

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

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

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## *Introduction to the List of Diatom Taxa*

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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.

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## *History of Diatom Research in the Central United States*

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### **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)

▶ ***Catombas 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 ramesii* (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 vulgare* 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* (Héribaud) Ohtsuka**

**Reported as:**

*Synedra ulna* var. *ramseii* (Héribaud) 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 exilis* 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* (Guérmeur & Manguin) Reimer = *Eucoconeis lapponica* var. *ninckei* (Guérmeur & 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)



***Achnantheidium 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)

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

**Reported as:**

*Achnanthes exigua* var. *constricta* (Grunow) Hustedt

**KS:** Wujek et al. (1980)

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

**Reported as:**

*Achnanthes exigua* var. *heterovalva* Krasske

**OK:** Seyfer and Wilhm (1977)

**Plains States:** Patrick and Reimer (1966)

***Achnantheidium exile* (Kützing) Heiberg**

**Reported as:**

*Achnanthes exilis* Kützing

**KS:** Curtis (1901)

***Achnantheidium 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)

***Achnantheidium 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)

***Achnantheidium 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)

***Achnantheidium pyrenaicum* (Grunow) Kobayasi**

**Reported as:**

*Achnanthes biasoletiana* Grunow

**KS:** Curtis (1901)

***Achnantheidium 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:** Pfister 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), Pfister 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), Pfister 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) Pfitzer**

**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), Pfiester 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:** Pfiester 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 amphiceros* 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 ampliatum* Ehrenberg = *Neidium ampliatum* (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 = *Diademsis 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 flantica* 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:** Pfister 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 Pfister (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:** Pfister 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:** Pfister 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), Pfiester 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), Pfiester 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:** Pfister 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:** Pfister and Terry (1978), Pfister 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:** Pfister 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. *ampliatum* (Ehrenberg) Cleve = *Neidium ampliatum* (Ehrenberg) Krammer

*Neidium iridis* var. *subampliatum* (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:** Pfister 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 (1979a, 1985)

*Nitzschia longissima* var. *reversa* (W. Smith) Van Heurck

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

**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 (1982a)

**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:** Pfister 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:** Pfister 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:** Pfister 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:** Pfiester 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:** Pfiester 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:** Pfiester 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 tbermes* (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:** Pfister 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), Pfister 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 Pfister (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 laevisissima* (Kützing) D. Mann**

**Reported as:**

*Navicula bacilliformis* Grunow

**KS:** Curtis (1901)

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

*Navicula laevisissima* 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 isostauron* Ehrenberg = *Pinnularia isostauron* (Ehrenberg) Cleve**

*Stauroptera microstauron* Ehrenberg = *Pinnularia microstauron* (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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