001	Merismopedia elegans Braun
875002	Merismopedia punctata Meyen
875003	Merismopedia glauca (Ehrenberg) Kützing
875004	Merismopedia sp.
875005	Merismopedia convoluta Brébisson
875008	Merismopedia minima Beck
875009	Merismopedia cf. convoluta ANDRESEN Brébisson in Kützing
875010	Merismopedia cf. N. spumigena Mertens Lemmermann
875011	Merismopedia thermalis Kützing
876001	Microcrocis irregularis (Lagerheim) Geitler
876002	Microcrocis geminata (Lagerheim) Geitler
878000	Microcoleus vaginatus (Vaucher) Gomont
878001	Microcoleus sp.
878002	Microcoleus subtorulosus Gomont
878003	Microcoleus violaceus Frémy
878004	Microcoleus lyngbyaceus (Kützing) Crouan
878005	Microcoleus irriguus (Kützing) Drouet
879000	Microcystis aeruginosa Kützing
879001	Microcystis sp.
879003	Microcystis flos-aquae (Wittrock) Kirchner
879007	Microcystis orissica West
879013	Microcystis novacekii (Komárek) Compère
879014	Microcystis roeseana (De Bary) Elenkin
879015	Microcystis smithii Komárek & Anagnostidis
881001	Myxobaktron sp.
884000	Nodularia harveyana (Thwaites) Thuret
884001	Nodularia harveyana var. sphaerocarpa (Bornet & Flahault) Elenkin
884002	Nodularia sp.
884003	Nodularia cf. spumigena ANDRESEN (Mertens) Drouet
885000	Nostoc pruniforme CA Agardh
885001	Nostoc spongiaeforme CA Agardh
885002	Nostoc sp. 1 ANS LAP
885003	Nostoc commune Vaucher
885004	Nostoc sp.
885005	Nostoc punctiforme (Kützing) Hariot
885006	Nostoc sp. 0A UL NAWQA EJ
885007	Nostoc sp. 0B UL NAWQA EJ
885009	Nostoc linckia (Roth) Bornet & Thuret
885010	Nostoc oryzae (Fritsch) Komárek & Anagnostidis

naded id	Taxon Name
886000	Nostochopsis lobatus Wood
888002	Oscillatoria sp. 2 ANS FWA
888003	Schizothrix friesii (Agardh) Gomont
888004	Oscillatoria princeps Vaucher
888005	Oscillatoria limosa (Dillwyn) Agardh
888006	Oscillatoria lutea Agardh
888009	Oscillatoria subbrevis Schmidle
888010	Oscillatoria sp.
888011	Oscillatoria limnetica Lemmermann
888012	Oscillatoria sancta Kützing
888016	Oscillatoria sp. 1 ANS LAP
888017	Schizothrix arenaria (Berkeley) Gomont
888020	Oscillatoria curviceps CA Agardh
888021	Oscillatoria sp. 2 ANS LAP
888022	Oscillatoria sp. 3 ANS LAP
888024	Schizothrix sp.
888025	Schizothrix mexicana Gomont
888026	Oscillatoria lacustris (Klebs) Geitler
888027	Oscillatoria retzii Agardh
888031	Oscillatoria amoena var. non-granulata Ghose
888034	Oscillatoria anguina Gomont
888037	Oscillatoria angustissima West & West
888039	Oscillatoria annae Van Goor
888045	Oscillatoria chalybea var. insularis Gardner
888046	Oscillatoria chikensis Biswas
888052	Oscillatoria curviceps var. angusta Ghose
888055	Oscillatoria foreaui Frey
888057	Oscillatoria formosa fo. loktakensis Brühl & Biswas
888058	Oscillatoria freyia De Toni
888059	Oscillatoria geitleriana Elenkin
888062	Oscillatoria grunowiana var. articulata Drouet
888065	Oscillatoria irrigua Gomont
888066	Oscillatoria iwanoffiana Geitler
888070	Oscillatoria laete-virens var. minimus Biswas.
888072	Oscillatoria limnetica var. 2 project: NAWQA EDJ
888078	Oscillatoria obscura Brühl & Biswas
888081	Oscillatoria perornata fo. attenuata Skuja
888084	Oscillatoria proteus Skuja
888088	Oscillatoria quadripunctulata var. unigranulata Singh
888089	Oscillatoria raui De Toni
888093	Oscillatoria sp. 0A UL NAWQA EJ
888094	Oscillatoria sp. 0B UL NAWQA EJ
888095	Oscillatoria splendida var. attenuata West & West
888096	Oscillatoria subbrevis fo. major West
888097	Oscillatoria subbrevis fo. minor Desik.
888101	Oscillatoria tenuis var. tergestina Rabenhorst
888103	Oscillatoria trichoides Szafer
888104	Oscillatoria vizagatensis Rao
888106	Oscillatoria sp. A UL 1996 NAWQA
888107	Oscillatoria sp. C 1996 UL NAWQA
888108	Oscillatoria sp B UL 1996 NAWQA

naded id	Taxon Name
888109	Oscillatoria submembranacea Ard. & Straff.
888111	Oscillatoria sp. 1 UM ALBE NAA
888112	Oscillatoria cf. curviceps ANDRESEN Agardh
888113	Oscillatoria cf. nigra ANDRESEN Vaucher
888114	Oscillatoria cf. pseudogeminata ANDRESEN var. unipunctata Biswas
888115	Oscillatoria cf. subbrevis ANDRESEN Schmidle
888116	Oscillatoria cf. tenuis ANDRESEN Agardh
888117	Oscillatoria cf. utermoehlii ANDRESEN De Toni
888118	Oscillatoria sp. 1 NAWQA Cal Acad
888119	Unknown Cyanophyte Oscillatoriaceae sp. 1 MSU
888120	Unknown Cyanophyte Oscillatoriaceae sp. 2 MSU
888121	Unknown Cyanophyte Oscillatoriaceae sp. 3 MSU
888123	Oscillatoria laevis (Gardner) Anagnostidis
888990	Oscillatoria sp. 1?
888991	Oscillatoria sp. 2?
888992	Oscillatoria sp. 3?
889001	Planktolyngbya contorta (Lemmermann) Anagnostidis & Komárek
889002	Planktolyngbya subtilis (Lemmermann) Anagnostidis & Komárek
890001	Phormidium inundatum Kützing
890002	Phormidium ambiguum Gomont
890003	Phormidium ambiguum var. major Lemmermann
890007	Phormidium corium Gomont
890008	Phormidium dimorphum Lemmermann
890010	Phormidium favosum Gomont
890014	Phormidium jenkelianum Schmid
890017	Phormidium minnesotense (Tilden) Drouet
890022	Phormidium retzii (CA Agardh) Gomont
890023	Phormidium stagnina Rao
890025	Phormidium sp.
890026	Phormidium subfuscum Kützing
890027	Phormidium uncinatum (CA Agardh) Gomont
890028	Phormidium autumnale (CA Agardh) Gomont
890029	Phormidium sp. UM 1996 UTEN NAA
890030	Phormidium acuminatum
890031	Phormidium acutissimum
890032	Phormidium aerugineo-caeruleum
890033	Phormidium amoenum
890034	Phormidium amphibium
890035	Phormidium animale
890036	Phormidium articulatum
890037	Phormidium boryanum
890038	Phormidium breve
890039	Phormidium chalybeum
890040	Phormidium chlorinum
890041	Phormidium claricentrosom
890042	Phormidium corallinae
890043	Phormidium cortianum
890044	Phormidium deflexum
890045	Phormidium diguetii
890046	Phormidium formosum
890047	Phormidium granulatum

naded id	Taxon Name
890048	Phormidium grunowianum
890049	Phormidium hamelii
890050	Phormidium holdenii
890051	Phormidium jasorvense
890052	Phormidium koettlitzii
890053	Phormidium laetevirens
890054	Phormidium meslinii
890055	Phormidium nigro-viride
890056	Phormidium nigrum
890057	Phormidium ornatum
890058	Phormidium paucigranatum
890059	Phormidium pseudopriestleyi
890060	Phormidium puteale
890061	Phormidium rubidum
890062	Phormidium schultzii
890063	Phormidium simplicissimum
890064	Phormidium subuliforme
890065	Phormidium taylori
890066	Phormidium terebriforme
890067	Phormidium willei
890068	Phormidium tenue (Agardh ex Gomont) Anagnostidis & Komárek
891001	Planktothrix agardhii (Gomont) Anagnostidis & Komárek
891002	Planktothrix cryptovaginata
891003	Planktothrix prolifica (Gomont) Anagnostidis & Komárek
891004	Planktothrix rubescens (Gomont) Anagnostidis & Komárek
892000	Plectonema sp.
893000	Pleurocapsa sp.
893001	Pleurocapsa sp. 1 NAWQA Cal Acad
896001	Porphyrosiphon animalis (CA Agardh) Drouet
896002	Porphyrosiphon notarisii (Meneghini) Kützing
896003	Porphyrosiphon cf. miniatus ANDRESEN (Hauck) Drouet
896004	Porphyrosiphon luteus (Gomont) Anagnostidis & Komárek
896005	Porphyrosiphon martensianus (Meneghini) Anagnostidis & Komárek
896006	Porphyrosiphon versicolor (Gomont) Anagnostidis & Komárek
897001	Pseudanabaena catenata Lauterborn
897003	Pseudanabaena sp.
897004	Pseudanabaena amphigranulata (Van Goor) Anagnostidis
897005	Pseudanabaena frigida (Fritsch) Anagnostidis
897006	Pseudanabaena mucicola (Naumann et Huber-Pestalozzi) Schwabe
898000	Raphidiopsis curvata Fritsch & Rich
898001	Raphidiopsis mediterranea Skuja
899002	Rhabdoderma irregulare (Naumann) Geitler
899003	Rhabdoderma lineare Schmidle & Lauterborn
899005	Rhabdoderma sp.
901000	Rivularia haematites Agardh
902001	Rhabdogloea smithii (Chodat) Komárek
903001	Schizothrix penicillata Gomont
903002	Schizothrix sp. 0A UL NAWQA TS
903003	Schizothrix calcicola (Agardh) Gomont
903004	Schizothrix lacustris Braun in Kützing
903005	Schizothrix rubella Gomont

naded id	Taxon Name
903006	Schizothrix tinctoria Gomont
903007	Schizothrix rivularis (Wolle) Drouet
904001	Anabaenopsis circularis var. javanica Woloszyńska
905001	Scytonematopsis kashyapi Geitler
906001	Spirulina meneghiniana Zanard
906002	Spirulina subtilissima Kützing ex Gomont
906003	Spirulina tenuissima Kützing
907001	Snowella lacustris (Chodat) Komárek & Hindák
908000	Stichosiphon filamentosus (Ghose) Geitler
908001	Stichosiphon regularis Geitler
910000	Stigonema sp.
910002	Stigonema mamillosum Agardh ex Bornet et Flahault
910003	Stigonema hormoides (Kützing) Bornet et Flahault
910004	Stigonema musicola (Thuret) Borzi
912001	Symploca laete-viridis Gomont
914004	Synechococcus elongatum (Nägeli) Nägeli
914005	Synechococcus sigmoideus (Moore & Carter) Komárek
915001	Synechocystis aquatilis Sauvageau
915002	Synechocystis crassa Voronichin
915003	Synechocystis pevalekii Ercegovic
920000	Tolypothrix distorta Kützing
920001	Tolypothrix sp.
925001	Trichormus anomalus (Fritsch) Komárek & Anagnostidis
925002	Trichormus fertissimus (Rao) Komárek & Anagnostidis
925003	Trichormus naviculoides (Fritsch) Komárek & Anagnostidis
925004	Trichormus variabilis (Kützing) Komárek & Anagnostidis
926001	Chondrocystis dermochroa (Nägeli) Komárek & Anagnostidis
927001	Coelomoron sp.
928001	Cyanobacterium cedrorum (Sauvageau) Komárek
929001	Cyanosarcina burmensis (Skuja) Kováčik
929002	Cyanosarcina spectabilis (Geitler) Kováčik
930001	Cyanothece aeruginosa (Nägeli) Komárek
930002	Cyanothece major (Schröter) Komárek
931001	Hymphomorpha dendroidea (Frémy) Anagnostidis & Komárek
932001	Komvophoron schmidlei (Jaag) Anagnostidis & Komárek
933001	Tychonema bornetii (Zukal) Anagnostidis & Komárek
942001	Xenotholos Spp0A UL Naqwa EJ
945000	Woronichinia sp.
945001	Woronichinia compacta (Lemmermann) Komárek & Hindák
945002	Woronichinia naegeliana (Unger) Elenkin
948000	Unknown Cyanophyte Und. Chroococcaceae sp. 1 ANS
948001	Unknown Cyanophyte coccoid
948004	Unknown Cyanophyte alga
948005	Unknown Cyanophyte coccoid (1-3µ)
948006	Unknown Cyanophyte coccoid (3-5µ)
948007	Unknown Cyanophyte coccoid (5-10µ)
948008	Unknown Cyanophyte coccoid (>10µ)
948009	Unknown Cyanophyte filament
948011	Unknown Cyanophyte cf. Clastidium
948012	Unknown Cyanophyte banana-shaped filament UL NAWQA EDJ
948013	Unknown Cyanophyte colonial coccoid small 1 sp. 0A NAWQA EDJ

naded id	Taxon Name
948014	Unknown Cyanophyte curved filam. UL NAWQA 96 TS
948015	Unknown Cyanophyte filamentous small sp. 0A NAWQA EDJ
948016	Unknown Cyanophyte sp. 0A UL NAWQA EDJ XFBME0A
948017	Unknown Cyanophyte sp. 0A UL NAWQA EDJ XBFSS10A
948019	Unknown Cyanophyte sp. 0A UL NAWQA EDJ XFBFS10A
948021	Unknown Cyanophyte sp. 0A UL NAWQA EJ
948022	Unknown Cyanophyte sp. 0A UL NAWQA KM
948023	Unknown Cyanophyte sp. 0B UL NAWQA EDJ
948024	Unknown Cyanophyte sp. 0B UL NAWQA
948025	Unknown Cyanophyte sp. 0C UL NAWQA KM
948026	Unknown Cyanophyte unicellular coccoid medium sp. 0A NAWQA EDJ
948027	Unknown Cyanophyte unicellular coccoid small 1 sp. 0A NAWQA EDJ
948028	Unknown Cyanophyte UL NAWQA 1996 TS (oval shape)
948029	Unknown Cyanophyte sp. 01 UL 1996 NAWQA
948030	Unknown Cyanophyte UL NAWQA 1996 TS (oval cell colony)
948031	Unknown Cyanophyte UL NAWQA 1996 TS (dividing cell)
948032	Unknown Cyanophyte (colonial filament)
948033	Unknown Cyanophyte (colonial coccoid)
948034	Unknown Cyanophyte (branching filament)
948035	Unknown Cyanophyte UL NAWQA TS (blue-green gas vacuole colony)
948036	Unknown Cyanophyte UL NAWQA TS (blue-green, attenuate cell)
948037	Unknown Cyanophyte UL NAWQA 1996 TS (coccoid)
948039	Unknown Cyanophyte Nostocaceae 1 ANS FWA
948040	Unknown Cyanophyte colony
948041	Unknown Cyanophyte Oscillatoriaceae sp. 1 UM 1996 NAA UTEN
948043	Unknown Cyanophyte sp. 1 UM 1996 NAA UTEN
948044	Unknown Cyanophyte sp. 1 MSU NAWQA LTEN KMM
948046	Unknown Cyanophyte Dermocarpellaceae
948047	Unknown Cyanophyte Oscillatoriales (sheath)
948048	Unknown Cyanophyte Oscillatoriales (no sheath)
962001	Colacium simplex Huber-Pestalozzi
970000	Euglena sp.
970001	Euglena acus Ehrenberg
970002	Euglena spirogyra Ehrenberg
970003	Euglena agilis Carter
970004	Euglena charkowiensis Swirenko
970005	Euglena chlamydophora Mainx
970006	Euglena gaumei Allorge et Lefèvre
970007	Euglena gracilis Klebs.
970008	Euglena haematodes Lemmermann
970009	Euglena hemichromata Skuja
970010	Euglena korshikovii Gojdics
970011	Euglena lepocincloides Drezepolski
970012	Euglena luscens Gunther
970013	Euglena mesnili Deflandre & Dusi
970014	Euglena nana Johnson
970015	Euglena obtuso-caudata Kiss
970016	Euglena pascheri Swirenko
970018	Euglena retronata Johnson
970019	Euglena sacculiformis Schiller
970020	Euglena sp. 0A UL NAWQA EJ

naded id	Taxon Name
970021	Euglena sp. 0A UL NAWQA KM
970022	Euglena sp. 0B UL NAWQA KM
970023	Euglena spirogyra var. minor Allorge
970024	Euglena tuberculata Swirenko
970025	Euglena sp. UL 1996 NAWQA (large)
970026	Euglena sp. 0A UL NAWQA 1996
970027	Euglena polymorpha Dangeard
970028	Euglena sp. B UL 1996 NAWQA
970029	Euglena sp. 1996 NAWQA (small)
970030	Euglena sp. UL 1995 (very small)
970031	Euglena elastica Prescott
970032	Euglena minuta Prescott
970033	Euglena proxima Dangeard
970034	Euglena fenestrata Elenkin
970035	Euglena fusca (Klebs) Lemmermann
970036	Euglena rubra Hardy
970037	Euglena spirogyra var. marchia Lemmermann
970038	Euglena cf. convoluta ANDRESEN Korschikov
970039	Euglena cf. fusca ANDRESEN (Klebs) Lemmermann
970040	Euglena cf. gastrosteus ANDRESEN Skuja
970041	Euglena cf. gracilis ANDRESEN Klebs
970042	Euglena cf. rubra ANDRESEN Hardy
970043	Euglena cf. sanguinea ANDRESEN Ehrenberg
984000	Lepocinclis sp.
984001	Lepocinclis fusiformis (Carter) Lemmermann
984002	Lepocinclis ovum (Ehrenberg) Lemmermann
984004	Lepocinclis marssonii Lemmermann
984005	Lepocinclis ovum var. deflandriana Conrad
984006	Lepocinclis sp. 0A UL NAWQA KM
984007	Lepocinclis texta Lemmermann
984008	Lepocinclis capito Wehrle
984009	Lepocinclis acuta Prescott
984010	Lepocinclis acicularis France
984011	Lepocinclis ovum var. gracilicauda Deflandre
984012	Lepocinclis radiata Chadefaud
989000	Petalomonas sp.
989001	Petalomonas praegnans Skuja
989002	Petalomonas applanata Skuja
990000	Phacus sp.
990001	Phacus swirenkoi Skvortzow
990002	Phacus orbicularis Hübner
990003	Phacus longicauda (Ehrenberg) Dujardin
990004	Phacus curvicaudata Swirenko
990005	Phacus anacoelus Stokes
990006	Phacus pyrum (Ehrenberg) Stein
990007	Phacus caudatus Hübner
990008	Phacus suecicus Lemmermann
990009	Phacus tortus (Lemmermann) Skvortzow
990010	Phacus acuminatus Stokes
990011	Phacus sp. 1 ANS LAP
990012	Phacus sp. 2 ANS LAP

naded id	Taxon Name
990013	Phacus trypanon Pochman
990014	Phacus aenigmaticus Drezepolski
990015	Phacus agilis Skuja
990017	Phacus Hamelii Allorge et Lefèvre
990018	Phacus Lemmermannii Skvortzow
990019	Phacus mirabilis Pochman
990020	Phacus pekinensis Skvortzow
990021	Phacus platalea Drezepolski
990022	Phacus pseudonordstedtii Pochman
990023	Phacus pusillus Lemmermann
990024	Phacus segretii var. ovum Prescott
990025	Phacus skujai Skvortzow
990026	Phacus sp. 0A UL NAWQA KM
990027	Phacus stokesii Lemmermann
990028	Phacus sp. A UL 1996 NAWQA
990029	Phacus pleuronectes (Möller) Dujardin
990030	Phacus caudatus var. ovalis Drezepolski
990031	Phacus nannos Pochman
990033	Phacus acuminatus var. iowensis Allerge & Jahn
990034	Phacus ankylonton Pochman
990035	Phacus brachykentron Pochman
990036	Phacus cochleatus Pochman
990037	Phacus horridus Pochman
990038	Phacus indicus Skvortzow
990039	Phacus lismorensis Playfair
990040	Phacus obolus Pochman
990041	Phacus onyx Pochman
990042	Phacus orbicularis zmudae Namyslowski
990043	Phacus rudicula (Playfair) Pochmann
990044	Phacus sp. 1 UM NAA
990045	Phacus sp. 2 UM NAA
990046	Phacus suecicus var. oidion Pochman
990047	Phacus cf. acuminatus ANDRESEN var. iowensis Allerge & Jahn
990048	Phacus cf. caudatus ANDRESEN Heubner
990050	Phacus cf. cochleatus ANDRESEN Pochman
990051	Phacus cf. hamelii ANDRESEN Allorge et Lefèvre
990052	Phacus cf. marie ANDRESEN Deflandre
990053	Phacus cf. platalea ANDRESEN Drezepolski
990054	Phacus cf. platyaulax ANDRESEN Pochman
990055	Phacus cf. skujae ANDRESEN Skvortzow
990056	Phacus cf. unguis ANDRESEN Stein & Deflandre
990057	Phacus nordstedtii Lemmermann
990058	Phacus cf. spirogyra Ehrenberg
993000	Strombomonas fluviatilis (Lemmermann) Deflandre
993001	Strombomonas verrucosa var. zmiewika (Swirenko) Deflandre
993002	Strombomonas sp. A UL 1996 NAWQA
993003	Strombomonas napiformis (Playfair) Deflandre
993004	Strombomonas verrucosa var. conspersa (Pascher) Deflandre
993005	Strombomonas verrucosa var. borystheniensis (Roll) Deflandre
993006	Strombomonas amphoraeformis (Hortobágyi) Huber-Pestalozzi
993007	Strombomonas fluviatilis var. curvata Lemmermann

naded id	Taxon Name
993008	Strombomonas gibberosa (Playfair) Deflandre
993009	Strombomonas verrucosa (Daday) Deflandre
993010	Strombomonas ensifera var. javanica Huber-Pestalozzi
993012	Strombomonas cf. ovalis ANDRESEN (Playfair) Deflandre
993013	Strombomonas maxima (Skvortzow) Deflandre
993014	Strombomonas cf. verrucosa var. zmiewika ANDRESEN (Swirenko) Deflandre
993015	Strombomonas longicauda (Swirenko) Deflandre
993016	Strombomonas deflandrei (Roll) Deflandre
993017	Strombomonas girardiana (Playfair) Deflandre
993018	Strombomonas schauinslandii (Lemmermann) Deflandre
995000	Trachelomonas sp.
995001	Trachelomonas sp. 1 ANS FWA
995002	Trachelomonas sp. 2 ANS FWA
995003	Trachelomonas lacustris Drezepolski
995004	Trachelomonas abrupta (Swirenko) Deflandre
995005	Trachelomonas sp. 3 ANS FWA
995006	Trachelomonas kelloggii (Skvortzow) Deflandre
995007	Trachelomonas hispida (Perty) Stein
995008	Trachelomonas crebea (Kellicott) Deflandre
995009	Trachelomonas volvocina Ehrenberg
995011	Trachelomonas robusta Swirenko
995012	Trachelomonas cf. intermedia Dangeard
995013	Trachelomonas armata Ehrenberg
995014	Trachelomonas cf. rotunda Swirenko
995015	Trachelomonas bernardinensis Vischer
995016	Trachelomonas aculeata Dol
995017	Trachelomonas speciosa Deflandre
995018	Trachelomonas lismorensis Playfair
995019	Trachelomonas scabra Playfair
995020	Trachelomonas cylindrica Ehrenberg
995025	Trachelomonas hispida var. coronata Lemmermann
995026	Trachelomonas atomaria Skvortzow
995027	Trachelomonas oblonga Lemmermann
995029	Trachelomonas horrida Palmer
995030	Trachelomonas coronata Swirenko
995031	Trachelomonas acanthophora Stokes
995032	Trachelomonas armata var. steinii Lemmermann
995034	Trachelomonas abrupta var. minor Deflandre
995035	Trachelomonas australica var. rectangularis Deflandre
995036	Trachelomonas granulosa Playfair
995037	Trachelomonas hispida var. crenulacollis Lemmermann
995038	Trachelomonas planctonica Swirenko
995039	Trachelomonas pulchella Deflandre
995040	Trachelomonas verrucosa Stokes
995042	Trachelomonas spinulosa (Skvortzow) Deflandre
995043	Trachelomonas verrucosa var. sparseornata Deflandre
995044	Trachelomonas sp. 0B UL NAWQA1996 TS
995045	Trachelomonas caudata (E.) Stein
995046	Trachelomonas lefevrei Deflandre
995047	Trachelomonas mucosa Swirenko
995048	Trachelomonas hungarica Szab.

naded id	Taxon Name
995049	<i>Trachelomonas cylindrica</i> var. <i>decollata</i> Playfair
995050	<i>Trachelomonas verrucosa</i> var. <i>granulosa</i> (Playfair) Conrad
995051	<i>Trachelomonas spectabilis</i> Deflandre
995052	<i>Trachelomonas abrupta</i> var. <i>arcuata</i> (Playfair) Deflandre
995053	<i>Trachelomonas abrupta</i> var. <i>obesa</i> (Playfair) Deflandre
995054	<i>Trachelomonas armata</i> var. <i>longispina</i> Playfair emend. Deflandre
995055	<i>Trachelomonas bacillifer</i> Playfair
995056	<i>Trachelomonas cervicula</i> Stokes
995057	<i>Trachelomonas dangaerdiana</i> Deflandre
995058	<i>Trachelomonas dybowskii</i> Drezepolski
995059	<i>Trachelomonas globularis</i> (Awerinz) Lemmermann
995060	<i>Trachelomonas globularis</i> var. <i>boyeri</i> (Palmer) Conrad
995061	<i>Trachelomonas lemmermannii</i> Woloszyńska emend. Deflandre
995062	<i>Trachelomonas mucosa</i> var. <i>hyalina</i> Skvortzow
995063	<i>Trachelomonas ovata</i> Roll
995064	<i>Trachelomonas playfairii</i> Deflandre
995066	<i>Trachelomonas similis</i> Stokes
995067	<i>Trachelomonas splendidissima</i> Middelhoek
995068	<i>Trachelomonas stokesiana</i> var. <i>dangeardii</i> (Deflandre) Huber-Pestalozzi
995069	<i>Trachelomonas subverrucosa</i> Deflandre
995070	<i>Trachelomonas superba</i> Swirenko & Deflandre
995071	<i>Trachelomonas superba</i> var. <i>swirenkiana</i> Deflandre
995072	<i>Trachelomonas volvocina</i> var. <i>punctata</i> Playfair
995073	<i>Trachelomonas woycickii</i> Koczwara
995074	<i>Trachelomonas zorensis</i> Lefèvre
995075	<i>Trachelomonas</i> cf. <i>granulosa</i> var. <i>subglobosa</i> ANDRESEN Playfair
995076	<i>Trachelomonas</i> cf. <i>hispida</i> var. <i>duplex</i> ANDRESEN Deflandre
995077	<i>Trachelomonas</i> cf. <i>horrida</i> ANDRESEN Palmer
995078	<i>Trachelomonas</i> cf. <i>pustulosa</i> ANDRESEN (Playfair) Huber-Pestalozzi
995079	<i>Trachelomonas</i> cf. <i>rugulosa</i> ANDRESEN Stein
995081	<i>Trachelomonas granulosa</i> var. <i>subglobosa</i> Playfair
995082	<i>Trachelomonas rotunda</i> Swirenko
995083	<i>Trachelomonas volvocina</i> var. <i>compressa</i> Drezepolski
999000	Unknown Euglenophyte sp.
999001	Unknown Euglenophyte sp. 0A UL NAWQA EJ
999002	Unknown Euglenophyte sp. 0A UL NAWQA 1996 TS (flagellate)
1007001	<i>Asterogloea</i> sp. 0A UL NAWQA EJ
1009001	<i>Apistonema polychloris</i> Ettl
1010001	<i>Botrydiopsis ahriza</i> Borzi
1020000	<i>Centritractus belanophorous</i> Lemmermann
1037000	<i>Chromulina minima</i> Dofl.
1037001	<i>Chromulina mikroplankton</i> Pascher
1049000	<i>Chrysocapsa planktonica</i> Pascher
1055001	<i>Chrysococcus rufescens</i> Klebs
1055003	<i>Chrysococcus granulatus</i> Hortobágyi
1055004	<i>Chrysococcus ovoides</i> Bourrelly
1059001	<i>Chrysosphaera gallica</i> Bourrelly
1110000	<i>Dinobryon acuminatum</i> Ruttner
1110001	<i>Dinobryon cylindrica</i> Imhof
1110002	<i>Dinobryon</i> sp.
1110003	<i>Dinobryon sertularia</i> Ehrenberg

naded id	Taxon Name
1110005	Dinobryon bavaricum Imhof
1110007	Dinobryon divergens Imhof
1110011	Dinobryon euristoma (Lemmermann) Hillard & Asmund
1115001	Gloeoichrysis pyrenigera Pascher
1116000	Goniochloris sculpta Geitler
1122001	Heterothrix sp. 0A UL NAWQA EJ
1125001	Hydrurus foetidus (Villars) Trevisan
1132004	Kephyrion ovale Huber-Pestalozzi
1132005	Kephyrion sp. 1 UM NAA
1132006	Kephyrion sp.
1145000	Mallomonas sp.
1145004	Mallomonas acaroides Perty
1145005	Mallomonas sp. 0A UL NAWQA EJ
1145006	Mallomonas sp. 0B UL NAWQA EJ
1145007	Mallomonas apochromatica Conrad
1146000	Meringosphaera spinosa Prescott in Prescott
1158000	Ochromonas sp.
1158001	Ochromonas sp. 0A UL NAWQA EJ
1158002	Ochromonas sp. 0B UL NAWQA EJ
1158003	Ochromonas vasocystis Dofl.
1160000	Ophiocytium capitatum Wolle
1160001	Ophiocytium desertum Printz
1160002	Ophiocytium sp.
1160003	Ophiocytium cochleare (Eichwald) Braun
1160004	Ophiocytium elongatum var. major Prescott
1160005	Ophiocytium sp. 0A UL NAWQA EJ
1160006	Ophiocytium gracilipes Rabenhorst
1190000	Rhipidodendron cf. huxleyi ANDRESEN Kent
1195000	Salpingoeca amphora Kent
1198001	Sphaerapsis sp. 0A UL NAWQA EJ
1205000	Synura sp.
1205001	Synura uvella Ehrenberg
1212000	Tribonema sp.
1212001	Tribonema affine GS West
1212002	Tribonema bombycinum (CA Agardh) Derbes & Solier
1212003	Tribonema utriculosum (Kützing) Hazen
1212004	Tribonema minus (Wille) Hazen
1212005	Tribonema sp. UL k me70a
1220000	Vaucheria geminata (Vaucher) DeCandolle
1220001	Vaucheria sp.
1220002	Vaucheria sp. 0A UL NAWQA EJ
1220003	Vaucheria polysperma Hassall
1220004	Vaucheria uncinata Kützing
1249000	Unknown Chrysophyte sp. 1 ANS MEK
1249001	Unknown Chrysophyte sp. 1 ANS SPM
1249002	Unknown Chrysophyte alga
1249003	Unknown Chrysophyte flagellate
1249011	Unknown Chrysophyte sp. 0A UL NAWQA EDJ XSCCS20A
1249013	Unknown Chrysophyte sp. 0A UL NAWQA EJ
1249016	Unknown Chrysophyte sp. 0B UL NAWQA EJ
1249017	Unknown Chrysophyte sp. 0E UL NAWQA TS

naded id	Taxon Name
1249018	Unknown Chrysophyte sp. 0C UL NAWQA TS
1249019	Unknown Chrysophyte sp. 0F UL NAWQA TS
1249020	Unknown Chrysophyte sp. 0D UL NAWQA TS
1249021	Unknown Chrysophyte sp. 0A UL NAWQA TS
1249022	Unknown Chrysophyte UL 1996 NAWQA (golden circular)
1249023	Unknown Chrysophyte sp.
1249024	Unknown Chrysophyte sp. 0B UL NAWQA TS
1249031	Unknown Chrysophyte golden, circular
1249032	Unknown Chrysophyte sp. 1 ANS FWA
1249990	Unknown Chrysophyte sp. 1?
1261001	Chroomonas coerulea Skuja
1265000	Cryptomonas sp. 2 ANS MEK
1265001	Cryptomonas sp. 1 ANS MEK
1265002	Cryptomonas sp.
1265003	Cryptomonas ovata Ehrenberg
1265004	Cryptomonas erosa Ehrenberg
1265005	Cryptomonas sp. 0B UL NAWQA 1996 TS
1265006	Cryptomonas sp. 0A UL NAWQA 1996 TS
1265007	Cryptomonas sp. C UL 1996 NAWQA
1265009	Cryptomonas erosa var. reflexa Marsson
1265010	Cryptomonas marssonii Skuja
1265011	Cryptomonas phaseolus Skuja
1265012	Cryptomonas sp. 2 UM NAA
1265013	Cryptomonas sp. 3 UM NAA
1290001	Pyrenomonas sp
1299001	Unknown Cryptophyte alga
1299002	Unknown Cryptophyte sp. 1 ANS FWA
1334000	Ceratium hirudinella (O.F. Möller) Dujardin
1334001	Ceratium carolinianum Jörgansen
1334002	Ceratium cf. carolinianum ANDRESEN (Bailey) Jörgansen
1371001	Dinosphaera palustris (Lemmermann) Kofoid & Michener
1396006	Glenodinium sp. A UL 1996 NAWQA
1396008	Glenodinium cf. penardiforme ANDRESEN (Lindemann) Schiller
1406001	Gymnodinium sp.
1406004	Gymnodinium albulum Lindemann
1406005	Gymnodinium inversum Nygaard
1406006	Gymnodinium varians Maskell
1406007	Gymnodinium sp. C UL 1996 NAWQA
1406008	Gymnodinium sp. B UL 1996 NAWQA
1406009	Gymnodinium sp. A UL 1996 NAWQA
1406010	Gymnodinium mirabile Penard
1406011	Gymnodinium palustre Schilling
1408000	Gyrodinium sp.
1415000	Hemidinium sp.
1426000	Katodinium sp.
1456001	Peridiniopsis borgei Lemmermann
1456002	Peridiniopsis penardii (Lemmermann) Bourrelly
1456003	Peridiniopsis polonicum (Woloszyńska) Bourrelly
1456004	Peridiniopsis sp.
1457000	Peridinium cinctum (Möller) Ehrenberg
1457001	Peridinium bipes Stein

naded id	Taxon Name
1457002	Peridinium sp.
1457003	Peridinium inconspicuum Lemmermann
1457004	Peridinium volzii Lemmermann
1457008	Peridinium pusillum (Pennard) Lemmermann
1457009	Peridinium Wierzejskii Woloszyńska
1457011	Peridinium cf. inconspicuum ANDRESEN Lemmermann
1457012	Peridinium cf. pygmaeum ANDRESEN Lindemann
1480001	Woloszynskia coronata (Woloszyńska) Thompson
1499000	Unk. Dinoflagellate cyst
1499001	Unk. Dinoflagellate alga
1502002	Audouinella hermannii (Roth) Duby
1505000	Batrachospermum vagum (Roth) CA Agardh
1505001	Batrachospermum sp.
1505002	Batrachospermum sp. 0A UL NAWQA EJ
1509000	Kylinia rosula Rosenv.
1509001	Kylinia sp.
1510001	Lemanea sp. 0A UL NAWQA EJ
1510002	Lemanea sp.
1518000	Thorea sp.
1540000	Compsopogon sp.
1540001	Compsopogon coeruleus (Balbis) Montagne
1550000	Bangia sp.
1555000	Boldia angustata Deason & Nichols
1555001	Boldia erythrosiphon Herndon
1591000	Phragmonema sp. 0A UL NAWQA EJ
1599001	Unknown Rhodophyte UL NAWQA 1996 TS (resting spore, filament) NAWQA 96 TS
1599002	Unknown Rhodophyte UL NAWQA 1996 TS (filament)
1599003	Unknown Rhodophyte (fragments)
1599004	Unknown Rhodophyte (branched)
1599005	Unknown Rhodophyte coccoid
1599006	Unknown Rhodophyte Florideophycidae (chantransia)
1999000	Unknown alga sp. 1 ANS FWA
1999001	Unknown alga sp. 2 ANS FWA
1999002	Unknown alga flagellate
1999003	Unknown alga flagellate (<10 μ)
1999004	Unknown alga flagellate (<5 μ)
1999006	Unknown alga coccoid (3-5 μ)
1999007	Unknown alga sp.
1999008	Unknown alga filament
1999009	Unknown alga coccoid
1999010	Unknown alga sp. 1 ANS LAP
1999011	Unknown alga parenchymatous form
1999012	Unknown alga flagellate (5-10 μ)
1999013	Unknown alga flagellate (>10 μ)
1999016	Unknown alga sp. 0A UL NAWQA EJ XAFBME0A
1999017	Unknown alga sp. D UL NAWQA TS (unkn triangle shape)
1999018	Unknown alga UL NAWQA TS (golden triangle)
1999019	Unknown alga sp. 1 UL NAWQA TS
1999020	Unknown alga sp. 2 UL NAWQA TS
1999021	Unknown alga sp. 3 UL NAWQA TS
1999022	Unknown alga sp. 4 UL NAWQA TS

naded id	Taxon Name
1999023	Unknown alga sp. 5 UL NAWQA TS
1999024	Unknown alga sp. 6 UL NAWQA TS
1999025	Unknown alga sp. A UL NAWQA TS (unkn triangle shape)
1999026	Unknown alga sp. C UL NAWQA TS (unkn triangle shape)
1999027	Unknown alga UL NAWQA 1996 TS (forked form) NAWQA 96 TS
1999028	Unknown alga sp. B UL NAWQA TS (unkn triangle shape)
1999029	Unknown alga sp. 1 UM NAA 0072B
1999030	Unknown alga sp. 2 UM NAA
1999031	Unknown alga sp. 1 NAA 0072B (coccooid)
1999032	Unknown alga sp. 1 UM NAA (coccooid oval)
1999033	Unknown alga sp. 2 UM NAA (coccooid oval)

Appendix E

2001-Start NAWQA Non-Diatom Algae Taxonomic Changes

Original Taxon ID & Name	Currently Used Taxon ID & Name	Remarks
1292000: Rhodomonas sp.	1290001: Pyrenomonas sp	Updated taxonomy
1396000: Glenodinium sp.	1456004: Peridiniopsis sp.	Standardized source; Glenodinium is an invalid genus
1396001: Glenodinium penardiforme (Lindemann) Schiller	1456002: Peridiniopsis penardii (Lemmermann) Bourrelly	Standardized source; Glenodinium is an invalid genus
1396002: Glenodinium pulvisculus (Ehrenberg) Stein	1371001: Dinosphaera palustris (Lemmermann) Kofoid & Michener	Standardized source; Glenodinium is an invalid genus
1396003: Glenodinium borgei (Lemmermann) Schiller	1456001: Peridiniopsis borgei Lemmermann	Standardized source; Glenodinium is an invalid genus
1396004: Glenodinium palustre (Lemmermann) Schiller	1371001: Dinosphaera palustris (Lemmermann) Kofoid & Michener	Standardized source; Glenodinium is an invalid genus
1396005: Glenodinium gymnodinium Penard	1456003: Peridiniopsis polonicum (Woloszyńska) Bourrelly	Standardized source; Glenodinium is an invalid genus
1396007: Glenodinium sanguineum Marchesoni	1480001: Woloszyńska coronata (Woloszyńska) Thompson	Standardized source; Glenodinium is an invalid genus
1502000: Audouinella violacea Kützing	1599006: Unknown Rhodophyte Batrachospermales(Chantransia)	Standardized lumped group; genera can not be determined
1502001: Audouinella sp.	1599006: Unknown Rhodophyte Batrachospermales(Chantransia)	Standardized lumped group; genera can not be determined
1502003: Audouinella tenella (Skuja) Papenfuss	1599006: Unknown Rhodophyte Batrachospermales(Chantransia)	Standardized lumped group; genera can not be determined
1502004: Audouinella sp. UM 1996 UTEN NA	1599006: Unknown Rhodophyte Florideophycidae (Chantransia)	Standardized lumped group; genera can not be determined
316063: Closterium ehrenbergii var. malinvernianum (DeNotaris) Rabenhorst	316032: Closterium ehrenbergii var. malinvernianum (DeNotaris) Rabenhorst	spelling error, duplicate
327047: Cosmarium schliephackeanum Grunow	327197: Cosmarium pygmaeum Archer	Standardized source
335000: Crucigeniella crucifera (Wolle) Komárek	328001: Crucigenia crucifera (Wolle) Collins	Probably will be changed back
335001: Crucigeniella rectangularis (Nägeli) Komárek	328005: Crucigenia rectangularis (Braun) Gay	Probably will be changed back
426009: Lagerheimia spp.	426004: Lagerheimia sp.	Correction (form)

Original Taxon ID & Name	Currently Used Taxon ID & Name	Remarks
450005: <i>Netrium interruptum</i> (Brébisson) Lütkemüller	450001: <i>Netrium interruptum</i> (Brébisson) Lütkemüller	duplicate, spelling error
467016: <i>Pediastrum boryanum</i> var. <i>longecorne</i> Raciborski	467014: <i>Pediastrum boryanum</i> var. <i>longicorne</i> Raciborski	duplicate, spelling error
467024: <i>Pediastrum simplex</i> var. <i>doudenarium</i> (Bailey) Rabenhorst	467012: <i>Pediastrum simplex</i> var. <i>duodenarium</i> (Bailey) Rabenhorst	duplicate, spelling error
467026: <i>Pediastrum tetras</i> var. <i>tetradon</i> (Corda) Rabenhorst	467011: <i>Pediastrum tetras</i> var. <i>tetraodon</i> (Corda) Rabenhorst	duplicate, spelling error
510132: <i>Scenedesmus bijuga</i> var. <i>alterans</i> (Reinsch) Hansgirg	510022: <i>Scenedesmus bijuga</i> var. <i>alternans</i> (Reinsch) Hansgirg	duplicate, spelling error
538007: <i>Staurastrum orbiculare</i> Ralfs	538004: <i>Staurastrum orbiculare</i> (Ehrenberg) Ralfs	duplicate
799024: Unknown Chlorophyte Chlorophyta Colonial, coccoid	799019: Unknown Chlorophyte colonial coccoid	Standardized form
799025: Unknown Chlorophyte Chlorophyta Filamentous	799004: Unknown Chlorophyte filament	Standardized form
801000: <i>Agmenellum quadruplicatum</i> (Meneghini) Brébisson	875002: <i>Merismopedia punctata</i> Meyen	Updated taxonomy
801001: <i>Agmenellum thermale</i> (Kützing) Drouet & Daily	875011: <i>Merismopedia thermalis</i> Kützing	Updated taxonomy
802000: <i>Amphithrix janthina</i> (Montagne) Bornet and Flahault	852004: <i>Homoeothrix janthina</i> (Bornet et Flahault) Starmach	Updated taxonomy
803007: <i>Anabaena anomala</i> Fritsch	925001: <i>Trichormus anomalus</i> (Fritsch) Komárek & Anagnostidis	Updated taxonomy
803009: <i>Anabaena fertilissima</i> Rao	925002: <i>Trichormus fertilissimus</i> (Rao) Komárek & Anagnostidis	Updated taxonomy
803016: <i>Anabaena naviculoides</i> Fritsch	925003: <i>Trichormus naviculoides</i> (Fritsch) Komárek & Anagnostidis	Updated taxonomy
803017: <i>Anabaena oryzae</i> Fritsch	885010: <i>Nostoc oryzae</i> (Fritsch) Komárek & Anagnostidis	Updated taxonomy
803020: <i>Anabaena variabilis</i> Kützing	925004: <i>Trichormus variabilis</i> (Kützing) Komárek & Anagnostidis	Updated taxonomy
805000: <i>Anacystis montana</i> (Lightf.) Drouet & Daily	842009: <i>Gloeocapsa atrata</i> Kützing	Updated taxonomy

Original Taxon ID & Name	Currently Used Taxon ID & Name	Remarks
805001: <i>Anacystis rupestris</i> Lyngbye	808005: <i>Aphanothece castagnei</i> (Brébisson) Rabenhorst	Updated taxonomy
805002: <i>Anacystis cyanea</i> Drouet & Daily	879000: <i>Microcystis aeruginosa</i> Kützing	Updated taxonomy
805003: <i>Anacystis diminuta</i> (Kützing) Drouet & Daily	820007: <i>Chroococcus turgidus</i> (Kützing) Nägeli	Updated taxonomy
805004: <i>Anacystis marina</i> (Hansgirg) Drouet & Daily	807012: <i>Aphanocapsa marina</i> Hansgirg	Updated taxonomy
805005: <i>Anacystis thermalis</i> (Meneghini) Drouet & Daily	807014: <i>Aphanocapsa thermalis</i> Brüger	Updated taxonomy
805006: <i>Anacystis thermalis</i> var. <i>major</i> (Lagerheim) Drouet & Daily	820005: <i>Chroococcus limneticus</i> Lemmermann	Updated taxonomy
807000: <i>Aphanocapsa pulchra</i> (Kützing) Rabenhorst	879015: <i>Microcystis smithii</i> Komárek & Anagnostidis	Updated taxonomy
807006: <i>Aphanocapsa endolithica</i> Erceg.	807002: <i>Aphanocapsa rivularis</i> (Carm.) Rabenhorst	Updated taxonomy
807008: <i>Aphanocapsa roeseana</i> deBary	879014: <i>Microcystis roeseana</i> (De Bary) Elenkin	Updated taxonomy
807009: <i>Aphanocapsa elachista</i> var. <i>planctonica</i> GM Smith	807013: <i>Aphanocapsa planctonica</i> (GM Smith) Komárek & Anagnostidis	Updated taxonomy
819002: <i>Chamaesiphon regularis</i> (Fritsch) Geitler	819008: <i>Chamaesiphon britannicus</i> (Kützing ex Gomont) Komárek & Anagnostidis	Updated taxonomy
820012: <i>Chroococcus limneticus</i> var. <i>subsalsus</i> Lemmermann	820003: <i>Chroococcus dispersus</i> (Keissler) Lemmermann	Updated taxonomy
820018: <i>Chroococcus limneticus</i> var. <i>distans</i> GM Smith	820022: <i>Chroococcus distans</i> (GM Smith) Komárková-Legnerová	Updated taxonomy
822001: <i>Coccochloris stagnina</i> Sprengel	808007: <i>Aphanothece stagnina</i> (Sprengel) Braun	Updated taxonomy
824001: <i>Coelosphaerium naegelianum</i> Unger	945002: <i>Woronichinia naegelianiana</i> (Unger) Elenkin	Updated taxonomy
824004: <i>Coelosphaerium pallidum</i> Lemmermann	927001: <i>Coelomoron</i> sp.	Updated taxonomy
826000: <i>Cyanarcus hamiformis</i> Pascher	948001: Unknown Cyanophyte coccoid	Genus invalid

Original Taxon ID & Name	Currently Used Taxon ID & Name	Remarks
827001: <i>Cyanoptyche gloeocystis</i> fo. <i>minor</i> Pascher	948001: Unknown Cyanophyte coccoid	Genus invalid
830000: <i>Dactylococcopsis raphidioides</i> Hansgirg	902001: <i>Rhabdogloea smithii</i> (Chodat) Komárek	Updated taxonomy
830001: <i>Dactylococcopsis acicularis</i> Lemmermann	881001: <i>Myxobaktron</i> sp.	Updated taxonomy
830002: <i>Dactylococcopsis fascicularis</i> Lemmermann	948001: Unknown Cyanophyte coccoid	Questionable form
835000: <i>Entophysalis rivularis</i> (Kützing) Drouet	835001: <i>Entophysalis</i> sp.	Updated taxonomy
835002: <i>Entophysalis lemaniae</i> (CA Agardh) Drouet & Daily	835001: <i>Entophysalis</i> sp.	Updated taxonomy
835003: <i>Entophysalis lemaniae</i> var. <i>elongata</i> Wille	835001: <i>Entophysalis</i> sp.	Updated taxonomy
840000: <i>Dermocarpa</i> sp.	948046: Unknown Cyanophyte Dermocarpellaceae	Updated taxonomy
842002: <i>Gloeocapsa dermochroa</i> Nägeli	926001: <i>Chondrocystis dermochroa</i> (Nägeli) Komárek & Anagnostidis	Updated taxonomy
842003: <i>Gloeocapsa polydermatica</i> Kützing	842009: <i>Gloeocapsa atrata</i> Kützing	Updated taxonomy
842006: <i>Gloeocapsa pleurocapsoides</i> Nováček	845002: <i>Gloeocapsopsis pleurocapsoides</i> (Nováček) Komárek & Anagnostidis	Updated taxonomy
846000: <i>Gomphosphaeria lacustris</i> Chodat	907001: <i>Snowella lacustris</i> (Chodat) Komárek & Hindák	Updated taxonomy
846003: <i>Gomphosphaeria aponina</i> var. <i>delicatula</i> Virieux	846006: <i>Gomphosphaeria virieuxii</i> Komárek & Hindák	Updated taxonomy
846004: <i>Gomphosphaeria lacustris</i> var. <i>compacta</i> Lemmermann	945001: <i>Woronichinia compacta</i> (Lemmermann) Komárek & Hindák	Updated taxonomy
846005: <i>Gomphosphaeria wichurae</i> Drouet & Daily	945002: <i>Woronichinia naegeliana</i> (Unger) Elenkin	spelling error, duplicate, updated taxonomy
852003: <i>Homoeothrix</i> spp	852003: <i>Homoeothrix</i> spp	Updated taxonomy
853000: <i>Hydrocoleum brebissonii</i> Kützing ex Gomont	809002: <i>Blennothrix brebissonii</i> (Kützing ex Gomont) Anagnostidis & Komárek	Updated taxonomy

Original Taxon ID & Name	Currently Used Taxon ID & Name	Remarks
853001: Hydrocoleum sp.	809001: Blennothrix sp.	Updated taxonomy
860000: Lyngbya diguetii Gomont	890045: Phormidium diguetii (Gomont) Anagnostidis & Komárek	Updated taxonomy
860001: Lyngbya sp. 1 ANS FWA	948047: Unknown Cyanophyte Oscillatoriales (sheath)	Standardized lumped group
860004: Lyngbya martensiana Meneghini	896005: Porphyrosiphon martensianus (Meneghini) Anagnostidis & Komárek	??? Remains in Lyngbya by Wehr & Sheath
860005: Lyngbya lutea (Agardh) Gomont	896004: Porphyrosiphon luteus (Gomont) Anagnostidis & Komárek	Updated taxonomy
860006: Lyngbya epiphytica Hieronymus	862001: Leibleinia epiphytica (Hieronymus) Anagnostidis & Komárek	Updated taxonomy
860009: Lyngbya limnetica Lemmermann	889002: Planktolyngbya subtilis (Lemmermann) Anagnostidis & Komárek	Updated taxonomy
860010: Lyngbya aerugineo-caerulea (Kützing) Gomont	890032: Phormidium aerugineo-caeruleum (Gomont) Anagnostidis & Komárek	Updated taxonomy
860012: Lyngbya contorta Lemmermann	889001: Planktolyngbya contorta (Lemmermann) Anagnostidis & Komárek	Updated taxonomy
860013: Lyngbya taylorii Drouet & Strickland	890065: Phormidium taylori	Updated taxonomy
860018: Lyngbya borgerti Lemmermann	867001: Limnothrix borgertii (Lemmermann) Anagnostidis	Updated taxonomy
860020: Lyngbya chaetomorpha Iyengarand & Desikachary	(Iyengarand & Desikachary) Anagnostidis & Komárek	Updated taxonomy
860021: Lyngbya cryptovaginata Schkorbatow	891002: Planktothrix cryptovaginata Anagnostidis & Komárek	Updated taxonomy
860023: Lyngbya gardneri Geitler	850002: Heteroleibleinia gardneri (Geitler) Anagnostidis & Komárek	Updated taxonomy
860024: Lyngbya gracilis Rabenhorst	862002: Leibleinia gracilis (Rabenhorst) Anagnostidis & Komárek	Updated taxonomy
860026: Lyngbya holdenii Forti	890050: Phormidium holdenii Anagnostidis	Updated taxonomy
860027: Lyngbya infixa Frémy	850003: Heteroleibleinia infixa (Frémy) Anagnostidis & Komárek	Updated taxonomy

Original Taxon ID & Name	Currently Used Taxon ID & Name	Remarks
860028: Lyngbya kuetzingii Schmidle	850004: Heteroleibleinia kuetzingii (Schmidle) Anagnostidis & Komárek	Updated taxonomy
860031: Lyngbya lagerheimii (Moebius) Gomont	863005: Leptolyngbya lagerheimii (Gomont) Anagnostidis & Komárek	Updated taxonomy
860033: Lyngbya mesotrichia Skuja	850005: Heteroleibleinia mesotricha (Skuja) Anagnostidis & Komárek	Updated taxonomy
860035: Lyngbya nordgaardii Wille	862003: Leibleinia nordgaardii (Wille) Anagnostidis & Komárek	Updated taxonomy
860036: Lyngbya ochracea Thuret	863009: Leptolyngbya ochracea (Thuret) Anagnostidis & Komárek	Updated taxonomy
860037: Lyngbya perelegans Lemmermann	863011: Leptolyngbya perelegans (Lemmermann) Anagnostidis & Komárek	Updated taxonomy
860038: Lyngbya polysiphoniae Frémy	863012: Leptolyngbya polysiphoniae (Frémy) Anagnostidis	Updated taxonomy
860039: Lyngbya porphyrosiphoni Frémy	862004: Leibleinia porphyrosiphonis (Frémy) Anagnostidis & Komárek	Updated taxonomy
860040: Lyngbya rivularium Gomont	863014: Leptolyngbya rivulariarum (Gomont) Anagnostidis & Komárek	Updated taxonomy
860041: Lyngbya rubida Frémy	890061: Phormidium rubidum (Frémy) Anagnostidis & Komárek	Updated taxonomy
860047: Lyngbya versicolor (Wartmann) Gomont	896006: Porphyrosiphon versicolor (Gomont) Anagnostidis & Komárek	Updated taxonomy
860049: Lyngbya putealis Montagne	890060: Phormidium puteale (Montagne) Anagnostidis & Komárek	Updated taxonomy
864001: Marssoniella elegans Lemmermann	948001: Unknown Cyanophyte coccoid	Genus invalid
879002: Microcystis incerta Lemmermann	807011: Aphanocapsa incerta (Lemmermann) Cronberg & Komárek	Updated taxonomy
879004: Microcystis elabens (Brébisson) Kützing	808006: Aphanothece elebens (Brébisson) Elenkin	Updated taxonomy
879005: Microcystis holsatica Lemmermann	807010: Aphanocapsa holsatica (Lemmermann) Cronberg & Komárek	Updated taxonomy
879006: Microcystis marginata Kützing	879013: Microcystis novacekii (Komárek) Compère	Updated taxonomy

Original Taxon ID & Name	Currently Used Taxon ID & Name	Remarks
879008: <i>Microcystis pulverea</i> Forti	807001: <i>Aphanocapsa</i> sp.	Updated taxonomy
879009: <i>Microcystis pulverea</i> var. <i>incerta</i> (Lemmermann) Crow	807011: <i>Aphanocapsa incerta</i> (Lemmermann) Cronberg & Komárek	Updated taxonomy
879010: <i>Microcystis stagnalis</i> Lemmermann	807001: <i>Aphanocapsa</i> sp.	Updated taxonomy
879011: <i>Microcystis</i> sp. 1 ANS FWA	879001: <i>Microcystis</i> sp.	No reference specimen
880001: <i>Myxosarcina burmensis</i> Skuja	929001: <i>Cyanosarcina burmensis</i> (Skuja) Kováčik	Updated taxonomy
880002: <i>Myxosarcina spectabilis</i> Geitler	929002: <i>Cyanosarcina spectabilis</i> (Geitler) Kováčik	Updated taxonomy
888000: <i>Oscillatoria terebriformis</i> Agardh ex Gomont	890066: <i>Phormidium terebriforme</i>	Updated taxonomy
888001: <i>Oscillatoria</i> sp. 1 ANS FWA	948048: Unknown Cyanophyte Oscillatoriales (no sheath)	Standardized lumped group
888013: <i>Oscillatoria articulata</i> Gardner	890036: <i>Phormidium articulatum</i>	Updated taxonomy
888014: <i>Oscillatoria splendida</i> Greville	847001: <i>Geitlerinema splendidum</i> (Greville) Anagnostidis	Need Authority, Secondary taxonomic update
888015: <i>Oscillatoria tenuis</i> Agardh ex Gomont	890068: <i>Phormidium tenue</i> (Agardh ex Gomont) Anagnostidis & Komárek	MAKE NEW <i>Phormidium tenue</i>
888018: <i>Oscillatoria prolifica</i> (Greville) Gomont	891003: <i>Planktothrix prolifica</i> (Gomont) Anagnostidis & Komárek	Updated taxonomy
888023: <i>Oscillatoria amoena</i> (Kützing) Gomont	890033: <i>Phormidium amoenum</i> Kützing	Updated taxonomy
888028: <i>Oscillatoria acuminata</i> Gomont	890030: <i>Phormidium acuminatum</i> (Gomont) Anagnostidis & Komárek	Updated taxonomy
888029: <i>Oscillatoria acutissima</i> Kufferath	890031: <i>Phormidium acutissimum</i> (Kufferath) Anagnostidis & Komárek	Updated taxonomy
888030: <i>Oscillatoria agardhii</i> Gomont	891001: <i>Planktothrix agardhii</i> (Gomont) Anagnostidis & Komárek	Updated taxonomy
888032: <i>Oscillatoria amphibia</i> Agardh	890034: <i>Phormidium amphibium</i> (Agardh) Anagnostidis & Komárek	Updated taxonomy

Original Taxon ID & Name	Currently Used Taxon ID & Name	Remarks
888033: <i>Oscillatoria amphigranulata</i> Van Goor	897004: <i>Pseudanabaena amphigranulata</i> (Van Goor) <i>Anagnostidis</i>	Updated taxonomy
888035: <i>Oscillatoria angusta</i> Koppe	861005: <i>Jaaginema metaphyticum</i> Komárek	Updated taxonomy
888036: <i>Oscillatoria angusta</i> var. 3 NAWQA EDJ	861002: <i>Jaaginema</i> sp.	Unknown updated
888038: <i>Oscillatoria animalis</i> fo. <i>tenuior</i> Stockmeyer	847002: <i>Geitlerinema tenuius</i> (Stockmeyer) <i>Anagnostidis</i>	Updated taxonomy
888040: <i>Oscillatoria bornettii</i> Zukal	933001: <i>Tychonema bornettii</i> (Zukal) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888041: <i>Oscillatoria boryana</i> Bory	890037: <i>Phormidium boryanum</i> (Bory) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888042: <i>Oscillatoria brevis</i> Gomont	890038: <i>Phormidium breve</i> (Gomont) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888043: <i>Oscillatoria calcuttensis</i> Biswas	861008: <i>Jaaginema calcuttense</i> (Biswas) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888044: <i>Oscillatoria chalybea</i> Mertens in Juergens	890039: <i>Phormidium chalybeum</i> (Mertens) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888048: <i>Oscillatoria chlorina</i> Brühl et Biswas	890040: <i>Phormidium chlorinum</i> <i>Anagnostidis</i>	Updated taxonomy
888049: <i>Oscillatoria claricentrosa</i> Gardner	890041: <i>Phormidium claricentrosom</i> (Gardner) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888050: <i>Oscillatoria corallinae</i> Gomont	890042: <i>Phormidium corallinae</i> (Gomont) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888051: <i>Oscillatoria cortiana</i> Meneghini ex Gomont	890043: <i>Phormidium cortianum</i> (Meneghini ex Gomont) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888053: <i>Oscillatoria deflexa</i> West & West	890044: <i>Phormidium deflexum</i> (West & West) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888054: <i>Oscillatoria earlei</i> Gardner	861003: <i>Jaaginema earlei</i> (Gardner) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888056: <i>Oscillatoria formosa</i> Bory	890046: <i>Phormidium formosum</i> (Bory) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888060: <i>Oscillatoria granulata</i> Gardner	890047: <i>Phormidium granulatum</i> (Gardner) <i>Anagnostidis</i>	Updated taxonomy

Original Taxon ID & Name	Currently Used Taxon ID & Name	Remarks
888061: <i>Oscillatoria grunowiana</i> Gomont	890048: <i>Phormidium grunowianum</i> (Gomont) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888063: <i>Oscillatoria guttulata</i> Van Goor.	867002: <i>Limnothrix guttulata</i> (Van Goor) <i>Anagnostidis</i>	Updated taxonomy
888064: <i>Oscillatoria hamelii</i> Frémy	890049: <i>Phormidium hamelii</i> (Frémy) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888067: <i>Oscillatoria jasorvensis</i> Vouk	890051: <i>Phormidium jasorvense</i> (Vouk) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888068: <i>Oscillatoria koettlitzii</i> Fritsch	890052: <i>Phormidium koettlitzii</i> (Fritsch) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888069: <i>Oscillatoria laete-virens</i> Gomont	890053: <i>Phormidium laetevirens laetevirens</i> (Gomont) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888071: <i>Oscillatoria lemmermannii</i> <i>Woloszyńska</i>	861004: <i>Jaaginema lemmermannii</i> (<i>Woloszyńska</i>) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888073: <i>Oscillatoria meslinii</i> Frémy	890054: <i>Phormidium meslinii</i> (Frémy) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888074: <i>Oscillatoria minima</i> Gicklhorn	861006: <i>Jaaginema minimum</i> (Gicklhorn) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888075: <i>Oscillatoria minnesotensis</i> Tilden	890017: <i>Phormidium minnesotense</i> (Tilden) Drouet	Updated taxonomy
888076: <i>Oscillatoria nigra</i> Vaucher	890056: <i>Phormidium nigrum</i> (Vaucher) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888077: <i>Oscillatoria nigroviridis</i> Thwaites	890055: <i>Phormidium nigro-viride</i> (Thwaites ex Gomont) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888079: <i>Oscillatoria ornata</i> Kützing	890057: <i>Phormidium ornatum</i> (Kützing) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888080: <i>Oscillatoria paucigranata</i> Brühl & Biswas	890058: <i>Phormidium paucigranatum</i> (Brühl & Biswas) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888082: <i>Oscillatoria planctonica</i> Woloszyńska	867003: <i>Limnothrix planctonica</i> (Woloszyńska) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888083: <i>Oscillatoria priestleyi</i> West & West	890059: <i>Phormidium pseudopriestleyi</i> <i>Anagnostidis</i> & Komárek	Updated taxonomy
888085: <i>Oscillatoria pseudogeminata</i> Schmid	861007: <i>Jaaginema pseudogeminatum</i> (Schmidle) <i>Anagnostidis</i> & Komárek	Updated taxonomy

Original Taxon ID & Name	Currently Used Taxon ID & Name	Remarks
888086: <i>Oscillatoria pseudogeminata</i> var. <i>unigranulata</i> Biswas	861011: <i>Jaaginema unigranulatum</i> (Biswas) <i>Anagnostidis</i>	Updated taxonomy
888087: <i>Oscillatoria quadripunctulata</i> Brühl et Biswas	861009: <i>Jaaginema quadripunctulatum</i> (Brühl et Biswas) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888090: <i>Oscillatoria rubescens</i> Gomont	891004: <i>Planktothrix rubescens</i> (Gomont) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888091: <i>Oscillatoria schultzei</i> Lemmermann	890062: <i>Phormidium schultzei</i> (Lemmermann) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888092: <i>Oscillatoria simplicissima</i> Gomont	890063: <i>Phormidium simplicissimum</i> (Gomont) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888098: <i>Oscillatoria subtilissima</i> Kützing	861010: <i>Jaaginema subtilissima</i> (Kützing) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888099: <i>Oscillatoria subuliformis</i> Thwaites ex Gomont	890064: <i>Phormidium subuliforme</i> (Thwaites ex Gomont) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888100: <i>Oscillatoria tenuis</i> var. <i>levis</i> Gardner	888123: <i>Oscillatoria laevis</i> (Gardner) <i>Anagnostidis</i>	Updated taxonomy
888105: <i>Oscillatoria willei</i> Gardner emend. Drouet	890067: <i>Phormidium willei</i> (Gardner emend. Drouet) <i>Anagnostidis</i> & Komárek	Updated taxonomy
888110: <i>Oscillatoria animalis</i> Agardh	890035: <i>Phormidium animale</i> (Agardh) <i>Anagnostidis</i> & Komárek	Updated taxonomy
890004: <i>Phormidium angustissimum</i> West & West	863001: <i>Leptolyngbya angustissima</i> (West & West) <i>Anagnostidis</i> & Komárek	Updated taxonomy
890006: <i>Phormidium antarcticum</i> West & West	863002: <i>Leptolyngbya antarctica</i> (West & West) <i>Anagnostidis</i> & Komárek	Updated taxonomy
890009: <i>Phormidium faveolarum</i> Rabenhorst ex Gomont	863003: <i>Leptolyngbya foveolarum</i> (Rabenhorst ex Gomont) <i>Anagnostidis</i> & Komárek	Updated taxonomy
890012: <i>Phormidium fragile</i> Gomont	863004: <i>Leptolyngbya fragilis</i> (Gomont) <i>Anagnostidis</i> & Komárek	Updated taxonomy
890013: <i>Phormidium frigidum</i> Fritsch	897005: <i>Pseudanabaena frigida</i> (Fritsch) <i>Anagnostidis</i>	Updated taxonomy
890015: <i>Phormidium laminosum</i> Gomont	863006: <i>Leptolyngbya laminosa</i> (Gomont) <i>Anagnostidis</i> & Komárek	Updated taxonomy
890016: <i>Phormidium microtomum</i> Skuja	860058: <i>Lyngbya microtoma</i> (Skuja) <i>Anagnostidis</i>	Updated taxonomy

Original Taxon ID & Name	Currently Used Taxon ID & Name	Remarks
890018: Phormidium mucicola Huber-Pestalozzi & Naumann	897006: Pseudanabaena mucicola (Naumann et Huber-Pestalozzi) Schwabe	Updated taxonomy
890019: Phormidium mucosum Gardner	863007: Leptolyngbya mucosa (Gardner) Anagnostidis & Komárek	Updated taxonomy
890020: Phormidium orientale West	863010: Leptolyngbya orientalis (West & West) Anagnostidis & Komárek	Updated taxonomy
890021: Phormidium purpurascens Gomont	863013: Leptolyngbya purpurascens (Gomont) Anagnostidis & Komárek	Updated taxonomy
890024: Phormidium tenue Gomont	863015: Leptolyngbya tenuis (Gomont) Anagnostidis & Komárek	Updated taxonomy
892001: Plectonema notatum Schmidle	863008: Leptolyngbya notata (Schmidle) Anagnostidis & Komárek	Updated taxonomy
896000: Porphyrosiphon splendidus (Greville) Drouet	847001: Geitlerinema splendidum (Greville) Anagnostidis	Updated Taxonomy
897002: Pseudanabaena schmidlei Jaag	932001: Komvophoron schmidlei (Jaag) Anagnostidis & Komárek	Updated taxonomy
899001: Rhabdoderma gorskii Woloszyńska	899003: Rhabdoderma lineare Schmidle & Lauterborn	Updated taxonomy
899004: Rhabdoderma sigmoidea fo. minor Moore & Carter	914005: Synechococcus sigmoideus (Moore & Carter) Komárek	Updated taxonomy
910001: Stigonema dendroideum Frémy	931001: Hyphomorpha dendroidea (Frémy) Anagnostidis & Komárek	Updated taxonomy
914000: Synechococcus aeruginosus Nägeli	930001: Cyanothece aeruginosa (Nägeli) Komárek	Updated taxonomy
914001: Synechococcus cedrorum Sauvageau	928001: Cyanobacterium cedrorum (Sauvageau) Komárek	Updated taxonomy
914006: Synechococcus major fo. crassior Lagerheim	930002: Cyanothece major (Schröter) Komárek	Updated taxonomy
915004: Synechococcus major var. crassior Lagerheim	930002: Cyanothece major (Schröter) Komárek	Duplicate, Updated taxonomy
918001: Tetrarcus Ilsteri Skuja	948001: Unknown Cyanophyte coccoid	Unknown genus
941000: Xenococcus kernerii Hansgirg	942001: Xenotholos Spp0A UL Naqwa EJ	Updated taxonomy

Original Taxon ID & Name	Currently Used Taxon ID & Name	Remarks
948038: Unknown Cyanophyte branching filament	948034: Unknown Cyanophyte (branching filament)	Standardized form
970017: Euglena pisciformis Klebs	970003: Euglena agilis Carter	Standardized source
970044: Euglena texta (Dujardin) Hübner	984007: Lepocinclis texta Lemmermann	Standardized source
970045: Euglena acus fo. rigida Hübner	970001: Euglena acus Ehrenberg	Standardized source
984013: Lepocinclis sphagnophila Lemmermann	984001: Lepocinclis fusiformis (Carter) Lemmermann	Standardized source
990016: Phacus curvicauda Swirenko	990004: Phacus curvicaudata Swirenko	duplicate, spelling error
990032: Phacus pseudoswirenkoi Prescott	990041: Phacus onyx Pochman	Standardized source
995021: Trachelomonas schauinslandii Lemmermann	993018: Strombomonas schauinslandii (Lemmermann) Deflandre	Updated taxonomy
995022: Trachelomonas girardiana (Playfair) Deflandre	993017: Strombomonas girardiana (Playfair) Deflandre	Updated taxonomy
995023: Trachelomonas gibberosa Playfair	993008: Strombomonas gibberosa (Playfair) Deflandre	Updated taxonomy
995041: Trachelomonas curta De Cunha emend. Deflandre	995083: Trachelomonas volvocina var. compressa Drezepolski	Updated taxonomy
995065: Trachelomonas scrabra Playfair	995018: Trachelomonas lismorensis Playfair	duplicate, spelling error
995080: Trachelomonas deflandrei (Roll) Deflandre	993016: Strombomonas deflandrei (Roll) Deflandre	Updated taxonomy