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Recent Diatoms Reported from the Central United States: Register of Taxa and Synonyms

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Recent Diatoms Reported from the Central United States: Register of Taxa and Synonyms

Report Number 77, State Biological Survey of Kansas
Lawrence, Kansas USA

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Please send comments and literature citations for additions or taxonomic changes to meberle@fhsu.edu.

[Internet homepage for this diatom list.](#)

Introduction to the List of Diatom Taxa

This list of diatom taxa summarizes information for more than 1000 taxa and synonyms reported in published accounts of collections made in the central United States, principally within the states of Kansas, Nebraska, and Oklahoma, but also including adjacent areas in eastern Colorado and western Missouri. This summary expands an earlier annotated list of Kansas diatoms (Eberle 1981). My objective here was to provide people working on diatom projects in this region with a base reference to help them assess the results of their research.

The literature on diatoms is scattered among many journals and government publications. Although a thorough effort was made to locate all relevant publications for this summary, some references possibly were missed. No records from Master's theses were incorporated into this list, and most were never published. References focused on fossil diatoms also were excluded, although a few have been published (e.g., Andrews 1970; Barbour 1896; Barbour 1910; Cragin 1891; Elmore 1898*a*, 1898*b*, 1914, 1917; Hanna 1932; Selva 1976, 1981).

I did not examine specimens, so taxa presented here are those reported in the literature or their possible synonyms. Interpretations of synonyms initially were derived from publications by VanLandingham (1967–1979) and others. Recent updates have primarily been based on the following internet resources:

- AlgaeBase (<http://www.algaebase.org/>) and
- Diatoms of the United States (<http://westerndiatoms.colorado.edu/>).

Diatom systematics is a dynamic field, with frequent reevaluations of taxa. The uncertainties generated by the reevaluation of systematic relationships among diatom taxa and by the misapplication of scientific names in widely used diatom references through the centuries probably have led researchers to misidentify many of the taxa listed here. Thus, to provide users of this list with the most complete information possible, all scientific names used in the publications cited in this summary are listed here with the corresponding citations.

Taxa above the level of genus are not yet well understood, so this list is subdivided into three traditional groups: centric diatoms (Coscinodiscophyceae), pennate diatoms without a

raphe (Fragilariophyceae), and pennate diatoms with at least some raphe present (Bacillariophyceae). Within these three classes, the genera and species are listed alphabetically. Forms and varieties are listed alphabetically after the nominate variety. A question mark in front of the citation for a reference indicates that the author of the publication was not sure of his or her identification. In several of the references, authorities for scientific names were incorrect or missing, and some Latin names were spelled incorrectly; these were corrected in this summary. As true of all scientific research, researchers using this list should consult the original publications.

This index can be used in two ways. You can select the currently accepted name of a taxon to check for publications, organized by states, that included that name. Also listed are taxa that represent possible synonyms. In addition, you can start with the name of a taxon from one of the published references and find that name in the list. This will provide you with a recommended scientific name. Without checking voucher specimens, it is assumed that the author was referring to this taxon, but some misidentifications in the original publications are likely. Taxa that presumably should be transferred to another genus or species, but for which I could locate no reference for the transfer, are followed by a question mark in place of an authority. The validity of these taxa remains to be ascertained, and this formal process is beyond the scope of this summary.

History of Diatom Research in the Central United States

Kansas

The earliest known account of a diatom taxon from Kansas is a note in the Bulletin of the Washburn College Laboratory of Natural History (Cragin 1886):

“Mr. J.D. McLaren, of Sumnerville, reports the diatom, *Meridiones radiales*, from Lawrence. It was found in spring water during recent biological studies at the State University.”

This is all of the information contained in the note, and the taxon this name refers to is unknown. Three years later, the same journal included a list of 23 taxa from Reno County identified by Wolle (1889). The diatoms were collected from sand in a brook fed by a perennial spring at Arlington, adjacent to the North Fork Ninescah River. The Reverend Wolle later included the “inland, salt marshes of Kansas” in the distribution of *Biddulphia laevis* Ehrenberg [= *Pleurosira laevis* (Ehrenberg) Compère] in his volume on the “Diatomaceae of North America” (Wolle 1894), as did Boyer (1901) in his summary of this group, although he listed it as a fossil.

Curtis (1901) made the first substantial contribution to the knowledge of the diatomaceous flora of Kansas. In 1899, he presented information on collections he made with Frank Patrick (father of Dr. Ruth Patrick) at Gage’s Pond and Silver Lake in Shawnee County. (Ruth Patrick was born in Topeka, Kansas in November 1907.) Curtis followed this by presenting 2 papers in 1900 on diatomaceous material provided by S.G. Mead. The first was an account of taxa collected at Medora, Reno County. He did not indicate a collection locality, but Medora is adjacent to the Little Arkansas River. His second paper discussed the stomach

contents, principally diatoms, taken from a “young perch” collected at Belvidere, Kiowa County. Again, he did not indicate the body of water from which the collection was made, but Belvidere is located adjacent to the Medicine Lodge River. His 3 accounts included a combined total of more than 280 taxa.

In *The Diatoms (Bacillarioideae) of Nebraska*, Elmore (1921) included 15 taxa from unspecified habitat(s) at Emporia, Lyon County. Six years later, Boyer (1927*a*, 1927*b*) published his *Synopsis of North American Diatomaceae*, which included 3 taxa specifically from Kansas. Also within this period, McNaught (1918, 1920) listed 13 genera of diatoms in a survey of algae from 43 city reservoirs in Kansas. All but 3 of these lakes (Russell, Jewell City, and Medicine Lodge) are in the eastern one-third of the state. His second publication (McNaught 1920) included a key and line drawings designed to educate and aid sanitary engineers.

From 1928 through 1959 there were no known published reports of nonfossil diatoms from Kansas. Jantzen (1960) reported genera of diatoms in a study of a small marsh in Stafford County. In nearby Barton County, McFarland et al. (1964) identified 13 taxa of diatoms in their algal survey of the wetlands of Cheyenne Bottoms State Wildlife Area. The following year, Wujek (1965) published a list of what, at the time, were thought to be previously unreported diatoms from eastern Kansas; however, a number of these taxa apparently had been recorded in earlier publications (see Eberle 1981). Eleven taxa of diatoms were included in a publication by Branson (1966) from a limnological survey of the Spring River drainage in Crawford and Cherokee counties in the Ozarkian region of southeastern Kansas. Patrick and Reimer (1966, 1975) cited Kansas and the “Plains States” within the geographical distributions of several taxa in their monograph on *The Diatoms of the United States*. Some of these records were based on specimens used by Curtis (1901) and Elmore (1921) in their publications. In a break from diatom publications that were simply lists of taxa, Youngsteadt (1972) studied the distribution of *Asterionella*, *Fragilaria*, and 2 other genera of algae with respect to parent soil materials in 22 lakes and ponds in southeastern Kansas.

The federal government conducted phycological research in Kansas during the 1960s and 1970s. Plankton samples were collected from the Arkansas, Kansas, and Missouri rivers in Kansas through the Water Pollution Surveillance System (WPSS 1961–1963, 1966; Williams and Scott 1962; Williams 1962, 1964, 1972). These efforts resulted in the compilation of various data on biological and environmental parameters used, in part, to explore the use of the 4 most abundant species of diatoms to assess water quality. Powers (1969) also compiled a list of phytoplankton from the Kansas River. A decade later, reservoirs were the subject of a phytoplankton study conducted by the US Environmental Protection Agency (Williams et al. 1979), which provided lists of taxa and indices of species diversity, species abundance, trophic state, and organic pollution levels for 15 impoundments.

Reinke and others reported fieldwork conducted throughout Kansas by the Kansas Biological Survey in publications from 1979 through 1985 (Reinke 1979*a*, 1979*b*, 1981, 1982*a*, 1982*b*, 1984, 1985; Czarnecki and Reinke 1981, 1982; Wujek et al. 1980). The Kansas Biological Survey (Lawrence, Kansas) collection included algal specimens from all 105 counties in the state. Czarnecki and Reinke (1981) also summarized changes in nomenclature for previously reported taxa. However, because that reference did not contain any additional

collection localities, it is not cited with those taxa in this summary. Subsequent research on diatoms in central Kansas was conducted at Fort Hays State University in Hays, Kansas (Wenke and Eberle 1985, 1986; Harris and Eberle 2001). In 2003 and 2008, Juracek published reports on sediments and diatoms in two reservoirs in eastern Kansas for the US Geological Survey. After a hiatus of nearly 3 decades, Reinke and Wujek published a description in 2013 of a new species of *Entomoneis* (*E. reimeri*) from a salt marsh in Kansas and provided a dichotomous key to 6 species in the genus that occur in the United States; all occur within Kansas.

Oklahoma

Research on the diatoms of Oklahoma begins with *Mikrogeologie* by Christian Gottfried Ehrenberg (1856), in which he identifies taxa of diatoms and other microspecimens collected for him by surgeons at military outposts in what was then referred to as the Indian Territory. The samples were taken from the (False) Washita River near Fort Washita and Fort Arbuckle in south-central Oklahoma (north of Ardmore) and from the Neosho River near Fort Gibson, just upstream from its confluence with the Arkansas River in northeastern Oklahoma. Despite this auspicious beginning, the next publication on recent diatoms of the state was not published for nearly 90 years.

During the 1940s, 3 papers were published on the diatoms of Oklahoma. The first, by Sister Maloney (1944), included taxa collected from ponds, a stock tank, a stream, and 3 aquaria. Unfortunately, collection sites were not referenced in the list of species, which includes an interesting assemblage of taxa. The taxa she reported were not included in this summary, because the aquaria probably included taxa not likely to occur in the waters of this region. In a publication that emphasized algae other than diatoms, Leake (1945) listed 11 species of diatoms among the 208 taxa she identified from Crystal Lake near Norman. During 1945 and 1946, Wallen (1949) studied the relative abundance of algae (genera only) in a pond drained, dredged, and covered by “18 five-ton truckloads of sludge from the local sewage disposal plant” in 1943.

Soil algae and sampling methods were the topics considered in a project conducted by Willson and Forest (1957) in McClain and Cleveland counties. They recorded 3 taxa of diatoms from prairie and cropland sites. A decade later, Schlichting and Gearheart (1966) reported 17 genera of diatoms in a study of the effects of sewage effluent on periphyton in an Oklahoma impoundment.

As in Kansas, diatoms were collected during the 1960s through the Water Pollution Surveillance System from the Arkansas, Verdigris, and Red rivers in Oklahoma (WPSS 1961–1963, 1966; Williams and Scott 1962; Williams 1962, 1964, 1972). Hern et al. (1979) also compiled information on the plankton and trophic status of 15 reservoirs for the US Environmental Protection Agency.

Several studies on diatoms in Oklahoma were conducted in the 1970s and 1980s. Wilhm and others at Oklahoma State University (Cooper and Wilhm 1975; Seyfer and Wilhm 1977; Wilhm et al. 1978; Wilhm et al. 1977) published research on stream periphyton in the Arkansas River drainage. These publications provided extensive lists of phytoplankton, as well as information on species diversity, biomass, and chlorophyll *a*.

Kennedy and Pfister (1984) and Pfister et al. (1979) added to our knowledge of the diatoms in the North Canadian and Neosho (Grand) river drainages, respectively. Pfister and Terry (1978) reported 24 diatom taxa from small impoundments in Cleveland County. Koch and Risser (1974) examined the algae (including 113 diatom taxa) growing on leaf detritus in a spring-fed limestone stream in Pontotoc County (south-central Oklahoma), and Koch (1975) reported 68 taxa of diatoms, including several “salt-water” taxa, from the southwestern part of the state. Troeger (1978, 1983) and Troeger and Menzel (1986) provided information on the diatoms of human-made ponds, including lists of over 100 diatom taxa derived from thousands of counted frustules (Troeger 1978, 1983).

Most recently, Potter et al. (2006) reported on the diversity of 21 diatom genera along a salinity gradient at Great Salt Plains National Wildlife Refuge in north-central Oklahoma. Bergey et al. (2009) reported the unexpected presence of *Didymosphenia geminata* in the Mountain Fork, a trout fishery downstream from Broken Bow reservoir in southeastern Oklahoma. Also in southeastern Oklahoma, Atkinson and Cooper (2016) investigated the potential effect land cover and physicochemical variables had on community composition of genera of benthic algae along the Kiamichi River.

Nebraska

As in Oklahoma, the first published record of diatoms in Nebraska was compiled by Ehrenberg (1856) from samples taken in the Platte River near Fort Kearney on the Oregon Trail. Later, Schofield (1892) and Webber (1889, 1890) noted a few diatom taxa, but much of the work on the diatoms of this state was a result of the efforts made by Clarence Elmore. Elmore and others primarily examined fossil deposits (Barbour 1896; Barbour 1910; Elmore 1898*a*, 1898*b*, 1917), but in 1921, Elmore published *The Diatoms (Bacillarioideae) of Nebraska*, which is still one of the few compilations of the diatoms from a large geographic area within the United States. It contains keys, line drawings, descriptions, and regional distributions for the taxa. Elmore also was credited with the identifications of diatoms in an algal survey of sandhill lakes in Cherry County published by Andersen and Walker (1920). Patrick and Reimer (1966, 1975) examined some of Elmore’s material for their monograph, in which they cited “Nebraska” and the “Plains States” with their distributions.

The diatoms of Nebraska also were included in the 2 early works on the diatoms of the United States. Wolle (1894), as he did with Kansas, included Nebraska within the range of *Pleurosira laevis*, and Boyer (1927*a*, 1927*b*) included that species in his *Synopsis of North American Diatomaceae*.

After the “Elmore era,” publications on the living diatoms of Nebraska were generally lacking during the period 1930–1960, as was the case in Kansas and Oklahoma. In 1953, Neel discussed chemical and biological aspects of the North Platte River in Wyoming and Nebraska, but his references to diatoms were not clearly associated with specific localities. In the early 1960s, samples were obtained through the Water Pollution Surveillance System from stream sites on the Missouri, North Platte, and Platte rivers (WPSS 1961–1963, 1966; Williams and Scott 1962; Williams 1962, 1964, 1972). DeNoyelles (1967) compared the phytoplankton in a double-cell sewage lagoon, in which 1 pond was organically enriched. He recorded only 1 diatom taxon, the genus *Navicula*, among the algae in the ponds.

Much of the research conducted on diatoms in Nebraska during the 1970s dealt with diatoms in lakes rather than streams. McCarraher et al. (1975) summarized selected aspects of the limnology of a chain of shallow lakes created during the construction of Interstate Highway 80, which crosses Nebraska from west to east. They reported 18 genera of diatoms. The distribution of phytoplankton and trophic status of 9 reservoirs in Nebraska were summarized for the US Environmental Protection Agency by F.A. Morris et al. (1979).

The most recent studies published on the diatoms of Nebraska mostly considered community structure and the role of diatom mucilage in benthic ecosystems (Hoagland et al. 1982; Roemer et al. 1984; Rosowski et al. 1986). From 11 to 69 taxa of diatoms were reported from each collection site in these studies conducted at Pawnee, Yankee Hill, and McConaughy reservoirs and the headwaters of the Middle Fork of Maple Creek in Stanton County, Nebraska. Johnson and Rosowski (1992) examined the fine morphology of *Pleurosira laevis* from the Missouri River. Shinneman et al. (2010) included 50 diatom species and subspecific taxa in a study examining diatom community composition and water depth.

Eastern Colorado

Biologists conducting phycological research in Colorado have concentrated on the mountainous region in the central part of the state rather than the arid eastern plains. The first report from the plains of Colorado was by Cockerell (1888). He credited Wolle with the identification of 3 diatom species from near Mace's Hole in Pueblo County. Other than this early report, only the US government has published any records of diatom taxa from the eastern portion of the state. The Water Pollution Surveillance System had a collection site on the South Platte River at Julesburg, Colorado (WPSS 1961–1963; Williams 1964, 1972), and M.K. Morris et al. (1979*b*) published results from the US Environmental Protection Agency survey of the distribution of phytoplankton and trophic status of 13 reservoirs. Three of these reservoirs were on the eastern plains: Cucharas Reservoir in Huerfano County, Holbrook Lake in Otero County, and Lake Meredith in Crowley County.

Western Missouri

As in eastern Colorado, few studies conducted in western Missouri have included diatoms. Ehrenberg (1856) identified diatoms from Missouri, but these were collected near St. Louis. The first accounts of diatoms from the western part of the state were published through the Water Pollution Surveillance System, which had collection stations at St. Joseph and Missouri City on the Missouri River (WPSS 1961–1963, 1966; Williams and Scott 1962; Williams 1962, 1964, 1972). Morris et al. (1979*a*) included Pomme de Terre Reservoir in Polk and Hickory counties; Stockton Reservoir in Dade, Polk, and Cedar counties; and Thomas Hill Reservoir in Macon and Randolph counties in their survey of phytoplankton distribution and trophic status of 6 reservoirs for the US Environmental Protection Agency. Pamperl (1980) conducted a taxonomic survey of diatoms from an additional reservoir—Lake of the Ozarks. She identified 157 taxa from both the planktonic and benthic communities.

CENTRIC DIATOMS — Coscinodiscophyceae

Names in **bold print** are current names for taxa reported from the central United States. Names in standard (nonbold) print are synonyms for the currently accepted names listed after them. References that reported a taxon or its synonyms are listed under the currently accepted name. The names of the states are abbreviated with their postal codes: CO = eastern Colorado, KS = Kansas, MO = western Missouri, NE = Nebraska, OK = Oklahoma. A “▶” marks the first name in a genus.

▶ ***Acanthoceras zachariasii* (Brun) Simonsen**

Reported as:

Attheya zachariasii Brun

OK: Hern et al. (1979)

▶ ***Actinocyclus normanii* f. *subsalsa* (Juhlin-Dannfelt) Hustedt**

Reported as:

Coscinodiscus rothii var. *subsalsa* (Juhlin-Dannfelt) Hustedt

OK: Koch (1975)

▶ *Attheya zachariasii* Brun = *Acanthoceras zachariasii* (Brun) Simonsen

▶ ***Aulacoseira alpigena* (Grunow) Krammer**

KS: Juracek (2008)

Reported as:

Melosira distans var. *alpigena* Grunow

KS: Powers (1969)

OK: Williams (1962), WPSS (1961–1963)

***Aulacoseira ambigua* (Grunow) Simonsen**

KS: Juracek (2008)

NE: Roemer et al. (1984), Shinneman et al. (2010)

Reported as:

Melosira ambigua (Grunow) O. Müller

KS: WPSS (1961–1963)

MO: WPSS (1961–1963)

NE: Hoagland et al. (1982), Williams (1962), WPSS (1961–1963, 1966)

OK: Hern et al. (1979), Pfiester et al. (1979), Wilhm et al. (1977), Williams (1962), WPSS (1961–1963, 1966)

***Aulacoseira crenulata* (Ehrenberg) Thwaites**

NE: Shinneman et al. (2010)

***Aulacoseira distans* (Ehrenberg) Simonsen**

KS: Juracek (2003)

Reported as:

Gallionella distans Ehrenberg

NE: Ehrenberg (1856)

Gallionella laevis Ehrenberg

OK: Ehrenberg (1856)

Lysigonium distans (Ehrenberg) Kuntze

NE: Andersen and Walker (1920), Elmore (1921)

Melosira distans (Ehrenberg) Kützing

KS: Powers (1969), Williams et al. (1979)

MO: M.K. Morris et al. (1979*a*)

NE: F.A. Morris et al. (1979)

OK: Hern et al. (1979), Pfiester et al. (1979), Wilhm et al. (1977), Wilhm et al. (1978)

***Aulacoseira distans* f. *lacustris* (Grunow) Simonsen**

Reported as:

Melosira distans var. *lirata* f. *lacustris* (Grunow) Bethage

MO: Pamperl (1980)

Aulacoseira distans var. *humilis* (A. Cleve) Ross = *Aulacoseira humilis* (A. Cleve) Genkal & Trifonova

***Aulacoseira granulata* (Ehrenberg) Simonsen**

KS: Juracek (2003, 2008)

NE: Shinneman et al. (2010) as *A. granulata* type 1

Reported as:

Lysigonium granulatum (Ehrenberg) Kuntze

NE: Elmore (1921)

Melosira granulata (Ehrenberg) Ralfs

CO: WPSS (1961–1963)

KS: Branson (1966), Powers (1969), Reinke (1979*a*), Williams (1964, 1972), Williams et al. (1979), WPSS (1961–1963)

MO: M.K. Morris et al. (1979*a*), Pamperl (1980), Williams (1972), WPSS (1961–1963)

NE: Hoagland et al. (1982), F.A. Morris et al. (1979), Williams (1962, 1964, 1972), WPSS (1961–1963, 1966)

OK: Hern et al. (1979), Pfiester and Terry (1978), Pfiester et al. (1979), Troeger (1978), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962, 1964), WPSS (1961–1963, 1966)

***Aulacoseira granulata* var. *angustissima* (O. Müller) Simonsen**

Reported as:

Melosira granulata var. *angustissima* O. Müller

KS: Powers (1969), Williams et al. (1979), Wujek et al. (1980)

MO: M.K. Morris et al. (1979*a*), Pamperl (1980)

NE: F.A. Morris et al. (1979)

OK: Hern et al. (1979), Troeger (1983)

***Aulacoseira granulata* f. *curvata* (Hustedt) Simonsen**

Reported as:

Melosira granulata var. *angustissima* f. *curvata* Grunow

MO: Pamperl (1980)

***Aulacoseira granulata* f. *spiralis* (Hustedt) Czarnecki & Reinke**

KS: Czarnecki and Reinke (1982)

Reported as:

Melosira granulata var. *angustissima* f. *spiralis* Hustedt

KS: Williams et al. (1979)

OK: Hern et al. (1979)

***Aulacoseira humilis* (A. Cleve) Genkal & Trifonova**

Reported as:

Aulacoseira distans var. *humilis* (A. Cleve) Ross

NE: Shinneman et al. (2010)

***Aulacoseira islandica* (O. Müller) Simonsen**

KS: Juracek (2003)

***Aulacoseira italica* (Ehrenberg) Simonsen**

Reported as:

Melosira italica (Ehrenberg) Kützing

KS: Williams (1962), Williams et al. (1979), WPSS (1966)

NE: F.A. Morris et al. (1979), WPSS (1961–1963)

OK: Hern et al. (1979), Pfiester et al. (1979), Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978)

***Aulacoseira italica* f. *crenulata* (Ehrenberg) Ross in Hartley**

Reported as:

Gallionella crenata Ehrenberg

OK: Ehrenberg (1856)

Lysigonium crenulatum (Ehrenberg) Kuntze

NE: Andersen and Walker (1920), Elmore (1921)

Melosira crenulata (Ehrenberg) Kützing

KS: Curtis (1901)

***Aulacoseira italica* var. *tenuissima* (Grunow) Simonsen**

Reported as:

Melosira italica var. *tenuissima* (Grunow) O. Müller

KS: Williams et al. (1979)

Aulacoseira cf. *nygaardii* (Camburn) Camburn & Charles

KS: Juracek (2003)

► *Biddulphia laevis* Ehrenberg = *Pleurosira laevis* (Ehrenberg) Compère

► *Chaetoceros muelleri* Lemmermann

KS: Harris and Eberle (2001), Reinke (1984, 1985)

- *Coscinodiscus lacustris* Grunow = *Thalassiosira lacustris* (Grunow) Hasle
Coscinodiscus rothii (Ehrenberg) Grunow
KS: Wujek et al. (1980)
OK: Williams (1962), WPSS (1961–1963, 1966)
Coscinodiscus rothii var. *subsalsa* (Juhl.-Dannf.) Hustedt = *Actinocyclus normanii* f. *subsalsa* (Juhlin-Dannfelt) Hustedt
- **Cyclostephanos dubius** (Fricke) Round
NE: Shinneman et al. (2010)
Reported as:
Stephanodiscus dubius (Fricke) Hustedt
CO: M.K. Morris et al. (1979*b*)
KS: Wujek et al. (1980)
MO: Pamperl (1980)
NE: Hoagland et al. (1982), Roemer et al. (1984), WPSS (1961–1963)
- Cyclostephanos invisitatus** (Hohn & Helleman) Theriot, Stoermer, & Håkansson
Reported as:
Stephanodiscus invisitatus (Fricke) Hustedt
KS: Powers (1969), Williams et al. (1979)
NE: Roemer et al. (1984)
- *Cyclotella antiqua* W. Smith = *Lindavia antiqua* (W. Smith) Nakov et al.
Cyclotella atomus Hustedt
CO: WPSS (1961–1963)
KS: Powers (1969), WPSS (1961–1963)
MO: WPSS (1961–1963)
NE: Roemer et al. (1984)
OK: Pfiester et al. (1979), Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962), WPSS (1961–1963, 1966)
- Cyclotella catenata** (Brun) Bachmann
OK: Troeger and Menzel (1986)
Cyclotella comensis Grunow in Van Heurck = *Pantocsekiella comensis* (Grunow) Kiss & Ács
Cyclotella comta (Ehrenberg) Kützing = *Lindavia comta* (Ehrenberg) Nakov et al.
- Cyclotella distinguenda** Hustedt
Reported as:
Cyclotella operculata (Agardh) Kützing
OK: Pfiester et al. (1979)
Cyclotella glomerata Bachmann = *Discotella glomerata* (Bachmann) Houk & Klee
Cyclotella kuetzingiana Thwaites = *Pantocsekiella kuetzingiana* (Thwaites) Kiss & Ács
Cyclotella kuetzingiana var. *planetophora* Fricke = *Pantocsekiella kuetzingiana* (Thwaites) Kiss & Ács
Cyclotella kuetzingiana var. *radiosa* Fricke = *Pantocsekiella kuetzingiana* (Thwaites) Kiss & Ács
Cyclotella meneghiniana Kützing = *Stephanocyclus meneghiniana* (Kützing) ? [legitimately transferred?]
Cyclotella meneghiniana var. *laevissima* (van Goor) Hustedt = *Stephanocyclus laevissima* (van Goor) ? [legitimately transferred?]
Cyclotella michiganiana Skvortzow = *Lindavia michiganiana* (Skvortzow) Nakov et al.
Cyclotella nana Hustedt = *Thalassiosira pseudonana* (Hustedt) Hasle & Heimdal
Cyclotella ocellata Pantocsek = *Pantocsekiella ocellata* (Pantocsek) Kiss & Ács
Cyclotella operculata sensu (Agardh) Kützing = *Cyclotella distinguenda* Hustedt [see Håkansson (1989)]
Cyclotella pseudostelligera Hustedt = *Discostella pseudostelligera* (Hustedt) Houk & Klee
- Cyclotella radiosa** (Grunow) Lemmermann
KS: Juracek (2003)
Cyclotella rotula Kützing = *Stephanodiscus rotula* (Kützing) Hendeý
Cyclotella stelligera Cleve & Grunow = *Discostella stelligera* (Cleve & Grunow) Houk & Klee
Cyclotella stelligeroides Hustedt = *Discostella stelligeroides* (Hustedt) Houk & Klee
- Cyclotella striata** (Kützing) Grunow
KS: McFarland et al. (1964)
OK: Koch (1975), Pfiester et al. (1979)
- Cyclotella striata** var. **bipunctata** Fricke
MO: Pamperl (1980)
- **Discostella glomerata** (Bachmann) Houk & Klee
Reported as:
Cyclotella glomerata Bachmann
KS: Powers (1969)

***Discostella pseudostelligera* (Hustedt) Houk & Klee**

Reported as:

Cyclotella pseudostelligera Hustedt

KS: Powers (1969), WPSS (1961–1963)

MO: Pamperl (1980), WPSS (1961–1963)

NE: WPSS (1961–1963)

OK: WPSS (1961–1963)

***Discostella stelligera* (Cleve & Grunow) Houk & Klee**

Reported as:

Cyclotella stelligera Cleve & Grunow

KS: Juracek (2003, 2008), Williams et al. (1979), Wujek et al. (1980)

MO: M.K. Morris et al. (1979*a*), Pamperl (1980)

NE: F.A. Morris et al. (1979)

OK: Hern et al. (1979), Pfister and Terry (1978), Pfister et al. (1979), Seyfer and Wilhm (1977), Troeger (1978), WPSS (1961–1963)

***Discostella stelligeroides* (Hustedt) Houk & Klee**

Reported as:

Cyclotella stelligeroides Hustedt

KS: Powers (1969)

- ▶ *Gallionella crenata* Ehrenberg = *Aulacoseira italica* f. *crenulata* (Ehrenberg) Ross in Hartley
- Gallionella distans* Ehrenberg = *Aulacoseira distans* (Ehrenberg) Simonsen
- Gallionella laevis* Ehrenberg = *Aulacoseira distans* (Ehrenberg) Simonsen

▶ ***Lindavia antiqua* (W. Smith) Nakov et al.**

Reported as:

Cyclotella antiqua W. Smith

NE: Elmore (1921)

OK: Leake (1945)

***Lindavia comta* (Ehrenberg) Nakov et al.**

Reported as:

Cyclotella comta (Ehrenberg) Kützing

KS: Curtis (1901), Wujek et al. (1980)

NE: Elmore (1921)

OK: Pfister et al. (1979)

***Lindavia michiganiana* (Skvortzow) Nakov et al.**

Reported as:

Cyclotella michiganiana Skvortzow

KS: ?Williams et al. (1979)

- ▶ *Lysigonium crenulatum* (Ehrenberg) Kuntze = *Aulacoseira italica* f. *crenulata* (Ehrenberg) Ross in Hartley
- Lysigonium distans* (Ehrenberg) Kuntze = *Aulacoseira distans* (Ehrenberg) Simonsen
- Lysigonium granulatum* (Ehrenberg) Kuntze = *Aulacoseira granulata* (Ehrenberg) Simonsen
- Lysigonium varians* (Agardh) De Toni = *Melosira varians* Agardh

▶ *Melosira ambigua* (Grunow) O. Müller = *Aulacoseira ambigua* (Grunow) Simonsen

Melosira binderana Kützing = *Stephandiscus binderanus* (Kützing) Krieger?

OK: WPSS (1961–1963) [probably misidentified; this species was introduced into Great Lakes region]

Melosira crenulata (Ehrenberg) Kützing = *Aulacoseira italica* f. *crenulata* (Ehrenberg) Ross in Hartley

Melosira distans (Ehrenberg) Kützing = *Aulacoseira distans* (Ehrenberg) Simonsen

Melosira distans var. *alpigena* Grunow = *Aulacoseira distans* var. *alpigena* (Grunow) Simonsen

Melosira distans var. *lirata* f. *lacustris* (Grunow) Bethage = *Aulacoseira distans* f. *lacustris* (Grunow) Simonsen

Melosira granulata (Ehrenberg) Ralfs = *Aulacoseira granulata* (Ehrenberg) Simonsen

Melosira granulata var. *angustissima* O. Müller = *Aulacoseira granulata* var. *angustissima* (O. Müller) Simonsen

Melosira granulata var. *angustissima* f. *curvata* Grunow = *Aulacoseira granulata* f. *curvata* (Hustedt) Simonsen

Melosira granulata var. *angustissima* f. *spiralis* Hustedt = *Aulacoseira granulata* f. *spiralis* (Hustedt) Czarnecki & Reinke

Melosira italica (Ehrenberg) Kützing = *Aulacoseira italica* (Ehrenberg) Simonsen

Melosira italica var. *tenuissima* (Grunow) O. Müller = *Aulacoseira italica* var. *tenuissima* (Grunow) Simonsen

***Melosira undulata* (Ehrenberg) Kützing**

OK: Wilhm et al. (1977)

***Melosira varians* Agardh**

CO: Cockerell (1888)

KS: Curtis (1901), McFarland et al. (1964), Williams et al. (1979), Wujek et al. (1980)

MO: M.K. Morris et al. (1979*a*), Pamperl (1980)

NE: Andersen and Walker (1920), F.A. Morris et al. (1979), Webber (1889, 1890), Williams (1962), WPSS (1961–1963, 1966)

OK: Hern et al. (1979), Koch (1975), Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978), WPSS (1961–1963)

Reported as:

Lysigonium varians (Agardh) De Toni

NE: Andersen and Walker (1920), Elmore (1921)

Cyclotella comensis Grunow in Van Heurck

KS: Juracek (2003)

► ***Pantocsekiella comensis* (Grunow) Kiss & Ács**

Reported as:

Cyclotella comensis Grunow in Van Heurck

KS: Juracek (2003)

***Pantocsekiella kuetzingiana* (Thwaites) Kiss & Ács**

Reported as:

Cyclotella kuetzingiana Thwaites

KS: Powers (1969)

OK: WPSS (1961–1963)

Cyclotella kuetzingiana var. *planetophora* Fricke

OK: Troeger (1978)

Cyclotella kuetzingiana var. *radiosa* Fricke

MO: Pamperl (1980)

***Pantocsekiella ocellata* (Pantocsek) Kiss & Ács**

Reported as:

Cyclotella ocellata Pantocsek

KS: Juracek (2003)

NE: Shinneman et al. (2010)

► ***Pleurosira laevis* (Ehrenberg) Compère**

KS: Harris and Eberle (2001)

NE: Johnson and Rosowski (1992)

Reported as:

Biddulphia laevis Ehrenberg

CO: WPSS (1961–1963)

KS: Boyer (1927*a*), Powers (1969), Reinke (1979*a*, 1982*b*), Wenke and Eberle (1986), Williams (1962), Wolle (1894), WPSS (1961–1963, 1966)

NE: Elmore (1921), Webber (1890), Wolle (1894)

OK: Koch (1975), Pfiester and Terry (1978), Wilhm et al. (1977)

► *Rhizosolenia* sp. = *Urosolenia* sp.? [*Rhizosolenia* (marine) is structurally distinct from *Urosolenia* (inland waters).]

***Rhizosolenia minima* Levander [= *Urosolenia*?]**

KS: Harris and Eberle (2001)

► ***Skeletonema potamos* (Weber) Hasle**

KS: Williams et al. (1979)

MO: M.K. Morris et al. (1979*a*)

OK: Hern et al. (1979)

► ***Stephanocyclus meneghiniana* (Kützing) ?** [legitimately transferred?]

Reported as:

Cyclotella meneghiniana Kützing

CO: M.K. Morris et al. (1979*b*), WPSS (1961–1963)

KS: Curtis (1901), Harris and Eberle (2001), Juracek (2003, 2008), Powers (1969), Wenke and Eberle (1986), Williams (1962, 1964), Williams et al. (1979), WPSS (1961–1963, 1966), Wujek et al. (1980)

MO: M.K. Morris et al. (1979*a*), Pamperl (1980), Williams (1962), WPSS (1961–1963, 1966)

NE: Andersen and Walker (1920), Elmore (1921), Hoagland et al. (1982), F.A. Morris et al. (1979), Roemer et al. (1984), Shinneman et al. (2010), Williams (1962, 1964), Williams and Scott (1962), WPSS (1961–1963, 1966)

OK: Cooper and Wilhm (1975), Hern et al. (1979), Koch (1975), Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983), Troeger and Menzel (1986), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962, 1964, 1972), Williams and Scott (1962), WPSS (1961–1963, 1966)

***Stephanocyclus laevis* (van Goor) ?** [legitimately transferred?]

Reported as:

Cyclotella meneghiniana var. *laevis* (van Goor) Hustedt

OK: Troeger (1978)

► ***Stephanodiscus alpinus* Hustedt**

KS: Powers (1969)

***Stephanodiscus astraea*?**

This species was reported from KS, MO, NE, and OK. However, taxonomic uncertainties in this group make it impossible to know which taxa actually were collected without reexamining the specimens. See Round (1981).

Stephanodiscus dubius (Fricke) Hustedt = *Cyclostephanos dubius* (Fricke) Round

***Stephanodiscus hantzschii* Grunow**

KS: Juracek (2003, 2008), Powers (1969), Williams (1962, 1964), Williams and Scott (1962), Williams et al. (1979), WPSS (1961–1963, 1966), Wujek (1965)

MO: Williams (1962, 1964, 1972), Williams and Scott (1962), WPSS (1961–1963, 1966)

NE: Hoagland et al. (1982), Roemer et al. (1984), Shinneman et al. (2010), Williams (1962, 1964), Williams and Scott (1962), WPSS (1961–1963, 1966)

OK: Pfiester et al. (1979), Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962), Williams and Scott (1962), WPSS (1961–1963, 1966)

***Stephanodiscus hantzschii* f. *tenuis* (Hustedt) Håkansson & Stoermer**

Reported as:

Stephanodiscus tenuis Hustedt

KS: Williams et al. (1979)

Stephanodiscus invisitatus Hohn & Hellerman = *Cyclostephanos invisitatus* (Hohn & Hellerman) Theriot, Stoermer, & Håkansson

***Stephanodiscus medius* Håkansson**

KS: Juracek (2008)

***Stephanodiscus minutulus* (Kützing) Cleve & Möller**

NE: Shinneman et al. (2010)

Reported as:

Stephanodiscus minutula (Kützing) Round

NE: Roemer et al. (1984)

Stephanodiscus rotula var. *minutula* (Kützing) Ross & Sims

NE: Hoagland et al. (1982)

***Stephanodiscus niagarae* Ehrenberg**

KS: Juracek (2003, 2008), WPSS (1961–1963)

MO: M.K. Morris et al. (1979*a*), WPSS (1961–1963)

NE: Elmore (1921), F.A. Morris et al. (1979), Shinneman et al. (2010), Williams (1962), WPSS (1961–1963, 1966)

***Stephanodiscus parvus* Stoermer & Håkansson**

NE: Shinneman et al. (2010)

***Stephanodiscus rotula* (Kützing) Hendey**

Reported as:

Cyclotella rotula Kützing

KS: Curtis (1901)

Stephanodiscus tenuis Hustedt = *Stephanodiscus hantzschii* f. *tenuis* (Hustedt) Håkansson & Stoermer

► ***Stephanopyxis broschii* Grunow**

OK: Pfiester and Terry (1978)

► ***Thalassiosira lacustris* (Ehrenberg) Hasle**

Reported as:

Coscinodiscus lacustris Grunow

NE: Elmore (1921)

OK: Wilhm et al. (1977)

Thalassiosira fluviatilis Hustedt = *Thalassiosira weisflogii* (Grunow) Fryxell & Hasle

***Thalassiosira pseudonana* (Hustedt) Hasle & Heimdal**

Reported as:

Cyclotella nana Hustedt

KS: Powers (1969)

***Thalassiosira weisflogii* (Grunow) Fryxell & Hasle**

Reported as:

Thalassiosira fluviatilis Hustedt

KS: Wujek et al. (1980)

OK: Koch (1975)

► ***Urosolenia* sp.** [now includes inland species; structurally distinct marine species retained in *Rhizosolenia*]

Reported as:

Rhizosolenia sp.

OK: Hern et al. (1979)

Also see *Rhizosolenia minima* Levander

PENNATE DIATOMS (without raphes) — Fragilariophyceae

Names in **bold print** are current names for taxa reported from the central United States. Names in standard (nonbold) print are synonyms for the currently accepted names listed after them. References that reported a taxon or its synonyms are listed under the currently accepted name. The names of the states are abbreviated with their postal codes: CO = eastern Colorado, KS = Kansas, MO = western Missouri, NE = Nebraska, OK = Oklahoma. A “▶” marks the first name in a genus.

▶ ***Asterionella formosa* Hassall**

KS: Powers (1969), Reinke (1979*a*), Williams et al. (1979), WPSS (1961–1963)

MO: M.K. Morris et al. (1979*a*), Pamperl (1980), Williams (1962), WPSS (1961–1963, 1966)

NE: Hoagland et al. (1982), F.A. Morris et al. (1979), Roemer et al. (1984), Shinneman et al. (2010), Williams (1962, 1964, 1972), WPSS (1961–1963, 1966)

OK: Hern et al. (1979), Pfiester et al. (1979), Wilhm et al. (1977), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1966)

***Asterionella formosa* var. *gracillima* (Hantzsch) Grunow**

KS: Williams et al. (1979)

▶ ***Belonastrum berolinensis* (Lemmermann) Round & Maidana**

Reported as:

Staurosirella berolinensis (Lemmermann) Lange-Bertalot

NE: Shinneman et al. (2010)

▶ ***Catacombas gaillonii* (Bory) Williams & Round**

Reported as:

Synedra gaillonii (Bory) Ehrenberg

KS: Czarnecki and Reinke (1981)

OK: Kennedy and Pfiester (1984)

▶ *Ceratoneis arcus* (Ehrenberg) Kützing = *Hannaea arcus* (Ehrenberg) Patrick

▶ ***Ctenophora pulchella* (Ralfs ex Kützing) Williams & Round**

KS: Harris and Eberle (2001)

Reported as:

Synedra pulchella Ralfs ex Kützing

KS: Curtis (1901), Wenke and Eberle (1986)

NE: Elmore (1921), Hoagland et al. (1982)

Plains States: Patrick and Reimer (1966)

Synedra pulchella f. *major* Grunow

KS: Curtis (1901)

Synedra pulchella var. *smithii* (Ralfs) Grunow

NE: Webber (1890) [and parenthetically as *Synedra acicularis* W. Smith]

***Ctenophora pulchella* var. *lacerata* (Hustedt) Bukhtiyarova**

Reported as:

Synedra pulchella var. *lacerata* Hustedt

NE: Hoagland et al. (1982), Patrick and Reimer (1966)

***Ctenophora pulchella* var. *lanceolata* (O'Meara) Bukhtiyarova**

Reported as:

Synedra pulchella var. *lanceolata* O'Meara

KS: Czarnecki and Reinke (1981) [see Eberle 1981:131]

NE: Patrick and Reimer (1966)

▶ ***Diatoma elongata* (Lyngbye) Agardh**

Reported as:

Diatoma elongatum (Lyngbye) Agardh

NE: F.A. Morris et al. (1979), Williams (1962), WPSS (1961–1963, 1966)

Diatoma tenue var. *elongatum* Lyngbye

CO: M.K. Morris et al. (1979*b*)

Plains States: Patrick and Reimer (1966)

***Diatoma hiemalis* [= *hyemalis*] (Roth) Heiberg**

Reported as:

Diatoma hiemale (Roth) Heiberg

KS: Reinke (1979*a*)

OK: Wilhm et al. (1977)

Plains States: Patrick and Reimer (1966)

Odontidium hiemale (Roth) Kützing

NE: Elmore (1921)

Diatoma tenue var. *elongatum* Lyngbye = *Diatoma elongatum* (Lyngbye) Agardh

***Diatoma tenue* Agardh**

Reported as:

Diatoma tenue Agardh

KS: Curtis (1901), Patrick and Reimer (1966)

OK: Troeger (1983)

***Diatoma vulgare* Bory**

Reported as:

Diatoma vulgare Bory

CO: WPSS (1961–1963)

KS: Branson (1966), Harris and Eberle (2001), Powers (1969), Reinke (1979*a*, 1985), Wenke and Eberle (1986), Williams et al. (1979), Wujek et al. (1980)

MO: Pamperl (1980), WPSS (1961–1963)

NE: Hoagland et al. (1982), F.A. Morris et al. (1979), Roemer et al. (1984), Williams (1962, 1964, 1972), Williams and Scott (1962), WPSS (1961–1963, 1966)

OK: Hern et al. (1979), Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978), WPSS (1961–1963)

Plains States: Patrick and Reimer (1966)

Odontidium vulgare (Bory) Elmore

NE: Elmore (1921)

Tetracyclus rubestris (Braun ex Rabenhorst) Grunow [misidentification?]

NE: Elmore (1921)

***Diatoma vulgare* var. *brevis* Grunow**

Reported as:

Diatoma vulgare var. *breve* Grunow

Plains States: Patrick and Reimer (1966)

► *Fragilaria brevistriata* Grunow = *Pseudostaurosira brevistriata* (Grunow) Williams & Round

Fragilaria brevistriata var. *inflata* (Pantocsek) Hustedt = *Pseudostaurosira brevistriata* var. *inflata* (Pantocsek) Edlund

***Fragilaria capucina* Desmazières**

KS: Williams (1962), WPSS (1961–1963, 1966), Wujek et al. (1980)

MO: Williams (1962), WPSS (1961–1963, 1966)

NE: Andersen and Walker (1920), Elmore (1921), F.A. Morris et al. (1979), Shinneman et al. (2010) as *F. capucina sensu lato*, Williams (1962), WPSS (1961–1963, 1966)

OK: Koch and Risser (1974), Pfiester et al. (1979), Wilhm et al. (1977)

Plains States: Patrick and Reimer (1966)

Reported as:

Fragilaria diophthalma (Ehrenberg) Ehrenberg [possibly = *F. capucina*; Patrick and Reimer 1966:131]

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

Fragilaria rhabdosoma Ehrenberg [possibly = *F. capucina*; Patrick and Reimer 1966:131]

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

Fragilaria capucina var. *mesolepta* Rabenhorst = *Fragilaria mesolepta* Rabenhorst

Fragilaria construens (Ehrenberg) Grunow = *Staurosira construens* Ehrenberg

Fragilaria construens var. *binodis* (Ehrenberg) Grunow = *Staurosira construens* var. *binodis* (Ehrenberg) Hamilton

Fragilaria construens var. *venter* (Ehrenberg) Grunow = *Staurosira construens* var. *venter* (Ehrenberg) Hamilton

***Fragilaria crotonensis* Kitton**

CO: M.K. Morris et al. (1979*b*)

KS: Williams (1962), Williams et al. (1979), WPSS (1961–1963, 1966), Wujek et al. (1980)

MO: M.K. Morris et al. (1979*a*), Pamperl (1980), Williams (1962), WPSS (1961–1963, 1966)

NE: F.A. Morris et al. (1979), Shinneman et al. (2010), Williams (1962, 1964), WPSS (1961–1963, 1966)

OK: Cooper and Wilhm (1975), Hern et al. (1979), Wilhm et al. (1977), Wilhm et al. (1978), WPSS (1961–1963)

Plains States: Patrick and Reimer (1966)

Reported as:

Synedra crotonensis (Kitton) Cleve & Möller

KS: Curtis (1901)

Fragilaria diophthalma (Ehrenberg) Ehrenberg = *Fragilaria capucina* Desmazières?

Fragilaria elliptica f. *minor* Grunow = *Staurosira elliptica* (Schumann) Williams & Round

Fragilaria harrisonii (W. Smith) Grunow = *Staurosirella leptostauron* (Ehrenberg) Williams & Round

***Fragilaria intermedia* Grunow**

KS: Curtis (1901), Powers (1969), Williams et al. (1979)

NE: ?F.A. Morris et al. (1979)

Fragilaria lapponica Grunow = *Staurosirella lapponica* (Grunow) Williams & Round

Fragilaria leptostauron (Ehrenberg) Hustedt = *Staurosirella leptostauron* (Ehrenberg) Williams & Round

***Fragilaria mesolepta* Rabenhorst**

Reported as:

Fragilaria capucina var. *mesolepta* Rabenhorst

KS: Juracek (2003), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982), Shinneman et al. (2010)

OK: Koch and Risser (1974), Troeger and Menzel (1986)

Plains States: Patrick and Reimer (1966)

Fragilaria mutabilis (W. Smith) Grunow = *Staurosirella pinnata* (Ehrenberg) Williams & Round

Fragilaria pinnata Ehrenberg = *Staurosirella pinnata* (Ehrenberg) Williams & Round

Fragilaria pinnata var. *intercedens* (Grunow) Hustedt = *Staurosirella pinnata* var. *intercedens* (Grunow) Hamilton

***Fragilaria radians* (Kützing) Williams & Round**

Reported as:

Synedra acus var. *radians* (Kützing) Hustedt

MO: Pamperl (1980)

Synedra radians Kützing

MO: Pamperl (1980)

NE: Elmore (1921), Hoagland et al. (1982), Roemer et al. (1984)

OK: Pfiester et al. (1979), Troeger (1978)

Plains States: Patrick and Reimer (1966)

Fragilaria rhabdosoma Ehrenberg = *Fragilaria capucina* Ehrenberg?

Fragilaria rostrata Ehrenberg = ?

OK: ?Ehrenberg (1856)

Fragilaria turgens Ehrenberg = ?

KS: Curtis (1901)

***Fragilaria vaucheriae* (Kützing) Petersen**

KS: Harris and Eberle (2001), Juracek (2008), Powers (1969), Wenke and Eberle (1986), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982), Roemer et al. (1984), Rosowski et al. (1986), Shinneman et al. (2010)

OK: Pfiester et al. (1979)

Plains States: Patrick and Reimer (1966)

Reported as:

Synedra vaucheriae (Kützing) Kützing

OK: Williams (1962), WPSS (1961–1963, 1966)

***Fragilaria vaucheriae* var. *capitellata* (Grunow) Patrick**

Reported as:

Synedra vaucheriae var. *capitellata* (Grunow) Cleve

OK: Pfiester and Terry (1978)

Fragilaria virescens Ralfs = *Fragilariforma virescens* (Ralfs) Williams & Round

Fragilaria virescens var. *mesolepta* (Rabenhorst) Schönfelt = *Fragilariforma virescens* var. *mesolepta* (Rabenhorst) Andersen, Stoermer, & Kreis

► ***Fragilariforma virescens* (Ralfs) Williams & Round**

Reported as:

Fragilaria virescens Ralfs

KS: Wujek (1965)

NE: Elmore (1921)

OK: Pfister et al. (1979)

Plains States: Patrick and Reimer (1966)

***Fragilariforma virescens* var. *mesolepta* (Rabenhorst) Andersen, Stoermer, & Kreis**

Reported as:

Fragilaria virescens var. *mesolepta* (Rabenhorst) Schönfeldt

KS: Wujek (1965)

► ***Hannaea arcus* (Ehrenberg) Patrick**

Plains States: Patrick and Reimer (1966)

Reported as:

Ceratoneis arcus (Ehrenberg) Kützing

KS: WPSS (1961–1963)

► ***Martyana martyi* (Héribaud) Round = *Staurosirella martyi* (Héribaud.) Morales & Manoylov**

► ***Meridion circulare* (Greville) Agardh**

KS: Curtis (1901), Powers (1969), Wenke and Eberle (1986), Wolle (1889)

NE: Elmore (1921), Rosowski et al. (1986), Shinneman et al. (2010), Webber (1890)

OK: Koch and Risser (1974), Pfister et al. (1979), Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1966)

***Meridion circulare* var. *constrictum* (Ralfs) Brun**

OK: Pfister et al. (1979)

► ***Odontidium hiemale* (Roth) Kützing = *Diatoma hiemale* (Roth) Heiberg**

Odontidium vulgare (Bory) Elmore = *Diatoma vulgare* Bory

► ***Opephora martyi* Héribaud = *Staurosirella martyi* (Héribaud) Morales & Manoylov**

► ***Punctatstriata lancettula* (Schumann) Hamilton & Siver**

Reported as:

Staurosirella punctata var. *lancettula* (Schumann) Siver

NE: Shinneman et al. (2010)

► ***Pseudostaurosira brevistriata* (Grunow) Williams & Round**

NE: Shinneman et al. (2010) as *P. brevistriata sensu lato* and *P. brevistriata* var. *capitata*

Reported as:

Fragilaria brevistriata Grunow

KS: Wenke and Eberle (1986), Wujek (1965)

Plains States: Patrick and Reimer (1966)

***Pseudostaurosira brevistriata* var. *inflata* (Pantocsek) Edlund**

Reported as:

Fragilaria brevistriata var. *inflata* (Pantocsek) Hustedt

KS: Wenke and Eberle (1986), Wujek et al. (1980)

NE: Hoagland et al. (1982), Patrick and Reimer (1966)

***Pseudostaurosira parasitica* (W. Smith) Morales**

Reported as:

Synedra parasitica (W. Smith) Hustedt

KS: Wujek et al. (1980)

MO: Pamperl (1980)

OK: Koch and Risser (1974)

Plains States: Patrick and Reimer (1966)

***Pseudostaurosira parasitica* var. *subconstricta* (Grunow) Morales**

Reported as:

Synedra parasitica var. *subconstricta* (Grunow) Hustedt

KS: Wujek et al. (1980)

OK: Koch and Risser (1974)

► ***Sceptroneis fibula* (Brébisson ex Kützing) Elmore = *Peronia fibula* (Brébisson ex Kützing) Ross**

Sceptroneis pacifica (Grunow) Elmore *sensu* Elmore (1921) = *Staurosirella martyi* (Héribaud) Morales

► ***Staurosira construens* Ehrenberg**

NE: Ehrenberg (1856), Shinneman et al. (2010) as *S. construens sensu lato*

Reported as:

Fragilaria construens (Ehrenberg) Grunow

CO: WPSS (1961–1963)

KS: Williams (1962, 1964), Williams and Scott (1962), WPSS (1961–1963, 1966)

MO: Pamperl (1980), Williams (1962, 1964), Williams and Scott (1962), WPSS (1961–1963, 1966)

NE: Andersen and Walker (1920), Elmore (1921), F.A. Morris et al. (1979), Shinneman et al. (2010), Williams (1964, 1972), WPSS (1961–1963)

OK: Wilhm et al. (1977), WPSS (1961–1963)

Plains States: Patrick and Reimer (1966)

***Staurosira construens* var. *binodis* (Ehrenberg) Hamilton**

NE: Shinneman et al. (2010)

Reported as:

Fragilaria binodis Ehrenberg

NE: Shinneman et al. (2010)

Fragilaria construens var. *binodis* (Ehrenberg) Grunow

KS: Wujek et al. (1980)

NE: Andersen and Walker (1920), Patrick and Reimer (1966)

***Staurosira construens* var. *venter* (Ehrenberg) Hamilton**

KS: Harris and Eberle (2001)

NE: Shinneman et al. (2010)

Reported as:

Fragilaria construens var. *venter* (Ehrenberg) Grunow

KS: Wenke and Eberle (1986), Wujek et al. (1980)

MO: Pamperl (1980)

***Staurosira elliptica* (Schumann) Williams & Round**

Reported as:

Fragilaria elliptica f. *minor* Grunow

KS: Curtis (1901)

► ***Staurosirella dubia* (Grunow) Morales**

NE: Morales and Manoylov (2006)

***Staurosirella lapponica* (Grunow) Williams & Round**

Reported as:

Fragilaria lapponica Grunow

OK: Patrick and Reimer (1966)

***Staurosirella leptostauron* (Ehrenberg) Williams & Round**

NE: Morales and Manoylov (2006)

Reported as:

Fragilaria harrisonii (W. Smith) Grunow

NE: Elmore (1921), Webber (1889, 1890)

Fragilaria leptostauron (Ehrenberg) Hustedt

NE: F.A. Morris et al. (1979)

OK: Koch and Risser (1974), Wilhm et al. (1977)

Plains States: Patrick and Reimer (1966)

***Staurosirella martyi* (Héribaude) Morales & Manoylov**

NE: Morales and Manoylov (2006)

Reported as:

Martyana martyi (Héribaude) Round

KS: Harris and Eberle (2001)

Opephora martyi Héribaude

KS: WPSS (1961–1963), Wujek et al. (1980)

MO: WPSS (1961–1963)

NE: WPSS (1961–1963)

OK: Wilhm et al. (1977), Wilhm et al. (1978), WPSS (1961–1963)

Plains States: Patrick and Reimer (1966)

Sceptroneis pacifica (Grunow) Elmore

NE: Andersen and Walker (1920), Elmore (1921)

***Staurosirella pinnata* (Ehrenberg) Williams & Round**

Reported as:

Fragilaria mutabilis (W. Smith) Grunow

KS: Curtis (1901)

NE: Andersen and Walker (1920), Elmore (1921)

Fragilaria pinnata Ehrenberg

KS: WPSS (1961–1963), Wujek (1965)

MO: Pamperl (1980), WPSS (1961–1963)

NE: Ehrenberg (1856), Roemer et al. (1984), WPSS (1961–1963)

OK: Ehrenberg (1856), Pfiester et al. (1979), Wilhm et al. (1977), WPSS (1961–1963)

Plains States: Patrick and Reimer (1966)

***Staurosirella pinnata* var. *intercedens* (Grunow) Hamilton**

Reported as:

Fragilaria pinnata var. *intercedens* Grunow

OK: Pfiester et al. (1979)

Plains States: Patrick and Reimer (1966)

***Staurosirella subcapitata* (Frenguelli) Morales**

NE: Morales and Manoylov (2006)

► *Striatella fenestrata* (Lyngbye) Kuntze = *Tabellaria fenestrata* (Lyngbye) Kützing

Striatella flocculosa (Roth) Kuntze = *Tabellaria flocculosa* (Roth) Kützing

► ***Synedra acus* Kützing**

KS: Curtis (1901), Williams et al. (1979), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982), F.A. Morris et al. (1979), Roemer et al. (1984), Shinneman et al. (2010), Webber (1890)

OK: Hern et al. (1979), Pfiester et al. (1979), WPSS (1961–1963)

Plains States: Patrick and Reimer (1966)

Reported as:

Synedra tenuissima Kützing

NE: Elmore (1921)

Synedra acus var. *angustissima* (Grunow) Van Heurck = *Ulnaria delicatissima* var. *angustissima* (Grunow) Aboal & Silva

Synedra acus var. *radians* (Kützing) Hustedt = *Fragilaria radians* (Kützing) Williams & Round

Synedra acuta Ehrenberg = ?

OK: Ehrenberg (1856)

***Synedra amphicephala* Kützing**

NE: Elmore (1921)

Plains States: Patrick and Reimer (1966)

Synedra capitata Ehrenberg = *Ulnaria capitata* (Ehrenberg) Compère

Synedra crotonensis (Kitton) Cleve & Möller = *Fragilaria crotonensis* Kitton

***Synedra cyclopum* Brutschy**

OK: Kennedy and Pfiester (1984)

Synedra danica Kützing = *Ulnaria danica* Kützing

Synedra delicatissima W. Smith = *Ulnaria delicatissima* (W. Smith) Aboal & Silva

Synedra delicatissima var. *angustissima* Grunow = *Ulnaria delicatissima* var. *angustissima* (Grunow) Aboal & Silva

Synedra entomon Ehrenberg = *Nitzschia entomon* (Ehrenberg) Ralfs

***Synedra famelica* Kützing**

Reported as:

Synedra minuscula Grunow

KS: Williams et al. (1979)

MO: Pamperl (1980)

OK: Koch (1975), Pfiester et al. (1979)

Synedra familiaris Kützing = *Synedra rumpens* var. *familiaris* (Kützing) Hustedt

Synedra fasciculata (Agardh) Kützing = *Tabularia fasciculata* (Agardh) Williams & Round

Synedra fasciculata var. *truncata* (Greville) Patrick = *Tabularia fasciculata* (Agardh) Williams & Round

***Synedra filiformis* var. *exilis* A. Cleve**

NE: Roemer et al. (1984)

OK: Troeger (1983)

Synedra flexuosa = ?

OK: Ehrenberg (1856)

Synedra gaillonii (Bory) Ehrenberg = *Catombas gaillonii* (Bory) Williams & Round

***Synedra goulardi* Brébisson**

KS: Wenke and Eberle (1985)

MO: Pamperl (1980)

OK: Pfiester et al. (1979)

***Synedra incisa* Boyer**

NE: Patrick and Reimer (1966)

Synedra lanceolata Kützing = *Ulnaria lanceolata* (Kützing) Compère

Synedra minuscula Grunow = *Synedra famelica* Kützing

***Synedra nana* Meister**

OK: WPSS (1961–1963)

Synedra parasitica (W. Smith) Hustedt = *Pseudostaurosira parasitica* (W. Smith) Morales

Synedra parasitica var. *subconstricta* (Grunow) Hustedt = *Pseudostaurosira parasitica* var. *subconstricta* (Grunow) Morales

Synedra pulchella Ralfs ex Kützing = *Ctenophora pulchella* (Ralfs ex Kützing) Williams & Round

Synedra pulchella f. *major* Grunow = *Ctenophora pulchella* (Ralfs ex Kützing) Williams & Round

Synedra pulchella var. *lacerata* Hustedt = *Ctenophora pulchella* var. *lacerata* (Hustedt) Bukhtiyarova

Synedra pulchella var. *lanceolata* O'Meara = *Ctenophora pulchella* var. *lanceolata* (O'Meara) Bukhtiyarova

Synedra pulchella var. *smithii* (Ralfs) Grunow = *Ctenophora pulchella* (Ralfs ex Kützing) Williams & Round

Synedra radians Kützing = *Fragilaria radians* (Kützing) Williams & Round

***Synedra rumpens* Kützing**

KS: Williams et al. (1979)

MO: Pamperl (1980)

NE: Andersen and Walker (1920), F.A. Morris et al. (1979)

OK: Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983), Wilhm et al. (1977), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1966)

***Synedra rumpens* var. *familiaris* (Kützing) Hustedt**

KS: Wenke and Eberle (1985)

MO: Pamperl (1980)

OK: Troeger (1978)

Plains States: Patrick and Reimer (1966)

Reported as:

Synedra familiaris Kützing

KS: Curtis (1901)

NE: Elmore (1921)

***Synedra rumpens* var. *fragilarioides* Grunow**

MO: Pamperl (1980)

NE: Patrick and Reimer (1966)

OK: Troeger (1978)

***Synedra rumpens* var. *meneghiniana* Grunow**

OK: Troeger (1978)

Synedra spectabilis Ehrenberg = *Hantzschia spectabilis* (Ehrenberg) Hustedt

Synedra splendens Kützing = *Ulnaria ulna* var. *splendens* (Kützing) Aboal

***Synedra superba* Kützing**

KS: Curtis (1901)

Synedra tabulata (Agardh) Kützing = *Tabularia tabulata* (Agardh) Snoeijs

***Synedra tenera* W. Smith**

NE: Shinneman et al. (2010)

OK: Troeger (1978, 1983)

Synedra tenuissima Kützing = *Synedra acus* Kützing

Synedra ulna (Nitzsch) Ehrenberg = *Ulnaria ulna* (Nitzsch) Compère

Synedra ulna var. *aequalis* (Kützing) Brun = *Ulnaria ulna* var. *aequalis* (Kützing) Aboal

Synedra ulna var. *ampbirhynchus* (Ehrenberg) Grunow = *Ulnaria ampbirhynchus* (Ehrenberg) Compère & Bukhtiyarova

***Synedra ulna* var. *chaseana* Thomas [= *Ulnaria ulna* var. *chaseana* (Thomas)?]**

OK: Pfiester et al. (1979)

Synedra ulna var. *contracta* Østrup = *Ulnaria contracta* (Østrup) Morales & Vis

Synedra ulna var. *danica* (Kützing) Van Heurck = *Ulnaria danica* Kützing

Synedra ulna var. *longissima* (W. Smith) Brun = *Ulnaria biceps* (Kützing) Compère

Synedra ulna var. *oxyrhynchus* (Kützing) O'Meara = *Ulnaria oxyrhynchus* (Kützing) Aboal

Synedra ulna var. *ramesi* (Héribaud) Hustedt = *Ulnaria ramseii* (Héribaud) Ohtsuka

Synedra ulna var. *spatulifera* Hustedt = *Ulnaria ulna* var. *spatulifera* (Grunow) Aboal

Synedra ulna var. *splendens* (Kützing) Van Heurck = *Ulnaria ulna* var. *splendens* (Nitzsch) Aboal

Synedra ulna var. *subaequalis* (Grunow) Van Heurck = *Ulnaria ulna* var. *subaequalis* (Grunow) Aboal

Synedra ulna var. *vitrea* (Bory ex Kützing) Van Heurck = *Ulnaria amphirhynchus* (Ehrenberg) Compère & Bukhtiyarova
Synedra vaucheriae (Kützing) Kützing = *Fragilaria vaucheriae* (Kützing) Petersen
Synedra vaucheriae var. *capitellata* (Grunow) Cleve = *Fragilaria vaucheriae* var. *capitellata* (Grunow) Patrick

► ***Tabellaria fenestrata* (Lyngbye) Kützing**

KS: Reinke (1982*a*)

OK: Hern et al. (1979), WPSS (1961–1963)

Reported as:

Striatella fenestrata (Lyngbye) Kuntze

NE: Elmore (1921)

***Tabellaria flocculosa* (Roth) Kützing**

OK: Pfiester et al. (1979)

Plains States: Patrick and Reimer (1966)

Reported as:

Striatella flocculosa (Roth) Kuntze

NE: Elmore (1921)

► ***Tabularia fasciculata* (Agardh) Williams & Round**

KS: Harris and Eberle (2001)

Reported as:

Synedra fasciculata (Agardh) Kützing

KS: Wenke and Eberle (1986), Wujek et al. (1980)

OK: Koch (1975), Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977)

Plains States: Patrick and Reimer (1966)

Synedra fasciculata var. *truncata* (Greville) Patrick

KS: Wujek et al. (1980)

MO: Pamperl (1980)

***Tabularia tabulata* (Agardh) Snoeijs**

KS: Harris and Eberle (2001)

Reported as:

Synedra tabulata (Agardh) Kützing

NE: Elmore (1921)

OK: Wilhm et al. (1977)

► ***Tetracyclus lacustris* Ralfs**

NE: Andersen and Walker (1920), Elmore (1921), Patrick and Reimer (1966)

Tetracyclus rupestris (Braun ex Rabenhorst) Grunow = misidentified *Diatoma vulgaris* Bory?

► ***Ulnaria amphirhynchus* (Ehrenberg) Compère & Bukhtiyarova**

Reported as:

Synedra ulna var. *amphirhynchus* (Ehrenberg) Grunow

OK: Pfiester et al. (1979)

Synedra ulna var. *vitrea* (Bory ex Kützing) Van Heurck

KS: Curtis (1901)

***Ulnaria biceps* (Kützing) Compère**

Reported as:

Synedra ulna var. *longissima* (W. Smith) Brun

KS: Curtis (1901)

Plains States: Patrick and Reimer (1966)

***Ulnaria capitata* (Ehrenberg) Compère**

Reported as:

Synedra capitata Ehrenberg

KS: Czarnecki and Reinke (1981)

NE: Elmore (1921)

Plains States: Patrick and Reimer (1966)

***Ulnaria contracta* (Østrup) Morales & Vis**

Reported as:

Synedra ulna var. *contracta* Østrup

OK: Pfiester et al. (1979)

***Ulnaria danica* Kützing**

Reported as:

Synedra danica Kützing

KS: Curtis (1901)

Synedra ulna var. *danica* (Kützing) Van Heurck

KS: Harris and Eberle (2001), Wujek (1965)

NE: Shinneman et al. (2010)

Plains States: Patrick and Reimer (1966)

***Ulnaria delicatissima* (W. Smith) Aboal & Silva**

Reported as:

Synedra delicatissima W. Smith

KS: ?Harris and Eberle (2001), Wujek et al. (1980)

MO: M.K. Morris et al. (1979*a*), Pamperl (1980)

OK: Hern et al. (1979)

***Ulnaria delicatissima* var. *angustissima* (Grunow) Aboal & Silva**

Reported as:

Synedra acus var. *angustissima* (Grunow) Van Heurck

OK: Troeger (1978, 1983)

Synedra delicatissima var. *angustissima* Grunow

KS: Juracek (2008)

MO: M.K. Morris et al. (1979*a*), Pamperl (1980)

OK: Hern et al. (1979), Troeger and Menzel (1986)

Plains States: Patrick and Reimer (1966)

***Ulnaria lanceolata* (Kützing) Compère**

Reported as:

Synedra lanceolata Kützing

KS: Curtis (1901)

***Ulnaria oxyrhynchus* (Kützing) Aboal**

Reported as:

Synedra ulna var. *oxyrhynchus* (Kützing) O'Meara

NE: Shinneman et al. (2010)

***Ulnaria ramseii* (Héribaude) Ohtsuka**

Reported as:

Synedra ulna var. *ramseii* (Héribaude) Hustedt

MO: Pamperl (1980)

Plains States: Patrick and Reimer (1966)

***Ulnaria ulna* (Nitzsch) Compère**

Reported as:

Synedra ulna (Nitzsch) Ehrenberg

CO: Williams (1964), WPSS (1961–1963)

KS: Curtis (1901), Harris and Eberle (2001), McFarland et al. (1964), Powers (1969), Reinke (1985), Wenke and Eberle (1986), Williams (1962, 1964, 1972), Williams and Scott (1962), Williams et al. (1979), Wolle (1889), WPSS (1961–1963, 1966), Wujek et al. (1980)

MO: Pamperl (1980), Williams (1962), Williams (1964), WPSS (1961–1963), WPSS (1966)

NE: Andersen and Walker (1920), Elmore (1921), F.A. Morris et al. (1979), Roemer et al. (1984), Rosowski et al. (1986), Shinneman (2010), Webber (1889, 1890), Williams (1964), WPSS (1961–1963)

OK: Cooper and Wilhm (1975), Ehrenberg (1856), Hern et al. (1979), Koch (1975), Koch and Risser (1974), Leake (1945), Pfister et al. (1979), Seyfer and Wilhm (1977), Troeger (1978), Troeger and Menzel (1986), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962, 1964, 1972), Willson and Forest (1957), WPSS (1961–1963, 1966)

Plains States: Patrick and Reimer (1966)

***Ulnaria ulna* var. *aequalis* (Kützing) Aboal**

Reported as:

Synedra ulna var. *aequalis* (Kützing) Brun

OK: Pfister et al. (1979)

***Ulnaria ulna* var. *spathulifera* (Grunow) Aboal**

Reported as:

Synedra ulna var. *spathulifera* Hustedt

KS: Wujek et al. (1980)

***Ulnaria ulna* var. *splendens* (Kützing) Aboal**

Reported as:

Synedra splendens Kützing

KS: Branson (1966)

Synedra ulna var. *splendens* (Kützing) Van Heurck

NE: Webber (1890)

***Ulnaria ulna* var. *subaequalis* (Grunow) Aboal**

Reported as:

Synedra ulna var. *subaequalis* (Grunow) Van Heurck

Plains States: Patrick and Reimer (1966)

PENNATE DIATOMS (with raphes) — Bacillariophyceae

Names in **bold print** are current names for taxa reported from the central United States. Names in standard (nonbold) print are synonyms for the currently accepted names listed after them. References that reported a taxon or its synonyms are listed under the currently accepted name. The names of the states are abbreviated with their postal codes: CO = eastern Colorado, KS = Kansas, MO = western Missouri, NE = Nebraska, OK = Oklahoma. A “▶” marks the first name in a genus.

- ▶ *Achnanthes affinis* Grunow = *Achnantheidium affine* (Grunow) Czarnecki
Achnanthes biasoletiana Grunow = *Achnantheidium pyrenaicum* (Grunow) Kobayasi
Achnanthes breviceps var. *intermedia* (Kützing) Cleve = *Achnantheidium breviceps* var. *intermedium* (Kützing) Cleve
***Achnanthes chlidanos* Hohn & Hellerman**
MO: Pamperl (1980)
Achnanthes clevei Grunow = *Karayevia clevei* (Grunow) Bukhtiyarova
***Achnanthes coarctata* (Brébisson) Grunow**
OK: Pfister et al. (1979)
Achnanthes deflexa Reimer = *Achnantheidium deflexum* (Reimer) Kingston
Achnanthes exigua Grunow = *Achnantheidium exiguum* (Grunow) Czarnecki
Achnanthes exigua var. *constricta* (Grunow) Hustedt = *Achnantheidium exiguum* var. *constrictum* (Grunow) Andersen, Stoermer, & Kreis
Achnanthes exigua var. *heterovalva* Krasske = *Achnantheidium exiguum* var. *heterovalvum* (Krasske) Czarnecki
Achnanthes excilis Kützing = *Achnantheidium exile* (Kützing) Heiberg
***Achnanthes gibberula* Grunow**
OK: Pfister et al. (1979)
Achnanthes hauckiana Grunow = *Planothidium haukianum* (Grunow) Bukhtiyarova
***Achnanthes hudsonis* Grunow**
KS: Curtis (1901)
Achnanthes hungarica (Grunow) Grunow = *Lemnicola hungarica* (Grunow) Round & Basson
***Achnanthes inflata* (Kützing) Grunow**
OK: Pfister et al. (1979), Wilhm et al. (1977)
Achnanthes lanceolata Brébisson ex Kützing = *Planothidium lanceolatum* (Brébisson) Lange-Bertalot
Achnanthes lanceolata var. *dubia* Grunow = *Planothidium dubium* (Grunow) Round & Bukhtiyarova
Achnanthes lanceolata var. *haynaldii* (Schaarschmidt) Cleve = *Planothidium haynaldii* (Schaarschmidt) Lange-Bertalot
Achnanthes lapponica var. *ninckei* (Guermeur & Manguin) Reimer = *Eucoconeis lapponica* var. *ninckei* (Guermeur & Manguin) Edlund
Achnanthes linearis (W. Smith) Grunow = *Achnantheidium lineare* W. Smith
Achnanthes linearis f. *curta* H.L. Sm. = *Achnantheidium lineare* W. Smith
Achnanthes microcephala (Kützing) Grunow = *Achnantheidium microcephalum* Kützing
Achnanthes minutissima Kützing = *Achnantheidium minutissimum* (Kützing) Czarnecki
Achnanthes minutissima f. *curta* Grunow = *Achnantheidium minutissimum* (Kützing) Czarnecki
Achnanthes pinnata Hustedt = *Platessa conspicua* (A. Mayer) Lange-Bertalot
Achnanthes trinodis (W. Smith) Grunow = *Achnantheidium trinodis* Arnott ex Ralfs
- ▶ ***Achnantheidium affine* (Grunow) Czarnecki**
Reported as:
Achnanthes affinis Grunow
OK: Pfister et al. (1979)
Plains States: Patrick and Reimer (1966)
***Achnantheidium breviceps* var. *intermedium* (Kützing) Cleve**
Reported as:
Achnanthes breviceps var. *intermedia* (Kützing) Cleve
KS: Czarnecki and Reinke (1981)
***Achnantheidium deflexum* (Reimer) Kingston**
Reported as:
Achnanthes deflexa Reimer
KS: Wenke and Eberle (1985)
OK: Koch and Risser (1974), Patrick and Reimer (1966)

***Achnanthidium exiguum* (Grunow) Czarnecki**

NE: Shinneman et al. (2010)

Reported as:

Achnanthes exigua Grunow

KS: Curtis (1901), Wujek (1965), Wujek et al. (1980)

MO: Pamperl (1980)

OK: Koch and Risser (1974), Pfiester et al. (1979), Troeger (1978, 1983)

Plains States: Patrick and Reimer (1966)

Stauroneis parvula Janisch *sensu* Elmore

NE: Elmore (1921)

***Achnanthidium exiguum* var. *constrictum* (Grunow) Andersen, Stoermer, & Kreis**

Reported as:

Achnanthes exigua var. *constricta* (Grunow) Hustedt

KS: Wujek et al. (1980)

***Achnanthidium exiguum* var. *heterovalvum* (Krasske) Czarnecki**

Reported as:

Achnanthes exigua var. *heterovalva* Krasske

OK: Seyfer and Wilhm (1977)

Plains States: Patrick and Reimer (1966)

***Achnanthidium exile* (Kützing) Heiberg**

Reported as:

Achnanthes exilis Kützing

KS: Curtis (1901)

***Achnanthidium lineare* W. Smith**

Reported as:

Achnanthes linearis (W. Smith) Grunow [= *Rossetidium linearis* (W. Smith) Round & Bukhtiyarova?]

MO: Pamperl (1980)

NE: Elmore (1921)

OK: Koch and Risser (1974), Pfiester et al. (1979), Troeger (1978, 1983), Troeger and Menzel (1986)

Achnanthes linearis f. *curta* H.L. Sm.

MO: Pamperl (1980)

OK: Troeger (1978)

***Achnanthidium microcephalum* Kützing**

Reported as:

Achnanthes microcephala (Kützing) Grunow

KS: Elmore (1921)

MO: M.K. Morris et al. (1979*a*), Pamperl (1980)

NE: Elmore (1921), Patrick and Reimer (1966)

OK: Hern et al. (1979), Pfiester et al. (1979)

***Achnanthidium minutissimum* (Kützing) Czarnecki**

Reported as:

Achnanthes minutissima Kützing

KS: Curtis (1901), Powers (1969), Williams (1962), WPSS (1961–1963, 1966), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982), Roemer et al. (1984), Shinneman et al. (2010), Williams (1962), WPSS (1961–1963, 1966)

OK: Koch (1975), Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978), Wilhm et al. (1977), Williams (1962), WPSS (1966)

Plains States: Patrick and Reimer (1966)

Achnanthes minutissima f. *curta* Grunow

KS: Curtis (1901)

***Achnanthidium pyrenaicum* (Grunow) Kobayasi**

Reported as:

Achnanthes biasolettiana Grunow

KS: Curtis (1901)

***Achnanthidium trinodis* Arnott *ex* Ralfs**

Reported as

Achnanthes trinodis (W. Smith) Grunow

KS: Curtis (1901)

► ***Adlafia minuscula* var. *muralis* (Grunow) Lange-Bertalot**

Reported as:

Navicula muralis Grunow

OK: Pfiester et al. (1979)

► ***Amphicampa mirabilis* Ehrenberg ex Ralfs**

NE: Patrick and Reimer (1966)

► ***Amphipleura pellucida* (Kützing) Kützing**

KS: Curtis (1901), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982)

OK: Koch and Risser (1974), Seyfer and Wilhm (1977), Troeger (1978), Troeger and Menzel (1986), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1966)

► *Amphiprora alata* (Ehrenberg) Kützing = *Entomoneis alata* (Ehrenberg) Ehrenberg

Amphiprora conspicua Greville = *Entomoneis alata* (Ehrenberg) Ehrenberg

Amphiprora ornata Bailey = *Entomoneis ornata* (Bailey) Reimer

Amphiprora paludosa W. Smith = *Entomoneis paludosa* (W. Smith) Reimer

Amphiprora pulchra Bailey = *Entomoneis pulchra* (Bailey) Reimer

► *Amphora acutiuscula* Kützing = *Halamphora acutiuscula* (Kützing) Levkov

Amphora coffeiformis (Agardh) Kützing = *Halamphora coffeiformis* (Agardh) Levkov

Amphora commutata Grunow in Olive

KS: Harris and Eberle (2001)

***Amphora copulata* (Kützing) Schoeman & Archibald** [following the use of Schoeman and Archibald (1986)]

KS: Harris and Eberle (2001)

Reported as:

Amphora libyca Ehrenberg

KS: Curtis (1901) [see Eberle (1981:17)]

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

Amphora ovalis var. *affinis* (Kützing) Van Heurck

KS: Wenke and Eberle (1986), Wujek et al. (1980)

NE: Shinneman et al. (2010)

OK: Troeger and Menzel (1986)

Plains States: Patrick and Reimer (1975)

Amphora cymbifera Gregory = *Halamphora cymbifera* (Gregory) Levkov

***Amphora javanica* A. Schmidt**

KS: Czarnecki and Reinke (1981)

Amphora lineata = ? [= *Halamphora lineata* (Gregory) Levkov]

KS: Curtis (1901) [see Eberle (1981:18)]

Amphora libyca Ehrenberg 1841 = *Amphora copulata* (Kützing) Schoeman & Archibald

Amphora montana Krasske = *Halamphora montana* (Krasske) Levkov

Amphora normanii Rabenhorst = *Halamphora normanii* (Rabenhorst) Levkov

***Amphora ovalis* (Kützing) Kützing**

KS: Curtis (1901), Elmore (1921), Harris and Eberle (2001), Wolle (1889), Wujek et al. (1980)

NE: Andersen and Walker (1920), Elmore (1921), Shinneman et al. (2010), WPSS (1961–1963)

OK: Koch (1975), Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978), Wilhm et al. (1977), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1975)

***Amphora pediculus* (Kützing) Grunow in Schmidt**

NE: Shinneman et al. (2010)

Reported as:

Amphora ovalis var. *pediculus* (Kützing) Van Heurck ex De Toni *sensu* Patrick and Reimer (1975)

KS: Czarnecki and Reinke (1981)

MO: Pamperl (1980)

NE: Hoagland et al. (1982)

OK: Koch and Risser (1974), Pfiester et al. (1979)

Plains States: Patrick and Reimer (1975)

***Amphora perpusilla* (Grunow) Grunow** *sensu* Patrick and Reimer (1975)

KS: Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982)

Amphora salina W. Smith = *Halamphora coffeiformis* (Agardh) Levkov
Amphora salinarum W. Smith = *Amphora salina* W. Smith? [= *Halamphora coffeiformis* (Agardh) Levkov]
Amphora submontana Hustedt = *Halamphora submontana* (Hustedt) Levkov
Amphora veneta Kützing = *Halamphora veneta* (Kützing) Levkov

► ***Aneumastus tusculus* (Ehrenberg) D. Mann & Stickle**

Reported as:

Navicula tuscula Ehrenberg

KS: Curtis (1901)

Plains States: Patrick and Reimer (1966)

► ***Anomoeoneis costata* (Kützing) Hustedt**

KS: Harris and Eberle (2001)

NE: Shinneman et al. (2010)

Plains States: Patrick and Reimer (1966)

Anomoeoneis exilis (Kützing) Cleve = *Brachysira exilis* (Kützing) Round & Mann

***Anomoeoneis sphaerophora* (Ehrenberg) Pfister**

KS: Harris and Eberle (2001), Wenke and Eberle (1986), Wujek et al. (1980)

NE: Shinneman et al. (2010)

OK: Pfister and Terry (1978), Pfister et al. (1979)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula biceps Ehrenberg

KS: Curtis (1901)

Navicula sphaerophora Ehrenberg

KS: Curtis (1901), Wolle (1889)

NE: Andersen and Walker (1920), Elmore (1921), Webber (1890)

***Anomoeoneis sphaerophora* var. *sculpta* O. Müller**

NE: Patrick and Reimer (1966)

Reported as:

Navicula rostrata Ehrenberg

NE: Elmore (1921)

Navicula sculpta Ehrenberg

NE: Andersen and Walker (1920)

Anomoeoneis vitrea (Grunow) Ross = *Brachysira vitrea* (Grunow) Ross

► ***Bacillaria paradoxa* Gmelin**

KS: Harris and Eberle (2001), McFarland et al. (1964), Wenke and Eberle (1986)

MO: WPSS (1961–1963)

OK: Ehrenberg (1856), Koch (1975), Seyfer and Wilhm (1977), Troeger (1983)

Reported as:

Homoeocladia paxillifer (O. Müller) Elmore

KS: Elmore (1921)

NE: Elmore (1921)

Nitzschia paradoxa (Gmel.) Grunow

KS: Curtis (1901), Powers (1969)

OK: Wilhm et al. (1977)

► ***Brachysira exilis* (Kützing) Round & D. Mann**

Reported as:

Anomoeoneis exilis (Kützing) Cleve

OK: Williams (1962), WPSS (1961–1963)

***Brachysira serians* (Brébisson ex Kützing) Round & D. Mann**

Reported as:

Navicula serians Brébisson ex Kützing

NE: Elmore (1921), Webber (1890)

***Brachysira vitrea* (Grunow) Ross**

Reported as:

Anomoeoneis vitrea (Grunow) Ross

KS: Wujek et al. (1980)

► ***Brebissonia vulgaris* (Thwaites) Kuntze = *Frustulia vulgaris* (Thwaites) De Toni**

► ***Caloneis amphisbaena* (Bory) Cleve**

CO: Williams (1964), Williams (1972), WPSS (1961–1963)

KS: Harris and Eberle (2001), Powers (1969), Wenke and Eberle (1986), Williams (1962), WPSS (1961–1963, 1966), Wujek et al. (1980)

NE: WPSS (1961–1963)

OK: Koch (1975), Wilhm et al. (1977), Wilhm et al. (1978), WPSS (1961–1963)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula amphisbaena Bory

NE: Ehreneberg (1856), Elmore (1921)

OK: Ehreneberg (1856)

***Caloneis amphisbaena* var. *subsalina* (Donkin) Cleve**

KS: Harris and Eberle (2001)

OK: Koch (1975)

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

NE: Patrick and Reimer (1966)

***Caloneis bacillum* (Grunow) Cleve**

KS: Juracek (2003), Powers (1969), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982)

OK: Koch (1975), Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1966)

***Caloneis fontinalis* (Grunow) A. Cleve**

Reported as:

Navicula fontinalis Grunow

KS: Curtis (1901)

***Caloneis hebes* (Ralfs) Patrick**

KS: Patrick and Reimer (1966:589)

Reported as:

Navicula obtusata W. Smith?

KS: Curtis (1901)

***Caloneis lewisii* Patrick**

KS: Harris and Eberle (2001), Wenke and Eberle (1986), Wujek et al. (1980)

NE: F.A. Morris et al. (1979)

OK: Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1966)

Reported as:

Caloneis trinodis Lewis

KS: Wujek (1965)

Navicula trinodis (Lewis) Boyer

KS: Curtis (1901), Elmore (1921)

NE: Elmore (1921)

***Caloneis lewisii* var. *inflata* (Schultze) Patrick**

OK: Pfiester and Terry (1978)

***Caloneis limosa* (Kützing) Patrick**

KS: Wenke and Eberle (1985, 1986)

OK: Pfiester et al. (1979), Troeger (1983)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula limosa Kützing

NE: Andersen and Walker (1920)

***Caloneis linearis* (Grunow) Boyer**

Reported as:

Navicula linearis Grunow

KS: Curtis (1901)

***Caloneis molaris* (Grunow) Krammer**

Reported as:

Pinnularia molaris (Grunow) Cleve

OK: Pfiester and Terry (1978)

Navicula macra Grunow

KS: Curtis (1901)

***Caloneis oregonica* (Ehrenberg) Patrick**

KS: Wujek et al. (1980)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula liburnica Grunow

NE: Elmore (1921)

***Caloneis permagna* (Bailey) Cleve**

KS: Czarnecki and Reinke (1981)

***Caloneis schumanniana* (Grunow) Cleve [= *Caloneis limosa* (Kützing) Patrick?]**

OK: Koch (1975), Troeger (1978)

Reported as:

Navicula schumanniana Grunow

KS: Curtis (1901)

***Caloneis silicula* (Ehrenberg) Cleve**

Reported as:

Navicula silicula Ehrenberg

NE: Ehrenberg (1856), Elmore (1921)

OK: Ehrenberg (1856)

Caloneis silicula var. *truncatula* (Grunow) Cleve = *Caloneis ventricosa* var. *truncatula* (Grunow) Meister

Caloneis trinodis (Lewis) Boyer = *Caloneis lewisii* Patrick

***Caloneis ventricosa* (Ehrenberg) Meister**

KS: Wujek et al. (1980)

OK: Koch (1975), Pfiester et al. (1979), Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula leptogongyla Ehrenberg

KS: Curtis (1901)

Navicula ventricosa Ehrenberg

NE: Elmore (1921)

***Caloneis ventricosa* var. *alpina* (Cleve) Patrick**

OK: Troeger (1978)

***Caloneis ventricosa* var. *minuta* (Grunow) Patrick**

KS: Harris and Eberle (2001), Patrick and Reimer (1966)

Reported as:

Navicula ventricosa f. *minuta* Grunow

KS: Curtis (1901)

***Caloneis ventricosa* var. *subundulata* (Grunow) Patrick**

KS: Wujek et al. (1980)

***Caloneis ventricosa* var. *truncatula* (Grunow) Meister**

OK: Koch and Risser (1974), Troeger (1983)

Reported as:

Caloneis silicula var. *truncatula* (Grunow) Cleve

OK: Pfiester and Terry (1978)

► ***Campylodiscus clypeus* (Ehrenberg) Ehrenberg ex Kützing**

KS: Czarnecki and Reinke (1981), Harris and Eberle (2001)

NE: Andersen and Walker (1920), Elmore (1921)

***Campylodiscus noricus* Ehrenberg ex Kützing**

OK: Koch and Risser (1974)

Campylodiscus noricus var. *hibernicus* (Ehrenberg) Grunow = *Iconella hibernica* (Ehrenberg) Ruck & Nakov

► ***Cavinula cocconeiformis* (Gregory ex Grunow) D. Mann & Stickle**

Reported as:

Navicula cocconeiformis Gregory ex Grunow

NE: Elmore (1921), Patrick and Reimer (1966)

***Cavinula jaerenfeltii* (Hustedt) D. Mann & Stickle**

Reported as:

Navicula jaerenfeltii Hustedt

OK: Pfiester et al. (1979)

***Cavinula lacustris* (Gregory) D. Mann & Stickle**

Reported as:

Navicula lacustris Krasske

OK: Wilhm et al. (1978)

***Cavinula variostrata* (Krasske) D. Mann**

Reported as:

Navicula variostrata Krasske

OK: Troeger (1983)

► ***Cocconeis diaphana* W. Smith = ?**

KS: Wolle (1889) [see Eberle (1981:25)]

Cocconeis diminuta Pantocsek = *Cocconeis neodiminuta* Krasske

***Cocconeis disculus* (Schumann) Cleve**

NE: Elmore (1921)

***Cocconeis fluviatilis* Wallace**

OK: Kennedy and Pfiester (1984)

Cocconeis lineata Ehrenberg = *Cocconeis placentula* var. *lineata* (Ehrenberg) Van Heurck

***Cocconeis mexicana* Ehrenberg**

OK: Ehrenberg (1856)

***Cocconeis neodiminuta* Krasske**

Reported as:

Cocconeis diminuta Pantocsek

NE: Hoagland et al. (1982)

OK: Wilhm et al. (1978)

***Cocconeis pediculus* Ehrenberg**

CO: Cockerell (1888)

KS: Curtis (1901), Wenke and Eberle (1986), ?Williams et al. (1979), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Elmore (1921), Webber (1889, 1890), WPSS (1961–1963)

OK: Pfiester et al. (1979), WPSS (1961–1963)

Plains States: Patrick and Reimer (1966)

***Cocconeis placentula* Ehrenberg**

KS: Wujek (1965)

NE: Andersen and Walker (1920), ?Ehrenberg (1856), Elmore (1921), Hoagland et al. (1982), F.A. Morris et al. (1979), Shinneman et al. (2010) as *C. placentula sensu lato*, Williams (1962), WPSS (1961–1963, 1966)

OK: Koch and Risser (1974), Leake (1945), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978), Troeger and Menzel (1986), Wilhm et al. (1977), Wilhm et al. (1978), WPSS (1961–1963)

Plains States: Patrick and Reimer (1966)

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

KS: Harris and Eberle (2001), Wenke and Eberle (1986), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982)

OK: Troeger (1978)

Plains States: Patrick and Reimer (1966)

***Cocconeis placentula* var. *lineata* (Ehrenberg) Van Heurck**

KS: Wenke and Eberle (1986), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Elmore (1921), Hoagland et al. (1982), Shinneman et al. (2010)

OK: Pfiester and Terry (1978), Pfiester et al. (1979)

Plains States: Patrick and Reimer (1966)

Reported as:

Cocconeis lineata Ehrenberg

KS: ?Wolle (1889)

OK: Ehrenberg (1856)

***Cocconeis rugosa* Sovereign**

OK: Pfiester et al. (1979)

***Cocconeis striata* Ehrenberg**

OK: Ehrenberg (1856)

- ▶ *Cocconema australicum* A. Schmidt = *Cymbella australica* (A. Schmidt) Cleve
Cocconema cistula (Ehrenberg) Ehrenberg = *Cymbella cistula* (Ehrenberg) Kirchner
Cocconema cornutum Ehrenberg = *Cymbella lanceolata* var. *cornuta* (Ehrenberg) Grunow
Cocconema cymbiforme (Agardh) Cleve = *Cymbella cymbiformis* Agardh
Cocconema fusidium Ehrenberg = *Cymbella affinis* Kützing
Cocconema helveticum = *Cymbella helvetica* Kützing?
KS: Curtis (1901) [see Eberle (1981:37)]
Cocconema hungaricum = *Cymbella hungaricum* (Grunow) Pantocsek?
KS: Curtis (1901) [see Eberle (1981:36–37)]
Cocconema lanceolatum (Agardh) Ehrenberg = *Cymbella lanceolata* (Agardh) Agardh
Cocconema lunula Ehrenberg = *Encyonema minutum* (Hilse ex Rabenhorst) D. Mann
Cocconema mexicanum Ehrenberg = *Cymbella mexicana* (Ehrenberg) Cleve
- ▶ *Colletonema vulgare* Thwaites = *Frustulia vulgaris* (Thwaites) De Toni
- ▶ ***Craticula accomoda* (Hustedt) D. Mann**
KS: Harris and Eberle (2001)
NE: Shinneman et al. (2010)
Reported as:
Navicula accomoda Hustedt
KS: Powers (1969), Wujek et al. (1980)
MO: Pamperl (1980)
OK: Pfiester et al. (1979), Troeger (1978, 1983)
Plains States: Patrick and Reimer (1966)
- Craticula ambigua* (Ehrenberg) D. Mann**
NE: Shinneman et al. (2010)
Reported as:
Navicula ambigua Ehrenberg
KS: Curtis (1901)
NE: Andersen and Walker (1920), Elmore (1921)
Navicula cuspidata var. *ambigua* (Ehrenberg) Cleve.
KS: McFarland et al. (1964), Powers (1969)
- Craticula citrus* (Krasske) Reichardt**
Reported as:
Navicula citrus Krasske
OK: ?Hern et al. (1979)
- Craticula cuspidata* (Kützing) D. Mann**
KS: Harris and Eberle (2001), Juracek (2003)
NE: Shinneman et al. (2010)
Reported as:
Navicula cuspidata (Kützing) Kützing
CO: M.K. Morris et al. (1979b)
KS: Curtis (1901), McFarland et al. (1964), Wenke and Eberle (1986), Williams et al. (1979), Wujek et al. (1980)
MO: Pamperl (1980), Williams (1962), WPSS (1966)
NE: Andersen and Walker (1920)
OK: Hern et al. (1979), Koch (1975), Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983), Troeger and Menzel (1986), Wilhm et al. (1977), Wilhm et al. (1978)
Plains States: Patrick and Reimer (1966)
Navicula cuspidata f. *craticula* (Van Heurck) PerAgardh & Héribaud
NE: Andersen and Walker (1920)
Navicula fulva Ehrenberg
NE: Elmore (1921)
OK: Ehrenberg (1856)
- Craticula cuspidata* var. *major* (Meister) Czarnecki**
Reported as:
Navicula cuspidata var. *major* Meister
KS: Wenke and Eberle (1985)
OK: Pfiester et al. (1979), Troeger (1978), Troeger and Menzel (1986)
- Craticula guatemalensis* (Cleve & Grove) Lange-Bertalot**
Reported as:
Navicula guatemalensis Cleve & Greville
NE: Elmore (1921), Patrick and Reimer (1966)

***Craticula halophila* (Grunow) D. Mann**

KS: Harris and Eberle (2001)

NE: Shinneman (2010)

Reported as:

Navicula halophila Grunow

KS: Wujek et al. (1980)

NE: Hoagland et al. (1982)

OK: Troeger (1978), Wilhm et al. (1978)

***Craticula halophila* f. *robusta* (Hustedt) Czarnecki**

Reported as:

Navicula halophila f. *robusta* Hustedt

KS: Czarnecki and Reinke (1981)

***Craticula halophila* f. *tenuirostris* (Hustedt) Czarnecki**

Reported as:

Navicula halophila f. *tenuirostris* Hustedt

KS: Wujek et al. (1980)

OK: Troeger (1978)

***Craticula molesta* (Krasske) Lange-Bertalot & Willmann**

Reported as:

Navicula molesta Krasske

MO: Pamperl (1980)

► ***Cylindrotheca closterium* (Ehrenberg) Reimann & Lewin**

Reported as:

Nitzschia closterium (Ehrenberg) W. Smith

KS: Powers (1969)

***Cylindrotheca gracilis* (Brébisson ex Kützing) Grunow**

CO: ?M.K. Morris et al. (1979*b*)

KS: Czarnecki and Reinke (1981), Harris and Eberle (2001)

OK: Koch (1975)

► ***Cymatopleura apiculata* W. Smith = *Cymatopleura solea* var. *apiculata* (W. Smith) Ralfs [= *C. librile* (Ehrenberg) Pantocsek?]**

***Cymatopleura elliptica* (Brébisson) W. Smith**

KS: Curtis (1901), Harris and Eberle (2001), Wenke and Eberle (1986), Wujek et al. (1980)

OK: Koch and Risser (1974), Seyfer and Wilhm (1977), Troeger (1978)

Reported as:

Sphinctocystis elliptica (Brébisson ex Kützing) Kuntze

KS: Elmore (1921)

NE: Elmore (1921)

***Cymatopleura elliptica* f. *spiralis* Boyer**

NE: F.A. Morris et al. (1979)

***Cymatopleura elliptica* var. *nobilis* (Hantzsch) Hustedt = *Cymatopleura nobilis* Hantzsch**

OK: Troeger (1978)

***Cymatopleura librile* (Ehrenberg) Pantocsek**

Reported as:

Sphinctocystis librilis (Ehrenberg) Hassall

KS: Elmore (1921)

NE: Elmore (1921)

Schoeman and Archibald (1976–1980) submerged the taxa listed below within this species:

Cymatopleura apiculata W. Smith

Cymatopleura solea (Brébisson) W. Smith

Cymatopleura solea var. *regula* (Ehrenberg) Grunow

Surirella regula Ehrenberg

***Cymatopleura nobilis* Hantzsch**

Reported as:

Cymatopleura elliptica var. *nobilis* (Hantzsch) Hustedt

OK: Troeger (1978)

***Cymatopleura solea* (Brébisson and Godey) W. Smith**

KS: Curtis (1901), Wenke and Eberle (1986), Williams et al. (1979), Wujek et al. (1980)

MO: M.K. Morris et al. (1979*a*)

NE: F.A. Morris et al. (1979), Shinneman et al. (2010), WPSS (1961–1963)

OK: Hern et al. (1979), Koch and Risser (1974), Pfiester et al. (1979), Troeger (1978), Wilhm et al. (1977)

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

Reported as:

Cymatopleura apiculata (W. Smith) Ralfs

KS: Curtis (1901)

Cymatopleura solea var. *regula* (Ehrenberg) Grunow = *Surirella regula* Ehrenberg

► *Cymbella aequalis* W. Smith = *Kurtkrammeria aequalis* (W. Smith) Krammer

***Cymbella affinis* Kützing**

KS: Curtis (1901), Wenke and Eberle (1986), Williams et al. (1979)

MO: Pamperl (1980)

NE: Elmore (1921), Hoagland et al. (1982), F.A. Morris et al. (1979), Roemer et al. (1984)

OK: Cooper and Wilhm (1975), Pfiester et al. (1979)

Plains States: Patrick and Reimer (1975)

Reported as:

Cocconema fusidium Ehrenberg

OK: Ehrenberg (1856)

Cymbella amphicephala Nägeli ex Kützing = *Cymbopleura amphicephala* (Nägeli) Krammer

Cymbella anglica Lagerstedt = *Cymbopleura anglica* (Lagerstedt) Krammer

Cymbella angustata (W. Smith) Cleve = *Cymbopleura angustata* (W. Smith) Krammer

***Cymbella aspera* (Ehrenberg) Cleve**

KS: Wujek (1965), Wujek et al. (1980)

OK: Troeger (1978)

Plains States: Patrick and Reimer (1975)

Reported as:

Cymbella gastroides Kützing

KS: Curtis (1901), Wolle (1889)

NE: Andersen and Walker (1920), Elmore (1921), Webber (1889, 1890)

***Cymbella australica* (A. Schmidt) Cleve**

Reported as:

Cocconema australicum A. Schmidt

KS: Curtis (1901)

Cymbella brebmii Hustedt = *Encyonema brebmii* (Hustedt) D. Mann

***Cymbella cistula* (Ehrenberg) Kirchner**

NE: Andersen and Walker (1920), Elmore (1921), Roemer et al. (1984)

Plains States: Patrick and Reimer (1975)

Reported as:

Cocconema cistula (Ehrenberg) Ehrenberg

KS: Curtis (1901)

Cymbella cistula var. *maculata* (Kützing) Van Heurck

OK: Koch and Risser (1974)

Cymbella cistula var. *maculata* (Kützing) Van Heurck = *Cymbella cistula* (Ehrenberg) Kirchner

Cymbella cuspidata Kützing = *Cymbopleura cuspidata* (Kützing) Krammer

***Cymbella cymbiformis* Agardh**

KS: Wujek et al. (1980)

NE: Andersen and Walker (1920), Elmore (1921), Shinneman et al. (2010), Webber (1890)

Plains States: Patrick and Reimer (1975)

Reported as:

Cocconema cymbiformis (Agardh) Cleve

KS: Curtis (1901)

***Cymbella cymbiformis* var. *nonpunctata* Fontell**

KS: Wujek et al. (1980)

Cymbella delicatula Kützing = *Delicata delicatula* (Kützing) Krammer

Cymbella ehrenbergii Kützing = *Cymbopleura inaequalis* (Ehrenberg) Krammer

Cymbella gastroides Kützing = *Cymbella aspera* (Ehrenberg) H. Peragallo

Cymbella hauckii Van Heurck = *Cymbopleura hauckii* (Van Heurck) Krammer

***Cymbella helvetica* Kützing**

KS: Curtis (1901)

NE: Elmore (1921)

***Cymbella hustedtii* Krasske**

MO: Pamperl (1980)

Cymbella inaequalis (Ehrenberg) Rabenhorst = *Cymbopleura inaequalis* (Ehrenberg) Krammer

***Cymbella janischii* (A. Schmidt) De Toni**

Reported as:

Cymbella mexicana var. *janischii* (A. Schmidt) Reimer

KS: Wujek et al. (1980)

OK: ?Patrick and Reimer (1975)

Cymbella kamtschatica Grunow = *Cymbella mexicana* var. *kamtschatica* (Grunow) Krammer

***Cymbella laevis* Nägeli ex Kützing**

NE: Patrick and Reimer (1975), Roemer et al. (1984)

OK: Kennedy and Pfister (1984)

***Cymbella lanceolata* (Agardh) Agardh**

KS: Wujek et al. (1980)

NE: Andersen and Walker (1920), Elmore (1921)

Plains States: Patrick and Reimer (1975)

Reported as:

Cocconema lanceolatum (Agardh) Ehrenberg

KS: Curtis (1901)

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

***Cymbella lanceolata* var. *cornuta* (Ehrenberg) Grunow**

Reported as:

Cocconema cornutum Ehrenberg

OK: Ehrenberg (1856)

Cymbella lata Grunow = *Cymbopleura lata* (Grunow ex Cleve) Krammer

Cymbella leptoceros (Ehrenberg) Kützing = *Cymbopleura neoleptocera* Krammer

Cymbella lunata W. Smith = *Encyonema lunatum* (W. Smith) Van Heurck

***Cymbella mexicana* (Ehrenberg) Cleve**

KS: Wujek et al. (1980)

OK: Koch and Risser (1974)

Plains States: Patrick and Reimer (1975)

Reported as:

Cocconema mexicanum Ehrenberg

KS: Curtis (1901)

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

Cymbella mexicana var. *janischii* (A. Schmidt) Reimer = *Cymbella janischii* (A. Schmidt) De Toni

***Cymbella mexicana* var. *kamtschatica* (Grunow) Krammer**

Reported as:

Cymbella kamtschatica Grunow

KS: Curtis (1901)

Cymbella microcephala Grunow = *Encyonopsis microcephala* (Grunow) Krammer

Cymbella minuscula Grunow = *Encyonopsis microcephala* (Grunow) Krammer

Cymbella minuta Hilse ex Rabenhorst = *Encyonema minutum* (Hilse ex Rabenhorst) D. Mann

Cymbella minuta f. *latens* (Krasske) Reimer = *Encyonema latens* (Krasske) D. Mann

Cymbella minuta var. *silesiaca* (Bleisch ex Rabenhorst) Reimer = *Encyonema silesiacum* (Bleisch ex Rabenhorst) D. Mann

Cymbella muelleri Hustedt = *Encyonema reimeri* Spaulding, Pool, and Castro

Cymbella naviculiformis Auerswald ex Heiberg = *Cymbopleura naviculiformis* (Auerswald ex Heiberg) Krammer

***Cymbella parva* (W. Smith) Kirchner**

NE: Elmore (1921)

Cymbella prostrata (Berkeley) Cleve = *Encyonema leibleinii* (Agardh) Silva et al.

Cymbella prostrata var. *auerswaldii* (Rabenhorst) Reimer = *Encyonema auerswaldii* Rabenhorst

Cymbella pusilla Grunow = *Navicymbula pusilla* (Grunow ex A. Schmidt) Krammer

Cymbella rupicola Grunow = *Cymbopleura rupicola* (Grunow) Krammer

Cymbella rutneri Hustedt = *Encyonopsis rutneri* (Hustedt) Krammer

Cymbella sinuata Gregory = *Reimeria sinuata* (Gregory) Kociolek & Stoermer

Cymbella stomatophora Grunow = *Cymbella tumida* (Brébisson ex Kützing) Van Heurck

Cymbella subaequalis Grunow = *Cymbopleura subaequalis* (Grunow) Krammer

Cymbella triangulum (Ehrenberg) Cleve = *Encyonema triangulum* (Ehrenberg) Kützing

***Cymbella tumida* (Brébisson ex Kützing) Van Heurck**

KS: Harris and Eberle (2001), Juracek (2008), Wenke and Eberle (1986), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982), F.A. Morris et al. (1979), Williams (1962), WPSS (1961–1963, 1966)

OK: Pfiester and Terry (1978), Pfiester et al. (1979), Wilhm et al. (1977), Wilhm et al. (1978), WPSS (1961–1963)

Plains States: Patrick and Reimer (1975)

Reported as:

Cymbella stomatophora Grunow

KS: Curtis (1901)

***Cymbella tumidula* Grunow ex A. Schmidt**

KS: Curtis (1901), Patrick and Reimer (1975)

MO: Pamperl (1980)

OK: Troeger (1978)

Cymbella turgida Gregory = *Encyonema elginense* (Krammer) D. Mann

***Cymbella turgidula* Grunow**

KS: Curtis (1901), Wenke and Eberle (1985)

MO: Pamperl (1980)

OK: Pfiester et al. (1979)

Plains States: Patrick and Reimer (1975)

Cymbella ventricosa (Agardh) Agardh = *Encyonema ventricosum* (Agardh) Grunow

▶ ***Cymbopleura amphicephala* (Nägeli) Krammer**

Reported as:

Cymbella amphicephala Nägeli ex Kützing

KS: Curtis (1901), Wenke and Eberle (1986)

NE: Andersen and Walker (1920), Elmore (1921)

Plains States: Patrick and Reimer (1975)

***Cymbopleura anglica* (Lagerstedt) Krammer**

Reported as:

Cymbella anglica Lagerstedt

KS: Curtis (1901)

***Cymbopleura angustata* (W. Smith) Krammer**

Reported as:

Cymbella angustata (W. Smith) Cleve

OK: Kennedy and Pfiester (1984)

***Cymbopleura cuspidata* (Kützing) Krammer**

Reported as:

Cymbella cuspidata Kützing

NE: Andersen and Walker (1920), Elmore (1921)

Plains States: Patrick and Reimer (1975)

***Cymbopleura hauckii* (Van Heurck) Krammer**

Reported as:

Cymbella hauckii Van Heurck

KS: Wenke and Eberle (1986)

OK: Troeger (1978)

***Cymbopleura inaequalis* (Ehrenberg) Krammer**

Reported as:

Cymbella ehrenbergii Kützing

NE: Andersen and Walker (1920), Elmore (1921)

Cymbella inaequalis (Ehrenberg) Rabenhorst

Plains States: Patrick and Reimer (1975)

Pinnularia inaequalis Ehrenberg

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

***Cymbopleura lata* (Grunow ex Cleve) Krammer**

Reported as:

Cymbella lata Grunow

NE: Roemer et al. (1984)

***Cymbopleura naviculiformis* (Auerswald ex Heiberg) Krammer**

Reported as:

Cymbella naviculiformis Auerswald ex Heiberg

KS: Curtis (1901)

NE: Andersen and Walker (1920), Elmore (1921)

OK: Koch and Risser (1974)

Plains States: Patrick and Reimer (1975)

***Cymbopleura neoleptocera* Krammer**

Reported as:

Cymbella leptoceros (Ehrenberg) Kützing

NE: Elmore (1921)

OK: Pfiester et al. (1979)

***Cymbopleura rupicola* (Grunow) Krammer**

Reported as:

Cymbella rupicola Grunow

OK: Pfiester et al. (1979)

***Cymbopleura subaequalis* (Grunow) Krammer**

Reported as:

Cymbella subaequalis Grunow

NE: Andersen and Walker (1920), Patrick and Reimer (1975)

- ▶ *Cystopleura argus* (Ehrenberg) Kuntze = *Epithemia argus* (Ehrenberg) Kützing
- Cystopleura gibba* (Ehrenberg) De Toni = *Rhopalodia gibba* (Ehrenberg) O. Müller
- Cystopleura gibba* var. *ventricosa* (Kützing) De Toni = *Rhopalodia gibba* var. *ventricosa* (Kützing) H. & M. Peragallo
- Cystopleura gibberula* (Ehrenberg) Kuntze = *Rhopalodia gibberula* (Ehrenberg) O. Müller
- Cystopleura musculus* (Kützing) Kuntze = *Rhopalodia musculus* (Kützing) O. Müller
- Cystopleura ocellata* (Ehrenberg) Kuntze = *Epithemia ocellata* (Ehrenberg) Kützing
- Cystopleura sorex* (Kützing) Kuntze = *Epithemia sorex* Kützing
- Cystopleura turgida* (Ehrenberg) Kuntze = *Epithemia turgida* (Ehrenberg) Kützing
- Cystopleura ventricosa* (Kützing) Elmore = *Rhopalodia gibba* var. *ventricosa* (Kützing) H. & M. Peragallo
- Cystopleura zebra* (Ehrenberg) Kuntze = *Epithemia adnata* (Kützing) Brébisson

▶ ***Delicata delicatula* (Kützing) Krammer**

Reported as:

Cymbella delicatula Kützing

MO: Pamperl (1980)

OK: Patrick and Reimer (1975)

▶ ***Denticula elegans* Kützing**

KS: Curtis (1901), Harris and Eberle (2001), Wujek et al. (1980)

NE: Andersen and Walker (1920), Elmore (1921), Roemer et al. (1984)

Plains States: Patrick and Reimer (1975)

***Denticula elegans* var. *kittoniana* (Grunow) De Toni**

NE: Patrick and Reimer (1975)

Denticula frigida Kützing = *Denticula tenuis* var. *frigida* (Kützing) Grunow

***Denticula kutzingii* Grunow**

NE: Shinneman et al. (2010)

Denticula splendens = ?

KS: Curtis (1901) [see Eberle (1981:38)]

***Denticula tenuis* Kützing**

KS: Curtis (1901), Patrick and Reimer (1975)

OK: Kennedy and Pfiester (1984)

***Denticula tenuis* var. *frigida* (Kützing) Grunow**

Reported as:

Denticula frigida Kützing

KS: Wujek (1965)

***Denticula thermalis* Kützing**

KS: Curtis (1901), Patrick and Reimer (1975)

OK: Wilhm et al. (1977), Willson and Forest (1957)

▶ ***Diadesmis confervacea* Kützing**

Reported as:

Navicula confervacea (Kützing) Grunow

KS: Wujek et al. (1980)

► ***Dickieia subinflata* (Grunow) D. Mann**

Reported as:

Navicula subinflata Grunow

KS: Curtis (1901)

► ***Didymosphenia geminata* (Lyngbye) M. Schmidt**

OK: Bergey et al. (2009)

► ***Diploneis*?**

Reported as:

Navicula elliptica var. *minuta* Grunow

KS: Curtis (1901) [see Eberle 1981:42]

***Diploneis elliptica* (Kützing) Cleve**

KS: Wujek et al. (1980)

NE: Elmore (1921)

OK: Koch and Risser (1974), Pfiester et al. (1979), Troeger (1983)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula elliptica Kützing

KS: Curtis (1901), Wolle (1889) [see Eberle 1981:41–42]

NE: Andersen and Walker (1920)

***Diploneis fusca* var. *hyperborea* (Grunow) Hustedt**

KS: Wujek et al. (1980)

***Diploneis interrupta* (Kützing) Cleve**

KS: Harris and Eberle (2001)

Reported as:

Navicula interrupta Kützing

KS: Wolle (1889)

***Diploneis marginestriata* Hustedt**

KS: Wujek et al. (1980)

OK: Koch and Risser (1974), Pfiester et al. (1979)

***Diploneis oblongella* (Nägeli ex Kützing) Ross**

KS: Harris and Eberle (2001), Juracek (2008), Wenke and Eberle (1986)

NE: Roemer et al. (1984)

OK: Koch and Risser (1974)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula elliptica var. *oblongella* (Nägeli ex Kützing) Grunow

KS: Curtis (1901)

***Diploneis oculata* (Brébisson) Cleve**

MO: Pamperl (1980)

OK: Koch and Risser (1974), Troeger (1978)

Reported as:

Navicula oculata Brébisson

KS: Curtis (1901)

***Diploneis pseudovalis* Hustedt**

KS: Wenke and Eberle (1985, 1986)

NE: Hoagland et al. (1982), Patrick and Reimer (1966)

***Diploneis puella* (Schumann) Cleve**

KS: Czarnecki and Reinke (1981)

MO: Pamperl (1980)

NE: Hoagland et al. (1982)

OK: Koch and Risser (1974), Pfiester et al. (1979), Troeger (1978)

Plains States: Patrick and Reimer (1966)

***Diploneis smithii* (Brébisson ex W. Smith) Cleve**

KS: WPSS (1961–1963)

OK: Hern et al. (1979), Koch (1975), Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962, 1964, 1972), Williams and Scott (1962), WPSS (1961–1963, 1966)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula smithii Brébisson ex W. Smith

KS: ?Curtis (1901)

Diploneis smithii f. *elliptica* ? = ?

OK: Hern et al. (1979)

***Diploneis smithii* var. *pumila* (Grunow) Hustedt**

KS: Williams et al. (1979)

► ***Encyonema* ?**

Reported as:

Gloeonema gracile Ehrenberg [= *Gloeonema gracile* Ehrenberg?]

NE: Ehrenberg (1856)

***Encyonema auerswaldii* Rabenhorst**

Reported as:

Cymbella prostrata var. *auerswaldii* (Rabenhorst) Reimer

KS: Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982)

***Encyonema brehmii* (Hustedt) D. Mann**

Reported as:

Cymbella brehmii Hustedt

OK: Troeger (1978)

***Encyonema elginense* (Krammer) D. Mann**

Reported as:

Cymbella turgida Gregory

NE: F.A. Morris et al. (1979)

OK: Wilhm et al. (1977), Wilhm et al. (1978)

Encyonema turgidum (Gregory) Grunow ex A. Schmidt

KS: Curtis (1901), Elmore (1921)

NE: Andersen and Walker (1920), Elmore (1921)

***Encyonema latens* (Krasske) D. Mann**

Reported as:

Cymbella minuta f. *latens* (Krasske) Reimer

MO: Pamperl (1980)

***Encyonema leibleinii* (Agardh) Silva et al.**

Reported as:

Cymbella prostrata (Berkeley) Cleve

MO: Pamperl (1980)

OK: Koch and Risser (1974), Pfister et al. (1979)

Plains States: Patrick and Reimer (1975)

Encyonema prostratum (Berkeley) Kützing

NE: Elmore (1921)

Gloeonema paradoxum Ehrenberg

NE: Ehrenberg (1856)

OK: ?Ehrenberg (1856)

***Encyonema lunatum* (W. Smith) Van Heurck**

Reported as:

Cymbella lunata W. Smith

KS: Wujek et al. (1980)

MO: Pamperl (1980)

OK: Pfister et al. (1979)

***Encyonema lunula* (Ehrenberg) Grunow (= *Encyonema minutum* (Hilse ex Rabenhorst) D. Mann?)**

Reported as:

Cocconema lunula Ehrenberg

OK: Ehrenberg (1856)

Encyonema lunula (Ehrenberg) Grunow

KS: Curtis (1901)

***Encyonema minutum* (Hilse ex Rabenhorst) D. Mann**

Reported as:

Cymbella minuta Hilse ex Rabenhorst

KS: Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982)

OK: Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1983)

Cymbella ventricosa (Kützing) Kützing

KS: Powers (1969), WPSS (1961–1963)

NE: WPSS (1961–1963)

OK: Koch (1975), Koch and Risser (1974), Troeger (1978), Wilhm et al. (1977), Wilhm et al. (1978), WPSS (1961–1963)

Encyonema ventricosum (Kützing) Grunow

KS: Curtis (1901)

NE: Elmore (1921)

***Encyonema reimeri* Spaulding, Pool, and Castro**

Reported as:

Cymbella muelleri Hustedt

MO: Pamperl (1980)

OK: Pfiester et al. (1979)

***Encyonema silesiacum* (Bleisch ex Rabenhorst) D. Mann**

NE: Shinneman et al. (2010) as *E. silesiacum sensu lato*

Reported as:

Cymbella minuta var. *silesiaca* (Bleisch ex Rabenhorst) Reimer

KS: Wenke and Eberle (1985, 1986)

NE: Hoagland et al. (1982), Roemer et al. (1984)

OK: Pfiester et al. (1979)

Plains States: Patrick and Reimer (1975)

***Encyonema triangulum* (Ehrenberg) Kützing**

KS: Curtis (1901), Harris and Eberle (2001)

Reported as:

Cymbella triangulum (Ehrenberg) Cleve

KS: Wenke and Eberle (1986), Wujek et al. (1980)

NE: Hoagland et al. (1982)

OK: Koch (1975), Pfiester et al. (1979), Troeger (1983)

Plains States: Patrick and Reimer (1975)

Encyonema ventricosum (Kützing) Grunow = *Encyonema minutum* (Hilse ex Rabenhorst) D. Mann

► ***Encyonopsis falaisensis* (Grunow) Krammer**

Reported as:

Navicula falaisensis Grunow

OK: Troeger (1983)

***Encyonopsis microcephala* (Grunow) Krammer**

Reported as:

Cymbella microcephala Grunow

KS: Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982), Roemer et al. (1984)

Plains States: Patrick and Reimer (1975)

Cymbella minuscula Grunow

KS: Curtis (1901) [see Patrick and Reimer 1975:34]

***Encyonopsis ruttneri* (Hustedt) Krammer**

Reported as:

Cymbella ruttneri Hustedt

NE: Roemer et al. (1984)

► ***Entomoneis alata* (Ehrenberg) Ehrenberg**

CO: M.K. Morris et al. (1979*b*)

KS: Harris and Eberle (2001), Reinke (1985), Reinke and Wujek (2013), Wenke and Eberle (1986), Williams et al. (1979)

Plains States: ?Patrick and Reimer (1975)

Reported as:

Amphiprora alata (Ehrenberg) Kützing

KS: McFarland et al. (1964), Powers (1969), Williams (1962), WPSS (1966)

NE: Elmore (1921)

OK: Koch (1975), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962), WPSS (1966)

Amphiprora conspicua Greville

KS: Curtis (1901) [see Patrick and Reimer 1975:6]

Navicula alata Ehrenberg

OK: ?Ehrenberg (1856)

***Entomoneis ornata* (Bailey) Reimer**

KS: Reinke and Wujek (2013)

Plains States: Patrick and Reimer (1975)

Reported as:

Amphiprora ornata Bailey

KS: Powers (1969)

NE: Elmore (1921)

OK: Troeger (1978)

***Entomoneis paludosa* (W. Smith) Reimer**

KS: Harris and Eberle (2001), Reinke (1985), Reinke and Wujek (2013), Wenke and Eberle (1986), Wujek et al. (1980)

OK: Hern et al. (1979), Seyfer and Wilhm (1977)

Plains States: Patrick and Reimer (1975)

Reported as:

Amphiprora paludosa W. Smith

KS: Curtis (1901), Reinke and Wujek (2013), Williams (1962, 1964), Williams and Scott (1962), WPSS (1961–1963, 1966)

OK: Cooper and Wilhm (1975), Wilhm et al. (1977), Williams (1962, 1964), Williams and Scott (1962), WPSS (1961–1963, 1966)

***Entomoneis paludosa* var. *duplex* (Donkin) Czarnecki & Reinke**

KS: Czarnecki and Reinke (1981), Czarnecki and Reinke (1982*a*)

***Entomoneis pulchra* (Bailey) Reimer**

KS: Reinke and Wujek (2013)

Reported as:

Amphiprora pulchra Bailey

NE: Webber (1890)

***Entomoneis reimeri* Reinke & Wujek**

KS: Reinke and Wujek (2013)

***Entomoneis robusta* (McCall) Reimer**

KS: Harris and Eberle (2001), Reinke and Wujek (2013)

OK: Kennedy and Pfiester (1984)

► ***Epithemia adnata* (Kützing) Brébisson**

NE: Shinneman et al. (2010) as *E. adnata sensu lato*

OK: Troeger (1983)

Plains States: Patrick and Reimer (1975)

Reported as:

Cystopleura zebra (Ehrenberg) Kuntze

NE: Andersen and Walker (1920), Elmore (1921)

Epithemia zebra (Ehrenberg) Kützing

KS: Curtis (1901)

Eunotia zebra Ehrenberg

OK: Ehrenberg (1856)

***Epithemia adnata* var. *minor* (Peragallo & Héribaud) Patrick**

KS: Czarnecki and Reinke (1981)

***Epithemia adnata* var. *porcellus* (Kützing) Ross**

OK: Troeger and Menzel (1986)

Reported as:

Epithemia zebra var. *porcellus* (Kützing) Grunow

OK: Pfiester and Terry (1978), Troeger (1978)

***Epithemia adnata* var. *proboscidea* (Kützing) Hendey**

OK: Pfiester et al. (1979)

***Epithemia adnata* var. *saxonica* (Kützing) Patrick**

Plains States: Patrick and Reimer (1975)

***Epithemia argus* (Ehrenberg) Kützing**

KS: Wolle (1889)

NE: ?Webber (1890)

Plains States: Patrick and Reimer (1975)

Reported as:

Cystopleura argus (Ehrenberg) Kuntze

NE: Elmore (1921)

***Epithemia argus* var. *alpestris* (W. Smith) Grunow**

KS: Czarnecki and Reinke (1981)

***Epithemia argus* var. *longicornis* (Ehrenberg) Grunow**

KS: Harris and Eberle (2001)

Epithemia gibba (Ehrenberg) Kützing = *Rhopalodia gibba* (Ehrenberg) O. Müller

Epithemia gibba var. *ventricosa* (Kützing) Grunow = *Rhopalodia gibba* var. *ventricosa* (Kützing) H. & M. Peragallo

Epithemia gibberula (Ehrenberg) Kützing = *Rhopalodia gibberula* (Ehrenberg) O. Müller

***Epithemia ocellata* (Ehrenberg) Kützing (= *Epithemia argus* (Ehrenberg) Kützing?)**

Plains States: Patrick and Reimer (1975)

Reported as:

Cystopleura ocellata (Ehrenberg) Kuntze

NE: Andersen and Walker (1920), Elmore (1921)

***Epithemia parallela* (Grunow) Ruck & Nakov**

Reported as:

Rhopalodia parallela (Grunow) O. Müller

KS: Czarnecki and Reinke (1981)

NE: Patrick and Reimer (1975)

OK: Kennedy and Pfiester (1984)

***Epithemia sorex* Kützing**

KS: Curtis (1901), Wujek et al. (1980)

OK: Koch and Risser (1974), Troeger and Menzel (1986), Wilhm et al. (1977), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1975)

Reported as:

Cystopleura sorex (Kützing) Kuntze

NE: Elmore (1921)

***Epithemia turgida* (Ehrenberg) Kützing**

KS: Harris and Eberle (2001), Wolle (1889), Wujek et al. (1980)

NE: Webber (1889, 1890)

Plains States: Patrick and Reimer (1975)

Reported as:

Cystopleura turgida (Ehrenberg) Kuntze

NE: Andersen and Walker (1920), Elmore (1921)

OK: Leake (1945)

Eunotia turgida (Ehrenberg) Ehrenberg

NE: Ehrenberg (1856)

***Epithemia turgida* var. *granulata* (Ehrenberg) Grunow**

Plains States: Patrick and Reimer (1975)

Reported as:

Eunotia granulata Ehrenberg

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

Eunotia librile Ehrenberg

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

***Epithemia turgida* var. *zebrina* (Ehrenberg) Rabenhorst**

Reported as:

Eunotia zebrina Ehrenberg

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

Epithemia zebrina (Ehrenberg) Kützing = *Epithemia adnata* (Kützing) Brébisson

- Epithemia zebra* var. *porcellus* (Kützing) Grunow = *Epithemia adnata* var. *porcellus* (Kützing) Ross
- ***Eucocconeis lapponica* var. *ninckei* (Guermeur & Manguin) Edlund**
Reported as:
Achnanthes lapponica var. *ninckei* (Guermeur & Manguin) Reimer
MO: Pamperl (1980)
OK: Pfiester et al. (1979)
- *Eunotia amphioxys* Ehrenberg = *Hantzschia amphioxys* (Ehrenberg) Grunow
- Eunotia arcus* Ehrenberg**
KS: Wujek et al. (1980)
NE: Elmore (1921)
Plains States: Patrick and Reimer (1966)
- Eunotia bilunaris* (Ehrenberg) Schaarschmidt**
Reported as:
Eunotia curvata (Kützing) Lagerstedt
KS: Wujek et al. (1980)
MO: Pamperl (1980)
NE: Rosowski et al. (1986), Shinneman et al. (2010)
OK: Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983)
Plains States: Patrick and Reimer (1966)
- Eunotia diodon* Ehrenberg**
NE: Andersen and Walker (1920), Elmore (1921)
Plains States: Patrick and Reimer (1966)
- Eunotia faba* Ehrenberg**
OK: Ehrenberg (1856)
- Eunotia fallax* A. Cleve**
OK: Troeger (1983)
- Eunotia formica* Ehrenberg**
NE: Elmore (1921), Shinneman et al. (2010)
OK: Troeger (1978)
Plains States: Patrick and Reimer (1966)
- Eunotia gibba* Ehrenberg = *Rhopalodia gibba* (Ehrenberg) O. Müller
Eunotia gibberula Ehrenberg = *Rhopalodia gibberula* (Ehrenberg) O. Müller
- Eunotia glacialis* Meister**
Plains States: Patrick and Reimer (1966)
Reported as:
Eunotia gracilis (Ehrenberg) Rabenhorst
KS: Curtis (1901)
- Eunotia gracilis* (Ehrenberg) Rabenhorst = *Eunotia glacialis* Meister
Eunotia granulata Ehrenberg = *Epithemia turgida* var. *granulata* (Ehrenberg) Brun
- Eunotia incisa* W. Smith ex Gregory**
OK: Troeger (1983)
- Eunotia librile* Ehrenberg = *Epithemia turgida* var. *granulata* (Ehrenberg) Brun
- Eunotia lunaris* (Ehrenberg) Grunow**
KS: Curtis (1901)
NE: Andersen and Walker (1920), Elmore (1921)
- Eunotia lunula* Ehrenberg = *Epithemia lunula* (Ehrenberg) Ralfs? [see Patrick and Reimer 1966:221]
KS: Curtis (1901)
- Eunotia maior* (W. Smith) Rabenhorst [also as *E. major*]**
NE: Andersen and Walker (1920), Elmore (1921)
OK: Pfiester et al. (1979)
Plains States: Patrick and Reimer (1966)
- Eunotia metamonodon* Lange-Bertalot**
Reported as:
Eunotia monodon Ehrenberg
KS: Wujek et al. (1980)
- Eunotia monodon* Ehrenberg = *Eunotia metamonodon* Lange-Bertalot
- Eunotia mondontiforma* Lange-Bertalot & Nörpel**
NE: Shinneman et al. (2010)
- Eunotia naegeli* Migula**
NE: Shinneman et al. (2010)
OK: Pfiester et al. (1979)

***Eunotia parallela* Ehrenberg**

KS: Wujek et al. (1980)

Eunotia paradoxa Ehrenberg = ?

NE: Ehrenberg (1856)

***Eunotia pectinalis* (Kützing) Rabenhorst**

OK: Hern et al. (1979)

***Eunotia pectinalis* f. *impressa* (Ehrenberg) Hustedt**

Reported as:

Eunotia pectinalis var. *minor* f. *impressa* Ehrenberg

OK: Troeger (1978, 1983)

Eunotia pectinalis var. *minor* f. *impressa* Ehrenberg = *Eunotia pectinalis* f. *impressa* (Ehrenberg) Hustedt

***Eunotia pectinalis* var. *ventricosa* (Ehrenberg) Grunow**

Plains States: Patrick and Reimer (1966)

***Eunotia perpusilla* Grunow**

OK: Pfiester et al. (1979)

***Eunotia septentrionalis* Østrup**

OK: Pfiester et al. (1979)

Eunotia sphaerula Ehrenberg = *Rhopalodia gibberula* var. *sphaerula* (Ehrenberg) O. Müller

Eunotia turgida (Ehrenberg) Ehrenberg = *Epithemia turgida* (Ehrenberg) Kützing

***Eunotia valida* Hustedt**

OK: Troeger (1978)

Eunotia zebra Ehrenberg = *Epithemia adnata* (Kützing) Brébisson

Eunotia zebra Ehrenberg = *Epithemia turgida* var. *zebrina* (Ehrenberg) Rabenhorst

► ***Fallacia insociabilis* (Krasske) D. Mann**

Reported as:

Navicula insociabilis Krasske

MO: Pamperl (1980)

***Fallacia pygmaea* (Kützing) Stickle & D. Mann**

KS: Harris and Eberle (2001)

Reported as:

Navicula pygmaea Kützing

KS: Powers (1969), Wenke and Eberle (1986), Wujek et al. (1980)

NE: Elmore (1921)

OK: Hern et al. (1979), Koch (1975), Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1966)

***Fallacia subhamulata* (Grunow) D. Mann**

Reported as:

Navicula subhamulata Grunow

MO: Pamperl (1980)

***Fallacia vitrea* (Østrup) D. Mann**

Reported as:

Navicula festiva Krasske

MO: Pamperl (1980)

OK: Koch and Risser (1974), Troeger (1983)

► ***Fistulifera pelliculosa* (Kützing) Lange-Bertalot**

Reported as:

Navicula pelliculosa (Brébisson ex Kützing) Hilse

KS: Powers (1969)

OK: Koch and Risser (1974), Seyfer and Wilhm (1977), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1966)

► ***Frustulia amphipleuroides* (Grunow) A. Cleve**

Reported as:

Frustulia rhomboides var. *amphipleuroides* (Grunow) De Toni

KS: Wenke and Eberle (1985)

***Frustulia interposita* (Lewis) Cleve**

OK: Wilhm et al. (1977)

***Frustulia rhomboides* (Ehrenberg) De Toni**

KS: Branson (1966)

OK: Pfiester et al. (1979)

Frustulia rhomboides var. *amphipleuroides* (Grunow) Cleve = *Frustulia amphipleuroides* (Grunow) De Toni

***Frustulia rhomboides* var. *capitata* (A. Mayer) Patrick**

OK: Pfiester et al. (1979)

Frustulia rhomboides var. *saxonica* (Rabenhorst) De Toni = *Frustulia saxonica* Rabenhorst

***Frustulia saxonica* Rabenhorst**

Reported as:

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

Plains States: Patrick and Reimer (1966)

***Frustulia vulgaris* (Thwaites) De Toni**

KS: Wenke and Eberle (1985, 1986)

OK: Cooper and Wilhm (1975), Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1983), Wilhm et al. (1977)

Plains States: Patrick and Reimer (1966)

Reported as:

Brebissonia vulgaris (Thwaites) Kuntze

NE: Andersen and Walker (1920), Elmore (1921)

Navicula rhomboides var. ? (*Colletonema vulgare* Thwaites)

KS: Curtis (1901)

► ***Geissleria decussis* (Østrup) Lange-Bertalot & Metzeltin**

Reported as:

Navicula decussis Østrup

KS: Wujek et al. (1980)

NE: Roemer et al. (1984)

OK: ?Koch (1975), Koch and Risser (1974), Pfiester et al. (1979)

***Geissleria schoenfeldii* (Hustedt) Lange-Bertalot & Metzeltin**

Reported as:

Navicula schoenfeldii Hustedt

OK: Troeger (1978)

► ***Gloeonema gracile* Ehrenberg = *Encyonema*?**

Gloeonema paradoxum Ehrenberg = *Encyonema prostratum* (Berkeley) Kützing

► ***Gomphoneis calcareum* Cleve**

Reported as:

Gomphonema olivaceum var. *calcareum* (Cleve) Cleve

KS: Harris and Eberle (2001)

OK: Troeger (1978)

***Gomphoneis clevei* (Fricke) Gill**

Reported as:

Gomphonema clevei Fricke

KS: Powers (1969)

MO: Pamperl (1980)

NE: Patrick and Reimer (1975)

OK: Pfiester et al. (1979)

***Gomphoneis eriense* (Grunow) Skvortzow & Meyer**

NE: Hoagland et al. (1982)

Plains States: Patrick and Reimer (1975)

Reported as:

Gomphonema eriense Grunow

NE: Elmore (1921)

***Gomphoneis exigua* (Kützing) Medlin**

Reported as:

Gomphonema exiguum Kützing

NE: Elmore (1921)

***Gomphoneis herculeana* (Ehrenberg) Cleve**

Plains States: Patrick and Reimer (1975)

Reported as:

Gomphonema herculeanum Ehrenberg

NE: Andersen and Walker (1920), Ehrenberg (1856), Elmore (1921)

***Gomphoneis herculeana* var. *robusta* (Grunow) Cleve**

NE: Hoagland et al. (1982), Roemer et al. (1984)

***Gomphoneis olivaceum* (Hornemann) Dawson ex Ross & Sims**

Reported as:

Gomphonema clavatum Ehrenberg

KS: Curtis (1901)

NE: Webber (1889, 1890)

OK: Ehrenberg (1856)

Gomphonema olivaceum (Lyngbye) Kützing

KS: Curtis (1901), Elmore (1921), Harris and Eberle (2001), McFarland et al. (1964), Powers (1969), Wenke and Eberle (1986), Williams et al. (1979), WPSS (1961–1963), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Elmore (1921), Hoagland et al. (1982), F.A. Morris et al. (1979), Roemer et al. (1984), WPSS (1961–1963)

OK: Cooper and Wilhm (1975), Koch (1975), Leake (1945), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1983), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962, 1964), WPSS (1961–1963, 1966)

Plains States: Patrick and Reimer (1975)

► *Gomphonema abbreviatum* Agardh = *Rhoicosphenia abbreviata* (Agardh) Lange-Bertalot

***Gomphonema acuminatum* Ehrenberg**

KS: Wujek et al. (1980)

NE: Andersen and Walker (1920), Elmore (1921)

OK: Pfiester et al. (1979), Troeger (1983), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1975)

Gomphonema acuminatum var. *coronatum* (Ehrenberg) Rabenhorst = *Gomphonema coronatum* Ehrenberg

***Gomphonema affine* Kützing**

KS: Curtis (1901), Harris and Eberle (2001), Powers (1969), Wujek et al. (1980)

NE: Hoagland et al. (1982), Shinneman et al. (2010)

OK: Pfiester et al. (1979), Troeger (1983), Troeger and Menzel (1986)

Plains States: Patrick and Reimer (1975)

Reported as:

Gomphonema affine f. *major* Grunow

KS: Curtis (1901)

Gomphonema affinis ?

KS: Curtis (1901) [*G. affine* and *G. affinis* were listed separately in the same list by Curtis (1901:69)]

Gomphonema affine f. *major* Grunow = *Gomphonema affine* Kützing

Gomphonema affine var. *insigne* (Gregory) Andrews = *Gomphonema insigne* Gregory

Gomphonema affinis? = *Gomphonema affine* Kützing?

***Gomphonema angustatum* (Kützing) Rabenhorst**

KS: Curtis (1901), Harris and Eberle (2001), Powers (1969), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Elmore (1921)

OK: Koch and Risser (1974), Pfiester et al. (1979), Wilhm et al. (1977), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1975)

***Gomphonema angustatum* var. *intermedium* Grunow**

KS: Curtis (1901), Powers (1969)

MO: Pamperl (1980)

Plains States: Patrick and Reimer (1975)

Reported as:

Gomphonema angustatum var. *obesa* Lauby

KS: Powers (1969)

Gomphonema angustatum var. *obesa* Lauby = *Gomphonema angustatum* var. *intermedium* Grunow

***Gomphonema angustatum* var. *obtusatum* (Kützing) Grunow**

KS: Patrick and Reimer (1975)

Reported as:

Gomphonema obtusatum (Kützing) Grunow

KS: Curtis (1901)

Gomphonema angustatum var. *productum* Grunow = *Gomphonema productum* (Grunow) Lange-Bertalot

Gomphonema angustatum var. *sarcophagus* (Gregory) Grunow = *Gomphonema angustatum* var. *sarcophagus* Gregory

***Gomphonema apicatum* Ehrenberg**

OK: Troeger (1978)

***Gomphonema apuncto* J.H. Wallace**

MO: Pamperl (1980)

***Gomphonema augar* Ehrenberg**

NE: Elmore (1921)

OK: Pfiester et al. (1979), Troeger (1978)

Plains States: Patrick and Reimer (1975)

***Gomphonema auritum* A. Braun ex Kützing**

KS: Curtis (1901)

Gomphonema brasiliense Grunow = *Gomphosphenia brasiliense* (Grunow) ?

***Gomphonema capitatum* Ehrenberg**

CO: Cockerell (1888)

KS: Curtis (1901)

NE: Webber (1890)

Reported as:

Gomphonema constrictum var. *capitatum*

NE: Webber (1890)

Gomphonema truncatum var. *capitatum* (Ehrenberg) Patrick

NE: Shinneman et al. (2010)

Plains States: Patrick and Reimer (1975)

Gomphonema clavatum Ehrenberg = *Gomphoneis olivaceum* (Hornemann) Dawson ex Ross & Sims

Gomphonema clevei Fricke = *Gomphoneis clevei* (Fricke) Gill

***Gomphonema commutatum* Grunow**

KS: Curtis (1901)

Reported as:

Gomphonema subclavatum var. *commutatum* (Grunow) A. Mayer

Plains States: Patrick and Reimer (1975)

Gomphonema commutatum var. *subramosum* = ?

KS: Curtis (1901) [see Patrick and Reimer 1975:151]

***Gomphonema consector* Hohn & Helleman**

KS: Wujek et al. (1980)

OK: Pfiester et al. (1979)

Gomphonema constrictum Ehrenberg = *Gomphonema truncatum* Ehrenberg

Gomphonema constrictum var. *capitatum* (Ehrenberg) Grunow = *Gomphonema capitatum* Ehrenberg

***Gomphonema coronatum* Ehrenberg**

Reported as:

Gomphonema acuminatum var. *coronatum* (Ehrenberg) Rabenhorst

KS: Wujek (1965)

OK: Koch and Risser (1974)

***Gomphonema dichotomum* Kützing**

MO: Pamperl (1980)

NE: Webber (1890)

Plains States: Patrick and Reimer (1975)

Reported as:

Gomphonema gracile var. *dichotomum* (Kützing) Grunow

NE: Webber (1890)

***Gomphonema drutelingense* Reichardt**

KS: Juracek (2008)

Gomphonema eriense Grunow = *Gomphoneis eriense* (Grunow) Skvortzow & Meyer

Gomphonema exiguum Kützing = *Gomphoneis exigua* (Kützing) Medlin

***Gomphonema gracile* Ehrenberg emend Van Heurck**

KS: Curtis (1901), Williams et al. (1979), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Andersen and Walker (1920), Elmore (1921), Hoagland et al. (1982), Shinneman et al. (2010)

OK: Ehrenberg (1856), Pfiester and Terry (1978), Pfiester et al. (1979), Troeger (1978, 1983)

Plains States: Patrick and Reimer (1975)

Reported as:

Gomphonema gracile var. *naviculoides* (W. Smith) Grunow

KS: Powers (1969)

Gomphonema gracile f. *parva* Grunow

KS: Curtis (1901)

Gomphonema gracile var. *dichotomum* (Kützing) Grunow = *Gomphonema dichotomum* Kützing

Gomphonema gracile var. *lanceolata* (Kützing) Cleve = *Gomphonema grunowii* Patrick

Gomphonema gracile f. *parva* Grunow = *Gomphonema gracile* Ehrenberg emend Van Heurck

***Gomphonema gracile* var. *longicolle* Ehrenberg**

Reported as:

Gomphonema longicolle Ehrenberg

NE: Ehrenberg (1856)

Gomphonema gracile var. *naviculoides* (W. Smith) Grunow = *Gomphonema gracile* Ehrenberg emend Van Heurck

***Gomphonema grunowii* Patrick**

KS: Wujek et al. (1980)

OK: Pfiester et al. (1979)

Plains States: Patrick and Reimer (1975)

Reported as:

Gomphonema gracile var. *lanceolata* (Kützing) Cleve

OK: Koch and Risser (1974)

Gomphonema lanceolatum Ehrenberg

NE: Elmore (1921)

***Gomphonema helveticum* Brun**

OK: Troeger (1978, 1983)

Gomphonema herculeanum Ehrenberg = *Gomphoneis herculeana* (Ehrenberg) Cleve

***Gomphonema insigne* Gregory**

KS: Curtis (1901)

Reported as:

Gomphonema affine var. *insigne* (Gregory) Andrews

OK: Pfiester et al. (1979)

Plains States: Patrick and Reimer (1975)

***Gomphonema intricatum* Kützing**

KS: Wujek (1965)

NE: Elmore (1921), Hoagland et al. (1982), Roemer et al. (1984), Rosowski et al. (1986)

Plains States: Patrick and Reimer (1975)

Gomphonema intricatum var. *pumila* Grunow = *Gomphonema pumilum* (Grunow) Reichardt & Lange-Bertalot

Gomphonema intricatum var. *vibrio* (Ehrenberg) Cleve = *Gomphonema vibrio* Ehrenberg

***Gomphonema lagenula* Kützing**

KS: Curtis (1901)

NE: Shinneman et al. (2010)

Gomphonema lanceolatum Ehrenberg = *Gomphonema grunowii* Patrick

Gomphonema longiceps var. *subclavatum* Grunow = *Gomphonema subclavatum* (Grunow) Grunow

Gomphonema longiceps var. *subclavatum* f. *gracilis* Hustedt = *Gomphonema subclavatum* (Grunow) Grunow

Gomphonema longicolle Ehrenberg = *Gomphonema gracile* var. *longicolle* Ehrenberg

***Gomphonema mexicanum* Grunow**

KS: Curtis (1901)

Reported as:

Gomphonema subclavatum var. *mexicanum* (Grunow) Patrick

KS: Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982)

OK: Pfiester et al. (1979)

Plains States: Patrick and Reimer (1975)

***Gomphonema micropus* Kützing**

Reported as:

Gomphonema parvulum var. *microceps* (Kützing) Cleve

OK: Koch and Risser (1974)

***Gomphonema montanum* (Schumann) Grunow**

KS: Elmore (1921)?

NE: Andersen and Walker (1920)?, Elmore (1921)?

OK: Koch (1975)

Plains States: Patrick and Reimer (1975) [*G. montanum sensu* Elmore (from KS and NE) is not *G. montanum* (Schumann) Grunow (Patrick and Reimer 1975:122)]

Gomphonema montanum var. *subclavatum* Grunow = *Gomphonema subclavatum* (Grunow) Grunow

Gomphonema obtusatum (Kützing) Grunow = *Gomphonema angustatum* var. *obtusatum* (Kützing) Grunow

Gomphonema obtusum Ehrenberg = *nom. nud.*

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

Gomphonema olivaceum (Lyngbye) Kützing = *Gomphoneis olivaceum* (Hornemann) Dawson ex Ross & Sims

Gomphonema olivaceum var. *calcareum* (Cleve) Cleve = *Gomphoneis calcareum* Cleve

Gomphonema olivaceum var. *vulgaris* = *Gomphoneis*?

KS: Curtis (1901) [misidentified (Patrick and Reimer 1975:152)]

***Gomphonema parvulum* (Kützing) Kützing**

KS: Curtis (1901), Harris and Eberle (2001), Powers (1969), Wenke and Eberle (1986), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Andersen and Walker (1920), Elmore (1921), Hoagland et al. (1982), Roemer et al. (1984), Rosowski et al. (1986), Shinneman et al. (2010) as *G. parvulum sensu lato*

OK: Hern et al. (1979), Koch (1975), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983), Troeger and Menzel (1986), Wilhm et al. (1977), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1975)

Reported as:

Gomphonema parvulum var. *subcapitata* Grunow

KS: Curtis (1901)

Gomphonema parvulum var. *microceps* (Kützing) Cleve = *Gomphonema parvulum* var. *micropus* (Kützing) Cleve? [= *Gomphonema micropus* Kützing]

Gomphonema parvulum var. *subcapitata* Grunow = *Gomphonema parvulum* (Kützing) Kützing

***Gomphonema productum* (Grunow) Lange-Bertalot & Reichardt**

Reported as:

Gomphonema angustatum var. *productum* Grunow

KS: Curtis (1901)

OK: Troeger (1983)

Plains States: Patrick and Reimer (1975)

***Gomphonema pumilum* (Grunow) Reichardt & Lange-Bertalot**

Reported as:

Gomphonema intricatum var. *pumila* Grunow

KS: Curtis (1901)

OK: Koch and Risser (1974)

***Gomphonema sarcophagus* Gregory**

KS: Curtis (1901)

Reported as:

Gomphonema angustatum var. *sarcophagus* (Gregory) Grunow

OK: Troeger (1983)

***Gomphonema semiapterum* Grunow**

KS: Patrick and Reimer (1975) [only as a fossil (Hanna 1932)]

***Gomphonema simus* Hohn & Hellerman**

OK: Pfiester et al. (1979)

***Gomphonema sphaerophorum* Ehrenberg**

KS: Wujek (1965)

OK: Pfiester et al. (1979)

Plains States: Patrick and Reimer (1975)

***Gomphonema subclavatum* (Grunow) Grunow**

KS: Powers (1969), Wenke and Eberle (1986)

MO: Pamperl (1980)

NE: Hoagland et al. (1982)

OK: Pfiester et al. (1979), Seyfer and Wilhm (1977)

Plains States: Patrick and Reimer (1975)

Reported as:

Gomphonema longiceps var. *subclavatum* (Grunow) Hustedt

NE: Shinneman et al. (2010)

OK: Koch and Risser (1974), Troeger (1978)

Gomphonema longiceps var. *subclavatum* f. *gracilis* (Kützing) Cleve

OK: Pfiester and Terry (1978)

Gomphonema montanum var. *subclavatum* Grunow

KS: Curtis (1901)

OK: Koch and Risser (1974)

Gomphonema subclavatum var. *commutatatum* (Grunow) A. Mayer = *Gomphonema commutatatum* Grunow

Gomphonema subclavatum var. *mexicanum* (Grunow) Patrick = *Gomphonema mexicanum* Grunow

***Gomphonema subtile* Ehrenberg**

KS: Wujek (1965)

***Gomphonema tenellum* Kützing**

MO: Pamperl (1980)

OK: Pfiester et al. (1979)

***Gomphonema tergestinum* (Grunow) Fricke**

OK: Pfiester et al. (1979)

***Gomphonema truncatum* Ehrenberg**

KS: Wenke and Eberle (1986), Wujek et al. (1980)

NE: Shinneman et al. (2010) as *G. truncatum sensu lato*

OK: Seyfer and Wilhm (1977)

Plains States: Patrick and Reimer (1975)

Reported as:

Gomphonema constrictum Ehrenberg

KS: Curtis (1901), Wolle (1889)

NE: Andersen and Walker (1920), Elmore (1921), Webber (1889, 1890)

OK: Koch and Risser (1974), Leake (1945)

Gomphonema truncatum var. *capitatum* (Ehrenberg) Patrick = *Gomphonema capitatum* Ehrenberg

***Gomphonema validum* Cleve**

NE: Elmore (1921)

***Gomphonema ventricosum* Gregory**

KS: Curtis (1901)

***Gomphonema vibrio* Ehrenberg**

Reported as:

Gomphonema intricatum var. *vibrio* (Ehrenberg) Cleve

KS: Wujek et al. (1980)

MO: Pamperl (1980)

Plains States: Patrick and Reimer (1975)

► ***Gomphosphenia brasiliense* (Grunow) ?**

Reported as:

Gomphonema brasiliense Grunow

Plains States: Patrick and Reimer (1975)

► ***Gyrosigma acuminatum* (Kützing) Rabenhorst**

KS: Harris and Eberle (2001), Juracek (2008), Reinke (1979*a*), Wenke and Eberle (1986), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Elmore (1921), Hoagland et al. (1982), Shinneman et al. (2010)

OK: Pfiester et al. (1979)

Plains States: Patrick and Reimer (1966)

Reported as:

Gyrosigma spenceri (Bailey ex Quekett) Griffith & Henfrey

KS: Elmore (1921), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Elmore (1921), Hoagland et al. (1982)

OK: Koch and Risser (1974), Seyfer and Wilhm (1977), Troeger (1978), Wilhm et al. (1977), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1966)

Pleurosigma gracilentum Rabenhorst

KS: Curtis (1901)

Pleurosigma spencerii (Bailey ex Quekett) W. Smith

KS: Curtis (1901)

***Gyrosigma attenuatum* (Kützing) Rabenhorst**

NE: Elmore (1921)

Plains States: Patrick and Reimer (1966)

Gyrosigma delicatulum (W. Smith) Elmore = *Pleurosigma delicatulum* W. Smith

***Gyrosigma euhippus* Sterrenburg & Ross**

Reported as:

Pleurosigma hippocampus Ehrenberg

KS: ?Curtis (1901)

***Gyrosigma eximium* (Thwaites) Boyer emend Sterrenburg**

KS: ?Patrick and Reimer (1966)

OK: Pfiester et al. (1979)

Reported as:

Pleurosigma eximium (Thwaites) Grunow

KS: Curtis (1901)

***Gyrosigma fasciola* (Ehrenberg) Griffith & Henfrey**

KS: Powers (1969)

OK: ?Hern et al. (1979)

***Gyrosigma kuetzingii* (Grunow) Cleve**

CO: WPSS (1961–1963)

KS: WPSS (1961–1963)

NE: Elmore (1921)

OK: WPSS (1961–1963)

Reported as:

Pleurosigma kuetzingii Grunow

KS: Curtis (1901)

***Gyrosigma macrum* (W. Smith) Griffith & Henfrey**

CO: ?M.K. Morris et al. (1979*b*)

***Gyrosigma obscurum* (W. Smith) Griffith & Henfrey**

KS: Wenke and Eberle (1985)

***Gyrosigma scalproides* (Rabenhorst) Cleve**

KS: Powers (1969)

NE: Elmore (1921)

Plains States: Patrick and Reimer (1966)

***Gyrosigma scalprum* (Gaillon) Sterrenburg**

Reported as:

Navicula scalprum Gaillon

OK: Ehrenberg (1856)

***Gyrosigma sciotense* (Sullivant & Wormley) Cleve**

Plains States: ?Patrick and Reimer (1966)

Reported as:

Pleurosigma sciotense Sullivant & Wormley

KS: Curtis (1901)

Gyrosigma spencerii (Quekett) Griffith & Henfrey = *Gyrosigma acuminatum* (Kützing) Rabenhorst

***Gyrosigma spencerii* var. *curvula* (Grunow) Reimer?** [status needs to be reassessed (Sterrenburg 1995:476–477)]

KS: Czarnecki and Reinke (1981), Wenke and Eberle (1986)

OK: Koch (1975)

► ***Halamphora acutiuscula* (Kützing) Levkov**

Reported as:

Amphora acutiuscula Kützing

KS: Czarnecki and Reinke (1981), Harris and Eberle (2001)

OK: Kennedy and Pfister (1984)

***Halamphora coffeiformis* (Agardh) Levkov**

Reported as:

Amphora coffeiformis (Agardh) Kützing

KS: Czarnecki and Reinke (1981), Harris and Eberle (2001)

NE: Patrick and Reimer (1975)

OK: Kennedy and Pfister (1984)

Amphora salina W. Smith

NE: Elmore (1921), Schofield (1892), Webber (1890)

Amphora salinarum W. Smith

OK: Koch (1975)

***Halamphora cymbifera* (Gregory) Levkov**

Reported as:

Amphora cymbifera Gregory

KS: Curtis (1901)

***Halamphora montana* (Krasske) Levkov**

Reported as:

Amphora montana Krasske

KS: Powers (1969)

***Halamphora normanii* (Rabenhorst) Levkov**

Reported as:

Amphora normanii Rabenhorst

OK: Pfister et al. (1979)

***Halumphora submontana* (Hustedt) Levkov**

Reported as:

Amphora submontana Hustedt

KS: Powers (1969)

Plains States: Patrick and Reimer (1975)

***Halumphora veneta* (Kützing) Levkov**

Reported as:

Amphora veneta Kützing

KS: Harris and Eberle (2001), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982), Shinneman et al. (2010)

OK: Pfiester et al. (1979), Troeger (1983)

Plains States: Patrick and Reimer (1975)

► ***Hantzschia amphioxys* (Ehrenberg) Grunow**

CO: WPSS (1961–1963)

KS: Harris and Eberle (2001), Juracek (2003), Wenke and Eberle (1986), Williams et al. (1979), WPSS (1961–1963)

MO: M.K. Morris et al. (1979*a*)

NE: Shinneman et al. (2010) [also as *H. amphioxys*], WPSS (1961–1963)

OK: Koch and Risser (1974), Pfiester et al. (1979), Troeger (1978), Wilhm et al. (1977), Wilhm et al. (1978), WPSS (1961–1963)

Reported as:

Eunotia amphioxys Ehrenberg

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

Homoeocladia amphioxys (Ehrenberg) Kuntze

NE: Andersen and Walker (1920), Elmore (1921)

Nitzschia amphioxys (Ehrenberg) W. Smith

KS: Curtis (1901), Wolle (1889)

***Hantzschia amphioxys* var. *capitata* O. Müller**

KS: Wenke and Eberle (1986), Wujek et al. (1980)

NE: F.A. Morris et al. (1979)

OK: Troeger (1983)

***Hantzschia amphioxys* f. *vivax* Grunow**

KS: Wenke and Eberle (1986)

NE: Webber (1890) [and parenthetically as *Nitzschia vivax* Hantzsch]

Reported as:

Nitzschia amphioxys var. *vivax* (Grunow) ?

KS: Curtis (1901)

***Hantzschia spectabilis* (Ehrenberg) Hustedt**

Reported as:

Synedra spectabilis Ehrenberg

NE: Ehrenberg (1856)

Homoeocladia spectabilis (Ehrenberg) Kuntze

NE: Elmore (1921)

Nitzschia spectabilis (Ehrenberg) Ralfs

KS: Curtis (1901) [see Eberle 1981:105]

NE: Andersen and Walker (1920)

***Hantzschia virgata* (Roper) Grunow**

OK: Wilhm et al. (1977), Willson and Forest (1957)

Reported as:

Homoeocladia virgata (Roper) Kuntze

NE: Elmore (1921)

***Hantzschia vivacior* Lange-Bertalot**

NE: Shinneman et al. (2010)

► ***Haslea spicula* (Hickie) Bukhtiyarova**

Reported as:

Navicula spicula (Hicke) Cleve

KS: Czarnecki and Reinke (1981), Wenke and Eberle (1986)

OK: Koch (1975)

Stauroneis spicula (Hicke) Grunow

KS: Czarnecki and Reinke (1981), Wenke and Eberle (1986)

► ***Hippodonta capitata* (Ehrenberg) Lange-Bertalot, Metzeltin, & Witkowski**

NE: Shinneman et al. (2010)

Reported as:

Navicula capitata Ehrenberg

NE: Hoagland et al. (1982)

OK: Koch and Risser (1974), Pfister et al. (1979), Seyfer and Wilhm (1977), Troeger (1983), Wilhm et al. (1977), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1966)

Pinnularia capitata Ehrenberg

OK: Ehrenberg (1856)

***Hippodonta hungarica* (Grunow) Lange-Bertalot, Metzeltin, & Witkowski**

Reported as:

Navicula capitata var. *hungarica* (Grunow) Ross

KS: Harris and Eberle (2001), Wujek et al. (1980)

MO: Pamperl (1980)

OK: Koch (1975)

Plains States: Patrick and Reimer (1966)

Navicula humilis Donkin

NE: Andersen and Walker (1920)

Navicula hungarica Grunow

KS: Powers (1969)

NE: Elmore (1921)

► ***Homoeocladia acicularis* (Kützing) Kuntze = *Nitzschia acicularis* (Kützing) W. Smith**

Homoeocladia amphibia (Grunow) Kuntze = *Nitzschia amphibia* Grunow

Homoeocladia amphioxys (Ehrenberg) Kuntze = *Hantzschia amphioxys* (Ehrenberg) Grunow

Homoeocladia angustata (W. Smith) Kuntze = *Tryblionella angustata* W. Smith

Homoeocladia apiculata (Gregory) Kuntze = *Tryblionella apiculata* Gregory

Homoeocladia arcus (Bulnheim) Kuntze = *Nitzschia obtusa* W. Smith

Homoeocladia brebissonii (W. Smith) Kuntze = *Nitzschia brebissonii* W. Smith

Homoeocladia commutata (Grunow) Kuntze = *Nitzschia commutata* Grunow

Homoeocladia dissipata (Kützing) Kuntze = *Nitzschia dissipata* (Kützing) Grunow

Homoeocladia dubia (W. Smith) Elmore = *Nitzschia dubia* W. Smith

Homoeocladia fasciculata (Grunow) Kuntze = *Nitzschia fasciculata* (Grunow) Grunow

Homoeocladia filiformis W. Smith = *Nitzschia filiformis* (W. Smith) Van Heurck

Homoeocladia frustulum (Kützing) Kuntze = *Nitzschia frustulum* (Kützing) Grunow

Homoeocladia hungarica (Grunow) Kuntze = *Tryblionella hungarica* (Grunow) Frenguelli

Homoeocladia intermedia (Hantzsch) Kuntze = *Nitzschia intermedia* Hantzsch

Homoeocladia lanceolata (W. Smith) Kuntze = *Nitzschia lanceolata* W. Smith

Homoeocladia linearis (W. Smith) Kuntze = *Nitzschia linearis* (Agardh) W. Smith

Homoeocladia obtusa (Lyngbye) Elmore = *Nitzschia denticula* Grunow

Homoeocladia palea (Kützing) Kuntze = *Nitzschia palea* (Kützing) W. Smith

Homoeocladia paxillifer (O. Müller) Elmore = *Bacillaria paradoxa* Gmelin

Homoeocladia punctata (W. Smith) Kuntze = *Tryblionella punctata* W. Smith

Homoeocladia sigma (Kützing) Kuntze = *Nitzschia sigma* (Kützing) W. Smith

Homoeocladia sigmoidea (Nitzsch) Elmore = *Nitzschia sigmoidea* (Nitzsch) W. Smith

Homoeocladia spectabilis (Ehrenberg) Kuntze = *Hantzschia spectabilis* (Ehrenberg) Hustedt

Homoeocladia subtilis (Kützing) Kuntze = *Nitzschia subtilis* (Kützing) Grunow

Homoeocladia tryblionella (Hantzsch) Kuntze = *Tryblionella gracilis* W. Smith

Homoeocladia umbonata (Ehrenberg) Kuntze = *Nitzschia umbonata* (Ehrenberg) Lange-Bertalot

Homoeocladia vermicularis (Kützing) Kuntze = *Nitzschia vermicularis* (Kützing) Hantzsch

Homoeocladia virgata (Roper) Kuntze = *Hantzschia virgata* (Roper) Grunow

Homoeocladia vitrea (Norman) Kuntze = *Nitzschia vitrea* Norman

► ***Humidophila contenta* (Grunow) Lowe et al. (= *Humidophila contenta* var. *biceps* (Grunow) ?)**

Reported as:

Navicula contenta var. *biceps* (Grunow) Van Heurck

OK: Troeger (1983)

***Humidophila peregrina* (W. Smith) Lowe et al.**

Reported as:

Navicula confervacea var. *hungarica* Grunow

KS: Curtis (1901)

Navicula confervacea var. *peregrina* (W. Smith) Grunow

KS: Curtis (1901), Patrick and Reimer (1966)

MO: Pamperl (1980)

OK: Troeger (1978, 1983), Troeger and Menzel (1986)

► ***Iconella bifrons* (Ehrenberg) Ruck & Nakov**

Reported as:

Surirella bifrons Ehrenberg

NE: ?Ehrenberg (1856)

OK: Ehrenberg (1856)

***Iconella biseriata* (Brébisson) Ruck & Nakov**

Reported as:

Surirella biseriata Brébisson

NE: Elmore (1921)

***Iconella delicatissima* (Lewis) Ruck & Nakov**

Reported as:

Surirella delicatissima Lewis

KS: Curtis (1901)

***Iconella linearis* (W. Smith) Ruck & Nakov**

Reported as:

Surirella linearis W. Smith

KS: Wujek (1965), Wujek et al. (1980)

NE: Elmore (1921)

OK: Koch and Risser (1974), Pfister et al. (1979)

***Iconella helvetica* (Brun) Ruck & Nakov**

Reported as:

Surirella linearis var. *helvetica* (Brun) Meister

KS: ?Williams et al. (1979)

***Iconella hibernica* (Ehrenberg) Ruck & Nakov**

Reported as:

Campylodiscus noricus var. *hibernicus* (Ehrenberg) Grunow

KS: Reinke (1979a)

***Iconella robusta* (Ehrenberg) Ruck & Nakov**

Reported as:

Surirella nobilis W. Smith

KS: Curtis (1901)

Surirella robusta Ehrenberg

KS: Curtis (1901), Wujek (1965)

NE: Andersen and Walker (1920), Elmore (1921)

OK: Pfister et al. (1979), Troeger (1978)

***Iconella spiralis* (Kützing) Ruck & Nakov**

Reported as:

Surirella spiralis Kützing

KS: Wolle (1889)

NE: Andersen and Walker (1920), Elmore (1921)

***Iconella splendida* (Ehrenberg) Ruck & Nakov**

Reported as:

Surirella robusta var. *splendida* (Ehrenberg) Van Heurck

KS: McFarland et al. (1964)

OK: Pfister et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983)

Surirella splendida (Ehrenberg) Kützing

KS: Curtis (1901), Wolle (1889)

***Iconella tenera* (Gregory) Ruck & Nakov**

Reported as:

Surirella tenera Gregory

KS: Curtis (1901)

NE: Shinneman et al. (2010)

- ▶ ***Karayevia clevei* (Grunow) Bukhtiyarova**
Reported as:
Achnanthes clevei Grunow
MO: Pamperl (1980)
- ▶ ***Kobayasiella subtilissima* (Cleve) Lange-Bertalot**
Reported as:
Navicula subtilissima Cleve
OK: Koch and Risser (1974), Pfiester et al. (1979)
- ▶ ***Kurtkrammeria aequalis* (W. Smith) Krammer**
Reported as:
Cymbella aequalis W. Smith
NE: Elmore (1921)

- ▶ ***Lemnicola hungarica* (Grunow) Round & Basson**
Reported as:
Achnanthes hungarica (Grunow) Grunow
KS: Wenke and Eberle (1986), Wujek et al. (1980)
MO: Pamperl (1980)
NE: Elmore (1921)
Plains States: Patrick and Reimer (1966)
- ▶ ***Luticola cohnii* (Hilse) D. Mann**
Reported as:
Navicula mutica var. *cohnii* (Hilse) Grunow
KS: Powers (1969), Wujek et al. (1980)
NE: Hoagland et al. (1982)
OK: Pfiester et al. (1979), Troeger (1978)
- Luticola goeppertiana* (Bleisch ex Rabenhorst) D. Mann**
Reported as:
Navicula mutica var. *goeppertiana* (Bleisch ex Rabenhorst) Grunow
KS: Curtis (1901)
- Luticola mutica* (Kützing) D. Mann**
Reported as:
Navicula mutica Kützing
KS: Powers (1969)
NE: Elmore (1921)
OK: Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983)
Plains States: Patrick and Reimer (1966)
- Luticola stigma* (Patrick) Johansen**
Reported as:
Navicula mutica var. *stigma* Patrick
OK: Pfiester et al. (1979)
- Luticola terminata* (Hustedt) Johansen**
Reported as:
Navicula mutica var. *tropica* Hustedt
OK: Pfiester et al. (1979)
- Luticola undulata* (Hilse) D. Mann**
Reported as:
Navicula mutica var. *undulata* (Hilse) Grunow
OK: Pfiester et al. (1979), Troeger (1983)
- Luticola ventricosa* (Kützing) D. Mann**
Reported as:
Navicula mutica var. *ventricosa* (Kützing) Cleve & Grunow
OK: Troeger (1978)

- ▶ ***Mastogloia albertii* Pavlov et al.**
Reported as:
Mastogloia smithii var. *amphicephala* Grunow
KS: Patrick and Reimer (1966)
OK: Pfiester et al. (1979)

***Mastogloia braunii* Grunow**

KS: Harris and Eberle (2001)

***Mastogloia dansei* (Thwaites) W. Smith**

KS: Harris and Eberle (2001)

Reported as:

Mastogloia elliptica var. *dansei* (Thwaites) Cleve

KS: Czarnecki and Reinke (1981), Wenke and Eberle (1986)

***Mastogloia elliptica* (Agardh) Cleve**

NE: Elmore (1921)

OK: Kennedy and Pfister (1984)

Mastogloia elliptica var. *dansei* (Thwaites) Cleve = *Mastogloia dansei* Thwaites [see Stoermer 1967]

***Mastogloia grevillei* W. Smith**

NE: Elmore (1921), Patrick and Reimer (1966)

OK: Kennedy and Pfister (1984)

***Mastogloia lacustris* (Grunow) Van Heurck**

Reported as:

Mastogloia smithii var. *lacustris* Grunow

KS: Curtis (1901), Czarnecki and Reinke (1981), Patrick and Reimer (1966)

***Mastogloia pumila* (Grunow) Cleve**

KS: Harris and Eberle (2001), Wujek et al. (1980)

***Mastogloia smithii* Thwaites ex W. Smith**

KS: Czarnecki and Reinke (1981)

Plains States: Patrick and Reimer (1966)

Mastogloia smithii var. *amphicephala* Grunow = *Mastogloia albertii* Pavlov et al.

Mastogloia smithii var. *lacustris* Grunow = *Mastogloia lacustris* (Grunow) Grunow

► ***Mayamaea asellus* (Weinhold ex Hustedt) Lange-Bertalot**

Reported as:

Navicula asellus Weigold ex Hustedt

KS: Powers (1969)

***Mayamaea atomus* (Kützing) Lange-Bertalot**

Reported as:

Navicula atomus (Kützing) Grunow

NE: Elmore (1921)

KS: Wujek et al. (1980)

OK: Pfister et al. (1979), Troeger (1978)

Navicula caduca Hustedt

KS: Powers (1969)

► ***Navicula accomoda* Hustedt = *Craticula accomoda* (Hustedt) D. Mann**

Navicula acrospheria (Brébisson) Kützing = *Pinnularia abaujensis* (Pantocsek) Ross

Navicula affinis Ehrenberg = *Neidium affine* (Ehrenberg) Pfister

***Navicula agma* Hohn & Hellerman**

MO: Pamperl (1980)

Navicula aikenensis Patrick = *Navigeia aikenensis* (Patrick) Bukhtiyarova

Navicula alata Ehrenberg = *Entomoneis alata* (Ehrenberg) Ehrenberg

Navicula alternans Schumann = *Scoliopleura alternans* (Schumann) De Toni?

Navicula ambigua Ehrenberg = *Craticula ambigua* (Ehrenberg) D. Mann

***Navicula amphibola* Cleve**

NE: Elmore (1921), Patrick and Reimer (1966)

OK: Kennedy and Pfister (1984)

Navicula amphicros Kützing = *Navicula rhyndotella* Lange-Bertalot

Navicula amphigomphus Ehrenberg = *Neidium iridis* var. *amphigomphus* (Ehrenberg) Tempère & Peragallo

Navicula amphilepta Ehrenberg *nom. nud.*

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

Navicula amphirhynchus Ehrenberg = *Neidium affine* var. *amphirhynchus* (Ehrenberg) Cleve

Navicula amphisbaena Bory = *Caloneis amphisbaena* (Bory) Cleve

Navicula ampliutum Ehrenberg = *Neidium ampliutum* (Ehrenberg) Krammer

***Navicula anglica* Ralfs**

NE: Andersen and Walker (1920), Elmore (1921)

OK: Pfister et al. (1979)

***Navicula anglica* var. *subsalsa* (Grunow) Cleve**

KS: Wujek et al. (1980)

OK: Pfiester et al. (1979), Troeger (1983)

***Navicula angusta* Grunow**

OK: Seyfer and Wilhm (1977), Wilhm et al. (1977)

Plains States: Patrick and Reimer (1966)

Navicula appendiculata (Agardh) Kützing = *Pinnularia appendiculata* (Agardh) Schaarschmidt

***Navicula arenaria* Donkin**

KS: Curtis (1901), Patrick and Reimer (1966)

Navicula arvensis Hustedt = *Sellaphora arvensis* (Hustedt) Wetzel & Ector

Navicula asellus Weigold ex Hustedt = *Mayamaea asellus* (Weinhold ex Hustedt) Lange-Bertalot

Navicula atomoides Grunow = *Sellaphora atomoides* (Grunow) Wetzel & Van de Vijver

Navicula atomus (Kützing) Grunow = *Mayamaea atomus* (Kützing) Lange-Bertalot

Navicula bacillariformis Grunow = *Sellaphora laevissima* (Kützing) D. Mann

Navicula bacillum Ehrenberg = *Sellaphora bacillum* (Ehrenberg) D. Mann

Navicula bacillum f. *minor* Grunow = *Sellaphora bacillum* (Ehrenberg) D. Mann

***Navicula bergensis* Hohn**

OK: Troeger (1978)

Navicula bicapitata var. *hybrida* Grunow = *Pinnularia microstauron* (Ehrenberg) Cleve

***Navicula bicephala* Hustedt**

OK: Koch and Risser (1974)

Navicula biceps Ehrenberg = *Anomoeoneis sphaerophora* (Ehrenberg) Pfitzer

Navicula bisulcata Lagerstedt = *Neidium bisulcatum* (Lagerstedt) Cleve

***Navicula biconica* Patrick**

KS: Wujek et al. (1980)

NE: Hoagland et al. (1982)

Navicula borealis (Ehrenberg) Kützing = *Pinnularia borealis* Ehrenberg

Navicula braunii Grunow = *Pinnularia braunii* (Grunow) Cleve

Navicula brebissonii Kützing = *Pinnularia brebissonii* (Kützing) Rabenhorst

Navicula caduca Hustedt = *Mayamaea atomus* (Kützing) Lange-Bertalot

***Navicula canalis* Patrick**

KS: Powers (1969)

OK: Wilhm et al. (1977), Williams (1962), WPSS (1966)

Plains States: Patrick and Reimer (1966)

***Navicula cancellata* var. *retusa* (Brébisson) Cleve**

Reported as:

Navicula retusa Brébisson

KS: Curtis (1901)

Navicula capitata Ehrenberg = *Hippodonta capitata* (Ehrenberg) Lange-Bertalot, Metzeltin, & Witkowski

Navicula capitata var. *hungarica* (Grunow) Ross = *Hippodonta hungarica* (Grunow) Lange-Bertalot, Metzeltin, & Witkowski

***Navicula capitatoradiata* Germain ex Gasse**

KS: Juracek (2008)

Reported as:

Navicula salinarum var. *intermedia* (Grunow) Cleve

KS: Wenke and Eberle (1986), Williams et al. (1979), Wujek et al. (1980)

NE: Hoagland et al. (1982), Roemer et al. (1984), Shinneman et al. (2010)

OK: Koch and Risser (1974), Troeger (1978)

Plains States: Patrick and Reimer (1966)

***Navicula cari* Ehrenberg**

NE: Shinneman et al. (2010)

Reported as:

Navicula graciloides A. Mayer

KS: Harris and Eberle (2001), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982)

OK: Pfiester et al. (1979)

***Navicula cincta* (Ehrenberg) Ralfs**

KS: Boyer (1927b)

MO: Pamperl (1980)

NE: Elmore (1921)

Plains States: Patrick and Reimer (1966)

***Navicula circumtexta* Meister ex Hustedt**

KS: Czarnecki and Reinke (1981), Harris and Eberle (2001)

Navicula citrus Krasske = *Craticula citrus* (Krasske) Reichardt

Navicula cocconeiformis Gregory ex Grunow = *Cavinula cocconeiformis* (Gregory ex Grunow) D. Mann and Stickle

Navicula columnaris Ehrenberg = *Neidium affine* var. *amphirhynchus* (Ehrenberg) Cleve

Navicula commutata Grunow = *Pinnularia*?

Navicula confervacea (Kützing) Grunow = *Diadesmis confervacea* Kützing

Navicula confervacea var. *hungarica* Grunow = *Humidophila peregrina* (W. Smith) Lowe et al.

Navicula confervacea var. *peregrina* (W. Smith) Grunow = *Humidophila peregrina* (W. Smith) Lowe et al.

Navicula conspicua A. Schmidt = *Pinnularia conspicua* (A. Schmidt) Cleve

Navicula contenta var. *biceps* (Arn.) Van Heurck = *Humidophila contenta* (Grunow) Lowe et al.

Navicula crucicula (W. Smith) Donkin = *Parlibellus crucicula* (W. Smith) Witkowski, Lange-Bertalot & Metzeltin

***Navicula cryptocephala* Kützing**

CO: WPSS (1961–1963)

KS: Curtis (1901), Powers (1969), Wenke and Eberle (1986), Williams (1962), ?Williams et al. (1979), WPSS (1961–1963, 1966), Wujek et al. (1980)

MO: Pamperl (1980), Williams (1962), WPSS (1961–1963), WPSS (1966)

NE: Elmore (1921), Hoagland et al. (1982), Roemer et al. (1984), Shinneman et al. (2010), Webber (1890), WPSS (1961–1963)

OK: Koch (1975), Koch and Risser (1974), Pfister et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983), Wilhm et al. (1977), Williams (1964), WPSS (1961–1963)

Plains States: Patrick and Reimer (1966)

***Navicula cryptocephala* f. *minuta* Petersen**

OK: Troeger (1983), Troeger and Menzel (1986)

Navicula cryptocephala var. *exilis* (Kützing) Grunow = *Navicula exilis* Kützing

Navicula cryptocephala var. *veneta* (Kützing) Rabenhorst = *Navicula veneta* Kützing

***Navicula cryptotenella* Lange-Bertalot**

Reported as:

Navicula radiosa var. *tenella* (Brébisson ex Kützing) Grunow

KS: Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982), Roemer et al. (1984)

Plains States: Patrick and Reimer (1966)

Navicula tenella Brébisson ex Kützing

KS: Curtis (1901)

Navicula cuspidata (Kützing) Kützing = *Craticula cuspidata* (Kützing) D. Mann

Navicula cuspidata f. *craticula* (Van Heurck) Peragallo & Héribaud = *Craticula cuspidata* (Kützing) D. Mann?

Navicula cuspidata var. *ambigua* (Ehrenberg) Cleve = *Craticula ambigua* (Kützing) D. Mann

Navicula cuspidata var. *major* Meister = *Craticula cuspidata* var. *major* (Meister) Czarnecki

***Navicula cymbula* Donkin**

KS: Curtis (1901)

Navicula decurrens (Ehrenberg) Kützing = *Pinnularia decurrens* Ehrenberg

Navicula decussis Østrup = *Geissleria decussis* (Østrup) Lange-Bertalot & Metzeltin

***Navicula demissa* Hustedt**

MO: Pamperl (1980)

Navicula dicephala W. Sm = *Placoneis dicephala* (W. Smith) Mereschkowsky

Navicula dicephala f. *minor* Grunow = *Placoneis dicephala* f. *minor* (Grunow) Cox

***Navicula digitoradiata* (Gregory) Ralfs**

NE: Elmore (1921)

Navicula dilatata Ehrenberg = *Neidium dilatatum* (Ehrenberg) Cleve

Navicula dilatata Ehrenberg *sensu* A. Schmidt = *Neidium iridis* var. *amphigomphus* (Ehrenberg) Tempère & Peragallo

Navicula dirhynchus = ?

KS: Curtis (1901) [see Eberle 1981:88]

Navicula divergens f. *minor* A. Schmidt = *Pinnularia microstauron* (Ehrenberg) Cleve

Navicula dubia Ehrenberg = *Neidium dubium* (Ehrenberg) Cleve

Navicula elginensis (Gregory) Ralfs = *Placoneis elginensis* (Gregory) Cox

Navicula elginensis var. *neglecta* (Krasske) Patrick = *Placoneis elginensis* var. *neglecta* (Krasske) Kobayasi

Navicula elliptica Kützing = *Diploneis elliptica* (Kützing) Cleve

Navicula elliptica var. *minuta* Grunow = *Diploneis*?

Navicula elliptica var. *oblongella* (Nägeli ex Kützing) Grunow = *Diploneis oblongella* (Nägeli ex Kützing) Ross

***Navicula elmorei* Patrick**

NE: Patrick and Reimer (1966)

OK: Troeger (1983)

***Navicula erifuga* Lange-Bertalot**

Reported as:

Navicula heufleri var. *leptocephala* (Brébisson ex Grunow) H. and M. Peragallo

NE: Patrick and Reimer (1966)

OK: Troeger (1978)

***Navicula escambia* (Patrick) Metzeltin & Lange-Bertalot**

Reported as:

Navicula schroeteri var. *escambia* Patrick

NE: Hoagland et al. (1982)

Navicula exigua Gregory ex Grunow = *Placoneis exigua* (Gregory ex Grunow) Mereschkowsky

Navicula exigua var. *capitata* Patrick = *Placoneis exigua* var. *capitata* (Patrick) Aysel

***Navicula exilis* Kützing**

Reported as:

Navicula cryptocephala var. *exilis* (Kützing) Grunow

KS: Powers (1969)

Plains States: Patrick and Reimer (1966)

***Navicula exilissima* Grunow**

MO: Pamperl (1980)

Navicula falaisensis Grunow = *Encyonopsis falaisensis* (Grunow) Krammer

Navicula festiva Krasske = *Fallacia vitrea* (Østrup) D. Mann

Navicula firma Kützing = *Neidium iridis* (Ehrenberg) Cleve

Navicula firma var. *subampliata* Grunow ex A.Schmidt = *Neidium iridis* var. *subampliatum* (Grunow ex A.Schmidt) A. Cleve

***Navicula flanatica* Grunow**

KS: Curtis (1901)

Navicula fontinalis Grunow = *Caloneis fontinalis* (Grunow) A. Cleve

Navicula fulva Ehrenberg = *Craticula cuspidata* (Kützing) D. Mann

Navicula gastrum (Ehrenberg) Kützing = *Placoneis gastrum* (Ehrenberg) Mereschkowsky

***Navicula germainii* (Wallace) Lange-Bertalot [or *Navicula rostellata* Kützing]**

Reported as:

Navicula rhyncocephala var. *germainii* (Wallace) Patrick

NE: Hoagland et al. (1982)

OK: Troeger (1978)

Navicula gibba Ehrenberg = *Rhopalodia gibba* (Ehrenberg) O. Müller

Navicula gibba var. *brevistriata* Van Heurck = *Pinnularia gibba* var. *brevistriata* (Van Heurck) A. Mayer

***Navicula gottlandica* Grunow**

KS: Czarnecki and Reinke (1981)

OK: Pfister et al. (1979)

Navicula gracilis Ehrenberg = *Navicula tripunctata* (O. Müller) Bory

Navicula gracilis var. *schizonemoides* Van Heurck = *Navicula tripunctata* var. *schizonemoides* (Van Heurck) Patrick

***Navicula gregaria* Donkin**

KS: Curtis (1901), Harris and Eberle (2001)

Plains States: Patrick and Reimer (1966)

***Navicula grimmei* Krasske**

KS: Patrick and Reimer (1966)

Navicula guatemalensis Cleve & Greville = *Craticula guatemalensis* (Cleve & Greville) Lange-Bertalot

Navicula gysingensis Foged = *Nupela impexiformis* (Lange-Bertalot) Lange-Bertalot

Navicula halophila (Grunow) Cleve = *Craticula halophila* (Grunow) D. Mann

Navicula halophila f. *robusta* Hustedt = *Craticula halophila* f. *robusta* (Hustedt) Czarnecki

Navicula halophila f. *tenuirostris* Hustedt = *Craticula halophila* f. *tenuirostris* (Hustedt) Czarnecki

Navicula hambergii Hustedt = *Placoneis hambergii* (Hustedt) Bruder

Navicula hemiptera Kützing = *Pinnularia hemiptera* (Kützing) Rabenhorst

***Navicula heufleri* Grunow**

KS: Wenke and Eberle (1986), Williams et al. (1979), Wujek et al. (1980)

OK: Troeger (1978)

Plains States: Patrick and Reimer (1966)

Navicula heufleri var. *leptocephala* (Brébisson ex Grunow) H. and M. Peragallo = *Navicula erifuga* Lange-Bertalot

Navicula bilseana (Janisch) Janisch = *Pinnularia subcapitata* Gregory [see Patrick and Reimer 1966:595–596]

Navicula humilis Donkin = *Hippodonta hungarica* (Grunow) Lange-Bertalot, Metzeltin, & Witkowski

Navicula hungarica Grunow = *Hippodonta hungarica* (Grunow) Lange-Bertalot, Metzeltin, & Witkowski

Navicula hustedtii Krasske = *Sellaphora hustedtii* (Krasske) Lange-Bertalot & Werum

***Navicula ilopangoensis* Hustedt**

OK: Koch (1975)

Navicula inflata Donkin = *Navicula mournei* Patrick

Navicula insociabilis Krasske = *Fallacia insociabilis* (Krasske) D. Mann

Navicula integra (W. Smith) Ralfs = *Prestauroneis integra* (W. Smith) Bruder

Navicula interrupta Kützing = *Diploneis interrupta* (Kützing) Cleve

Navicula interrupta (W. Smith) A. Schmidt = *Pinnularia interrupta* W. Smith

Navicula iridis Ehrenberg = *Neidium iridis* (Ehrenberg) Cleve

Navicula iridis var. *amphigomphus* Ehrenberg = *Neidium iridis* var. *amphigomphus* (Ehrenberg) Tempère & Peragallo

Navicula jaerenfeltii Hustedt = *Cavinula jaerenfeltii* (Hustedt) D. Mann & Stickle

Navicula lacustris Gregory = *Cavinula lacustris* (Gregory) D. Mann & Stickle

Navicula laevissima Kützing = *Sellaphora laevissima* (Kützing) D. Mann

***Navicula lanceolata* (Agardh) Ehrenberg**

KS: Curtis (1901), Elmore (1921), Harris and Eberle (2001), Powers (1969), Wenke and Eberle (1986), Wujek et al. (1980)

NE: Andersen and Walker (1920), Elmore (1921), Hoagland et al. (1982), Rosowski et al. (1986), Webber (1890)

OK: Koch (1975), Koch and Risser (1974), Pfiester et al. (1979), Troeger (1978), Troeger and Menzel (1986)

Plains States: Patrick and Reimer (1966)

Navicula lata (Brébisson) Kützing = *Pinnularia lata* (Brébisson) Rabenhorst

Navicula latens Krasske = *Navigeia thingvallae* (Østrup) Bukhtiyarova

Navicula legumen Ehrenberg = *Pinnularia legumen* (Ehrenberg) Ehrenberg

Navicula leptogongyla Ehrenberg = *Caloneis ventricosa* (Ehrenberg) Meister

***Navicula leptostriata* Jørgensen**

NE: Shinneman et al. (2010)

Navicula liburnica Grunow = *Caloneis oregonica* (Ehrenberg) Patrick

Navicula limosa Kützing = *Caloneis limosa* (Kützing) Patrick

Navicula linearis Grunow = *Caloneis linearis* (Grunow) Boyer

***Navicula longa* (Gregory) Ralfs**

KS: Curtis (1901)

Navicula longirostris Hustedt = *Proschkinia longirostris* (Hustedt) D. Mann

***Navicula luzonensis* Hustedt**

OK: Wilhm et al. (1977), Wilhm et al. (1978)

Navicula macra Grunow = *Caloneis molaris* (Grunow) Krammer

Navicula major (Kützing) Kützing = *Pinnularia maior* (Kützing) Rabenhorst

***Navicula menisculus* Schumann**

KS: Powers (1969), Shinneman et al. (2010), Wujek (1965)

NE: Elmore (1921)

OK: Pfiester et al. (1979)

***Navicula menisculus* var. *obtusa* Hustedt**

KS: Powers (1969)

Navicula menisculus var. *upsaliensis* (Grunow) Grunow = *Navicula upsaliensis* Grunow

Navicula mesolepta Ehrenberg = *Pinnularia mesolepta* (Ehrenberg) W. Smith

Navicula mesostyla Ehrenberg = *Pinnularia mesostyla* (Ehrenberg) W. Smith

Navicula minima Grunow = *Sellaphora saugerresii* (Desmazières) Wetzell & D. Mann

***Navicula miniscula* Grunow**

KS: Wujek et al. (1980)

MO: Pamperl (1980)

OK: Pfiester et al. (1979), Troeger (1983)

***Navicula minisculoides* Hustedt**

NE: Shinneman et al. (2010)

***Navicula minnewaukonensis* Elmore**

OK: Pfiester et al. (1979), Troeger (1978)

Navicula molesta Krasske = *Craticula molesta* (Krasske) Lange-Bertalot

***Navicula mournei* Patrick**

Reported as:

Navicula inflata Donkin

KS: Curtis (1901) [see Eberle 1981:88]

Navicula mucronata Elmore = *Neidium dubium* f. *constrictum* Hustedt

Navicula muralis Grunow = *Adlafia minuscula* var. *muralis* (Grunow) Lange-Bertalot

Navicula mutica Kützing = *Luticola mutica* (Kützing) D. Mann

Navicula mutica var. *cobnii* (Hilse) Grunow = *Luticola cobnii* (Hilse) D. Mann
Navicula mutica var. *goeppertiana* (Bleisch ex Rabenhorst) Grunow = *Luticola goeppertiana* (Bleisch ex Rabenhorst) D. Mann
Navicula mutica var. *stigma* Patrick = *Luticola stigma* (Patrick) Johansen
Navicula mutica var. *tropica* Hustedt = *Luticola terminata* (Hustedt) Johansen
Navicula mutica var. *undulata* (Hilse) Grunow = *Luticola undulata* (Hilse) D. Mann
Navicula mutica var. *ventricosa* (Kützing) Cleve = *Luticola ventricosa* (Kützing) D. Mann
Navicula nobilis (Ehrenberg) Kützing = *Pinnularia nobilis* (Ehrenberg) Ehrenberg
Navicula nodosa Ehrenberg = *Pinnularia nodosa* (Ehrenberg) W. Smith

***Navicula notha* Wallace**

KS: Wujek et al. (1980)

OK: Koch (1975), Troeger (1983)

***Navicula oblonga* (Kützing) Kützing**

KS: Curtis (1901)

NE: Andersen and Walker (1920), Elmore (1921), Shinneman et al. (2010)

Plains States: Patrick and Reimer (1966)

Navicula obtusa Ehrenberg = *Pinnularia appendiculata* (Agardh) Schaarschmidt

Navicula obtusata W. Smith = ?*Caloneis hebes* (Ralfs) Patrick

Navicula oculata Brébisson = *Diploneis oculata* (Brébisson) Cleve

***Navicula odiosa* Wallace**

OK: Pfiester et al. (1979)

***Navicula palpebralis* Brébisson ex W. Smith**

NE: Elmore (1921), Patrick and Reimer (1966)

Navicula parva (Ehrenberg) Elmore = *Pinnularia stauroptera* (Grunow) Rabenhorst

***Navicula paucivittata* Patrick**

KS: Wujek et al. (1980)

OK: Troeger (1983)

Navicula pelliculosa (Kützing) Hilse = *Fistulifera pelliculosa* (Kützing) Lange-Bertalot

***Navicula peregrina* (Ehrenberg) Kützing**

KS: Curtis (1901), Harris and Eberle (2001), Wenke and Eberle (1986), Wujek et al. (1980)

NE: Elmore (1921)

OK: Kennedy and Pfiester (1984)

Plains States: Patrick and Reimer (1966)

Reported as:

Pinnularia peregrina Ehrenberg

OK: Ehrenberg (1856)

Navicula phyllodes (Ehrenberg) Ehrenberg = *Stauroneis phyllodes* Ehrenberg

Navicula placentula (Ehrenberg) Kützing = *Placoneis placentula* (Ehrenberg) Mereschkowsky

Navicula placentula f. *rostrata* A. Mayer = *Placoneis placentula* var. *rostrata* (A. Mayer) Andersen, Stoermer, & Kreis?

Navicula producta W. Smith = *Neidium productum* (W. Smith) Cleve

Navicula protracta Grunow = *Parlibellus protractus* (Grunow) Witkowski, Lange-Bertalot, & Metzeltin

Navicula pseudobacillum Grunow = *Sellaphora bacillum* (Ehrenberg) D. Mann

***Navicula pseudoreinhardtii* Patrick**

OK: Pfiester et al. (1979)

Navicula pumila Grunow = *Navicula cryptocephala* var. *veneta* (Kützing) Rabenhorst

Navicula pupula Kützing = *Sellaphora pupula* (Kützing) Mereschkowsky

Navicula pupula f. *minutula* Cholnoky = *Sellaphora pupula* (Kützing) Mereschkowsky

Navicula pupula var. *capitata* Skvortzow & Meyer = *Sellaphora pupula* var. *capitata* (Skvortzow & Meyer) Poulin

Navicula pupula var. *elliptica* Hustedt = *Sellaphora wummensis* Johansen

Navicula pupula var. *mutata* (Krasske) Hustedt = *Sellaphora mutata* (Krasske) Lange-Bertalot

Navicula pupula var. *rectangularis* (Gregory) Grunow = *Sellaphora rectangularis* (Gregory) Lange-Bertalot & Metzeltin

Navicula pygmaea Kützing = *Fallacia pygmaea* (Kützing) Stickle & D. Mann

Navicula radians = ?

KS: Curtis (1901) [see Eberle 1981:89]

***Navicula radiosa* Kützing**

KS: Curtis (1901), Elmore (1921), Wujek et al. (1980)

NE: Andersen and Walker (1920), Elmore (1921), Hoagland et al. (1982), F.A. Morris et al. (1979), Shinneman et al. (2010)

OK: Pfiester et al. (1979), Troeger (1978, 1983), Troeger and Menzel (1986)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula radiosa var. *acuta* (W. Smith) Grunow

KS: Curtis (1901)

Navicula radiosa var. *acuta* (W. Smith) Grunow = *Navicula radiosa* Kützing
Navicula radiosa var. *parva* Wallace = *Navicula radiosafallax* Lange-Bertalot
Navicula radiosa var. *tenella* (Brébisson ex Kützing) Grunow = *Navicula cryptotenella* Lange-Bertalot
***Navicula radiosafallax* Lange-Bertalot**
Reported as:
Navicula radiosa var. *parva* Wallace
NE: Hoagland et al. (1982)
Navicula rangoonensis (Grunow) Elmore = *Pinnularia abaujensis* var. *linearis* (Hustedt) Patrick
***Navicula recens* Lange-Bertalot**
NE: Shinneman et al. (2010)
***Navicula reichardtiana* Lange-Bertalot**
KS: Juracek (2008)
***Navicula reinhardtii* (Grunow) Grunow**
NE: Elmore (1921)
Plains States: Patrick and Reimer (1966)
Navicula retusa Brébisson = *Navicula cancellata* var. *retusa* (Brébisson) Cleve
“*Navicula rhombooides* var. ? (*Colletonema vulgare* Thwaites)” = *Frustulia vulgaris* (Thwaites) De Toni
Navicula rhyncocephala Kützing = *Navicula rhynchotella* Lange-Bertalot
Navicula rhyncocephala var. *amphiceros* (Kützing) Grunow = *Navicula rhynchotella* Lange-Bertalot
Navicula rhyncocephala var. *germainii* (Wallace) Patrick = *Navicula germainii* (Wallace) Lange-Bertalot
***Navicula rhynchotella* Lange-Bertalot**
Reported as:
Navicula rhyncocephala Kützing
KS: Branson (1966), Curtis (1901), Wujek (1965)
MO: Pamperl (1980)
NE: Elmore (1921), Hoagland et al. (1982)
OK: Koch and Risser (1974), Pfiester et al. (1979), Wilhm et al. (1977)
Plains States: Patrick and Reimer (1966)
Navicula rhyncocephala var. *amphiceros* (Kützing) Grunow
KS: Patrick and Reimer (1966)
Navicula amphiceros Kützing
KS: ?Curtis (1901)
***Navicula rostellata* Kützing**
KS: Curtis (1901), Juracek (2008)
Reported as:
Navicula viridula var. *rostellata* (Kützing) Cleve
KS: Wenke and Eberle (1985, 1986)
NE: Patrick and Reimer (1966)
OK: Troeger (1983)
Plains States: Patrick and Reimer (1966)
Navicula rostrata Ehrenberg = *Anomoeoneis sphaerophora* var. *sculpta* O. Müller
Navicula rupestris (Hantzsch) A. Schmidt = *Pinnularia rupestris* Hantzsch
***Navicula sabiniana* Patrick**
OK: Pfiester et al. (1979), Troeger (1978, 1983), Troeger and Menzel (1986)
***Navicula salinarum* Grunow**
KS: Czarnecki and Reinke (1981)
MO: M.K. Morris et al. (1979a)
NE: Elmore (1921)
OK: Koch (1975), Koch and Risser (1974), Seyfer and Wilhm (1977), Wilhm et al. (1977)
Plains States: Patrick and Reimer (1966)
Navicula salinarum var. *intermedia* (Grunow) Cleve = *Navicula capitatoradiata* Germain ex Gasse
***Navicula sanctaerucis* Østrup**
OK: Koch (1975)
Navicula scalprum Gaillon = *Gyrosigma scalprum* (Gaillon) Sterrenburg
Navicula schoenfeldii Hustedt = *Geissleria schoenfeldii* (Hustedt) Lange-Bertalot & Metzeltin
Navicula schroeteri var. *escambia* Patrick = *Navicula escambia* (Patrick) Metzeltin & Lange-Bertalot
Navicula schumanniana Grunow = *Caloneis schumanniana* (Grunow) Cleve
Navicula sculpta Ehrenberg = *Anomoeoneis sphaerophora* var. *sculpta* O. Müller
***Navicula scutum* Schumann**
NE: Elmore (1921)

***Navicula secreta* Patrick**

OK: Wilhm et al. (1977)

Navicula secreta var. *apiculata* Patrick = *Navicula subrostellata* Hustedt

Navicula secreta Patrick = *Sellaphora subfasciata* Potapova

***Navicula semen* Ehrenberg *emend* Donkin**

Plains States: Patrick and Reimer (1966)

Navicula seminulum Grunow = *Sellaphora seminulum* (Grunow) D. Mann

Navicula seminulum var. *hustedtii* Patrick = *Sellaphora seminulum* var. *hustedtii* (Patrick) ?

Navicula serians Brébisson *ex* Kützing = *Brachysira serians* (Brébisson *ex* Kützing) Round & D. Mann

***Navicula sigma* Ehrenberg**

OK: Ehrenberg (1856)

Navicula silicula Ehrenberg = *Caloneis silicula* (Ehrenberg) Cleve

***Navicula simplex* Krasske**

NE: Hoagland et al. (1982)

Navicula smithii Brébisson *ex* W. Smith = *Diploneis smithii* (Brébisson *ex* W. Smith) Cleve

Navicula sphaerophora Ehrenberg = *Anomooneis sphaerophora* (Kützing) Pfitzer

Navicula spicula (Hicke) Cleve = *Haslea spicula* (Hickie) Bukhtiyarova

Navicula stauroneiformis Elmore = *Pinnularia aestuarii* Cleve

Navicula stauronparva Grunow = *Pinnularia parvula* (Ralfs) A. Cleve

Navicula stauroptera Grunow = *Pinnularia gibba* Ehrenberg

Navicula stauroptera var. *parva* Grunow = *Pinnularia parvula* (Ralfs) A. Cleve

Navicula stomatophora Grunow = *Pinnularia stomatophora* (Grunow) Cleve

Navicula subcapitata (Gregory) Ralfs = *Pinnularia subcapitata* Gregory

Navicula subcapitata var. *stauroneiformis* Van Heurck = *Pinnularia subcapitata* Gregory

Navicula subfasciata Patrick = *Sellaphora subfasciata* Potapova

Navicula subhamulata Grunow = *Fallacia subhamulata* (Grunow) D. Mann

Navicula subinflata Grunow = *Dickieia subinflata* (Grunow) D. Mann

***Navicula subrostellata* Hustedt**

Reported as:

Navicula secreta var. *apiculata* Patrick

KS: ?Harris and Eberle (2001)

OK: Koch and Risser (1974)

Navicula subtilissima Cleve = *Kobayasia subtilissima* (Cleve) Lange-Bertalot

***Navicula symmetrica* Patrick**

KS: Powers (1969)

MO: Pamperl (1980)

NE: Hoagland et al. (1982)

OK: Koch (1975), Pfister et al. (1979)

Plains States: Patrick and Reimer (1966)

Navicula tabellaria Grunow = *Pinnularia*?

Navicula tantula Hustedt = *Sellaphora atomoides* (Grunow) Wetzel & Van de Vijver

Navicula tenella Brébisson *ex* Kützing = *Navicula cryptotenella* Lange-Bertalot

Navicula tenera Hustedt = *Pseudofallacia tenera* (Hustedt) Liu, Kociolek, & Wang

***Navicula tenelloides* Hustedt**

Plains States: Patrick and Reimer (1966)

***Navicula texana* Patrick** [= *Navicula kotschyi* Grunow?]

OK: Koch and Risser (1974)

Navicula thermes (Ehrenberg) A. Schmidt = *Pinnularia thermes* Ehrenberg

Navicula tridentula Krasske = *Sellaphora tridentula* (Krasske) Wetzel

Navicula trinodis Lewis = *Caloneis levisii* Patrick

***Navicula tripunctata* (O. Müller) Bory**

KS: Wujek et al. (1980)

NE: Hoagland et al. (1982), Roemer et al. (1984), Williams (1962), WPSS (1966)

OK: Koch (1975), Koch and Risser (1974), Pfister et al. (1979), Seyfer and Wilhm (1977), Troeger (1978), Wilhm et al. (1977)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula gracilis Ehrenberg

KS: Curtis (1901)

NE: Elmore (1921)

OK: Ehrenberg (1856), Leake (1945)

***Navicula tripunctata* var. *schizonemoides* (Van Heurck) Patrick**

KS: Powers (1969)

MO: Pamperl (1980)

OK: Koch (1975)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula gracilis var. *schizonemoides* Van Heurck

KS: Powers (1969)

***Navicula trivialis* Lange-Bertalot**

NE: Shinneman (2010)

Navicula tuscula Ehrenberg = *Aneumastus tuscula* (Ehrenberg) D. Mann & Stickle

Navicula undulata = ?

KS: Curtis (1901) [see Eberle 1981:137]

***Navicula upsaliensis* Grunow**

Reported as:

Navicula menisculus var. *upsaliensis* (Grunow) Grunow

KS: Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982), Patrick and Reimer (1966), Roemer et al. (1984)

OK: Troeger (1983)

Navicula variostrata Krasske = *Cavinula variostrata* (Krasske) D. Mann

***Navicula vaucheriae* Petersen**

KS: Powers (1969)

***Navicula vaucheriae* var. *densistriata* Lund**

KS: Powers (1969)

***Navicula veneta* Kützing**

KS: Curtis (1901)

Reported as:

Navicula cryptocephala var. *veneta* (Kützing) Rabenhorst

KS: Harris and Eberle (2001), Powers (1969), Wenke and Eberle (1986), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Andersen and Walker (1920)

OK: Koch (1975), Koch and Risser (1974), Troeger (1978, 1983)

Plains States: Patrick and Reimer (1966)

Navicula pumila Grunow

KS: Curtis (1901)

Navicula ventricosa Ehrenberg = *Caloneis ventricosa* (Ehrenberg) Meister

Navicula ventricosa f. *minuta* Grunow = *Caloneis ventricosa* var. *minuta* (Grunow) Patrick

Navicula viridis (Nitzsch) Ehrenberg = *Pinnularia viridis* (Nitzsch) Ehrenberg

Navicula viridis (Nitzsch) Ehrenberg *sensu* A. Schmidt = *Pinnularia viridis* var. *minor* Cleve

***Navicula viridula* (Kützing) Ehrenberg**

CO: Williams (1964)

KS: Wujek (1965)

OK: Koch and Risser (1974), Pfiester et al. (1979), Troeger (1983), Wilhm et al. (1977)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula viridula f. *minor*

KS: Curtis (1901) [see Eberle 1981:89]

Navicula viridula f. *minor* = *Navicula viridula* (Kützing) Ehrenberg?

***Navicula viridula* var. *argunensis* Skvortzow**

KS: Powers (1969)

***Navicula viridula* var. *avenacea* (Brébisson *ex* Grunow) Van Heurck**

KS: Czarnecki and Reinke (1981), Wenke and Eberle (1986)

NE: Patrick and Reimer (1966)

***Navicula viridula* var. *linearis* Hustedt**

KS: Powers (1969)

MO: Pamperl (1980)

OK: Pfiester and Terry (1978)

Plains States: Patrick and Reimer (1966)

Navicula viridula var. *rostellata* (Kützing) Cleve = *Navicula rostellata* Kützing

Navicula viridula var. *rostrata* Skvortzow

KS: Powers (1969)

Navicula vitabunda Hustedt = *Sellaphora vitabunda* (Hustedt) D. Mann

Navicula vulpina Kützing

NE: Hoagland et al. (1982)

OK: Pfiester et al. (1979)

► *Navicymbula pusilla* (Grunow ex A. Schmidt) Krammer

Reported as:

Cymbella pusilla Grunow

KS: Curtis (1901), Harris and Eberle (2001)

NE: Elmore (1921), Hoagland et al. (1982)

OK: Troeger (1983)

Plains States: Patrick and Reimer (1975)

► *Navigeia aikenensis* (Patrick) Bukhtiyarova

Reported as:

Navicula aikenensis Patrick

OK: Pfiester et al. (1979)

Navigeia thingvallae (Østrup) Bukhtiyarova

Reported as:

Navicula latens Krasske

NE: F.A. Morris et al. (1979)

► *Neidiomorpha binodiformis* (Krammer) Cantonati, Lange-Bertalot, & Angeli

Reported as:

Neidium binode (Ehrenberg) Hustedt

OK: Koch and Risser (1974)

► *Neidium affine* (Ehrenberg) Pfitzer

KS: Harris and Eberle (2001)

OK: Seyfer and Wilhm (1977)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula affinis Ehrenberg

KS: Curtis (1901)

NE: Ehrenberg (1856), Elmore (1921)

OK: Ehrenberg (1856)

Pleurosiphonia affinis Ehrenberg

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

Neidium affine var. *amphirhynchus* (Ehrenberg) Cleve

OK: Troeger (1978, 1983)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula amphirhynchus Ehrenberg

KS: Curtis (1901)

OK: Ehrenberg (1856)

Navicula columnaris Ehrenberg

KS: Curtis (1901)

Neidium ampliatum (Ehrenberg) Krammer

KS: Harris and Eberle (2001)

Reported as:

Navicula ampliatum Ehrenberg

KS: Curtis (1901)

Neidium iridis var. *ampliatum* (Ehrenberg) Cleve

OK: Pfiester et al. (1979)

Neidium binode (Ehrenberg) Hustedt = *Neidiomorpha binodiformis* (Krammer) Cantonati, Lange-Bertalot, & Angeli

Neidium bisulcatum (Lagerstedt) Cleve

NE: Patrick and Reimer (1966)

OK: Kennedy and Pfiester (1984)

Reported as:

Navicula bisulcata Lagerstedt

NE: Elmore (1921)

Neidium bisulcatum var. *baicalense* (Skvortzow & Meyer) Reimer

OK: Troeger (1983)

Neidium dilatatum (Ehrenberg) Cleve

Reported as:

Navicula dilatata Ehrenberg

OK: ?Ehrenberg (1856)

Neidium dubium (Ehrenberg) Cleve

OK: Pfiester et al. (1979), Willhm et al. (1977)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula dubia Ehrenberg

KS: Curtis (1901)

NE: Elmore (1921)

Neidium dubium f. *constrictum* Hustedt

Reported as:

Navicula mucronata Elmore

NE: Elmore (1921)

Neidium hercynicum f. *subrostratum* Wallace

OK: Troeger (1983)

Neidium iridis (Ehrenberg) Cleve

KS: Wujek et al. (1980)

OK: Pfiester and Terry (1978), Pfiester et al. (1979), Troeger (1978)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula firma Kützing

KS: Curtis (1901)

Navicula iridis Ehrenberg

NE: Andersen and Walker (1920), Elmore (1921)

Neidium iridis var. *amphigomphus* (Ehrenberg) Tempère & Peragallo

OK: Pfiester and Terry (1978)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula amphigomphus Ehrenberg

KS: Wolle (1889)

NE: Elmore (1921)

Navicula dilatata Ehrenberg *sensu* A. Schmidt

KS: Curtis (1901) [see Eberle 1981:92–93]

Navicula iridis var. *amphigomphus* Ehrenberg

NE: Webber (1889, 1890)

Neidium iridis var. *ampliatus* (Ehrenberg) Cleve = *Neidium ampliatus* (Ehrenberg) Krammer

Neidium iridis var. *subampliatus* (Grunow ex A.Schmidt) A. Cleve

Reported as:

Navicula firma var. *subampliata* Grunow ex A.Schmidt

KS: Curtis (1901) [see Eberle 1981:93]

Neidium iridis f. *vernalis* Reichelt = *Neidium vernale* (Reichelt ex Hustedt) Metzeltin & Lange-Bertalot

Neidium productum (W. Smith) Cleve

OK: Pfiester et al. (1979), Troeger (1978)

Reported as:

Navicula producta W. Smith

KS: Curtis (1901)

NE: Webber (1889)

Neidium vernale (Reichelt ex Hustedt) Metzeltin & Lange-Bertalot

Reported as:

Neidium iridis f. *vernalis* Reichelt

KS: Harris and Eberle (2001)

- ***Nitzschia acicularis* (Kützting) W. Smith** [some records might be *Nitzschia reversa* W. Smith (e.g., Elmore 1921:209, fig. 772)]
CO: WPSS (1961–1963)
KS: Harris and Eberle (2001), Powers (1969), Wenke and Eberle (1986), Williams (1962, 1972), Williams et al. (1979), WPSS (1961–1963, 1966), Wujek et al. (1980)
MO: Pamperl (1980), WPSS (1961–1963)
NE: Hoagland et al. (1982)
OK: Cooper and Wilhm (1975), Hern et al. (1979), Koch (1975), Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962), WPSS (1961–1963, 1966)
Reported as:
Homoeocladia acicularis (Kützting) Kuntze
KS: Elmore (1921)
NE: Elmore (1921)
- Nitzschia acidoclinata* Lange-Bertalot**
NE: Shinneman et al. (2010)
Nitzschia actinastroides (Lemmermann) van Goor = *Nitzschia bolsatica* Hustedt
Nitzschia acuta Cleve = *Tryblionella acuta* (Cleve) D. Mann
- Nitzschia adapta* Hustedt**
KS: Harris and Eberle (2001)
- Nitzschia agnewii* Chohnoky**
KS: Harris and Eberle (2001)
- Nitzschia amphibia* Grunow**
KS: Harris and Eberle (2001), Powers (1969), Wenke and Eberle (1986), Wujek et al. (1980)
MO: Pamperl (1980)
NE: Hoagland et al. (1982), Roemer et al. (1984), Shinneman et al. (2010)
OK: Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978), Troeger and Menzel (1986), Wilhm et al. (1977), Wilhm et al. (1978)
Reported as:
Homoeocladia amphibia (Grunow) Kuntze
NE: Andersen and Walker (1920), Elmore (1921)
Nitzschia amphioxys (Ehrenberg) W. Smith = *Hantzschia amphioxys* (Ehrenberg) Grunow
Nitzschia amphioxys var. *vivax* (Grunow) ? = *Hantzschia amphioxys* var. *vivax* Grunow
- Nitzschia angularis* W. Smith**
OK: Kennedy and Pfiester (1984)
Nitzschia angustata (W. Smith) Grunow = *Tryblionella angustata* W. Smith
Nitzschia apiculata (Gregory) Grunow = *Tryblionella apiculata* Gregory
- Nitzschia bacata* Hustedt**
NE: Hoagland et al. (1982)
- Nitzschia brebissonii* W. Smith**
NE: Andersen and Walker (1920)
Reported as:
Homoeocladia brebissonii (W. Smith) Kuntze
NE: Andersen and Walker (1920), Elmore (1921)
- Nitzschia brevissima* Grunow**
Reported as:
Nitzschia parvula Lewis [non *Nitzschia parvula* W. Smith]
OK: Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1983), Wilhm et al. (1977), Wilhm et al. (1978)
- Nitzschia caledonensis* Schoeman**
KS: Harris and Eberle (2001)
- Nitzschia capitellata* Hustedt**
KS: Powers (1969)
OK: ?Koch (1975), Pfiester et al. (1979), Troeger (1983)
- Nitzschia clausii* Hantzsch**
KS: Powers (1969), Wujek et al. (1980)
OK: Koch (1975), Pfiester et al. (1979)
- Nitzschia closterium* (Ehrenberg) W. Smith = *Cylindrotheca closterium* (Ehrenberg) Reimann & Lewin
- Nitzschia communis* Rabenhorst**
KS: Curtis (1901), ?Harris and Eberle (2001)
NE: Roemer et al. (1984), Schofield (1892)
OK: Pfiester et al. (1979)

***Nitzschia commutata* Grunow**

KS: Wenke and Eberle (1986), Wujek et al. (1980)

OK: Pfiester et al. (1979)

Reported as:

Homoeocladia commutata (Grunow) Kuntze

NE: Elmore (1921)

***Nitzschia confinis* Hustedt**

KS: Harris and Eberle (2001)

***Nitzschia denticula* Grunow**

KS: Williams (1962), WPSS (1961–1963), Wujek et al. (1980)

OK: Koch (1975), Seyfer and Wilhm (1977)

Reported as:

Homoeocladia obtusa (Grunow) Elmore

NE: Elmore (1921)

***Nitzschia dissipata* (Kützing) Rabenhorst**

KS: Curtis (1901), ?Harris and Eberle (2001), Juracek (2003), Powers (1969), Wenke and Eberle (1986), Williams et al. (1979), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982), Roemer et al. (1984)

OK: Koch (1975), Koch and Risser (1974), Pfiester et al. (1979), Troeger (1978), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962), WPSS (1966)

Reported as:

Homoeocladia dissipata (Kützing) Kuntze

NE: Elmore (1921)

***Nitzschia dubia* W. Smith**

OK: Koch (1975)

Reported as:

Homoeocladia dubia (W. Smith) Elmore

NE: Elmore (1921)

***Nitzschia elegans* Hustedt**

NE: Hoagland et al. (1982)

***Nitzschia elliptica* Hustedt**

OK: Wilhm et al. (1977), Wilhm et al. (1978)

***Nitzschia entomon* (Ehrenberg) Ralfs**

Reported as:

Synedra entomon Ehrenberg

OK: Ehrenberg (1856)

***Nitzschia epiphytica* O. Müller**

OK: Koch and Risser (1974)

***Nitzschia fasciculata* (Grunow) Grunow**

KS: Powers (1969)

OK: Pfiester et al. (1979)

Reported as:

Homoeocladia fasciculata (Grunow) Kuntze

NE: Elmore (1921)

***Nitzschia filiformis* (W. Smith) Van Heurck**

KS: Harris and Eberle (2001), Powers (1969), Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982), F.A. Morris et al. (1979)

OK: Hern et al. (1979), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978), Wilhm et al. (1977), Wilhm et al. (1978)

Reported as:

Homoeocladia filiformis W. Smith

NE: Elmore (1921)

***Nitzschia flexa* Schumann**

KS: Wujek et al. (1980)

***Nitzschia fonticola* (Grunow) Grunow**

KS: Harris and Eberle (2001)

MO: Pamperl (1980)

NE: Hoagland et al. (1982)

OK: Koch (1975), Koch and Risser (1974), Pfiester et al. (1979), Troeger (1978, 1983)

***Nitzschia frustulum* (Kützing) Grunow**

KS: Curtis (1901), Harris and Eberle (2001), Powers (1969)

MO: Pamperl (1980)

NE: Roemer et al. (1984), Shinneman et al. (2010)

OK: Koch (1975), Koch and Risser (1974), Pfiester et al. (1979), Troeger (1978), Troeger (1983)

Reported as:

Homoeocladia frustulum (Kützing) Kuntze

NE: Elmore (1921)

Nitzschia frustulum var. *perminuta* Grunow = *Nitzschia perminuta* (Grunow) M. Peragallo

***Nitzschia frustulum* var. *perpusillum* (Rabenhorst) Van Heurck**

KS: Wujek et al. (1980)

***Nitzschia gandersheimiensis* Krasske**

KS: Harris and Eberle (2001)

***Nitzschia geitleri* Hustedt**

KS: ?Harris and Eberle (2001)

***Nitzschia gracilis* Hantzsch**

KS: Harris and Eberle (2001), Juracek (2008), Powers (1969)

MO: Pamperl (1980)

NE: Hoagland et al. (1982), Shinneman et al. (2010)

OK: Koch and Risser (1974), Pfiester et al. (1979), Troeger (1978, 1983)

***Nitzschia hantzschiana* Rabenhorst**

OK: Hern et al. (1979), Troeger (1978), Troeger (1983)

***Nitzschia heufferiana* Grunow**

KS: Curtis (1901)

***Nitzschia holsatica* Hustedt**

KS: Powers (1969), Wenke and Eberle (1986), Williams et al. (1979), Wujek et al. (1980)

OK: Hern et al. (1979), Willhm et al. (1977)

Reported as:

Nitzschia actinastroides (Lemmermann) van Goor

KS: Wenke and Eberle (1986)

Nitzschia hungarica Grunow = *Tryblionella hungarica* (Grunow) Frenguelli

***Nitzschia ignorata* Krasske**

MO: Pamperl (1980)

OK: Pfiester et al. (1979)

***Nitzschia intermedia* Hantzsch**

Reported as:

Homoeocladia intermedia (Hantzsch) Kuntze

NE: Elmore (1921)

***Nitzschia invicta* f. *lanceolata* Hustedt**

KS: Powers (1969)

***Nitzschia kuetszingiana* Hilse**

KS: Wujek et al. (1980)

OK: ?Koch (1975)

Reported as:

Nitzschia palea var. *kuetszingiana* (Hilse) Grunow

KS: Powers (1969)

***Nitzschia lanceolata* W. Smith**

KS: Curtis (1901)

OK: Williams (1964)

Reported as:

Homoeocladia lanceolata (W. Smith) Kuntze

KS: Elmore (1921)

NE: Elmore (1921)

***Nitzschia linearis* W. Smith**

KS: Powers (1969), Wenke and Eberle (1986), Williams (1962, 1964), WPSS (1966), Wujek (1965)

MO: Williams (1962, 1964), Williams and Scott (1962), WPSS (1966)

NE: Hoagland et al. (1982), Rosowski et al. (1986), Shinneman et al. (2010) as *N. linearis sensu lato*, Williams (1962, 1964), WPSS (1966)

OK: Koch and Risser (1974), Seyfer and Wilhm (1977), Troeger (1983), Troeger and Menzel (1986), Wilhm et al. (1977), Williams (1962), WPSS (1966)

Reported as:

Homoeocladia linearis (W. Smith) Kuntze

NE: Elmore (1921)

***Nitzschia linearis* var. *tenuis* (W. Smith) Grunow**

KS: Wenke and Eberle (1985, 1986)

Nitzschia longissima f. *parva* Grunow = *Nitzschia reversa* W. Smith [misidentification?]

Nitzschia longissima var. *reversa* (W. Smith) Van Heurck = *Nitzschia reversa* W. Smith

***Nitzschia lorenziana* Grunow**

OK: Pfiester et al. (1979), Wilhm et al. (1978)

***Nitzschia lorenziana* var. *subtilis* Grunow**

OK: Troeger (1983)

***Nitzschia microcephala* Grunow**

KS: Harris and Eberle (2001), Wujek et al. (1980)

MO: Pamperl (1980)

OK: Koch and Risser (1974)

***Nitzschia modesta* Hustedt**

KS: Juracek (2008)

***Nitzschia obtusa* W. Smith**

KS: Czarnecki and Reinke (1981)

MO: Pamperl (1980)

OK: Pfiester et al. (1979)

Reported as:

Homoeocladia arcus (Buhl.) Kuntze

NE: Elmore (1921)

***Nitzschia obtusa* var. *scapelliformis* Grunow**

KS: Czarnecki and Reinke (1981)

OK: Koch (1975), Seyfer and Wilhm (1977)

***Nitzschia palea* (Kützing) W. Smith**

KS: Curtis (1901), Harris and Eberle (2001), Powers (1969), Wenke and Eberle (1986), Williams (1962), Williams and Scott (1962), Wujek et al. (1980)

MO: Pamperl (1980), Williams (1962)

NE: Hoagland et al. (1982), F.A. Morris et al. (1979), Roemer et al. (1984), Shinneman et al. (2010), Williams (1962)

OK: Cooper and Wilhm (1975), Koch (1975), Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1983), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962), Williams and Scott (1962)

Reported as:

Homoeocladia palea (Kützing) Kuntze

NE: Andersen and Walker (1920), Elmore (1921)

***Nitzschia palea* var. *debilis* (Kützing) Grunow**

NE: Hoagland et al. (1982)

Nitzschia palea var. *kuetzingiana* (Hilse) Grunow = *Nitzschia kuetzingiana* Hilse

***Nitzschia paleacea* (Grunow) Grunow**

KS: Harris and Eberle (2001)

OK: Koch and Risser (1974)

Nitzschia paradoxa (Gmelin) Grunow = *Bacillaria paradoxa* Gmelin

Nitzschia parvula Lewis (non *Nitzschia parvula* W. Smith) = *Nitzschia brevissima* Grunow

***Nitzschia perminuta* (Grunow in Van Heurck) M. Peragallo**

NE: Shinneman et al. (2010)

Reported as:

Nitzschia frustulum var. *perminuta* Grunow

MO: Pamperl (1980)

***Nitzschia pseudoamphioxys* Hustedt**

KS: Powers (1969)

***Nitzschia rautenbachiae* Chohnoky**

KS: Harris and Eberle (2001)

***Nitzschia recta* Hantzsch ex Rabenhorst**

KS: Juracek (2008), Wujek et al. (1980)

MO: Pamperl (1980)

***Nitzschia reversa* W. Smith**

KS: Harris and Eberle (2001), McFarland et al. (1964)

Reported as:

Nitzschia longissima f. *parva* Grunow [misidentification?]

KS: Reinke (1979*a*, 1985)

Nitzschia longissima var. *reversa* (W. Smith) Van Heurck

CO: Morris et al. (1979*b*)

KS: Williams et al. (1979)

OK: Hern et al. (1979)

***Nitzschia romana* Grunow**

KS: Powers (1969)

MO: Pamperl (1980)

OK: Pfiester et al. (1979), Troeger (1978)

***Nitzschia sigma* (Kützing) W. Smith**

KS: Curtis (1901), Harris and Eberle (2001), Powers (1969), Wenke and Eberle (1986), Wujek et al. (1980)

OK: Koch (1975), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978), Wilhm et al. (1977), Wilhm et al. (1978)

Reported as:

Homoeocladia sigma (Kützing) Kuntze

NE: Elmore (1921)

OK: Leake (1945)

***Nitzschia sigmoidea* (Nitzsch) W. Smith**

KS: Curtis (1901), ?Harris and Eberle (2001), Williams et al. (1979), Wujek et al. (1980)

NE: F.A. Morris et al. (1979), Webber (1890)

OK: Koch and Risser (1974), Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978)

Reported as:

Homoeocladia sigmoidea (Kützing) Kuntze

KS: Curtis (1901)

NE: Elmore (1921)

***Nitzschia sinuata* var. *tabellaria* (Grunow) Grunow [= *Grunowia tabellaria* (Grunow) Rabenhorst?]**

KS: Wujek (1965), Wujek et al. (1980)

MO: Pamperl (1980)

Nitzschia spectabilis (Ehrenberg) Ralfs = *Hantzschia spectabilis* (Ehrenberg) Hustedt

***Nitzschia spiculoidea* Hustedt**

KS: Harris and Eberle (2001)

***Nitzschia stagnorum* (Rabenhorst) Grunow [= *Nitzschia umbonata* (Ehrenberg) Lange-Bertalot?]**

KS: Curtis (1901), Powers (1969)

OK: Pfiester and Terry (1978), Pfiester et al. (1979)

***Nitzschia subacicularis* Hustedt**

KS: Juracek (2003)

***Nitzschia subcapitellata* Hustedt**

KS: Powers (1969)

NE: Rosowski et al. (1986)

***Nitzschia sublinearis* Hustedt**

KS: Wenke and Eberle (1985)

MO: Pamperl (1980)

OK: Koch and Risser (1974), Troeger (1978, 1983)

***Nitzschia subrostrata* Hustedt**

MO: Pamperl (1980)

***Nitzschia subtilis* Grunow**

KS: Reinke (1982*a*)

OK: Kennedy and Pfiester (1984)

Reported as:

Homoeocladia subtilis (Grunow) Kuntze

NE: Elmore (1921)

***Nitzschia subtilioides* Hustedt**

NE: Hoagland et al. (1982)

Nitzschia subvitrea Hustedt = *Nitzschia vitrea* var. *subvitrea* (Hustedt) Wood

***Nitzschia suchlandti* Hustedt**

NE: ?Hoagland et al. (1982)

***Nitzschia tarda* Hustedt**

KS: Powers (1969)

***Nitzschia thermalis* (Ehrenberg) Auerswald**

KS: Wujek et al. (1980)

OK: Pfiester et al. (1979)

***Nitzschia thermalis* var. *minor* Hilse**

MO: Pamperl (1980)

OK: Pfiester et al. (1979)

***Nitzschia tropica* Hustedt**

NE: Hoagland et al. (1982), Roemer et al. (1984)

Nitzschia tryblionella Hantzsch = *Tryblionella gracilis* W. Smith

Nitzschia tryblionella f. *densus striatae* ? = *Tryblionella gracilis* W. Smith?

Nitzschia tryblionella f. *minor* ? = *Tryblionella gracilis* W. Smith?

Nitzschia tryblionella var. *debilis* (Arn.) A. Mayer = *Tryblionella debilis* Arn.

Nitzschia tryblionella var. *levidensis* (W. Smith) Grunow = *Tryblionella levidensis* W. Smith

Nitzschia tryblionella var. *victoriae* (Grunow) Grunow = *Tryblionella victoriae* Grunow

Nitzschia umblicata Hustedt = *Tryblionella umblicata* (Hustedt) D. Mann

***Nitzschia umbonata* (Ehrenberg) Lange-Bertalot**

Reported as:

Homoeocladia umbonata (Ehrenberg) Kuntze

NE: Elmore (1921)

***Nitzschia valdestriata* Aleem & Hustedt**

KS: Powers (1969)

***Nitzschia vermicularis* (Kützing) Hantzsch**

KS: Harris and Eberle (2001), Wenke and Eberle (1986), Williams et al. (1979)

OK: Hern et al. (1979), Kennedy and Pfiester (1984)

Reported as:

Homoeocladia vermicularis (Kützing) Kuntze

KS: Elmore (1921)

NE: Elmore (1921)

***Nitzschia vitrea* Norman**

Reported as:

Homoeocladia vitrea (Norman) Kuntze

NE: Elmore (1921)

***Nitzschia vitrea* var. *salinarum* Grunow**

KS: Czarnecki and Reinke (1981), Harris and Eberle (2001)

***Nitzschia vitrea* var. *scaphiformis* Wislouch & Poretzky**

KS: ?Harris and Eberle (2001)

***Nitzschia vitrea* var. *subvitrea* (Hustedt) Wood**

Reported as:

Nitzschia subvitrea Hustedt

KS: Harris and Eberle (2001)

Nitzschia vivax Hantzsch = *Hantzschia amphioxys* f. *vivax* Grunow

► ***Nupela impexiformis* (Lange-Bertalot) Lange-Bertalot**

Reported as:

Navicula gysingensis Foged

KS: Wujek et al. (1980)

OK: Kennedy and Pfiester (1984)

► ***Parlibellus crucicula* (W. Smith) Witkowski, Lange-Bertalot, & Metzeltin**

Reported as:

Navicula crucicula (W. Smith) Donkin

KS: Wujek et al. (1980)

NE: Elmore (1921), Patrick and Reimer (1966)

***Parlibellus protractus* (Grunow) Witkowski, Lange-Bertalot, & Metzeltin**

Reported as:

Navicula protracta Grunow

KS: Czarnecki and Reinke (1981)

OK: Troeger (1983)

- ***Peronia fibula* (Brébisson ex Kützing) Ross**
NE: Patrick and Reimer (1966)
Reported as:
Sceptroneis fibula (Brébisson) Elmore (listed with Fragilariophyceae)
NE: Andersen and Walker (1920), Elmore (1921)
- ***Pinnularia* ?**
Reported as:
Navicula commutata Grunow
KS: Curtis (1901) [see Patrick and Reimer 1966:612]
Navicula tabellaria Grunow
KS: Curtis (1901) [see Eberle 1981:116 and Patrick and Reimer 1966:613 and 626]
- Pinnularia abaujensis* (Pantocsek) Ross**
OK: Pfiester et al. (1979), Troeger (1983)
Plains States: Patrick and Reimer (1966)
Reported as:
Navicula acrospheria (Brébisson) Kützing
KS: Curtis (1901)
NE: Elmore (1921)
- Pinnularia abaujensis* var. *linearis* (Hustedt) Patrick**
NE: Patrick and Reimer (1966)
Reported as:
Navicula rangoonensis (Grunow) Elmore
NE: Elmore (1921)
- Pinnularia abaujensis* var. *rostrata* (Patrick) Patrick**
OK: Pfiester et al. (1979)
- Pinnularia abaujensis* var. *subundulata* (A. Mayer ex Hustedt) Patrick**
OK: Troeger (1983)
- Pinnularia acrosphaeria* W. Smith**
KS: Wujek et al. (1980)
MO: Pamperl (1980)
OK: Pfiester et al. (1979), Troeger (1983)
Plains States: Patrick and Reimer (1966)
- Pinnularia acuminata* W. Smith**
KS: ?Patrick and Reimer (1966)
OK: Pfiester et al. (1979)
- Pinnularia aestuarii* Cleve**
Plains States: Patrick and Reimer (1966)
Reported as:
Navicula stauroneiformis Elmore
KS: Curtis (1901)
NE: Elmore (1921)
- Pinnularia amphioxys* Ehrenberg**
NE: Ehrenberg (1856)
OK: Ehrenberg (1856)
- Pinnularia appendiculata* (Agardh) Schaarschmidt**
Plains States: Patrick and Reimer (1966)
Reported as:
Navicula appendiculata (Agardh) Kützing
NE: Andersen and Walker (1920), Elmore (1921)
Navicula obtusa Ehrenberg
OK: Ehrenberg (1856)
- Pinnularia biceps* Gregory = *Pinnularia interrupta* W. Smith
Pinnularia biceps f. *petersenii* Ross = *Pinnularia interruptiformis* Krammer
- Pinnularia borealis* Ehrenberg**
KS: Juracek (2003)
OK: Ehrenberg (1856), Pfiester and Terry (1978), Pfiester et al. (1979), Troeger (1978, 1983)
Plains States: Patrick and Reimer (1966)
Reported as:
Navicula borealis (Ehrenberg) Kützing
KS: Curtis (1901)
NE: Elmore (1921)

***Pinnularia boyeri* Patrick**

Plains States: Patrick and Reimer (1966)

***Pinnularia braunii* (Grunow) Cleve**

KS: Powers (1969)

NE: Patrick and Reimer (1966)

OK: Seyfer and Wilhm (1977), Wilhm et al. (1978)

Reported as:

Navicula braunii Grunow

NE: Elmore (1921)

Pinnularia braunii var. *amphicephala* (A. Mayer) Hustedt = *Pinnularia mayeri* Krammer

***Pinnularia brebissonii* (Kützing) Rabenhorst**

KS: Harris and Eberle (2001)

NE: Shinneman et al. (2010)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula brebissonii Kützing

KS: Curtis (1901)

NE: Andersen and Walker (1920), Elmore (1921), Webber (1890)

Pinnularia microstauron var. *brebissonii* (Kützing) Hustedt

OK: Pfiester and Terry (1978)

Pinnularia brebissonii var. *diminuta* (Grunow) Cleve = *Pinnularia obscuriformis* Krammer

***Pinnularia brevicostata* Cleve**

NE: Shinneman et al. (2010)

OK: Troeger (1983)

Pinnularia capitata Ehrenberg = *Hippodonta capitata* (Ehrenberg) Lange-Bertalot, Metzeltin, & Witkowski

***Pinnularia conspicua* (A. Schmidt) Cleve**

Reported as:

Navicula conspicua A. Schmidt

KS: Curtis (1901)

***Pinnularia decurrens* Ehrenberg**

NE: Ehrenberg (1856)

Reported as:

Navicula decurrens (Ehrenberg) Kützing

KS: Curtis (1901)

NE: Elmore (1921)

***Pinnularia divergens* W. Smith**

Plains States: Patrick and Reimer (1966)

***Pinnularia formica* (Ehrenberg) Patrick**

OK: Pfiester et al. (1979)

***Pinnularia gibba* Ehrenberg**

Reported as:

Navicula stauroptera Grunow

KS: Curtis (1901)

NE: Andersen and Walker (1920)

***Pinnularia gibba* var. *brevistriata* (Van Heurck) A. Mayer**

OK: Pfiester and Terry (1978)

Reported as:

Navicula gibba var. *brevistriata* Van Heurck

NE: Andersen and Walker (1920) [Elmore (1921) equated this species with *P. decurrens* Ehrenberg and *P. gibba* Ehrenberg]

Pinnularia gibba var. *mesogongyla* (Ehrenberg) Hustedt = *Pinnularia mesogongyla* Ehrenberg

***Pinnularia hemiptera* (Kützing) Rabenhorst**

Reported as:

Navicula hemiptera Kützing

KS: Curtis (1901) [see Eberle 1981:114 and Patrick and Reimer 1966:621]

Pinnularia bilseana Janisch = *Pinnularia subcapitata* Gregory [see Patrick and Reimer 1966:595–596]

Pinnularia inaequalis Ehrenberg = *Cymbopleura inaequalis* (Ehrenberg) Krammer

***Pinnularia interrupta* W. Smith**

Reported as:

Navicula interrupta (W. Smith) A. Schmidt

KS: Curtis (1901) [see Eberle 1981:106]

Pinnularia biceps Gregory

KS: Wujek et al. (1980)

OK: Pfiester et al. (1979), Troeger (1978, 1983)

***Pinnularia interruptiformis* Krammer**

Reported as:

Pinnularia biceps f. *petersenii* Ross

OK: Pfiester et al. (1979)

***Pinnularia isostauron* (Ehrenberg) Cleve**

Reported as:

Stauroptera isostauron Ehrenberg

OK: Ehrenberg (1856)

***Pinnularia lata* (Brébisson) Rabenhorst**

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula lata (Brébisson) Kützing

NE: Elmore (1921)

***Pinnularia latevittata* var. *domingensis* Cleve**

OK: Troeger (1978)

***Pinnularia legumen* (Ehrenberg) Ehrenberg**

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula legumen Ehrenberg

NE: Elmore (1921)

***Pinnularia macilenta* (Ehrenberg) Ehrenberg**

OK: Ehrenberg (1856)

***Pinnularia maior* (Kützing) Rabenhorst [also as *Pinnularia maior*]**

KS: Wujek (1965)

OK: Pfiester et al. (1979)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula maior (Kützing) Kützing

KS: Curtis (1901), Wolle (1889)

NE: Andersen and Walker (1920), Elmore (1921), Webber (1889, 1890)

Pinnularia maior var. *transversa* (A. Schmidt) Cleve = *Pinnularia transversa* (Cleve) A. Mayer

***Pinnularia mayeri* Krammer**

Reported as:

Pinnularia braunii var. *amphicephala* (A. Mayer) Hustedt

KS: Wujek et al. (1980)

OK: Troeger (1978, 1983)

***Pinnularia mesogongyla* Ehrenberg**

OK: Pfiester et al. (1979)

Plains States: Patrick and Reimer (1966)

Reported as:

Pinnularia gibba var. *mesogongyla* (Ehrenberg) Hustedt

OK: Pfiester et al. (1979), Troeger (1978)

***Pinnularia mesolepta* (Ehrenberg) W. Smith**

OK: Troeger (1978)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula mesolepta Ehrenberg

KS: Curtis (1901) [see Eberle 1981:115]

NE: Andersen and Walker (1920), Elmore (1921)

***Pinnularia mesostyla* (Ehrenberg) W. Smith**

Reported as:

Navicula mesostyla Ehrenberg

KS: Curtis (1901)

***Pinnularia microstauron* (Ehrenberg) Cleve**

KS: Powers (1969)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula bicapitata var. *hybrida* Grunow

KS: Curtis (1901)

Navicula divergens f. *minor* A. Schmidt

KS: Curtis (1901)

Stauoptera microstauron Ehrenberg

NE: Ehrenberg (1856)

Pinnularia microstauron f. *biundulata* (O. Müller) Hustedt = *Pinnularia rhombarea* var. *biundulata* (O. Müller) Krammer

Pinnularia microstauron var. *brebissonii* (Kützing) Hustedt = *Pinnularia brebissonii* (Kützing) Rabenhorst

Pinnularia molaris (Grunow) Cleve = *Caloneis molaris* (Grunow) Krammer

***Pinnularia mormonorum* (Grunow) Patrick**

OK: Pfister et al. (1979)

***Pinnularia nobilis* (Ehrenberg) Ehrenberg**

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula nobilis Ehrenberg

NE: Elmore (1921)

***Pinnularia nodosa* (Ehrenberg) W. Smith**

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula nodosa Ehrenberg

NE: Elmore (1921)

***Pinnularia obscura* Krasske**

OK: Pfister et al. (1979), Troeger (1978, 1983)

Plains States: Patrick and Reimer (1966)

***Pinnularia obscuriformis* Krammer**

Reported as:

Pinnularia brebissonii var. *diminuta* (Grunow) Cleve

KS: Harris and Eberle (2001)

***Pinnularia parvula* (Ralfs) A. Cleve**

Reported as:

Navicula gibba var. *brevistriata* Van Heurck

NE: Andersen and Walker (1920)

Navicula stauroparva Grunow

KS: Curtis (1901)

Navicula stauoptera var. *parva* Grunow

KS: Curtis (1901)

Pinnularia peregrina Ehrenberg = *Navicula peregrina* (Ehrenberg) Kützing

***Pinnularia rhombarea* var. *biundulata* (O. Müller) Krammer**

Reported as:

Pinnularia microstauron f. *biundulata* (O. Müller) Hustedt

OK: Pfister and Terry (1978)

***Pinnularia rupestris* Hantzsch**

KS: ?Patrick and Reimer (1966)

Reported as:

Navicula rupestris (Hantzsch) A. Schmidt

KS: Curtis (1901)

Pinnularia sirokiana Ehrenberg = ? [invalid name]

OK: Ehrenberg (1856)

***Pinnularia socialis* (T.C. Palmer) Hustedt**

KS: Wujek et al. (1980)

***Pinnularia stauoptera* (Grunow) Rabenhorst**

Reported as:

Navicula parva (Ehrenberg) Elmore

NE: Elmore (1921)

***Pinnularia stomatophora* (Grunow) Cleve**

KS: Wujek et al. (1980)

Plains States: ?Patrick and Reimer (1966)

Reported as:

Navicula stomatophora Grunow

KS: Curtis (1901)

***Pinnularia subcapitata* Gregory**

OK: Troeger (1978)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula hilseana (Janisch) Janisch

NE: Andersen and Walker (1920) [see Patrick and Reimer 1966:595–596]

Navicula subcapitata (Gregory) Ralfs

NE: Andersen and Walker (1920), Elmore (1921)

Navicula subcapitata var. *stauroneiformis* Van Heurck

KS: Curtis (1901)

Pinnularia hilseana Janisch

NE: ?Patrick and Reimer (1966)

OK: Pfiester et al. (1979)

***Pinnularia subcapitata* var. *paucistriata* (Grunow) Cleve**

OK: Troeger (1983)

***Pinnularia subcommutata* Krammer**

Reported as:

Pinnularia viridis var. *commutata* (Grunow) Cleve

Plains States: Patrick and Reimer (1966)

***Pinnularia substomatophora* Hustedt**

OK: Pfiester et al. (1979)

***Pinnularia termes* Ehrenberg**

OK: Ehrenberg (1856)

Reported as:

Navicula thermes (Ehrenberg) A. Schmidt

NE: Elmore (1921)

***Pinnularia termitina* (Ehrenberg) Patrick**

OK: Troeger (1983)

***Pinnularia transversa* (Cleve) A. Mayer**

Reported as:

Pinnularia maior var. *transversa* (A. Schmidt) Cleve

OK: Troeger (1978)

***Pinnularia viridis* (Nitzsch) Ehrenberg**

KS: Harris and Eberle (2001), McFarland et al. (1964)

NE: Ehrenberg (1856), Shinneman et al. (2010)

OK: Ehrenberg (1856), Troeger (1978, 1983)

Plains States: Patrick and Reimer (1966)

Reported as:

Navicula viridis (Nitzsch) Ehrenberg

KS: Wolle (1889)

NE: Andersen and Walker (1920), Elmore (1921), Webber (1890)

Pinnularia viridis var. *commutata* (Grunow) Cleve = *Pinnularia subcommutata* Krammer

***Pinnularia viridis* var. *minor* Cleve**

KS: Wenke and Eberle (1985)

Reported as:

Navicula viridis (Nitzsch) Ehrenberg *sensu* A. Schmidt

KS: Curtis (1901) [see Eberle 1981:112–113]

► ***Placoneis abiskoensis* (Hustedt) Lange-Bertalot & Metzeltin**

NE: Shinneman et al. (2010)

***Placoneis dicephala* (W. Smith) Mereschkowsky**

Reported as:

Navicula dicephala W. Smith

KS: Curtis (1901), Wujek (1965)

NE: Andersen and Walker (1920), Elmore (1921)

***Placoneis dicephala* f. *minor* (Grunow) Cox**

Reported as:

Navicula dicephala f. *minor* Grunow

KS: Curtis (1901)

***Placoneis elginensis* (Gregory) Cox**

KS: Harris and Eberle (2001)

NE: Shinneman et al. (2010)

Reported as:

Navicula elginensis (Gregory) Ralfs

KS: Wujek et al. (1980)

OK: Koch and Risser (1974), Troeger (1978, 1983), Wilhm et al. (1977)

Plains States: Patrick and Reimer (1966)

***Placoneis elginensis* var. *neglecta* (Krasske) Kobayasi**

Reported as:

Navicula elginensis var. *neglecta* Krasske

OK: Pfiester et al. (1979)

***Placoneis exigua* (Gregory ex Grunow) Mereschkowsky**

Reported as:

Navicula exigua Gregory ex Grunow

OK: Koch and Risser (1974), Wilhm et al. (1977), Wilhm et al. (1978)

***Placoneis exigua* var. *capitata* (Patrick) Aysel**

Reported as:

Navicula exigua var. *capitata* Patrick

KS: Wujek et al. (1980)

MO: Pamperl (1980)

Plains States: Patrick and Reimer (1966)

***Placoneis gastrum* (Ehrenberg) Mereschkowsky**

Reported as:

Navicula gastrum (Ehrenberg) Kützing

NE: Andersen and Walker (1920), Elmore (1921)

Plains States: Patrick and Reimer (1966)

***Placoneis hambergii* (Hustedt) Bruder**

Reported as:

Navicula hambergii Hustedt

OK: Troeger (1983)

***Placoneis placentula* (Ehrenberg) Mereschkowsky**

Reported as:

Navicula placentula (Ehrenberg) Kützing

NE: Elmore (1921)

OK: Pfiester et al. (1979)

Plains States: Patrick and Reimer (1966)

***Placoneis placentula* var. *rostrata* (A. Mayer) Andersen, Stoermer, & Kreis**

Reported as:

Navicula placentula f. *rostrata* A. Mayer?

OK: Koch and Risser (1974)

► ***Plagiotropis arizonica* Czarnecki & Blinn**

KS: Czarnecki and Reinke (1981), Harris and Eberle (2001)

***Plagiotropis lepidoptera* (Gregory) Reimer**

Reported as:

Tropidoneis lepidoptera (Gregory) Cleve

OK: Koch (1975)

***Plagiotropis lepidoptera* var. *proboscidea* (Cleve) Reimer**

KS: Harris and Eberle (2001), Wenke and Eberle (1986)

Reported as:

Tropidoneis lepidoptera (Gregory) Cleve

KS: Reinke (1979a) [Reinke placed the taxon he identified with this variety rather than the nominate variety.]

- ***Planothidium dubium* (Grunow) Round & Burhtiyarova**
Reported as:
Achnanthes lanceolata var. *dubium* Grunow
KS: Wenke and Eberle (1986), Wujek et al. (1980)
MO: Pamperl (1980)
NE: Hoagland et al. (1982)
OK: Pfiester et al. (1979), Troeger (1983)
Plains States: Patrick and Reimer (1966)
- Planothidium haukianum* (Grunow) Round & Bukhtiyarova**
Reported as:
Achnanthes haukiana Grunow
KS: Czarnecki and Reinke (1981)
MO: Pamperl (1980)
OK: Koch (1975), Pfiester et al. (1979), Seyfer and Wilhm (1977)
- Planothidium haynaldii* (Schaarschmidt) Lange-Bertalot**
Reported as:
Achnanthes lanceolata var. *haynaldii* (Istv.-Schaarsch) Cleve
KS: Patrick and Reimer (1966)
- Planothidium lanceolatum* (Brébisson ex Kützing) Lange-Bertalot**
NE: Shinneman et al. (2010)
Reported as:
Achnanthes lanceolata Grunow
CO: WPSS (1961–1963)
KS: Curtis (1901), Powers (1969), Wenke and Eberle (1986), Wujek et al. (1980)
MO: Pamperl (1980)
NE: Andersen and Walker (1920), Elmore (1921), Rosowski et al. (1986)
OK: Hern et al. (1979), Koch and Risser (1974), Seyfer and Wilhm (1977), Troeger (1978, 1983), Troeger and Menzel (1986), Wilhm et al. (1977)
Plains States: Patrick and Reimer (1966)
- ***Platessa conspicua* (A. Mayer) Lange-Bertalot**
Reported as:
Achnanthes pinnata Hustedt
OK: Koch and Risser (1974)
- ***Pleurosigma delicatulum* W. Smith**
CO: WPSS (1961–1963)
KS: Curtis (1901), McFarland et al. (1964), Reinke (1985), Wenke and Eberle (1986), Williams (1962, 1964), WPSS (1961–1963, 1966), Wujek et al. (1980)
NE: Williams (1962), WPSS (1961–1963, 1966)
OK: Cooper and Wilhm (1975), Hern et al. (1979), Koch (1975), Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978), WPSS (1961–1963)
Plains States: Patrick and Reimer (1966)
Reported as:
Gyrosigma delicatulum (W. Smith) Elmore
NE: Elmore (1921)
- Pleurosigma elongatum* W. Smith**
KS: Czarnecki and Reinke (1981), Wenke and Eberle (1986)
Pleurosigma eximium (Thwaites) Cleve & Grunow = *Gyrosigma eximium* (Thwaites) Boyer *emend* Sterrenburg
Pleurosigma gracilentum Rabenhorst = *Gyrosigma acuminatum* (Kützing) Rabenhorst
Pleurosigma hippocampus Ehrenberg = *Gyrosigma euhippus* Sterrenburg & Ross
- Pleurosigma intermedium* W. Smith**
NE: Webber (1889, 1890)
Pleurosigma kuetszingii Grunow = *Gyrosigma kuetszingii* (Grunow) Cleve
Pleurosigma sciotensis Sullivant & Wormley = *Gyrosigma sciotense* (Sullivant & Wormley) Cleve
Pleurosigma spencerii (Bailey ex Quekett) W. Smith = *Gyrosigma acuminatum* (Kützing) Rabenhorst
- Pleurosigma strigosum* W. Smith**
OK: Kennedy and Pfiester (1984)
- *Pleurosiphonia affinis* Ehrenberg = *Neidium affine* (Ehrenberg) Pfitzer

- ▶ ***Prestauroneis integra* (W. Smith) Bruder**
Reported as:
Navicula integra (W. Smith) Ralfs
KS: Harris and Eberle (2001), Wujek et al. (1980)
NE: Elmore (1921), Patrick and Reimer (1966)
OK: Kennedy and Pfister (1984)
- ▶ ***Proschkinia longirostris* (Hustedt) D. Mann**
Reported as:
Navicula longirostris Hustedt
MO: Pamperl (1980)
OK: Troeger (1978)
- ▶ ***Pseudofallacia tenera* (Hustedt) Liu, Kociolek, & Wang**
Reported as:
Navicula tenera Hustedt
KS: Wujek et al. (1980)
NE: Hoagland et al. (1982)
OK: Seyfer and Wilhm (1977), Troeger (1978)
- ▶ ***Reimeria sinuata* (Gregory) Kociolek & Stoermer**
Reported as:
Cymbella sinuata Gregory
KS: Wenke and Eberle (1986), Wujek et al. (1980)
OK: Kennedy and Pfister (1984)
Plains States: Patrick and Reimer (1975)
- ▶ ***Rhaphoneis rostrata* Ehrenberg = ? [invalid name]**
OK: ?Ehrenberg (1856)
- ▶ ***Rhoicosphenia abbreviata* (Agardh) Lange-Bertalot**
Reported as:
Gomphonema abbreviatum Agardh
KS: Curtis (1901)
MO: Pamperl (1980)
OK: Pfister et al. (1979)
Rhoicosphenia curvata (Kützing) Grunow *ex* Rabenhorst
KS: Reinke (1979*a*), Wenke and Eberle (1986), Wujek et al. (1980)
NE: Andersen and Walker (1920), Elmore (1921), Hoagland et al. (1982)
OK: Hern et al. (1979), Koch and Risser (1974), Pfister et al. (1979), Seyfer and Wilhm (1977), Wilhm et al. (1978), WPSS (1961–1963)
Plains States: Patrick and Reimer (1966)
- ▶ ***Rhopalodia gibba* (Ehrenberg) O. Müller**
KS: Harris and Eberle (2001), Reinke (1979*a*, 1981, 1985), Williams (1962), WPSS (1961–1963, 1966), Wujek (1965), Wujek et al. (1980)
MO: Pamperl (1980), Williams (1962), WPSS (1961–1963, 1966)
NE: Hoagland et al. (1982), F.A. Morris et al. (1979), Shinneman et al. (2010) as *R. gibba sensu lato*, WPSS (1961–1963)
OK: Pfister and Terry (1978), Pfister et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983), Troeger and Menzel (1986), Wilhm et al. (1978)
Plains States: Patrick and Reimer (1975)
Reported as:
Cystopleura gibba (Ehrenberg) De Toni
NE: Andersen and Walker (1920), Elmore (1921)
OK: Leake (1945)
Epithemia gibba (Ehrenberg) Kützing
KS: Curtis (1901), Wolle (1889)
NE: Webber (1889, 1890)
Eunotia gibba Ehrenberg
NE: Ehrenberg (1856)
OK: Ehrenberg (1856)
Navicula gibba Ehrenberg
KS: Curtis (1901), Wolle (1889)

***Rhopalodia gibba* var. *ventricosa* (Kützing) H. & M. Peragallo**

KS: Wenke and Eberle (1986)

NE: Shinneman et al. (2010)

OK: Troeger (1983)

Plains States: Patrick and Reimer (1975)

Reported as:

Cystopleura gibba var. *ventricosa* (Kützing) De Toni

NE: Andersen and Walker (1920)

Cystopleura ventricosa (Kützing) Elmore

NE: Elmore (1921)

OK: Leake (1945)

Epithemia gibba var. *ventricosa* (Kützing) Grunow

KS: Curtis (1901)

***Rhopalodia gibberula* (Ehrenberg) O. Müller**

KS: Harris and Eberle (2001), Wenke and Eberle (1985)

NE: Shinneman et al. (2010)

OK: Koch (1975), Koch and Risser (1974), Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1975)

Reported as:

Cystopleura gibberula (Ehrenberg) Kuntze

NE: Elmore (1921)

Epithemia gibberula (Ehrenberg) Kützing

KS: Curtis (1901)

Eunotia gibberula Ehrenberg

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

***Rhopalodia gibberula* var. *sphaerula* (Ehrenberg) O. Müller**

Reported as:

Eunotia sphaerula Ehrenberg

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

***Rhopalodia gibberula* var. *vanheurckii* O. Müller**

KS: Czarnecki and Reinke (1981)

OK: Pfiester et al. (1979)

***Rhopalodia musculus* (Kützing) O. Müller**

KS: Harris and Eberle (2001), Wenke and Eberle (1986)

NE: Patrick and Reimer (1975)

Reported as:

Cystopleura musculus (Kützing) Kuntze

NE: Elmore (1921)

Rhopalodia parallela (Grunow) O. Müller = *Epithemia parallela* (Grunow) Ruck & Nakov

► ***Scoliopleura alternans* (Schumann) De Toni**

Reported as:

Navicula alternans Schumann

KS: Curtis (1901) [see Patrick and Reimer 1966:644]

***Scoliopleura peisonis* Grunow**

KS: Harris and Eberle (2001)

► ***Sellaphora arvensis* (Hustedt) Wetzel & Ector**

Reported as:

Navicula arvensis Hustedt

KS: Wujek et al. (1980)

MO: Pamperl (1980)

NE: Hoagland et al. (1982)

OK: Kennedy and Pfiester (1984)

***Sellaphora atomoides* (Grunow) Wetzel & Van de Vijver**

Reported as:

Navicula atomoides Grunow

NE: Elmore (1921)

Navicula tantula Hustedt

KS: Powers (1969)

***Sellaphora bacillum* (Ehrenberg) D. Mann**

Reported as:

Navicula bacillum Ehrenberg

KS: Curtis (1901)

Plains States: Patrick and Reimer (1966)

Navicula bacillum f. *minor* Grunow

KS: Curtis (1901)

Navicula pseudobacillum Grunow

KS: Curtis (1901)

***Sellaphora hustedtii* (Krasske) Lange-Bertalot & Werum**

Reported as:

Navicula hustedtii Krasske

OK: Troeger (1983)

***Sellaphora laevis* (Kützing) D. Mann**

Reported as:

Navicula bacilliformis Grunow

KS: Curtis (1901)

NE: Andersen and Walker (1920), Elmore (1921)

Navicula laevis Kützing

KS: Wujek et al. (1980)

OK: Seyfer and Wilhm (1977)

Plains States: Patrick and Reimer (1966)

***Sellaphora mutata* (Krasske) Lange-Bertalot**

Reported as:

Navicula pupula var. *mutata* (Krasske) Hustedt

MO: Pamperl (1980)

***Sellaphora nana* (Hustedt) Lange-Bertalot et al.**

Reported as:

Stauroneis nana Hustedt

OK: Troeger (1983)

***Sellaphora pupula* (Kützing) Mereschkowsky**

KS: Harris and Eberle (2001)

NE: Shinneman et al. (2010) as *S. pupula sensu lato*

Reported as:

Navicula pupula Kützing

KS: Boyer (1927b), ?Curtis (1901), Powers (1969)

MO: Pamperl (1980)

NE: Andersen and Walker (1920), Elmore (1921), Hoagland et al. (1982), Roemer et al. (1984)

OK: Pfister et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983), Troeger and Menzel (1986), Wilhm et al. (1977), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1966)

Navicula pupula f. *minutula* Cholnoky

KS: Powers (1969)

***Sellaphora pupula* var. *capitata* (Skvortzow & Meyer) Poulin**

Reported as:

Navicula pupula var. *capitata* Skvortzow & Meyer

KS: Wenke and Eberle (1986), Wujek et al. (1980)

OK: Koch and Risser (1974), Troeger (1983)

Plains States: Patrick and Reimer (1966)

***Sellaphora rectangularis* (Gregory) Lange-Bertalot & Metzeltin**

KS: Harris and Eberle (2001)

Reported as:

Navicula pupula var. *rectangularis* (Gregory) Grunow

KS: Wujek et al. (1980)

MO: Pamperl (1980)

NE: Patrick and Reimer (1966)

OK: Koch and Risser (1974), Troeger (1978)

***Sellaphora saugerresii* (Desmazières) Wetzel & D. Mann**

Reported as:

Navicula minima Grunow

KS: Wenke and Eberle (1985)

MO: Pamperl (1980)

OK: Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983)

Plains States: Patrick and Reimer (1966)

***Sellaphora seminulum* (Grunow) D. Mann**

Reported as:

Navicula seminulum Grunow

OK: Wilhm et al. (1978)

***Sellaphora seminulum* var. *hustedtii* (Patrick) ?**

Reported as:

Navicula seminulum var. *hustedtii* Patrick

OK: Pfiester et al. (1979), Troeger (1978)

***Sellaphora subfasciata* Potapova**

Reported as:

Navicula segura Patrick

OK: Koch and Risser (1974)

Navicula subfasciata Patrick [also as *N. subfasciculata*]

OK: Koch and Risser (1974), Troeger (1978, 1983)

***Sellaphora tridentula* (Krasske) Wetzel**

Reported as:

Navicula tridentula Krasske

OK: Troeger (1978)

***Sellaphora vitabunda* (Hustedt) D. Mann**

Reported as:

Navicula vitabunda Hustedt

OK: Troeger (1978)

***Sellaphora wummensis* Johansen**

Reported as:

Navicula pupula var. *elliptica* Hustedt

MO: Pamperl (1980)

NE: Patrick and Reimer (1966)

OK: Troeger (1978)

► *Sphinctocystis elliptica* (Brébisson ex Kützing) Kuntze = *Cymatopleura elliptica* (Brébisson) W. Smith

Sphinctocystis librilis (Ehrenberg) Hassall = *Cymatopleura solea* (Brébisson) W. Smith

► ***Stauroneis acuta* W. Smith**

KS: Branson (1966)

NE: Andersen and Walker (1920), Elmore (1921)

Plains States: Patrick and Reimer (1966)

***Stauroneis amphicephala* Kützing**

Reported as:

Stauroneis anceps var. *amphicephala* (Kützing) Van Heurck

NE: Andersen and Walker (1920)

***Stauroneis anceps* Ehrenberg**

KS: Curtis (1901), Wolle (1889), Wujek et al. (1980)

NE: Andersen and Walker (1920), Elmore (1921), Webber (1890)

OK: Pfiester et al. (1979), Troeger (1978, 1983), Wilhm et al. (1978)

Plains States: Patrick and Reimer (1966)

Stauroneis anceps var. *americana* Reimer = *Stauroneis charlesreimeri* Lange-Bertalot & Metzeltin

Stauroneis anceps var. *amphicephala* (Kützing) Van Heurck = *Stauroneis anceps* Ehrenberg

***Stauroneis anceps* f. *gracilis* Rabenhorst**

OK: Troeger (1978)

Plains States: Patrick and Reimer (1966)

Stauroneis anceps f. *linearis* (Ehrenberg) Hustedt = *Stauroneis anceps* var. *linearis* (Ehrenberg) Brun

***Stauroneis anceps* var. *linearis* (Ehrenberg) Brun**

Reported as:

Stauroneis anceps f. *linearis* (Ehrenberg) Hustedt

Plains States: Patrick and Reimer (1966)

Stauroneis linearis Ehrenberg

NE: Elmore (1921)

***Stauroneis charlesreimeri* Lange-Bertalot & Metzeltin**

Reported as:

Stauroneis anceps var. *americana* Reimer

KS: Wujek et al. (1980)

***Stauroneis ignorata* Hustedt**

NE: Patrick and Reimer (1966)

OK: Troeger (1983)

***Stauroneis kriegeri* Patrick**

OK: Troeger (1983)

***Stauroneis legumen* (Ehrenberg) Kützing**

NE: Elmore (1921)

Stauroneis linearis Ehrenberg = *Stauroneis anceps* var. *linearis* (Ehrenberg) Brun

Stauroneis nana Hustedt = *Sellaphora nana* (Hustedt) Lange-Bertalot et al.

***Stauroneis nobilis* Schumann**

OK: Pfister et al. (1979)

***Stauroneis nobilis* var. *baconiana* (Stodder) Reimer**

OK: Pfister et al. (1979), Troeger (1978)

Stauroneis palustris Hustedt = *Staurophora tackei* (Hustedt) Bahls

Stauroneis parvula Janisch *sensu* Elmore = *Achnanbidium exiguum* (Grunow) Czarnecki [see Patrick and Reimer 1966:257]

***Stauroneis phoenicenteron* (Nitzsch) Ehrenberg**

KS: Curtis (1901), Wenke and Eberle (1986), Wolle (1889), Wujek (1965)

NE: Andersen and Walker (1920), Elmore (1921), Shinneman et al. (2010) [as *S. phonicentron*]

OK: Koch and Risser (1974), Troeger (1978)

Plains States: Patrick and Reimer (1966)

***Stauroneis phoenicenteron* f. *gracilis* (Ehrenberg) Hustedt**

KS: Czarnecki and Reinke (1981)

OK: Troeger (1978)

***Stauroneis phyllodes* Ehrenberg**

Reported as:

Navicula phyllodes (Ehrenberg) Ehrenberg

OK: Ehrenberg (1856)

***Stauroneis producta* Grunow**

KS: Wolle (1889)

***Stauroneis semen* Ehrenberg**

NE: ?Ehrenberg (1856)

***Stauroneis smithii* Grunow**

KS: Wujek (1965)

NE: Andersen and Walker (1920)

OK: Koch and Risser (1974), Troeger (1983)

Plains States: Patrick and Reimer (1966)

Stauroneis spicula (Hicke) Grunow = *Haslea spicula* (Hickie) Bukhtiyarova

***Staurophora tackei* (Hustedt) Bahls**

Reported as:

Stauroneis palustris Hustedt

NE: Hoagland et al. (1982)

Stauroneis tenuissima [non Hustedt 1937] = ?

NE: Andersen and Walker (1920)

Stauroneis wislouchii Poretzky & Anisimova = *Staurophora wislouchii* (Poretzky & Anisimova) D. Mann

► ***Staurophora wislouchii* (Poretzky & Anisimova) D. Mann**

Reported as:

Stauroneis wislouchii Poretzky & Anisimova

KS: Czarnecki and Reinke (1981)

► *Stauroptera isostauroon* Ehrenberg = *Pinnularia isostauroon* (Ehrenberg) Cleve

Stauroptera microstauroon Ehrenberg = *Pinnularia microstauroon* (Ehrenberg) Cleve

► ***Stenopterobia intermedia* (Lewis) Van Heurck ex Hanna**

Reported as:

Surirella intermedia Lewis

KS: Curtis (1901)

► ***Surirella amphioxys* W. Smith**

Reported as:

Surirella moelleriana Grunow *sensu* A. Schmidt

KS: Curtis (1901)

***Surirella angusta* Kützing** [also as *S. angustata*]

KS: Harris and Eberle (2001), Powers (1969), Wenke and Eberle (1986), Williams et al. (1979), Wujek et al. (1980)

MO: M.K. Morris et al. (1979*a*), Pamperl (1980)

NE: F.A. Morris et al. (1979)

OK: Cooper and Wilhm (1975), Hern et al. (1979), Seyfer and Wilhm (1977), Troeger (1983), Wilhm et al. (1977), Wilhm et al. (1978)

***Surirella apiculata* W. Smith**

KS: Curtis (1901)

Surirella bifrons Ehrenberg = *Iconella bifrons* (Ehrenberg) Ruck & Nakov

Surirella biseriata Brébisson = *Iconella biseriata* (Brébisson) Ruck & Nakov

***Surirella brebissonii* Krammer & Lange-Bertalot**

Reported as:

Surirella ovalis var. *ovata* (Kützing) Van Heurck

NE: Andersen and Walker (1920), Webber (1890)

Surirella ovata Kützing

CO: WPSS (1961–1963)

KS: Curtis (1901), Wenke and Eberle (1986), Williams (1962), Williams et al. (1979), WPSS (1961–1963, 1966), Wujek et al. (1980)

MO: Pamperl (1980), Williams (1962), WPSS (1961–1963), WPSS (1966)

NE: F.A. Morris et al. (1979), Hoagland et al. (1982), Roemer et al. (1984), Williams (1962), WPSS (1961–1963, 1966)

OK: Cooper and Wilhm (1975), Hern et al. (1979), Koch (1975), Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Troeger (1978, 1983), Troeger and Menzel (1986), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962), WPSS (1961–1963, 1966)

***Surirella brightwellii* W. Smith**

CO: WPSS (1961–1963)

KS: Wenke and Eberle (1986), Williams (1962), WPSS (1961–1963, 1966), Wujek et al. (1980)

NE: WPSS (1961–1963)

OK: Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962, 1964), WPSS (1961–1963, 1966)

Surirella craticula (Ehrenberg) Ehrenberg = ?

NE: Ehrenberg (1856)

***Surirella crumena* Brébisson ex Kützing**

KS: Harris and Eberle (2001)

Reported as:

Surirella ovata var. *crumena* (Brébisson) Hustedt

KS: Wujek et al. (1980)

Surirella delicatissima Lewis = *Iconella delicatissima* (Lewis) Ruck & Nakov

***Surirella didyma* Kützing**

OK: Pfiester et al. (1979)

***Surirella elegans* Ehrenberg**

NE: Elmore (1921)

OK: Troeger (1978)

***Surirella gracilis* Grunow**

OK: Troeger (1978)

Surirella intermedia Lewis = *Stenopterobia intermedia* (Lewis) Van Heurck ex Hanna

Surirella linearis W. Smith = *Iconella linearis* (W. Smith) Ruck & Nakov

Surirella linearis var. *helvetica* (Brun) Meister = *Iconella helvetica* (Brun) Ruck & Nakov

***Surirella minuta* Brébisson**

Reported as:

Surirella ovalis var. *pinnata* (W. Smith) Van Heurck

NE: Andersen and Walker (1920)

Surirella ovata var. *pinnata* (W. Smith) Brun

KS: Wenke and Eberle (1986), Wujek et al. (1980)

NE: Andersen and Walker (1920), Hoagland et al. (1982)

Surirella moelleriana Grunow *sensu* A. Schmidt = *Surirella amphioxys* W. Smith

***Surirella myodon* Ehrenberg**

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

Surirella nobilis W. Smith = *Iconella robusta* (Ehrenberg) Ruck & Nakov

***Surirella ovalis* Brébisson**

KS: ?Harris and Eberle (2001), McFarland et al. (1964), Wenke and Eberle (1986), Wujek (1965)

NE: Elmore (1921), English and Potapova (2012)

OK: Koch and Risser (1974), Pfiester et al. (1979), Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978)

Surirella ovalis var. *ovata* (Kützing) Van Heurck = *Surirella brebissonii* Krammer & Lange-Bertalot

Surirella ovalis var. *pinnata* (W. Smith) Van Heurck = *Surirella minuta* Brébisson

Surirella ovata Kützing = *Surirella brebissonii* Krammer & Lange-Bertalot

Surirella ovata var. *crumena* (Brébisson) Hustedt = *Surirella crumena* Brébisson

Surirella ovata var. *pinnata* (W. Smith) Brun = *Surirella minuta* Brébisson

Surirella ovata var. *salina* (W. Smith) Rabenhorst = *Surirella salina* W. Smith

Surirella palmerii Boyer = *Surirella tenera* var. *palmerii* (Boyer) Hustedt

***Surirella panduriformis* Kützing**

KS: Curtis (1901)

***Surirella regula* Ehrenberg**

OK: Ehrenberg (1856)

Reported as:

Cymatopleura solea var. *regula* (Ehrenberg) Grunow

OK: Pfiester et al. (1979)

Surirella robusta Ehrenberg = *Iconella robusta* (Ehrenberg) Ruck & Nakov

Surirella robusta var. *splendida* (Ehrenberg) Van Heurck = *Iconella splendida* (Ehrenberg) Ruck & Nakov

***Surirella salina* W. Smith**

Reported as:

Surirella ovata var. *salina* (W. Smith) Rabenhorst

KS: Powers (1969)

***Surirella saxonica* Auerswald *ex* Rabenhorst**

NE: Elmore (1921)

***Surirella sigmoidea* Ehrenberg**

OK: Ehrenberg (1856)

Surirella spiralis Kützing = *Iconella spiralis* (Kützing) Ruck & Nakov

Surirella splendida (Ehrenberg) Kützing = *Iconella splendida* (Ehrenberg) Ruck & Nakov

***Surirella striatula* Turpin**

KS: ?Harris and Eberle (2001), Wenke and Eberle (1986), Williams (1962, 1964), WPSS (1961–1963, 1966)

OK: Ehrenberg (1856), Koch (1975), Pfiester et al. (1979), WPSS (1961–1963)

***Surirella suevica* Zeller *ex* Grunow**

KS: Curtis (1901)

Surirella tenera Gregory = *Iconella tenera* (Gregory) Ruck & Nakov

***Surirella tenera* var. *nervosa* A. Schmidt**

KS: Curtis (1901), Wenke and Eberle (1985)

***Surirella tenera* var. *palmerii* (Boyer) Hustedt**

Reported as:

Surirella palmerii Boyer

KS: Powers (1969)

***Surirella tenera* var. *splendidula* A. Schmidt**

KS: Curtis (1901)

***Surirella undulata* Ehrenberg**

NE: Ehrenberg (1856)

OK: Ehrenberg (1856)

***Surirella utahensis* (Grunow) Hanna & Grant**

NE: Shinneman et al. (2010) as *S. utbanensis*

▶ *Tropidoneis lepidoptera* (Gregory) Cleve = *Plagiotropis lepidoptera* (Gregory) Reimer or *P. l.* var. *proboscidea* (Cleve) Reimer

▶ ***Tryblionella acuta* (Cleve) D. Mann**

Reported as:

Nitzschia acuta Cleve

NE: Hoagland et al. (1982), Roemer et al. (1984)

OK: Pfister et al. (1979)

***Tryblionella angustata* W. Smith**

Reported as:

Homoeocladia angustata (W. Smith) Kuntze

NE: Elmore (1921)

Nitzschia angustata (W. Smith) Grunow

KS: Curtis (1901), Wujek et al. (1980)

OK: Seyfer and Wilhm (1977), Troeger (1978), Wilhm et al. (1978)

***Tryblionella apiculata* Gregory**

Reported as:

Homoeocladia apiculata (Gregory) Kuntze

NE: Elmore (1921)

Nitzschia apiculata (Gregory) Grunow

KS: Curtis (1901), Powers (1969), Wenke and Eberle (1986), Williams (1962), ?Williams et al. (1979), WPSS (1966), Wujek et al. (1980)

NE: Roemer et al. (1984)

OK: Hern et al. (1979), Koch (1975), Koch and Risser (1974), Pfister et al. (1979), Seyfer and Wilhm (1977), Troeger (1978), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962), WPSS (1966)

***Tryblionella calida* (Grunow in Cleve & Grunow) Stroganov**

KS: Harris and Eberle (2001)

***Tryblionella debilis* Arnott ex O'Meara**

Reported as:

Nitzschia tryblionella var. *debilis* (Arnott) A. Mayer

KS: ?Williams et al. (1979), Wujek et al. (1980)

MO: M.K. Morris et al. (1979a), Pamperl (1980)

NE: Hoagland et al. (1982)

OK: Hern et al. (1979), Koch (1975)

***Tryblionella gracilis* W. Smith**

Reported as:

Homoeocladia tryblionella (Hantzsch) Kuntze

NE: Elmore (1921)

OK: Leake (1945)

Nitzschia tryblionella Hantzsch

KS: Curtis (1901), Powers (1969), Williams et al. (1979), Wujek et al. (1980)

NE: Andersen and Walker (1920), Williams (1962), WPSS (1961–1963, 1966)

OK: Koch (1975), Pfister et al. (1979), Seyfer and Wilhm (1977), Wilhm et al. (1977), Wilhm et al. (1978), WPSS (1961–1963)

Nitzschia tryblionella f. *densus striatae* ?

KS: Curtis (1901)

Nitzschia tryblionella f. *minor* ?

KS: Curtis (1901)

Tryblionella tryblionella (Hantzsch) Prochazka

KS: Harris and Eberle (2001)

***Tryblionella hungarica* (Grunow) Frenguelli**

KS: Harris and Eberle (2001)

Reported as:

Homoeocladia hungarica (Grunow) Kuntze

NE: Elmore (1921)

Nitzschia hungarica Grunow

KS: Curtis (1901), Powers (1969), Wenke and Eberle (1986), Williams et al. (1979), Wujek et al. (1980)

NE: Hoagland et al. (1982), Rosowski et al. (1986)

OK: Cooper and Wilhm (1975), Koch (1975), Pfister et al. (1979), Seyfer and Wilhm (1977), Troeger (1978), Wilhm et al. (1977), Wilhm et al. (1978), Williams (1962), WPSS (1966)

***Tryblionella levidensis* W. Smith**

KS: Harris and Eberle (2001)

Reported as:

Nitzschia tryblionella var. *levidensis* (W. Smith) Grunow

OK: Pfister and Terry (1978), Troeger (1983)

***Tryblionella punctata* W. Smith**

Reported as:

Homoeocladia punctata (W. Smith) Kuntze

NE: Elmore (1921)

***Tryblionella umblicata* (Hustedt) D. Mann**

Reported as:

Nitzschia umblicata Hustedt

KS: Powers (1969)

***Tryblionella victoriae* Grunow**

Reported as:

Nitzschia tryblionella var. *victoriae* (Grunow) Grunow

KS: Curtis (1901)

NE: Hoagland et al. (1982)

OK: Koch and Risser (1974)

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