

## **Check-List of The Freshwater Algae of Turkey**

### **Türkiye Tatlı Su Alglerinin Kontrol Listesi**

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#### **Abstract**

The freshwater algae of the lakes, dam lakes, streams, brooks, puddles, thermal springs, marshes of Turkey based on literature records are listed in this study. 179 studies have been carried out by different workers, in which 2030 taxa were identified [(354 Cyanophyceae, 159 Euglonidea, 24 Dinophyceae, one (1) Bangiophyceae, five (5) Florideophyceae, 378 Chlorophyceae, one (1) Pleurastrophyceae, seven (7) Charophyceae *stricto sensu*, eight (8) Euphyceae, 266 Conjugophyceae, five (5) Cryptista, two (2) Fucophyceae, 25 Xanthophyceae, nine (9) Chrysophyceae, four (4) Synurophyceae, 63 Coscinodiscophyceae, 101 Fragilariophyceae, 617 Bacillariophyceae and one (1) Bicoecea]. 18 taxa were given as new record for the freshwater algal flora of Turkey.

**Key words:** algae, freshwater, Turkey

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#### **Introduction**

This check-list of freshwater algae of Turkey is intended to be a catalogue, in which are included the Cyanophyceae, Euglonidea, Dinophyceae, Bangiophyceae, Florideophyceae, Chlorophyceae, Pleurastrophyceae, Charophyceae, Euphyceae, Conjugatophyceae, Cryptista, Fucophyceae, Xanthophyceae, Chrysophyceae, Synurophyceae, Coscinodiscophyceae, Fragilariophyceae, Bacillariophyceae and Bicoecea. The studies have been carried out by a group of Turkish phycologists. A total of 59 stations were studied in the region (Fig. 1). The accepted number of specific and infraspecific taxa of Turkish freshwater algae is 2031 based upon current taxonomy.

Knowledge of Turkish freshwater algae has increased in the last few years. Our primary objective was to take the available pool of information and produce a single list and geographic index for Turkey. However, this list is not intended to be a definitive catalogue.

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The main goal of this work was to standardize the nomenclature as far as possible, reconciling the numerous taxonomic and nomenclatural divergencies among different local studies. This check-list will be of biogeographical interest because it details the distribution of each species in Turkey.

## Material and Methods

The list is based on literature records. Names of taxa are given with their authors, but publication dates are not specified. Species are arranged alphabetically. When a specific or infraspecific taxon is recorded under a synonym or misapplied name, it is given in roman (not italic and bold) below the current name. The current names are given in bold and italic. Each research station was numbered and subsequent studies at the same stations are considered under the same number (Table 1).

Table 1. List and studied stations

1. Akarçay river-basin (Ankara-Kurtboğazi dam lake, Aykulu & Obalı 1981)
2. Akarçay river-basin (Ankara-ODTU Oksidation ponds, Obalı 1982, 1982)
3. Gediz river-basin (Göl Marmara, Cirik, S 1978, 1981, 1994; Cirik-Altındağ 1982, 1983a,b; 1984; Demirköprü dam lake, Gezerler ve diğ. 1999)
4. Sakarya river-basin (Ankara-Çubuk - I dam lake, Gönüloğlu 1985b; Gönüloğlu & Aykulu 1984)
5. Konya closed river-basin (Konya-Meram Çayı, Yıldız 1984a,b; 1985b)
6. Sakarya river-basin (Ankara-Beytepe and Alap ponds, Dere 1989; Ünal 1984)
7. Sakarya river-basin (Ankara-Mogan lake, Obalı 1984; Obalı *et al.*, 1989)
8. Fırat river-basin (Köprüköy, Altuner & Pabuççu 1993, 1994; Tekederesi (Palandöken) pond- Gürbüz 2000; Gürbüz & Altuner 2000), East Blacksea river-basin (Yedigöller, Şahin 2002), Çoruh river-basin (Tortum lake, Altuner 1984; Altuner & Aykulu 1987); Aras river-basin (Porsuk pond, Gürbüz *et al.* 2002a,b; Demirdöven Dam, Kıvrak & Gürbüz 2005)
9. Konya closed river-basin (Altınapa dam lake, Yıldız 1985a, 1986a,b, 1987c)
10. Sakarya river-basin (Ankara-Bayındır dam lake, Gönüloğlu 1985a, 1987)
11. Akarçay river-basin (Karamuk lake, Gönüloğlu & Obalı 1986; Şen *et al.*, 1994)
12. Sakarya river-basin (Sakarya river and Sarıyar Dam Reservoir, Atıcı 2002; Atıcı & Yıldız 1996; Yıldız 1987a,b; Aykulu *et al.* 1999; Poyrazlar and Taşkırsı lakes Yardımcı, Temel 2000)
13. Kızılırmak river-basin (Sultan Sazlığı, Özemesi 1987, Akbulut 2003)
14. Aras river-basin (Aras river, Altuner 1988; Çıldır Lake-Ardahan, Akbulut & Yıldız 2002)
15. North Aegean river-basin (Aysel *et al.*, 1985-86; Gezerler 1986; Gezerler-Şipal *et al.*, 1996), Gediz river-basin (Cirik & Cirik 1990), Küçük Menderes river-basin (Aysel 1985-86a,b, Aysel *et al.*, 1990, 1993, 1998a,b,c,d, 2000 (in press), 2001, 2002a,b; Erener *et al.*, 1995; Gezerler-Şipal *et al.*, 1992, 1995; Kolaylı & Güner 1988; Sukatar & Güner 1988; Skuja 1937)

16. Fırat river-basin (Elazığ, Şen *et al.*, 1995; Keban dam, Çetin & Şen 1998; Malatya-Orduzu, Çetin & Şen 2004), Dicle river-basin (Elazığ, Şen 1988a; Şen *et al.*, 1999, Devegeçidi dam lake, Baykal *et al.*, 2004).
17. Dicle river-basin (Elazığ-Kırkgözeler, Şen & Aksakal 1988)
18. East Mediterranean river-basin (Cennet cave, Şen 1988b, Mersin/Aydıncık-Soğuksu, Aysel *et al.*, 1992)
19. Kızılırmak river-basin (Sivas-Hafik lake, Kılınç & Dere 1988; Kılınç 1998; Tödürge, Kılınç & Sıvacı 2001)
20. Büyük Menderes river-basin (Aydın/Muğla-Bafa lake, Cirik *et al.*, 1989, 1992)
21. Küçük Menderes river-basin (İzmir/ Bozdağ-Gölcük, Cirik & Cirik 1989b)
22. Fırat river-basin (Karasu-Fırat river, Altuner, Gürbüz 1988, 1989, 1990a, 1991)
23. Fırat river-basin (Erzincan-Tercan dam lake, Altuner, Gürbüz 1990b, 1994, 1996)
24. Yeşil İrmak river-basin (Samsun- Hasan Uğurlu dam lake, Gönüloğlu & Obalı 1998), Kızılırmak river-basin (Samsun-Bafra fish lakes Gönüloğlu & Çomak 1990, 1992a,b; 1993a,b; Gönüloğlu 1993),
25. Kızılırmak river-basin (Kızılırmak river, Dere & Sıvacı 1994; Hasbenli & Yıldız 1993; Yıldız & Özkıran 1991)
26. Kızılırmak river-basin (Kırşehir-Seyfe Gölü, Elmacı & Obalı 1992)
27. Kızılırmak river-basin (Samsun-Incesu brook, Gönüloğlu & Arslan 1992)
28. East Blacksea river-basin (Şahin 1992, 1993, 1994, 1998a,b, 2000, 2001, 2003; Şahin & Gönüloğlu 1997; Kolaylı *et al.*, 1996, Kara & Şahin 2001)
29. Sakarya river-basin (Ankara-Çubuk river, Yıldız & Özkıran 1994)
30. West Blacksea river-basin (Sinop-Sinop peninsula, Öztürk 1995; Öztürk & Gönüloğlu 1995; Öztürk *et al.*, 1995b,c)
31. West Blacksea river-basin (Sinop-Sarıkuş lake, Öztürk 1994; Öztürk *et al.*, 1995a)
32. Gediz river-basin (İzmir/Menemen-Sazlıgöl, Aysel *et al.*, 1987)
33. Küçük Menderes river-basin (İzmir-Çandarlı, Aysel *et al.*, 1988)
34. Antalya river-basin (Antalya, Skuja 1937; Vardar & Güner 1972)
35. Gediz river-basin (İzmir-Karagöl, Cirik & Cirik 1989a; Güner 1969)
36. Büyük Menderes river-basin (Denizli, Güner 1966; Skuja 1937)
37. Susurluk river-basin (Bandırma-Kuş lake and around, Güner *et al.*, 1987)
38. Van closed river-basin (Van lake, Öztürk 1957; Gessner 1957)
39. West Blacksea river-basin (Zonguldak-İlksu Thermalwater, Aysel *et al.*, 1992)
40. Susurluk river-basin (Bandırma/Kuşgözü-Akıntıdere, Aysel *et al.*, 1995; Gezerler-Şipal 1992)
41. Konya closed river-basin (Konya, Cirik *et al.* 1991; Hotamış lake, Demirsoy 1996; Beşgöz lake, Akköz & Obalı 1998)
42. Susurluk river-basin (Bandırma-Sığırcıdere, Gezerler-Şipal *et al.*, 1994)
43. Küçük Menderes river-basin (İzmir/Gümüldür-Tahtalı dam lake, Balık & Gezerler-Şipal 1995)



44. Anatolian lakes (Sapanca, Beyşehir, Kuş, Ulubat, Işıkli, Eğirdir, Iznik, Salda, Marmara, Çamiçi, Burdur, Acı, Krater, North Tuz, South Tuz, Skuja 1937; Öztüğ 1961; Temel 1992, 1996-1997a; Yıldız *et al.*, 1994, Morkoyunlu *et al.*, 1999; Mitamura *et al.*, 1995; Elmacı & Obalı 1998)
45. Antalya river-basin (Isparta, Öztüğ 1961; Ongan 1970; Conk & Cirik 1991; Ertan *et al.*, 1996; Yüce *et al.*, 1997; Savaş & Cirik 1997; Morkoyunlu & Ertan 1995a,b; Morkoyunlu *et al.*, 1996-1997; Ertan & Morkoyunlu 1998)
46. Fırat river-basin (Elazığ-Cip dam lake, Şen & Çetin 1988)
47. North Aegean river-basin, Gediz river-basin, Küçük Menderes river-basin, Büyük Menderes river-basin and West mediterranean river-basin (Aegean region thermal and mineral water, Güner 1970)
48. Meriç river-basin (Kırklareli, Ünal *et al.*, 2000), Marmara river-basin (Küçükçekmece lake and around, Güner 1974)
49. Sakarya river-basin (Ankara and around, Aykulu *et al.*, 1983 ; Hatip lake, Demirsoy 1996)
50. Yeşilirmak river-basin (Samsun/Suat Uğurlu dam lake, Yazıcı & Gönülo 1994; Kır & Polat 1996-1997)
51. Marmara river-basin (Istanbul-Göksu stream, Albay & Aykulu 1994a,b; Temel 2000; Riva brook, Temel 1994, 2003 )
52. Seyhan river-basin (Adana-Seyhan river, Kandemir - Çevik *et al.*, 1994)
53. Susurluk river-basin (Bursa/Uludağ and Gebirge, Skuja, Nilifer Stream, Dere *et al.*, 2002, Ulubat Lake, Karacaoğlu *et al.*, 2004)
54. Yeşilirmak river-basin (Tokat-Yeşilirmak river, Altuner & Pabuçcu 1996)
55. West Blacksea river-basin (Bolu, Cirik 1997)
56. Marmara river-basin (İstanbul-Büyükçekmece lake, Temel 1996-1997, 1999, 2002)
57. Asi river-basin (Hatay-Asi river, Şen *et al.*, 1997)
58. Kızılırmak river-basin (Samsun/Cernek Gölü-Bafra, İşbakan *et al.*, 1998)
59. Çoruh river-basin (Bayburt-Çoruh river, Atıcı, Obalı 1999)

## Results and Discussion

In this study the freshwater algae of Turkey have been listed. A total of 2030 taxa have been reported . There are 617 taxa of Bacillariophyceae (30,393), 378 taxa of Chlorophyceae (18,620 %), 354 taxa of Cyanophyceae ( 17,438 %), 266 taxa of Conjugophyceae (13,103 %), 159 taxa of Euglonida (7,832 %), 101 taxa of Fragilariophyceae (4,975 %) and 63 taxa of Coscinodiscophyceae (3,104 %). These seven classes comprise 1937 taxa out of 2030 taxa listed ( 95,419 % of the total). Bacillariophyceae, Fragilariophyceae and Coscinodiscophyceae (781 taxa, 38,473 %) belong to Diatomeae dominate the freshwater algae of Turkey. The remaining taxa belong to Xanthophyceae (25), Dinophyceae (24), and Chrysophyceae (9), Euphyceae (8), Charophyceae (7) with relative percentages of 1.232 %, 1,182 %, 0,443 %, 0,395 % and 0,345 % respectively (Table 1).

The taxonomic range developed according to Reviere (1993), Round (1984), Hartley *et al.* (1997), Hoek *et al.* (1988, 1997), Brands (1989-2004) and Guiry & Nic Dhonncha (2005).

Table 1. According to class, taxon number and the present percentage of the freshwater algae of Turkey (TN: Taxon number).

Classis	TN	%
Cyanophyceae	354	17,438
Euglonidea	159	7,832
Dinophyceae	24	1,182
Bangiophyceae	1	0,050
Florideophyceae	5	0,246
Chlorophyceae	378	18,620
Pleurostrophyceae	1	0,050
Charophyceae	7	0,345
Euphyceae	8	0,395
Conjugophyceae	266	13,103
Cryptista	5	0,247
Fucophyceae	2	0,098
Xanthophyceae	25	1,232
Chrysophyceae	9	0,443
Synurophyceae	4	0,197
Coscinodiscophyceae	63	3,104
Fragilariophyceae	101	4,975
Bacillariophyceae	617	30,393
Bicoecea	1	0,050
Toplam	2030	100

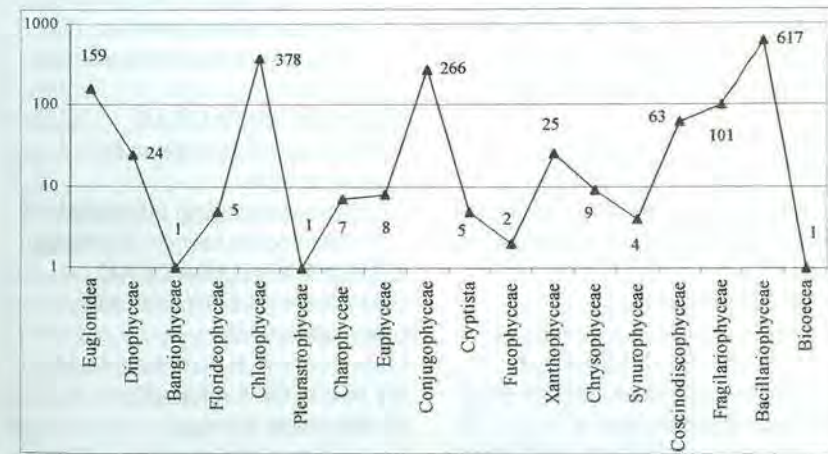


Figure 2. Graphical position and taxon number of the freshwater algae of Turkey according to class



**CYANOPHYTA**

[=CYANOBACTERIA]

**CYANOPHYCEAE****CHROOCOCCALES****CHAMAESIPHONACEAE***Chamaesiphon* A. Braun & Grunow*C. minutus* (Rostafinski) Lemmermann; 15**CHROOCOCCACEAE***Chroococcus* Nägeli*C. sp.*; 8,28,45*C. dimidatus* (Kützing) Nägeli 3,5,9-11,15,16,18,19,24,30,31,40,42-44,59

[=C. turgidus (Kützing) Nägeli]

*C. dispersus* (Keissler) Lemmermann; 1,3,7-9,11,15,16,19,22-24,28,30,41,44,45,53,59[=C. limneticus var. subsalsus Lemmermann, *C. minor* var. dispersus Keissler, *Gloeocapsa minor* f. dispersa (Keissler) Hollerbach]*C. distans* (G.M. Smith) Komarkova-Legnerova & Cronberg; 3,19,24

[=C. limneticus var. distans G.M. Smith]

*C. giganteus* W. West; 7,25*C. gomontii* Nygaard; 24*C. limneticus* Lemmermannvar. *limneticus*; 3,7,8,11,15,20,21,

23,24,28,31,41,43-45,53,58

var. *elegans* G.M. Smith; 24*C. macrococcus* (Kützing) Rabenhorst; 6*C. minimus* (Keissl.) Lemmermann; 15,19,28,41,58,59

[=C. dispersus var. minor G.M. Smith]

*C. minor* (Kützing) Nägeli; 4,6,9,15,16,19,43,47,53*C. minutus* (Kützing) Nägelivar. *minutus*; 3,4,6,15,16,19,22-24,30,31,32,35,36,41,43,45,47,58var. *thermalis* Copeland; 39*C. oblitteratus* Richter; 39

[=C. minutus var. oblitteratus (Richter) Hansgrig]

*C. purpureus* Snow; 41*C. thermalis* (Meneghini) Nägeli; 39

[=C. turgidus var. thermalis (Meneghini) Rabenhorst]

*C. turgidus* (Kützing) Nägeli var. *maximus* Nygaard; 10,24,41*C. turicensis* (Nägeli) Hansgrig; 15,20*C. varius* A. Braun var. *varius*; 19,37,41,59f. *samoensis* Wille; 6*C. westii* Boyle-Petersen.; 15,18**Cyanosarcina** Kováčik*C. spectabilis* (Geitler) Kováčik; 15,55

[=Myxosarcina spectabilis Geitler]

**Dactylococcopsis** Hansgrig*D. acicularis* Lemmermann; 12,15,16,19*D. fascicularis* Lemmermann; 4,12,19*D. raphidioides* Hansgrig; 15,19,24**Gloeocapsopsis** Geitler ex Komárek*G. magma* (Brébisson) Komárek & Anagnostidis; 15,39,43,45

[=Gloeocapsa magma (Brébisson) Kützing]

*G. pleurocapsoides* (Novacek) Komárek & Anagnostidis; 15

[=Gloeocapsa pleurocapsoides Novacek]

**DERMOCARPACEAE****Dermocarpa** P.L. Crouan & H.M. Crouan*D. kernerii* (Hansgirg) Hansgirg; 15

[=Xenococcus kernerii Hansgrig]

**ENTOPHYSALIDACEAE****ENTOPHYSALIDOIDEAE****Chlorogloea** Wille*C. microcystoides* Geitler; 15,36**HYDROCOCCACEAE****Hydrococcus** Kützing*H. rivularis* Kützing; 15**Placoma** Schousboe ex Bornet & Thuret*P. vesiculosa* Schousboe ex Bornet & Thuret; 15**Tetrapedia** Reinsch*T. reinschiana* Archer; 13**HYELLACEAE****Pleurocapsa** Thuret in Hauck*P. concharum* Hansgrig; 59**MERISMOPEDIACEAE****MERISMOPEDIOIDEAE****Aphanocapsa** Nägeli*A. bififormis* A. Braun;

15,21,23,41,42,47,58

[=Microcystis bififormis (A. Braun) Bourrelly]

*A. delicatissima* W. West & G. S. West; 3,35,41,53

[=Microcystis pulvere f. delicatissima (W. West &amp; G.S. West) Elenkin]

*A. elachista* W. West & G.S. West var. *elastica*; 15,16,19,40,41,53,55[=A. conferta (W. West & G.S. West) Komarova-Legnerova & Cronberg, *A. elachista* f. conferta W. West & G. S. West,*A. planctonica* (G.M. Smith) Komárek & Anagnostidis, *A. elachista* var. planctonica G. M. Smith, *Microcystis pulvere f. elachista* (W. West & G. S. West) Elenkin]*A. grevillei* (Hassall) Rabenhorst; 3,15,16

[=Microcystis grevillei (Hassall) Elenkin]

*A. incerta* (Lemmermann) Cronberg & Komárek; 1,3,8,11,19,21,35,41

[=Microcystis incerta (Lemmermann) Lemmermann]

*A. littoralis* Hansgrig; 15*A. muscicola* (Meneghini) Wille; 39*A. parasitica* (Kützing) Komárek & Anagnostidis; 37

[=Microcystis parasitica Kützing]

*A. parietina* Naegel.; 15,45

[=A. virescens (Hassall) Rabenhorst]

*A. rivularis* (Charmicheal)

Rabenhorst; 8,24,53

[=A. anodontae Hansgirg, *A. endolithica* Ercegovic, *A. endolithica* var. rivulorum Geitler, *Microcystis anodontae* (Hansgirg) Elenkin, *M. calciphila* Schwabe, *M. anodontae* var. rivulorum (Geitler) Kann]*A. thermalis* Brugger; 39,47**Holopedia** Lagerheim*H. irregularis* Lagerheim; 16,41**Merismopedia** Meyen*M. sp.*; 25,28,45*M. convoluta* Brébisson; 12*M. elegans* A. Braun ex Kützing; 3,8,10,15,16,20,24,28,36,44,55,58*M. glauca* (Ehrenberg) Kützing; 3,7,8,10-13,15,22,24,25,27,28,35,36,40,43,44,53,56,59*M. punctata* Meyen; 4-7,9,11,15,16,19,20,22-24,27,30,31,35,36,39,44,45,53*M. tenuissima* Lemmermann; 4-7,9,12,13,15,16,19,20,24,31,35,40,44,50,53,58*M. trolleri* Bachmann; 41**Microcrocis** Richter*M. geminata* (Lagerheim) Geitler; 16[=Microcrocis geminata (Lagerheim) Geitler, *M. dietelii* P. Richter, *Holopedium dietelii* (Richter) Migula, *Merismopedia geminata* Lagerheim, *Holopedia geminata* (Lagerheim) Lagerheim]**Synechocystis** Sauvageau*S. crassa* Woronichin; 15*S. endobiotica* (Elenkin & Hollerbach) Elenkin; 16,19,41

[=Synechococcus endobioticus]



Elenkin & Hollerbach,  
*Aphanocapsa endophytica*  
G M Smith]  
*S. minuscula* Woronichin ; 47  
**GOMPHOSPHAERIOIDEAE**  
**Coelomoron** Buell  
*C. pusillum* (Van Goor) Komarek; 41  
[=*Coelosphaerium pusillum*  
Van Goor]  
**Coelosphaerium** Nägeli  
*C. dubium* Grunow in Rabenhorst ; 13  
15,41,53  
*C. goetzei* Schmidle ; 41  
*C. kützingianum* Nägeli ; 41,53  
**Gomphosphaeria** Kützing  
*G. sp.* ; 12  
*G. aponina* Kützing  
var. *aponina* ; 10,11,13,15,16,21,  
24,31,40,41,43,44,50,53,59  
*G. virieuxii* Komarek & Hindák ; 41  
[=*G. aponina* var. *delicatula*  
Virieux]  
**Snowella** Elenkin  
*S. lacustris* (Chodat) Komárek &  
Hindák ; 11,12,15,16,24,35,  
50,51,53,58  
[=*Gomphosphaeria lacustris*  
Chodat]  
**Woronichinia** Elenkin  
*W. compacta* (Lemmermann)  
Komárek & Hindák ; 12  
[=*G. compacta* (Lemmermann)  
Ström, *G. lacustris* var.  
*compacta* Lemmermann,  
*G. lacustris* f. *compacta*  
(Lemmermann) Elenkin]  
*W. nägeliana* (Unger) Elenkin ; 16,41  
[=*Coelosphaerium naegelianum* Unger,  
*Gomphosphaeria nägeliana* (Unger)  
Lemmermann]  
**MICROCYSTACEAE**  
**Chondrocystis** Lemmermann  
*C. dermochroa* (Nägeli) Komarek &  
Anagnostidis ; 15  
[=*Gloeocapsa dermochroa* Nägeli]

**Eucapsis** Clements & Shantz  
*E. minuta* Fritsch ; 24  
**Gloeocapsa** Kützing  
*G. sp.* 45  
*G. alpina* (Nägeli) Brand ; 39  
[=*G. ambigua* Nägeli]  
*G. atrata* Kützing ; 15  
*G. aeruginosa* Kützing ; 53  
*G. biformis* Ercegovic ; 15,40  
*G. decorticans* (A Braun) Richter ; 15  
*G. termophila* (Wood) Claus ; 37,47  
[=*Chroococcus thermophilus*  
Wood]  
*G. gelatinosa* (Meneghini) Kützing  
; 15,39  
*G. polydermatica* Kützing ; 15  
*G. punctata* Nägeli ; 15  
*G. rupestris* Kützing ; 19,39,47,53  
**Microcystis** Kützing  
ex Lemmermann  
*M. sp.* ; 3,28,45  
*M. aeruginosa* (Kützing) Kützing  
var. *aeruginosa* ; 3,4,7,8,10-12,  
15,16,19,21,22,24,28,30,31,  
35,37,40-45,47,50,53,58,59  
*M. flos-aquae* (Wittrock) Kirchn ;  
3,15,24,59  
[=*M. aeruginosa* f. *flos-aquae*  
(Wittrock) Elenkin]  
*M. novacekii* (Komárek) Compère  
; 16  
[=*M. marginata* (Meneghini)  
Kützing, *M. aeruginosa* f.  
*marginata* (Meneghini)  
Elenkin, *Diplocystis novacekii*  
Komárek, *Anacystis montana*  
f. *montana* Drouet & Daily]  
*M. pseudofilamentosa* Crow ; 47  
*M. pulverea* (Food) Forti ; 15  
*M. robusta* Kützing ; 10,15,24,41,50  
*M. smithii* Komarek & Anagnostidis  
; 3,53  
[=*Aphanocapsa pulchra* (Kützing)  
Rabenhorst]  
*M. wesenbergii* (Komárek) Komárek

; 3,15,45  
**SYNECHOCOCCACEAE**  
**APHANOTHECOIDEAE**  
**Aphanothece** Nägeli  
*A. bullosa* (Meneghini) Rabenhorst  
; 15  
*A. caldariorum* Richter ; 41  
[=*A. microspora* (Meneghini)  
Rabenhorst]  
*A. clathrata* W. West & G.S. West  
; 41,53  
*A. endophytica* (W. West & G.S.  
West) Komarkova-Legnerova &  
G. Cronberg ; 16,41  
[=*A. nidulans* var. *endophytica*  
W. West & G. S. West]  
*A. gelatinosa* (Hennings)  
Lemmermann ; 41  
*A. microscopica* Nägeli ; 15,19,41  
*A. nägeli* Wartmann ; 15  
*A. nidulans* Richter  
var. *nidulans* ; 35,41,47,53  
*A. rivularis* (Larm.) Elenkin ; 41  
*A. saxicola* Nägeli ; 15,19,21  
*A. stagnina* (Sprengel) A Braun ; 41  
**Cyanothece** Komárek  
*C. aeruginosa* (Nägeli) Komárek  
; 19  
[=*Synechococcus aeruginosa*  
Nägeli]  
**Gloethece** Nägeli  
*G. linearis* Nägeli ; 15,19  
*G. lunata* W. West & G.S. West ; 15  
*G. rupestris* (Lyngbye) Bornet ; 15  
[=*G. rupestris* var. *maxima* (W. West)  
Hollerbach]  
*G. wittrockiana* Lagerheim ; 59  
**SYNECHOCOCCOIDEAE**  
**Synechococcus** Nägeli  
*S. sp.* ; 41  
*S. elongatus* (Nägeli) Nägeli ; 15,36,47  
**Rhabdogloea** Schröder  
*R. smithii* (R. Chodat & F. Chodat)  
J. Komárek ; 53  
[=*Dactylococcopsis smithii* R. Chodat

& F. Chodat]  
**XENOCOCCACEAE**  
**Myxosarcina** Printz  
*M. concinna* Printz ; 15  
*M. decolorata* (Varma & Mitra)  
Komárek & Anagnostidis ; 15  
[=*Myxosarcina spectabilis* var.  
*decolorata* Geitler]  
**OSCILLATORIALES**  
**BORZIACEAE**  
**Komvophoron** Anagnostidis &  
Komárek  
*K. constrictum* (Szafer) Anagnostidis  
& Komárek ; 15,40,42  
[=*Anabaena constricta* (Szafer)  
Geitler, *Oscillatoria constricta*  
Szafer]  
**GOMONTIELLACEAE**  
**Cyanarcus** Pascher  
*C. hamiformis* Pascher ; 41  
**OSCILLATORIACEAE**  
**Lyngbya** C. Agardh  
*L. sp.* ; 16,24,28,37,45,58  
*L. aestuarii* Liebmann ex Gomont ; 15  
*L. birgei* Smith ; 51  
*L. bourrellyana* Compère ; 3  
*L. circumerata* G.S. West ; 41  
*L. contorta* Lemmermann ; 12,47  
*L. corium* (C. Agardh ex Gomont)  
Hansgrig ; 3,41  
*L. endophytica* Elenkin &  
Hollerbach ; 53  
*L. hieronymusii* Lemmermann ; 11,  
15,24,44  
*L. kuetzingii* (Kützing) Schmidle ; 15  
*L. lagerheimii* (Möbius) Gomont  
; 15,25,36,47  
*L. lauterbornii* (Schmidle)  
Utermohli ; 41  
*L. mucicola* Lemmermann ; 15,36,43  
*L. nordgardii* Wille ; 12  
*L. orientalis* (G.S. West) Compère  
; 59  
*L. pseudospirulina* Geitler ; 41  
*L. retzii* (C. Agardh ex Gomont)



Hansgrig ; 3  
*L. shakletoni* W. West & G.S. West ; 18  
*L. subfusca* (C. Agardh) Cooke ; 3  
*L. valderiae* (Delp.) Cirik ; 3,15,35  
**Oscillatoria** Vaucher ex Gomont  
*O. sp.* ; 15,20,37,41,45,50,53,55,56  
*O. acuminata* Gomont ; 15,39,41  
*O. acutissima* H. Kufferath ; 41  
*O. anguina* (Bory) Gomont ; 44  
*O. articulata* Gardner ; 3,59  
*O. cortiana* Meneghini ex Gomont ; 3,15,36,47  
*O. curviceps* C. Agardh nom. illeg. ; 7,15,24,28,40  
*O. granulata* Gardner ; 3,20,28,53  
*O. hamelii* Frémy ; 3,15  
*O. ionica* Skuja ; 3,15  
*O. iwanoffiana* (Nygaard) Geitler ; 7, 11  
*O. limosa* C. Agardh nom. illeg. ; 4,7,8,12,13,15,16,18,19,22-26, 28,39,40,42-45,50,51,55,59  
*O. minima* Gicklhorn ; 15,16,27,28, 36,53  
*O. mougeotii* Kützing ; 15,53  
*O. oscillarioides* Iltis ; 3  
*O. planktonica* Wol. ; 41,44  
*O. princeps* Vaucher ; 8,15,16,26, 39,40,42,44,51,56,59  
*O. pristleyi* W. West & G.S. West ; 26  
*O. producta* W. West & G.S. West ; 41  
*O. prolifica* (Greville) Gomont ; 6  
*O. putrida* Lemmermann ; 40,42  
*O. quadripunctulata* Bruhl & Biswas var. *quadripunctulata* ; 53  
var. *unigranulata* Singh ; 15  
*O. regelii* Skuja ; 44  
*O. rerorsata* Skuja ; 15  
*O. sancta* (Kützing) Gomont ; 8,15,18,28, 39,43-45,47  
*O. subbrevis* Schmidle ; 8,15,28,45,53  
*O. tenuis* C. Agardh nom. illeg. var. *tenuis* ; 8,12,28,44,53  
var. *natans* Gomont ; 7-9,16,27

var. *tergestina* Kützing ; 2,7,8,11, 15,24,27,28,44,54,58  
**Tychonema** K. Anagnostidis & J. Komárek  
*T. bornetii* (Zukal) Anagnostidis & Komárek ; 59  
[=Oscillatoria bornetii Zukal, Lyngbya bornetii Zukal]  
**PHORMIDIACEAE**  
**MICROCOLEOIDEAE**  
**Microcoleus** Desmazières ex Gomont  
*M. chthonoplastes* (Mertens) Zanardini ex Gomont ; 15  
*M. paludosus* (Kützing) Gomont ; 15  
*M. sociatus* W. West & G.S. West ; 3  
*M. subtorulosus* Gomont ; 39  
**Hydrocoleum** Kützing  
*H. brebissonii* Kützing ex Gomont ; 39  
**PHORMIDIOIDEAE**  
**Phormidium** Kützing  
*P. aerugineo-caerulea* (Gomont) Anagnostidis & Komárek ; 8,28  
[=Lyngbya aerugineo-caerulea Gomont]  
*P. ambiguum* Gomont ; 15,18,25, 36,37,39,47  
*P. amoenum* Kützing ; 8,15,28,36  
[=Oscillatoria amoena (Kützing) Gomont]  
*P. amphibium* (C. Agardh) Anagnostidis & Komárek ; 2-4, 6-11,15,16,24-26,28,34-36, 43,47,53  
[=Oscillatoria amphibia C. Agardh]  
*P. autumnale* C. Agardh ex Gomont ; 15,36  
[=P. uncinatum (C. Agardh) Gomont, P. subsalsum Gomont, Oscillatoria autumnalis C. Agardh, Oscillatoriella autumnalis (C. Agardh) Gaillon]  
*P. breve* (Kützing) Anagnostidis &

Komárek ; 3,11,15,39,43,47  
[=Oscillatoria brevis (Kützing) Gomont, Oscillaria brevis (Kützing) Kützing, Arthrospira brevis (Kützing) Drouet]  
*P. chalybeum* (Mertens) Anagnostidis & Komárek ; 7,11  
[=Oscillatoria chalybea Mertens]  
*P. chalybeum* (West) C. Agardh ; 55  
*P. chlorinum* (Kützing) Umezaki & Watanabe ; 8,15,36  
[=Oscillatoria chlorina Kützing, Oscillaria chlorina Kützing]  
*P. diguetii* (Gomont) Anagnostidis & Komárek ; 41  
[=Lyngbya diguetii Gomont]  
*P. formosum* (Bory de Saint-Vincent) Anagnostidis & Komárek ; 3,4,7-9,15,16,20,22-25,28,30, 31,36,43-45,47,50,51,53,59  
[=Oscillatoria formosa Bory ex Gomont, Oscillaria formosa Bory ex Gomont]  
*P. inundatum* (Kützing) Gomont ; 15  
*P. irriguum* (Kützing ex Gomont) Anagnostidis & Komárek ; 3,8,15,28,41  
[=Oscillatoria irrigua Kützing ex Gomont]  
*P. luridum* (Kützing) Gomont ; 47  
*P. mucicola* Naumann & Huber-Pestalozzi. ; 16,24,41,58  
*P. nigrum* (Vaucher) Anagnostidis & Komárek ; 28  
[=Oscillatoria nigra Vaucher]  
*P. ornatum* (Kützing) Anagnostidis & Komárek var. *ornatum* ; 15  
[=Oscillatoria ornata (Kützing) Gomont, Oscillaria ornata Kützing] var. *crassum* (Rao) comb. nov. ; 39  
[=Oscillatoria ornata var. crassa Rao]  
*P. purpurascens* (Kützing) Gomont ; 35, 36,47  
*P. retzii* (C. Agardh) Gomont ; 15,28  
*P. simplicissimum* (Gomont)

Anagnostidis & Komárek  
var. *simplicissimum* ; 15  
[=Oscillatoria simplicissima Gomont]  
var. *antarticum* (Fritsch) comb. nov. ; 18  
[=Oscillatoria simplicissima var. antartica Fritsch]  
*P. splendens* (Greville) Anagnostidis & Komárek ; 3,8,15,28,39  
[=Oscillatoria splendida Greville, O. leptotricha Kützing]  
*P. subfuscum* Kützing ex Gomont ; 15,28  
*P. subuliforme* (Thwaites ex Gomont) Anagnostidis & Komárek ; 47  
*P. terebriforme* (C. Agardh) Anagnostidis & Komárek ; 15,36, 39,40,42,47  
[=Oscillatoria terebriformis C. Agardh]  
*P. truncatum* Lemmermann ; 47  
*P. valderianum* (Delponte) Gomont ; 15,35,36,39,47  
*P. willei* (N.L. Gardner) Anagnostidis & Komárek ; 15  
[=Oscillatoria willei N.L. Gardner]  
**Planktothrix** Anagnostidis & Komárek  
*P. agardhii* (Gomont) Anagnostidis & Komárek ; 15,24,28  
[=Oscillatoria agardhii Gomont]  
*P. rubescens* (De Candolle ex Gomont) Anagnostidis & Komárek ; 3,16,28,44,50  
[=Oscillatoria rubescens De Candolle ex Gomont]  
**Porphyrosiphon** Kützing ex Gomont  
*P. ceylanicus* (Wille) Anagnostidis & Komárek ; 8  
[=Lyngbya ceylanica Bory]  
*P. martensianus* (Meneghini ex Gomont) Anagnostidis & Komárek ; 8,12,15,30,31,39,47



[=Lyngbya martensiana Meneghini ex Gomont]  
*P. versicolor* Wartmann ; 28,36,47,59  
 [=Lyngbya versicolor (Warthman.) Gomont]  
*Symploca* Kützing ex Gomont  
*S. thermalis* (Kützing) Gomont ; 36  
**PSEUDOANABAENACEAE**  
**HETEROLEIBLEINIOIDEAE**  
*Homoeothrix* (Thuret) Kirchner  
*H. crustacea* Woronichin ; 36  
**LEPTOLYNGBYOIDEAE**  
*Leibleinia* (Gomont) L. Hoffman  
*L. epiphytica* (Hieronymus) Anagnostidis & Komárek ; 41,53  
 [=Lyngbya epiphytica Hieronymus]  
*Leptolyngbya* Anagnostidis & Komárek  
*L. angustissima* (W. West & G.S. West) Anagnostidis & Komárek  
 f. *angustissima* ; 53  
 [=Phormidium angustissimum W. West & G.S. West, Lyngbya angustissima (W. West & G.S. West) A. Iltis]  
 f. *major* (Frémy) *comb. nov.* ; 15  
 [=Phormidium angustissimum f. *major* Frémy]  
*L. foveolarum* (Montagne ex Gomont) Anagnostidis & Komárek ; 3,15,20,25, 41,47,53  
 [=Phormidium foveolarum (Montagne) Gomont, *P. molle* (Kützing) Gomont, *Anabaena mollis* Kützing, Lyngbya foveolarum (Montagne ex Gomont) Hansgrig]  
*L. frigida* (F.E. Fritsch) Anagnostidis & Komárek ; 2  
 [=Phormidium frigidum F.E. Fritsch]  
*L. laminosa* (Gomont) Anagnostidis & Komárek ; 15,39,47  
 [=Phormidium laminosum (C. Agardh) ex Gomont]

*L. notata* (Schmidle) Anagnostidis & Komárek ; 59  
 [=Plectonema notatum Schmidle]  
*L. nostocorum* (Bornet) Anagnostidis & Komárek ; 18,53  
 [=Plectonema nostocorum Bornet]  
*Planktolyngbya* Anagnostidis & Komárek  
*P. subtilis* (G.S. West) Anagnostidis & Komárek ; 12,13,15,20,35,43,41  
 [=P. limnetica (Lemmermann) J. Komárková-Legnerová & G. Cronberg, Lyngbya subtilis W. West, L. limnetica Lemmermann]  
**PSEUDANABAENOIDEAE**  
*Geitlerinema* (Anagnostidis & Komárek) Anagnostidis  
*G. claricentrosom* (Gardner) Anagnostidis ; 15,40,42  
 [=Oscillatoria claricentrosa Gardner]  
*Jaaginema* Anagnostidis & Komárek  
*J. angustissimum* (W. West & G.S. West) Anagnostidis & Komárek ; 36,47,53  
 [=Oscillatoria angustissima W. West & G.S. West]  
*J. geminatum* (Meneghini ex Gomont) Anagnostidis & Komárek  
 var. *geminatum* ; 15,43,47  
 [=Oscillatoria geminata Meneghini ex Gomont]  
 var. *sulphureum* (Strzeszewski) *comb. nov.* ; 15,36  
 [=Oscillatoria geminata var. *sulphurea* Strzeszewski]  
*J. metaphyticum* Komárek ; 44

[Oscillatoria angusta Koppe]  
*J. pseudogeminata* (Schmidle) Anagnostidis & Komárek ; 18, 26,35  
 [=Oscillatoria pseudogeminata Schmidle]  
*J. subtilissimum* (Kützing) Anagnostidis & Komárek ; 15,47  
 [=Oscillatoria subtilissima Kützing]  
*Limnothrix* Meffert  
*L. amphigranulata* (Goor) Meffert ; 41  
 [=Oscillatoria amphigranulata Goor]  
*Pseudanabaena* Lauterborn  
*P. sp.* ; 5,8,9,22,23,41,45  
*P. articulata* Skuja ; 3,24  
*P. catenata* Lauterborn ; 3,15,20, 21,24,30,31,35,37,41,43,45,47,53  
*P. galeata* Böcher ; 36,37,39,47  
*P. lonchoides* Anagnostidis ; 3  
*P. limnetica* (Lemmermann) Komárek ; 4,5,7-10,12,15,16,22-24, 27,28,30,31,41,53,58  
 [=Oscillatoria limnetica Lemmermann, O. splendida var. *limnetica* (Lemmerman) Playfair]  
*Spirocoleus* Möbius  
*S. tenuis* (Meneghini) P. Silva  
 f. *tenuis* ; 2-6,8-12,15,16,18,20, 22-26,36,39,40,42-44, 47,50,51,53,59  
 [=Leptolyngbya tenuis (Gomont) Anagnostidis & Komárek, Phormidium tenue (Meneghini) Gomont, *Anabaena tenuis* Meneghini]  
 f. *cincinatus* (Meneghini) *comb. nov.* ; 15,43  
 [=Phormidium tenue f. *cincinata* Meneghini]  
**SPIRULINOIDEAE**  
*Spirulina* P.J. Turpin ex Gomont  
*S. sp.* ; 15,25,28,49,51

*S. corakiana* Playfair ; 36,39,47  
*S. jeneri* (Stizenberger) Geitler ; 9,11,15,41  
 [=Arthrospira jeneri Stizenberger]  
*S. labyrinthiformis* (Linnaeus) Gomont ; 15,36,41,47  
*S. laxa* G.M. Smith ; 12,53  
*S. laxissima* G.S. West  
 f. *laxissima* ; 13,41,53,59  
 f. *major* Desikachary ; 15,59  
*S. major* Kützing ; 7,11,15,16,22, 24-26,28,31,41,44,51,56,58  
*S. meneghiniana* (Zanardini) Gomont ; 15,26,40,44,42  
*S. miniata* Hauck ; 12  
*S. nordstedtii* Gomont ; 8,9  
*S. platensis* (Nordstedt) Geitler ; 40,41  
 [=Arthrospira platensis (Nordstedt) Gomont, *Spirulina jeneri* var. *platensis* Nordstedt]  
*S. princeps* W. West & G.S. West ; 15,43  
*S. spirulinoides* (Ghose) Geitler ; 41  
*S. subsalsa* Oersted ; 15,35,39, 40-42,47,59  
*S. subtilissima* Kützing ; 15,39,40,47  
**SCHIZOTRICHACEAE**  
*Schizotrix* Kützing ex Gomont  
*S. sp.* ; 22  
*S. lardaceae* (Cesati) Gomont ; 3, 15,39  
**NOSTOCALES**  
**NOSTACACEAE**  
*Anabaena* Bory de Saint-Vincent ex Bornet & Flahault  
*A. sp.* ; 6,8,12,15,22,28,41,45,50  
*A. aequalis* Borge ; 8,16,51  
*A. ambigua* C.B. Rao  
 var. *ambigua* ; 3  
 var. *minor* (Ley.) F.E. Fritsch ; 3,20  
*A. anomala* F.E. Fritsch ; 15  
*A. augustumalis* Schmidle



- var. *augustumalis* ; 40  
**[new record]**  
 var. *incrassata* (Nygaard) Geitler ; 28  
 [=A. *incrassata* Nygaard]  
*A. bergii* Ostenfeld  
 var. *bergii*  
 f. *bergii* ; 20  
 f. *minor* (Kisselev) Kossinskaja ; 20  
 var. *affinis* (Lemmermann) Geitler ; 8,12,16,22,24,28,44,51,53,56,58  
 [=A. *affinis* Lemmermann]  
*A. circinalis* Rabenhorst ex Bornet & Flahault  
 var. *circinalis* ; 8,20,22-24,35,53  
 var. *macrospora* (Wittrock) De Toni ; 12  
*A. contorta* Bachmann ; 15  
*A. cylindrica* Lemmermann ; 16,59  
*A. doliolum* Bharadwaja. ; 15  
*A. flos-aquae* (Lyngbye) Brébisson ex Bornet & Flahault  
 var. *flos-aquae* ; 7,10,15,20,24,28,43  
 var. *intermedia* Woronichin ; 35  
 var. *trelesi* Bornet & Flahault ; 24  
*A. gelatinicola* Ghose ; 15,37  
*A. inaequalis* (Kützing) Bornet & Thuret ; 59  
*A. iyengarii* Bharadwaja ; 3  
*A. naviculoides* F.E. Fritsch ; 15  
*A. planctonica* Brunthaler ; 3,12,15,35,40,42  
 [=A. *limnetica* G.M. Smith, *A. solitaria* f. *planctonica* (Brunthaler) Komárek ]  
*A. pseudoscillatoria* Bory de Saint-Vincent ; 15,39,59  
 [=A. *oscillarioides* Bory ex Bornet & Flahault]  
*A. scheremetievii* Elenkin ; 12,13  
*A. sedowii* Kossinskaja ; 24  
*A. sigmoidea* Nygaard ; 1
- A. smithii* (Komárek) M. Watanabe ; 3  
 [=A. *solitaria* f. *smithii* Komárek]  
*A. sphaerica* Bornet & Flahault  
 var. *sphaerica* ; 15  
 var. *tenuis* G.S. West ; 39  
*A. spiroides* Klebahn ex Komárek  
 f. *spiroides* ; 3,12,15,16,20,21,24,31,35,40,41,50,53,56,58  
 f. *crassa* (Lemmermann) Elenkin ; 3,24  
*A. subcylindrica* Borge ; 8  
*A. torulosa* Lagerheim ex Bornet & Flahault  
 var. *torulosa* ; 15,30,31,39,47  
 var. *tenuis* (Lemmermann) Geitler ; 20  
 [=A. *oscillarioides* var. *tenuis* Lemmermann]  
*A. verrucosa* J.B. Petersen ; 7,15  
*A. viguieri* Denis & Frémy ; 3,44  
*A. wisconsinense* Presscot ; 8  
*A. zinserlingii* Kossinskaja ; 28  
**Anabaenopsis** Woloszyńska  
*A. sp.* ; 56  
*A. cunningtonii* R. Taylor ; 11,24  
*A. elenkinii* V. Miller  
 var. *elenkinii*  
 f. *elenkinii* ; 24  
 f. *kelifii* (Kogar) Jeeji-Bai in Jeeji-Bai, Hegew. & Soeder ; 20  
*A. luzonensis* R. Taylor ; 15  
*A. sircularis* (G.S. West) Woloszyńska et V. Miller  
**Aphanizomenon** A. Morren ex Bornet & Flahault  
*A. sp.* ; 9,45,53  
*A. aphanizomenoides* (Forti) Hortobágyi & Komárek ; 10,15,20,24,58  
 [=Anabaena *aphanizomenoides* Forti]  
*A. flos-aquae* (Linnaeus) Ralfs ex

- Bornet & Flahault  
 var. *flos-aquae*  
 f. *flos-aquae* ; 3,12,15,16,20,24,43  
*A. gracile* Lemmermann ; 3,53  
 [=A. *flos-aquae* f. *gracile* (Lemmermann) Elenkin, *Anabaena flos-aquae* var. *gracile* Lemmermann]  
*A. issatschenkai* (Ussacz) Proshkina Lavkenko ; 3  
**Cylindrospermum** Kützing  
*C. indicum* Rao ; 15  
*C. licheniforme* (Bory) Kützing ex Bornet & Flahault ; 24  
*C. majus* Kützing ; 7,15  
*C. minimum* G.S. West ; 11  
*C. muscicola* Kützing ex Bornet & Flahault ; 15  
*C. stagnale* (Kützing) ex Bornet & Flahault ; 3,15  
*C. trichospermum* Frémy ; 40  
**[new record]**  
**Nodularia** Mertens ex Bornet & Flahault  
*N. harveyana* (Thwaites) Thuret ; 15,24,31  
*N. quadrata* F.E. Fritsch ; 59  
*N. spumigena* Mertens ; 15,24,40,58  
**Nostoc** Vaucher ex Bornet & Flahault  
*N. sp.* ; 6,8,28,50,53  
*N. calcicola* Brébisson ; 15  
*N. carneus* C. Agardh ex Bornet & Flahault ; 15  
*N. commune* Vaucher ; 15,28,54,59  
*N. endophytum* Bornet & Flahault ; 53  
*N. ellipsosporum* Rabenhorst ex Bornet & Flahault ; 15  
*N. linckia* (Roth) Bornet & Flahault ; 15  
*N. muscorum* C. Agardh ; 15,40,42  
*N. paludosum* (Kützing) Bornet & Flahault ; 15,31  
*N. parmelioides* (Kützing) Bornet & Flahault ; 34  
*N. piscinale* Kützing ; 15  
*N. punctiforme* (Kützing) Harriot ; 15,31  
*N. sphaericum* Vaucher ex Bornet & Flahault ; 13,15  
*N. spongiaeforme* (C. Agardh) Bornet & Flahault ; 15,40  
*N. verrucosum* (Vaucher) Bornet & Flahault ; 15,53  
*N. zetterstedii* Areschoug ; 15  
**Raphidiopsis** F.E. Fritsch & M.F. Rich  
*R. sp.* ; 25  
*R. curvata* F.E. Fritsch & M.F. Rich ; 53  
*R. mediterranae* Skuja ; 3  
**Trichormus** (Ralfs ex Bornet & Flahault) Komárek & Anagnostidis  
*T. catenula* (Bornet & Flahault) Komárek & Anagnostidis ; 8  
 [=Anabaena *catenula* (Kützing) Bornet & Flahault, *A. catenula* var. *solitaria* (Klebahn) Geitler, *A. solitaria* Klebahn, *A. solitaria* Brunthaler]  
*T. variabilis* (Kützing) Komárek & Anagnostidis ; 3,13,15,21,43  
 [=Anabaena *variabilis* Kützing ]  
**MICROCHAETACEAE**  
**MICROCHAETOIDEAE**  
**Microchaete** Thuret ex Bornet & Flahault  
*M. diplosiphon* Gomont ex Bornet & Flahault ; 15  
**RIVULARIACEAE**  
**Calothrix** C. Agardh ex Bornet & Flahault  
*C. sp.* ; 45  
*C. contarenii* (Zanard.) Bornet & Flahault ; 40 **[new record]**  
*C. elenkenii* Kossinskaja ; 15  
*C. epiphytica* W. West & G.S. West ; 15  
*C. fusca* (Kützing) Bornet & Flahault ; 15,18,19  
*C. gardnerii* De Toni ; 15  
*C. membranacea* Schmidle ; 15



*C. parietina* (Nägeli) Thuret ; 36  
**Gloeotrichia** J. Agardh  
*G. sp.* ; 16  
*G. echinulata* (J.E. Smith)  
 P.G. Richter ; 3,35,47  
*G. longiarticulata* G.S. West ; 59  
*G. natans* (Hedwig) Rabenhorst ; 44  
*G. pisum* (C. Agardh) Thuret ex  
 Bornet & Flahault ; 7,11,24  
**Isocystis** Borzi ex Bornet & Flahault  
*I. infusionum* (Kützing) Borzi  
 ; 36,47  
*I. pallida* Woronichin ; 47  
**Leptochaete** Borzi  
*L. crustacea* Borzi ; 36  
**Rivularia** C. Agardh  
*R. aquatica* De Wildeman ; 15  
*R. dura* Roth ex Bornet & Flahault  
 ; 13  
**SCYTONEMATACEAE**  
**Plectonema** Thuret ex Gomont  
*P. sp.* ; 53  
**Scytonema** C. Agardh  
*S. bohnerii* Schmidle ; 15  
**STIGONEMALES**  
**FISCHERELLACEAE**  
**Fischerella** (Bornet & Flahault) Gomont  
*F. muscicola* (Thuret) Gomont ; 40  
 [new record]  
**MASTIGOCLADACEAE**  
**Hapalosiphon** Nägeli ex Bornet &  
 Flahault  
*H. aureus* W. West & G.S. West ; 59  
**Mastigocladus** Cohn ex Kirchner  
*M. laminosus* Chon  
 f. *laminosus* ; 15,47  
 f. *anabaenoides* Boye Pet ; 15,47  
 f. *nostocoides* Frémy ; 47  
**EUKARYOTA**  
**PROTOZOA**  
**BICILIATA**  
**EXCAVATA**  
**EUGLENOZOA**  
**PLICOSTOMA**  
**EUGLENOIDEA**

**PETALOMONADIDA**

**Petalomonas** F. Stein  
*P. mediocanellata* F. Stein ; 15  
*P. pusilla* Skuja ; 15  
 [=P. *poosilla* Larsen & Patterson]

**PERANEMIDA**

**Peranema** F. Dujardin  
*P. macromatrix* Conrad ; 15

**EUGLENIDA**

**EUGLENINA**

**ASTASIACEAE**

**Astasia** F. Dujardin  
*A. dangeardii* Lemmermann ; 40  
*A. inflata* F. Dujardin ; 15,40  
*A. variabilis* Skvortzov. ; 40

**COLACIACEAE**

**Colacium** Ehrenberg  
*C. vesiculosum* Ehrenberg ; 3,41

**EUGLENACEAE**

**Euglena** Ehrenberg  
*E. sp.* ; 8,9,15,28,41,51-53  
*E. acuminatus* Stokes ; 4  
*E. acus* Ehrenberg  
 var. *acus* ; 3,4,7,8,10,12,13,15,16,  
 19,24,27,31,44,45,51-53,56,58,59  
 var. *longissima* Deflandre ; 15  
 var. *rigida* E. Huebner ; 24,53  
*E. adhaerens* Matvienko ; 15,40,42  
*E. caudata* E. Huebner ; 15,53  
*E. charkoviensis* Swirenko ; 15,16  
*E. chlamydophora* Mainx ; 15,39,  
 40,42  
*E. clavata* Skuja ; 15,40  
*E. deses* Ehrenberg ; 2,53  
*E. ehrenbergii* G.A. Klebs.  
 var. *ehrenbergii* ; 3,12,44,51,53,56  
 var. *africana* Bourrelly ; 3  
*E. elastica* Prescott ; 4-6,8,9,22,24,  
 27,31,45,53,58  
*E. elongata* Schewiakoff ; 19,25  
*E. gaumei* Allorge & Lefèvre. ;  
 15,40  
*E. geniculata* (F. Schmitz) Dujardin  
 ; 15

*E. gracilis* G.A. Klebs ; 2,4,6,8-12,15,  
 16,19,24,25,27,28,43,45,51,53,58  
*E. hemicromata* Skuja ; 15,27  
*E. lepocinoides* Drezepolski ; 15  
*E. limnophila* Lemmermann ; 50  
*E. lucens* Gunther ; 15  
*E. minuta* Prescott ; 6,16,24,58  
*E. multififormis* Schiller ; 15  
*E. mutabilis* F. Schmitz  
 var. *mutabilis* ; 15,39,40,42  
 var. *lefevrei* Chadef. ; 15  
*E. oxyuris* Schmarda  
 var. *oxyuris* ; 3-7,9,10,12,15,19,24,  
 31,52  
 var. *charkoviensis* Bourrelly ; 24  
 var. *minor* Deflandre ; 3,24  
*E. pascherii* Swirenko ; 40,42  
*E. pisciformis* G.A. Klebs ; 53  
 [=E. *agilis* H.J. Carter]  
*E. platydesma* Skuja ; 15,40,42  
*E. polymorpha* P.A. Dangeard ; 3,8,15,  
 16,24,25,31,52,53,58  
*E. proxima* P.A. Dangeard ; 8,27,53  
*E. pseudoviridis* Chadefaud ; 40,42  
*E. repulsans* J. Schiller ; 15  
*E. rustica* J. Schiller ; 15,24,27,50  
*E. sanguinea* Ehrenberg ; 15  
 [=E. *viridis* var. *sanguinea* (Ehrenberg)  
 Playfair]  
*E. spathyrhyncha* Skuja ; 8,22,23,53  
**E. spirogyra** Ehrenberg  
 var. *spirogyra* ; 3,15,16  
 [=E. *spirogyra* var. *fusiformis*  
 Deflandre]  
 var. *suprema* Skuja ; 15  
*E. spiroides* Lemmermann ; 16  
*E. splendens* P.A. Dangeard ; 3,15,40,  
 42,43  
*E. texta* (Dujardin) Hübner ; 53  
 [=Crumenula *texta* Dujardin,  
 Lepocinlis *texta* (Dujardin)  
 Lemmermann]  
*E. tripteris* (Dujardin) G.A. Klebs  
 var. *tripteris* ; 3,15,24,53  
 [=E. *torta* A. Stokes, *E. tripteris*

subsp. *crassa* Swirenko]  
 var. *major* Swirenko ; 3,15,53  
 var. *klebsii* Lemmermann ; 3,15  
*E. tuberculata* Swirenko ; 3,15,40,43  
*E. variabilis* G.A. Klebs ; 15,39  
*E. viridis* (O.F. Müller) Ehrenberg ;  
 3,13,15,16  
 [=E. *viridis* f. *salina* Popowa,  
 Cercaria *viridis* O.F. Müller]  
**Lepocinlis** Perty  
*L. sp.* ; 5,9,49,52,53  
*L. acicularis* Francé ; 27  
*L. acuta* Prescott ; 4,24,58  
*L. constricta* Matvienko ; 14  
*L. fusiformis* (H.J. Carter)  
 Lemmermann ; 4,6-8,10,24,26,53  
 [=Euglena *fusiformis* H.J. Carter]  
*L. ovum* (Ehrenberg) Lemmermann  
 var. *ovum* ; 3,15,42  
 [=Euglena *ovum* Ehrenberg]  
 var. *butschlii* Conrad ; 40  
 [=L. *bütschli* Lemmermann]  
 var. *maior* (Huber-Pestalozzi)  
 Conrad ; 40  
 [=L. *bütschli* var. *maior* Huber-  
 Pestalozzi]  
*L. playfairiana* Deflandre ; 59  
*L. salina* F.E. Fritsch ; 3  
*L. wangi* S.P. Chu ; 53  
**Phacus** Dujardin  
*P. sp.* ; 8,19,22,23,28,44,52  
*P. acuminatus* Stokes  
 var. *acuminatus* ; 3-6,8,9,15,16,24,  
 31,56,58  
 var. *acuticauda* (Roll) Pochmann  
 ; 3,24,40  
 var. *discifera* (Pochmann) Huber-  
 Pestalozzi ; 3,24  
 var. *drezepolskii* Skvortzov. ; 24  
 var. *granulata* (Roll) Huber-  
 Pestalozzi ; 39  
 var. *megaparamylica* (Roll)  
 Huber-Pestalozzi ; 15  
*P. agilis* Skuja ; 28  
*P. anacoelus* A. Stokes ; 24



- P. ankylonoton* Pochmann ; 3  
[=P. caudatus var. polonicus Drezepolski]
- P. brachykentron* Pochmann ; 3,15,24  
[=P. pleuronectes var. rothertii Namyslowski]
- P. brevicaudatus* (Klebs) Lemmermann ; 3,15,31  
[=P. pleuronectes var. brevicaudata Klebs]
- P. caudatus* Hübner  
var. *caudatus* ; 3,24,53  
var. *minor* Drezepolski ; 15
- P. chloroplastes* Prescott ; 11
- P. circulatus* Pochmann ; 3,4,12,24,27, 31,51  
[=P. orbicularis K. Hübner, P. orbicularis var. zmdae Namyslowski]
- P. clavatus* P.A. Dangeard ; 9
- P. curvicauda* Swirenko ; 3,12,15,24
- P. denisii* Allorge & Lefèvre ; 3,15,41
- P. gibbosus* Huber-Pestalozzi ; 40,42  
[=P. asymmetricus Prescott]
- P. hamatus* Pochmann ; 27
- P. helicoides* Pochmann ; 53  
[=Euglena oxyuris var. helicoidea (Bernard) Playfair]
- P. indicus* Skvortsov ; 3  
[=P. caudata var. volicensis Drezepolski]
- P. lemmermannii* (Swirenko) Skvortsov ; 59
- P. longicauda* (Ehrenberg) Dujardin  
var. *longicauda* ; 4,6,7,10,12,15, 16,24,27,50,52,53  
var. *insecta* Huber-Pestalozzi ; 3,24  
var. *major* Swirenko ; 27  
var. *rotunda* (Pochmann) Huber-Pestalozzi ; 24
- P. mangini* Lefèvre ; 3
- P. nordstedtii* Lemmermann ; 6,7,16,24, 53,58
- P. orbicularis* Hubner  
f. *cingeri* (Roll) Safonowa ; 6,16,19  
[=P. cingeri Roll, P. platalea Drezepolski, P. orbicularis var. caudata Skvortsov]
- P. onyx* Pochmann ; 3,15,24
- P. petolotii* Lefèvre ; 3,15
- P. pleuronectes* (O.F. Müller) Dujardin ; 8,53
- P. pusillus* Lemmermann ; 3,24  
[=P. parvulus var. pusillus (Lemmermann) Popowa]
- P. skujai* Skvortsov ; 3,16,24
- P. spirogyra* Drezepolski  
var. *maxima* Prescott ; 8
- P. tortus* (Lemmermann) Skvortsov ; 3,24,35,55,58
- P. trypanon* Pochmann ; 3,15,24
- P. undulatus* (Skvortsov) Pochmann ; 3,24,39  
[=P. pleuronectes var. insecta Koczwar, P. anacoelus var. undulata Skvortsov]
- Strombomonas** Deflandre
- S. deflandrei* (Roll) Deflandre ; 3,24  
[=Trachelomonas deflandrei Roll]
- S. fluviatilis* (Lemmermann) Deflandre ; 3,24  
[=Trachelomonas fluviatilis Lemmermann]
- S. gibberosa* (Playfair) Deflandre ; 3  
[=Trachelomonas gibberosa Playfair, T. schauinslandii var. australica Skvortsov]
- S. ovalis* (Playfair) Deflandre ; 40,42  
[=Trachelomonas urceolata var. ovalis Playfair, T. ovalis (Daday) Lemmermann, T. hispida var. playfairii Skvortsov]
- S. schauinslandii* (Lemmermann) Deflandre ; 3,24  
[=Trachelomonas schauinslandii Lemmermann]
- S. tambowika* (Swirenko) Deflandre ; 3

- [=Trachelomonas tambowika Swirenko]
- S. triquetra* (Playfair) Deflandre ; 3  
[=Trachelomonas triquetra Playfair]
- S. tuberosa* (Skvortsov) Deflandre  
var. *tuberosa* ; 24  
[=Trachelomonas tuberosa Skvortsov]  
var. *conspersa* Skvortsov ; 15,24,39
- S. verrucosa* (Daday) Deflandre  
var. *verrucosa* ; 3,15,24,40,55  
var. *borystheniensis* (Roll) Deflandre ; 3,24,39  
var. *conspersa* (Pascher) Deflandre ; 3,15  
var. *zmiewika* (Swirenko) Deflandre ; 3,24,39
- Trachelomonas** Ehrenberg
- T. sp.* ; 8,15,28,11,39,41,53
- T. armata* (Ehrenberg) Stein  
var. *armata* ; 12  
var. *longispina* Playfair ; 12
- T. australica* (Playfair) Deflandre  
var. *granulata* (Playfair) Deflandre ; 15
- T. bacillifera* Playfair  
var. *minima* Playfair ; 20,35
- T. charkoviensis* Swirenko ; 8
- T. cordata* Deflandre ; 15
- T. curta* A.M. Cunha ; 15
- T. cylindrica* Ehrenberg  
var. *decollata* Playfair ; 15
- T. granulosa* Playfair  
var. *granulosa* ; 15  
[=T. kelloggii var. australica Skvortsov]  
var. *oblonga* Playfair ; 15
- T. gregussii* Hortobágyi ; 40,42
- T. guttata* Middelhoek. ; 40,42
- T. hexangulata* Swirenko ; 24,58
- T. hispida* (Perty) F. Stein ex Deflandre  
var. *hispida* ; 1,2,4-6,9-12,15,24,27, 31,43,44,50,51  
f. *minor* Bourrelly ; 21  
f. *punctata* Lemmermann ; 24  
var. *coronata* Lemmermann ; 24  
var. *crenulatocollis* (Maskell) Lemmermann ; 3  
[=T. crenulatocollis Maskell]
- T. lacustris* Drezepolski ; 12
- T. oblonga* Lemmermann ; 15,24  
[=T. proxima Skvortsov]
- T. pulcherrima* Playfair  
var. *pulcherrima* ; 8  
var. *minor* Playfair ; 24
- T. rugulosa* F. Stein ex Deflandre  
var. *rugulosa* ; 1
- T. scabra* Playfair  
var. *scabra* ; 15  
var. *ovata* Playfair ; 3,15  
[=T. fossa var. angulata Skvortsov]
- T. similis* Stokes ; 19
- T. spiculifera* Palmer ; 40,42
- T. stokesiana* Palmer  
var. *dangeardii* (Deflandre) Huber-Pestalozzi ; 3  
[=T. rugulosa var. dangeardi Deflandre]
- T. verrucosa* Stokes ; 24
- T. volvocina* Ehrenberg  
var. *volvocina* ; 1,4,8-10,12,15,24, 27,28,50,53,58  
var. *punctata* Playfair ; 24
- T. volvocinopsis* Swirenko  
var. *volvocinopsis* ; 15
- T. volzii* Lemmermann  
var. *intermedia* Playfair ; 8,15  
[=T. varians (Lemmermann) Deflandre]
- SPHENOMONADINA**
- Anisonema** F. Dujardin
- A. ovale* G.A. Klebs. ; 15
- A. platysomum* Skuja ; 15
- A. variabile* G.A. Klebs. ; 40
- Notosolenus** A.C. Stokes
- N. chelonides* Skuja ; 40,42
- ALVEOLATA**
- MYZOOA**



**DINOZOA****DINOFLLAGELLATA****DINOPHYCEAE****GYMNODINIPHYCIDAE****GYMNODINIALES****GYMNODINIACEAE****Gymnodinium** F. Stein*G. sp.* ; 44,58*G. fuscum* (Ehrenberg) F. F. Stein ; 51[=*G. caudatum* Prescott, *Peridinium fuscum* Ehrenberg,*Gymnocystodinium gessneri*Baumeister, *Cystodinium gessneri* (Baumeister) Bourelly]*G. excavatum* Nygaard ; 53*G. uberrimum* (G.J. Alman) Kofoid & Swezy ; 39[=*G. mirabile* Penard, *G. mirabile* var. *rufescens* Penard, *G. rufescens* Lemmermann, *G. limneticum* Woloszynska, *G. irregulare* Christen, *G. bogoriense* Klebs, *G. obesum* Schiller, *G. rotundatum* Klebs, *G. poculiferum* Skuja, *G. limitatum* Skuja, *G. uberrimum* var. *rotundatum* Popovsky, *Gyrodinium traun* f. *steineri* Lindemann, *Melodinium uberrimum* Kent, *Peridinium uberrimum* Allman]**PERIDINIPHYCIDAE****GONYAULACALES****CERATIINEAE****CERATIACEAE****Ceratium** F. Schrank*C. sp.* ; 45,52*C. furca* (Ehrenberg) Claparède & Lachmann ; 51[=*Peridinium furca* Ehrenberg]*C. fusus* (Ehrenberg) Dujardin ; 51[=*Peridinium fusus* Ehrenberg]*C. hirundinella* (O.F. Müller) Bergh ; 1, 3,4,8-12,15,16,19,21,23,24,35,41, 43-45,50,55[=*C. tetraceros* Schrank,*C. macroceras* Schrank,*C. longicorne* Perty,*C. cumaonense* Carter,*C. brevicorne* Zacharias,*C. leptoceras* Zacharias,*C. pumilum* Zacharias,*C. handelii* Skuja, *Bursaria**hirundella* O.F. Müller]*C. tripos* (O.F. Müller) Nitzsch ; 51[=*Cercaria tripos* O.F. Müller]**PERIDINIALES****PERIDINIINEAE****PERIDINIACEAE****Peridiniopsis** Lemmermann*P. borgei* (Lemmermann)

Lemmermann ; 41,53

[=*Peridinium borgei*

(Lemmermann) Lemmermann,

*Glenodinium borgei*

(Lemmermann) Schiller]

*P. cunningtonii* (Lemmermann)

Popovsky &amp; Pfiester ; 3

[=*Peridinium cunningtonii*

(Lemmermann) Lemmermann,

*P. treubii* Woloszynska,*P. suttoni* Griffiths,*P. cunningtonii* var.*pseudoquadridens* Lindemann,*P. wildemani* Woloszynska,*P. cunningtonii* var.*quinquecuspidata* (Massart)Nygaard, *Glenodinium sedens*Lindemann, *Heterocapsa**quinquecuspidata* Massart]*P. penardiforme* (Lindemann)

Bourelly ; 53

[=*Peridinium penardiforme*Lindemann, *Glenodinium**penardiforme* (Lindemann)

Schiller]

*P. quadridens* (Stein) Bourelly ; 53[=*Peridinium quadridens* Stein,*Glenodinium quadridens* (Stein)

Schiller]

*P. thompsonii* (Thompson)

Bourelly ; 12,23

**Peridinium** Ehrenberg*P. sp.* ; 12,31,41,45,52,53*P. bipes* F. Stein ; 20,24,44,50[=*P. bipes* var. *exisum* Lemmermann,*P. bipes* var. *ocultatum* Lindemann,*P. bipes* f. *tabulatum* (Ehrenberg)Lefèvre, *P. tabulatum* (Ehrenberg)Claparède & Lachmann, *Glenodinium**tabulatum* Ehrenberg]*P. cinctum* (O.F. Müller) Ehrenbergvar. *cinctum* ; 1,4,6,10,11,15,16,19,24, 41,50,53[=*Vorticella cincta* O.F. Müller,*P. cinctum* var. *lemmermannii* West,*P. tuberosum* Meunier, *P. westii* var.*aureolatum* Lemmermann,*P. cinctum* var. *laesum* Lindemann,*P. germanicum* Lindemann,*P. eximium* Lindemann, *P. rhenanum*Lindemann, *P. cinctum* var.*regulatum* Lindemann, *P. cinctum*f. *regulatum* (Lindemann) Lefèvre,*P. cinctum* var. *irregulatum*Lindemann, *P. cinctum* var.*angulatum* Lindemann, *P. cinctum* f.*angulatum* (Lindemann) Lefèvre,*P. cinctum* f. *ovoplanum* Lindemann,*P. westii* Lemmermann, *P. tabulatum*var. *meandrica* Lauterborn,*P. meandricum* Brehm, *P. cinctum* f.*meandricum* Lefèvre, *P. cinctum* f.*westii* (Lemmermann) Lefèvre,*P. cinctum* var. *tuberosum* (Meunier)Lindemann, *P. cinctum* var.*carinatum* Steinecke & Lindemann,*P. cinctum* f. *tuberosum* (Meunier)

Lefèvre]

*P. lomnickii* Woloszynska ; 15[=*Glenodinium lomnickii*

(Woloszynska) Lindemann]

*P. palatinum* Lauterborn ; 53*P. raciborskii* Woloszynska ; 55[=*P. palustre* (Lindemann) Lefèvre,*P. raciborskii* var. *palustre* Lindem]*P. umbonatum* F. Stein ; 5,9,39, 41[=*P. inconspicuum* Lemmermann,*P. pusillum* (Penard)

Lemmermann]

*P. willei* Huitfeldt-Kaas ; 15,16,40, 42,43,45[=*P. caudatum* Playfair, *P. volzii*Lemmermann, *P. volzii* var.*cinctiforme* Lefèvre]**PROROCENTROPHYCIDAE****PROROCENTRALES****PROROCENTRACEAE****Prorocentrum** Ehrenberg*P. scutellum* Schröder ; 51**PHYTODINIALES****PHYTODINIACEAE**[=**HEMIDINIACEAE**]**Hemidinium** F. Stein*H. nasutum* F. Stein ; 41[=*Gloeodinium cracoviense*Starmach, *H. brasiliense* Bicudo& Skvortzov, *H. nasutum* var.*tatricum* Woloszynska, *H. nobile*

Skuja]

**PLANTAE****BILIPHYTA****RHODOPHYTA****MACRORHODOPHYTINA****BANGIOPHYCEAE****BANGIALES****BANGIACEAE****Bangia** Lyngbye*B. atropurpurea* (Roth) C. Agardh ; 15,53**FLORIDEOPHYCEAE****NEMALIOPHYCIDAE****BATRACHOSPERMALES**[=**NEMALIALES**]**BATRACHOSPERMACEAE****Batrachospermum** Roth*B. gelatinosum* (Linnaeus) De

Candolle ; 15,28,43,59

[=*B. moliniforme* Roth]**LEMNEACEAE****Lemanea** Bory de Saint-Vincent*L. torulosa* (Roth) C. Agardh ; 35



**RHODYMENIOPHYCIDAE****CERAMIALES****CERAMIACEAE****CERAMIOIDEAE****CERAMIEAE*****Ceramium* Roth***C. diaphanum* (Lightfoot) Rothvar. *elegans* (Roth) Roth ; 48[ = *C. elegans* (Roth) Ducluzeau ]*C. virgatum* Roth ; 48[ = *C. rubrum* (Hudson) C. Agardh var. *rubrum* ]**RHODOMELACEAE*****Polysiphonia* Greville***P. subulifera* (C. Agardh) Harvey ; 48**VIRIDAEPLANTAE****CHLOROPHYTA auct.****CHLOROPHYTINA****TETRAPHYTAE****CHLOROPHYCEAE****CHAETOPELTIDACEAE****CHAETOPELTIDACEAE*****Chaetopeltis* Berthold***C. orbicularis* Berthold ; 16**CYLINDROCAPSALES****CYLINDROCAPSACEAE*****Cylindrocapsa* Reinsch***C. geminella* Wolle ; 11[ = *Gloeotaenium loitlesbergerianum* Hansgrig ]**VOLVOCALES****CHLAMYDOMONADACEAE*****Chlamydomonas* Ehrenberg***C. sp.* ; 8,9,12,37,44,51,53*C. acuminata* Skuja ; 15,40,42,43*C. altera* Skuja ; 15*C. angulosa* Dill ; 19*C. braunii* Gorozhankin ; 15,35*C. cienkowskii* Schmid. ; 19*C. epiphytica* G.M. Smith ; 19*C. globosa* Snow ; 4,10,11,15,19,24,27,30,31,44,53,58*C. gracilis* Snow ; 4,6,15*C. incerta* Pascher ; 15*C. kuwadea* Gerl. ; 15*C. polypyrenoidea* Prescott ; 9,25,59*C. pseudopertyi* Pascher ; 8,19*C. snowiae* Printz ; 8,19,23,53*C. sphagnicola* F.E. Fritsch et Takeda ; 19*C. steinii* Gorozhankin ; 15***Lobomonas* Dangeard***L. ampla* Pascher ; 3*L. denticulata* Korshikov ; 3***Vitreochlamy* Batko***V. gloeocystiformis* (Dill) Batko ; 3**CARTERIAEAE*****Carteria* Diesing***C. sp.* ; 1,8,25,49*C. bullulina* Playfair ; 21[ = *C. multifilis* Fresenius ) O. Dill ]*C. cordiformis* (Carter) Dill. ; 3,21,26,45,53[ = *Tetraselmis cordiformis* F. Stein ]*C. fornicata* Nyg. ; 1*C. globosa* Korshikov ; 15,50*C. klepsii* (P.A. Dangeard) France em. Troitzkaja ; 27,53*C. peterhofiensis* Kisselev ; 3*C. turfosa* Fott ; 15**STEPHANOSPHAERACEAE**[ = **HAEMATOCOCCACEAE** ]***Haematococcus* C. Agardh***H. phuvialis* Flotow ; 3*H. lacustris* (Girod.) Rostafinski ; 8,19**PHACOTACEAE*****Phacotus* Perty***P. sp.* ; 5,6,9*P. lendneri* Chodat ; 3*P. lenticularis* (Ehrenberg) F. Stein ; 1,3,4,10-12,24,30,31,58***Pteromonas* Seligo***P. angulosa* (H.J. Carter) Lemmermann ; 3*P. limnetica* Hortobágyivar. *limnetica* ; 3var. *cordiformis* Cirik ; 3var. *orientalis* Cirik ; 3*P. nivalis* Chodat ; 40,42**TETRABAENACEAE*****Tetrabaena* Fromentel***T. socialis* (Dujardin) H. Nozaki &

M. Itoh ; 3, 15,30,31,40,43

[ = *T. dujardinii* Fromentel,*Cryptomonas socialis* Dujardin,*Gonium sociale* (Dujardin) Warming,*Tetragonium lacustre* W. West & G.S. West ]**GONIACEAE*****Gonium* O.F. Müller***G. sp.* ; 12,44,56*G. formosum* Pascher ; 15,40*G. pectorale* O.F. Müller ; 11,15,30,31,40,51**VOLVOCACEAE*****Eudorina* Ehrenberg ex Ralfs***E. elegans* Ehrenberg ; 2,3,15,16,24,40,41,50,51,53*E. uniccocca* G.M. Smith ; 3,24,50,53***Pandorina* Bory de Saint-Vincent***P. minodi* Chodat ; 15,40,42*P. morum* Bory de Saint-Vincent ; 1-4,8,10-13,15,16,24,27,30,31,40,43,44,50,51,53,55,56,59[ = *Volvox morum* O.F. Müller ]***Pleodorina* W.R. Shaw***P. sp.* ; 51***Volvox* Linnaeus***V. aureus* Ehrenberg ; 3,15,37,40*V. glabator* Linnaeus ; 3,40*V. tertius* A. Mayer ; 41**TETRASPORALES****ACTINOCHLORIDACEAE**[ = **NAUTOCOCCACEAE** ]***Actinochloris* Korschikov**[ = *Radiosphaera* J. Snow in Ward & Whipple ]*A. terrestris* (Vischer) H. Ettl &

G. Gärtner ; 16

[ = *Asterococcus terrestris* Vischer,*Radiococcus dissecta* (Korshikov)R.C. Starr, *Macrochloris dissecta*

Korshikov ]

**PALMELLOPSIDACEAE*****Asterococcus* Scherffel***A. limneticus* G.M. Smith ; 45*A. superbus* (Cienkowski) Scherffel ; 15***Chlamydocapsa* B. Fott***C. sp.* ; 51*C. ampla* (Kützing) Fott ; 15[ = *Gloeocapsa ampla* Kützing,*Gloeocystis ampla* (Kützing)Rabenhorst, *G. gigas* auct.,*Sphaerocystis ampla* (Kützing)

Novakova ]

*C. bacillus* (Teilung) Fott ; 15*C. planctonica* (W. West &

G.S. West) Fott ; 4,7,11,15

[ = *Gloeocystis gigas* var.*planctonica* W. West &G.S. West, *G. planctonica*

(W. West &amp; G.S. West)

Lemmermann, *G. gigas*

(Kützing) Lagerheim ]

***Pseudosphaerocystis* Woronichin***P. lundii* (Bourrelly) Bourrelly ; 3,15*P. lacustris* (Lemmermann)

Nováková ; 41

[ = *Planktogloea planctonica* Woronichin, *Tetraspora lacustris* Lemmermann ]**CHARACIOCHLORIDACEAE**[ = **CHLORANGIELLACEAE** ]***Characiochloris* Pascher***C. characioides* (Korshikov) Pascher ; 40,42*C. clathrata* Skuja ; 40 [new record]*C. obtusa* Korshikov ; 40,42***Chlorangiopsis* A. A. Korshikov***C. blatnense* (Ettl) Fott ; 3**TATRASPORACEAE*****Schizochlamys* A. Braun***S. gelatinosa* A. Braun ; 12***Tetraspora* Link***T. sp.* ; 51*T. gelatinosa* (Vaucher) Desvaux ;



15,33,40,42  
*T. lubrica* (Roth) C. Agardh ; 28  
**CHLOROCOCCALES**  
**CHARACIACEAE**  
**CHARACIOIDEAE**  
*Characium* A. Braun in Kützing  
*C. sp.* ; 49  
*C. acuminatum* A. Braun ; 6  
*C. ornithocephalum* A. Braun  
 var. *harpochytriforme* Printz ; 53  
 [=*C. falcatum* Schröder]  
**SCHROEDERIOIDEAE**  
*Ankyra* Fott  
*A. ancora* (G.M. Smith) Fott ; 3  
*A. judayi* (G. M. Smith) Fott ; 3,41  
*A. paradoxioides* Cirik ; 3  
*Schroederia* Lemmermann  
*S. indica* Philipose ; 3,24,58  
*S. setigera* (Schröder) Lemmermann  
 var. *setigera* ; 1,3,7,12,24,53,58  
 [=*Reinschiella setigera* Schröder,  
 Ankistrodesmus setigerus (Schröder)  
 G.S. West, *Characium setigerum*  
 (Schröder) Burrelly]  
 var. *anatolica* Cirik ; 3  
*S. spiralis* (Printz) Korshikov ; 3,41  
 [=*Ankistrodesmus nitzschoides* var.  
*spiralis* Printz]  
*Gloeocystis* Nägeli  
*G. major* Gerneck ex Lemmermann  
 ; 19,41  
*Korshikoviella* P.C. Silva  
*K. limnetica* (Lemmermann) Silva ; 7,8  
 [=*Characium limneticum*  
 Lemmermann, *Lambertia limnetica*  
 (Lemmermann) Korshikov]  
*K. michailovskoensis* (Elenkin) Silva ;  
 3,24,44  
 [=*K. gracilipes* (F.D. Lambert) Silva,  
*Characium gracilipes* F.D. Lambert,  
*Lambertia gracilipes* (F.D. Lambert)  
 Korshikov]  
*K. setosa* (Filarsz.) Silva ; 3  
*Rhopalosolen* Fott  
*R. saccatus* (Filarsz.) Fott. ; 41

[=*Characium saccatum* Filarsz]  
*Sphaerocystis* R. Chodat  
*S. sp.* ; 8,45  
*S. planctonica* (Korshikov) Bourelly  
 ; 16  
 [=*Palmellocystis planctonica*  
 Korshikov]  
*S. schroeteri* Chodat ; 1-4,7,9-11,15,  
 21,24,30,31,35,41,50,53,55,58  
 [=*S. vesiculosa* var. *schroeteri*  
 (Chodat) Playfair, *Gloeococcus*  
*schroeteri* (Chodat)  
 Lemmermann]  
**CHLOROCOCCACEAE**  
*Lambertia* Korshikov  
*L. ocellata* Korshikov ; 12  
 [=*Characium ocellum* Korshikov]  
**CHLOROCOCCOIDEAE**  
*Chlorococcum* Meneghini  
*C. sp.* ; 12,23  
*C. infusionum* (Schrank) Meneghini  
 ; 8,54  
 [=*C. humicola* (Nägeli)  
 Rabenhorst]  
**ENDOSPHAERACEAE**  
*Gomontia* Bornet & Flahault  
*G. aegrophila* Acton ; 15  
**GOLENKINIACEAE**  
*Golenkinia* R. Chodat  
*G. sp.* ; 53  
*G. radiata* Chodat *emend.*  
 Korshikov ; 3,12,16,53  
 [=*G. radiata* var. *longispina* G.M.  
 Smith, *Micractinium radiatum*  
 (Chodat) Wille]  
*G. paucispina* W. West & G.S. West  
 ; 53  
 [=*G. brevispina* Korshikov,  
*G. radiata* var. *brevispina*  
 Tiffany & Ahlstrom,  
*Micractinium paucispinosum*  
 (W. West & G.S. West) Wille]  
*Golenkiniopsis* Korshikov  
*G. maxima* Tiff. & Ahlstr.  
 var. *granulata* Cirik ; 3

**HYDRODICTYACEAE**  
*Hydrodictyon* A. Roth  
*H. sp.* ; 40,45  
*H. reticulatum* (Linnaeus) Lagerheim ;  
 15,40,48,53  
*Paradoxia* Sirenko  
*P. multisetia* Sirenko ; 3  
*Pediastrum* Meyen  
*P. sp.* ; 28,45,50,52,53  
*P. angulosum* Ehrenberg ex Meneghini  
 var. *angulosum* ; 19  
 [=*P. araneosum* (Raciborski)  
 Raciborski]  
 var. *rugulosum* (G.S. West)  
*nov. nomen* ; 24  
 [=*P. araneosum* var. *rugulosum*  
 G.S. West]  
*P. bidentulum* P.J. Turpin ; 40  
**[new record]**  
*P. biradiatum* Meyen  
 var. *biradiatum* ; 45,52  
 [=*P. rotula* (Ehrenberg) Kützing,  
*P. biradiatum* var. *longicornutum*  
 Gutwinski, *P. lobatum* Nit.,  
*P. tetrapodum* Moroz.]  
*P. biwae* Negoro ; 24,44,53  
 [=*P. simplex* var. *echinulatum*  
 Wittrock, *P. simplex* var. *biwaense*  
 Fu Kush, *P. simplex* var. *duodenarium*  
 (J.W. Bailey) Rabenhorst]  
*P. boryanum* (Turpin) Meneghini  
 var. *boryanum*  
 f. *boryanum* ; 1,4-6,8-13,15,16,19,  
 21-24,28,30,31,35,37,40,43-45,  
 50-53,55,58  
 [=*Hierella boryana* Turpin,  
*Pediastrum granulatum* Kützing,  
*P. constrictum* Hassal,  
*P. bidentulum* A. Braun]  
 f. *punctulatum* Krieg. ; 3,15,30,31,41  
 f. *reticulatum* Krieg. ; 3,15  
 var. *granatum* Pascher ; 15  
 var. *longicorne* Reinsch ; 24,40  
 [=*P. glanduliferum* Bennett]  
*P. duplex* Meyen

var. *duplex* ; 1,3-5,9-13,15,16,  
 21,24,25,28,30,31,37,40,  
 43-45,50-53,58  
 [=*P. pertusum* Kützing,  
*P. selenaea* (Kützing) Kützing,  
*P. napoleonis* Ralfs, *P. diodon*  
 Corda, *P. limneticum* Thunm.]  
 var. *asperum* (A. Braun) Hansgrig  
 ; 40  
 var. *cohaerens* Bohlin ; 16,53  
 var. *reticulatum* Lagerheim ; 6,16,  
 24,53  
 [=*P. duplex* var. *clathratum*  
 (A. Braun) Lagerheim]  
*P. integrum* Nägeli  
 var. *integrum* ; 12,15,19,22  
 [=*P. braunianum* Grun]  
 var. *scutum* Raciborski ; 8,28  
*P. muticum* Kützing ; 28,44,45  
*P. pearsonii* G.S. West  
 var. *orientale* Skujá ; 36  
*P. simplex* Meyen  
 var. *simplex* ; 3,12,15,16,24,37,  
 40,41,42,45,50,52,53,58  
 [=*P. simplex* var. *radians*  
 Lemmermann, *P. triangulum*  
 (Ehrenberg) A. Braun,  
*P. duodenarium* (J.W. Bailey)  
 Rabenhorst, *P. enoplum* West &  
 G.S. West, *P. clathratum*  
 (Schröder) Lemmermann,  
*P. simplex* var. *sturmii*  
 (Reinsch) Wolle, *P. schroeteri*  
 Lemmermann, *P. sturmii* var.  
*echinulatum* Lemmermann,  
*P. sturmii* var. *crenulatum*  
 Prescott]  
*P. tetras* (Ehrenberg) Ralfs  
 var. *tetras* ; 1,8,12,13,15,22-24,  
 30,31,37,40,52,58  
 [=*Micrateris tetras*  
 Ehrenberg, *P. rotula* Kützing,  
*P. ehrenbergii* (Corda)  
 A. Braun, *P. incavatum* Turner]



var. *tetraodon* (Corda) Hansgrig ; 3, 12,15,19,24,30,31,41,45,58

**Sorastrum** Kützing

*S. americanum* (Bohlin) Schmidle ; 31  
[=*Selenosphaerium americanum* Bohlin]

**MICRACTINIACEAE**

**Micractinium** Fresenius

*M. pusillum* Fresenius ; 2,3,53  
[=*M. eriense* Tiffany & Ahlstrom,  
*M. pusillum* var. *mucosa* Korshikov,  
*M. pusillum* var. *longisetum* Tiffany & Ahlstrom, *Golenkinia botryoides* Schmidle, *Staurogenia multiseta* Schmidle]

**OOCYSTACEAE**

**Cerasterias** Reinsch

*C. staurasroides* W. West & G.S. West ; 27,53

**Chlorolobion** Korshikov

*C. braunii* (Nägeli) Komárek. 2,3,19  
[=*Raphidium braunii* Nägeli,  
*Ankistrodesmus braunii* (Nägeli) Collins, *Monoraphidium braunii* (Nägeli) Komárková-Legnerová, *Keratococcus braunii* (Nägeli) Hindák]

**Diacanthos** Korshikov

*D. belenophorus* Korshikov ; 53

**Echinosphaerella** G.M. Smith

*E. sp.* 53

**Planktosphaeria** G.M. Smith

*P. gelatinosa* G.M. Smith ; 3

**Hyaloraphidium** Pascher et Korshikov

*H. arcuatum* Korshikov ; 16

*H. contortum* Pascher & Korshikov ; 16

*H. moinae* Korshikov ; 16

*H. rectum* Korshikov ; 16

**OOCYSTOIDEAE**

**Granulocystopsis** Hindák

*G. coronata* (Lemmermann) Hindák  
var. *elegans* (Fott) Komárek; 3,20  
[=*Oocystis coronata* var. *elegans* (Fott) Fott & Rehak., *Siderocelis elegans* Fott, *S. elegans* f. *symplex* Heynig]

**Nephrochlamys** Korshikov

*N. rostrata* Nygaard et al. ; 19  
[=*Kirchneriella subsolitaria* G.S. West]

**Nephrocytium** Nägeli

*N. agardhianum* Nägeli ; 3,10,11, 41,53

*N. lunatum* W. West ; 19

**Oocystidium** O. Korshikov

*O. sp.* ; 45

**Oocystis** A. Braun

*O. sp.* ; 8,12,22,23,45,56

*O. borgei* Snow. ; 1,2,4,5,7,8, 10,11,15,16,24,43,44,50,53,58

*O. elliptica* W. West ; 1,5,7,9,15,19, 24,43

*O. gleocystiformis* Borge ; 7

*O. lacustris* Chodat ; 3,15,24,41,43, 45,55

*O. marsonii* Lemmermann ; 3

*O. minuta* Guillard, H.C. Bold & Mac Entee  
var. *vacuolata* S. Watanabe ; 15

*O. naegelii* A. Braun ; 12

*O. parva* W. West & G.S. West ; 3, 7,21,41,53

*O. pusilla* Hansgrig ; 19

*O. solitaria* Wittrock in Wittrock & Nordstedt

f. *solitaria* ; 1,3,11,15,16,24,25 36,41,45,50,51,58

[=*O. crassa* Wittrock,  
*O. solitaria* var. *notabile* W. West & G.S. West]

f. *major* Wille ; 3,11,24,41  
[=*O. solitaria* var. *pachyderma* Printz]

*O. submarina* Lagerheim ; 24,58

*O. tainoensis* Komárek ; 8

**LAGERHEIMIOIDEAE**

**Franceia** Lemmermann

*F. amphitricha* (Lagerheim) Hegewald ; 27  
[=*Franceia droescheri* (Lemmermann) G.M. Smith,

*Oocystis ciliata* var. *amphitricha* Lagerheim]

*F. ovalis* (Francé) Lemmermann ; 3  
[=*F. elongata* Korshikov, *Phythelios ovalis* Francé]

**Lagerheimia** R. Chodat

*L. sp.* ; 16

*L. ciliata* (Lagerheim) Chodat ; 3  
[=*Oocystis ciliata* Lagerheim,  
*Chodatella ciliata* (Lagerheim) Lemmermann]

*L. citrifformis* (Snow) Collins ; 3  
[=*Chodatella citrifformis* Snow]

*L. genevensis* (Chodat) Chodat ; 12  
[=*L. quadriseta* (Lemmermann) G.M. Smith, *L. ciliata* var. *genevensis* (Chodat) Playfair, *Chodatella quadriseta* Lemmermann, *C. genevensis* (Chodat) S.H. Li, *Tetraceras genevensis* Chodat]

*L. longiseta* (Lemmermann) Wille ; 3  
[=*Chodatella longiseta* Lemmermann]

*L. subsalsa* Lemmermann ; 53,54

**EREMOSPHAEROIDEAE**

**Eremosphaera** de Bary

*E. gigas* (Archer) Fott & Kalina ; 11,24  
[=*Oocystis gigas* Archer]

*E. minor* R.L. Smith & Bold ; 15

**TREUBARIACEAE**

**Pachycladella** P.C. Silva

*P. umbrina* (G.M. Smith) P.C. Silva ; 59  
[=*Pachycladon umbrina* G.M. Smith]

**Treubaria** C. Bernard

*T. planctonica* (G.M. Smith) Korshikov ; 3  
[=*Borgea planctonica* G.M. Smith]

*T. schmidlei* (Schröder) Fott & Kovácik ; 51

[=*T. limnetica* (G.M. Smith) Fott & Kovácik, *Polyedrium schmidlei* Schröder, *Echinosphaerella limnetica* G.M. Smith]

*T. setigera* (Archer) G.M. Smith ; 12  
[=*Tetrapedia setigera* Archer,

*Polyedrium trigonum* var. *setigerum* (Archer) Schröder, *Tetraedron trigonum* var. *setigerum* (Archer) Lemmermann]

*T. triappendiculata* Bernard ; 3  
[=*Tetraedron triappendiculatum* (Bernard) Wille, *Polyedrium schmidlei* var. *euryacanthum* Schmidle]

**DICTYOSPHAERIACEAE**

**[=BOTRYOCOCCACEAE]**

**Lobocystis** R.H. Thompson

*L. planctonica* (Tiffany & Ahlstrom) Fott ; 41

[=*L. planctonica* var. *mucosa* Bourrelly, *L. dichotoma* Thompson, *Dictyosphaerium planctonica* Tiffany & Ahlstrom]

**BOTRYOCOCCOIDEAE**

**Botryococcus** Kützing

*B. braunii* Kützing ; 1,3,7,10,11,15, 21,24,35,44,55,58

**DICTYOSPHAERIOIDEAE**

**Dictyosphaerium** Nägeli

*D. ehrenbergianum* Nägeli ; 3,12, 16,41

*D. elegans* Bachmann ; 53

*D. pulchellum* Wood  
var. *pulcellum* ; 1,3,7,8,11,12,16, 24,35,41,45,53

*D. tetrachotomum* Printz ; 12

[=*D. pulchellum* var. *ovatum* Korshikov]

**RADIOCOCCACEAE**

**RADIOCOCCOIDEAE**

**Coenocystis** Korshikov

*C. obtusa* Korshikov ; 3  
[=*Kirchneriella obtusa* (Korshikov) Komárek]

*C. subcylindrica* Korshikov ; 3,53

**CHLORELLACEAE**

**Keratococcus** Pascher

*K. raphidioides* (Hansgrig) Pascher ; 15  
[=*Dactylococcus raphidioides*



- Hansgrig, *Monoraphidium raphidioides* (Hansgrig) Hindák]  
**ANKISTRODESMOIDEAE**  
*Ankistrodesmus* Corda  
*A. sp.* ; 51  
*A. convolutus* Corda ; 53  
*A. densus* Korshikov. ; 3,15  
 [=A. spiralis var. fasciculatus G.M. Smith]  
*A. falcatus* (Corda) Ralfs  
 var. *falcatus* ; 1,4,6-8,10-12,15,16,19, 24,28,30,31,35,43,51,53  
 var. *radiatus* (Chodat) Lemmermann ; 15,55  
*A. longissimus* (Lemmermann) Wille  
 var. *acicularis* (Chodat) Brunthaler ; 12,16  
*A. sigmoidea* (Rabenhorst) Bruhl. & Bisw. ; 15  
*A. spiralis* (Turner) Lemmermann ; 15,19  
 [=Raphidium spirale Turner]  
**Closteriopsis** Lemmermann  
*C. acicularis* (G.M. Smith) Belcher & Swale ; 35,53  
 [=C. longissima var. acicularis G.M. Smith, *Ankistrodesmus falcatus* var. *tumidus* G.S. West]  
*C. longissima* (Lemmermann) Lemmermann ; 16,19,53  
 [=Ankistrodesmus longissimus (Lemmermann) Wille, *Rhaphidium pyrenogerum* Chodat, *Closterium pronum* var. *longissima* Lemmermann  
**Kirchneriella** Schmidle  
*K. sp.* ; 49  
*K. aperta* Teiling ; 6,11  
 [=K. obesa var. *aperta* (Teiling) Brunthaler, *K. obesa* var. *pygmaea* W. West & G.S. West]  
*K. elongata* G.M. Smith ; 15,16  
*K. lunaris* (Kirchner) Möbius. ; 6,35  
 [=K. lunata Schmidle, *Raphidium convolutum* var. *lunare* Kirchner]  
*K. obesa* (G.S. West) Schmidle  
 var. *obesa* ; 24,53  
 [=Selenastrum obesum G.S. West, *Kirchneriella intermedia* Korshikov]  
 var. *contorta* Schmidle ; 53  
 [=K. contorta (Schmidle) Bohlin]  
**Monoraphidium** Komárková-Legnerová  
*M. caribeum* Hindák ; 58  
*M. circinale* Nygaard ; 21  
*M. contortum* (Thuret) Komárková-Legnerová ; 3,20,35,53,54  
 [=M. angustus Bernard, *Ankistrodesmus contortum* Thuret, *A. falcatus* var. *spirilliformis* G.S. West, *A. falcatus* var. *duplex* (Kützing) G.S. West, *A. pseudomirabilis* var. *spiralis* Korshikov, *Raphidium polymorphum* var. *spirale* W. West & G.S. West]  
*M. convolutum* (Corda) Komárková-Legnerová  
 var. *pseudosabulosum* Hindák ; 4  
 [=Dactylococcus infusionum Nägeli]  
*M. dybowskii* (Wolosz) Hindák & Komárková-Legnerová ; 21  
*M. griffithii* (Berkeley) Komárková-Legnerová ; 2,3,5,24,37,40 53  
 [=Ankistrodesmus falcatus var. *acicularis* (A. Braun) G. S. West, *A. falcatus* var. *acicularis* f. *longissima* Printz, *Closterium griffithii* Berkeley, *Rhaphidium polymorphum* var. *aciculare* (A. Braun) Rabenhorst, *R. aciculare* A. Braun]  
*M. irregulare* (G.M. Smith) Komárková-Legnerová ; 3, 15,16,21,24,35,41,58  
 [=Dactylococcopsis irregularis G.M. Smith]  
*M. komarkovae* Nygaard ; 3,24, 30,31,58

- [=M. setiforme (Nygaard) Komárková-Legnerová]  
*M. minutum* (Nägeli) Komárková-Legnerová ; 6,7,12,19,24,30,31,35, 53,58  
 [=Raphidium minutum Nägeli, *R. convolutum* var. *minutum* (Nägeli) Rabenhorst, *Selenastrum minutum* (Nägeli) Collins, *Ankistrodesmus lunulatus* Belcher & Swale, *A. minutissimus* Korshikov]  
*M. mirabile* (W. West & G.S. West) Pankow ; 8,15,47,53,59  
 [=Raphidium polymorphum var. *mirabile* W. West & G.S. West, *Ankistrodesmus mirabilis* (W. West & G.S. West) Lemmermann, *A. falcatus* var. *mirabilis* W. West & G.S. West]  
*M. tortile* (W. West & G.S. West) Komárková-Legnerová ; 3,41  
 [=Ankistrodesmus tortilis W. West & G.S. West, *A. pseudobraunii* J.H. Belcher & Swale]  
**Quadrigula** Printz  
*Q. sp.* ; 54  
*Q. lacustris* (Chodat) G.M. Smith ; 7,19  
*Q. pfitzeri* (Schröder) G.M. Smith ; 41  
 [=Raphidium pfitzeri Schröder, *Ankistrodesmus pfitzeri* (Schröder) G.S. West]  
**Selenastrum** Reinsch  
*S. sp.* ; 51  
*S. bibraianum* Reinsch ; 12,15,16  
 [=Ankistrodesmus bibraianus (Reinsch) Korshikov]  
*S. gracile* Reinsch ; 3,8,12,15,19, 24,28,35,40,43,53,59  
 [=S. westii G.M. Smith, *Ankistrodesmus gracilis* (Reinsch) Korshikov]  
**CHLORELLOIDEAE**  
**Chlorella** M. Beijerinck  
*C. sp.* ; 3,8,28,45  
*C. ellipsoidea* Gerneck ; 2,4,6,8,15, 22,24,43,53,58  
*C. saccharophila* (Krüger) Migula  
 var. *saccharophila* ; 28  
*C. vulgaris* Beyerinck ; 8,15,22,27, 53,58,59  
**TETRAEDRONOIDEAE**  
**Tetraedron** Kützing  
*T. caudatum* (Corda) Hansgrig  
 var. *caudatum* ; 12  
 [=T. caudatum var. *incisum* (Lagerheim) Brunthaler, *T. caudatum* var. *punctatum* Lagerheim, *Polyedrium pentagonum* Reinsch, *P. caudatum* Corda, *Asteridium caudatum* Corda]  
 var. *longispinum* Lemmermann ; 16  
*T. minimum* (A. Braun) Hansgrig ; 1,4,7-13,15,16,24,27,50,53,58  
 [=Polyedrium minimum A. Braun, *Tetraedron quadratum* (Reinsch) Hansgrig, *T. platyisthmum* (Archer) G.S. West, *T. minimum* var. *apiculato-scrobiculatum* (Reinsch) Skuja, *T. glaucescens* (Wittrock) Claus]  
*T. muticum* (A. Braun) Hansgrig ; 6, 11,12,24,53  
*T. pentaedricum* W. West & G.S. West ; 12,24,58  
*T. regulare* Kützing  
 var. *regulare* ; 11,24  
 [=Tetraedron tumidulum (Reinsch) Hansgrig, *T. ornatum* Lemmermann, *T. quadrilobum* G.M. Smith]  
 var. *torsum* (Turner) Brunthaler ; 52  
*T. trigonum* (Nägeli) Hansgrig  
 var. *trigonum* ; 11,24,52,53,58  
 var. *gracile* (Reinsch) de Toni ; 53  
**COELASTRACEAE**  
**Actinastrum** Lagerheim



*A. gracillum* G.M. Smith ; 12  
*A. hantzschii* Lagerheim  
 var. *hantzschii* ; 1,3,4,24,53,58,59  
 var. *elongatum* ; 19  
 var. *fluviatile* Schröder ; 51,53  
**Coelastrum** Nägeli  
*C. sp.* ; 45  
*C. astroideum* De Notaris ; 15  
 [=*C. microporum* f. *astroidea*  
 (De Notaris) Nygaard]  
*C. indicum* Turner ; 3,41  
 [=*C. pulchrum* var. *intermedium*,  
*C. pulchrum* var. *manillatum* Bohl.,  
*C. intermedium* (Bohl.) Korshikov,  
*C. cambrium* var. *intermedium* (Bohl.)  
 G.S. West]  
*C. microporum* Nägeli  
 var. *microporum* ; 1,2,4,6,7,10-12,  
 15,16,21,24,45,50-53,58  
 [= *C. robusrum* Hantzsch in  
 Rabenhorst, *Chlorella regularis*  
 (Art.) Oltmann]  
*C. pulchrum* Schmidle  
 var. *pulchrum* ; 3,15,45,55  
 [=*C. cambricum* Archer]  
*C. reticulatum* (P.A. Dangeard) Senn  
 var. *reticulatum* ; 3,41,52  
 [=*Hariotina reticulata* P.A. Dangeard]  
*C. sphaericum* Nägeli ; 1,4,6,7,12,24,50  
 [=*C. cubicum* Nägeli, *C. irregulare*  
 Schröder, *C. pseudocubicum* Schröder,  
*C. compositum* West, *C. giganteum*  
 Ceder., *C. skujae* Korshikov]  
**Coenococcus** Korshikov  
*C. planktonicus* Korshikov ; 16  
 [=*Eutetramorus planktonicus*  
 (Korshikov) Bourrelly]  
*C. polycoccus* (Korshikov) Hindák  
 ; 3,15,24,  
 [=*Eutetramorus polycoccus*  
 (Korshikov) Komárek, *Sphaerocystis*  
*polycocca* Korshikov]  
**SCENEDESMACEAE**  
**SCENEDESMOIDEAE**  
*Scenedesmus* Meyen

*S. sp.* ; 8,9,28,41,45,51-53  
*S. acuminatus* (Lagerheim) Chodat  
 var. *acuminatus* ; 3,5,6,9,12,13,  
 15,16,24,25,30,31,37,40,53,58  
 [=*S. acuminatus* var. *elongatus*  
 G.M. Smith, *S. obliquus* var.  
*acuminatus* (Lagerheim) Chodat  
*S. falcatus* f. *tortuosus* Skuja, f.  
*maximus* Uherk., *S. hungaricus*  
 Hortobágyi, *S. acuminatus* f.  
*tortuosus* (Skuja) Korshikov,  
*Selenastrum acuminatum*  
 Lagerheim]  
 var. *biseriatus* Reinsch ; 12  
 var. *minor* G.M. Smith ; 15,19,  
 37,53  
 [=*S. falcatus* Chodat]  
 var. *tetradesmoides* G.M. Smith  
 ; 19  
*S. acunea* Comas ; 15  
*S. acutiformis* Schröder ; 8,15  
*S. acutus* Meyen  
 var. *acutus*  
 f. *acutus* 1,10,15,16,20,  
 37,40,42,43  
 [=*S. dimorphus* f. *granulatus*  
 Isabella & R. J. Patel,  
*S. dimorphus* f. *alternans*  
 Hortobágyi, *S. dimorphus* var.  
*alternans* Christ., *S. crassus*  
 Chodat, *S. scenesmoides*  
 Chodat, *S. tetradesmiformis*  
 (Wolosz.) Chodat,  
*Arthrodesmus acutus*  
 Ehrenberg ex Ralfs]  
 f. *costulatus* (Chodat) Uherk.  
 ; 15  
*S. apiculatus* (W. West &  
 G.S. West) Chodat ; 36  
 [=*S. alternans* var. *apiculatus*  
 W. West & G.S. West]  
*S. arcuatus* Schröder ; 51  
*S. armatus* (Chodat) Chodat  
 var. *armatus* ; 3,12,15,16,21  
 [=*S. hystrix* var. *armatus* Chodat,

*S. helveticus* Chodat, *S. columnatus*  
 Hortobágyi, *S. columnatus* var.  
*boglariensis* f. *semicostatus*  
 Hortobágyi]  
 var. *major* G.M. Smith ; 51  
*S. bernardii* G.M. Smith ; 19  
*S. bicaudatus* Dedusenko ; 1,15,43  
 [=*S. quadricauda* var. *bicaudata*  
 Hansgrig, *S. longispina* Chodat sensu  
 Wolosz., *S. diagonalis* Fang,  
*S. bicaudatus* (Hansgrig) Chodat]  
*S. bijugus* (Turpin) Kützing  
 var. *obtusiusculus* (Chodat)  
 G.M. Smith ; 8  
 [=*S. obtusiusculus* Chodat]  
*S. brevispina* (G.M. Smith) Chodat ; 8  
*S. circumfusus* Hortobágyi  
 var. *circumfusus* ; 11,15  
 [=*S. circumfusus* var. *bicaudata*  
 Hortobágyi, *S. circumfusus* var.  
*semiquadrifidus* Hortobágyi,  
*S. armatus* var. *ecornis* f.  
*semiquadrifidus* (Hortobágyi)  
 Kirj.]  
 var. *bicaudatus* Hortobágyi  
 f. *granulatus* Hortobágyi ; 15  
*S. dimorphus* (Turpin) Kützing ; 8,12,  
 19,24,28,44,50-53,58  
 [=*S. antennatus* Brébisson in Ralfs,  
*S. obliquus* var. *dimorphus* (Turpin)  
 Hansgrig, *S. costulatus* Chodat,  
*S. pectinatus* Meyen, *S. acutus* var.  
*dimorphus* (Turpin) Rabenhorst,  
*Achnanthes dimorpha* Turpin]  
*S. disciformis* (Chodat) Fott & Komárek  
 f. *obciturus* (Uherk.) Komárek ; 15  
*S. ecornis* (Ehrenberg) Chodat  
 var. *ecornis* ; 1,3-11,13,15,24,30,31,  
 36,39,40,44,45,50,58,59  
 [=*S. obtusus* Meyen (sensu  
 Uherk. 1966), *S. quadricaudatus* var.,  
*ecornis* Ehrenberg, *S. ecornis* f. *major*  
 Chodat, *S. obtusus* f. *ecornis*  
 (Ehrenberg) Compere]  
 var. *polymorphus* Chodat ; 3,15,19

[=*S. flexuosus* (Lemmermann)  
 Ahlstr., *S. ellipticus* Corda,  
*S. bijugatus* var. *flexuosus*  
 Lemmermann, *S. ecornis* var.  
*flexuosus* (Lemmermann) Fott  
 & Komárek, *S. ecornis* sensu  
 Uherk.]  
*S. ginzenbergii* Kamm. ; 15  
*S. hystrix* Lagerheim ; 15  
*S. incrassatulus* Bohlin ; 3,15,19  
*S. intermedius* Chodat  
 var. *intermedius* ; 3,7,15,16,41,  
 55,58  
 [=*S. quadricauda* var. *alternans*  
 Dedus, *S. quadricauda* var.  
*alternans* Prosin., *S. intermedius*  
 var. *bicaudatus* Hortobágyi,  
*S. intermedius* var.  
*heterocaudatus* Hortobágyi,  
*S. intermedius* f. *heterocaudatus*  
 Hortobágyi, *S. quadricauda* var.  
*intermedius* (Chodat) Philipose]  
 var. *balatonicus* Hortobágyi  
 ; 3,15,24  
 [=*S. graciosus* Hortobágyi,  
*S. intermedius* var. *balatonicus*  
 f. *longispinosus* Hortobágyi]  
*S. kissi* Hortobágyi ; 2  
 [=*S. quadricauda* var. *biornata*  
 Kisselev]  
*S. longispina* Chodat  
 var. *longispina* ; 12,15,16,19,40  
 [=*S. quadricauda* var. *longispina*  
 (Chodat) G. Smith, *S. maculosus*  
 Hortobágyi, *S. nanus* var.  
*spinosus* Hortobágyi,  
*S. pseudolongispina* Hortobágyi]  
 var. *asymmetricus* Hortobágyi &  
 Nemeth ; 15,40  
*S. magnus* Meyen ; 3,15,16,36  
 [=*S. longus* var. *naegelii*  
 Brébisson,  
*S. quadricauda* var. *maximus*  
 (West & G.S. West) Chodat,  
*S. oahuensis* (Lemmermann)



- G.M. Smith, *S. quadricauda* var. *oahuensis* Lemmermann,  
*S. quadricauda* var. *setosus* Kirchner,  
*S. magnus* var. *naegelii* (Brébisson) Tsarenko, *S. maximus* (W. West & G.S. West) Chodat, *S. muzzanensis* Huber-Pestalozzi, *S. armatus* var. *setosus* Philpote]
- S. obliquus* (Turpin) Kützing ; 8,12, 15,16,19,24,27,36,40,44,45,51-53  
 [=Achnanthes obliquus Turpin, *A. bijuga* Turpin, *S. bijuga* (Turpin) Lagerheim, *S. obtusus* Meyen Sensu auct. post. G.M. Smith, *S. bijugatus* Kützing, *S. acutus* var. *obliquus* Rabenhorst, *S. oblongus* Chodat, *S. dactylococcoides* Chodat]
- S. obtusus* Meyen  
 f. *obtusus* ; 3,7,8,11,12,15,16,19,24, 35,40,42,51,53  
 [=S. bijug(a)us var. *alternans* (Reinsch) Hansgrig, *S. obtusus* var. *ternans* (Reinsch) Compère, *S. alternans* Reinsch, *S. ovalternus* Brébisson, *S. bijuga* var. *irregularis* (Wille) G.M. Smith, *S. bijugatus* f. *irregularis* Wille, *S. reniformis* Kisel., *S. alternans* var. *arcuatus* (Lemmermann) Fott & Komárek, *S. alternans* var. *platydiscus* (G.M. Smith) Fott & Komárek, *S. platydiscus* var. *alternans* (Rein.) Chodat, *S. alternans* var. *prescottii* Fott & Komárek, *S. arcuatus* (Lemmermann) Lemmermann, *S. bijugatus* var. *arcuatus* Lemmermann, *S. bijugatus* f. *arcuatus* Lemmermann, *S. arcuatus* var. *platydiscus* G.M. Smith, *S. platydiscus* (G.M. Smith) Chodat]
- S. opoliensis* Richter  
 var. *opoliensis*; 3,15,30,31,35,37, 41,51,53,58  
 [=S. carinatus f. *brevicaudatus* Uherkovich, *S. opoliensis* var.
- setosus* Dedusenko,  
*S. opoliensis* f. *crassicaudatus* Hortobágyi, *S. opoliensis* f. *deflexuosus* Hortobágyi,  
*S. thomassonii* Hortobágyi]  
 var. *abundans* Printz ; 12  
 var. *carinatus* Lemmermann ; 40,42  
 [=S. carinatus (Lemmermann) Chodat, *S. carinatus* var. *hanoiensis* Hortobágyi, *S. armatus* var. *boglariensis* f. *granulatus* Hortobágyi & Nemeth, *S. armatus* f. *crassicaudatus* Hortobágyi]  
 var. *contacta* Prescott ; 12
- S. ovalternus* Chodat  
 var. *ovalternus*; 3,10,11,15,24, 30,31,59  
 [=S. bijuga var. *alternans* f. *parvus* G.M. Smith, *S. bijuga* f. *minutissimus* Kuffer., *S. ovalternus* var. *irregularis* Kisselev, *S. alternans* var. *irregularis* (Kisselev) Kirj.]
- S. quadricauda* (Turpin) Brébisson ex Ralfs  
 var. *quadricauda* ; 1-9,11-13, 15,16,22-25,30,31,35,40-45, 50-53,56,58  
 [=S. longus Meyen, *S. caudatus* Corda, *S. protuberans* Fritsch sensu auct. post. Trainor & Roskosky), *S. quadricauda* var. *obtusisspinosus* Hortobágyi, *S. quadricauda* var. *crassicaudatus* Hortobágyi, *S. communis* Hegew.]  
 var. *maximus* W. West & G.S. West ; 3,24,51,53,58  
 var. *westii* G.M. Smith ; 16,51
- S. quadrispina* Chodat ; 24,28,51,58  
 [=S. quadricauda var. *quadrispina*

- (Chodat) G.M. Smith]  
*S. sempervirens* Chodat ; 12,15  
 [=S. abundans (Kirchner) Chodat, *S. caudatus* f. *abundans* Kirchner, *S. quadricauda* var. *abundans* (Kirchner) Hansgrig, *S. caudatus* var. *minor* Kützing, *S. spinosus* var. *crassispinosus* Hortobágyi, *S. spinosus* sensu auct. post.]  
*S. spinosus* Chodat ; 15,21,30,31  
*S. subspicatus* Chodat ; 24,52  
 [=S. spicatus W. West & G.S. West, *S. gutwinskii* Chodat, *S. gutwinskii* var. *heterospina* Bodrogsközy, *S. abundans* var. *longicauda* G.M. Smith, *S. abundans* var. *brevicauda* G.M. Smith, *S. abundans* var. *spicatiformis* Chodat, *S. denticulatus* var. *linearis* f. *crassispinosus* (Hortobágyi) Uherk.]  
*S. verrucosus* Y.-V. Roll ; 3,8,11,15,24, 50,55  
 [=S. disciformis (Chodat) Fott & Komárek, *S. bijugatus* var. *granulatus* Schmidle, *S. granulatus* var. *verrucosus* Dedusenko, *S. eornis* var. *disciformis* Chodat, *S. bijugatus* var. *disciformis* Chodat, *S. bijugatus* sensu auct. post Behre, *Tetrachlorella nephrocellularis* Komárek]
- Schroederiella* Woloszyńska  
*S. africana* Woloszyńska ; 15  
*S. papillata* Korshikov ; 53
- TETRALANTOIDEAE**  
*Tetralantos* Teilling  
*T. lagerheimii* Teilling ; 20  
 [=Menzbierella paragraphon Mill., *Kirchneriella major* Bern.]
- DIMORPHOCOCCOIDEAE**  
*Dimorphococcus* A. Braun  
*D. lunatus* A. Braun ; 12  
 [=Dictyosphaerium reniforme Bulnheim]
- CRUCIGENIOIDEAE**  
*Crucigenia* Morren

- C. sp.* ; 45  
*C. lauterbornii* (Schmidle) Schmidle ; 3,7,16  
 [=Hoffmania lauterbornii (Schmidle) Wille, *Komarekia lauterbornii* (Schmidle) Fott, *Staurogenia lauterbornii* Schmidle]  
*C. quadrata* Morren ; 4,6-8,10, 15,24,31,41,43,53,58  
*C. tetrapedia* (Kirchin) W. West & G.S. West ; 3-7,9,10,12,15, 24,40,42,43,53
- Crucigeniella** Lemmermann  
*C. apiculata* (Lemmermann) Komárek ; 3,24,41  
 [=C. pulchra (W. West & G.S. West) Komárek, *Crucigenia apiculata* (Lemmermann) Schmidle, *Staurogenia apiculata* Lemmermann, *Tetrastrum apiculatum* (Lemmermann) Schim. ex Brunthaler]
- C. irregularis* (Wille) Tsarenko & D.M. John ; 19,24  
 [=Crucigenia irregularis Wille, *C. antarctica* Wille, *C. rectangularis* var. *irregularis* (Wille) Playfair, *Willea irregularis* (Wille) Schmidle]
- C. neglecta* (Fott & Ettl) Komárek ; 3  
*C. rectangularis* (Nägeli) Komárek ; 11,24,35,41,53  
 [=Crucigenia rectangularis (Nägeli) Gay]
- Westella** De Wildermann  
*W. sp.* ; 45  
*W. botryoides* (W. West) De Wildermann ; 45,53  
 [=Tetracoccus botryoides W. West, *Dictyosphaerium regulare* Svir.]  
*W. braunii* Kützing ; 3  
**Tetrastrum** Chodat



*T. glabrum* (Roll) Ahlstrom & Tiffany ; 3  
 [=*T. staurogeniaeforme* var. *glabrum* Roll, *Crucigenia triangularis* Playfair]  
*T. staurogeniaeforme* (Schröder) Lemmermann ; 3,24,58  
 [=*Cohniella staurogeniaeformis* Schröder, *Crucigenia schroederi* (Schmidle) Schmidle]  
*T. triacanthum* Korshikov ; 12  
**MICROSPORALES**  
**MICROSPORACEAE**  
*Microspora* Thuret  
*M. sp.* ; 8,28,37,52  
*M. floccosa* (Vaucher) Thuret ; 7  
*M. tumidula* Hazen ; 15,40,42  
**OEDOGONIALES**  
**OEDOGONIACEAE**  
*Bulbochaete* C. Agardh  
*B. sp.* ; 8,28  
*B. mirabilis* Wittrock ; 39  
*B. nana* Wittrock ; 8,40,42  
*Oedogonium* Link  
*O. sp.* ; 8,9,12,15,16,23,24,28,35,37,44,50,52,53,58  
*O. autumnale* Wittrock ; 15  
*O. braunii* Kützing ; 15  
*O. capillare* (Linnaeus) Kützing ; 15,53  
*O. cardiacum* (Hassall) Wittrock  
 f. *cardiacum* ; 15,40,42  
 f. *interjectum* Hirn ; 15  
*O. ciliatum* (Hassall) Pringsheim ; 15  
*O. collinsii* Tiffany ; 15  
*O. concatenatum* (Hassall) Wittrock ; 15,40,42,43  
*O. crassum* (Hassall) Wittrock ; 15,40  
*O. crispum* (Hassall) Wittrock  
 f. *inflatum* Hirn ; 15  
*O. curvum* Pringsheim ; 15,40,42  
*O. fennicum* (Tiffany) Tiffany ; 28  
*O. franklinianum* Wittrock ; 15,39  
*O. hoersholmiense* Hallas ; 15  
*O. inconspicuum* Hirn. ; 15,39  
*O. inclusum* Hirn. ; 12

*O. idioandrosporum* (Nordstedt & Wittrock) Tiffany ; 40 [new record]  
*O. longicolle* Nordstedt ; 15,39  
*O. longipilum* Jao ; 15,40  
*O. macrandrium* Wittrock  
 var. *propinquum* (Wittrock) Hirn. ; 15  
*O. mitratum* Hirn ; 15,39,40  
*O. obtruncatum* Wittrock ; 15  
*O. pisanum* Wittrock ; 15,40,42  
*O. rothii* (Le Clerc) Pringsheim ; 15  
*O. sancti-thomae* Wittrock & Cléve ; 15  
*O. tapeinosporum* Wittrock ; 15,39  
*O. vaucherii* (Le Clerc) A. Braun ; 15  
**CHAETOPHORALES sensu stricto**  
**CHAETOPHORACEAE**  
*Chaetophora* F. Schrank  
*C. sp.* ; 28  
*C. incrassata* (Hudson) Hazen ; 15,32,40,43  
*Draparnaldia* Bory de Saint-Vincent  
*D. mutabilis* (Roth) Bory ; 15  
 [=*D. acuta* (C. Agardh) Kützing, *D. glomerata* (Vaucher) C. Agardh, *D. muelleri* Kützing, *Conferva glomerata* Vaucher]  
*Entocladia* Reinke  
*E. cladophorae* (Hornby) G.S. West & F.E. Fritsch ; 15  
 [=*Endoderma cladophorae* Hornby]  
*E. polymorpha* (G.S. West) G.M. Smith ; 15  
 [=*Endoderma polymorpha* G.S. West]  
*Pseudulvella* Wille  
*P. americana* Wille ; 7  
*Stigeoclonium* Kützing  
*S. sp.* ; 8,12,23,28  
*S. attenuatum* (Hazen) Collins ; 50  
*S. farctum* Berthold ; 11

*S. flagelliferum* Kützing ; 28  
*S. lubricum* (Dillwyn) Kützing  
 var. *lubricum* ; 15,40,50  
 var. *varians* Hazen ; 40  
*S. polymorphum* (Franke) Heer. ; 27  
*S. setigerum* Kützing ; 15,40,43  
*S. stagnatile* (Hazen) Collins ; 15,59  
*S. tenue* (C. Agardh) Kützing ; 25  
**Uronema** Lagerheim  
*U. confervicola* Lagerheim ; 15  
*U. gigas* Visher ; 15  
**SCHIZOMERIDACEAE**  
*Schizomeris* Kützing  
*S. leiblenii* Kützing ; 7,8,44,50  
**ULOTRICHALES**  
**ULOTRICHINEAE**  
**ULOTRICHACEAE**  
*Chlorhormidium* B. Fott  
*C. dissectum* (Chodat) Fott ; 20  
*Gloeotila* Kützing  
*G. subconstricta* (G.S. West) Printz ; 8,12,15  
 [=*Ulothrix subconstricta* G.S. West]  
*Planktonema* Schmidle  
*P. lauterbornii* Schmidle ; 3,15,40,41  
 [=*Binuclearia lauterbornii* (Schmidle) Pros.-Lavr.]  
*Ulothrix* Kützing  
*U. sp.* ; 8,28,51-53,58  
*U. bipyrenoidosa* Fritsch ; 40 [new record]  
*U. aequalis* Kützing ; 28,59  
*U. cylindricum* Prescott ; 8,22,23  
*U. limnetica* Lemmermann ; 37  
*U. mucosa* Thuret ; 15  
*U. tenerrima* Kützing ; 7,8,15,24,27,28,35,36,43  
 [=*U. variabilis* Kützing]  
*U. tenuissima* Kützing ; 8,22-24,28  
*U. zonata* (Weber & Mohr) Kützing ; 8,12,15,19,22,28,59  
**CTENOCLADALES**  
**CTENOCLADACEAE**  
*Desmococcus* F. Brand

*D. olivaceus* (Persoon ex Ascherson) J.R. Laundon ; 8,22,23,44  
 [=*D. vulgaris* Brand, *D. Viridis* (C. Agardh) Brand, *Pleurococcus vulgaris* Nägeli, *P. naegeli* Chodat, *Lepraria olivacea* Persoon ex Archerson, *Protococcus viridis* C. Agardh]  
**ULVALES**  
**MONOSTROMATACEAE**  
*Monostroma* Thuret  
*M. bullosum* (Roth) Wittrock ; 40  
 [=*Tetraspora bullosa* Kützing, *Ulva bullosa* Roth]  
**ULVELLACEAE**  
*Protoderma* Kützing  
*P. sarcinoideum* (Groover & Bold) Tupa ; 3,24  
 [=*Pleurastrum sarcinoideum* Groover & Bold]  
*P. viride* Kützing ; 15,24,27  
**ULVACEAE**  
*Enteromorpha* Link in Nees  
*E. intestinalis* (Linnaeus) Link  
 var. *intestinalis* ; 48  
*Ulva* Linnaeus  
*U. lactuca* Linnaeus ; 48  
**SPHAEROPLEALES**  
**SPHAEROPLEACEAE**  
*Sphaeroplea* C. Agardh  
*S. annulina* (Roth) C. Agardh ; 15,28  
**CLADOPHORALES**  
**CLADOPHORACEAE**  
*Chaetomorpha* Kützing  
*C. aerea* (Dillwyn) Kützing ; 48  
*Cladophora* Kützing  
*C. sp.* ; 28,39,41,48,52,53  
*C. aegropila* (Linnaeus) Rabenhorst ; 3  
*C. fracta* (O.F. Müller) Kützing ; 7,8,12,15,19,23-25,27,28,31,41,44,50,53,59  
*C. glomerata* (Linnaeus) Kützing ; 5,7,9,11,12,15,16,19,22,24,25,28,



35,36,40,42-45,58,59  
[=C. crispata (Roth) Kützing,  
C. macrogonya (Lyngbye) Kützing,  
C. glomerata f. macrogonya  
(Lyngbye) Rabenhorst]  
status *detersus* Brand. ; 15,36  
var. *crassior* (C. Agardh) Van Den  
Hoek ; 44  
[=C. glomerata f. callicoma  
Rabenhorst, C. callicoma Kützing]  
*C. vaucheriaeformis* Kützing. ; 15  
**Rhizoclonium** Kützing  
*R. sp.* ; 8  
*R. fontanum* Kützing  
f. ; 15  
*R. hieroglyphicum* (C. Agardh) Kützing  
; 15  
**PLEURASTROPHYCEAE**  
[=TREBOUXIOPHYCEAE,  
CHLOROPHYCEAE]  
**PLEURASTRALES**  
[=MICROTHAMNIALES,  
CHAETOPHORALES]  
**CHAETOPHORACEAE**  
*Microthamnion* Nägeli  
*M. kützingianum* Nägeli ; 28  
**PHRAGMOPHYTINA**  
**CHAROPHYTAE**  
**CHAROPHYCEAE stricto sensu**  
**CHARALES**  
**CHARACEAE**  
*Chara* Linnaeus  
*C. sp.* ; 15  
*C. canescens* Desvaux & Loiseleur  
f. *canescens* ; 15,44  
*C. globularis* Thuiller  
var. *globularis*  
f. *globularis* ; 48  
[=C. fragilis Desvaux]  
*C. vulgaris* Linnaeus  
var. *vulgaris*  
f. *vulgaris* ; 15,48,59  
[=C. foetida A. Braun]  
f. *kieneri* (Daily) Norton ex  
R.D. Wood ; 40 [new record]

var. *gymnophylla* (A. Braun)  
Nyman ; 36  
[=C. gymnophylla A. Braun]  
var. *inconnexa* (T.F. Allen)  
R.D. Wood ; 15,40  
**RUDOPHYTAE**  
**EOPHYCEAE**  
[=KLEBSORMIDIOPHYCEAE]  
**STICHOPHYCIDAE**  
**KLEBSORMIDIALES**  
**KLEBSORMIDIACEAE**  
*Klebsormidium* P.C. Silva,  
K. Mattox & W. Blackwell  
*K. flaccidum* (Kützing) Silva,  
Mattox & Blackwell ; 15,25,40,42  
[=Chlorhormidium flaccidum  
(Kützing) Fott, C. flaccidum  
(A. Braun) Fott, Hormidium  
flaccidum (Kützing) A. Braun,  
Hormococcus flaccidus  
(Kützing) Chodat, Hormiscia  
flaccida (Kützing) Lagerheim,  
Stichococcus flaccidus (Kützing)  
F. Gay, Ulothrix flaccida  
Kützing]  
*K. fluitans* (Gay) Lokhorst ; 15  
[=Hormidium fluitans (F. Gay)  
Heering, Stichococcus fluitans  
F. Gay, Chlorhormidium fluitans  
(F. Gay) Starmach]  
*K. subtile* (Kützing) Tracanna ex  
Tell ; 24,27,40,51,53  
[=Hormidium subtile (Kützing)  
Heering, H. Subtilissimum  
(Rabenhorst) Mattox & Bold  
Ulothrix subtilis Kützing,  
U. subtilissima Rabenhorst]  
**STICHOCOCCACEAE**  
*Stichococcus* Nägeli  
*S. fragilis* Gay ; 15  
**ELAKATOTHRICACEAE**  
*Elakatothrix* Wille  
*E. gelatinosa* Wille ; 3,21,41  
*E. viridis* (Snow) Printz ; 19  
*Raphidonema* Lagerheim

*R. bernium* Kol. ; 40  
**CHAETOPHYCIDAE**  
**COLEOCHAETALES**  
**COLEOCHAETACEAE**  
*Coleochaete* Brébisson  
*C. orbicularis* Pringsheim ; 15,24  
**CONJUGOPHYCEAE** auct.  
[=ZYGNEMATOPHYCEAE]  
**DESMIDIALES**  
**DESMIDIACEAE**  
*Actinotaenium* (Nägeli) Teiling  
*A. cruciferum* (de Bary) Teiling ; 28  
[=Penium cruciferum (de Bary)  
Wittrock]  
*A. cucurbita* (Brébisson) Teiling ex  
Ruzicka & Pouzar ; 28  
[=Cosmarium cucurbita Brébisson ex  
Ralfs]  
*Cosmarium* Ralfs  
*C. sp.* ; 8,15,28,45,52  
*C. abbreviatum* Raciborski ; 3,31  
*C. bioculatum* Brébisson ex Ralfs  
var. *bioculatum* ; 8,3,24,50,58,59  
var. *depressum* (Schaarschmidt)  
Schmidle ; 11,24  
*C. bireme* Nordstwdt ; 15  
*C. biretum* Brébisson  
var. *trigibberum* Nordstedt ; 15  
*C. blytii* Wille  
var. *blytii* ; 8,28  
*C. botrytis* Meneghini ex Ralfs ; 7,8,11,  
13,15,19,21,24,28,35,39,40,42,59  
*C. braunii* Reinsch. ; 40 [new record]  
*C. constrictum* Delponte ; 6,15  
*C. contractum* Kirchner  
var. *contractum* ; 15  
*C. cymatopleurum* Nordstedt ; 40  
*C. denticulatum* Borge ; 8  
*C. dentiferum* Corda ; 15,28,40,43  
*C. depressum* (Nägeli) Lundell  
var. *depressum* ; 4, 6,15,43,53  
var. *planctonicum* Reverdin ; 11  
*C. didymochondrum* Nordstedt ; 36  
*C. euromum* Skuja  
var. *euromum* ; 15,36  
var. *metacystis* Skuja : 15  
*C. exiguum* W. Archer  
var. *subrectangulum* W. West &  
G.S. West ; 8  
*C. formulosum* Hoffmann  
var. *formulosum* ; 1,4-7,9-12,  
15,19,24,25,30,31,44,51,56,58  
var. *nathorstii* (Boldt) W. West &  
G.S. West ; 3,19  
*C. granatum* Brébisson ; 3,5,7-11,  
13,15,24,36,44,45,50,53,59  
*C. holmiense* Lundell  
var. *integrum* Lundell ; 36  
*C. hornavanense* Schmidle ; 15,40  
*C. humile* (Gay) Nordstedt ; 11  
*C. impressulum* Elfvig  
f. *impressulum* ; 11,36  
f. *suborthogonum* (Raciborski)  
W. West & G.S. West ; 3,15,  
40,42  
[=C. suborthogonum  
Raciborski]  
*C. incavatum* Brébisson ; 13  
*C. leave* Rabenhorst  
var. *leave* ; 8,11,15,24,28,36,47,52  
var. *octangulare* (Wille) W. West  
& G.S. West ; 3,41  
var. *westii* Krieger & Gerloff ; 15  
*C. logiense* Bissett  
f. *expensa* W. West & G.S. West  
; 36  
*C. mansangense* W. West &  
G.S. West ; 28  
*C. margaritatum* (Lundell) Roy &  
Bissett  
f. *margaritatum* ; 8  
f. ; 22,23  
*C. margaritifera* Meneghini ex  
Ralfs ; 15  
*C. medioscrobiculatum* W. West ; 28  
*C. meneghinii* Brébisson ; 7,11,  
24,58  
*C. moniliforme* Turpin ex Ralfs ; 59  
*C. nitidulum* De Notaris ; 7  
*C. obtusatum* Schmidle ; 15,54,59



- C. ornatum* Ralfs ; 35  
[=*C. ornatum* var. *anglicum* Raciborski, *C. ornatum* var. *suecicum* Raciborski, *C. ornatum* var. *lapponicum* Schmidle]  
*C. orthopunctulatum* Schmidle ; 3  
*C. pachydermum* Lundell ; 15  
f. *pachydermum* ; 15  
f. *transitoria* Heimerl ; 8  
[=*C. transitorium* (Heimerl) Duccellier]  
*C. phaseolus* Brébisson  
var. *phaseolus*  
f. *phaseolus* ; 37,50  
f. *minus* Bold. ; 24,58  
var. *minutum* Krieger ; 3  
*C. praemorsum* Brébisson ; 15  
*C. protractum* ; 12  
*C. pseudoholmi* Borge ; 28  
*C. pseudorectangulare* Grönblad ; 3,  
15,21,35,43,50  
*C. punctulatum* Brébisson  
var. *punctulatum* ; 11,28  
*C. pyramidatum* Brébisson ; 8,13  
*C. regnelli* Wille  
var. *regnelli* ; 11,19  
var. *chondrophorum* Skuja  
f. *minus* Grönblad, Scott & Croasdale ; 15  
var. *minutum* Eichler & Gutwinski ; 11,24  
*C. reniforme* (Ralfs) Archer ; 11,16,19,45  
*C. sexnotatum* Gutwinski  
var. *tristriatum* (Lütkem) Schmidle ; 3  
*C. skujae* Krieger ; 3  
*C. speciosum* Lundell  
var. *speciocum* ; 8,40  
var. *simplex* Nordstedt ; 40  
*C. sportella* Brébisson ; 15  
*C. subcostatum* Nordstedt  
f. *subcostatum* ; 3,8,28  
f. *minor* W. West & G.S. West ; 8,  
21,28  
var. *beckii* Gutwinski ; 34,36  
*C. subcrenatum* Hantzsch ; 8,36  
*C. subimpressulum* Borge ; 11  
*C. subprotumidum* Nordstedt ; 15  
*C. subspeciosum* Nordstedt  
var. *validius* Nordstedt ; 8  
*C. trilobulatum* Reinsch ; 11,24  
*C. turpinii* Brébisson  
var. *turpinii* ; 40  
var. *podolicum* Gutwinski ; 18  
*C. umbilicatum* Lütkem  
f. a. ; 15  
f. b. ; 15  
*C. variolatum* P. Lundell ; 28  
*C. vexatum* W. West  
var. *vexatum* ; 8,15,28,36,47,53  
var. *lacustre* Messikommer ; 36  
*C. wembareense* Schmidle  
var. *wembareense* ; 44  
f. ; 15  
*C. wittrockii* Lundell ; 11,16  
**Desmidium** C. Agardh  
*D. swartzii* C. Agardh ex Ralfs ; 13  
**Euastrum** Ehrenberg ex Ralfs  
*E. ansatum* Ralfs  
var. *ansatum* ; 28  
*E. binale* (Turpin) Ehrenberg ex Ralfs  
var. *gutwinski* (Schmidle) Homfeld ; 28  
[=*E. binale* f. *gutwinski* Schmidle]  
*E. insulare* (Wittrock) Roy ; 11,24  
*E. luetkemuelleri* F. Duccell.  
var. *carniolicum* (Lütkem.) Krieger ; 28  
var. *floridanum* (Scott & Grönblad) ; 28  
*E. obesum* Joshua ; 28  
*E. oblongum* (Greville) Ralfs ex Ralfs ; 8,28  
*E. pinnatum* Ralfs ; 28  
*E. verrucosum* Ehrenberg ex Ralfs  
var. *rhomboideum* Lundell ; 28  
var. *alatum* Wolle  
f. *floridense* Prescott ; 8  
**Haplotaenium** Bando

- H. minutum* (Ralfs) Bando ; 28  
[=*Docidium minutum* Ralfs, *Penium minutum* (Ralfs) Clève, *Pleurotaenium minutum* (Ralfs) Delponte]  
**Micrasterias** C. Agardh  
*M. americana* Ehrenberg ex Ralfs ; 28  
*M. denticulata* Brébisson ex Ralfs ; 28  
*M. rotata* (Greville) Ralfs ex Ralfs ; 28  
**Pleurotaenium** Nägeli  
*P. trabecula* (Ehrenberg) Nägeli ; 8,28,  
30,31  
**Spondylosium** Brébisson ex Kützing  
*S. planum* (Wolle) W. West & G.S. West ; 28  
**Staurastrum** (Meyen) Ralfs  
*S. sp.* ; 12,13,28,45,52,53,56  
*S. brachioprominens* Börgesen ; 3,15,  
35,37  
*S. crenulatum* (Nägeli) Delponte  
var. *crenulatum* ; 3  
var. *britannicum* Messikommer ; 3,19,  
21,35  
*S. cyclacanthum* W. West & G.S. West ;  
3,19,41  
*S. dispar* Brébisson ; 8  
*S. gracile* Ralfs ; 4,6,10-12,24,50  
*S. hexacerum* (Ehrenberg) Wittrock ; 11,24  
*S. longiradiatum* W. West & G.S. West ; 8  
*S. longipes* (Nordstedt) Teilling ; 37  
*S. margarithaceum* (Ehrenberg) Meneghini ex Ralfs ; 11  
*S. oxycastrum* W. Archer ; 12  
*S. paradoxum* Meyen ex Ralfs  
var. *paradoxum* ; 15,40,43,52  
var. *chaetoceros* Schröder in Zacharias ; 12,40  
var. *depressum* Meyen ; 40  
[**new record**]  
*S. pilosum* (Nägeli) Archer ; 28  
*S. polytrichum* (Perty) Rabenhorst ; 28  
*S. punctulatum* (Brébisson) Ralfs ; 8,  
11,28  
*S. pungens* Brébisson ex Ralfs ; 16  
*S. sebaldi* Reinsch  
var. *ornatum* Nordstedt  
f. *elongata* Krieger & Bourrelly ; 16  
*S. sexangulare* (Bulnheim) Lundell  
var. *subglabrum* W. West & G.S. West ; 55  
*S. tetracerum* Ralfs ; 15,37  
*S. vestitum* Ralfs ; 8  
**Stauroidesmus** Teiling  
*S. triangularis* (Lagerheim) Teiling ; 8  
[=*Arthrodesmus triangularis* Lagerheim]  
**Tetmemorus** Ralfs ex Ralfs  
*T. granulatus* Brébisson Ralfs ; 53  
[=*T. granulatus* var. *attenuatus* W. West]  
**Xanthidium** Ehrenberg ex Ralfs  
*X. sp.* ; 12  
*X. ornatum* Borge ; 41  
**PENIACEAE**  
[=**CLOSTERIACEAE**]  
**Closterium** Nitzsch ex Ralfs  
*C. sp.* ; 8,9,28,50,52,53,56  
*C. acerosum* (Schröder) Ehrenberg ex Ralfs ; 4-7,9,10,15,37,40,43-45  
*C. aciculare* T. West ; 11,15,24,30,  
31,41  
*C. acutum* Brébisson  
var. *acutum* ; 3,4,10,12,15,24,30,  
31,37,43,44,51,53,58  
[=*C. acutum* var. *tenuis* Nordstedt]  
var. *linea* (Perty) W. West. & G.S. West ; 3  
var. *variabile* (Lemmermann) Krieg. ; 3,6,12,21,24,59  
*C. cambricum* Johns ; 15,43  
*C. closterioides* (Ralfs) Louis & Peeters ; 15,28  
[=*C. libellula* Focke ex Nordstedt]  
*C. dianea* Ehrenberg ex Ralfs ; 8,11,  
13,24,41



*C. didymotocum* (Corda) Ralfs ; 8  
*C. ehrenbergii* Meneghini ex Ralfs ; 7, 13, 15, 24, 28, 52  
*C. exiguum* W. West & G.S. West ; 9  
*C. gracile* Brébisson ex Ralfs ; 1, 12  
*C. incurvum* Brébisson ; 15  
*C. intermedium* Ralfs ; 15, 22  
*C. kützingii* Brébisson ; 15, 31  
*C. lanceolatum* Kützing f. ; 36  
*C. leiblenii* Kützing var. *boergeseni* (Schmidle) Skvortsov ; 15, 28  
*C. limneticum* Lemmermann ; 24, 50  
*C. littorale* Gay. var. *littorale* ; 8, 27, 28 var. *crassum* W. West & G.S. West ; 28  
*C. longissima* Lemmermann ; 51  
*C. lunula* Nitzsch ex Ralfs var. *lunula* ; 8, 22, 24, 36, 50 var. *intermedium* Gutwinski ; 8 var. *massartii* (De Wildeman) Willi Krieger ; 8, 28 [= *C. massartii* De Wildeman]  
*C. macilentum* Brébisson var. *japonicum* (Suringar) Grönblad ; 3  
*C. malinvernianum* De Not. f. ; 15  
*C. moniliferum* Ehrenberg ex Ralfs var. *moniliferum* ; 13, 15, 28, 35, 40, 42, 43 var. *concovum* Klebs ; 15, 40  
*C. navicula* (Brébisson) Lütkenmüller ; 13 [= *Penium navicula* Brébisson]  
*C. nordstedtii* Chodat var. *polystichum* (Nygaard) Ruzicka ; 24, 27  
*C. parvulum* Nägeli var. *parvulum* ; 3, 7, 8, 15, 21-23, 28, 30, 31, 36, 40, 41, 50, 51, 59 var. *maius* (W. West in Schmidle) Krieger ; 15  
*C. praelongum* Brébisson ; 15, 31  
*C. pritchardianum* Archer var. *pritchardianum* ; 24, 27, 39 var. *alpinum* Schmidle ; 15  
*C. pseudolunula* Borge ; 15  
*C. ralfsii* Brébisson ex Ralf var. *ralfsii* ; 8, 28 var. *hybridum* Rabenhorst ; 12  
*C. rostratum* Ehrenberg ex Ralfs ; 8, 27, 28  
*C. setaceum* Ehrenberg ex Ralfs var. *setaceum* ; 12  
*C. strigosum* Brébisson ; 4, 5, 9, 10  
*C. striolatum* Ehrenberg ex Ralfs ; 8, 36  
*C. tumidulum* Gay ; 15, 40, 42  
*C. tumidum* Johnson ; 8, 28, 40, 42  
*C. venus* Kützing ex Ralfs ; 1, 7, 54  
**Gonatozygon** De Bary  
*G. monotaenium* De Bary ; 55 [= *G. raffsii* De Bary]  
**Penium** Brébisson ex Ralfs in Ralfs  
*P. cylindricum* (Ehrenberg) Brébisson ; 13, 59  
*P. margaritaceum* (Ehrenberg) Brébisson ; 28  
*P. polymorphum* (Perty) Perty ; 28  
**ZYGNEMATALES**  
 [= **MESOTAENIALES**]  
**ZYGNEMATACEAE**  
**Debarya** (Wittrock) Transeau  
*D. sp.* ; 15  
*D. glyptosperma* (De Bary) Wittrock ; 15  
**Mougeotia** C. Agardh  
*M. sp.* ; 15, 24, 28, 35, 36, 41, 44, 48, 52, 53, 55  
*M. capucina* (Bory) C. Agardh ; 15  
*M. macrospora* (Wolle) De Toni ; 15  
*M. microspora* Taft. ; 40, 42  
*M. robusta* (de Bary) Wittrock ; 36, 39, 47  
*M. ventricosa* (Wittrock) Collins ; 15  
**Mougeotiopsis** Palla  
*M. calospora* Palla ; 15

[= *Mougeotia calospora* (Palla) Czurda]  
**Sirogonium** Kützing  
*S. sticticum* (Engler & Bottler) Wille ; 50 [= *Conferva stictica* Engler & Bottler, *Spirogyra stictica* Smith]  
**Spirogyra** Link  
*S. sp.* ; 8, 9, 12, 15, 25, 28, 36, 44, 45, 48, 50-53, 55, 56  
*S. acanthophora* (Skuja) Czurda ; 15  
*S. affinis* (Hassall) P. Petit ; 40 [= *S. suecica* Transeau, *Zygnema affine* Hassall] [**new record**]  
*S. aplanospora* Randhawa ; 15  
*S. bellis* (Hassall) Clève ; 15  
*S. bififormis* Jao ; 15  
*S. calcarea* Transeau ; 15  
*S. catanaeformis* (Hassall) Kützing ; 50  
*S. chenii* Jao ; 15  
*S. daedalea* Lagerheim ; 15  
*S. decimina* (O.F. Müller) Kützing ; 15  
*S. denticulata* Transeau ; 15, 40  
*S. dentireticulata* Jao ; 15  
*S. dubia* Kützing ; 15  
*S. ellipsospora* Transeau ; 45  
*S. farlowii* Transeau ; 15  
*S. fluviatilis* Hilse ; 36, 47  
*S. fuellebornei* Schmidle ; 8  
*S. gracilis* (Hassall) Kützing ; 45, 50  
*S. granulata* Jao ; 15  
*S. grevilleana* (Hassall) Kützing ; 45, 58  
*S. grossi* Schmidle ; 15, 37  
*S. hollandiae* Taft ; 15  
*S. hyalina* Clève ; 15  
*S. hydrodictya* Transeau ; 15, 40  
*S. inflata* (Vaucher) Kützing ; 15  
*S. insignis* (Hassall) Kützing ; 45  
*S. jurgensii* Kützing ; 15, 37, 45  
*S. lagerheimii* Wittrock ; 15  
*S. longata* (Vauch.) Kützing ; 15, 40, 42, 43, 45  
*S. majuscula* Kützing ; 45  
*S. novae - angliae* Transeau ; 15, 22, 45, 50, 53  
*S. oudhensis* Randhawa ; 15  
*S. papulata* Jao ; 40, 42  
*S. pseudoreticulata* Krieger ; 15  
*S. protecta* Wood ; 45  
*S. pulchrifigurata* Jao ; 15  
*S. quadrata* (Hassall) Petit ; 15, 40, 43  
*S. rivularis* (Hassall) Rabenhorst ; 24, 45, 58  
*S. sahnii* Randhawa ; 3, 15, 40, 42  
*S. scrobiculata* (Stockmayer) Czurda ; 15  
*S. sphaerospora* ; Hirn ; 45  
*S. singularis* Nordstedt ; 15, 40  
*S. spreeiana* Rabenhorst ; 15  
*S. submaxima* Transeau ; 15  
*S. subsalina* Cederer. ; 15  
*S. tenuissima* (Hassall) Kützing ; 45  
*S. turfosa* Gay ; 15, 35, 36, 39, 47  
*S. varians* (Hassall) Kützing ; 15, 30, 31, 41, 43, 45, 58  
*S. variformis* Transeau ; 15, 40  
*S. venusta* Jao ; 15  
*S. verruculosa* Jao ; 15  
*S. weberii* Kützing ; 3, 8, 11, 15, 24, 28, 30, 31, 45, 58  
*S. westii* Transeau ; 15, 43  
**Zygnema** C. Agardh  
*sp.* ; 3, 8, 9, 15, 28, 30, 31, 45, 50, 52, 58  
*Z. calosporum* Jao ; 40 [**new record**]  
*Z. chalybeospermum* Hansgrig ; 15  
*Z. compressum* Czurda ; 15  
*Z. cylindricum* Transeau ; 15, 39,  
*Z. czurda* Randhawa ; 40  
 [**new record**]  
*Z. hymaleense* Randhawa ; 40, 42  
*Z. indicum* Transeau ; 15  
*Z. misrae* Kolkwitz & Krieger ; 37  
*Z. neocruciatum* Transeau ; 40  
 [**new record**]  
*Z. pawneanum* Taft. ; 15, 40, 42  
*Z. pectinatum* (Vaucher) C. Agardh ; 11, 15, 36, 39, 40, 42, 47  
*Z. sterile* Transeau ; 15  
*Z. subcylindricum* Krieger ; 40  
*Z. terrestre* Randhawa ; 40, 42  
**Zygnemopsis** (Skuja) Transeau



*Z. sp.* ; 15  
*Z. desmidioides* W. West & G.S. West ; 15  
*Z. transeauiana* Randh. ; 40  
[new record]  
*Zygonium* Kützing  
*Z. sp.* ; 40  
*Z. indicum* (Randhawa) Transeau ; 40,42  
**MESOTAENIACEAE**  
*Cylindrocystis* Meneghini ex De Bary  
*C. brebissonii* (Meneghini ex Ralfs) De Bary ; 8,28,36,47  
*Netrium* (Nägeli) Itzigsohn & Rothe in Rabenhorst  
*N. sp.* ; 28  
*N. digitus* (Ehrenberg ex Ralfs) Itzigsohn & Rothe ; 8  
[=*Penium digitus* Ehrenberg ex Ralfs]  
*Roya* W. West & G.S. West  
*R. obtusa* (Brébisson) W. West & G.S. West ; 8,36,47  
[=*Closterium obtusum* Brébisson]  
**CHROMISTA**  
**CRYPTISTA**  
**CRYPTOMONADEA**  
**PYRENOMONADALES**  
**PYRENOMONADACEAE**  
*Rhodomonas* Karston  
*R. sp.* ; 4,29  
**CRYPTOMONADALES**  
**CRYPTOMONADACEAE**  
*Cryptomonas* C.G. Ehrenberg  
*C. sp.* ; 5,8,9,52,53  
*C. erosa* Ehrenberg ; 11,12,24,44,50,51  
*C. ovata* Ehrenberg ; 1,4,6,7,10,12,15, 19,24,44,51,53,56,58  
**CHROOMONADACEAE**  
*Chroomonas* Hansgirg  
*C. sp.* ; 53  
**CHROMOBIOTA**  
**HETEROKONTA**  
**OCHROPHYTA**  
**PHAEISTA**  
**CHRYSISTA**  
**PHAEISTIA**

**FUCOPHYCEAE**  
[=**PHAEOPHYCEAE**]  
**ECTOCARPALES**  
**ECTOCARPACEAE**  
*Ectocarpus* Lyngbye  
*E. siliculosus* (Dillwyn.) Lyngbye ; 48  
[ = *E. confervoides* Le Jolis]  
**SCYTOSIPHONALES**  
**SCYTOSIPHONACEAE**  
*Scytosiphon* C. Agardh  
*S. lomentaria* (Lyngbye) Link ; 48  
[=*S. simplicissimus* (Clemente) Cremades]  
**XANTHOPHYCEAE**  
**MISCHOCOCCALES**  
**CHARACIOPSIDACEAE**  
*Characiopsis* A. Borzi  
*C. cylindrica* (Lambert) Lemmermann ; 24,50,58  
*Peroniella* Gobi  
*P. planctonica* G.M. Smith ; 15  
**OPHIOCYTACEAE**  
[=**SCIADIACEAE**]  
*Ophiocytium* Nägeli  
*O. arbuscula* (A. Braun) Rabenhorst ; 15  
*O. capitatum* Wolle  
var. *capitatum* ; 59  
var. *longispinum* (K. Möbius) Lemmermann ; 12  
*O. cochleare* (Eichwald) A. Braun ; 24  
[=*Sciadium arbuscula* A. Braun ex Kützing]  
*O. desertum* Printz.  
var. *minor* Prescott ; 15  
*O. majus* Nägeli ; 3,15,24,40  
*O. parvulum* (Perty) A. Braun ; 15  
**PLEUROCHLORIDACEAE**  
*Pseudostaurastrum* R. Chodat  
*P. gracile* (Reinsch.) Chodat ; 5  
*P. limneticum* (Borge) Chodat f. ; 5  
var. *minus* (Jao) Couté, Rouss. ; 3

**TRIBONEMATALES**  
[=**VAUCHERIALES**]  
**TRIBONEMATACEAE**  
*Tribonema* Derbes & Solier  
*T. aequale* Pascher ; 15  
*T. affine* (Kützing) G.S. West ; 15,37,40  
*T. minus* (Klebs) Hazen ; 15,37,40,43  
[=*T. bombycina* f. minor (Wille) G.S. West]  
*T. monochlorum* Pascher & Geitler ; 15,37  
*T. vulgare* Pascher ; 35, 37  
[=*T. bombycinum* (C. Agardh) Derbes & Solier, *T. bombycina* (C. Agardh) Derbes & Solier]  
**VAUCHERIALES**  
**VAUCHERIAEAE**  
*Vaucheria* A.P. de Candolle  
*V. sp.* ; 8,25,31  
*V. arrhyncha* Heidinger ; 37  
[=*V. unciniata* Kützing, *Vaucheriopsis arrhyncha* (Heidinger) Heering]  
*V. bursata* (O.F. Müller) C. Agardh ; 37,40  
[=*V. sessilis* (Vaucher) de Candolle, *Conferva bursata* O.F. Müller, *Ectosperma sessilis* Vaucher]  
*V. debaryana* Woronin ; 37,40,42  
*V. frigida* (Roth) C. Agardh ; 15  
[=*V. hamata* Walz, *V. mulleola* subsp. *calida* T.A. Christensen]  
*V. geminata* (Vaucher) de Candolle ; 40  
[new record]  
*V. repens* Hassal ; 37  
*V. woroniniana* Heering ; 34  
**LIMNISTIA**  
**CHRYSOPHYCEAE**  
**CHROMULINALES**  
**CHRYSAMOEBACEAE**  
*Rhizochrysis* Pascher  
*R. limnetica* G.M. Smith ; 53  
**DINOBRYACEAE**  
*Chrysococcus* G.A. Klebs  
*C. sp.* ; 12  
*Dinobryon* Ehrenberg

*D. sp.* ; 6,8,9,44,52  
*D. bavarium* O.E. Imhof ; 12  
[=*D. elongatum* Imhof]  
*D. cylindricum* Imhof ; 15  
*D. divergens* O.E. Imhof ; 53  
*D. sertularia* Ehrenberg ; 3,4,6,10, 11,15,19,31,40,41,50  
*D. utriculus* (Ehrenberg) Klebs  
var. *pusillum* (Aw.) Lemmermann ; 15  
*Epipyxis* Ehrenberg  
*E. utriculus* Ehrenberg  
var. *tabellaria* (Lemmermann) G.M. Smith ; 5,9  
[=*Dinobryon utriculus* var. *tabellariae* Lemmermann, *D. tabellariae* (Lemmermann) Pascher]  
**SYNUROPHYCEAE**  
**SYNUROPHYCIDAE**  
**SYNURALES**  
**SYNURACEAE**  
*Paraphysomonas* De Saedeleer  
*P. vestita* (A.C. Stokes) De Saedeleer ; 12  
[=*Physomonas vestita* A.C. Stokes]  
*Synura* Ehrenberg  
*S. uvella* Ehrenberg emend. F. F. Stein ; 15,31  
**MALLOMONADACEAE**  
*Mallomonas* Perty  
*M. sp.* ; 3  
**HYDRURALES**  
**HYDRURACEAE**  
*Hydrurus* C. Agardh  
*H. foetidus* (Villars) Trevisan ; 59  
**DIATOMEAE**  
[=**BACILLARIOPHYTA**]  
**COSCINODISCOPHYCEAE**  
**THALASSIOSIROPHYCIDAE**  
**THALASSIOSIRALES**  
**THALASSIOSIRACEAE**  
*Thalassiosira* Cleve



*T. bramaputrae* (Ehrenb.) Håk. & Locker  
; 44,45,54  
[=Aulacoseira distans f. lacustris  
(Grunow) Simonsen, Melosira  
distans var. lirata f. lacustris  
(Grunow) Bethge, Coscinodiscus  
lacustris Grunow]

*T. weissflogii* (Grunow) G. Fryxell &  
Hasle ; 16  
[=T. fluviatilis Hustedt,  
Micropodiscus weissflogii Grunow]

**SKELÉTONEMACEAE**  
*Skeletonema* Greville  
*S. costatum* (Greville) Cléve ; 51

**STEPHANODISCACEAE**  
*Cyclostephanos* Round  
*C. dubius* (Fricke) Round ; 16,53,57  
{=Stephanodiscus dubius (Fricke)  
Hustedt]

*Cyclotella* (Kützing) Brébisson  
*C. sp.* ; 28,45,51,53  
*C. atomus* Hustedt ; 44  
*C. bodanica* Grunow ; 8,15,16,44,51,54  
*C. catenata* (Brun) Bachmann ; 3,28  
*C. chaetoceras* Lemmermann ; 7,49,53  
*C. distinguenda* Hustedt ; 8  
[=C. operculata (C. Agardh) Kützing]

*C. glomerata* Bachmann ; 7,  
8,16,27,44,49,53  
[=C. stelligera var. glomerata  
(Bachmann) Haw. & Hurley]

*C. krammeri* Håk. ; 16  
*C. kützingiana* Thwaites  
var. *kützingiana* ; 1,4,7,8,10,11-13,15,  
16,23-25,28,29,44-46,50,51,54,57  
var. *radiosa* Fricke ; 8,12,23

*C. meneghiniana* Kützing  
var. *meneghiniana* ; 1,3-5,7-9,11-16,19,  
21-26,29,31,35,36,40,41,43-45,  
47,51-58  
var. *plana* Fricke ; 15

*C. ocellata* Pant ; 1,4-16,19,22-25,  
27,29,31,41,43-46,50-54,56-58

*C. planctonica* Brunthaler ; 16,24,50,51  
[=C. socialis var. planctonica

(Brunthaler) Cléve]

*C. radiosa* (Grunow) Lemmermann ;  
8,12,14-16,22,23,35,37,41,53,57  
[=C. comta (Ehrenberg) Kützing  
C. comta var. radiosa Grunow]

*C. stelligera* (Cléve & Grunow)  
Van Heurck ; 5,8,9,16,23

*C. striata* (Kützing) Grunow ; 8,15

**Stephanodiscus** Ehrenberg  
*S. sp.* ; 45  
*S. alpinus* Hustedt ; 7  
*S. astrea* (Ehrenberg) Grunow ; 1,3,  
4,6-8,12,14,16,21,25,28,29,41,  
44,50,51

*S. hantzschii* Grunow ; 8,16

*S. minutulus* (Kützing) Cléve &  
Möller ; 23  
[=S. rotula var. minutula (Kützing)  
Ross & Sims,  
S. astrea var. minutula (Kützing)  
Grunow]

*S. niagarae* Ehrenberg ; 53

*S. rotula* (Kützing) Hendey ; 8,14,  
16,22,23,54  
[=Cyclotella rotula Kützing,  
C. astrea (Ehrenberg) Kützing]

**COSCINODISCOPHYCIDAE**

**MELOSIRALES**

**MELOSIRACEAE**  
*Melosira* C. Agardh  
*M. sp.* ; 15,45,51,52  
*M. juergensii* C. Agardh  
f. *bothnica* (Grunow) Cléve ; 15  
var. *subangularis* Grunow ; 35,41,  
47

*M. lineata* (Dillwyn) C. Agardh  
var. *octogona* (Grunow) Cléve ; 47  
[=M. borneri var. octogona  
Grunow]

*M. nummuloides* (Dillwyn)  
C. Agardh ; 44

*M. undulata* (Ehrenberg) Kützing  
; 15,28,40,41

*M. varians* C. Agardh ; 1,3,4,7,  
8,10,12,14-16,22-25,28,29,31,

37,40,41,43-45,51-54,56,58  
[=Aulacosira varians C. Agardh,  
Lysigonium varians (C. Agardh)  
De Toni]

**PARALIALES**

**PARALIACEAE**  
*Ellerbeckia* R.M.: Crawford  
*E. arenaria* (Moore ex Ralfs)  
R.M. Crawford ; 14,15,28,36,47  
[=Melosira arenaria Moore ex Ralfs]

**AULACOSEIRALES**

**AULACOSEIRACEAE**  
*Aulacoseira* Thwaites  
*A. ambigua* (Grunow) Simonsen ; 13,14,  
16,40,50  
[=Melosira ambigua (Grunow)  
O.F. Müller]

*A. distans* (Ehrenberg) Simonsen ; 16,  
37,45  
[=Gallionella distans Ehrenberg,  
G. laevis Ehrenberg, Lysigonium  
distans (Ehrenberg) Kuntze,  
Melosira distans (Ehrenberg)  
Kützing]

*A. granulata* (Ehrenberg) Simonsen  
var. *granulata* ; 3,11-16,22-25,28,  
29,40,41,44,50-54,57  
[=Lysigonium granulatum  
(Ehrenberg) Kuntze, Melosira  
granulata (Ehrenberg) Ralfs]  
var. *angustissima* (O.F. Müller)  
Simonsen ; 3,8,16,24,50,53  
[=Melosira granulata var.  
angustissima O.F. Müller]

*A. islandica* (O.F. Müller) Simonsen ; 28  
[=Melosira islandica O.F. Müller]

*A. italica* (Ehrenberg) Simonsen  
var. *italica* ; 3,12-14,21,28,41,44,51,56  
[=Melosira italica (Ehrenberg)  
Kützing, M. crenulata (Ehrenberg)  
Kützing, Gallionella crenata  
Ehrenberg, Lysigonium crenulatum  
(Ehrenberg) Kuntze]

var. *tenuissima* (Grunow) Simonsen  
; 12,44

[=Melosira italica var. tenuissima  
(Grunow) O.F. Müller]  
subsp. *subarctica* (O.F. Müller)  
Simonsen ; 53  
[A. subarctica (O.F. Müller)  
E.Y. Haw.]

*A. lirata* (Ehrenberg) Ross ; 53  
[=Melosira distans var. lirata  
(Ehrenberg) Bethge, M. Distans  
var. lirata (Ehrenberg)  
O. F. Müller, M. lirata (Ehrenberg)  
Kützing]

*A. muzzanensis* (Meister) Krammer  
; 13,21,41  
[=Melosira muzzanensis  
Meister, M. granulata var.  
muzzanensis (F. Meister)  
Hustedt]

**COSCINODISCALES**

**COSCINODISCACEAE**  
*Coscinodiscus* Ehrenberg  
*C. sp.* ; 8,23,41,45,51  
*C. granii* Gough ; 15  
*C. oculus-iridis* Ehrenberg ; 41

**HEMIDISCACEAE**  
*Actinocyclus* Ehrenberg  
*A. normanii* (Gregory) Hustedt  
f. *subsalsus* (Juhlin-Dannfelt)  
Hustedt ; 41  
[=Coscinodiscus radiatus  
Ehrenberg, C. borealis  
Ehrenberg, C. subsalsus  
Juhlin-Dannfelt]

**BIDDULPHIOPHYCIDAE**

**BIDDULPHIALES**

**BIDDULPHIACEAE**  
*Terpsinoë* Ehrenberg  
*T. musica* Ehrenberg ; 15

**LITHODESMIOPHYCIDAE**

**LITHODESMIALES**

**LITHODESMIACEAE**  
*Ditylum* J.W. Bailey  
*D. sp.* ; 51

**CYMATOSIROPHYCIDAE**



**CYMATOSIRALES****CYMATOSIRACEAE**

- Campylosira* Grunow ex Van Heurck  
*C. cymbelliformis* (A. Schmidt) Grunow  
 ex Van Heurck ; 38  
 [=Synedra cymbelliformis  
 A. Schmidt]

**RHIZOLENIOPHYCIDAE****RHIZOLENIALES****RHIZOLENIACEAE**

- Urosolenia* F.E. Round &  
 R.M. Crawford in F.E. Round,  
 R.M. Crawford & D.G. Mann  
 [=Rhizosolenia Brightwell]  
*U. sp.* ; 51  
*U. eriensis* (H.L. Smith) F.E. Round &  
 R.M. Crawford  
 ; 40,42  
 [=Rhizosolenia eriensis H.L. Smith]

**CHAETOCEROTOPHYCIDAE****CHAETOCEROTALES****CHAETOCEROTACEAE**

- Chaetoceros* Ehrenberg  
*C. sp.* ; 51,58  
*C. curvisetum* Cléve ; 20  
*C. densum* Cléve ; 51  
 [=C. boreale var. densum Cleve]  
*C. muellerii* Lemmermann ; 20,44  
*C. rostratus* Lauder ; 51  
*C. teres* Cléve ; 51  
*C. wighamii* Brightwell ; 20  
 [=C. biconcavum Gran, C. bottnicum  
 Cleve]

**ACANTHOCERATAACEAE**

- Acanthoceras* H. Honigmann  
*A. zachariasii* (Brun) Simonson ; 41  
 [=Attheya zachariasii Brun]

**FRAGILARIOPHYCEAE****FRAGILARIOPHYCIDAE****FRAGILARIALES****FRAGILARIACEAE**

- Asterionella* Hassall  
*A. sp.* ; 37  
*A. formosa* Hassall  
 var. *formosa* ; 8,12,16,21-24,41,

- 45,50,51,53,55  
 var. *gracillima* (Hantzsch in  
 Rabenhorst) Grunow ; 19,24,50

- Ctenophora* (A. Grunow)  
 D.M. Williams & F.E. Round  
*C. pulchella* (Kützing)  
 D.M. Williams & Round  
 var. *pulchella* ; 15,16,20,  
 21,35,36,40,41,44,45,47  
 [=Synedra pulchella Ralfs  
 ex Kützing, S. pulchella  
 f. major Grunow,  
 S. pulchella var. smithii  
 (Ralfs) Grunow]  
 var. *lanceolata* (O'Meara)  
 L. Bukhtiyarova ; 53  
 [=Synedra pulchella var.  
 lanceolata O'Meara,  
 Fragilaria pulchella var.  
 lanceolata (O'Meara) Lange-  
 Bertalot]

- Diatoma* Bory de St-Vincent  
*D. sp.* ; 45,50  
*D. elongatum* (Lyngbye) C. Agardh  
 var. *minor* Grunow ; 44  
*D. hyemale* (Roth) Heiberg  
 var. *hyemale* ; 8,14-16,27,36,  
 45,46,51,53  
 [=D. hiemale (Lyngbye)  
 Heiberg, Odontidium  
 hiemale (Roth) Kützing]  
 var. *quadratum* (Kützing) R. Ross  
 ; 8,14,15,22,23,53  
 [=Diatoma mesodon  
 (Ehrenberg) Kützing,  
 D. hyemalis f. mesodon  
 (Ehrenberg) Grunow]  
*D. tenue* C. Agardh  
 var. *tenue* ; 7,11,13,15,22,24  
 [=D. elongatum var. tenue  
 (C. Agardh) Van Huerck,  
 Odontidium elongatum var.  
 tenue (C. Agardh) Patrick]  
 var. *elongatum* Lyngbye 7,  
 10-12,14-16,19,22,23,25,

- 29,36,41,43-45,51,56,57  
 [=D. elongatum (Lyngbye)  
 C. Agardh, Odontidium  
 elongatum (Lyngbye) Elm.]  
 var. *pachycephala* Grunow ; 40  
 [=D. elongatum var. pachycephala  
 (Grunow) Hustedt]  
*D. vulgaris* Bory  
 var. *vulgaris* ; 4,5,7,9-12,14-16,20,  
 22-25,27-29,31,37,40,41,43-45,  
 49-54,56-58  
 [=Odontidium vulgare (Bory) Elm.]  
 var. *breve* Grunow ; 4,7,8,14,15,19,22,  
 23,28,41,53  
 [=D. tenue var. ovalis (Fricke)  
 Hustedt]  
 var. *capitulata* Grunow ; 53  
 var. *grande* (W. Smith) Grunow ; 8,9,  
 25,53  
 [=D. ehrenbergii Kützing, D. vulgaris  
 var. ehrenbergii (Kützing) Grunow]  
 var. *lineare* Grunow ; 14,16,22,23  
*Fragilaria* Lyngbye  
*F. sp.* ; 8,9,44,45,52,53  
*F. acus* (Kützing) Lange-Bertalot ; 1,4,6,  
 8,9,11-13,15,16,22-26,36,37,41,44,47,  
 51,53,54,56,57  
 [=F. ulna var. acus (Kützing) Lange-  
 Bertalot, Synedra acus Kützing,  
 S. tenuissima Kützing]  
*F. amphicephala* (Kützing) Lange-  
 Bertalot ; 4,9,10,15,19,53  
 [=F. capucina ssp. amphicephala  
 (Kützing) Lange-Bertalot, Synedra  
 amphicephala Kützing]  
*F. austriaca* (Grunow) Lange Bertalot ;  
 12,15,41  
 [=F. capucina ssp. austriaca  
 (Grunow) Lange-Bertalot,  
 F. gracillima A. Mayer, Synedra  
 amphicephala var. austriaca  
 (Grunow) Hustedt, S. austriaca  
 Grunow]  
*F. biceps* (Kützing) Lange-Bertalot ; 8,12,  
 15,16,19,22,24-26,29,51,53,56

- [=Ulnaria biceps (Kützing)  
 Compere, Synedra ulna var. biceps  
 (Kützing) Kirchner, S. ulna var.  
 longissima (W. Smith) Brun]  
*F. capitata* (Ehrenberg) Lange-  
 Bertalot nom. illeg. ; 4,11-15,19,  
 22,25,29,31,41,44,53-55  
 [=F. dilatata (Brébisson)  
 Lange-Bertalot, Ulnaria  
 capitata (Ehrenberg)  
 Compere, Synedra capitata  
 Ehrenberg]  
*F. capucina* Desmazières  
 var. *capucina* ; 3,13-16,21,24,  
 39,40,43,51,53  
 [=F. diophthalma (Ehrenberg)  
 Ehrenberg, F. rhabdosoma  
 Ehrenberg]  
 var. *capitellata* (Grunow) Lange-  
 Bertalot ; 41  
 [=F. vaucheriae var.  
 capitellata (Grunow) Patrick  
 Synedra vaucheria Kützing  
 var. capitellata (Grunow)  
 Cléve]  
 var. *lanceolata* Grunow ; 51  
 var. *mesolepta* (Rabenhorst)  
 Rabenhorst ; 3,8,53  
 [=F. capucina var. mesolepta  
 Rabenhorst]  
 var. *vaucheriae* ; 3,7-12,14,16,19,  
 22-25,29,41,47,53,58  
 [=F. vaucheriae (Kützing)  
 J.B. Petersen, F. intermedia  
 Grunow, F. intermedia  
 (Kützing) Petersen,  
 F. capucina var. vaucheriae  
 (Kützing) Lange-Bertalot,  
 Synedra vaucheriae (Kützing)  
 Kützing]  
*F. crotonensis* Kitton ; 1,8,14-16,  
 19,28,44,51,53,55,56  
 [=Synedra crotonensis (Kitton)  
 Cléve & Möller]



- F. danica* (Kützing) Lange-Bertalot ; 4,7, 10,16,22-24,28  
[=Synedra ulna var. danica (Kützing) Van Heurck, *S. danica* Kützing]
- F. delicatissima* (Kützing) Lange-Bertalot  
var. *delicatissima* ; 5,8,9,11,14,19,53  
[=Synedra delicatissima W. Smith, *S. acus* var. *delicatissima* (W. Smith) Grunow]  
var. *angustissima* (Grunow) Lange-Bertalot ; 12,16,41,53,57  
[=Synedra delicatissima var. *angustissima* Grunow, *S. acus* var. *angustissima* (Grunow) Van Heurck]
- F. demerarae* (Grunow) Lange-Bertalot ; 8,23  
[=Synedra demerarae Grunow]
- F. fragilarioides* (Grunow) Choln. ; 11,53  
[=Synedra rumpens var. *fragilarioides* Grunow]
- F. henryi* Lange-Bertalot ; 14  
[=F. famelica subsp. littoralis (H. Germain) Lange-Bertalot, *F. intermedia* var. littoralis Grunow]
- F. hyalina* (Kützing) Grunow ; 15  
[=Diatoma hyalinum Kützing]
- F. nanana* Lange-Bertalot ; 28,53  
[=F. nana (F. Meister) Lange-Bertalot, *Synedra nana* F. Meister]
- F. pulchella* Ralfs ; 13
- F. radians* (Kützing) D.M. Williams & Round ; 8,36,40  
[=F. radians (Kützing) Lange-Bertalot, *Synedra radians* Kützing, *S. acus* var. *radians* (Kützing) Hustedt in Pascher]
- F. striatula* Lyngbye ; 15
- F. tenera* (W. Smith) Lange-Bertalot ; 15,19  
[=Synedra tenera W. Smith]
- F. ulna* (Nitzsch) Lange-Bertalot  
var. *ulna* ; 1-16,19-25,27-29,31, 35,36,40-45,49-51,53-57  
[=S. lanceolata Kützing, *S. splendens* Kützing, *S. ulna* var. *splendens* (Kützing) Van Heurck *Synedra ulna* (Nitzsch) Ehrenberg, *Bacillaria ulna* Nitzsch]  
var. *angustissima* (Nitzsch) Lange-Bertalot ; 16
- Fragilariforma** D.M. Williams & F.E. Round
- F. constricta* (Ehrenberg) Williams & F.E. Round ; 4,19,28  
[=Fragilaria constricta Ehrenberg, *Neofragilaria constricta* (Ehrenberg) D.M. Williams & F.E. Round]
- F. virescens* (Ralfs) D.M. Williams & F.E. Round ; 4,15,16,19,28, 31,35  
[=Fragilaria virescens Ralfs]
- Hannaea** R.M. Patrick in R.M. Patrick & C.W. Reimer
- H. sp.* ; 8
- H. arcus* (Ehrenberg) R.M. Patrick  
var. *arcus* ; 8,14-16,22,23,25, 28,41,44,53  
[=Navicula arcus Ehrenberg, *Ceratoneis arcus* (Ehrenberg) Kützing]  
var. *amphioxys* (Rabenhorst) R. M. Patrick ; 8,22,23,28, 40,53  
[=Ceratoneis amphioxys Rabenhorst, *C. arcus* var. *amphioxys* (Rabenhorst) Brunth]  
var. *linearis* (Holmboe) R. Ross ; 8,28  
[=Ceratoneis arcus var. *linearis* Holmboe]
- Martyana** F.E. Round in F.E. Round, R.M. Crawford & D.G. Mann
- M. martyi* (Hériveau) F.E. Round ; 14

- [=Opephora martyi Hériveau, *Staurosira martyi* (Hériveau) Lange-Bertalot, *Fragilaria martyi* (Hériveau) Lange-Bertalot]
- Meridion** C. Agardh
- M. anceps* (Ehrenberg) D.M. Williams ; 8,13,22,23,28,37  
[=Diatoma anceps (Ehrenberg) Grunow]
- M. circulare* (Greville) C. Agardh  
var. *circulare* ; 8-10,14,16,22,23,25, 28,29,31,44,45,51-53,56  
[=M. vernale C. Agardh, *Echinella circularis* Greville]  
var. *constricta* (Ralfs) A. Cléve ; 8,28
- Pseudostaurosira** D.M. Williams & F.E. Round
- P. brevistriata* (Grunow) D.M. Williams & F.E. Round ; 10,16,44  
[=Fragilaria brevistriata Grunow]
- Staurosira** Ehrenberg
- S. berolinensis* (Lemmermann) Lange-Bertalot ; 15,37  
[=Fragilaria berolinensis (Lemmermann) Lange-Bertalot, *Synedra berolinensis* Lemmermann]
- S. construens* Ehrenberg  
var. *construens* ; 4,7,9,10,12,13,15, 16,19,22-25,27-29,31,35,36,41,45, 47,52  
[=Fragilaria construens (Ehrenberg) Grunow]  
var. *binodis* (Ehrenberg) Hamilton ; 13,14,16,22,23,41  
[=Fragilaria construens var. *binodis* (Ehrenberg) Grunow]  
var. *subsalina* (Hustedt) E.Y. Haw. & M.G. Kelly ; 8,19  
[=Fragilaria construens var. *subsalina* Hustedt]  
var. *triundulata* (Richelt ex Hartz & Østrup) E.Y. Haw. & M.G. Kelly ; 14  
[=Fragilaria construens var. *triundulata* Riechelt]  
var. *venter* (Ehrenberg) Hamilton ; 13,22  
[=Fragilaria construens var. *venter* (Ehrenberg) Grunow]
- Staurosirella** D.M. Williams & F.E. Round
- S. leptostauron* (Ehrenberg) Williams & Round ; 4,14,45  
[=Fragilaria harrisonii W. Smith, *F. leptostauron* (Ehrenberg) Hustedt]
- S. pinnata* (Ehrenberg) D.M. Williams & F.E. Round  
var. *pinnata* ; 7,8,12-16,23,25, 27,28,31,41,57  
[=Fragilaria pinnata Ehrenberg, *F. mutabilis* (W. Smith) Grunow, *Odontidium mutabile* W. Smith]  
var. *trigona* (Brun & Hériveau) E.Y. Haw. & M.G. Kelly ; 19  
[=Fragilaria pinnata var. *trigona* (Brun. & Heriveau) Hustedt]
- Synedra** Ehrenberg
- S. sp.* ; 45,51,52
- S. arcuata* (Ostenfeld) Cléve  
f. *arcuata* ; 29  
f. *suberecta* Cléve ; 15
- S. balatonis* Pantocsek ; 15  
[=S. ulna var. *balatonis* (Pantocsek) Cléve]
- S. filiformis* Carter & Denny  
var. *exilis* A. Cléve ; 8,53
- S. fulgens* (Greville) W. Smith ; 44  
[=Exilaria fulgens Greville]
- S. joursacensis* Hériveau ; 15  
[=S. ulna f. *joursacensis* Cléve]
- S. oostenfeldii* (Krieg.) Cléve ; 15
- S. parasitica* (W. Smith) Hustedt  
var. *subconstricta* Grunow ; 8,14
- S. rostrata* Pantocsek ; 16  
[=S. ulna var. *rostrata* Hustedt]
- S. ulna* (Nitzsch) Ehrenberg



- var. *amphirhynchus* (Ehrenberg)  
Grunow ; 16,19,53  
[=S. amphirhynchus Ehrenberg,  
S. ulna var. vitrea (Bory ex  
Kützing) Van Heurck]
- var. *contracta* Oestrup ; 3,8,22
- var. *notata* Grunow; 28
- var. *oxyrhynchus* (Kützing)  
Van Heurck  
f. *oxyrhynchus*; 3,12,14,22-25,28,  
29,41,53,56,57  
f. *mediocontracta* (Forti) Hustedt ; 3
- var. *ramesi* Héribaud ; 3,41
- var. *spathulifera* Grunow ; 14
- var. *subaequalis* (Grunow) Van  
Heurck ; 8,15,44
- Synedrella** F.E. Round & Maidana  
*S. parasitica* (W. Smith) F.E. Round &  
Maidana ; 8,14,27,53  
[=Odontidium parasiticum W. Smith,  
Synedra parasitica (W. Smith)  
Hustedt, Fragilaria parasitica  
(W. Smith) Grunow]
- Tabularia** (F.T. Kützing) D.M. Williams  
et F.E. Round  
*T. sp.* ; 12
- T. fasciculata* (C. Agardh) Williams &  
Round  
var. *fasciculata* ; 7,8,10,12,15,19,  
24,28,35,39,40,42,44,46,51,58  
[=Fragilaria fasciculata  
(C. Agardh) Lange-Bertalot,  
F. tabulata var. truncata (Greville)  
Lange-Bertalot, Echinella  
fasciculata var. truncata  
Greville, Synedra fasciculata  
(C. Agardh) Kützing,  
S. fasciculata var. truncata  
(Greville) Patrick, Diatoma  
fasciculatum C. Agardh, Synedra  
affinis Kützing, S. affinis var.  
fasciculata (Kützing) Grunow]
- var. *hybrida* (Grunow) *comb. nov.* ; 15  
[=Synedra affinis var. hybrida  
Grunow, S. affinis var. hybrida
- Grunow f. *elongata* Van Heurck,  
S. tabulata (C. Agardh) Kützing  
var. *hybrida* (Grunow) Cléve]
- T. familiaris* (Kützing.) *comb. nov.*  
; 8,24,44,53  
[=Synedra rumpens var.  
familiaris (Kützing) Grunow]
- T. meneghiana* (Grunow) *comb. nov.*  
; 3  
[=Synedra rumpens var.  
meneghiana Grunow]
- T. rumpens* (Kützing) *comb. nov.* ;  
7,8,14,19,24  
[=Synedra rumpens Kützing,  
Fragilaria rumpens (Kützing)  
Carl., F. capucina ssp. rumpens  
(Kützing) Lange-Bertalot]
- T. tabulata* (C. Agardh) Snoeijis ; 16  
[=Synedra tabulata (C. Agardh)  
Kützing, Diatoma tabulatum  
C. Agardh, S. affinis var. tabulata  
J.-Danff.]
- TABELLARIALES**  
**TABELLARIAACEAE**  
*Oxyneis* F.E. Round in F.E. Round,  
R.M. Crawford & D.G. Mann  
*O. binalis* (Ehrenberg) F.E. Round  
; 19  
[=Tabellaria binalis (Ehrenberg)  
Grunow]
- Tabellaria** C.G. Ehrenberg ex  
F.T. Kützing  
*T. sp.* ; 44
- T. fenestrata* (Lyngbye) Kützing ;  
19,28,51  
[=Striatella fenestrata (Lyngbye)  
Kuntze]
- T. flocculosa* (Roth) Kützing  
var. *flocculosa* ; 28,41  
[=Conferva flocculosa Roth,  
Bacillaria flocculosa (Roth)  
Leiblein, Striatella flocculosa  
(Roth) Kuntze]
- var. *asterionelloides* Grunow  
; 8,19

**LICMOPHORALES**  
**LICMOPHORACEAE**

- Licmophora** C. Agardh  
*L. sp.* ; 9  
*L. anglica* (Kützing) Grunow ; 47  
*L. paradoxa* (Lyngbye) C. Agardh  
; 39,40,42  
[=Echinella paradoxa Lyngbye,  
Gomphonema paradoxum Agardh,  
Styllaria paradoxa (Lyngbye) Bory  
de St. -Vincent]

**RHAPONEIDALES**  
**PSAMMODISCACEAE**

- Psammodiscus** F. E. Round et  
D. G. Mann  
*P. nitidus* (W. Gregory) Round &  
D.G. Mann ; 24  
[=Coscinodiscus nitidus Gregory]

**THALASSIONEMATALES**  
**THALASSIONEMATAACEAE**

- Thalassionema** M. Peragallo  
*T. nitzschioides* (Grunow) Grunow ex  
Hustedt ; 15, 39  
[=Synedra nitzschioides Grunow,  
Thalassiothrix nitzschioides var.  
javanica Grunow, T. nitzschioides  
(Grunow) Grunow]

**RHABDONEMATALES**  
**RHABDONEMATAACEAE**

- Rhabdonema** Kützing  
*R. arcuatum* (Lyngbye) Kützing ; 40  
[=Diatoma arcuatum Lyngbye]  
[new record]

**STRIATELLALES**  
**STRIATELLACEAE**

- Grammatophora** Ehrenberg  
*G. sp.* ; 45  
*G. angulosa* Ehrenberg ; 47

**BACILLARIOPHYCEAE**  
**EUNOTIOPHYCIDAE**

- EUNOTIALES**  
**EUNOTIACEAE**  
**Eunotia** Ehrenberg  
*E. sp.* ; 8,12,52

- E. arcubus* Nörpel & Lange-Bertalot  
; 22  
[=E. arcus var. bidens Grunow]
- E. arcus* Ehrenberg ; 16,19,44,45
- E. bidens* Ehrenberg  
var. *bidens* ; 28,53  
[=E. praerupta var. bidens  
(Ehrenberg) Grunow]
- var. *inflata* Grunow *nov. nomen* ;  
19,28  
[=E. inflata (Grunow) Nörpel-  
Schempp & Lange-Bert. *in*  
Lange-Bertalot, E. praerupta  
var. inflata Grunow]
- var. *praerupta* (Ehrenberg) *nov.*  
*nomen* ; 28,53  
[=E. praerupta Ehrenberg]
- E. clévei* Grunow ; 13
- E. curvata* (Kützing) Lagerstedt ;  
13-15,22,23,53  
[=E. alpina (Nägeli) Hustedt,  
E. lunaris (Ehrenberg) Grunow  
*in* Van Heurck (non E. Lunaris  
Brébisson ex Rabenhorst),  
E. lunaris var. bilunaris Grunow  
*in* Van Heurck, Ceratoneis  
lunaris (Ehrenberg) Grunow *in*  
Rabenhorst]
- E. diodon* Ehrenberg ; 8,28
- E. exigua* (Brébisson ex Kützing)  
Rabenhorst ; 8
- E. glacialis* F. Meister ; 28  
[=E. gracilis (Ehrenberg)  
Rabenhorst]
- E. grunowii* A. Berg.  
f. *uplandica* Cléve ; 15
- E. hebridica* Åke Berg ; 28
- E. monodon* Ehrenberg ; 8,9,13,19  
[=E. monodon var. major  
(W. Smith) Hustedt, E. major  
(W. Smith) Rabenhorst]
- E. parallela* Ehrenberg ; 15
- E. pectinalis* (O.F. Müller)  
Rabenhorst ; 9,15,19,22,28



- [=E. pectinalis var. minor (Kützing)  
Rabenhorst, Himantidium pectinale  
Kützing]  
*E. repens* A. Berg.  
f.  $\delta$  A. Berg. ; 15  
*E. robusta* Ralfs ; 28  
*E. sudetica* O.F. Müller ; 12  
*E. tenella* (Grunow) Hustedt ; 28  
*E. valida* Hustedt ; 8,28,53
- BACILLARIOPHYCIDAE**  
**MASTOGLOIALES**  
**MASTOGLOIACEAE**  
*Aneumastus* D.G. Mann & A.J. Stickle  
in F. E. Round, R. M. Crawford &  
D. G. Mann  
*A. tusculus* (Ehrenberg) D.G. Mann &  
A.J. Stickle ; 7,8,12,14,16,21,41,51  
[=Navicula tuscula (Ehrenberg)  
Grunow, N. punctata (Kützing)  
Donkin, Pinnularia tuscula  
Ehrenberg, Stauroneis punctata  
Kützing, Stauroptera tuscula  
(Ehrenberg) Ehrenberg]  
*Mastogloia* Thwaites ex W. Smith  
*M. apiculata* W. Smith ; 47  
*M. dansei* Thwaites ex W. Smith  
var. *dansei* (Thwaites) Cléve ;  
7,11,28,44  
[=M. dansei Thwaites, M. elliptica  
var. danseii (Thwaites ex  
W. Smith) Cléve, M. Grevillei  
W. Smith, Dickieia dansei  
Thwaites]  
var. *streptoraphe* (A. Berg. in A. Berg  
& Hessland) A. Cléve ; 11  
*M. elliptica* (C. Agardh) Cléve ; 7,11,13,  
19,41  
[=M. dansei var. elliptica Van Heurck,  
Frustulia elliptica C. Agardh]  
*M. lanceolata* Thwaites ; 11  
[=M. smithii var. lanceolata Grunow]  
*M. recta* Hustedt ; 14  
*M. smithii* Thwaites  
var. *smithii* ; 7,11,13,24,36,39,47  
var. *lacustris* Grunow ; 11,36,44

- CYMBELLALES**  
**RHOICOSPHENIACEAE**  
*Gomphonemopsis* L.K. Medlin in  
L.K. Medlin & F. E. Round  
*G. exigua* (Kützing) L.K. Medlin ;  
15,20  
[=Gomphonema exiguum  
Kützing]  
*Rhoicosphenia* Grunow  
*R. abbreviata* (C. Agardh) Lange-  
Bertalot ; 1,4,5,7-17,22,24-29,  
31,35,36,40,41,43-45,47,50-54,  
56-58  
[=R. curvata (Kützing ex  
Rabenhorst) Grunow,  
Gomphonema abbreviatum  
C. Agardh, G. curvatum  
Kützing]
- ANOMOEONEIDACEAE**  
*Anomoeoneis* Pfitzer  
*A. costata* (Kützing) Hustedt ; 7,13,  
25,44  
*A. sphaerophora* (Ehrenberg) Pfitz.  
var. *sphaerophora* ; 7,11,13-15,27,  
38,40,44,53  
[=Navicula sphaerophora  
Ehrenberg]  
var. *guntheri* O. F. Müller ; 44  
var. *polygramma* (Ehrenberg)  
O. F. Müller ; 38,44  
var. *sculpta* (Ehrenberg)  
O.F. Müller ; 3,7,24,44
- CYMBELLACEAE**  
*Cymbella* C. Agardh  
*C. sp.* ; 45,51-53  
*C. aequalis* W. Smith ; 16  
[=C. obtusa Gregory]  
*C. affinis* Kützing ; 3-9,12,14-17,19,  
21-25,27-29,31,36,41,43-45,47,  
49-54,56-58  
[=C. parva W. Smith,  
C. cymbiformis C. Agardh,  
Cocconema fusidium  
Ehrenberg]  
*C. agardhii* C. Agardh ; 41

- C. amphicephala* Nägeli  
var. *amphicephala* ; 4-10,12,14-16,  
22,23,25,28,29,41,45,46,52  
var. *intermedia* Cléve ; 8,28  
*C. angustata* (W. Smith) Cléve ; 14,50  
*C. aspera* (Ehrenberg) Cléve ; 8,14-16,  
45,46,50  
[=Cocconema asperum Ehrenberg,  
Cymbella gastroides Kützing]  
*C. bernensis* Meister ; 15  
*C. cistula* (Ehrenberg) Kirchner  
var. *cistula* ; 3,7,8,11,12,14-16,19,  
22-25,28,29,36,40,41,43-45,53,56  
[=Cocconema cistula (Ehrenberg)  
Ehrenberg, Cocconeis cistula  
(Ehrenberg) Ehrenberg, Frustulia  
maculata Kützing, Cymbella  
maculata (Kützing) Brébisson &  
Godey, C. cistula (Ehrenberg in  
Hempr. & Ehrenberg) Kirchin,  
C. cistula var. maculata  
(Kützing) Van Heurck, C. cistula  
var. crassa Temp. & Perag.]  
var. *gibbosa* Brun ; 19,53  
var. *hebetata* (Pantocsek) Cléve ; 15  
*C. cuspidata* Kützing ; 8,14,16,22,23,28,  
41,44  
*C. cymbiformis* C. Agardh  
var. *longa* Cléve ; 11  
*C. designata* Krammer in Krammer &  
Lange-Bertalot ; 16  
[=C. leptoceras (Ehrenberg) Kützing,  
C. leptoceras (Ehrenberg) Grunow]  
*C. elginensis* Krammer ; 7,11,14,19,  
22,28,39,54,55  
[=C. turgida W. Gregory]  
*C. falaisensis* (Grunow) Krammer &  
Lange-Bertalot  
var. *falaisensis* ; 22,23,54  
[=C. diavola Carter, Navicula iniqua  
Krasske, N. falaisiensis Grunow in  
Van Heurck]  
var. *lanceola* (Grunow) comb. nov. ; 28  
[=Navicula falaisiensis var. lanceola  
Grunow]  
*C. gracilis* (Rabenhorst) Cléve ; 16,  
57  
*C. hauckii* V. Heurck ; 19  
*C. helvetica* Kützing  
var. *helvetica* ; 8,10-12,14-16,25,  
28,29,41,44,51,52,56,57  
var. *compacta* (Ostrup) Hustedt ;  
12,41  
*C. hercynica* A. Schmidt ; 25  
*C. hungarica* (Grunow) Pantocsek  
var. *hungarica* ; 27  
var. *grunowii* Cléve ; 15  
*C. hustedtii* Krasske ; 3  
*C. hybrida* Grunow ; 46  
*C. inaequalis* (Ehrenberg)  
Rabenhorst ; 14,19  
[=Navicula inaequalis  
Ehrenberg in Pogg., Cymbella  
ehrenbergii Kützing,  
C. ehrenbergii var. minor Van  
Heurck, C. dissimilis Perag., in  
Temp. & Perag., C. cucumis var.  
delicata Temp. & Perag.,  
Pinnularia inaequalis Ehrenberg]  
*C. lanceolata* Ehrenberg ; 7,8,11,12,  
14,15,22,23,25,29,35,40,41,44,  
51-54,56  
[=Cocconema lanceolatum  
Ehrenberg]  
*C. lata* Grunow ex Cléve ; 28,54  
*C. laevis* Nägeli ex Kützing ; 19,44  
*C. microcephala* Grunow  
var. *microcephala* ; 5,7-9,11,12,  
15,22,24,25,29,36,40,41,47  
[=C. minuscula Grunow,  
C. ruttneri Hustedt  
Navicula incompta Krasske]  
var. *crassa* Reimer ; 53  
*C. moellerina* Grunow ; 22  
*C. naviculiformis* (Auerswald ex  
Heib.) Cléve ; 4,5,8-10,12,15,  
22-25,27,36,41  
[=C. anglica Lagerst.]  
*C. obtusiuscula* (Kützing) Grunow ;  
16,46,50,57



*C. pusilla* Grunow ; 26  
*C. similis* Krasske ; 39  
 [=C. hybridiformis Hustedt]  
*C. subaequalis* Grunow ; 8,22,23  
*C. tumida* (Brébisson) Van Heurck ; 3,7,  
 8,12,15,16, 22-24,28,31,40-42,45,46,  
 50,51,56  
*C. tumidula* Grunow ; 7,10,14,15,22,28,  
 43,56,57  
*C. turgidula* Grunow ; 8,9,16,19  
**Encyonema** Kützing  
*E. auerswaldii* Rabenhorst ; 5,9,16,53  
 [=Cymbella prostrata var. auerswaldii  
 (Rabenhorst) Reimer]  
*E. caespitosum* Kützing ; 16  
 [=Cymbella caespitosa (Kützing)  
 Brun]  
*E. latens* (Krasske) D.G. Mann ; 8  
 [=Cymbella latens Krasske, C. minuta  
 var. latens Krasske]  
*E. lunatum* (W. Smith) Van Heurck  
 var. *lineatum* (Ehrenberg) comb. nov. ;  
 26  
 [=Cymbella lunata var. lineata  
 (Ehrenberg) Van Heurck]  
*E. minutum* (Hilse ex Rabenh.)  
 D.G.Mann in Round, Crawford &  
 Mann ; 1,3-12,14-16,19,22-25,27-29,  
 41,44,45,51-53,56  
 [=Cymbella minuta Hilse ex  
 Rabenhorst, Cymbella ventricosa  
 (Kützing) Kützing, non  
 C. ventricosa (C. Agardh)  
 C. Agardh, Encyonema  
 ventricosum (Kützing) Grunow in  
 A.Schmidt]  
 var. *pseudogracilis* (Cholnoky)  
 D.B.Czarnecki. ; 19  
*E. muelleri* (Hustedt) D.G. Mann  
 f. *muelleri* 19  
 [=Cymbella muelleri Hustedt]  
 f. *ventricosum* (Tempère & Peragallo)  
 D. B. Czarnecki., 8  
 [=Cymbella muelleri f. ventricosa  
 (Tempère & Peragallo) Reimer]

*E. prostratum* (Berkeley) Kützing ;  
 4,5,7,9,12,14,15,19,22,24,25,  
 27-29,31,35,36,43,45,50,52,53,58  
 [=Cymbella prostrata (Berkeley)  
 Cléve]  
*E. silesiacum* (Bleisch) D.G. Mann ;  
 8,19,28,44,53  
 [=Cymbella silesiaca Bleisch,  
 C. ventricosa var. silesiaca  
 (Bleisch) Cléve, C. minuta var.  
 silesiaca (Bleisch) Reimer]  
*E. triangulum* (Ehrenberg) Kützing ;  
 52  
 [=Cymbella triangulum  
 (Ehrenberg) Cléve, Gloeonema  
 triangularum Ehrenberg] .  
**Placoneis** Mereschkowsky  
*P. clementis* (Grunow) E.J.Cox ; 26  
 [=Navicula clementis Grunow  
 N. clementis var. rhombica  
 Brockmann, N. inclementis  
 Hendey]  
*P. dicephala* (W. Smith)  
 Mereschkowsky ; 4,8,10,14,15,  
 22,23,27,37,54,57  
 [=Navicula dicephala W. Smith]  
*P. elginensis* (W.Gregory) E.J.Cox ;  
 4,6-8,15,19,,23,40,42,43,44,51,  
 53,56  
 [=Navicula elginensis  
 (W. Gregory) Ralfs, N. anglica  
 Ralfs]  
*P. exigua* (W. Gregory) Meresch.  
 var. *exigua* ; 12,25,29,41,51,53,56  
 [=Navicula exigua (W. Gregory)  
 Grunow]  
 var. *capitata* (R.M. Patrick) comb.  
 nov. 53  
 [=Navicula exigua var. capitata  
 R.M. Patrick]  
*P. gastrum* (Ehrenberg) Meresch. ;  
 8,14,22,23,51  
 [=Navicula gastrum (Ehrenberg)  
 Kützing]  
*P. placentula* (Ehrenberg) Heinzerl

f. *placentula* ; 3,4,7,8,15,24,36,  
 46,49,51  
 [=Navicula placentula (Ehrenberg)  
 Grunow]  
 f. *rostrata* (A.Mayer) Bukht. ; 14  
 [=Navicula placentula var. rostrata  
 A. Mayer]  
**GOMOPHONEMATACEAE**  
**Didymosphenia** M. Schmidt  
*D. geminata* (Lyngbye) M. Schmidt ;  
 8,14,22,23,28,40  
 [=Gomphonema geminatum  
 (Lyngbye) C. Agardh, Echinella  
 geminata Lyngbye]  
**Gomphoneis** Cléve  
*G. sp.* ; 51  
*G. olivacea* (Hornemann) P. Dawson ex  
 Ross et Sims ;  
 var. *olivacea* ; 1-12,14-17,19,20,  
 22-25,27-29,41,44,45,49-54,56-58  
 [=G. olivaceum (Lngbye) Dawson,  
 Gomphonema olivaceum  
 (Lyngbye) Kützing]  
 var. *calcareea* (Cléve) Poulin in Poulin,  
 Hamilton & Proulx ; 5,7-9,12,15,25,  
 28,29,36,41,44,53  
 [= Gomphonema calcareum  
 Cléve, G. olivaceum var.  
 calcareea (Cléve) Cléve]  
 var. *calcarneum* (Lyngbye) comb. nov.  
 ; 12  
 [=Gomphonema olivaceum var.  
 calcarnea (Lyngbye) Kützing]  
 var. *minutissimum* (Hustedt) comb.  
 nov. ; 8,15,22,23,28  
 [=Gomphonema olivaceum var.  
 minutissimum Hustedt]  
 var. *densestriata* (Foged) comb. nov.  
 ; 23,28  
 [=Gomphonema olivaceoides var.  
 densestriata Foged]  
**Gomphonema** Ehrenberg  
*G. sp.* ; 8,15,45,51,53  
*G. abbreviatum* C. Agardh ; 27,36,53  
*G. acuminatum* Ehrenberg

var. *acuminatum* ; 8,12-14,22,  
 23,28,29,31,35,39,41,43-45,  
 51-53,56  
 [= G. coronatum Ehrenberg,  
 G. acuminatum var.  
 coronatum (Ehrenberg)  
 Rabenhorst, G. acuminatum  
 var. coronatum (Ehrenberg)  
 Cléve, G. acuminatum var.  
 laticeps (Ehrenberg) Grunow  
 in Van Heurck]  
 var. *clavus* (Brébisson) Grunow ;  
 22,28  
*G. affine* Kützing ; 8,11,16,24,25,53  
 [=Gomphonema affine f. major  
 Grunow, G. lanceolatum var.  
 affine (Kützing) Cléve,  
 G. angustum var. intermedia f.  
 major Van Heurck, G. balatonis  
 Pantocsek, G. insigna var. fossilis  
 A. Mayer, G. lanceolatum e.p.,  
 G. lanceolatum var. bengalensis  
 Cléve, G. lanceolatum var. affinis  
 Cléve]  
*G. angustatum* (Kützing) Rabenhorst  
 ; 8,10,13,14,16,22,23,41,53,57  
 [=G. instabilis Hohn &  
 Hellermann, G. bohemicum  
 Hustedt]  
*G. augur* Ehrenberg  
 var. *augur* ; 12,15,24,25,29,51,  
 53,56  
 var. *gautieri* Van Heurck ; 14  
 var. *turris* (Ehrenberg) Lange-  
 Bertalot ; 13,28  
 [=G. turris Ehrenberg,  
 G. acuminatum var. turris  
 (Ehrenberg) Cléve]  
*G. bohemicum* Reich.& Fricke ; 3,  
 15,53  
 [=G. vibrio var. bohemicum  
 Reichelt & Fricke, G. intricatum  
 var. bohemicum ( Reich.&  
 Fricke) Cléve]  
*G. brebissonii* Kützing ; 8,22,23



*G. constrictum* Ehrenberg  
f. *curta* Grunow ; 28

*G. dichotomum* Kützing ; 16,25,29  
[=G. *gracile* var. *dichotomum*  
(Kützing) Grunow, *G. intricatum* var.  
*pumila* Grunow in Van Heurck]

*G. elongatum* W. Smith ; 53  
[=G. *acuminatum* var. *elongatum*  
(W. Smith) Carruth]

*G. fanensis* Maillard ; 57

*G. gibba* J. Wallace ; 8

*G. gracile* Ehrenberg emend. Van  
Heurck ; 2,4,9,11-16,22,27,40,41,43,  
51,54  
[=G. *auritum* A. Braun, *G. gracile*  
f. *parva* Grunow, *G. gracile* f.  
*naviculaoides* (W. Smith) Grunow,  
*G. grunowii* Patrick,  
*G. lanceolatum* (Ehrenberg)  
Kützing (non *G. lanceolatum*  
C. Agardh), *G. lanceolatum*  
Ehrenberg, *G. lanceolatum*  
Kützing in Van Heurck, *G. gracile*  
var. *lanceolata* (Kützing) Cléve]

*G. helveticum* Brun ; 15,53

*G. intricatum* Kützing  
var. *dichotomiformis* A. Mayer ; 14

*G. montanum* Schumann ; 15,40,42,43

*G. olivaceum* (Hornemann) Brébisson ;  
12,19,51,56

*G. olivaceum* (Lyngbye) Kützing  
var. *olivaceoides* (Hustedt) Lange-  
Bert. in Lange-Bertalot & Krammer ;  
8,22,23,28,44,53  
[*Gomphonema olivaceoides*  
Hustedt, *G. calcifugum* Lange-  
ertalot]

*G. parvulum* (Kützing) Kützing ; 2,4,7,8,  
11-15,19,22-25,27-29,43-45,49,50,  
53,54,57  
[=G. *lagenula* Kützing, *G. parvulum*  
var. *microceps* (Kützing) Cléve,  
*G. parvulum* var. *subcapitata*  
Grunow, *G. parvulum* var.  
*subelliptica* Brandy]

*G. productum* (Grunow) Lange-  
Bertalot & Reichardt ; 14,16  
[=G. *angustatum* var. *producta*  
Grunow]

*G. pseudotenellum* Lange-Bertalot ;  
19,22,54  
[=G. *tenellum* Kützing]

*G. subtile* Ehrenberg ; 16

*G. truncatum* Ehrenberg  
var. *truncatum* ; 7-10,12-15,21,  
23,28,29,31,40,42-45,51,53,57  
[=G. *constrictum* Ehrenberg]

var. *capitatum* (Ehrenberg)  
R.M. Patrick. ; 8,11,12,14,19,22,  
24,28,29,51,53,56  
[=G. *capitatum* Ehrenberg,  
*G. constrictum* var. *capitatum*  
(Ehrenberg) Van Heurck]

var. *clavatum* (Ehrenberg)  
*nov. nomen* ; 13,15,16,27,36,52  
[=G. *clavatum* Ehrenberg,  
*G. subclavatum* (Grunow)  
Grunow, *G. subclavatum* var.  
*commutatum* (Grunow)  
Grunow, *G. subclavatum* f.  
*gracilis* (Hustedt) Woodhead  
& Tweed, *G. longiceps* var.  
*subclavatum*. Grunow,  
*G. longiceps* var. *subclavata* f.  
*gracilis* Hustedt]

var. *turgidum* (Ehrenberg)  
R.M. Patrick. ; 10,44  
[=G. *turgidum* Ehrenberg,  
*G. turgidum* Grunow,  
*G. constrictum* var. *capitatum*  
f. *robusta* A. Mayer,  
*G. constrictum* var. *capitatum*  
f. *turgidum* (Ehrenberg)  
A. Mayer]

*G. ventricosum* W. Gregory ; 6,8,19,  
58

*G. vibrio* Ehrenberg  
var. *vibrio* ; 12  
[=G. *intricatum* Kützing var.  
*vibrio* (Ehrenberg) Cléve]

var. *intricatum* (Kützing) Ross ; 5,8,9,  
11,12,14,15,22,23,25,29,41,44-46,  
51,52,56  
[=G. *vibrio* var. *intricatum*  
(Kützing) Playfair, *G. intricatum*  
Kützing, *G. angustum* C. Agardh]

**Reimeria** J.P. Kociolek & E.F. Stoermer  
*R. sinuata* (W. Gregory) Kociolek &  
Stoermer ; 5,8,9,12,19,22,23,25,28,29,  
41,53  
[=Cymbella *sinuata* W. Gregory]

**ACHNANTHALES**  
**ACHNANTHACEAE**  
**Achnanthes** Bory de Saint-Vincent  
*A. sp.* ; 51

*A. biasolettina* (Kützing) Grunow ;  
7,10,15,28  
[=A. *linearis* (W. Smith) Grunow,  
*A. pyrenaica* Hustedt,  
*Achnanthidium biasolettianum*  
(Grunow) Bukhtiyarova,  
*A. biasolettianum* (Grunow in  
Cleve & Grunow) Bukht. & Round]

*A. brevipes* C. Agardh ; 13,47  
[=Cymbosira *agardhii* Kützing nom.  
illeg.]

*A. conspicua* A. Mayer ; 54  
[=A. *conspicua* var. *brevistriata*  
Hustedt, *A. pinnata* Hustedt]

*A. lanceolata* (Brébisson) Grunow  
subsp. *dubia* (Grunow) Lange-Bertalot  
; 8  
[=A. *lanceolata* var. *dubia*  
Grunow, *Achnantheiopsis dubia*  
(Grunow) Lange-Bertalot]

*A. montana* Krasske ; 28

*A. parvula* Kützing ; 47  
[=A. *brevipes* var. *parvula* (Kützing)  
Cleve]

*A. pusilla* (Grunow) De Toni  
var. *pusilla* ; 40  
[=A. *pusilla* Grunow, *A. linearis* var.  
*pusilla* Grunow]

var. *petersenii* (Hustedt) Lange-  
Bertalot ; 27

[=A. *petersenii* Hustedt,  
*A. sonyda* B. Hartley,  
*A. pusilla* var. *petersenii*  
(Hustedt) Lange-Bertalot,  
*A. parallela* J.R. Carter, *A.*  
*kryophila* var. *densestriata*  
Hustedt, *A. jakovljevicii*  
Hustedt, *A. hustedtii* Bily &  
Marvan, *A. grubei* Simonsen,  
*Navicula densestriata* Hustedt]

*A. thermalis* (Rabenhorst)  
Schoenfeld ; 16,22,25  
[=A. *gibberula* Grunow,  
*A. gibberula* var. *angustior*  
Grunow, *A. grimmei* Krasske,  
*A. grimmei* var. *elliptica*  
Krasske, *A. grimmei* var.  
*hyalina* Hustedt, *A. grimmei*  
var. *inflata* Krasske,  
*Achnanthidium zelleri* Kirchner,  
*A. thermale* Rabenhorst]

**Astartiella** A. Witkowski, H. Lange-  
Bertalot & D. Metzeltin

*A. wellsiae* (Reimer) Witkowski  
& Lange-Bertalot ; 28  
[=Achnanthes *wellsiae* Reimer]

**COCCONEIDACEAE**  
**Cocconeis** Ehrenberg  
*C. sp.* ; 8,45,51

*C. disculus* (Schumann) Cléve ; 8,  
14,15,20,24,39,40  
[=C. *thomasiana* Brun, *Navicula*  
*disculus* Schumann]

*C. fluviatilis* J.H. Wallace ; 8

*C. ovalis* Ehrenberg ; 15

*C. pediculus* Ehrenberg ; 5,7-9,12,  
14-16,22,24, 25,28,29,36,41,44,  
45,50,52,53,57

*C. pinnata* Gregory ex Greville. ; 15

*C. placentula* Ehrenberg  
var. *placentula* ; 1,4,6-8,10,12-17,  
19,20,24-28,31,36,39,41-45,  
51-54,56-58

var. *euglypta* (Ehrenberg) Grunow



- ; 3,5,7-9,11,12,14-16,22-25,27-29,  
31,41,45,51,53-56  
var. *lineata* (Ehrenberg) Clève ; 5,8,9,  
15,16,22-24,26, 34,40,53  
[=C. *lineata* Ehrenberg]  
f. *major* Clève ; 15  
C. *rugosa* Sovereign. ; 40  
C. *scutellum* Ehrenberg  
var. *scutellum* ; 14  
var. *japonica* (A.W.F.Schmidt)  
Skvortzov ; 7  
[=C. *japonica* A. Schmidt].  
C. *thumensis* A. Mayer ; 8  
**ACHNANTHIDIACEAE**  
**Achnanthidium** Kützing  
A. *affine* (Grunow) Czarnecki ; 14,28  
[=Achnanthes minutissima var. *affinis*  
(Grunow) Lange-Bertalot, A. *affinis*  
Grunow]  
A. *brevipes* C. Agardh  
var. *intermedia* (Kützing) Clève ; 47  
[=Achnanthes *brevipes* var.  
*intermedia* (Kützing) Clève,  
A. *intermedia* Kützing,  
A. *subsessilis* Ehrenberg]  
A. *coarctatum* Brébisson ; 16,47  
[=Achnanthes *coarctata* (Brébisson)  
Grunow, A. *coarctata* var. *elliptica*  
Krasske, A. *coarctata* var. *constricta*  
Krasske]  
A. *deflexum* (C. W. Reimer)  
J. C. Kingston ; 19,28  
[=A. *deflexa* C.W. Reimer,  
A. *deflexa* (Kützing) Brun]  
A. *exiguum* (Grunow) Czarnecki  
var. *exiguum* ; 54  
[=Achnanthes *exigua* Grunow]  
var. *heterovalvum* (G. Krasske)  
Czarnecki ; 16,53  
[=Achnanthes *exigua* var.  
*heterovalvata* Krasske]  
A. *exilis* (Kützing) Bukht. ; 15,40  
[=Achnanthes *exilis* Kützing]  
A. *microcephalum* Kützing ; 11  
[=Achnanthes *microcephala*

- (Kützing) Clève]  
A. *minutissimum* (Kützing)  
Czarnecki ; 7,8,11-16,19,22,23,  
25,28,29,36,41,44,53  
[=Achnanthes *minutissima*  
Kützing, A. *minutissima* f.  
*curta* Grunow, A. *minutissima*  
var. *cryptocephala* Grunow]  
**Achnantheiopsis** H. Lange-Bertalot  
A. *delicatula* (Kützing) Lange-  
Bertalot ; 7,16,28  
[=Planothidium *delicatulum*  
(Kützing) Bukht. & Round,  
Achnanthes *delicatula* (Kützing)  
Grunow, A. *delicatula* Kützing,  
Achnanthidium *delicatulum*  
Kützing]  
A. *lanceolata* (Brébisson) Lange-  
Bertalot ; 2,6-8,12,14-16,19,22,  
23,25,27-29,31,36,41,45,51-54  
[=Planothidium *lanceolatum*  
(Brébisson) Bukht. & Round,  
Achnanthes *lanceolata*  
(Brébisson) Grunow  
A. *lanceolatum* Brébisson,  
Achnanthidium *lanceolatum*  
Brébisson]  
A. *peragalli* (Brun et Héribaud)  
Lange-Bertalot ; 8,54  
[=Achnanthes *peragalli* Brun et  
Héribaud, A. *peragalli*  
(Brébisson) Grunow,  
Planothidium *peragalli* (Brun et  
Héribaud) Bukht. & Round]  
A. *rostrata* (Østrup) Lange-Bertalot ;  
5,9,12,25,27,29,41,44  
[=Achnanthes *rostrata* Østrup,  
A. *lanceolata* subsp. *rostrata*  
(Østrup) Lange-Bertalot,  
A. *lanceolata* var. *rostrata*  
(Ostenfeld) Hustedt, A. *piatica*  
Carter, Planothidium *rostratum*  
(Østrup) Round & Bukhtiyarova]  
**Eucoconeis** P.T. Cleve ex  
F. Meister

- E. flexella* (Kützing) Clève ; 8-10,16,  
19,46,57  
[=Eucoconeis *flexella* (Kützing)  
Grunow, E. *flexella* (Kützing)  
Hustedt in Pascher, Cymbella  
*flexella* Kützing, Cocconeis *flexella*  
(Kützing) Clève, Achnanthidium  
*flexellum* Brébisson in Kützing  
A. *flexellum* (Kützing) Brébisson,  
Achnanthes *flexella* Kützing]  
*E. laevis* (Østrup) Lange-Bertalot ; 28  
[=Achnanthes *laevis* Østrup]  
*E. quadratarea* (Østrup) Lange-Bertalot  
; 16,27  
[=Achnanthes *laevis* var. *quadratarea*  
(Østrup) Lange-Bertalot, A.  
*lapponica* Hustedt, A. *quadratarea*  
(Østrup) M. Möller ex Foged,  
Cocconeis *quadratarea* Østrup]  
**Karayevia** F.E. Round &  
L. Bukhtiyarova ex F.E. Round  
K. *clèvei* (Grunow) Round & Bukht ;  
8,9,28,57  
[=Achnanthes *clèvei* Grunow,  
Achnanthidium *clèvei* (Grunow in  
Clève & Grunow) Czarn.]  
**Kolbesia** F.E. Round & L. Bukhtiyarova  
ex F. E. Round  
K. *kolbei* (Hust.) Bukht. & Round ; 28  
**Lemnicola** F.E. Round & P.W. Basson  
L. *hungarica* (Grunow) F. E. Round &  
P. W. Basson ; 27,53  
[=Achnanthes *hungarica* (Grunow)  
Grunow, A. *andicola* (Cleve) Hustedt,  
A. *pseudohungarica* Cholnoky-  
Pfannkuche, Achnanthidium  
*hungaricum* Grunow]  
**Planothidium** F.E. Round &  
L. Bukhtiyarova  
P. *joursacense* (Héribaud) Lange-  
Bertalot ; 5,9,27,28,54  
[=Achnanthes *joursacense*  
Héribaud, A. *lanceolata* var. *elliptica*  
Cleve, A. *elliptica* (Clève) Clève,  
A. *lanceolata* var. *omissa*

- Reimer, Achnantheiopsis  
*joursacense* (Héribaud) Lange-  
Bertalot ]  
**Psammothidium** L. Buhtkiyarova &  
F.E. Round  
P. *marginulatum* (Grunow) Bukht.  
& Round ; 16  
[=Achnanthes *marginulata*  
Grunow]  
**NAVICULALES**  
**NEIDIINEAE**  
**CAVINULACEAE**  
**Cavinula** Mann & Stickle  
C. *cocconeiformis* (Gregory ex  
Greville) D.G. Mann &  
A.J. Stickle 3,14,16,22,27,41  
[=Navicula *cocconeiformis*  
Gregory ex Greville]  
C. *scutelloides* (W. Smith) Lange-  
Bertalot in Lange-Bertalot &  
Metzeltin ; 14  
[=Navicula *scutelloides*  
W. Smith]  
**COSMIONEIDACEAE**  
**Cosmioneis** D.G. Mann & Stickle  
C. *pusilla* (W. Smith) D.G. Mann &  
A.J. Stickle ; 16  
[=Navicula *pusilla* W. Smith]  
**DIADESMIDACEAE**  
**Diademsis** Kützing  
D. *laevissima* (Cleve) Mann ; 16  
[=Fragilaria *laevissima* Cleve,  
Navicula *fragilarioides* Krasske]  
D. *perpusilla* (Grunow) D.G. Mann ;  
27,53  
[=Navicula *perpusilla* (Kützing)  
Grunow, N. *gallica* var.  
*perpusilla* (Grunow) Lange-  
Bertalot]  
**Luticola** D.G. Mann in F.E. Round,  
R.M. Crawford & D.G. Mann  
L. *mutica* (Kützing) D.G. Mann ;  
3,8,10,15,25,29,39,40,42  
[=Navicula *mutica* Kützing,  
N. *imbricata* Bock]



*L. nivalis* (Ehrenberg) D.G. Mann ; 12, 25,29,31  
[=Navicula nivalis Ehrenberg, *N. mutica* var. *nivalis* (Ehrenberg) Hustedt]

*L. undulata* (Hilse) D.G. Mann ; 8,15, 25,54  
[=Navicula mutica var. *undulata* (Hilse) Grunow]

*L. ventricosa* (Kützing) D.G. Mann ; 8,40  
var. *ventricosa* (Kützing) Cléve  
[=Navicula mutica var. *ventricosa* (Kützing) Cléve]

**AMPHIPLEURACEAE**

*Amphipleura* Kützing  
*A. pellucida* Kützing ; 12,15,53  
*Amphiprora* Ehrenberg  
*A. costata* Hustedt ; 24

**Frustulia** Rabenhorst  
*F. rhomboides* (Ehrenberg) De Toni  
var. *rhomboides* ; 13,19,51  
[=Navicula rhomboides Ehrenberg]  
var. *capitata* (A. Mayer) R. M. Patrick ; 5,9,53  
[=F. saxonica var. *capitata* A. Mayer, *F. rhomboides* var. *saxonica* f. *capitata* (Mayer) Hustedt, *F. rhomboides* f. *capitata* A. Mayer]

*F. vulgaris* (Thwaites) De Toni ; 8,12,16, 25,28,29,51,56  
[=Brebissonia vulgaris (Thwaites) Kuntze, *Vanheurckia vulgaris* (Thwaites) Van Heurck]

**BRACHYSIRACEAE**

*Brachysira* Kützing  
*B. serians* (Brébisson ex Kützing) F.E. Round & D.G. Mann ; 8  
[=Anomoeoneis serians (Brébisson.) Cléve]

**NEIDIACEAE**

*Neidium* Pfitzer  
*N. affine* (Ehrenberg) Pfitzer  
var. *affine* ; 8,10,13-16,39,40,46,53  
[=N. affinis Ehrenberg, *N. iridis* var. *affinis* (Ehrenberg) Van Heurck]

var. *amphirhynchus* (Ehrenberg) Cléve ; 14,15  
[=Navicula amphirhynchus (Ehrenberg) Pfitzer]

var. *longiceps* (W. Gregory) Cléve ; 10  
[=Navicula longiceps W. Gregory]

*N. ampliatus* (Ehrenberg) Krammer ; 53  
[=N. iridis var. *ampliatus* (Ehrenberg) Cléve]

*N. binode* (Ehrenberg) Hustedt ; 5,9,10,12,16,41,46,53,57  
[=Navicula binodis Ehrenberg, *N. binodeforme* Krammer, *N. binodis* (Ehrenberg) Hustedt, *N. mutica* var. *binodis* Hustedt]

*N. dubium* (Ehrenberg) Cléve  
f. *dubium* ; 4,5,7-12,14,16,19,24, 25,27,29,36,41,44,45,53,54  
f. *constrictum* (Hustedt) Hustedt ; 7

*N. iridis* (Ehrenberg) Cléve  
var. *iridis* ; 8,10,13,14,16,50,53  
[=N. maximum (Cleve) Meister, *Navicula iridis* Ehrenberg]  
var. *amphigomphus* (Ehrenberg) A. Mayer ; 14  
[=Navicula amphigomphus Ehrenberg, *N. Iridis* var. *amphigomphus* Ehr]  
var. *vernalis* (Reichelt ex Hustedt) Frenguelli ; 53

*N. productum* (W. Smith) Cléve ; 9,15,39,40,42  
[=Navicula producta W. Smith, *N. iridis* var. *affinis* Van Heurck]

*N. temperei* C.W.Reimer ; 28

**SCOLIOTROPIDACEAE**

*Scoliopleura* Grunow  
*S. peisonis* Grunow ; 44

**SELLAPHORINEAE**

**SELLAPHORACEAE**

*Fallacia* Stickle & Mann

*F. indifferens* (Hustedt) D.G. Mann ; 12,25,41  
[=Navicula indifferens Hustedt]

*F. pygmaea* (Kützing) A.J. Stickle & D.G. Mann ; 4,7-9,12,14,16,22-26, 29,41,44,45,46,51-54,57  
[=Navicula pygmaea Kützing]

*F. tenera* (Hustedt) D.G. Mann ; 11  
[=Navicula dissipata Hustedt]

**Sellaphora** Mereschkovsky  
*S. bacillum* (Ehrenberg) D. Mann ; 5,8,9, 14-16,22,24,28,41  
[=Navicula bacillum Ehrenberg]

*S. laevisima* (Kützing) D.G. Mann ; 2, 8,13  
[=Navicula laevisima Kützing, *N. bacilliformis* Grunow in Cléve & Grunow]

*S. pupula* Skvortsov & Meyer  
var. *pupula* ; 3-10,12,14-16,19,22-25, 27-29,36,46,51-54  
[=S. pupula (Kützing) Mereschkovsky, *Navicula pupula* Kützing]  
f. *capitata* (Skvortsov & Meyer) Poulin ; 5-9,12,36  
[=Navicula pupula var. *capitata* Skvortsov & Meyer]  
var. *elliptica* (Hustedt) Bukhtiyarova ; 8,15,27,53  
[=Navicula pupula var. *elliptica* Hustedt]  
var. *pseudopupula* (Krasske) E.Y. Haw. & M.G. Kelly ; 8  
[=Navicula pupula var. *pseudopupula* (Krasske) Hustedt]  
var. *rectangularis* (W. Gregory) Mann ; 8,11  
[=Navicula pupula var. *rectangularis* (W. Gregory) Cléve & Grunow, *N. pupula* f. *rectangularis* (W. Gregory) Hustedt]

*S. vitabunda* (Hust.) D.G. Mann ; 27  
[=Navicula vitabunda Hustedt,

*N. verecunda* Hustedt]

**PINNULARIACEAE**

**Diatomella** Greville  
*D. balfouriana* Greville ; 40

**Pinnularia** Ehrenberg  
*P. sp.* ; 28,37,41,45,51  
*P. abaujensis* (Pantocsek) R. Ross  
var. *linearis* (Hustedt) Patrick ; 28  
*P. acrosphaeria* (Brébisson) W. Smith ; 8  
*P. appendiculata* (C. Agardh) Cléve ; 8,12,28,53  
*P. biceps* W. Gregory ; 8,12,14-16, 22,24,25,29,36,41,44,45,46,53  
[=Navicula bicapitata Lagerstedt]  
*P. borealis* Ehrenberg ; 8,13,14,22, 25,28,29,53  
*P. braunii* (Grunow) Cléve  
var. *braunii* ; 15,16,28,39  
var. *amphicephala* (A. Mayer) Hustedt ; 28  
[=P. amphicephala A. Mayer]  
*P. brevicostata* Cléve ; 4,8,11,15, 22,23,46,53  
[=P. borealis var. *brevicostata* Hustedt]  
*P. cardinalis* (Ehrenberg) W. Smith ; 14,15  
[=Navicula cardinalis Ehrenberg]  
*P. dactylus* Ehrenberg ; 22,23  
*P. distinguenda* Cléve ; 39  
*P. divergens* W. Smith  
var. *divergens* ; 16,44,51  
var. *elliptica* (Grunow) Cléve ; 8  
*P. esox* Ehrenberg  
var. *gracilescens* Cléve ; 15  
*P. fasciata* Lagerstedt ; 54  
*P. gibba* Ehrenberg ; 12- 14,28,36,47,54  
*P. globiceps* W. Gregory ; 39,46  
*P. interrupta* W. Smith  
var. *interrupta* ; 28  
var. *radiosa* (Ehrenberg) Cléve ; 8  
*P. islandica* Ostrup ; 10



*P. isostauron* (Ehrenberg) Clève ; 8  
*P. krockii* (Grunow) Clève ; 15  
 [=P. globiceps var. krockii (Grunow) Clève]  
*P. lancettula* Clève ; 27  
*P. lata* (Brébisson) Rabenhorst  
 var. *lata* ; 19,40  
 [=Navicula lata (Brébisson) Kützing]  
 f. *thuringiaca* (Rabenhorst) A. Mayer ;  
 53,54  
*P. major* (Kützing) Rabenhorst ; 8,12,14,  
 15,19,28,39,41,51,53  
 [=P. maior (Kützing) Clève.,  
 Navicula major (Kützing) Kützing]  
 var. *lacustris* A. Meister ; 15,35  
*P. mesolepta* (Ehrenberg) W. Smith ; 5,8,  
 9,12,14-16,25,28,29,36,46  
 [=Navicula mesolepta Ehrenberg]  
*P. microstauron* (Ehrenberg) Clève  
 var. *microstauron* ; 4-16,22,23,25,  
 27,29,31,34,36,37,40,41,43,44,46,  
 47,49-51,53,54,56,57  
 [=P. brebissonii (Kützing)  
 Rabenhorst, P. brebissonii var.  
 subproducta Van Heurck, P.  
 microstauron var. brebissonii  
 (Kützing) Hustedt, P. viridis var.  
 caudata Boyer, Navicula  
 microstauron Ehrenberg,  
 N. brebissonii Kützing]  
 f. *diminuta* Grunow ; 8,9,12,15,25,  
 36,53  
 [=P. brebissonii var. diminuta  
 (Grunow) Clève, P. microstauron  
 var. diminuta Shirshov]  
*P. nobilis* (Ehrenberg) Ehrenberg ; 14  
 [=Navicula nobilis (Ehrenberg)  
 Kützing]  
*P. parvula* (Ehrenberg) W. Gregory ; 28  
*P. stauoptera* (Grunow) Rabenhorst ; 10  
 [=Navicula stauoptera Grunow]  
*P. stomatophora* Grunow ; 8  
*P. subcapitata* W. Gregory ; 13,15,  
 44,46,53  
*P. subsolaris* (Grunow) Clève ; 44

*P. sudetica* Hilse ; 8,36,52  
 [=P. viridis var. sudetica (Hilse)  
 A. Mayer, P. viridis var. sudetica  
 Hustedt]  
*P. viridis* (Nitzsch) Ehrenberg  
 var. *viridis* ; 4-16,19,22-25,28,  
 29,31,37,40-42,44-47,53,54  
 [=Navicula viridis Ehrenberg]  
 var. *commutata* (Grunow) Clève ;  
 22  
 var. *semicruciatata* (Grunow) Clève  
 ; 14

#### DIPLONEIDINEAE

#### DIPLONEIDACEAE

*Diploneis* Ehrenberg ex Clève  
*D. sp.* ; 23,45,51  
*D. elliptica* (Kützing) Clève ; 5,  
 8-10,12-16,24,25,28,29,36,40,  
 42,43,53  
 [=Navicula elliptica Kützing]  
*D. finnica* (Ehrenberg) Clève ; 24  
 [=Cocconeis finnica Ehrenberg]  
*D. interrupta* (Kützing) Clève ; 38,  
 41,47  
 [=Navicula interrupta Kützing]  
*D. oblongella* (Nägeli) Ross ; 8,12,  
 15,16,22,23,36,51,53,56  
 [=D. ovalis (Hilse) Clève,  
 Pinnularia ovalis Hilse,  
 Navicula oblongella Nägeli ex  
 Kützing]  
*D. oculata* (Brébisson) Clève ; 54  
*D. ovalis* Kützing ; 14  
*D. pseudovalis* Hustedt ; 24  
*D. puella* (Schumann) Clève ; 8,28  
*D. smithii* (Brébisson) Clève  
 var. *smithii* ; 24  
 [=Navicula smithii Brébisson]  
 var. *dilatata* (Perag in Temp. &  
 Perag.) Boyer ; 15,24  
 [=Navicula smithii var.  
 dilatata Perag in Temp. &  
 Perag]

#### NAVICULINEAE

#### NAVICULACEAE

*Adlafia* G. Moser, Lange-Bertalot &  
 Metzeltin  
*A. bryophila* (J.B. Petersen) G. Moser,  
 Lange-Bertalot & Metzeltin ; 16  
 [=Navicula bryophila J.B. Petersen]  
*A. minuscula* (Grunow) Lange-Bertalot  
 var. *minuscula* ; 4-8,34  
 [=Navicula minuscula Grunow,  
 N. minuscula var. muralis (Grunow)  
 Lange-Bertalot, N. muralis Grunow,  
 N. cloacina Lange-Bertalot & Bonik,  
 N. importunata Hustedt,  
 N. pseudoexilissima Hustedt]  
*Caloneis* Clève  
*C. sp.* ; 9  
*C. alpestris* (Grunow) Clève ; 5,9,12,  
 13,16,25,29,36,44,46  
*C. amphibaena* (Bory) Clève ; 3,4,6-8,  
 12-15,19,22,23,25,39,40,41,43,47,  
 50,51,56,57  
 [=Navicula amphibaena Bory ]  
*C. bacillum* (Grunow) Mereschkowsky ;  
 6,8,9,14,16,25,29,36,44  
*C. brevis* (Gregory) Clève ; 38  
 [=Navicula brevis Gregory]  
*C. clèvei* (Lagerstedt) Clève ; 10,16,19,  
 25  
*C. fenzi* (Grunow) Patrick ; 44  
*C. leptosoma* (Grunow) Krammer ; 16  
 [=Pinnularia leptosoma (Grunow)  
 Clève, P. leptosoma f. erlangensis  
 A. Mayer]  
*C. lewisii* Patrick ; 16  
*C. limosa* (Kützing) Patrick ; 3,8,15,  
 16,19,27,28,40  
 [=C. schumanniana (Grunow)  
 Clève, C. schumanniana var.  
 biconstricta (Grunow) Reich.,  
 C. silicula var. gibberula  
 (Kützing) Mayer, Navicula  
 limosa Kützing, N. gibberula  
 Kützing, N. trochus Ehrenberg,  
 N. schumanniana (Grunow)  
 Clève]  
*C. obtusa* (W. Smith) Clève ; 6,8,15

[=C. hebes (Ralfs) R.M. Patrick,  
 Navicula obtusa W. Smith]  
*C. permagna* (J.W. Bailey) Clève ;  
 4,44,53  
 [=Pinnularia permagna  
 J.W. Bailey]  
*C. pulchra* Messikommer ; 8  
*C. schroederi* Hustedt ; 22  
*C. silicula* (Ehrenberg) Clève  
 var. *silicula* 4-16,19,22-25,28,29,  
 36,40,43-46,50,51,53,56  
 [C. ventricosa (Ehrenberg)  
 F. Meister, Navicula ventricosa  
 Ehrenberg, N. silicula  
 Ehrenberg, N. leptogongyla  
 Ehrenberg]  
 var. *alpina* Clève ; 2  
 [=C. ventricosa var. alpina  
 Clève]  
 var. *truncatula* Grunow ; 8,10,28,  
 36,53  
 [=C. ventricosa var. truncatula  
 (Grunow) Meister, Navicula  
 ventricosa var. truncatula  
 Grunow]  
*C. subsalina* (Donkin) Hendey ; 38  
 [=C. amphibaena var. subsalina  
 (Donkin) Clève, Navicula  
 subsalina Donkin]  
*C. westii* (W. Smith) Hendey  
 var. *angusta* (Heid.) nov. nom. ; 44  
 [=C. formosa var. angusta  
 (Heid.) Freng]  
*Eolimna* Lange-Bertalot &  
 W. Schiller  
*E. minima* (Grunow) Lange-Bertalot  
 ; 19,26,27,54  
 [=Navicula minima Grunow in  
 Van Heuck, N. minima var.  
 atomoides (Grunow) Clève,  
 N. tantula Hustedt, N. atomoides  
 Grunow]  
*Geissleria* Lange-Bertalot &  
 Metzeltin



- G. decussis* (Østrup) Lange-Bertalot & Metzeltin in Lange-Bertalot ; 14  
[=Navicula decussis Ostrup]
- G. schoenfeldii* (Hust.) Lange-Bertalot & Metzeltin in Lange-Bertalot ; 27,53  
[=Navicula schöenfeldii Hustedt]
- Haslea** Simonsen
- H. ostrearia* (Gaillon) Simonsen ; 39  
[=Vibrio ostrearius Gaillon, Navicula ostrearia Turpin, N. fusiformis Grunow, N. fusiformis var. ostrearia (Gaillon) Grunow]
- Hippodonta** Lange-Bertalot, Metzeltin & Witkowski
- H. capitata* (Ehrenberg) Lange-Bertalot, Metzeltin & Witkowski ; 3-12,14,15, 23-25,28,29,31,41,44,53  
[=Navicula capitata Ehrenberg, N. hungarica var. capitata (Ehrenberg) Clève, Pinnularia capitata Ehrenberg, P. digitus Ehrenberg]
- H. costulata* (Grunow) Lange-Bertalot, Metzeltin & Witkowski ; 10,50  
[=Navicula costulata Grunow]
- H. hungarica* (Grunow) Lange-Bertalot, Metzeltin & Witkowski ; 3,4,7,8,10, 13,15,19,23,24,41,44,53  
[=Navicula capitata var. hungarica (Grunow) Ross, N. hungarica Grunow, N. humilis Donkin]
- H. lüneburgensis* (Grunow) Lange-Bertalot, Metzeltin & Witkowski ; 7,24  
[=Navicula capitata var. lüneburgensis (Grunow) Patrick, N. hungarica var. lüneburgensis Grunow]
- Kobayasia** Lange-Bertalot
- K. subtilissima* (Clève) Lange-Bertalot ; 8,9,12,25  
[=Navicula subtilissima Clève, Kobayasiella subtilissima (Clève) Lange-Bertalot]
- Navicula** Bory de Saint-Vincent
- N. sp.* ; 20,41,45,51-53,56
- N. angusta* Grunow ; 3,16
- N. arenaria* Donkin ; 3,28  
[=N. lanceolata var. arenaria (Donkin) Van Heurck]
- N. arvensis* Hustedt ; 19,53
- N. atomus* (Kützing) Grunow ; 8,12, 25,28,35,41  
[=N. caduca Hustedt, N. atomus var. excelsa (Krasske) Lange-Bertalot, N. atomus var. permitis (Hustedt) Lange-Bertalot, N. excelsa Krasske, N. permitis Hustedt, N. peratomus Hustedt, N. pseudatomus Lund]
- N. bicapitellata* Hustedt ; 3,27,41
- N. bicephala* Hustedt ; 10,19
- N. capitatoradiata* Germain ex Gasse ; 5-10,15,24,28,38,41,53,54  
[=N. salinarum var. intermedia (Grunow) Clève, N. cryptocephala var. intermedia Grunow]
- N. cari* Ehrenberg ; 3,7,8,10,12,15, 16,22-25,29,36,40,41,46,53,55  
[=N. graciloides A. Mayer, N. cincta var. cari (Ehrenberg) Clève, N. granulata J.W. Bailey]
- N. cincta* (Ehrenberg) Ralfs ; 7,13, 15,16,26,53,54,57  
[=N. cincta var. heuflerii Grunow, N. umida Bock, N. cari var. cincta (Ehrenberg) Lange-Bertalot, N. inutilis Krasske, Pinnularia cincta Kützing]
- N. contempta* Krasske ; 53
- N. cryptocephala* Lange-Bertalot ; 1-10,12-16,19,20,22-25,27-29, 31,36,38,39,41,44-46,49-58  
[=N. cryptocephala Kützing, N. cryptocephala f. terrestris Lund]
- N. cryptocephala* Kützing var. *exilis* (Kützing) Grunow ; 15,28,57
- var. *veneta* (Kützing) Rabenhorst ; 3, 4-12,14,16,21-25,27-29,31,36,41,44, 47,53,58  
[=N. veneta Kützing, N. cryptocephala var. veneta (Kützing) Clève, N. cryptocephala var. veneta (Kützing) Grunow, N. lancettula Schumann, N. cryptocephala var. lancettula Van Heurck, N. cryptocephala var. lancettula Schumann, N. pumila Grunow, N. cryptocephala var. pumila (Grunow) Clève, N. rhombulus Schumann]
- N. cryptotenella* Lange-Bertalot ; 3,7,9, 17,41,53,57  
[=N. radiosa var. tenella (Brébisson ex Kützing) Grunow ex Van Heurck]
- N. dicephala* Ehrenberg var. *neglecta* (Krasske) Hustedt ; 8
- N. digito-radiata* (W. Gregory) Ralfs ; 16  
[=Pinnularia digito-radiata W. Gregory]
- N. directa* (W. Smith) Ralfs ; 11,12,41  
[=Pinnularia directa W. Smith]
- N. ehrenbergii* Kützing ; 41
- N. elegans* W. Smith ; 15
- N. erifuga* Lange-Bertalot ; 53  
[=N. heuflerii var. leptocephala (Kützing ex Grunow) H. Peragallo & Peragallo]
- N. fragilis* Heiberg ; 38
- N. frugalis* Hustedt ; 14
- N. gottlandica* Grunow ex Van Heurck ; 10,11,15,26-28  
[=N. helvetica Brun]
- N. gregaria* Donkin ; 12,25,29,41,53
- N. grevilleana* Hendey ; 38  
[=Navicula grevillei (C. Agardh) Clève]
- N. grimmei* Krasske ; 7,8
- N. heufleri* Grunow ; 44
- N. hustedtii* Krasske ; 27,28,31,56
- N. incerta* Grunow ex Van Heurck: 8
- N. integra* (W. Smith) Ralfs ; 19
- N. lanceolata* (C. Agardh) Kützing var. *lanceolata* ; 8,9,12,14,15, 25,29,41,44,45,53  
var. *phyllepta* (Kützing) Cleve ; 16  
[=N. phyllepta Kützing]  
var. *cymbula* (Donkin) Clève ; 16  
[=N. cymbula Donkin]
- N. laterostrata* Hustedt ; 8,22
- N. lucidula* Grunow ; 28
- N. ludloviana* Schmidt ; 15
- N. maculata* Hustedt ; 52
- N. mayerii* Mayer ; 27
- N. menisculus* Schumann var. *menisculus* ; 12,14,25, 27,29,36,50,53  
var. *upsaliensis* (Grunow) Grunow ; 5,9,22,23
- N. microcephala* Grunow ; 54
- N. minusculoides* Hustedt ; 51
- N. neoventricosa* Hustedt ; 12,16,46
- N. nivaloides* Bock ; 14
- N. notha* Wallace ; 3
- N. oblonga* (Kützing) Kützing ; 3,13,40,44,46,41
- N. odiosa* Wallace ; 28
- N. ostrupii* Schulz ; 24
- N. peregrina* (Ehrenberg) Kützing ; 8,15,37,51  
[=Pinnularia peregrina Ehrenberg]
- N. platystoma* Ehrenberg ; 8
- N. plicata* Donkin ; 8
- N. radiosafallax* Lange-Bertalot ; 12, 25,28,29  
[=N. radiosa var. parva Wallace]
- N. radiosa* Kützing ; 2-12,14-16,19, 24,25,27-29,36,41,43-45,50-53, 55-57
- N. reinhardtii* Grunow ; 12,14,16,19, 44,51,54
- N. rhyncocephala* Kützing ; 8,10, 14-16,22-24,28,44,45,53,57,58
- N. rhynchotella* Lange-Bertalot ; 28,57



[=N. rhyncocephala var. amphiceros (Kützing) Grunow, N. amphiceros Kützing]  
*N. salinarum* Grunow ; 7,8,10,15,16, 22-24,26,27,50,57  
*N. silicula* Kützing ; 15  
 [= non *N. silicula* Ehr.]  
*N. simplex* Krasske ; 24,51  
*N. subrhyncocephala* Hustedt ; 57  
*N. tau* Cléve ; 3  
*N. tridentula* Krasske ; 22  
*N. tripunctata* (O.F. Müller) Bory ; 3-5, 7-9,12,14-16,19,22,25,27-29,31,41, 43-45,50-54,56,57  
 [=N. gracilis Ehrenberg, *Vibrio tripunctatus* O.F. Müller]  
*N. trivialis* Lange-Bertalot ; 16,46  
*N. viridula* (Kützing) Ehrenberg  
 var. *viridula* ; 3,8,12,15,19,22-24, 28,40,41,44,45,53  
 var. *avanacea* (Brébisson ex Grunow) Van Heurck ; 15,22,23  
 var. *rostellata* (Kützing) Cléve ; 6,14  
 [=N. roseletta Kützing, N. rhyncocephala var. *rostellata* (Kützing) Grunow]  
 var. *slesvicensis* (Grunow in Van Heurck) Van Heurck ; 28  
*N. vulpina* Kützing ; 15,16,40  
 [=N. viridula var. *vulpina* (Kützing) Lange-Bertalot]  
*Nupela* Vyverman & Compère  
*N. imperfecta* (Schimanski) Lange-Bertalot ; 15  
 [=Achnanthes imperfecta Schimanski, *Navicula poconoensis* Patrick, N. pennsylvanica Patrick, N. keeleyi Patrick, N. concava Patrick]  
*Parlibellus* E.J. Cox  
*P. protracta* (Grunow) Lange-Bertalot ; 8,22,26  
 [=Navicula protracta (Grunow) Cléve, N. protractoides Hustedt]

## PLEUROSIGMATACEAE

*Gyrosigma* Hassall  
*G. sp.* ; 41,44,45  
*G. acuminatum* (Kützing) Rabenhorst ; 2-16,19,22-29,31,36, 41,40,42-44,50,51,53-58  
 [G. kützingii (Grunow) Cléve, G. spencerii (Quek.) Griff. & Henfr., *Pleurosigma gracilentum* Rabenhorst, P. kützingii Grunow, P. spencerii (Quek.) W. Smith, P. spencerii W. Smith, P. acuminatum (Kützing) Grunow, *Navicula spencerii* Quek.]  
*G. attenuatum* (Kützing) Rabenhorst ; 12,14,15,24,25, 27,29,44,45,51  
 [=Gyrosigma delicatulum (W. Smith) Elm. *Pleurosigma attentuatum* Kützing) W. Smith, P. delicatulum W. Smith]  
*G. balticum* (Ehrenberg) Rabenhorst ; 26  
 [=Navicula baltica Ehrenberg, *Pleurosigma balticum* (Ehrenberg) W. Smith]  
*G. exilis* (Grunow) C.W.Reimer ; 53  
*G. fasciola* (Ehrenberg) J.W. Griffith & Henfrey ; 53  
 [=Ceratoneis fasciola Ehrenberg, *Pleurosigma fasciola* (Ehrenberg) W. Smith]  
*G. littorale* (W. Smith) Griffith & Henfrey. ; 47  
 [=Pleurosigma littorale W. Smith]  
*G. scalproides* (Rabenhorst) Cléve var. *eximia* (Thwaites) Cléve ; 28  
*G. terryanum* (Perag.) Cléve ; 26  
*G. wormleyi* (Sull.) Boyer ; 53  
*Pleurosigma* W. Smith  
*P. sp.* ; 20,37  
*P. angulatum* (Quekett) W. Smith ; 51  
 [=Navicula angulata Quekett]

*P. elongatum* W. Smith ; 15,24  
*P. salinarum* (Grunow) Grunow ; 13, 15,40  
*P. scalproides* Rabenhorst ; 28  
*P. strigosum* W. Smith ; 26  
 [=P. angulatum var. strigosum (W. Smith) Van Heurck]  
**PLAGIOTROPIDACEAE**  
*Plagiotropis* Pfitzer  
*P. lepidoptera* (W. Gregory) Kuntze ; 15  
**STAURONEIDACEAE**  
*Craticula* Grunow  
*C. accomoda* (Hustedt) D.G. Mann ; 2  
 [=Navicula accomoda Hustedt]  
*C. cuspidata* (Kützing) D. Mann var. *cuspidata* ; 3-10,12-16,22-25,27, 29,36,40-47,51-53,56,57  
 [=Navicula cuspidata (Kützing) Kützing, N. cuspidata var. *ambigua* (Ehrenberg) Cléve]  
 var. *craticula* (Van Heurck) nov. nomen ; 10,57  
 [=C. cuspidata var. *heribaudi* (Peragallo) E.Y. Haw. & M.G. Kelly, *Navicula cuspidata* f. *craticulare* (Van Heurck) Peragallo & Héribaud, N. cuspidata var. *heribaudii* Peragallo]  
 var. *major* (Meister) Czarnecki ; 11,44  
 [=Navicula cuspidata var. *major* Meist]  
*C. halophila* (Grunow) D. Mann var. *halophila* ; 8,11,16,24,26,44  
 [=Navicula halophila (Grunow) Cléve N. cuspidata var. *halophila* Grunow ex Van Heurck]  
 f. *robusta* (Hustedt) Czarnecki ; 57  
 [=Navicula halophila f. *robusta* Hustedt]  
*Stauroneis* Ehrenberg  
*S. sp.* ; 8,52  
*S. acuta* W. Smith ; 14,24,52  
 [=S. kochii Pantocsek]  
*S. anceps* Ehrenberg ; 3,4,7-12, 14-16,19,22,28,44,46,51,53,56

[=S. anceps f. *gracilis* (Ehrenberg) Cléve, S. anceps f. *gracilis* Rabenhorst]  
*S. borrichii* (J.B. Petersen) J.W.G. Lund ; 15  
 [=S. thienemanni f. *simplex* Hustedt, *Navicula borrichii* J.B. Petersen]  
*S. obilis* Schumann ; 13,19  
*S. obtusa* Lagerstedt ; 8  
 [=S. lapponica Cléve]  
*S. parvula* Grunow ; 51  
*S. phoenicenteron* (Nitzsch) Ehrenberg  
 f. *phoenicenteron* ; 8,13-16,53,57  
 [=S. nobilis f. *alabamiae* (Heiden) Cléve]  
 f. *gracilis* (Ehrenberg) Hustedt ; 40  
*S. smithii* Grunow ; 5,8,9,12,14,16, 25,27,34,36,44,45,53  
*S. spicula* (Hicke) Grunow ; 12,19, 24  
 [=Navicula spicula (Hicke) Cléve]  
**PROSCHKINIACEAE**  
*Proschkinia* N.I. Karajeva  
*P. longirostris* (Hustedt) D.G. Mann ; 41  
 [=Navicula longirostris Hustedt]  
**THALASSIOPHYSALES**  
**CATENULACEAE**  
*Amphora* Ehrenberg ex Kützing  
*A. sp.* 45  
*A. acutiuscula* Kützing ; 15,44,47  
*A. coffeaeformis* (C. Agardh) Kützing ; 26,38,53  
 [=A. aponina Kützing *Frustulia coffeaeformis* C. Agardh]  
*A. commutata* Grunow ; 3,19, 24,26,38,41  
*A. holsatica* Hustedt ; 15  
*A. lineolata* Ehrenberg ; 19  
*A. marina* W. Smith ; 27  
*A. normanii* Rabenhorst ; 6,16,22



*A. obtusa* W. Gregory ; 15,35  
*A. ovalis* (Kützing) Kützing  
 var. *ovalis* ; 3-12,14-16,19,21-25,  
 27,28,31,34,39,41-47,50-54,56-58  
 [= *A. ovalis* f. *gracilis* (Ehrenberg)  
 Cléve, *Navicula amphora* Ehrenberg]  
 var. *affinis* (Kützing) Van Heurck ex  
 De Toni ; 12,15,29,40  
 [= *A. affinis* Kützing, *A. lybica*  
 Ehrenberg, *A. ovalis* var. *lybica*  
 (Ehrenberg) Cléve]  
 var. *pediculus* (Kützing) Van Heurck  
 ex De Toni ; 4-10,12,14-16,19,22-25,  
 27-29,41,44,52-54  
 [= *A. pediculus* Kützing]  
*A. perpusilla* (Grunow) Grunow ; 8,22,  
 37,53  
*A. proteus* W. Gregory ; 10,27  
 [= *A. hexagonalis* Witt,  
*A. speciosa* Castracane]  
*A. robusta* W. Gregory ; 27  
*A. veneta* Kützing ; 6-8,11,16,22-24,  
 27,28,41,44,53  
**BACILLARIALES**  
**BACILLARIACEAE**  
*Bacillaria* J.F. Gmelin  
*B. paxillifer* (O.F. Müller) Hendey ; 7,  
 13,15,25,40,43,45,51,53,56,57  
 [= *B. paradoxa* Gmelin, *Vibrio*  
*paxillifer* O.F. Müller, *Nitzschia*  
*paxillifer* (O.F. Müller) Heiberg,  
*N. paradoxa* (Gmelin) Grunow]  
*Cylindrotheca* Rabenhorst  
*C. closterium* (Ehrenberg) Lewin &  
 Reimann ; 15,16,56  
 [= *Ceratoneis closterium* Ehrenberg,  
*Nitzschia closterium* W. Smith,  
*N. closterium* (Ehrenberg) W. Smith,  
*N. longissima* var. *closterium*  
 (W. Smith) Van Heurck]  
*C. gracilis* (Brébisson ex Kützing)  
 Grunow ; 7,44  
 [= *C. gerstenbergeri* Rabenhorst,  
*Ceratoneis gracilis* Brébisson ex  
 Kützing, *Nitzschia taenia*

W. Smith]  
**Denticula** Ehrenberg  
*D. elegans* Kützing ; 8,9,12,15,16,  
 19,25,29,35,41,44,45,47  
*D. lauta* J.W. Bail. ; 19  
*D. tenuis* Kützing  
 var. *tenuis* ; 4,6,15,19,45  
 var. *crassula* (Nägeli) Hustedt ; 15  
*D. thermalis* Kützing ; 19,36  
**Hantzschia** Grunow  
*H. amphioxys* (Ehrenberg) Grunow  
 var. *amphioxys* ; 1,2,4-16,19,22-25,  
 28,29,40-42,44-46,51,53,56,57  
 [= *Eunotia amphioxys*  
 Ehrenberg, *Homoeocladia*  
*amphioxys* (Ehrenberg)  
 Kuntze, *Nitzschia amphioxys*  
 (Ehrenberg) W. Smith]  
 var. *major* Grunow ; 16,46  
*H. elongata* (Hantzsch) Grunow ; 28  
*H. spectabilis* (Ehrenberg) Hustedt ;  
 14,19,53  
 [= *Nitzschia spectabilis*  
 (Ehrenberg) Ralfs]  
*H. virgata* (Roper) Grunow ; 8,10,  
 15,40,42  
 [= *Nitzschia virgata* Roper,  
*Homoeocladia virgata* (Roper)  
 Kuntze]  
**Nitzschia** Hassall  
*N. sp.* ; 8,41,45,51,52  
*N. acicularis* (Kützing) W. Smith  
 var. *acicularis* ; 1,3,6-9,11,12,  
 14-16,19,20,22-25,27,29,31,37,  
 40,43-45,51,53-56,58  
 [= *Homoeocladia acicularis*  
 (Kützing) Kuntze]  
 var. *closterioides* Grunow ; 20  
*N. actinastroides* (Lemmermann)  
 Goor ; 15,19,28,40,41,53  
 [= *N. holsatica* Hustedt, *Synedra*  
*actinastroides* Lemmermann]  
*N. amphibia* Grunow ; 7,8,11-16,  
 22-25,27,29,41,50,53,54

[= *Homoeocladia amphibia* (Grunow)  
 Kuntze]  
*N. angularis* W. Smith ; 15  
*N. capitellata* Hustedt ; 25  
*N. circumscuta* (J.W. Bailey) Grunow ;  
 11,15,27  
 [= *Surirella circumscuta* J.W. Bailey]  
*N. clausii* Hantzsch ; 11,15,25,57  
 [= *N. sigma* var. *clausii* (Hantzsch)  
 Grunow]  
*N. communis* Rabenhorst ; 38  
*N. commutatooides* Lange-Bertalot ; 11,  
 22,27,35,36  
 [= *N. commutata* Grunow,  
*N. pseudoamphioxys* Hustedt]  
*N. constricta* (Kützing) Ralfs ; 3,7,12-14,  
 16,24,25,27,29,31,46,51,53,57  
 [= *N. apiculata* (W. Gregory) Grunow,  
*Tryblionella apiculata* W. Gregory]  
*N. debilis* (Arnott) Grunow ; 7,15,24,40  
 [= *N. tryblionella* var. *debilis* (Arnott)  
 Hustedt]  
*N. dissipata* (Kützing) Grunow  
 var. *dissipata* ; 2-4,8,9,11,12,14,15,  
 21-25,27,29,36,50,53,57  
 [= *Homoeocladia dissipata*  
 (Kützing) Kuntze]  
 var. *media* (Hantzsch) Grunow ; 2  
*N. dubia* W. Smith  
 var. *dubia* ; 15,27,36,57  
 [= *Homoeocladia dubia* (W. Smith)  
 Elm.]  
 var. *latestriata* Ostrup ; 7  
*N. fasciculata* Grunow ; 25  
*N. filiformis* (W. Smith) Hustedt ; 3,4,15,  
 25,27,29,51,53  
 [= *Homoeocladia filiformis* W. Smith]  
*N. fonticola* Grunow ; 4,7,8,11,14,22-24,  
 26,29,34,38,44,53  
*N. frustulum* (Kützing) Grunow  
 var. *frustulum* ; 2,4,5,9,14,22,  
 25,26,38,44,49,50  
 [= *Homoeocladia frustulum*  
 (Kützing) Kuntze, *Synedra*  
*frustulum* Kützing]

var. *perminuta* Grunow ; 12  
 var. *perpusilla* (Rabenh.) Grunow  
 ; 44,53  
 var. *subsalina* Hustedt ; 3,38,44  
*N. gandersheimiensis* Krasske ; 3,19,  
 22,44,45  
*N. gracilis* Hantzsch ; 3,6,8,12,14,  
 16,22,23,25,41,53  
*N. hantzschiana* Rabenhorst ; 16,22,  
 27,46  
*N. heufferiana* Grunow ; 26  
*N. homburgienseis* Lange-Bertalot ;  
 36,44  
 [= *N. thermalis* (Ehrenberg)  
 Auersw., *N. thermalis* var.  
*minor* Hilse]  
*N. incognita* Legler & Krasske ; 38  
*N. inconspicua* Grunow ; 38  
*N. intermedia* Hantzsch ; 12,14,22,  
 27,57  
 [= *Homoeocladia intermedia*  
 (Hantzsch) Kuntze]  
*N. invisiatata* Hustedt ; 8  
*N. lacustris* Hustedt ; 15,40,43  
*N. linearis* (C. Agardh) W. Smith ;  
 5,9,12,15,16,19,23-25,29,41,  
 44-46,49,50,51,53,56,57  
 [= *Homoeocladia linearis*  
 (W. Smith) Kuntze]  
*N. longissima* (Brébisson in  
 Kützing) Grunow  
 f. *longissima* ; 15,40  
 [= *N. birostrata* W. Smith,  
*Ceratoneis longissima*  
 Brébisson]  
 f. *parva* Grunow ; 15  
*N. lorenziana* Grunow  
 var. *lorenziana* ; 24,27,44  
 [= *N. incurvata* var. *lorenziana*  
 Ross]  
 var. *subtilis* Grunow ; 3,7,41,44,53  
 [= *N. subtilis* Grunow,  
*Homoeocladia subtilis* (Grunow)  
 Kuntze]



- N. microcephala* Grunow ; 8,26,44,53  
*N. minuta* Bleisch ; 16  
*N. nana* Grunow ; 57  
 [=*N. ignorata* Krasske]  
*N. obtusa* W. Smith ; 8,12,13,24-27,29, 44,53  
 [=*Homoeocladia arcus* (Buhln.) Kuntze]  
*N. palea* (Kützing) W. Smith  
 var. *palea* ; 1,2,4-16,19,22-25,27-29, 41,43,44,46,49-51,53,54,56,57  
 [=*Homoeocladia palea* (Kützing) Kuntze]  
 var. *debilis* (Kützing) Grunow ; 57  
 var. *tenuirostris* Grunow ; 57  
*N. paleacea* Grunow ; 8  
*N. parvula* W. Smith ; 15,53  
*N. punctata* (W. Smith) Grunow ; 11, 24,27  
 [=*Tryblionella punctata* W. Smith]  
*N. pusilla* Grunow ; 2,3,7,8,10,27,28, 38,41,53,57  
 [=*N. kützingiana* Hilse,  
*N. obtusangula* Hustedt,  
*N. indistincta* Michailov, *N. paleacea* (Grunow) Grunow, *N. palea* var. *kützingiana* (Hilse) Grunow, *N. bacata* Hustedt]  
*N. recta* Hantzsch ; 4-6,8,9,11,12,14,15, 19,25,29,41,44,45,53,57  
*N. romana* Grunow ; 3,12,16,22,23, 25,46  
 [=*N. fonticola* var. *romana* (Grunow) Cléve]  
*N. rostellata* Hustedt ; 12,25  
*N. scapelliformis* (Grunow) Grunow ; 2, 15,19,27  
 [=*N. obtusa* var. *scapelliformis* Grunow]  
*N. sigma* (Kützing) W. Smith  
 var. *sigma* ; 4-7,9,10,12,22,24,25, 27,29,41,45,46,50,51,53,56,57  
 [=*Homoeocladia sigma* (Kützing) Kuntze, *Synedra sigma* Kützing]  
 var. *rigida* (Kützing) Grunow ex Van Heurck ; 15  
*N. sigmoidea* (Nitzsch) W. Smith ; 1,3-10,12-16,19,22,25,27-29,31, 36,40,41,43-45,50-53,56,57  
 [=*N. elongata* Hassall nom. illeg., *Bacillaria sigmoidea* Nitzsch, *Homoeocladia sigmoidea* (Nitzsch) Elmore]  
*N. sinuata* (W. Smith) Grunow  
 var. *sinuata* ; 16,36  
 var. *tabellaria* Grunow ; 5, 8-10,16,46,57  
*N. socialis* W. Gregory ; 24  
*N. subcapitellata* Hustedt ; 12,14, 25,29,54,56  
*N. sublinearis* Hustedt ; 4-6, 8-10,12,16,19,24-28,34,36, 44,45,51,53,56  
*N. subtubicola* H. Germain ; 12, 25,29  
*N. thermalis* Kützing ; 2,4-7,9,24,25, 27,28,44,50,51,53  
*N. tryblionella* Hantzsch  
 var. *subsalina* Hantzsch ; 14  
*N. umbonata* (Ehrenberg) Lange-Bertalot ; 16,22,23,27,50,58  
 [=*N. diducta* Hustedt, *N. fossalis* Hustedt, *N. stagnorum* Rabenhorst, *Navicula umbonata* Ehrenberg]  
*N. vermicularis* (Kützing) Hantzsch ; 1,3-6,9,10,12,15,16,19,22,23,25, 36,37,40-43,50,53,57  
 [=*Homoeocladia vermicularis* (Kützing) Kuntze]  
*N. vitrea* G. Norman ; 4,9,10,27, 29,38  
 [=*Homoeocladia vitrea* (Norm.) Kuntze]  
*N. vivax* W. Smith ; 44  
***Pseudo-nitzschia*** H. Peragallo & M. Peragallo  
*P. seriata* (Cleve) H. Peragallo ; 21  
 [=*Nitzschia seriata* Cléve]  
***Tryblionella*** W. Smith  
*T. acuminata* W. Smith ; 4,6,10,26  
 [=*Nitzschia acuminata* (W. Smith) Grunow]  
*T. acuta* (Cléve) D.G. Mann ; 4,10,11, 14,19,24,41,44  
 [=*Nitzschia acuta* Cléve]  
*T. angustata* W. Smith  
 var. *angustata* ; 4,5,8-10,14,16,22-24, 27,41,46,51,53  
 [=*Nitzschia angustata* (W. Smith) Grunow]  
 var. *acuta* (Grunow) Bukht ; 3,8,9,53  
 [=*Nitzschia angustata* var. *acuta* Grunow]  
*T. hungarica* (Grunow) D.G. Mann ; 3-5,7,9,12,14,25,27,29,31,44,51-53, 56,57  
 [=*Nitzschia hungarica* Grunow]  
*T. levidensis* W. Smith ; 12,24,27,46,53  
 [=*Nitzschia tryblionella* var. *levidensis* (W. Smith) Grunow]  
*T. littoralis* (Grunow) D.G. Mann  
 [=*Nitzschia littoralis* Grunow] ; 15,46  
*T. tryblionella* (Hantzsch) Proch. ; 4,7, 12,15,22,24,25,27,29,31,40,44,53,57  
 [=*Nitzschia tryblionella* Hantzsch, *N. tryblionella* var. *calida* Grunow, *Tryblionella gracilis* W. Smith, *T. hantzschiana* Grunow, *T. hantzschiana* var. *australica* Playfair, *T. hantzschiana* var. *calida* (Grunow) Van Heurck, *T. hantzschiana* var. *minor* Playfair, *T. hantzschiana* var. *ovata* (Lagerstedt) Playfair]  
*T. victoriae* Grunow ; 3,53  
 [=*T. hantzschiana* var. *victoriae* (Grunow) Playfair, *Nitzschia tryblionella* var. *victoriae* (Grunow) Grunow]  
**RHOPALODIALES**  
**RHOPALODIACEAE**  
***Epithemia*** Brébisson  
*E. sp.* ; 45  
*E. adnata* (Kützing) Rabenhorst  
 var. *adnata* ; 7,8,11-13,15,16, 19,22-24,44,53,55  
 [=*Frustulia adnata* Kützing, *Navicula zebra* Ehrenberg, *Eunotia zebra* (Ehrenberg) Ehrenberg, *Epithemia adnata* Brébisson, *E. zebra* (Ehrenberg) Kützing, *Cystopleuro zebra* (Ehrenberg) Kuntze]  
 var. *minor* (Peragallo & Héribaud) R.M.Patrick ; 53  
 var. *porcellus* (Kützing) R. Ross ; 3,12,14,44  
 [=*E. zebra* var. *porcellus* (Kützing) Grunow, *E. porcellus* Kützing, *Cystopleuro zebra* var. *porcellus* (Kützing) De Toni, *E. adnata* var. *porcellus* (Kützing) Patrick]  
 var. *proboscidea* (Kützing) Hendey ; 41,44  
 [=*E. proboscidea* Kützing, *E. zebra* var. *proboscidea* (Kützing) Grunow, *E. cistula* (Ehrenberg) Grunow, *E. adnata* var. *proboscidea* (Kützing) Patrick]  
 var. *saxonica* (Kützing) R.M. Patrick ; 14,53  
 [=*E. saxonica* Kützing, *E. zebra* var. *saxonica* (Kützing) Grunow]  
*E. argus* (Ehrenberg) Kützing  
 var. *argus* ; 8,12-16,28,41,44,46  
 [=*Eunotia argus* Ehrenberg, *Cystopleura argus* (Ehrenberg) Kuntze]  
 var. *intermedia* (Hilse) A. Mayer ; 15  
 var. *longicornis* (Ehrenberg) Grunow ; 36,44  
 var. *protracta* A. Mayer ; 8  
*E. frickei* Krammer ; 16,19  
 [=*E. intermedia* Fricke]



*E. ocellata* (Ehrenberg) Kützing ; 8  
*E. reicheltii* Fricke ; 44  
*E. smithii* Carruth  
 var. *smithii* ; 41  
 var. *mesolepta* (Rabenhorst) Heiberg ;  
 11  
*E. sorex* Kützing  
 var. *sorex* ; 1,3,8,10-16,19,22-25,  
 29,37,41,44,53  
 [=Cystopleura *sorex* (Kützing)  
 Kuntze]  
 var. *gracilis* Hustedt ; 8,54  
*E. turgida* (Ehrenberg) Kützing  
 var. *turgida* ; 7,8,11-16,19,22,23,31,  
 35,44,53,56  
 [=Cystopleura *turgida* (Ehrenberg)  
 Kuntze, Eunotia *fabia* Ehrenberg,  
*E. turgida* (Ehrenberg) Ehrenberg]  
 var. *granulata* (Ehrenberg) Grunow ;  
 13-15  
 [=Eunotia *granulata* Ehrenberg,  
*E. librile* Ehrenberg]  
 var. *vergatus* (Kützing) Grunow ; 41  
 var. *westermanni* (Ehrenberg) Grunow  
 ; 14,54  
**Rhopalodia** O. Müller  
*R. sp.* ; 12,52  
*R. gibba* (Ehrenberg) O.F. Müller  
 var. *gibba* ; 3,6-16,24-26,29,40,41,  
 44,53  
 [=Navicula *gibba* Ehrenberg,  
 Eunotia *gibba* Ehrenberg, Epithemia  
*gibba* (Ehrenberg) Kützing,  
 Cystopleura *gibba* (Ehrenberg)  
 Kuntze]  
 var. *ventricosa* (Ehrenberg) Grunow ;  
 7,8,11,14-16,22-24,28,39,40,41,44,  
 45,53,54,56,58  
 [=Cystopleura *gibba* var. *ventricosa*  
 (Kützing) De Toni, *C. ventricosa*  
 (Kützing) Elm., Epithemia  
*gibba* var. *ventricosa* (Kützing)  
 Grunow, *E. ventricosa* Kützing,  
 Rhopalodia *ventricosa*  
 (Kützing) O. Müller, Cymbella

*ventricosa* (Kützing) Kuntze]  
*R. gibberula* (Ehrenberg)  
 O.F. Müller  
 var. *gibberula* ; 1,8,10,14,16,22,  
 23,25,29,41,44,53  
 [=Cystopleura *gibberula*  
 (Ehrenberg) Kuntze,  
 Epithemia *gibberula*  
 (Ehrenberg) Kützing, Eunotia  
*gibberula* Ehrenberg]  
 var. *producta* (Grunow)  
 O.F. Müller ; 12,54  
*R. musculus* (Kützing) O.F. Müller  
 var. *musculus* ; 8,12,16,14,41  
 [=R. *gibberula* var. *musculus*  
 (Kützing) Cléve, Epithemia  
*musculus* Kützing, Cystopleura  
*musculus* (Kützing) Kuntze]  
 var. *suprasemicircularis* ; 38  
*R. operculata* (Agardh) Håk. ; 13  
*R. parallela* (Grunow) O.F. Müller ;  
 15,53  
 [=R. *gibba* var. *parallela*  
 (Grunow) H. Peragallo &  
 M. Peragallo]

#### SURIRELLALES

#### ENTOMONEIDACEAE

**Entomoneis** Ehrenberg  
*E. alata* (Ehrenberg) Ehrenberg ;  
 11-13,24,25,44  
 [=Navicula *alata* Ehrenberg,  
 Amphiprora *alata* (Ehrenberg)  
 Kützing, A. *conspicua* Greville]  
*E. ornata* (J.W. Bailey) C.W. Reimer  
 ; 15,24,40,42  
 [=Amphiprora *ornata*  
 J.W. Bailey]  
*E. paludosa* (W. Smith)  
 C.W. Reimer ; 7,15  
 [=E. *ornata* var. *paludosa*  
 (W. Smith) Reimer, Amphiprora  
*paludosa* W. Smith]

#### SURIRELLACEAE

**Campylodiscus** Ehrenberg ex  
 Kützing

*C. sp.* ; 11,44,45  
*C. clypeus* (Ehrenberg) Ehrenberg ex  
 Kützing ; 13,44,45  
 [=C. *ovatus* Ralfs, Cocconeis *clypeus*  
 Ehrenberg, Surirella *clypeus*  
 Ehrenberg]  
*C. echeneis* Ehrenberg ex Kützing ; 15  
*C. noricus* Ehrenberg ex Kützing  
 var. *noricus* ; 8,54  
 var. *hibernicus* (Ehrenberg) Grunow  
 ; 8,14,15  
 [=C. *hibernicus* Ehrenberg]  
**Cymatopleura** W. Smith  
*C. sp.* ; 45,51  
*C. angulata* Greville ; 8,54  
 [=C. *elliptica* var. *angulata* (Greville)  
 Cléve]  
*C. brunii* Petit ; 40,42  
 [=C. *elliptica* var. *brunii* (Petit) Cléve]  
*C. elliptica* (Brébisson. ex Kützing)  
 W. Smith  
 var. *elliptica* ; 1,3-5,8-10,12-16,19,  
 25,27,29,31,40-42,44,45,50,53,54,56  
 [=Sphinctocystis *elliptica* (Kützing)  
 Kuntze  
 var. *constricta* Grunow ; 15  
*C. nobilis* Hantzsch  
 var. *nobilis* ; 4  
 [=C. *elliptica* var. *nobilis* (Hantzsch)  
 Hustedt]  
 var. *ovata* Grunow ; 5,9  
*C. solea* (Brébisson & Godey) W. Smith  
 var. *solea* ; 1,3-16,19,22-25,27-29,31,  
 40,41,43-46,50-54,56,57  
 [=C. *solea* Brébisson, *C. librile*  
 (Ehrenberg) Pantocsek, Sphinctocystis  
*librilis* (Ehrenberg) Hassali, Surirella  
*librile* Ehrenberg]  
 var. *albaregiensis* (Pantocsek) Cléve ;  
 15  
 var. *apiculata* (W. Smith) Ralfs ; 7,11  
 var. *clavata* O.F. Müller ; 9  
 var. *gracilis* Grunow ; 16,53  
 var. *pygmea* (Pantocsek) Cléve  
 ; 10

var. *regula* (Ehrenberg) Grunow  
 ; 5,9,41,53  
 var. *subconstricta* O.F. Müller ; 15  
**Stenopterobia** Brébisson  
*S. sp.* ; 12,58  
*S. cruvula* (W. Sm.) Krammer ; 3,45  
 [=S. *intermedia* (F.W. Lewis) Van  
 Heurck, S. *anceps* var. *intermedia*  
 (F.W. Lewis) Playfair]  
*S. delicatissima* (F. W. Lewis)  
 Brébisson ex Van Heurck ; 22,23  
 [=Surirella *delicatissima*  
 F.W. Lewis]  
*S. pelagica* Hustedt ; 9  
**Surirella** P.J. Turpin  
*S. sp.* ; 37,45,51,52  
*S. angusta* Kützing ; 4,5,8-10,12,15,  
 22,23,25,27-29,36,41,44,45,51,  
 53,56  
*S. biseriata* Brébisson  
 var. *biseriata* ; 14,27,45,53  
 var. *bifrons* (Ehrenberg) Hustedt  
 ; 14  
 [=S. *bifrons* Ehrenberg]  
 var. *celebriana* Hustedt ; 39,40  
 var. *constricta* (Ehrenberg)  
 Grunow ex Hustedt ; 24,40  
*S. brebissonii* Krammer & Lange-  
 Bertalot ; 1,2,4-6,8-10,12,14-16,  
 19,21-29,31,44-47,49,51-54,  
 56-58  
 [=S. *ovata* Kützing, S. *ovalis*  
 var. *ovata* (Kützing) Van  
 Heurck]  
*S. capronii* Brébisson ; 12,14,25,28,  
 29,35,44,55  
*S. conifera* Skvortzow. ; 40  
**[new record]**  
*S. crumena* Brébisson ; 4,7,24,57  
 [=S. *ovata* var. *crumena*  
 (Brébisson) Van Heurck]  
*S. didyma* Kützing ; 27  
*S. elegans* Ehrenberg  
 f. *elegans* ; 40,45,46  
 f. *lata* Hustedt ; 15,40



*S. fasciculata* O.F. Müller ; 40  
*S. gracilis* (W. Smith) Grunow ; 22,23  
*S. invicta* (Gessner 1957) ; 38  
*S. islandica* Ostrup ; 10,53  
*S. linearis* W. Smith  
 var. *linearis* ; 5,8,9,12,16,28,29,41,  
 44-46,51,53  
 var. *helvetica* (Brun) Meister ; 27,53  
*S. margaritifera* Hustedt ; 40,42  
*S. minuta* Brébisson in Kützing ; 4,5,9,  
 10,12,14,16,25,26,22,25,29,44,53,57  
 [=*S. apiculata* W. Smith, *S. ovalis*  
 var. *pinnata* (W. Smith) Van Heurck,  
*S. ovata* var. *pinnata* (W. Smith)  
 Brun, *S. ovata* var. *pinnata* (W. Smith)  
 Rabenhorst, *S. ovata* var. *salina*  
 W. Smith, *S. salina* W. Smith,  
*S. ovalis* var. *salina* (W. Smith)  
 Van Heurck, *S. panduriformis*  
 Kützing]  
*S. moelleriana* Grunow ; 16  
*S. ovalis* Brébisson  
 var. *ovalis* ; 2,4,7,8,10-12,14-16,19,  
 25,27-29,31,41,43-45,51,53,54,56  
 var. *baltica* (Schumann) Cléve ; 15  
*S. ovata* Kützing  
 var. *minuta* (Schumann) Van Heurck  
 ; 15,40  
*S. patella* Kützing ; 27  
 [=*S. suevica* Zeller ex Grunow]  
*S. peisonis* Pantocsek ; 11,13,44,58  
 [=*S. ovalis* var. *pyriphormis*  
 (Pantocsek) Cléve, *S. peisonis*  
 (Pantocsek) Hustedt]  
*S. pseudovata* Hustedt ; 16

*S. robusta* Ehrenberg  
 var. *robusta* ; 8,15,24,27,28,31,  
 41,42,45,50,51  
 [=*S. nobilis* W. Smith]  
*S. smithii* Ralfs ; 4,10  
*S. spiralis* Kützing ; 8,16,28,41,44,  
 45,53  
*S. spiraloides* Hustedt ; 9  
*S. splendida* (Ehrenberg) Kützing  
 ; 8,9,12,14,16,22,23,27,28,  
 37,40,41,50,53  
 [=*S. robusta* var. *splendida*  
 (Ehrenberg) Van Heurck]  
*S. striatula* P.J. Turpin. ; 14,15  
 [=*Navicula striatula* (P.J. Turpin)  
 Ehrenberg]  
*S. sublinearis* Hustedt ; 7,28,40  
*S. subsalsa* W. Smith ; 27  
*S. suecica* Grunow ; 27  
 [=*Nitzschia suecica* (Grunow)  
 Cléve]  
*S. tenera* W. Gregory ;  
 5,8,9,16,22,28,46,44  
*S. tenuis* A. Mayer ; 27  
*S. turgida* W. Smith ; 9,14  
**SAGENISTA**  
 [=**HETEROKONTOPHYTA**]  
**BICOECA**  
 [=**BICOSOECOPHYCEAE**]  
**BICOECALES**  
 [=**BICOSOECALES**]  
**BICOECACEAE**  
 [=**BICOSOECACEAE**]  
*Bicoeca* H.J. Clark [=*Bicosoeca*]  
*B. sp.* ; 3

## DOUPTFULL TAXA

*Batrachospermum vagum* (Roth)  
 C. Agardh ; 59  
*Cladophora profunda* var.  
*nordstediana* Brand. ; 59  
*Cymatopleura ovalis* Brébisson ; 41  
*Cymbella microcephala* var. *euqlypta*  
 (Ehrenberg) Cleve ; 41

*C. italica* (Ehrenberg) Kützing ; 51  
*Cystodinium botaviense* Klebs ; 59  
*Gymnodinium fuscum* (Ehrenberg)  
 F. Stein. ; 59  
*Lemanea fucina* (Bory) Atkinson ;  
 59

*Oocystis citrifomis* (Conk, Cirik 1991)  
 ; 45  
*Oedogonium echinospermum* A. Braun  
 ; 59  
*O. orientale* Jao ; 59  
*O. striatum* Tiffany ; 59  
*Protoderma viride* Kützing ; 59  
*Pediastrum duplex* var. *rotundatum*  
 Meyen ; 3  
*Pseudobohlinia americana* Bourrelly ; 3  
 [=*Bohlinia echidna* (Bohl.)  
 Lemmermann]  
*Scenedesmus arcuatus* Schröder ; 51

*Spirogyra gratiana* Transeau ; 59  
*S. subsalsa* Kützing ; 59  
*S. varians* (Hassall) Kützing ; 59  
*Stigeoclonium flagelliferum*  
 Kützing ; 59  
*Trachelomonas dubia* Swirenko em  
 Deflandre ; 59  
*T. volvocinopsis* Swirenko ; 59  
*Vaucheria sessilis* (Vaucher) D.C. ;  
 59  
*Zygnema pectinatum* (Vauch.) Ag. ;  
 59

## Özet

Bu çalışmada, literatür kayıtlarına dayalı, Türkiye'nin göl, baraj, akarsu, çay, dere, su birikintileri, kaplıca, sazlık ve bataklıklarındaki tatlısu algleri listelenmiştir. Çeşitli araştırmacılar tarafından 179 araştırma gerçekleştirilmiştir ve bu araştırmaların sonucunda 2030 takson saptanmıştır [(354 Cyanophyceae, 159 Euglonidea, 24 Dinophyceae, one (1) Bangiophyceae, five (5) Florideophyceae, 378 Chlorophyceae, one (1) Pleurostrophyceae, seven (7) Charophyceae *stricto sensu*, eight (8) Euphyceae, 266 Conjugophyceae, five (5) Cryptista, two (2) Fucophyceae, 25 Xanthophyceae, nine (9) Chrysophyceae, four (4) Synurophyceae, 63 Coscinodiscophyceae, 101 Fragilariophyceae, 617 Bacillariophyceae and one (1) Bicoecea]. 18 takson Türkiye tatlısu algflorası için yeni kayıt olarak verilmiştir.

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#### APPENDIX

**Phormidium ornatum** (Kützing) Anagnostidis & Komárek  
var. *crassum* (Rao) *comb. nov.*

Basionym; Oscillatoria ornata (Kützing) Gomont var. *crassa* Rao

**Phormidium simplicissimum** (Gomont) Anagnostidis & Komárek  
var. *antarcticum* (Fritsch) *comb. nov.*

Basionym; Oscillatoria simplicissima Gomont var. *antarctica* Fritsch

**Leptolyngbya angustissima** (W. West & G.S. West) Anagnostidis & Komárek  
f. *major* (Frémy) *comb. nov.*

Basionym; Phormidium angustissimum W. West & G.S. West f. *major* Frémy

**Jaaginema geminatum** (Meneghini ex Gomont) Anagnostidis & Komárek  
var. *sulphureum* (Strzeszewski) *comb. nov.*

Basionym; Oscillatoria geminata Meneghini ex Gomont var. *sulphurea*  
Strzeszewski

**Spirocoleus tenuis** (Meneghini) P. Silva f. *cincinatus* (Meneghini) *comb. nov.*

Basionym; Phormidium tenue (Meneghini) Gomont f. *cincinata* Meneghini

**Tabularia fasciculata** (C. Agardh) Williams & Round  
var. *hybrida* (Grunow) *comb. nov.*

Basionym; Synedra affinis var. *hybrida* Grunow

Synonym ; Synedra affinis var. *hybrida* Grunow f. *elongata* Van Heurck,  
S. *tabulata* (C. Agardh) Kützing var. *hybrida* (Grunow) Cléve]

**Tabularia familiaris** (Kützing) *comb. nov.*

Basionym; Synedra rumpens var.  $\gamma$  *familiaris* Kützing

Synonym; Synedra rumpens var. *familiaris* (Kützing) Grunow]

**Tabularia meneghiana** (Grunow) *comb. nov.*

Basionym; Synedra rumpens var. *meneghiana* Grunow

**Tabularia rumpens** (Kützing) *comb. nov.*

Basionym; Synedra rumpens Kützing

Synonym; Fragilaria rumpens (Kützing) Carl.,

Fragilaria *capucina* ssp. *rumpens* (Kützing) Lange-Bertalot

**Cymbella falaisensis** (Grunow) Krammer & Lange-Bertalot  
var. *lanceola* (Grunow) *comb. nov.*

Basionym; Navicula falaisiensis var. *lanceola* Grunow

**Encyonema lunatum** (W. Smith in Greville) Van Heurck  
var. *lineatum* (Ehrenberg) *comb. nov.*

Synonym; Cymbella lunata W. Smith var. *lineata* (Ehrenberg) Van Heurck

**Placoneis exigua** (W. Gregory) Meresch. var. *capitata* (R.M. Patrick) *comb. nov.*

Basionym; Navicula exigua var. *capitata* R.M. Patrick

**Gomphoneis olivacea** (Hornemann) P. Dawson ex Ross et Sims  
var. *calcorneum* (Lyngbye) *comb. nov.*

Synonym; Gomphonema olivaceum var. *calcornea* (Lyngbye) Kützing

**Gomphoneis olivacea** (Hornemann) P. Dawson ex Ross et Sims  
var. *minutissimum* (Hustedt) *comb. nov.*

Basionym; Gomphonema olivaceum var. *minutissimum* Hustedt

**Gomphoneis olivacea** (Hornemann) P. Dawson ex Ross et Sims  
var. *densestriata* (Foged) *comb. nov.*

Basionym; Gomphonema olivaceoides var. *densestriata* Foged

**Gomphonema truncatum** Ehrenberg var. *clavatum* (Ehrenberg) *nov. nomen*

Basionym; Gomphonema clavatum Ehrenberg

Synonym; Gomphonema subclavatum (Grunow) Grunow,

Gomphonema subclavatum var. *commutatum* (Grunow) Grunow,

Gomphonema subclavatum f. *gracilis* (Hustedt) Woodhead & Tweed,

Gomphonema longiceps var. *subclavatum*. Grunow,

Gomphonema longiceps var. *subclavata* f. *gracilis* Hustedt]

**Craticula cuspidata** (Kützing) D. Mann var. *craticula* (Van Heurck) *nov. nomen*

Synonym; C. *cuspidata* var. *heribaudi* (Peragallo) E.Y. Haw. & M.G. Kelly,

Navicula *cuspidata* f. *craticula* (Van Heurck) Peragallo & Héribaud,

N. *cuspidata* var. *heribaudii* Peragallo.

**Pediastrum angulosum** Ehrenberg ex Meneghini

var. *rugulosum* (G.S. West) *nov. nomen*

Basionym; Pediastrum araneosum var. *rugulosum* G.S. West]

**Eunotia bidens** Ehrenberg var. *inflata* Grunow *nov. nomen*

Basionym; Eutotia praerupta var. *inflata* Grunow

Synonym; Eunotia *inflata* (Grunow) Norpel-Schempp & Lange- Bert. in Lange-  
Bertalot

**Eunotia bidens** Ehrenberg var. *praerupta* (Ehrenberg) *nov. nomen*

Basionym; Eunotia praerupta Ehrenberg

**Caloneis westii** (W. Smith) Hendey var. *angusta* (Heid.) *nov. nomen*

Synonym; Caloneis *formosa* var. *angusta* (Heid.) Freng



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Endoderma cladophorae Hornby	34	E. viridis var. sanguinea		Rabenhorst	47	Beralot	48
E. polymorpha G.S. West	34	(Ehrenberg). Playfair	17	F. capucina var. vaucheriae		F. rhabdosoma Ehrenberg	47
Entomoneis ornata var. paludosa		Eunotia alpina (Nägeli) Hustedt	51	(Kützing) Lange- Beralot	47	F. rumpens (Kützing) Carl.	50
(W. Smith) Reimer	72	E. amphioxys Ehrenberg	68	F. constricta Ehrenberg	48	F. tabulata var. truncata	
Epithemia adnata Brébisson	71	E. arcus var. bidens Grunow	51	F. construens (Ehrenberg)		(Greville) Lange- Beralot	50
E. adnata var. porcellus		E. argus Ehrenberg	71	Grunow		F. ulna var. acus (Kützing)	
(Kützing) Patrick	71	E. faba Ehrenberg	72	49		Lange-Beralot	47
E. adnata var. proboscidea		E. gibba Ehrenberg	72	F. construens var. binodis		F. vaucheriae (Kützing)	
(Kützing) Patrick	71	E. gibberula Ehrenberg	72	(Ehrenberg) Grunow	49	J.B. Petersen	47
E. cistula (Ehrenberg) Grunow	71	E. gracilis (Ehrenberg) Rabenhorst	51	F. construens var. subsalina		F. vaucheriae var. capitellata	
E. gibba (Ehrenberg) Kützing	72	E. granulata Ehrenberg	72	Hustedt	49	(Grunow) Patrick	47
E. gibba var. ventricosa		E. inflata (Grunow) Norpel-		F. construens var. triundulata		F. virescens Ralfs	48
(Kützing) Grunow	72	Schempp & Lange-Bert. In		Riechelt	49	Franceia droescheri	
E. gibberula (Ehrenberg)		Lange-Beralot	51	F. construens var. venter		(Lemmermann) G.M. Smith	26
Kützing	72	E. librile Ehrenberg	72	(Ehrenberg) Grunow	49	F. elongata Korshikov	27
E. intermedia Fricke	71	E. lunaris (Ehrenberg) Grunow in		F. dilatata (Brébisson)		Frustulia rhomboides	
E. musculus Kützing	72	Van Heurck	51	Lange-Beralot	47	f. capitata A. Mayer	60
E. porcellus Kützing	71	E. lunaris var. bilunaris Grunow in		F. diophthalma (Ehrenberg)		F. rhomboids var. saxonica	
E. proboscidea Kützing	71	Van Heurck	51	Ehrenberg	47	f. capitata (Mayer) Hustedt	60
E. saxonica Kützing	71	E. major (W. Smith) Rabenhorst	51	F. famelica subsp. littoralis		F. saxonica var. capitata A. Mayer	60
E. ventricosa Kützing	72	E. monodon var. major		(H. Germain) Lange- Beralot	48	F. adnata Kützing	71
E. zebra (Ehrenberg) Kützing	71	(W. Smith) Hustedt	51	F. fasciculata (C. Agardh)		F. coffeaeformis C. Agardh	67
E. zebra var. porcellus		E. pectinalis var. minor		Lange- Beralot	50	F. elliptica C. Agardh	52
(Kützing) Grunow	71	(Kützing) Rabenhorst	52	F. gracillima A. Mayer	47	F. maculata Kützing	53
E. zebra var. proboscidea		E. praerupta Ehrenberg	51	F. harrisonii W. Smith	49		
(Kützing) Grunow	71	E. praerupta var. bidens		F. intermedia (Kützing) Petersen	47	Gallionella crenata Ehrenberg	45
E. zebra var. saxonica		(Ehrenberg) Grunow	51	F. intermedia Grunow	47	G. distans Ehrenberg	45
(Kützing) Grunow	71	E. praerupta var. inflata Grunow	51	F. intermedia var. littoralis		G. laevis Ehrenberg	45
Euastrum binale f. gutwinski		E. turgida (Ehrenberg) Ehrenberg	72	Grunow	48	Glenodinium borgei	
Schmidle	38	E. zebra (Ehrenberg) Ehrenberg	71	F. laevissima Cleve	59	(Lemmermann) Schiller	20
Eucocconeis flexella (Kützing)		Eutetramorus planctonicus		F. leptostauron (Ehrenberg)		G. lomnickii (Woloszynska)	
Grunow	59	(Kourshikov) Bourrelly	30	Hustedt	49	Lindemann	21
E. flexella (Kützing) Hustedt		E. polycoccus (Korshikov)		F. martyi (Hérilbaud)		G. penardiforme (Lindemann)	
in Pascher	59	Komárek	30	Lange-Beralot	49	Schiller	20
Euglena agilis H.J. Carter	17	Exilaria fulgens Greville	49	F. mutabilis (W. Smith) Grunow	49	G. quadridens (Stein) Schiller	20



<i>G. sedens</i> Lindemann	20	(Ehrenberg) Grunow <i>in</i> Van	55	<i>in</i> Van Heurck	56	Reichelt & Fricke	55
<i>G. tabulatum</i> Ehrenberg	21	Heurck	55	<i>G. lagenula</i> Kützing	56	<i>G. vibrio</i> var. <i>intricatum</i>	
<i>Gloeocapsa ambigua</i> Nägeli	8	<i>G. acuminatum</i> var. <i>turris</i>		<i>G. lanceolatum</i> (Ehrenberg) Kützing	56	(Kützing) Playfair	57
<i>G. ampla</i> Kützing	23	(Ehrenberg) Cléve	55	<i>G. lanceolatum</i> e.p.	55	<i>Gomphosphaeria aponina</i>	
<i>G. dermochroa</i> Nägeli	8	<i>G. affine</i> f. <i>major</i> Grunow	55	<i>G. lanceolatum</i> Ehrenberg	56	var. <i>delicatula</i> Virieux	8
<i>G. magma</i> (Brebisson) Kützing	6	<i>G. angustatum</i> var. <i>producta</i>		<i>G. lanceolatum</i> Kützing		<i>G. compacta</i> (Lammermann)	
<i>G. minor</i> f. <i>dispersa</i> (Keissler)		Grunow	56	<i>in</i> Van Heurck	56	Ström	8
Hollerbach	6	<i>G. angustum</i> C. Agardh	57	<i>G. lanceolatum</i> var. <i>affine</i>		<i>G. lacustris</i> Chodat	8
<i>G. pleurocapsoides</i> Novacek	6	<i>G. angustum</i> var. <i>intermedia</i>		(Kützing) Cléve	55	<i>G. lacustris</i> f. <i>compacta</i>	
<i>Gloeococcus schroeteri</i> (Chodat)		f. <i>major</i> Van Heurck	55	<i>G. lanceolatum</i> var. <i>affinis</i> Cléve	55	(Lammermann) Elenkin	8
Lammermann	24	<i>G. auritum</i> A. Braun	56	<i>G. lanceolatum</i> var. <i>bengalensis</i>		<i>G. lacustris</i> var. <i>compacta</i>	
<i>Gloeocystis ampla</i> (Kützing)		<i>G. balatonis</i> Pantocsek	55	Cléve	55	Lammerman	8
Rabenhorst	23	<i>G. bohemicum</i> Hustedt	55	<i>G. longiceps</i> var. <i>subclavata</i>		<i>G. nägeliana</i> (Unger)	
<i>G. gigas</i> (Kützing) Lagerheim	23	<i>G. calcareum</i> Cléve	55	f. <i>gracilis</i> Hustedt	56	Lammermann	8
<i>G. gigas</i> auct.	23	<i>G. calcifugum</i> Lange-Bertalot	56	<i>G. longiceps</i> var. <i>subclavatum</i>		<i>Gonatozygon rafflsii</i> De Bary	40
<i>G. gigas</i> var. <i>planctonica</i>		<i>G. capitatum</i> Ehrenberg	56	Grunow	56	<i>Gonium sociale</i> (Dujardin)	
W. West & G.S. West	23	<i>G. clavatum</i> Ehrenberg	56	<i>G. olivaceoides</i> Hustedt	56	Warming	23
<i>G. planctonica</i> (W. West &		<i>G. constrictum</i> Ehrenberg	56	<i>G. olivaceoides</i> var.		<i>Gymnocystodinium gessneri</i>	
G.S. West) Lemmermann	23	<i>G. constrictum</i> var. <i>capitatum</i>		<i>densistriata</i> Foged	55	Baumeister	20
<i>Gloeodinium cracoviense</i>		(Ehrenberg) Van Heurck	56	<i>G. olivaceum</i> (Lyngbye)		<i>Gymnodinium bogoriense</i> Klebs	20
Starmach	21	<i>G. constrictum</i> var. <i>capitatum</i>		Kützing	55	<i>G. caudatum</i> Prescott	20
<i>Gloeonema triangularum</i>		f. <i>robusta</i> A. Mayer	56	<i>G. olivaceum</i> var. <i>calcareum</i>		<i>G. irregulare</i> Christen	20
Ehrenberg	54	<i>G. constrictum</i> var. <i>capitatum</i> f.		(Cléve) Cléve	55	<i>G. limitatum</i> Skuja	20
<i>Gloeotaenium</i>		<i>turgidum</i> (Ehrenberg) A. Mayer	56	<i>G. olivaceum</i> var. <i>calcornea</i>		<i>G. limneticum</i> Woloszynska	20
<i>loitlesbergerianum</i> Hansgrig	22	<i>G. coronatum</i> Ehrenberg	55	(Lyngbye) Kützing	55	<i>G. mirabile</i> Penard	20
<i>Gloeotheca rupestris</i> var.		<i>G. curvatum</i> Kützing	52	<i>G. olivaceum</i> var.		<i>G. mirabile</i> var. <i>rufescens</i> Penard	20
<i>maxima</i> (W. West) Hollerbach	9	<i>G. exiguum</i> Kützing	52	<i>minutissimum</i> Hustedt	55	<i>G. obesum</i> Schiller	20
<i>Golenkinia botryoides</i>		<i>G. geminatum</i> (Lyngbye)		<i>G. paradoxum</i> Agardh	51	<i>G. poculiferum</i> Skuja	20
Schmidle	26	C. Agardh	55	<i>G. parvulum</i> var. <i>microceps</i>		<i>G. rotundatum</i> Klebs	20
<i>G. brevispina</i> Korshikov	24	<i>G. gracile</i> f. <i>naviculaoides</i>		(Kützing) Cléve	56	<i>G. rufescens</i> Lemmermann	20
<i>G. radiata</i> var. <i>brevispina</i>		(W. Smith) Grunow	56	<i>G. parvulum</i> var. <i>subcapitata</i>		<i>G. uberrimum</i> var. <i>rotundatum</i>	
Tiffany & Ahlstrom	24	<i>G. gracile</i> f. <i>parva</i> Grunow	56	Grunow	56	Popovsky	20
<i>G. radiata</i> var. <i>longispina</i>		<i>G. gracile</i> var. <i>dichotomum</i>		<i>G. parvulum</i> var. <i>subelliptica</i>		<i>Gyrodinium traun</i> f. <i>steineri</i>	
G.M. Smith	24	(Kützing) Grunow	56	Brandy	56	Lindemann	20
<i>Gomphoneis olivaceum</i>		<i>G. gracile</i> var. <i>lanceolata</i>		<i>G. subclavatum</i> (Grunow)		<i>Gyrosigma delicatulum</i>	
(Lyngbye) Dawson	55	(Kützing) Cléve	56	Grunow	56	(W. Smith) Elm.	66
<i>Gomphonema abbreviatum</i>		<i>G. grunowii</i> Patrick	56	<i>G. subclavatum</i> f. <i>gracilis</i>		<i>G. kützingii</i> (Grunow) Cléve	66
C. Agardh	52	<i>G. insigna</i> var. <i>fossilis</i> A. Mayer	55	(Hustedt) Woodhead & Tweed	56	<i>G. spencerii</i> (Quek.) Griff. & Henfr.	66
<i>G. acuminatum</i> var. <i>coronatum</i>		<i>G. instabilis</i> Hohn & Hellermann	55	<i>G. subclavatum</i> var. <i>commutatum</i>			
(Ehrenberg) Cléve	55	<i>G. intricatum</i> Kützing var. <i>vibrio</i>		(Grunow) Grunow	56	<i>Hariotina reticulata</i> P.A. Dangeard	30
<i>G. acuminatum</i> var. <i>coronatum</i>		(Ehrenberg) Cléve	56	<i>G. tenellum</i> Kützing	56	<i>Hemidinium brasiliense</i> Bicudo &	
(Ehrenberg) Rabenhorst	55	<i>G. intricatum</i> Kützing	57	<i>G. turgidum</i> Ehrenberg	56	Skvortzov	21
<i>G. acuminatum</i> var. <i>elongatum</i>		<i>G. intricatum</i> var. <i>bohemicum</i>		<i>G. turgidum</i> Grunow	56	<i>H. nasutum</i> var. <i>taticum</i>	
(W. Smith) Carruth	56	(Reich. & Fricke) Cléve	55	<i>G. turris</i> Ehrenberg	55	Woloszynska	21
<i>G. acuminatum</i> var. <i>laticeps</i>		<i>G. intricatum</i> var. <i>pumila</i> Grunow		<i>G. vibrio</i> var. <i>bohemicum</i>		<i>H. nobile</i> Skuja	21



Heterocapsa quinquecuspidata Massart	20	K. lunata Schmidle	28
Hierella boryana Turpin		K. major Bern.	33
25		K. obesa var. aperta (Teiling) Brunthaler	28
Himantidium pectinale Kützing	52	K. obesa var. pygmaea W. West & G.S. West	28
Hoffmania lauterbornii (Schmidle)		K. obtusa (Korshikov) Komárek	27
Wille	33	K. subsolitaria G.S. West	26
Holopedia geminata (Lagerheim)		Kobayasiella subtilissima (Cléve) Lange-Bertalot	64
Lagerheim	7	Komarekia lauterbornii (Schmidle) Fott	33
Holopedium dietelii (Richter)		Korshikoviella gracilipes (F.D. Lambert) Silva	24
Migula	7	Lagerheimia ciliata var. genevensis (Chodat) Playfair	27
Homoeocladia acicularis (Kützing) Kuntze	68	L. quadriseta (Lemmermann) G.M. Smith	27
H. amphibia (Grunow) Kuntze	69	Lambertia gracilipes (F.D. Lambert) Korshikov	24
H. amphioxys (Ehrenberg) Kuntze	68	L. limnetica (Lemmermann) Korshikov	24
H. arcus (Buhl.) Kuntze	70	Lepocinclis bütschli Lemmermann	17
H. dissipata (Kützing) Kuntze	69	L. bütschli var. maior Huber- Pestalozzi	17
H. dubia (W. Smith) Elm.	69	L. texta (Dujardin) Lemmermann	17
H. filiformis W. Smith	69	Lepraria olivacea Persoon ex Archerson	35
H. frustulum (Kützing) Kuntze	69	Leptolyngbya tenuis (Gomont) Anagnostidis & Komárek	13
H. intermedia (Hantzsch) Kuntze	69	Lobocystis dichotoma var. mucosa Bourrelly	27
H. palea (Kützing) Kuntze	70	Lyngbya aerugineo-caerulea Gomont	10
H. sigma (Kützing) Kuntze	70	L. angustissima (W. West & G.S. West) A. Iltis	12
H. sigmoidea (Nitzsch) Elmore	70	L. bornetii Zukal	10
H. subtilis (Grunow) Kuntze	69	L. ceylanica Bory	11
H. vermicularis (Kützing) Kuntze	70	L. diguetii Gomont	11
H. virgata (Roper) Kuntze	68	L. epiphytica Hieronymus	12
H. vitrea (Norm.) Kuntze	70	L. foveolarum (Montagne ex Gomont) Hansgrig	12
H. liearis (W. Smith) Kuntze	69	L. limnetica Lemmermann	12
Hormidium flaccidum (Kützing) A. Braun	36	L. martensiana Meneghini ex Gomont	12
H. fluitans (Gay) Heering	36		
H. subtile (Kützing) Heering	36		
H. subtilissimum (Rabenhorst) Mattox & Bold	36		
Hormiscia flaccida (Kützing) Lagerheim	36		
Hormococcus flaccidus (Kützing) Chodat	36		
Keratococcus braunii (Nägeli) Hindák	26		
Kirchneriella contorta (Schmidle) Bohlin	28		
K. intermedia Korshikov	28		

Gomont	12	Merismopedia geminata Lagerheim	7
L. subtilis W. West	12	Micractinium ericense Tiffany & Ahlstrom	26
L. versicolor (Warthman.) Gomont	12	M. paucispinosum (W. West & G.S. West) Wille	24
Lysigónium crenulatum (Ehrenberg) Kuntze	45	M. pusillum var. longisetum Tiffany & Ahlstrom	26
L. distans (Ehrenberg) Kuntze	45	M. pusillum var. mucosa Korshikov	26
L. granulatum (Ehrenberg) Kuntze	45	M. radiatum (Chodat) Wille	24
L. varians (C. Agardh) De Toni	45	Micrateris tetras Ehrenberg	25
Macrochloris dissecta Korshikov	23	Microcrocis dietelii P. Richter	7
Mastogloia dansei Thwaites	52	M. geminata (Lagerheim) Geitler	7
M. dansei var. elliptica Van Heurck	52	Microcystis aeruginosa f. flos-aquae (Wittrock) Elenkin	8
M. elliptica var. danseii (Thwaites) ex W. Smith) Cléve	52	M. aeruginosa f. marginata (Meneghini) Elenkin	8
M. grevillei W. Smith	52	M. anodontae (Hansgirg) Elenkin	7
M. smithii var. lanceolata Grunow	52	M. anodontae var. rivulorum (Geitler) Kann	7
Melodinium uberrimum Kent	20	M. bififormis (A Braun) Bourrelly	7
Melosira ambigua (Grunow) O.F. Müller	45	M. calciphila Schwabe	7
M. arenaria Moore ex Ralfs	45	M. grevillei (Hassall) Elenkin	7
M. borneri var. octogona Grunow	44	M. incerta (Lemmermann) Lammermann	7
M. crenulata (Ehrenberg) Kützing	45	M. marginata (Meneghini) Kützing	8
M. distans (Ehrenberg) Kützing	45	M. parasitica Kützing	7
M. distans var. lirata (Ehrenberg) Bethge	45	M. pulvereae f. conferta (W. West & G. S. West) Elenkin	7
M. distans var. lirata (Ehrenberg) O. F. Müller	45	M. pulvereae f. delicatissima (W. West & G.S. West) Elenkin	7
M. distans var. lirata f. lacustris (Grunow) Bethage	44	M. pulvereae f. elachista (W. West & G. S. West) Elenkin	7
M. granulata (Ehrenberg) Ralfs	45	Micropodiscus weissflogii Grunow	44
Melosira granulata var. angustissima O.F. Müller	45	Monoraphidium angustum Bernard	28
M. granulata var. muzzanensis (F. Meister) Hustedt	45	M. braunii (Nägeli) Komárková- Legnerová	26
M. islandica O.F. Müller	45	M. raphidioides (Hansgirg) Hindak	28
M. italica (Ehrenberg) Kützing	45	M. setiforme (Nygaard) Komárková-Legnerová	29
M. italica var. tenuissima (Grunow) O.F. Müller	45	Mougeotia calospora (Palla) Czurda	41
M. lirata (Ehrenberg) Kützing	45	Myxosarcina spectabilis Geitler	6
M. muzzanensis Meister	45	M. spectabilis var. decolorata Geitler	9
Menzbierella paragraphon Mill.	33		
Meridion vernale C. Agardh	49		
Echinella circularis Greville	49		



Navicula accomoda Hustedt	67	Bonik	63	N. fragilarioides Krasske	59	N. longiceps W. Gregory	60
N. alata Ehrenberg	72	N. cocconeiformis Gregory ex Greville	59	N. fusiformis Grunow	64	N. longirostris Hustedt	67
N. amphiceros Kützing	66	N. concava Patrick	66	N. fusiformis var. ostrearia (Gaillon) Grunow	64	N. major (Kützing) Kützing	62
N. amphigomphus Ehrenberg	60	N. costulata Grunow	64	N. gallica var. perpusilla (Grunow) Lange-Bertalot	59	N. mesolepta Ehrenberg	62
N. amphirhynchus (Ehrenberg) Pfitzer	60	N. cryptocephala f. terrestris Lund	64	N. gastrum (Ehrenberg) Kützing	54	N. microstauron Ehrenberg	62
N. amphisbaena Bory	63	N. cryptocephala Kützing	64	N. gibba Ehrenberg	72	N. minima Grunow in Van Heuck	63
N. amphora Ehrenberg	68	N. cryptocephala var. intermedia Grunow	64	N. gibberula Kützing	63	N. minima var. atomoides (Grunow) Cleve	63
N. anglica Ralfs	54	N. cryptocephala var. lancettula Schumann	65	N. gracilis Ehrenberg	66	N. minuscula Grunow	63
N. angulata Quekett	66	N. cryptocephala var. lancettula Van Heurck	65	N. graciloides A. Mayer	64	N. minuscula var. muralis (Grunow) Lange-Bertalot	63
N. arcus Ehrenberg	48	N. cryptocephala var. pumila (Grunow) Cléve	65	N. granulata J.W. Bailey	64	N. muralis Grunow	63
N. atomoides Grunow	63	N. cryptocephala var. veneta (Kützing) Cléve	65	N. grevillei (C. Agardh) Cleve	65	N. mutica Kützing	59
N. atomus var. excelsa (Krasske) Lange-Bertalot	64	N. cryptocephala var. veneta (Kützing) Grunow	65	N. halophila (Grunow) Cléve	67	N. mutica var. binodis Hustedt	60
N. atomus var. permitis (Hustedt) Lange-Bertalot	64	N. cuspidata (Kützing) Kützing	67	N. halophila f. robusta Hustedt	67	N. mutica var. nivalis (Ehrenberg) Hustedt	60
N. bacilliformis Grunow in Cléve & Grun	61	N. cuspidata f. craticulare (Van Heurck) Peragallo & Héribaud	67	N. helvetica Brun	65	N. mutica var. undulata (Hilse) Grunow	60
N. bacillum Ehrenberg	61	N. cuspidata var. ambigua (Ehrenberg) Cléve	67	N. heuflerii var. leptcephala (Kützing ex Grunow) H. Peragallo & Peragallo	65	N. mutica var. ventricosa (Kützing) Cléve	60
N. baltica Ehrenberg	66	N. cuspidata var. halophila Grunow ex Van Heurck	67	N. hungarica Grunow	64	N. nivalis Ehrenberg	60
N. bicapitata Lagerstedt	61	N. cuspidata var. heribaudii Peragallo	67	N. humilis Donkin	64	N. nobilis (Ehrenberg) Kützing	62
N. binodeforme Krammer	60	N. cuspidata var. major Meist	67	N. hungarica var. capitata (Ehrenberg) Cleve	64	N. oblongella Nägeli ex Kützing	62
N. binodis (Ehrenberg) Hustedt	60	N. cymbula Donkin	65	N. hungarica var. luneburgensis Grunow	64	N. obtusa W. Smith	63
N. binodis Ehrenberg	60	N. decussis Ostrup	64	N. imbricata Bock	59	N. ostrearia Turpin	64
N. borrichii J.B. Petersen	67	N. densestriata Hustedt	57	N. importunata Hustedt	63	N. pennsylvanica Patrick	66
N. brebissonii Kützing	62	N. dicephala W. Smith	54	N. inaequalis Ehrenberg in Pogg.	53	N. peratomus Hustedt	64
N. brevis Gregory	63	N. disculus Schumann	57	N. inclementis Hendey	54	N. permitis Hustedt	64
N. bryophila J.B. Petersen	63	N. dissipata Hustedt	61	N. incompta Krasske	53	N. perpusilla (Kützing) Grunow	59
N. caduca Hustedt	64	N. elginensis (W. Gregory) Ralfs	54	N. indifferens Hustedt	61	N. phyllepta Kützing	65
N. capitata Ehrenberg	64	N. elliptica Kützing	62	N. iniqua Krasske	53	N. placentula (Ehrenberg) Grunow	55
N. capitata var. hungarica (Grunow) Ross	64	N. excelsa Krasske	64	N. interrupta Kützing	62	N. placentula var. rostrata A. Mayer	55
N. capitata var. luneburgensis (Grunow) Patrick	64	N. exigua (W. Gregory) Grunow	54	N. inutilis Krasske	64	N. poconoensis Patrick	66
N. cardinalis Ehrenberg	61	N. exigua var. capitata R.M. Patrick	54	N. iridis Ehrenberg	60	N. producta W. Smith	60
N. cari var. cincta (Ehrenberg) Lange-Bertalot	64	N. falaisiensis Grunow in Van Heurck	53	N. iridis var. affinis Van Heurck	60	N. protracta (Grunow) Cléve	66
N. cincta var. cari (Ehrenberg) Cleve	64	N. falaisiensis var. lanceola Grunow	53	N. iridis var. amphigomphus Ehr	60	N. protractoides Hustedt	66
N. cincta var. heuflerii Grunow	64			N. keeleyi Patrick	66	N. pseudatomus Lund	64
N. clementis Grunow	54			N. laevisissima Kützing	61	N. pseudoexilissima Hustedt	63
N. clementis var. rhombica Brockmann	54			N. lanceolata var. arenaria (Donkin) Van Heurck	64	N. pumila Grunow	65
N. cloacina Lange-Bertalot &				N. lancettula Schumann	65	N. punctata (Kützing) Donkin	52
				N. lata (Brébisson) Kützing	62	N. pupula f. rectangularis (W. Gregory) Hustedt	61
				N. leptogongyla Ehrenberg	63	N. pupula Kützing	61
				N. limosa Kützing	63	N. pupula var. capitata Skvortsov	



& Meyer	61	<i>N. vetricosa</i> var. <i>truncatula</i>		<i>N. obtusangula</i> Hustedt	70	Lagerheim	27
<i>N. pupula</i> var. <i>elliptica</i> Hustedt	61	Grunow	63	<i>N. palea</i> var. <i>kützingiana</i> (Hilse)		<i>O. coronata</i> var. <i>elegans</i>	
<i>N. pupula</i> var. <i>pseudopupula</i>		<i>N. viridis</i> Ehrenberg	62	Grunow	70	(Fott) Fott & Rehak.	26
(Krasske) Hustedt	61	<i>N. viridula</i> var. <i>vulpina</i>		<i>N. paleacea</i> (Grunow) Grunow	70	<i>O. crassa</i> Wittrock	26
<i>N. pupula</i> var. <i>rectangularis</i>		(Kützing) Lange-Bertalot	66	<i>N. paradoxa</i> (Gmelin) Grunow	68	<i>O. gigas</i> Archer	27
(W. Gregory) Cléve & Grunow	61	<i>N. vitabunda</i> Hustedt	61	<i>N. paxillifer</i> (O.F. Müller) Heiberg	68	<i>O. solitaria</i> var. <i>notabile</i>	
<i>N. pusilla</i> W. Smith	59	<i>N. zebra</i> Ehrenberg	71	<i>N. pseudoamphioxys</i> Hustedt	69	W. West & G.S. West	26
<i>N. pygmaea</i> Kützing	61	Neidium affinis Ehrenberg	60	<i>N. seriata</i> Cléve	70	<i>O. solitaria</i> var. <i>pachyderma</i>	
<i>N. radiosa</i> var. <i>parva</i> Wallace	65	<i>N. iridis</i> var. <i>affinis</i>		<i>N. sigma</i> var. <i>clausii</i> (Hantzsch)		Printz	26
<i>N. radiosa</i> var. <i>tenella</i> (Brébisson)		(Ehrenberg) Van Heurck	60	Grunow	69	<i>Opephora martyi</i> Héribaud	49
ex Kützing) Grunow ex		<i>N. iridis</i> var. <i>ampliatum</i>		<i>N. spectabilis</i> (Ehrenberg) Ralfs	68	<i>Oscillaria brevis</i> (Kützing)	
Van Heurck	65	(Ehrenberg) Cleve	60	<i>N. stagnorum</i> Rabenhorst	70	Kützing	11
<i>N. rhomboides</i> Ehrenberg	60	<i>N. maximum</i> (Cleve) Meister	60	<i>N. subtilis</i> Grunow	69	<i>O. chlorine</i> Kützing	11
<i>N. rhombulus</i> Schumann	65	Neofragilaria constricta		<i>N. suecica</i> (Grunow) Cléve	74	<i>O. formosa</i> Bory ex Gomont	11
<i>N. rhyncocephala</i> var. <i>amphiceros</i>		(Ehrenberg) D.M. Williams		<i>N. taenia</i> W. Smith	68	<i>O. ornata</i> Kützing	11
(Kützing) Grunow	66	& F.E. Round	48	<i>N. thermalis</i> (Ehrenberg) Auersw.	69	<i>Oscillatoria chlorina</i> Kützing	11
<i>N. rhyncocephala</i> var. <i>rostellata</i>		<i>Nitzschia acuminata</i>		<i>N. thermalis</i> var. <i>minor</i> Hilse	69	<i>O. agardhii</i> Gomont	11
(Kützing) Grunow	66	(W. Smith) Grunow	71	<i>N. tryblionella</i> Hantzsch	71	<i>O. amoena</i> (Kützing) Gomont	10
<i>N. roseletta</i> Kützing	66	<i>N. littoralis</i> Grunow	71	<i>N. tryblionella</i> var. <i>calida</i>		<i>O. amphibia</i> C. Agardh	10
<i>N. salinarum</i> var. <i>intermedia</i>		<i>N. acuta</i> Cléve	71	Grunow	71	<i>O. amphigranulata</i> Goor	13
(Grunow) Cléve	64	<i>N. amphioxys</i> (Ehrenberg) W. Smith	68	<i>N. tryblionella</i> var. <i>debilis</i>		<i>O. angusta</i> Koppe	13
<i>N. schöenfeldii</i> Hustedt	64	<i>N. angustata</i> (W. Smith) Grunow	71	(Arnott) Hustedt	69	<i>O. autumnalis</i> C. Agardh	10
<i>N. schumanniana</i>		<i>N. angustata</i> var. <i>acuta</i> Grunow	71	<i>N. tryblionella</i> var. <i>levidensis</i>		<i>O. bornetii</i> Zukal	10
(Grunow) Cléve	63	<i>N. apiculata</i> (W. Gregory) Grunow	69	(W. Smith) Grunow	71	<i>O. brevis</i> (Kützing) Gomont	11
<i>N. scutelloides</i> W. Smith	59	<i>N. bacata</i> Hustedt	70	<i>N. tryblionella</i> var. <i>victoriae</i>		<i>O. chalybea</i> Mertens	11
<i>N. silicula</i> Ehrenberg	63	<i>N. birostrata</i> W. Smith	69	(Grunow) Grunow	71	<i>O. claricentrosa</i> Gardner	12
<i>N. smithii</i> Brébisson	62	<i>N. closterium</i> W. Smith	68	<i>N. virgata</i> Roper	68	<i>O. constricta</i> Szafer	9
<i>N. smithii</i> var. <i>dilatata</i> Perag		<i>N. closterium</i> (Ehrenberg) W.		<i>non</i> <i>Cymbella ventricosa</i>		<i>O. formosa</i> Bory ex Gomont	11
in Temp & Perag	62	Smith	68	(C. Agardh) C. Agardh	54	<i>O. geminata</i> Meneghini ex Gomont	12
<i>N. spencerii</i> Quek.	66	<i>N. commutata</i> Grunow	69	<i>non</i> <i>Eunotia lunaris</i> Brébisson		<i>O. geminata</i> var. <i>sulphurea</i>	
<i>N. sphaerophora</i> Ehrenberg	52	<i>N. diducta</i> Hustedt	70	ex Rabenhorst)	51	Strzeszewski	12
<i>N. spicula</i> (Hicke) Cléve	67	<i>N. elongata</i> Hassall nom. illeg	70	<i>non</i> <i>Gomphonema lanceolatum</i>		<i>O. irrigua</i> Kützing ex Gomont	11
<i>N. stauroptera</i> Grunow	62	<i>N. fonticola</i> var. <i>romana</i>		C. Agardh	56	<i>O. leptotricha</i> Kützing	11
<i>N. striatula</i> (P.J. Turpin)		(Grunow) Cléve	70	<i>non</i> <i>Navicula silicula</i> Ehrenberg	66	<i>O. limnetica</i> Lemmermann	13
Ehrenberg	74	<i>N. fossalis</i> Hustedt	70			<i>O. nigra</i> Vaucher	11
<i>N. subsalina</i> Donkin	63	<i>N. holsatica</i> Hustedt	68	<i>Odontidium elongatum</i>		<i>O. ornata</i> (Kützing) Gomont	11
<i>N. subtilissima</i> Cléve	64	<i>N. hungarica</i> Grunow	71	(Lyngbye) Elm.	47	<i>O. ornata</i> var. <i>crassa</i> Rao	11
<i>N. tantula</i> Hustedt	63	<i>N. ignorata</i> Krasske	70	<i>O. elongatum</i> var. <i>tenue</i>		<i>O. pseudogeminata</i> Schmidle	13
<i>N. trochus</i> Ehrenberg	63	<i>N. incurvata</i> var. <i>lorenziana</i> Ross	69	(C. Agardh) Patrick	46	<i>O. rubescens</i> De Candolle ex	
<i>N. tuscula</i> (Ehrenberg) Grunow	52	<i>N. indistincta</i> Michailov	70	<i>O. hiemale</i> (Roth) Kützing	46	Gomont	11
<i>N. umbonata</i> Ehrenberg	70	<i>N. kützingiana</i> Hilse	70	<i>O. mutabile</i> W. Smith	49	<i>O. simplicissima</i> Gomont	11
<i>N. umida</i> Bock	64	<i>N. longissima</i> var. <i>closterium</i>		<i>O. parasiticum</i> W. Smith	50	<i>O. simplicissima</i> var. <i>antartica</i>	
<i>N. veneta</i> Kützing	65	(W. Smith) Van Heurck	68	<i>O. vulgare</i> (Bory) Elm.	47	Fritsch	11
<i>N. ventricosa</i> Ehrenberg	63	<i>N. obtusa</i> var. <i>scapelliformis</i>		<i>Oocystis ciliata</i> Lagerheim	27	<i>O. splendida</i> Greville	11
<i>N. verecunda</i> Hustedt	61	Grunow	70	<i>O. ciliata</i> var. <i>amphitrica</i>		<i>O. splendida</i> var. <i>limnetica</i>	



(Lemmerman) Playfair	13	<i>P. simplex</i> var. <i>echinulatum</i>		<i>P. cinctum</i> var. <i>regulatum</i>		<i>P. caudata</i> var. <i>volicensis</i>	
<i>O. subtilissima</i> Kützing	13	Wittrock	25	Lindemann	21	Drezeński	18
<i>O. terebriformis</i> C. Agardh	11	<i>P. simplex</i> var. <i>radians</i>		<i>P. cinctum</i> var. <i>tuberosum</i>		<i>P. caudatus</i> var. <i>polonicus</i>	
<i>O. willei</i> N.L. Gardner	11	Lemmermann	25	(Meunier) Lindemann	21	Drezeński	18
<i>O. angustissima</i> W. West & G.S. West	12	<i>P. simplex</i> var. <i>sturmii</i> (Reinsch) Wolle	25	<i>P. cunningtonii</i> (Lemmermann) Lemmermann	20	<i>P. cingeri</i> Roll	18
<i>Oscillatoria autumnalis</i> (C. Agardh) Gaillon	10	<i>P. sturmii</i> var. <i>crenulatum</i> Prescott	25	<i>P. cunningtonii</i> var. <i>pseudoquadridens</i> Lindemann	20	<i>P. orbicularis</i> K. Hübner	18
<i>Pachycladon umbrina</i> G.M. Smith	27	<i>P. sturmii</i> var. <i>echinulatum</i> Lemmermann	25	<i>P. cunningtonii</i> var. <i>quinquecuspidata</i> (Massart) Nygaard	20	<i>P. orbicularis</i> var. <i>zmudae</i> Namyslowski	18
<i>Palmellocystis planctonica</i> Korshikov	24	<i>P. tetrapodium</i> Moroz	25	<i>P. eximium</i> Lindemann	21	<i>P. parvulus</i> var. <i>pusillus</i> (Lemmermann) Popowa	18
<i>Pediastrum araneosum</i> (Raciborski) Raciborski	25	<i>P. triangulum</i> (Ehrenberg) A. Braun	25	<i>P. furca</i> Ehrenberg	20	<i>P. platalea</i> Drezeński	18
<i>P. araneosum</i> var. <i>rugulosum</i> G.S. West	25	<i>Penium cruciferum</i> (de Bary) Wittrock	37	<i>P. fuscum</i> Ehrenberg	20	<i>P. pleuronectes</i> var. <i>brevicaudata</i> Klebs	18
<i>P. bidentulum</i> A. Braun	25	<i>P. digitus</i> Ehrenberg ex Ralfs	42	<i>P. fusus</i> Ehrenberg	20	<i>P. pleuronectes</i> var. <i>insecta</i> Koczwara	18
<i>P. biradiatum</i> var. <i>longecornutum</i> Gutwinski	25	<i>P. minutum</i> (Ralfs) Cléve	39	<i>P. germanicum</i> Lindemann	21	<i>P. pleuronectes</i> var. <i>rothertii</i> Namyslowski	18
<i>P. braunianum</i> Grun	25	<i>P. navicula</i> Brébisson	40	<i>P. inconspicuum</i> Lemmermann	21	<i>Phormidium angustum</i> f. <i>major</i> Frémy	12
<i>P. clathratum</i> (Schroder) Lemmermann	25	<i>Peridinium bipes</i> f. <i>tabulatum</i> (Ehrenberg) Lefèvre	21	<i>P. meandricum</i> Brehm	21	<i>P. angustissimum</i> W. West & G.S. West	12
<i>P. constrictum</i> Hassal	25	<i>P. bipes</i> var. <i>exisum</i> Lemmermann	21	<i>P. palustre</i> (Lindemann) Lefèvre	21	<i>P. foveolarum</i> (Montagne) Gomont	12
<i>P. diodon</i> Corda	25	<i>P. bipes</i> var. <i>oculatum</i> Lindemann	21	<i>P. penardiforme</i> Lindemann	20	<i>P. frigidum</i> F.E. Fritsch	12
<i>P. duodenarium</i> (J.W. Bailey) Rabenhorst	25	<i>P. borgei</i> (Lemmermann) Lemmermann	20	<i>P. pusillum</i> (Penard) Lemmermann	21	<i>P. laminosum</i> (C. Agardh) ex Gomont	12
<i>P. duplex</i> var. <i>clathratum</i> (A. Braun) Lagerheim	25	<i>P. caudatum</i> Playfair	21	<i>P. quadridens</i> Stein	20	<i>P. molle</i> (Kützing) Gomont	12
<i>P. ehrenbergii</i> (Corda) A. Braun	25	<i>P. cinctum</i> f. <i>angulatum</i> (Lindemann) Lefèvre	21	<i>P. raciborskii</i> var. <i>palustre</i> Lindem	21	<i>P. subsalsum</i> Gomont	10
<i>P. enoplum</i> West & G.S. West	25	<i>P. cinctum</i> f. <i>meandricum</i> Lefèvre	21	<i>P. rhenanum</i> Lindemann	21	<i>P. tenue</i> (Meneghini) Gomont	13
<i>P. glanduliferum</i> Bennett	25	<i>P. cinctum</i> f. <i>ovoplanum</i> Lindemann	21	<i>P. suttoni</i> Griffiths	20	<i>P. tenue</i> (Meneghini) Gomont f. <i>cincinata</i> Meneghini	13
<i>P. granulatum</i> Kützing	25	<i>P. cinctum</i> f. <i>regulatum</i> (Lindemann) Lefèvre	21	<i>P. tabulatum</i> (Ehrenberg) Claparède & Lachmann	21	<i>P. uncinatum</i> (C. Agardh) Gomont	10
<i>P. incavatum</i> Turner	25	<i>P. cinctum</i> f. <i>tuberosum</i> (Meunier) Lefèvre	21	<i>P. tabulatum</i> var. <i>meandrica</i> Lauterborn	21	<i>Physomonas vestita</i> A.C. Stokes	43
<i>P. limneticum</i> Thunm.	25	<i>P. cinctum</i> f. <i>westii</i> (Lemmermann) Lefèvre	21	<i>P. treubii</i> Woloszyńska	20	<i>Phythelios ovalis</i> Francé	27
<i>P. lobatum</i> Nit.	25	<i>P. cinctum</i> var. <i>angulatum</i> Lindemann	21	<i>P. tuberosum</i> Meunier	21	<i>Pinnularia amphicephala</i> A. Mayer	61
<i>P. napoleonis</i> Ralfs	25	<i>P. cinctum</i> var. <i>carinatum</i> Steinecke & Lindemann	21	<i>P. uberrima</i> Allman	20	<i>P. borealis</i> var. <i>brevicostata</i> Hustedt	61
<i>P. pertusum</i> Kützing	25	<i>P. cinctum</i> var. <i>irregulatum</i> Lindemann	21	<i>P. volzii</i> Lemmermann	21	<i>P. brebissonii</i> var. <i>diminuta</i> (Gronow) Cléve	62
<i>P. rotula</i> (Ehrenberg) Kützing	25	<i>P. cinctum</i> var. <i>laesum</i> Lindemann	21	<i>P. volzii</i> var. <i>cinctiforme</i> Lefèvre	21	<i>P. brebissonii</i> (Kützing) Rabenhorst	62
<i>P. rotula</i> Kützing	25	<i>P. cinctum</i> var. <i>lemmermannii</i> West	21	<i>P. westii</i> Lemmermann	21	<i>P. brebissonii</i> var. <i>subproducta</i> Van Heurck	62
<i>P. schroeteri</i> Lemmermann	25			<i>P. westii</i> var. <i>aureolatum</i> Lemmermann	21	<i>P. capitata</i> Ehrenberg	64
<i>P. selenaea</i> (Kützing) Kützing	25			<i>P. wildemani</i> Woloszyńska	20	<i>P. cincta</i> Kützing	64
<i>P. simplex</i> var. <i>biwaense</i> Fu Kush	25			<i>Petlomonas poosilla</i> Larsen & Patterson	16		
<i>P. simplex</i> var. <i>duodenarium</i> (J.W. Bailey) Rabenhorst	25			<i>Phacus anacoelus</i> var. <i>undulata</i> Skvortzov	18		
				<i>P. asymmetricus</i> Prescott	18		



<i>P. digito-radiata</i> W. Gregory	65	(W. Smith) Van Heurck	67	<i>Rhopalodia gibba</i> var. <i>parallela</i>		<i>S. armatus</i> var. <i>ecornis</i>	
<i>P. digitus</i> Ehrenberg	64	<i>P. attentuatum</i> (Kützing)		(Grunow) H. & M. Peragolle	72	f. <i>semiquadrispinosus</i>	
<i>P. directa</i> W. Smith	65	W. Smith	66	<i>R. gibberula</i> var. <i>musculus</i>		(Hortobágyi) Kirj.	31
<i>P. globiceps</i> var. <i>krockii</i>		<i>P. balticum</i> (Ehrenberg)		(Kützing) Cléve	72	<i>S. armatus</i> var. <i>setosus</i> Philpote	32
(Grunow) Cleve	62	W. Smith	66	<i>R. ventricosa</i> (Kützing) O. Müller	72	<i>S. bicaudatus</i> (Hansgrig) Chodat	31
<i>P. inaequalis</i> Ehrenberg	53	<i>P. delicatulum</i> W. Smith	66			<i>S. bijugatus</i> Kützing	32
<i>P. leptosoma</i> (Grunow) Cleve	63	<i>P. fasciola</i> (Ehrenberg) W. Smith	66	<i>Scenedesmus quadricauda</i>		<i>S. bijug(a)us</i> var. <i>alternans</i>	
<i>P. leptosoma</i> f. <i>erlangensis</i>		<i>P. gracilentum</i> Rabenhorst	66	var. <i>alternans</i> Prosin.	31	(Reinsch) Hansgrig	32
A. Mayer	63	<i>P. kützingii</i> Grunow	66	<i>S. abundans</i> (Kirchner) Chodat	33	<i>S. bijuga</i> (Turpin) Lagerheim	32
<i>P. maior</i> (Kützing) Cléve.	62	<i>Pleurosigma littorale</i> W. Smith	66	<i>S. abundans</i> var. <i>brevicauda</i>		<i>S. bijuga</i> f. <i>minutissimus</i> Kuffer.	32
<i>P. microstauron</i> var. <i>brebissonii</i>		<i>P. spencerii</i> (Quek.) W. Smith	66	G.M. Smith	33	<i>S. bijuga</i> var. <i>alternans</i>	
(Kützing) Hustedt	62	<i>P. spencerii</i> W. Smith	66	<i>S. abundans</i> var. <i>longicauda</i>		f. <i>parvus</i> G.M. Smith	32
<i>P. microstauron</i> var. <i>diminuta</i>		<i>Pleurotaenium minutum</i>		G. M. Smith	33	<i>S. bijuga</i> var. <i>irregularis</i>	
Shirshov	62	(Ralfs) Delponte	39	<i>S. abundans</i> var. <i>spicatifomis</i>		(Wille) G.M. Smith	32
<i>P. ovalis</i> Hilse	62	<i>Polyedrium caudatum</i> Corda	29	Chodat	33	<i>S. bijugatus</i> f. <i>arcuatus</i>	
<i>P. peregrina</i> Ehrenberg	65	<i>P. minimum</i> A. Braun	29	<i>S. acuminatus</i> f. <i>tortuosus</i>		Lemmermann	32
<i>P. permagna</i> J.W. Bailey	63	<i>P. pentagonum</i> Reinsch	29	(Skuja) Korshikov	30	<i>S. bijugatus</i> f. <i>irregularis</i> Wille	32
<i>P. tuscula</i> Ehrenberg	52	<i>P. schmidlei</i> Schröder	27	<i>S. acuminatus</i> var. <i>elongatus</i>		<i>S. bijugatus</i> sensu auct.	
<i>P. viridis</i> var. <i>caudata</i> Boyer	62	<i>P. schmidlei</i> var. <i>euryacanthum</i>		G.M. Smith	30	post Behre	33
<i>P. viridis</i> var. <i>sudetica</i> Hustedt	62	Schmidle	27	<i>S. acutus</i> var. <i>dimorphus</i>		<i>S. bijugatus</i> var. <i>alternans</i>	
<i>P. viridis</i> var. <i>sudetica</i> (Hilse)		<i>P. trigonum</i> var. <i>setigerum</i>		(Turpin) Rabenhorst	31	(Rein.) Hansgrig	32
A. Mayer	62	(Archer) Schröder	27	<i>S. acutus</i> var. <i>obliquus</i>		<i>S. bijugatus</i> var. <i>arcuatus</i>	
<i>Planktogloea planctonica</i>		<i>Protococcus viridis</i> C. Agardh	35	Rabenhorst	32	Lemmermann	32
Woronichin	23			<i>S. alternans</i> Reinsch	32	<i>S. bijugatus</i> var. <i>disciformis</i>	
<i>Planktolynghya limnetica</i>		<i>Radiococcus dissecta</i>		<i>S. alternans</i> var. <i>apiculatus</i>		Chodat	33
(Lemmermann)		(Korshikov) R.C. Starr	23	W. West & G.S. West	30	<i>S. bijugatus</i> var. <i>flexuosus</i>	
J. Komárková-Legnerová &		<i>Raphidium braunii</i> Nägeli	26	<i>S. alternans</i> var. <i>arcuatus</i>		Lemmermann	31
G. Cronberg	12	R. convolutum var. <i>lunare</i> Kirchner	28	(Lemmermann) Fott &		<i>S. bijugatus</i> var. <i>granulatus</i>	
<i>Planothidium delicatulum</i>		R. minutum Nägeli	29	Komárek	32	Schmidle33	
(Kützing) Bukht. & Round	58	R. pfitzeri Schröder	29	<i>S. alternans</i> var. <i>irregularis</i>		<i>S. carinatus</i> (Lemmermann) Chodat	32
<i>P. lanceolatum</i> (Brébisson)		R. polymorphum var. <i>mirabile</i>		(Kisselev) Kirj.	32	<i>S. carinatus</i> f. <i>brevicaudatus</i>	
Bukht. & Round	58	W. West & G.S. West	29	<i>S. alternans</i> var. <i>platydiscus</i>		Uherkovich	32
<i>P. peragalli</i> (Brun et Héribaud)		R. polymorphum var. <i>spirale</i>		(G.M. Smith) Fott & Komárek	32	<i>S. carinatus</i> var. <i>hanoiensis</i>	
Bukht. & Round	58	W. West & G.S. West	28	<i>S. alternans</i> var. <i>prescottii</i>		Hortobágyi	32
<i>P. rostratum</i> (Østrup)		R. spirale Turner	28	Fott & Komárek	32	<i>S. caudatus</i> Corda	32
Round & Bukhtiyarova	58	Reinschiella setigera Schröder	24	<i>S. antennatus</i> Brébisson in Ralfs	31	<i>S. caudatus</i> f. <i>abundans</i> Kirchner	33
<i>Plectonema nostocorum</i> Bornet	12	<i>Rhaphidium aciculare</i> A. Braun	28	<i>S. arcuatus</i> (Lemmermann)		<i>S. caudatus</i> var. <i>minor</i> Kützing	33
<i>P. notatum</i> Schmidle	12	R. convolutum var. <i>minutum</i>		Lemmermann	32	<i>S. circumfusus</i> var. <i>bicaudata</i>	
<i>Pleurastrum sarcinoideum</i>		(Nägeli) Rabenhorst	29	<i>S. arcuatus</i> var. <i>platydiscus</i>		Hortobágyi	31
Groover & Bold	35	R. polymorphum var. <i>aciculare</i>		G.M. Smith	32	<i>S. circumfusus</i> var.	
<i>Pleurococcus naegeli</i> Chodat	35	(A. Braun) Rabenhorst	28	<i>S. armatus</i> f. <i>crassicaudatus</i>		<i>semiquadrispinosus</i> Hortobágyi	31
<i>P. vulgaris</i> Nägeli	35	R. pyrenogerum Chodat	28	Hortobágyi	32	<i>S. columnatus</i> Hortobágyi	31
<i>Pleurosigma acuminatum</i>		<i>Rhizosolenia eriensis</i> H.L. Smith	46	<i>S. armatus</i> var. <i>boglariensis</i>		<i>S. columnatus</i> var. <i>boglariensis</i>	
(Kützing) Grunow	66	<i>Rhoicosphenia curvata</i> (Kützing)		f. <i>granulatus</i> Hortobágyi &		f. <i>semicostatus</i> Hortobágyi	31
<i>P. angulatum</i> var. <i>strigosum</i>		ex Rabenhorst) Grunow	52	Nemeth	32	<i>S. communis</i> Hegew.	32



<i>S. costulatus</i> Chodat	31	<i>S. longus</i> Meyen	32	<i>S. quadricauda</i> var. <i>bicaudata</i>		<i>S. elegans</i> Fott	26
<i>S. crassus</i> Chodat	30	<i>S. longus</i> var. <i>naegeli</i> Brébisson	31	Hansgrig	31	<i>Sphaerocystis</i> <i>ampla</i>	
<i>S. dactylococcoides</i> Chodat	32	<i>S. maculosus</i> Hortobágyi	31	<i>S. quadricauda</i> var. <i>biornata</i>		(Kützing) Novakova	23
<i>S. denticulatus</i> var. <i>linearis</i>		<i>S. magnus</i> var. <i>naegeli</i>		Kisselev	31	<i>Sphaerocystis</i> <i>polycocca</i>	
f. <i>crassispinosus</i> (Hortobágyi)		(Brébisson) Tsarenko	32	<i>S. quadricauda</i> var. <i>crassicaudatus</i>		Korshikov	30
Uherk.	33	<i>S. maximus</i> (W. West &		Hortobágyi	32	<i>S. vesiculosa</i> var. <i>schroeteri</i>	
<i>S. diagonalis</i> Fang	31	G.S. West) Chodat	32	<i>S. quadricauda</i> var. <i>longispina</i>		(Chodat) Playfair	24
<i>S. dimorphus</i> f. <i>alternans</i> Hortobágyi	30	<i>S. muzzanensis</i> Huber-Pestalozzi	32	(Chodat) G. Smith	31	<i>Sphinctocystis</i> <i>librillis</i>	
<i>S. dimorphus</i> f. <i>granulatus</i> Isabella		<i>S. nanus</i> var.		<i>S. quadricauda</i> var. <i>maximus</i>		(Ehrenberg) Hassall	73
& R. J. Patel	30	<i>spinosus</i> Hortobágyi	31	(West & G.S. West) Chodat	31	<i>S. elliptica</i> (Kützing) Kuntze	73
<i>S. dimorphus</i> var. <i>alternans</i> Christ.	30	<i>S. oahuensis</i> (Lemmermann)		<i>S. quadricauda</i> var. <i>oahuensis</i>		<i>Spirogyra</i> <i>stictica</i> Smith	41
<i>S. disciformis</i> (Chodat) Fott &		G.M. Smith	31	Lemmermann	32	<i>S. suecica</i> Transeau	41
Komárek	33	<i>S. obliquus</i> var. <i>acuminatus</i>		<i>S. quadricauda</i> var.		<i>Spirulina</i> <i>jenneri</i> var. <i>platensis</i>	
<i>S. ecornis</i> Chodat var. <i>disciformis</i>		(Lagerheim) Chodat	30	<i>btusisspinosus</i> Hortobágyi	32	Nordstedt	13
Chodat	33	<i>S. obliquus</i> var. <i>dimorphus</i>		<i>S. quadricauda</i> var. <i>quadripina</i>		<i>Staurogenia</i> <i>apiculata</i>	
<i>S. ecornis</i> f. <i>major</i> Chodat	31	(Turpin) Hansgrig	31	(Chodat) G.M. Smith	32	Lemmermann	33
<i>S. ecornis</i> sensu Uherk.	31	<i>S. oblongus</i> Chodat	32	<i>S. quadricauda</i> var. <i>setosus</i> Kirchner	32	<i>S. lauterbornii</i> Schmidle	33
<i>S. ecornis</i> var. <i>flexuosus</i>		<i>S. obtusiusculus</i> Chodat	31	<i>S. quadricauda</i> var. <i>intermedius</i>		<i>S. multiseta</i> Schmidle	26
(Lemmermann) Fott &		<i>S. obtusus</i> f. <i>ecornis</i>		(Chodat) Philipose	31	<i>Stauroneis</i> <i>anceps</i> f. <i>gracilis</i>	
Komárek	31	(Ehrenberg) Compere	31	<i>S. quadricaudatus</i> var. <i>ecornis</i>		(Ehrenberg) Cléve	67
<i>S. ellipticus</i> Corda	31	<i>S. obtusus</i> Meyen (sensu		Ehrenberg	31	<i>S. anceps</i> f. <i>gracilis</i> Rabenhorst	67
<i>S. falcatus</i> Chodat	30	Uherk. 1966)	31	<i>S. reniformis</i> Kisel.	32	<i>S. kochii</i> Pantocsek	67
<i>S. falcatus</i> f. <i>tortuosus</i> Skuja	30	<i>S. obtusus</i> Meyen Sensu		<i>S. scenesmoides</i> Chodat	30	<i>S. lapponica</i> Cléve	67
<i>S. falcatus</i> f. <i>maximus</i> Uherk.	30	auct. post. G.M. Smith	32	<i>S. spicatus</i> W. West & G.S. West	33	<i>S. nobilis</i> f. <i>alabamae</i>	
<i>S. flexuosus</i> (Lemmermann)		<i>S. obtusus</i> var. <i>alternans</i>		<i>S. spinosus</i> Chodat var.		(Heiden) Cléve	67
Ahlstr.	31	(Reinsch) Compère	32	<i>crassispinosus</i> Hortobágyi	33	<i>S. punctata</i> Kützing	52
<i>S. graciosus</i> Hortobágyi	31	<i>S. opoliensis</i> f. <i>crassicaudatus</i>		<i>S. spinosus</i> sensu auct. Post.	33	<i>S. thienemanni</i> f. <i>simplex</i>	
<i>S. granulatus</i> var. <i>verrucosus</i>		Hortobágyi	32	<i>S. tetradesmiformis</i> (Wolosz.)		Hustedt	67
Dedusenko	33	<i>S. opoliensis</i> f. <i>deflexuosus</i>		Chodat	30	<i>Stauroptera</i> <i>tuscula</i>	
<i>S. gutwinskii</i> Chodat	33	Hortobágyi	32	<i>S. thomassonii</i> Hortobágyi	32	(Ehrenberg) Ehrenberg	52
<i>S. gutwinskii</i> var. <i>heterospina</i>		<i>S. opoliensis</i> var. <i>setosus</i>		<i>Sciadium</i> <i>arbuscula</i>		<i>Staurosira</i> <i>martyi</i> (Héribaud)	
Bodrogsközy	33	Dedusenko	32	A. Braun ex Kützing	42	Lange-Bertalot	49
<i>S. helveticus</i> Chodat	31	<i>S. ovalternus</i> Brébisson	32	<i>Scytosiphon</i> <i>simplicissimus</i>		<i>Stenopterobia</i> <i>anceps</i> var.	
<i>S. hungaricus</i> Hortobágyi	30	<i>S. ovalternus</i> var. <i>irregularis</i>		(Clemente) Cremades	42	<i>intermedia</i> (F.W. Lewis) Playfair	73
<i>S. hystrix</i> var. <i>armatus</i> Chodat	30	Kisselev	32	<i>Selenastrum</i> <i>acuminatum</i>		<i>S. intermedia</i> (F.W. Lewis)	
<i>S. intermedius</i> f. <i>heterocaudatus</i>		<i>S. pectinatus</i> Meyen	31	Lagerheim	30	Van Heurck	73
Hortobágyi	31	<i>S. platydiscus</i> (G.M. Smith) Chodat	32	<i>S. minutum</i> (Nägeli) Collins	29	<i>Stephanodiscus</i> <i>astraea</i> var.	
<i>S. intermedius</i> var. <i>balatonicus</i>		<i>S. platydiscus</i> var. <i>alternans</i>		<i>S. obesum</i> G.S. West	28	<i>minutula</i> (Kützing) Grunow	44
f. <i>longispinosus</i> Hortobágyi	31	(Rein.) Chodat	32	<i>S. westii</i> G.M. Smith	29	<i>S. dubius</i> (Fricke) Hustedt	44
<i>S. intermedius</i> var. <i>bicaudatus</i>		<i>S. protuberans</i> Fritsch sensu auct.		<i>Selenosphaerium</i> <i>americanum</i>		<i>S. rotula</i> var. <i>minutula</i> (Kützing)	
Hortobágyi	31	post. Trainor & Roskosky	32	Bohlin	26	Ross & Sims	44
<i>S. intermedius</i> var.		<i>S. pseudolongispina</i> Hortobágyi	31	<i>Sellaphora</i> <i>pupula</i> (Kützing)		<i>Stichococcus</i> <i>flaccidus</i>	
<i>heterocaudatus</i> Hortobágyi	31	<i>S. quadricauda</i> var. <i>abundans</i>		Mereschkovsky	61	(Kützing) Gay	36
<i>S. longispina</i> Chodat sensu		(Kirchner) Hansgrig	33	<i>Siderocelis</i> <i>elegans</i>		<i>S. fluitans</i> F. Gay	36
Wolosz.	31	<i>S. quadricauda</i> var. <i>alternans</i> Dedus	31	f. <i>symplex</i> Heynig	26	<i>Striatella</i> <i>fenestrata</i> (Lyngbye)	



Kuntze	50	<i>S. acus</i> var. <i>radians</i> (Kützing)		Grunow	50	<i>crobiculatum</i> (Reinsch) Skuja	29
<i>S. flocculosa</i> (Roth) Kuntze	50	Hustedt <i>in</i> Pascher	48	<i>S. sigma</i> Kützing	70	<i>T. ornatum</i> Lemmermann	29
<i>Styllaria paradoxa</i> (Lyngbye)		<i>S. affinis</i> Kützing	50	<i>S. splendens</i> Kützing	48	<i>T. platyisthmum</i> (Archer)	
Bory de St. -Vincent	51	<i>S. affinis</i> var. <i>fasciculate</i>		<i>S. tabulata</i> (C. Agardh) Kützing		G.S. West	29
<i>Surirella apiculata</i> W. Smith	74	(Kützing) Grunow	50	var. <i>hybrida</i> (Grunow) Cléve	50	<i>T. quadratum</i> (Reinisch)	
<i>S. bifrons</i> Ehrenberg	73	<i>S. affinis</i> var. <i>hybrida</i>		<i>S. tabulata</i> (C. Agardh) Kützing	50	Hansgrig	29
<i>S. circumscuta</i> J.W. Bailey	69	f. <i>elongata</i> Van Heurck	50	<i>S. tenera</i> W. Smith	48	<i>T. quadrilobum</i> G.M. Smith	29
<i>S. clypeus</i> Ehrenberg	73	<i>S. affinis</i> var. <i>hybrida</i> Grunow	50			<i>T. triappendiculatum</i> (Bernard)	
<i>S. delicatissima</i> F.W. Lewis	73	<i>S. affinis</i> var. <i>tabulata</i> J.-Danff	50	<i>S. ulna</i> (Nitzsch) Ehrenberg	48	Wille	27
<i>S. librile</i> Ehrenberg	73	<i>S. amphicephala</i> Kützing	47	<i>S. ulna</i> f. <i>joursacensis</i> Cléve	49	<i>T. trigonum</i> var. <i>setigerum</i>	
<i>S. nobilis</i> W. Smith	74	<i>S. amphicephala</i> var. <i>austriaca</i>		<i>S. ulna</i> var. <i>balatonis</i> (Pantocsek)		(Archer) Lemmermann	27
<i>S. ovalis</i> var. <i>ovata</i> (Kützing)		(Grunow) Hustedt	47	Cléve	49	<i>T. tumidulum</i> (Reinisch)	
Van Heurck	73	<i>S. amphirhynchus</i> Ehrenberg	50	<i>S. ulna</i> var. <i>biceps</i> (Kützing)		Hansgrig	29
<i>S. ovalis</i> var. <i>pinnata</i> (W. Smith)		<i>S. austriaca</i> Grunow	47	Kirchner	47	<i>Tetragonium lacustre</i>	
Van Heurck	74	<i>S. berolinensis</i> Lemmermann	49	<i>S. ulna</i> var. <i>danica</i> (Kützing) Van		W. West & G.S. West	23
<i>S. ovalis</i> var. <i>pyriphormis</i>		<i>S. capitata</i> Ehrenberg	47	Heurck	48	<i>Tetrapedia setigera</i> Archer	27
(Pantocsek) Cléve	74	<i>S. crotonensis</i> (Kitton) Cléve		<i>S. ulna</i> var. <i>longissima</i> (W. Smith)		<i>Tetraselmis cordiformis</i> F. Stein	22
<i>S. ovalis</i> var. <i>salina</i> (W. Smith)		& Möller	47	Brun	47	<i>Tetraspora bullosa</i> Kützing	35
Van Heurck	74	<i>S. cymbelliformis</i> A. Schmidt	46	<i>S. ulna</i> var. <i>rostrata</i> Hustedt	49	<i>T. lacustris</i> Lemmermann	23
<i>S. ovata</i> Kützing	73	<i>S. danica</i> Kütz	48	<i>S. ulna</i> var. <i>splendens</i> (Kützing)		<i>Tetrastrum apiculatum</i>	
<i>S. ovata</i> var. <i>crumena</i>		<i>S. delicatissima</i> var.		Van Heurck	48	(Lemmermann) Schim. <i>Ex</i>	
(Brébisson) Van Heurck	73	<i>angustissima</i> Grunow	48	<i>S. ulna</i> var. <i>vitrea</i> (Bory ex		Brunthaler	33
<i>S. ovata</i> var. <i>pinnata</i>		<i>S. delicatissima</i> W. Smith	48	Kützing) Van Heurck	50	<i>T. staurogeniaeforme</i>	
(W. Smith) Brun	74	<i>S. demerarae</i> Grunow	48	<i>S. vaucheria</i> Kützing var.		var. <i>glabrum</i> Roll	34
<i>S. ovata</i> var. <i>pinnata</i>		<i>S. fasciculata</i> (C. Agardh)		<i>capitellata</i> (Grunow) Cléve	47	<i>Thalassiosira fluviatilis</i> Hustedt	44
(W. Smith) Rabenhorst	74	Kützing	50	<i>S. vaucheriae</i> (Kützing) Kützing	47	<i>Thalassiothrix nitzschioides</i>	
<i>S. ovata</i> var. <i>salina</i> W. Smith	74	<i>S. fasciculata</i> var. <i>truncata</i>				(Grunow) Grunow	51
<i>S. panduriformis</i> Kützing	74	(Greville) Patrick	50	<i>Tabellaria binalis</i> (Ehrenberg)		<i>T. nitzschioides</i> var. <i>javanica</i>	
<i>S. peisonis</i> (Pantocsek) Hustedt	74	<i>S. frustulum</i> Kützing	69	Grunow	50	Grunow	51
<i>S. robusta</i> var. <i>splendida</i>		<i>S. lanceolata</i> Kützing	48	<i>Tetmomorus granulatus</i> var.		<i>Trachelomonas crenulato-collis</i>	
(Ehrenberg) Van Heurck	74	<i>S. nana</i> F. Meister	48	<i>attenuatus</i> W. West	39	Maskell	19
<i>S. suevica</i> Zeller ex Grunow	74	<i>S. nitzschioides</i> Grunow	51	<i>Tetrabaena dujardinii</i>		<i>T. deflandrei</i> Roll	18
<i>S. salina</i> W. Smith	74	<i>S. parasitica</i> (W. Smith) Hustedt	50	Fromentel	23	<i>T. fluviatilis</i> Lemmermann	18
<i>Synechococcus aeruginosa</i>		<i>S. pulchella</i> Ralfs ex Kützing	46	<i>Tetraceras genevensis</i> Chodat	27	<i>T. fossa</i> var. <i>angulata</i> Skvortsov	19
Nägeli	9	<i>S. pulchella</i> f. <i>major</i> Grunow	46	<i>Tetrachlorella nephrocellularis</i>		<i>T. gibberosa</i> Playfair	18
<i>S. endobioticus</i> Elenkin &		<i>S. pulchella</i> var. <i>lanceolata</i> O'Meara	46	Komárek	33	<i>T. hispida</i> var. <i>playfairii</i> Skvortsov	18
Hollerbach	7	<i>S. pulchella</i> var. <i>smithii</i> (Ralfs)		<i>Tetracoccus botryoides</i> W. West	33	<i>T. kelloggii</i> var. <i>australiana</i>	
<i>Synedra actinastroides</i>		Grunow	46	<i>Tetraedron caudatum</i>		Skvortsov	19
Lemmermann	68	<i>S. radians</i> Kützing	48	var. <i>incisum</i> (Lagerheim)		<i>T. ovalis</i> (Daday) Lemmermann	18
<i>S. acus</i> Kützing	47	<i>S. rumpens</i> Kützing	50	Brunthaler	29	<i>T. proxima</i> Skvortsov	19
<i>S. tenuissima</i> Kützing	47	<i>S. rumpens</i> var. <i>familiaris</i>		<i>T. caudatum</i> var. <i>punctatum</i>		<i>T. rugulosa</i> var. <i>dangeardi</i>	
<i>S. acus</i> var. <i>angustissima</i>		(Kützing) Grunow	50	Lagerheim	29	Deflandre	19
(Grunow) Van Heurck	48	<i>S. rumpens</i> var. <i>fragilarioides</i>		<i>T. glaucescens</i> (Wittrock)		<i>T. schauinslandii</i> Lemmermann	18
<i>S. acus</i> var. <i>delicatissima</i>		Grunow	48	Claus	29	<i>T. schauinslandii</i> var. <i>australiana</i>	
(W. Smith) Grunow	48	<i>S. rumpens</i> var. <i>meneghiana</i>		<i>T. minimum</i> var. <i>apiculato-</i>		Skvortsov	18



T. tambowika Svirenko	19	Compere	47
T. triquetra Playfair	19	Ulothrix flaccida Kützing	36
T. tuberosa Skvortzov	19	U. subconstricta G.S. West	35
T. urceolata var. ovalis Playfair	18	U. subtilis Kützing	36
T. varians (Lemmermann) Deflandre	19	U. subtilissima Rabenhorst	36
Treubaria limnetica (G.M. Smith)		U. variabilis Kützing	35
Fott & Kováčik	27	Ulva bulbosa Roth	35
Tribonema bombycina (C. Agardh)			
Derbes & Solier	43	Vanheurckia vulgaris	
T. bombycina f. minor (Wille)		(Thwaites) Van Heurck	60
G.S. West	43	Vaucheria hamata Walz	43
T. bombycinum (C. Agardh)		V. mulleola subsp. calida	
Derbes & Solier	43	T.A. Christensen	43
Tryblionella apiculata W. Gregory	69	V. sessilis (Vaucher)	
T. gracilis W. Smith	71	de Candolle	43
T. hantzschiana Grunow	71	V. unciniata Kützing	43
T. hantzschiana var. australica		Vaucheriopsis arrhyncha	
Playfair	71	(Heidinger) Heering	43
T. hantzschiana var. calida		Vibrio ostrearius Gaillon	64
(Grunow) Van Heurck	71	V. paxillifer O.F. Müller	68
T. hantzschiana var. minor		V. tripunctatus O.F. Müller	66
Playfair	71	Volvox morum O.F. Müller	23
T. hantzschiana var. ovata		Vorticella cincta O.F. Müller	21
(Lagerstedt) Playfair	71		
T. hantzschiana var. victoriae		Willea irregularis (Wille)	
(Grunow) Playfair	71	Schmidle	33
T. punctata W. Smith	70		
		Xenococcus kernerii Hansgrig	6
Ulnaria biceps (Kützing)			
Compere	47	Zygnema affine Hassall	41
U. capitata (Ehrenberg)			

## Investigations on the Sediment of Lake VAN

### II. Heavy metals, sulfur, hydrogen sulfide and Thiosulfuric acid S-(2-amino ethyl ester) contents

#### Van Gölü Sedimenti Üzerinde Araştırmalar

### II. Ağır metal ve Kükürt, Hidrojen sülfid ve Tiosülfurik asit S – (2-amino etil ester) içeriği

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#### Abstract

Fe, Mn, Pb, Cu, Zn, Ni, Cd and Cr contents were determined by AAS in sediment of Lake Van. Cadmium and nickel levels were found high.

The sulfur forms were detected as precipitated, octa-sulfur and 1,2,3,5,6 pentathiepane by GC/MS.

Thiosulfuric acid S –(2 – amino ethyl ester) was detected first time in sediment by GC/MS analysis. This compound was also found in algae by our laboratory. The origin was probably due to marine organisms.

Hydrogen sulfide content was determined in Van Lake sediments 265.2 - 639.2 µg/g.

**Key word:** Lake Van, metals, sulfur forms, thiosulfuric acid S –(2 – amino ethyl ester), hydrogen sulfide