

Table S1. Key words used for searching documents on sexual reproduction in diatoms.

Key word (fragment)	Examples of applied phrases and cognate words
auxosp	auxospore, auxospore formation, auxosporulation
breed	breeding, crossbreed, crossbreeding inbreeding, interbreeding
cardinal	cardinal points
chromosome	chromosome
conjugat	conjugate, conjugation
copulat	copulation, copulative
cross	crossbreeding crossing cross-inoculation
cycle	cell cycle, life cycle
eci / ecy	dioecious, dioecy
enlarge	enlarge, enlargement
evolut	evolution
female	female
fertil	fertile, fertility, fertilization
game / gam	allogamy, autogamy, gametangium, gamete, gametic, gametocyte, gametogamy, gametogenesis, heterogametes, heterogamy, homogametic, plasmogamy, anisogamy
gene	gene, generative, genetic
hetero	heterogametes, heterogamy, heterothallic, heterothallism
history	life history
homo	homogametic, homothallic, homothallism, homozygote, homozygotic
hybrid	hybrid, hybrid zone, hybridization
inbred	inbred influence, inbred strain
incunabula	incunabula
initial	initial cell
karyogamy	karyogamy
life	life cycle, life span
male	male
mating	mating
meio	meiosis, meiotic
ontogen	ontogenesis, ontogenetic, ontogeny
oog	oogamy, oogenesis, oogonium,
pairing	pairing
parent	parent, parental
perizon	preizonium, properizonium,
reduct	reduction
rejuven	rejuvenation
reprod	reproduction, reproductive
resting	resting, resting spores resting
restorat	restoration
sex	asexual, polysexual, sex, sexual behavior, sexual induction, sexual, sexuality, sexualization, sexualize, sexually inducible size range
size	sexual size range
sperm	sperm, spermatium, spermatocyte, spermatogenesis, spermatogonangium, spermatogonium, spermatozoid
spor	auxospore, auxosporeformation, auxosporulation, resting spores, spore

stage	stage
syngamy	syngamy
zygot	zygote, zygotic

Table S2. Diatoms which sexual reproduction was observed and described (with varying degrees of details)

Genus (species)	The number of studied species and intraspecific forms	References
COSCINODISCOPHYCEAE		
(Nonpolar Centrics)		
<i>Actinocyclus</i>		
- <i>octonarius</i> var. <i>ralfsii</i> (W.Smith) Hendey [syn. <i>A. ehrenbergii</i> Ralfs]	2	SUBRAHMANYAN 1946; VON STOSCH & DREBES 1964; DREBES 1974; IDEI et al. 2012
- sp.		
<i>Actinoptychus</i>		
- <i>senarius</i> (Ehrenberg) Ehrenberg [syn. <i>A. undulatus</i> (Kützing) Ralfs in Pritchard] §	1	DREBES 1974, 1977; VON STOSCH 1982; HOPPENRATH et al. 2009
<i>Arachnoidiscus</i>		
- <i>ehrenbergii</i> J.W.Bailey ex Ehrenberg	1	YENDO & AKATSUKA 1910; KARSTEN 1928; KOBAYASHI et al. 2001
<i>Aulacodiscus</i>		
- <i>argus</i> (Ehrenberg) A.W.F.Schmidt	1	DREBES 1977
<i>Aulacoseira</i>		
- <i>ambigua</i> (Grunow) Simonsen §		THWAITES 1848; KARSTEN 1928;
- <i>baicalensis</i> (K.I.Meyer) Simonsen §		SKABICHEVSKIJ 1929; FRITSCH 1935;
- <i>crenulata</i> (Ehrenberg) Thwaites §	7	CLEVE-EULER 1951; POPOVSKAYA & SKABICHEVSKIJ 1970; GIBSON &
- <i>granulata</i> (Ehrenberg) Simonsen §		FITZSIMONS 1990; JEWSON 1992b,
- <i>herzogii</i> (Lemmermann) Simonsen		JEWSON & LOWRY 1993; EDLUND &

- <i>islandica</i> ssp. <i>helvetica</i> (O.Müller) Simonsen §		BIXBY 2001
- <i>subarctica</i> (O.Müller) Haworth §		
<i>Corethron</i>		
- <i>inermis</i> Karsten		KARSTEN 1928; GROSS 1937; CUPP
- <i>hystrix</i> Hensen §		1943; DREBES 1974; BARRON et al.
- <i>pennatum</i> (Grunow) Ostenfeld [syn. <i>C. criophilum</i>	4	1989; CRAWFORD 1995; HOPPENRATH
Castracane] §		et al. 2009
- <i>valdiviae</i> * Karsten		
<i>Coscinodiscus</i>		
- <i>apiculatus</i> Ehrenberg		HOFKER 1928; FRITSCH 1935; HOLMES
- <i>asteromphalus</i> Ehrenberg		1966, 1967; DREBES 1968, 1974;
- <i>biconicus</i> Van Breemen		FINDLAY 1969; WERNER 1971;
- <i>concinus</i> W.Smith §	7	ROSHCHIN 1972, 1973, 1976; SCHMID
- <i>granii</i> L.F.Gough §		1994, 1995; JENSEN et al. 2003;
- <i>janischii</i> A.W.F.Schmidt §		HOPPENRATH et al. 2009
- <i>wailesii</i> Gran et Angst §		
<i>Ellerbeckia</i>		
- <i>arenaria</i> (D.Moore ex Ralfs) Dorofeyuk et Kulikovskiy	1	CHOLNOKY 1933; CLEVE-EULER 1951;
[syn. <i>Melosira arenaria</i> D.Moore ex Ralfs]		SCHMID & CRAWFORD 2001
<i>Guinardia</i>		
- <i>flaccida</i> (Castracane) H.Peragallo §	1	DREBES 1974, 1977
<i>Leptocylindrus</i>		
- <i>danicus</i> Cleve §		FRENCH & HARGRAVES 1985;
- <i>hargravesii</i> D.Nanjappa et A.Zingone §	3	HARGRAVES 1990; SUNESEN & SAR
- <i>minimus</i> Gran §		2007; NANJAPPA et al. 2013, 2017
<i>Libellus</i>		
- <i>constrictus</i> * (Ehrenberg) De Toni [syn. <i>Navicula</i>	1	FRITSCH 1935; GEITLER, 1953
<i>constricta</i> W. Smith]		
<i>Melosira</i>		
- <i>lineata</i> (Dillwyn) C.Agardh [syn. <i>Melosira jürgensii</i>	6	HUSTEDT 1923; SCHMIDT 1923;
C.Agardh] §		CHOLNOKY 1933; RIETH 1940, 1953;

- <i>moniliformis</i> (O.F.Müller) C.Agardh §		CLEVE-EULER 1951; BRUCKMAYER-
- <i>moniliformis</i> var. <i>subglobosa</i> (Grunow) Hustedt		BERKENBUSCH 1954; VON STOSCH
- <i>nummuloides</i> C.Agardh §		1951; ERBEN 1959; MIGITA 1967a,
- <i>octogona</i> A.W.F.Schmidt §		1967c; CRAWFORD 1974, 1975;
- <i>varians</i> C.Agardh §		ROSHCHIN 1986a, 1990b; KUSTENKO
		1991; IDEL & CHIHARA 1992
<i>Orthoseira</i>		
- <i>roeseana</i> (Rabenhorst) Pfitze [syn. <i>Melosira roeseana</i> Rabenhorst] §	1	ROEMER & ROSOWSKI 1980
<i>Paralia</i>		
- <i>guyana</i> MacGillivray §	2	CUPP 1943; KACZMARSKA & EHRMAN 2015
- <i>sulcata</i> (Ehrenberg) Cleve [syn. <i>Melosira sulcata</i> (Ehrenberg) Kützing] §		
<i>Proboscia</i>		
- <i>alata</i> (Brightwell) Sundström [syn. <i>Rhizosolenia alata</i> Brightwell] §	1	KARSTEN 1928; CUPP 1943
<i>Pseudosolenia</i>		
- <i>calcar-avis</i> (Schultze) B.G.Sundström §	1	KUSTENKO 1991
<i>Rhizosolenia</i>		
- <i>bergonii</i> H.Peragallo §		GRAN 1902; FRITSCH 1935; CUPP
- <i>hebetata</i> f. <i>semispina</i> (Hensen) Gran	4	1943; RAMSFJELL 1959; DREBES 1974,
- <i>setigera</i> Brightwell §		1977; BELT et al. 2002
- <i>styliiformis</i> T.Brightwell		
<i>Stephanopyxis</i>		
- <i>palmeriana</i> (Greville) Grunow §	2	VON STOSCH & DREBES 1964; DREBES
- <i>turris</i> (Greville) Ralfs §		1966, 1969, 1974, 1979; STEELE 1967
MEDIOPHYCEAE		
(Thalassiosirales)		
<i>Conticribra</i>		
- <i>weissflogii</i> (Grunow) Stachura-Suchoples et	1	VAULOT & CHISHOLM 1987;
		ARMBRUST 1999; VON DASSOW et al.

D.M.Williams [syn. <i>Thalassiosira weissflogii</i> (Grunow) G.A.Fryxell et Hasle] §		2006
<i>Cyclotella</i>		BACHMANN 1903; IYENGAR &
- <i>bodanica</i> var. <i>lemanica</i> O. Müller §		SUBRAHMANYAN 1944; GEITLER
- <i>cryptica</i> Reimann, J.C.Lewin et Guillard §		1952a; SCHULTZ & TRAINOR 1968,
- <i>gamma</i> Sovereign §	5	1970; RAO 1971; HOOPS & FLOYD
- <i>meneghiniana</i> Kützing §		1979; P PÉREZ-MARTINEZ et al. 1992;
- <i>quillensis</i> L.W.Bailey §		MEYER et al. 2001; CHEPURNOV et al.
		2012
<i>Detonula</i>		CUPP 1943; HOLT & SMAYDA 1974;
- <i>confervacea</i> (Cleve) Gran §	3	HORNER 2002; HOPPENRATH et al.
- <i>pumila</i> (Castracane) Gran §		2009
- <i>schroederi</i> Gran		
<i>Lauderia</i>		DREBES 1974; JUNMIN & SHIDE 1994
- <i>annulata</i> Cleve [syn. <i>Lauderia borealis</i> Gran] §	1	
<i>Pantocsekiella</i>		PÉREZ-MARTINEZ 1992; CHEPURNOV
- <i>ocellata</i> (Pantocsek) K.T.Kiss [syn. <i>Cyclotella ocellata</i> Pantocsek] §	1	et al. 2004
<i>Skeletonema</i>		CUPP 1943; MIGITA 1967a, 1967b;
- <i>costatum</i> (Gréville) Cleve §	2	KUSTENKO & ROSCHIN 1974;
- <i>marinoi</i> Sarno et Zingone §		HOPPENRATH et al. 2009; GODHE et al.
		2014
<i>Stephanodiscus</i>		ROUND 1982; EDLUND & STOERMER
- <i>neoastraea</i> Håkansson et Hickel §	3	1991; JEWSON 1992a; EDLUND &
- <i>niagarae</i> Ehrenberg §		BIXBY 2001
- sp.		
<i>Thalassiosira</i>		CUPP 1943; DREBES 1974, 1979;
- <i>angulata</i> (W.Gregory) Hasle §		SCHMID 1984; HORNER 2002;
- <i>australis</i> Peragallo	6	CHEPURNOV et al. 2006; MILLS &
- <i>eccentrica</i> (Ehrenberg) Cleve §		KACZMARSKA 2006; HOPPENRATH et
- <i>gravida</i> Cleve [syn. <i>Thalassiosira rotula</i> Meunier] §		al. 2009

- <i>lacustris</i> (Grunow) G.R.Hasle		
- <i>punctigera</i> (Castracane) Hasle §		
MEDIOPHYCEAE		
(Polar Centrics)		
<i>Amphitetras</i>		
- <i>antediluviana</i> Ehrenberg [syn. <i>Triceratium antediluvianum</i> (Ehrenberg) Grunow] §	1	LIEBISCH 1928; VON STOSCH 1982
<i>Arcocellulus</i>		
- <i>cornucervis</i> Hasle, Stosch et Syvertsen §	2	HASLE et al. 1983
- <i>mammifer</i> Hasle, Stosch et Syvertsen §		
<i>Ardissonaea</i>		
- <i>crystallina</i> (C.Agardh) Grunow §	1	DAVIDOVICH et al. 2017; KACZMARSKA et al. 2018
<i>Attheya</i>		
- <i>decora</i> T.West §	1	DREBES 1977; VON STOSCH 1982; CHEPURNOV et al. 2004
<i>Bacteriastrum</i>		
- <i>hyalinum</i> Lauder §	1	DREBES 1967, 1972; VON STOSCH 1982; HOPPENRATH et al. 2009
<i>Bellerochea</i>		
- <i>malleus</i> (Brightwell) Van Heurck §	1	VON STOSCH 1954, 1982; DREBES 1977
<i>Biddulphia</i>		
- <i>biddulphiana</i> (J.E.Smith) Boyer [syn. <i>Biddulphia pulchella</i> S.F.Gray] §	2	VON STOSCH 1965, 1982; SAMANTA et al. 2020
- <i>tridens</i> (Ehrenberg) Ehrenberg §		
<i>Brockmanniella</i>		
- <i>brockmannii</i> (Hustedt) Hasle, Stosch et Syvertsen §	1	VON STOSCH 1982; HASLE et al. 1983; SAMANTA et al. 2017
<i>Cerataulina</i>		
- <i>bicornis</i> (Ehrenberg) Hasle [syn. <i>Cerataulina compacta</i> Ostenfeld]	2	SAUNDERS & GLENN 1969; DREBES 1977; KUSTENKO 1979; TUANLAO & JUNMIN 1996
- <i>pelagica</i> (Cleve) Hendey [syn. <i>Cerataulina bergonii</i> (H.Peragallo) F.Schütt] §		
<i>Cerataulus</i>	1	DREBES 1977; CHEPURNOV et al. 2004

- <i>granulatus</i> P.A.Sims et D.M.Williams [syn. <i>Biddulphia</i>		
<i>granulata</i> Roper; <i>Odontella granulata</i> (Roper)		
R.Ross]		
<i>Chaetoceros</i>		
- <i>acadianus</i> Samanta et Porcher §		
- <i>borealis</i> Bailey §		
- <i>cochleus</i> F.Schütt		
- <i>compressus</i> Lauder §		MEUNIER 1910; PAVILLARD 1921;
- <i>constrictus</i> Gran §		KARSTEN 1928; GRAN & ANGST 1931;
- <i>curvisetus</i> Cleve §		PERSIDSKY 1932; GROSS 1937; CUPP
- <i>decipiens</i> Cleve §		1943; SATO & KAN-NO 1967; VON
- <i>densus</i> (Cleve) Cleve §		STOSCH et al. 1973; DREBES 1974,
- <i>diadema</i> (Ehrenberg) Gran §	18	1977; ROSHCHIN 1976; VON STOSCH
- <i>dichaeta</i> Ehrenberg §		1982; FRENCH & HARGRAVES 1985;
- <i>didymus</i> Ehrenberg §		FURNAS 1985; RINES 1999; ORLOVA &
- <i>eibenii</i> Grunow §		AIZDAICHER 2000; JENSEN et al. 2003;
- <i>laciniosus</i> F.Schütt §		ASSMY et al. 2008; HOPPENRATH et al.
- <i>lorenzianus</i> Grunow §		2009; KACZMARSKA et al. 2019
- <i>medius</i> F.Schütt		
- <i>protuberans</i> Lauder §		
- <i>salsugineus</i> H.Takano §		
- <i>simplex</i> Ostenfeld §		
<i>Cymatosira</i>		
- <i>belgica</i> Grunow §	2	HASLE et al. 1983
- <i>lorenziana</i> Grunow §		
<i>Ditylum</i>		
- <i>brightwellii</i> (T.West) Grunow §	1	GROSS 1939; STEELE 1967; WAITE
		HARRISON 1992; KOESTER et al. 2007
<i>Eucampia</i>		
- <i>antarctica</i> (Castracane) Mangin §	2	HOPPENRATH et al. 2009; NISHIKAWA
- <i>zodiacus</i> Ehrenberg §		2017
<i>Helicotheca</i>	1	VON STOSCH 1954, 1977, 1982;

- <i>tamesis</i> (Shrubsole) M.Ricard [syn. <i>Streptothea</i> <i>tamesis</i> Shrubsole] §		DREBES 1977; CHEPURNOV et al. 2004
<i>Hobaniella</i>		
- <i>longicuris</i> (Greville) P.A.Sims et D.M.Williams [syn. <i>Odontella longicuris</i> (Greville) M.A.Hoban] §	1	HOBAN 2008
<i>Hydrosera</i>		
- <i>triquetra</i> G.C.Wallich	1	IDEI et al. 2015
<i>Isthmia</i>		
- <i>nervosa</i> Kützing	1	STEELE 1963
<i>Lampriscus</i>		
- <i>sp.</i>	1	IDEI & NAGUMO 2004a
<i>Leyanella</i>		
- <i>arenaria</i> Hasle, Stosch et Syvertsen §	1	HASLE et al. 1983
<i>Lithodesmium</i>		
- <i>intricatum</i> Ehrenberg §	2	VON STOSCH 1954, 1982; MANTON et al. 1969; VON STOSCH & KOWALLIK 1969; DREBES 1977
- <i>undulatum</i> Ehrenberg §		
<i>Minutocellus</i>		
- <i>pseudopolymorphus</i> Hasle, Stosch et Syvertsen	2	HASLE et al. 1983
- <i>scriptus</i> Hasle, Stosch et Syvertsen		
<i>Odontella</i>		
- <i>aurita</i> (Lyngbye) C.Agardh §	1	VON STOSCH 1954, 1956, 1982;
<i>Papiliocellulus</i>		
- <i>elegans</i> Hasle, Stosch et Syvertsen §	1	HASLE et al. 1983
<i>Plagiogrammopsis</i>		
- <i>vanheurckii</i> (Grunow) Hasle, Stosch et Syvertsen §	1	HASLE et al. 1983; HOPPENRATH et al. 2009; SAMANTA et al. 2018
<i>Pleurosira</i>		
- <i>laevis</i> (Ehrenberg) Compère [syn. <i>Biddulphia laevis</i> Ehrenberg; <i>Cerataulus laevis</i> (Ehrenberg) Ralfs] §	1	HEATH & DARLEY 1972; DREBES 1977; EHRLICH et al. 1982
<i>Proteucylindrus</i>		
- <i>taiwanensis</i> C.-W.Li et Y.-M.Chiang	1	LI & CHIANG 1979

<i>Ralfsiella</i>		
- <i>smithii</i> (Ralfs) P.A.Sims, D.M.Williams et M.Ashworth [syn. <i>Cerataulus smithii</i> Ralfs] §	1	VON STOSCH 1956
<i>Subsilicea</i>		
- <i>fragilarioides</i> von Stosch et Reimann	1	VON STOSCH & REIMANN 1970
<i>Terpsinoë</i>		
- <i>musica</i> Ehrenberg §	1	MÜLLER 1889
<i>Trieres</i>		
- <i>chinensis</i> (Greville) Ashworth et E.C.Theriot [syn. <i>Odontella chinensis</i> (Greville) Grunow] §	3	VON STOSCH 1954, 1956, 1982;
- <i>mobiliensis</i> (Bailey) Ashworth et E.C.Theriot [syn. <i>Biddulphia mobiliensis</i> (Bailey) Grunow] §		DREBES 1974, 1977; HOPPENRATH et
- <i>regia</i> (M.Schultze) Ashworth et E.C.Theriot [syn. <i>Biddulphia regia</i> (M.Schultze) Ostenfeld; <i>Odontella</i> <i>mobiliensis</i> (Bailey) Grunow]		al. 2009; HEGDE et al. 2011
<i>Trigonium</i>		
- <i>formosum</i> (Brightwell) Cleve §	1	IDEI & NAGUMO 2004b
<i>Zygoceros</i>		
- <i>rhombus</i> Ehrenberg [syn. <i>Biddulphia rhombus</i> (Ehrenberg) W.Smith; <i>Odontella rhombus</i> (Ehrenberg) Kützing] §	1	VON STOSCH 1956
BACILLARIOPHYCEAE		
(Araphids)		
<i>Diatoma</i>		
- <i>elongata</i> (Lyngbye) C.Agardh	1	TSCHERMAK-WOESS 1973a
<i>Fragilaria</i>		
- <i>amphicephaloides</i> Lange-Bertalot [syn. <i>Synedra</i> <i>amphicephala</i> Kützing]	4	GEITLER 1952e, 1958a, 1973a; ROUND
- <i>crotonensis</i> Kitton §		et al. 1990
- <i>fragilarioides</i> (Grunow) Cholnoky [syn. <i>Synedra</i>		

<i>rumpens</i> § var. <i>fragilarioides</i> Grunow]		
- <i>vaucheriae</i> (Kützing) J.B.Petersen §		
<i>Fragilariforma</i>		
- <i>virescens</i> (Ralfs) D.M.Williams et Round §	1	WILLIAMS 2001
<i>Gephyria</i>		
- <i>media</i> Walker-Arnott	1	SATO et al. 2004
<i>Grammatophora</i>		
- <i>marina</i> (Lyngbye) Kützing §	1	ROSHCHIN 1994b; SATO et al. 2008c
<i>Licmophora</i>		
- <i>abbreviata</i> C.Agardh §		
- <i>communis</i> (Heiberg) Grunow §		KUMAR 1978; MANN 1982a;
- <i>dalmatica</i> (Kützing) Grunow	7	ROSHCHIN 1986b, 1994; ROSHCHIN &
- <i>ehrenbergii</i> (Kützing) Grunow		CHEPURNOV 1994; CHEPURNOV 1997;
- <i>gracilis</i> § var. <i>anglica</i> (Kützing) Peragallo		CHEPURNOV & MANN 2004
- <i>hyalina</i> (Kützing) Grunow		
- <i>juergensii</i> C.Agardh §		
<i>Meridion</i>		
- <i>circulare</i> (Greville) C.Agardh	1	GEITLER 1940, 1973a
<i>Nanofrustulum</i>		
- <i>trainorii</i> (E.A.Morales) E.A.Morales [syn. <i>Pseudostaurosira trainorii</i> E.A.Morales]	1	SATO et al. 2011
<i>Neosynedra</i>		
- <i>delicatissima</i> (Proshkina-Lavrenko) Bukhtiyarova [syn. <i>Fragilaria delicatissima</i> Proshkina-Lavrenko]	1	ROSHCHIN 1994b; CHEPURNOV 1997
<i>Plagiogramma</i>		
- <i>acutumontgo</i> (B.S.Gray Jr. et Kaczmarska) Chunlian Li, Ashworth et Witkowski [syn. <i>Dimeregramma</i> <i>acutumontgo</i> B.S.Gray Jr. et Kaczmarska] §	3	KACZMARSKA et al. 2017
- <i>staurophorum</i> (W.Gregory) Heiberg §		
- <i>tsawwassen</i> Kaczmarska et B.S.Gray §		

<i>Pseudostriatella</i>		
- <i>oceanica</i> S.Sato, Mann et Medlin	1	SATO et al. 2008b
<i>Rhabdonema</i>		BUFFHAM 1885; KARSTEN 1899;
- <i>adriaticum</i> Kützing §	3	LEBOUR 1930; VON STOSCH 1958,
- <i>arcuatum</i> (Lyngbye) Kützing §		1962, 1982; MAGNE-SIMON 1960,
- <i>minutum</i> Kützing §		1962; ROZUMEK 1968
<i>Striatella</i>		
- <i>unipunctata</i> (Lyngbyae) C.A.Agardh §	1	ROSHCHIN 1994b; CHEPURNOV 1997
<i>Tabellaria</i>		
- <i>fenestrata</i> (Lyngbye) Kützing	1	MANN 1988b
<i>Tabularia</i>		
- <i>affinis</i> (Kützing) Snoeijs §	4	KARSTEN 1897, 1899; SATO et al.
- <i>fasciculata</i> (C.A.Agardh) Williams et Round §		2008a; DAVIDOVICH & DAVIDOVICH
- <i>parva</i> (Kützing) D.M.Williams et Round		2010; DAVIDOVICH et al. 2010, 2012b;
- <i>tabulata</i> (C.A.Agardh) Snoeijs §		MATHER et al. 2014
<i>Ulnaria</i>		
- <i>acus</i> (Kützing) M.Aboal §	2	GEITLER 1939a, 1939b; PODUNAY et
- <i>ulna</i> (Nitzsch) P.Compère §		al. 2014, 2018
BACILLARIOPHYCEAE		
(Raphids)		
<i>Achnanthes</i>		
- <i>brevipes</i> § var. <i>angustata</i> (Greville) Cleve	8	KARSTEN 1897, 1899; GEITLER 1977a;
- <i>brevipes</i> § var. <i>intermedia</i> (Kützing) Kützing		VON STOSCH 1982; ROSHCHIN &
- <i>crenulata</i> Grunow		CHEPURNOV 1993; ROSHCHIN 1994b,
- <i>javanica</i> Grunow		1994b; MIZUNO 1994; CHEPURNOV &
- <i>longipes</i> C.Agardh §		ROSHCHIN 1995; CHEPURNOV & MANN
- <i>subconstricta</i> (F.Meister) K.Toyoda		1997, 1999, 2000; SABBE et al. 2004b;
- <i>subsessilis</i> * Kützing		TOYODA et al. 2005, 2006
- <i>yaquinensis</i> McIntire and Reimer		
<i>Achnanthidium</i>	2	GEITLER 1979, 1980

- <i>affine</i> (Grunow) Czarnecki [syn. <i>Achnanthes affinis</i> Grunow]		
- <i>lineare</i> W.Smith [syn. <i>Achnanthes linearis</i> (W.Smith) Grunow]		
<i>Actinella</i>		
- <i>brasiliensis</i> Grunow	1	MAYAMA 1991
<i>Amphipleura</i>		
- <i>pellucida</i> (Kützing) Kützing §	1	GEITLER 1952c
<i>Amphora</i>		
- <i>arcus</i> W.Gregory §		
- <i>copulata</i> (Kützing) Schoeman et R.E.M.Archibald §		
- cf. <i>laevis</i> W.Gregory §		CARTER 1856a; KARSTEN 1899; MANN
- <i>minutissima</i> W.Smith	7	1984c, 1993; SABBE et al. 2004a;
- <i>ovalis</i> (Kützing) Kützing §		MANN & POULÍČKOVÁ 2010
- <i>pediculus</i> (Kützing) Grunow [syn. <i>Cymbella pediculus</i> Kützing] §		
- cf. <i>proteus</i> W.Gregory §		
<i>Anomoeoneis</i>		
- <i>sculpta</i> (Ehrenberg) Cleve §	1	CHOLNOKY 1928; GEITLER 1954
<i>Berkeleya</i>		
- <i>micans</i> (Lyngbye) Grunow	2	TSCHERMAK-WOESS 1973b;
- <i>rutilans</i> (Trentepohl ex Roth) Grunow §		DAVIDOVICH 2001
<i>Brachysira</i>		
- <i>exilis</i> (Kützing) Round et D.G.Mann [syn. <i>Navicula</i> <i>exilis</i> Kützing; <i>Anomoeoneis exilis</i> (Kützing) Cleve] §	2	CARTER, 1865b; GEITLER 1949
- <i>serians</i> (Brébisson) Round et D.G.Mann [syn. <i>Navicula serians</i> (Brébisson) Kützing]		
<i>Caloneis</i>		
- <i>amphisbaena</i> (Bory) Cleve [syn. <i>Navicula</i> <i>amphisbaena</i> Bory] §	4	MANN 1989a; CHEPURNOV et al. 2004; ISHII et al. 2012

- <i>linearis</i> (Cleve) Boyer		
- <i>silicula</i> (Ehrenberg) Cleve §		
- <i>ventricosa</i> F.Meister		
<i>Campylodiscus</i>		
- <i>neofastuosus</i> Ruck et Nakov [syn. <i>Surirella fastuosa</i> (Ehrenberg) Ehrenberg] §	1	WATANABE et al. 2012
<i>Campylopyxis</i>		
- <i>germainii</i> D.G.Mann	1	MANN 1990
<i>Cocconeis</i>		
- <i>lineata</i> Ehrenberg §		
- <i>ornata</i> W.Gregory		CARTER 1856a; KARSTEN 1900;
- <i>pediculus</i> Ehrenberg §		FRITSCH 1935; GEITLER 1927, 1948,
- <i>pellucida</i> Grunow	8	1958b, 1973a; MIZUNO & OKUDA
- <i>placentula</i> Ehrenberg §		1985; MIZUNO 1998; EDLUND &
- <i>placentula</i> § var. <i>klinoraphis</i> * Geitler		BIXBY 2001
- <i>pseudolineata</i> (Geitler) Lange-Bertalot		
- <i>scutellum</i> Ehrenberg §		
<i>Climaconeis</i>		
- <i>scalaris</i> (Brébisson) E.J.Cox §	1	DAVIDOVICH et al., 2019
<i>Craticula</i>		
- <i>cuspidata</i> (Kützing) D.G.Mann [syn. <i>Navicula cuspidata</i> (Kützing) Kützing] §	2	SUBRAHMANYAN 1945; MANN & STICKLE 1991
- <i>halophila</i> (Grunow) D.G.Mann §		
<i>Cylindrotheca</i>		
- <i>closterium</i> (Ehrenberg) Reimann et J.C.Lewin §	1	VANORMELINGEN et al. 2013a
<i>Cymatopleura</i>		
- <i>elliptica</i> (Brébisson) W.Smith §	1	THALER 1972
<i>Cymbella</i>		
- <i>affinis</i> Kützing §	6	PETIT 1885; GEITLER 1932, 1973a; FRITSCH 1935; GEITLER & MACK 1953; EDLUND & BIXBY 2001
- <i>aspera</i> (Ehrenberg) Cleve §		

- <i>cistula</i> (Ehrenberg) O.Kirchner §		
- <i>cymbiformis</i> C.Agardh §		
- <i>lanceolata</i> var. <i>cornuta</i> (Ehrenberg) Grunow		
- <i>sumatrensis</i> Hustedt		
<i>Cymbellonitzschia</i>		
- <i>diluviana</i> Hustedt	1	JEWSON & LOWRY 1993
<i>Cymbopleura</i>		
- <i>amphicephala</i> (Nägeli) Krammer [syn. <i>Cymbella</i> <i>amphicephala</i> Nägeli ex Kützing] §	2	GEITLER 1973a
- <i>inaequalis</i> (Ehrenberg) Krammer [syn. <i>Cymbella</i> <i>ehrenbergii</i> Kützing] §		
<i>Delicatophycus</i>		
- <i>delicatus</i> (Kützing) M.J.Wynne [syn. <i>Cymbella</i> <i>delicula</i> Kützing; <i>Delicatophycus delicatus</i> (Kützing) M.J.Wynne] §	1	GEITLER 1973a
<i>Denticula</i>		
- <i>tenuis</i> Kützing	1	GEITLER 1932, 1953, 1973a
<i>Dickieia</i>		
- <i>subinflata</i> (Grunow) D.G.Mann		
- <i>ulvacea</i> (Berkeley ex Kützing) Cleve [syn. <i>Navicula</i> <i>ulvacea</i> (Berkeley) Cleve] §	2	COX 1985; MANN 1994
<i>Didymosphenia</i>		
- <i>geminata</i> (Lyngbye) Mart.Schmidt [syn. <i>Gomphonema</i> <i>geminatum</i> (Lyngbye) C.Agardh] §	2	MEYER 1929; SKABICHEVSKII 1983
- <i>lineata</i> Skabichevsky		
<i>Diploneis</i>		
- <i>constricta</i> Cleve [syn. <i>Navicula constricta</i> Grunow]		
- <i>didymus</i> (Ehrenberg) Ehrenberg [syn. <i>Navicula</i> <i>didymus</i> Ehrenberg; <i>Diploneis didyma</i> (Ehrenberg) Ehrenberg]	3	KARSTEN 1899; MIZUNO 1994; IDEI et al. 2013
- <i>papula</i> (A.W.F.Schmidt) Cleve		

<i>Encyonema</i>		
- <i>gracile</i> Rabenhorst [syn. <i>Cymbella gracilis</i> (Rabenhorst) Cleve] §		
- <i>lacustre</i> (C.Agardh) Pantocsek [syn. <i>Cymbella lacustris</i> (C.Agardh) Cleve; <i>Encyonema lacustre</i> (C.Agardh) F.W.Mills] §	3	GEITLER 1949, 1973a
- <i>ventricosum</i> (C.Agardh) Grunow [syn. <i>Cymbella</i> <i>ventricosa</i> (C.Agardh) C.Agardh]		
<i>Encyonopsis</i>		
- <i>cesatii</i> (Rabenhorst) Krammer [syn. <i>Cymbella cesatii</i> (Rabenhorst) Grunow]	2	GEITLER 1973a, 1975
- <i>microcephala</i> (Grunow) Krammer [syn. <i>Cymbella</i> <i>microcephala</i> Grunow]		
<i>Entomoneis</i>		
- <i>alata</i> (Ehrenberg) Ehrenberg [syn. <i>Amphiprora alata</i> (Ehrenberg) Kützing] §	3	KARSTEN 1899; OSADA 1993; PODUNAY ET AL. 2021
- <i>decussata</i> (Grunow) K.Osada et H.Kobayasi		
- cf. <i>paludosa</i> (W.Smith) Reimer §		
<i>Epithemia</i>		
- <i>gibba</i> (Ehrenberg) Kützing [syn. <i>Pinnularia gibba</i> (Ehrenberg) Ehrenberg; <i>Rhopalodia gibba</i> (Ehrenberg) O. Müller]	4	FRITSCH 1935; GEITLER 1977b; POULÍČKOVÁ & MANN 2019
- <i>sorex</i> Kützing §		
- <i>turgida</i> (Ehrenberg) Kützing §		
- <i>zebra</i> § var. <i>saxonica</i> * (Kützing) R.M.Patrick		
<i>Eucoconeis</i>		
- <i>flexella</i> (Kützing) Meister [syn. <i>Achnanthes flexella</i> (Kützing) Brun]	1	FRITSCH 1935; GEITLER 1973a
<i>Eunotia</i>		
- <i>arcus</i> Ehrenberg	8	THWAITES 1847; GEITLER 1932, 1951a, 1951b, 1958a; MAYAMA 1992,
- <i>bilunaris</i> (Ehrenberg) Mills §		1993; IDEI 1993; MANN et al. 2003;

- <i>flexuosa</i> (Brébisson ex Kützing) Kützing §		VANORMELINGEN et al. 2007
- <i>formica</i> Ehrenberg §		
- <i>multiplastidica</i> S.Mayama		
- <i>pectinalis</i> (Kützing) Rabenhorst §		
- <i>pectinalis</i> § var. <i>polyplastidica</i> * L.Geitler		
- <i>tropica</i> * Hustedt		
<i>Fragilariopsis</i>		
- <i>kerquelensis</i> (O'Meara) Hustedt §	1	ASSMY et al. 2006; FUCHS et al. 2013
<i>Frustulia</i>		
- <i>crassinervia</i> (Brébisson ex W.Smith) Lange-Bertalot et Krammer §	2	CARTER 1865b; GEITLER 1949; MANN 1984a; NESTEROVICH 2012
- <i>saxonica</i> Rabenhorst [syn. <i>Frustulia rhomboides</i> var. <i>saxonica</i> (Rabenhorst) De Toni §		
<i>Gomphoneis</i>		
- <i>mesta</i> S.I.Passy-Tolar et R.L.Lowe	1	GEITLER 1949; PASSY-TOLAR & LOWE 1995
<i>Gomphonema</i>		
- <i>acuminatum</i> Ehrenberg §		
- <i>angustatum</i> (Kützing) Rabenhorst §		
- <i>augur</i> Ehrenberg §		
- <i>auritum</i> A.Braun ex Kützing		
- <i>capitatum</i> Ehrenberg [syn. <i>Gomphonema constrictum</i> var. <i>capitatum</i> (Ehrenberg) Grunow] §	12	KARSTEN 1897; GEITLER 1932, 1952b, 1960, 1973b; FRITSCH 1935; MANN 1984b; CHEPURNOV 1997; EDLUND & BIXBY 2001
- <i>dichotomum</i> Kützing §		
- <i>gracile</i> Ehrenberg §		
- <i>intricatum</i> Kützing §		
- <i>micropus</i> Kützing §		
- <i>olivaceum</i> * (Lyngbye) Kützing		
- <i>parvulum</i> (Kützing) Kützing §		
- <i>subclavatum</i> (Grunow) Grunow §		
<i>Halamphora</i>	2	FRITSCH 1935; THALER 1972; PAYNE-HOWELL & PFIESTER 1983
- <i>normanii</i> (Rabenhorst) Levkov [syn. <i>Amphora normani</i>		

Rabenhorst] §		
- <i>veneta</i> (Kützing) Levkov [syn. <i>Amphora veneta</i> Kützing		
<i>Haslea</i>		
- <i>crucigera</i> (W. Smith) Simonsen §		KARSTEN 1897; NEUVILLE & DASTE
- <i>karadagensis</i> Davidovich, Gastineau et Mouget §		1972, 1975; CHEPURNOV 1993;
- <i>nusantara</i> Mouget, Gastineau et Syakti §	7	ROSHCHIN 1994b; DAVIDOVICH et al.
- <i>ostrearia</i> (Gaillon) Simonsen §		2009, 2012a; GASTINEAU et al. 2016,
- <i>provincialis</i> Gastineau, Hansen et Mouget §		2021
- <i>silbo</i> Gastineau, Hansen et Mouget §		
- <i>subagnita</i> (Proshkina-Lavrenko) Makarova et Karayeva		
<i>Iconella</i>		
- <i>helvetica</i> (Brun) Ruck et Nakov [syn. <i>Surirella helvetica</i> Brun; <i>Surirella linearis</i> var. <i>helvetica</i> (Brun) Meister] §	2	FRITSCH 1935; THALER 1972; GEITLER 1973a
- <i>splendida</i> (Ehrenberg) Ruck et Nakov [syn. <i>Surirella splendida</i> (Ehrenberg) Ehrenberg] §		
<i>Lemnicola</i>		
- <i>hungarica</i> (Grunow) Round et Basson [syn. <i>Achnanthes hungarica</i> (Grunow) Grunow] §	1	GEITLER 1980
<i>Luticola</i>		
- <i>dismutica</i> (Hustedt) D.G.Mann	2	POULÍČKOVÁ 2008a; POULÍČKOVÁ & MANN 2019
- <i>poulickovae</i> Levkov, Metzeltin et Pavlov		
<i>Lyrella</i>		
- <i>atlantica</i> (A.W.F.Schmidt) D.G.Mann §	1	MANN & STICKLE 1993
<i>Mastogloia</i>		
- <i>binotata</i> (Grunow) Cleve	2	STICKLE 1986; MANN 1993;
- <i>smithii</i> Thwaites ex W.Smith		CHEPURNOV 1997
<i>Muelleria</i>		
- <i>peraustralis</i> (West et G.S.West) S.A.Spaulding et F.R.Stoermer	1	EDLUND & SPAULDING 2006

Navicula

- | | | |
|---|---|--------------------------------|
| - <i>cryptocephala</i> Kützing § | | |
| - <i>directa</i> (W.Smith) Brébisson | | |
| - <i>lothargeitleri</i> Pouličková et Cox | | KARSTEN 1899; GEITLER 1952d, |
| - <i>oblonga</i> (Kützing) Kützing § | 9 | 1952e; MANN & STICKLE 1989; |
| - <i>peregrina</i> (Ehrenberg) Kützing | | MIZUNO 2000; POULÍČKOVÁ & MANN |
| - <i>radiosa</i> Kützing § | | 2006 |
| - <i>trivialis</i> Lange-Bertalot | | |
| - <i>veneta</i> Kützing § | | |
| - <i>viridula</i> (Kützing) Ehrenberg § | | |

Neidium

- | | | |
|--|---|--------------------------------|
| - <i>affine</i> (Ehrenberg) Pfitzer § | 3 | MANN 1984a; MANN & CHEPURNOV |
| - <i>ampliatum</i> (Ehrenberg) Krammer | | 2005; POULÍČKOVÁ 2008b; MANN & |
| - <i>iridis</i> (Ehrenberg) Cleve § | | POULÍČKOVÁ 2009 |

Neodenticula

- | | | |
|---|---|---------------------------|
| - <i>seminae</i> (Simonsen et T.Kanaya) Akiba et Yanagisawa § | 1 | KURIHARA & TAKAHASHI 2002 |
|---|---|---------------------------|

Nitzschia

- | | | |
|---|----|-------------------------------------|
| - <i>amphibia</i> Grunow § | | |
| - <i>dicrogramma</i> D.G. Mann et Trobajo | | |
| - <i>dissipata</i> (Kützing) Rabenhorst § | | GEITLER 1932, 1969; FRITSCH 1935; |
| - <i>flexoides</i> Geitler | | MANN 1986, 1993; ROSHCIN 1990a, |
| - <i>fonticola</i> (Grunow) Grunow § | | 1994; ROUND et al. 1990; CHEPURNOV |
| - <i>frustulum</i> var. <i>perpusilla</i> (Rabenhorst) Grunov ex Van Heurck | 17 | 1997; DAVIDOVICH & BTES 1998; |
| - <i>hybrida</i> var. <i>hyalina</i> Prosskina-Lavrenko | | DAVIDOVICH 2002; DAVIDOVICH et al. |
| - <i>lanceolata</i> W.Smith | | 2006; TROBAJO et al. 2006, 2009; |
| - <i>linearis</i> W.Smith § | | KACZMARSKA et al. 2007; MANN et al. |
| - <i>longissima</i> (Brébisson ex Kützing) Grunow § | | 2013 |
| - <i>palea</i> (Kützing) W.Smith § | | |
| - <i>recta</i> Hantzsch ex Rabenhorst § | | |
-

- <i>rectilonga</i> Takano §		
- <i>reversa</i> W. Smith §		
- <i>sigmoidea</i> (Nitzsch) W.Smith §		
- <i>spathulata</i> Brébisson ex W.Smith §		
- <i>subtilis</i> (Kützing) Grunow		
<i>Petrodictyon</i>		
- <i>gemma</i> (Ehrenberg) D.G.Mann [syn. <i>Surirella gemma</i> (Ehrenberg) Kützing] §	1	FRITSCH 1935
<i>Petroneis</i>		
- <i>humerosa</i> (Brébisson ex W.Smith) Stickle et D.G.Mann §	1	JONES et al. 2005
<i>Pinnularia</i>		
- cf. <i>gibba</i> * (Ehrenberg) Ehrenberg §	3	FRITSCH 1935; POULÍČKOVÁ et al.
- <i>nodosa</i> (Ehrenberg) W.Smith §		2007; POULÍČKOVÁ & MANN 2008,
- <i>viridis</i> (Nitzsch) Ehrenberg §		2019
<i>Placoneis</i>		
- <i>gastrum</i> (Ehrenberg) Mereschkowsky §	1	MANN & STICKLE 1995
<i>Planothidium</i>		
- <i>lanceolatum</i> (Brébisson ex Kützing) Lange-Bertalot [syn. <i>Achnanthes lanceolata</i> (Brébisson ex Kützing) Grunow] §	1	GEITLER 1977b, 1980
<i>Pleurosigma</i>		
- <i>intermedium</i> W.Smith [syn. <i>Pleurosigma nubecula</i> W.Smith] §	1	KARSTEN 1899
<i>Prestauroneis</i>		
- <i>protracta</i> (Grunow) Kulikovskiy et Glushchenko [syn. <i>Navicula protracta</i> Grunow]	1	MANN 1988a
<i>Pseudo-nitzschia</i>		
- <i>arenysensis</i> Quijano-Scheggia, Garcés, Lundholm §	15	FRYXELL et al. 1991; DAVIDOVICH & BATES 1998; KACZMARSKA et al.
- <i>australis</i> Frenguelli §		2000; HILTZ et al. 2000; AMATO et al. 2005, 2007; CHEPURNOV et al. 2004,

- <i>brasiliiana</i> Lundholm, Hasle et G.A. Fryxell §		2005; AMATO & MONTRESOR 2008;
- <i>calliantha</i> Lundholm, Moestrup et Hasle §		LEVIALDI GHIRON et al. 2008;
- <i>cuspidata</i> (Hasle) Hasle §		D'ALELIO et al. 2009; QUIJANO-
- <i>delicatissima</i> (P.T.Cleve) Heiden §		SCHEGGIA et al. 2009a, 2009b;
- <i>dolorosa</i> Lundholm et Moestrup §		HOLTERMANN et al. 2010; SARNO et al.
- <i>fraudulenta</i> (P.T.Cleve) Hasle §		2010; LUNDHOLM et al. 2012;
- <i>mannii</i> Amato et Montresor §		SABATINO et al. 2015; SCALCO et al.
- <i>multiseries</i> (Hasle) Hasle §		2016; KIM et al. 2020
- <i>multistriata</i> (Takano) Takano §		
- <i>pseudodelicatissima</i> (Hasle) Hasle §		
- <i>pungens</i> (Grunow ex P.T.Cleve) Hasle §		
- <i>seriata</i> (P.T.Cleve) H. Peragallo §		
- <i>subcurvata</i> (Hasle) G.A.Fryxell §		
<i>Reimeria</i>		
- <i>sinuata</i> (W.Gregory) Kociolek et Stoermer [syn. <i>Cymbella sinuata</i> W.Gregory] §	1	GEITLER 1973
<i>Rhoicosphenia</i>		
- <i>abbreviata</i> (C.Agardh) Lange-Bertalot [syn. <i>Rhoicosphenia curvata</i> (Kützing) Grunow] §	1	KARSTEN 1899; CHOLNOKY 1927; MANN 1982b
<i>Rhopalodia</i>		
- <i>gibba</i> § var. <i>ventricosa</i> (Kützing) H.Peragallo et M.Peragallo [syn. <i>Epithemia gibba</i> var. <i>ventricosa</i> (Kützing) Grunow]	1	KLEBAHN 1896; KARSTEN 1899; KAMAKURA et al. 2021
<i>Schizostauron</i>		
- <i>trachyderma</i> (F.Meister) Górecka, Riaux-Gobin et Witkowski §	2	DAVIDOVICH et al. 2017; GORECKA et al. 2022
- sp.		
<i>Scoliopleura</i>		
- <i>peisonis</i> Grunow §	1	EDLUND & SPAULDING 2006
<i>Sellaphora</i>		
- <i>bacillum</i> (Ehrenberg) D.G.Mann §	7	GEITLER 1932; MANN 1989b; MANN et al. 1999, 2011; CHEPURNOV et al.

- <i>laevissima</i> (Kützing) D.G.Mann §		2004; MANN & POULÍČKOVÁ 2019
- <i>marvanii</i> Poulíčková et D.G.Mann §		
- <i>pausariae</i> Poulíčková et D.G.Mann §		
- <i>pupula</i> (Kützing) Mereschkovsky §		
- <i>lanceolata</i> D.G.Mann et S.Droop §		
- <i>seminulum</i> (Grunow) D.G.Mann [syn. <i>Navicula</i> <i>seminulum</i> Grunow] §		
<i>Seminavis</i>		CHEPURNOV et al. 2002; MANN &
- <i>macilenta</i> (W.Gregory) D.B.Danielidis et D.G.Mann	2	CHEPURNOV 2005; VANSTECHELMAN
- <i>robusta</i> D.B.Danielidis et D.G.Mann §		et al. 2013b; BONDOC et al. 2016; MOEYS et al. 2016
<i>Stauroneis</i>		
- <i>anceps</i> Ehrenberg §		
- <i>legumen</i> (Ehrenberg) Kützing	4	MANN & STICKLE 1995; MANN 1996
- <i>phoenicenteron</i> (Nitzsch) Ehrenberg §		
- <i>siberica</i> (Grunow) Lange-Bertalot et Krammer		
<i>Surirella</i>		
- <i>librile</i> (Ehrenberg) Ehrenberg [syn. <i>Cymatopleura</i> <i>solea</i> (Brébisson) W.Smith] §		KARSTEN 1900, 1912, 1928; LIEBISCH
- <i>minuta</i> Brébisson ex Kützing [syn. <i>Surirella ovata</i> Kützing] §	4	1929; FRITSCH 1935; THALER 1972; GEITLER 1963, 1973a; MANN 1987;
- <i>peisonis</i> Pantocsek		WATANABE et al. 2012
- <i>robusta</i> Ehrenberg [syn. <i>Surirella saxonica</i> Auerswald ex Rabenhors]		
<i>Tetralunata</i>		
- <i>vanheurckii</i> (Brun) Hamsher, Graeff, Stepanek et Kociolek [syn. <i>Denticula vanheurcki</i> Brun] §	1	GEITLER 1932; FRITSCH 1935
<i>Tryblionella</i>		
- <i>angustata</i> W.Smith [syn. <i>Nitzschia angustata</i> (W.Smith) Grunow]	1	MANN 1986
Total:	355	

Note. * – the name of the species as in the original source; in other cases we use currently accepted names according to (Guiry & Guiry, 2021); synonyms are given in square brackets; § – genetic sequence data are available in GenBank (<https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi>; serched on 08 March 2022)