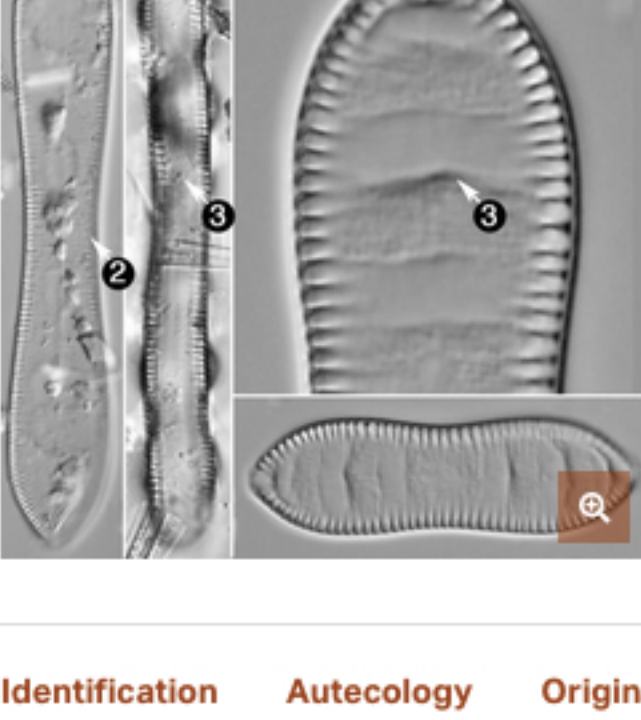


Cymatopleura solea

(Bréb. in Bréb. and Godey) W.Sm. 1851

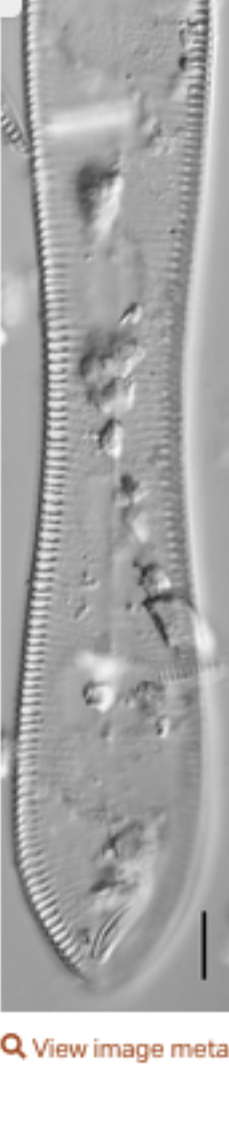


Category	Surirelloid
Length Range	56-280 µm
Width Range	13-24 at the midsection, 15-36 at the broadest point µm
Striae in 10 µm	29-34
Contributor	Pat Kociolek - Mar 2011
Reviewer	Rex Lowe - Oct 2011

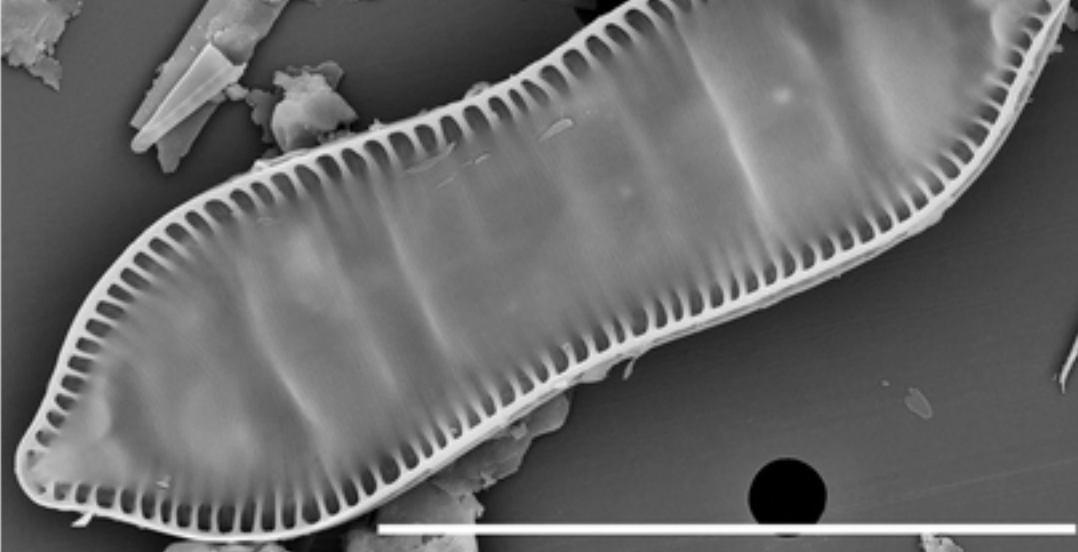
IdentificationAutecologyOriginal DescriptionEMAP AssessmentCitations & LinksUpdates

Compare

Identification



View image metadata



Description

Valves are broadly linear with a central constriction and tapering to blunt ends. Alar canals and ribs number 6-9 in 10 µm. Striations between the ribs are evident by fine, but not distinctly punctate striae. The raphe is contained in a canal around the margin of the valve. Undulations oriented across the face of the valve, occur the length of the valve.

Note that *Surirella librile* (Ehrenb.) Ehrenb. 1845 is a nomenclatural

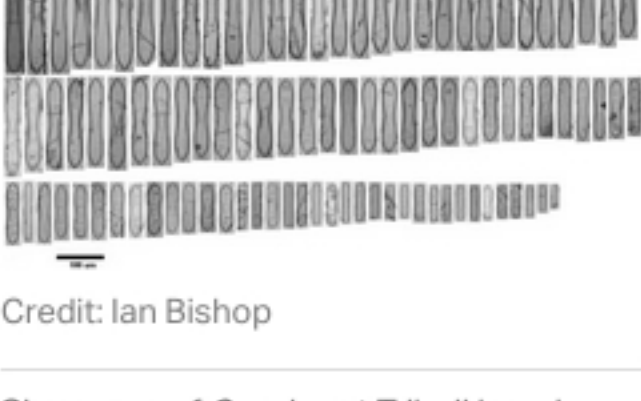
synonym of *Cymatopleura solea* (Breb.) W. Smith 1851. Prior to the description of *Cymbella solea* Bréb. & Godey (1835) and transfer to *Cymatopleura solea* (Bréb.) W. Sm. (1851), the taxon *Navicula librile* was described by Ehrenberg in 1832. According to Jahn et al. (2017), Ehrenberg's drawings and specimens from his material show the earliest description of *Cymatopleura solea* was by Ehrenberg (1832). *Navicula librile* Ehrenb. 1832 has priority, as does its transfer to *Surirella librile* (Ehrenb.) Ehrenb. 1845.

Autecology

As a relatively large diatom with a raphe system that runs the perimeter of the cell, *C. solea* is found growing on the surface of fine sediments.

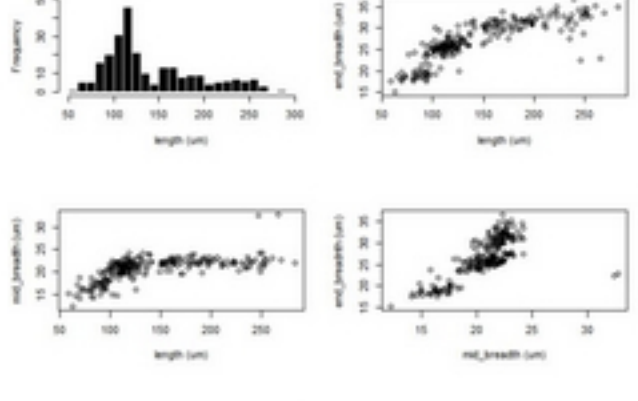
The 2014 *Ecology and Systematics of Diatoms* course at the Iowa Lakeside Lab found a large population of *C. solea* at Triboji beach, West Lake Okoboji. In contrast to conventional thinking that sexual reproduction is induced near 40% of the maximum cell size, the students found cells at 20% of the maximum cell size. As a class project, students searched for specific size ranges (~ 2 µm bins) to plot the dimensions. No auxospores or initial valves were observed.

Mann (1987) documented sexual reproduction in *C. solea* and a similar size range (1989).



Credit: Ian Bishop

Size range of *C. solea* at Triboji beach. Scale bar equal to 100 µm.



Credit: Ian Bishop, David Burge

Plots of the morphological dimensions of the cells found at Triboji beach.

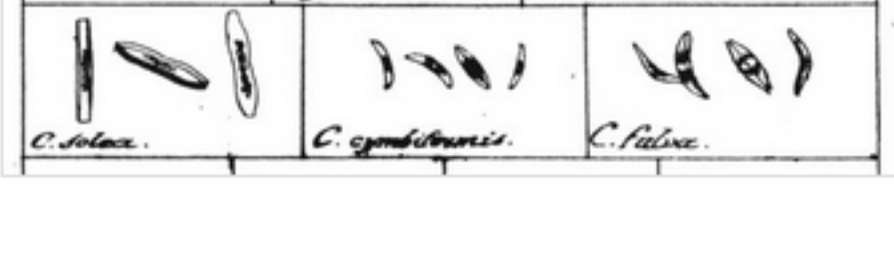
Size Range, µm3	100001-1000000
Motility	Highly motile
Attachment	Unattached
Habitat	Benthic
Colony	Solitary
BCG	BCG 4
Distribution	Western EMAPCalifornia

Learn more about this >

Original Description

Basionym	Surirella solea
Author	Bréb. in Bréb. and Godey 1835

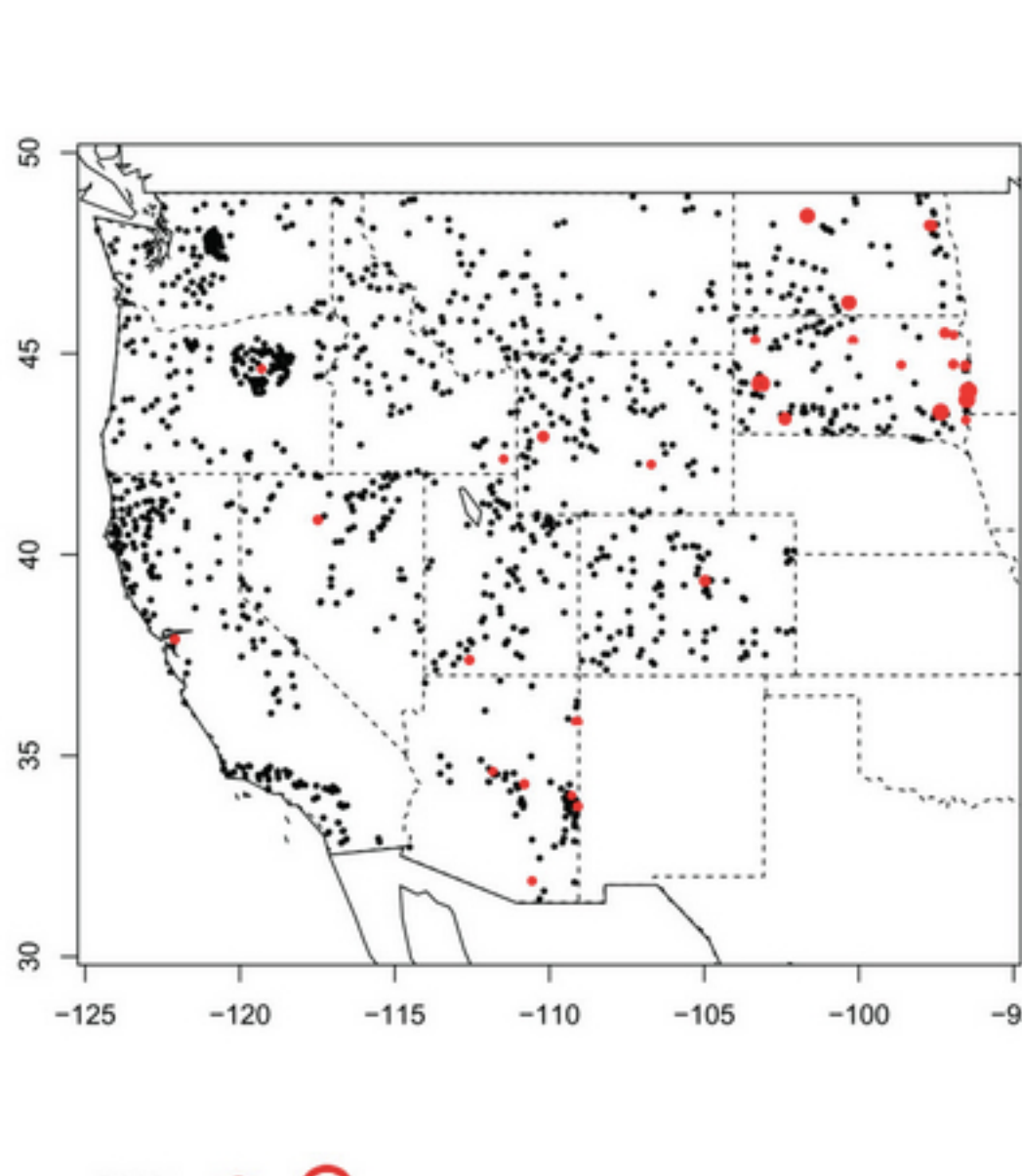
Original Images



14. *C. solea* Bréb. herb. (*C. semella*.) Frustules longe, transparentes; vus de face: planes, ovales, panduriformes, renfermés au milieu d'un endochrome verdâtre; vus de profil: linéaires, droits. — Très-rare. Rivière d'Orne, à St-Philbert. (Pl. VII.)

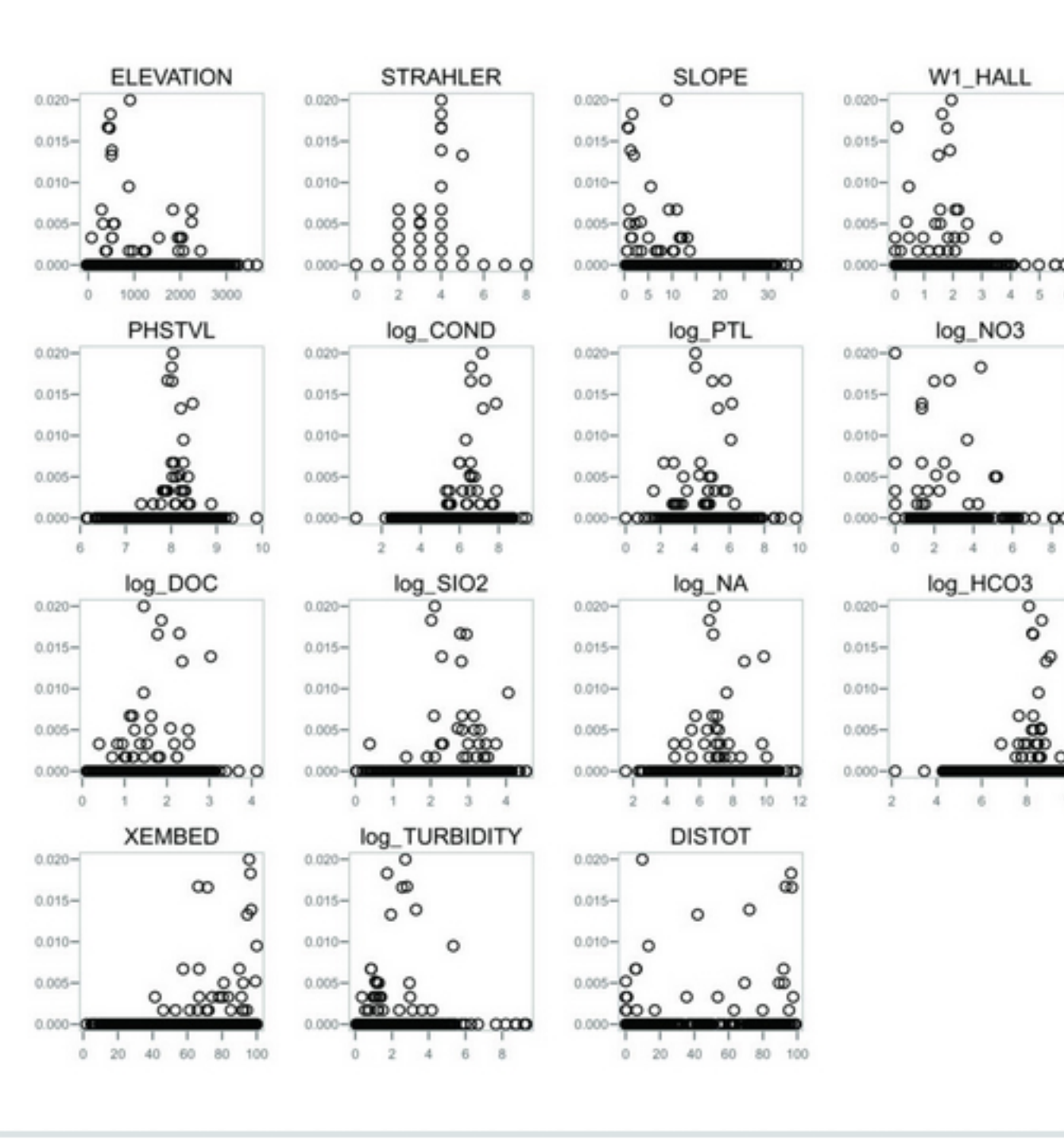
EMAP Assessment

EMAP Distribution



Response Plots

Response Plot Key >



Citations & Links

Citations

Jahn, R., Kusber, W.H. and Cocquyt, C. (2017) Differentiating *Iconella* from *Surirella* (Bacillariophyceae): typifying four Ehrenberg names and a preliminary checklist of the African taxa *PhytoKeys* 82: 73–112

Publication Link: 10.3897/phytokeys.82.13542

Krammer, K. and Lange-Bertalot, H. (1988) Bacillariophyceae. 2. Teil: Bacillariaceae, Epithemiaceae, Surirellaceae In: Ettl, H., J. Gerloff, H. Heynig and D. Mollenhauer (eds.) *Susswasserflora von Mitteleuropa*, Band 2/2. Gustav Fisher Verlag, Jena.

Mann, D.G. (1987) Sexual reproduction in *Cymatopleura solea* *Diatom Research* 2: 97–112

Publication Link: 10.1080/0269249X.1987.9704987

Mann, D.G. (1989) The species concept in diatoms: evidence for morphologically distinct, sympatric gametemes in four epipelagic species. *Plant Systematics and Evolution* 164: 215–237.

Ruck, E.C. and Kociolek, J.P. (2005) Preliminary phylogeny of the Family Surirellaceae (Bacillariophyta) *Bibliotheca Diatomologica* 50: 1–236

Links

Index Nominum Algarum
Original

CAS
Link

GenBank
Cymatopleura solea NCBI

North American Diatom Ecological Database
NADED ID: 22001

Updates

May 18, 2020 - Extension of size range

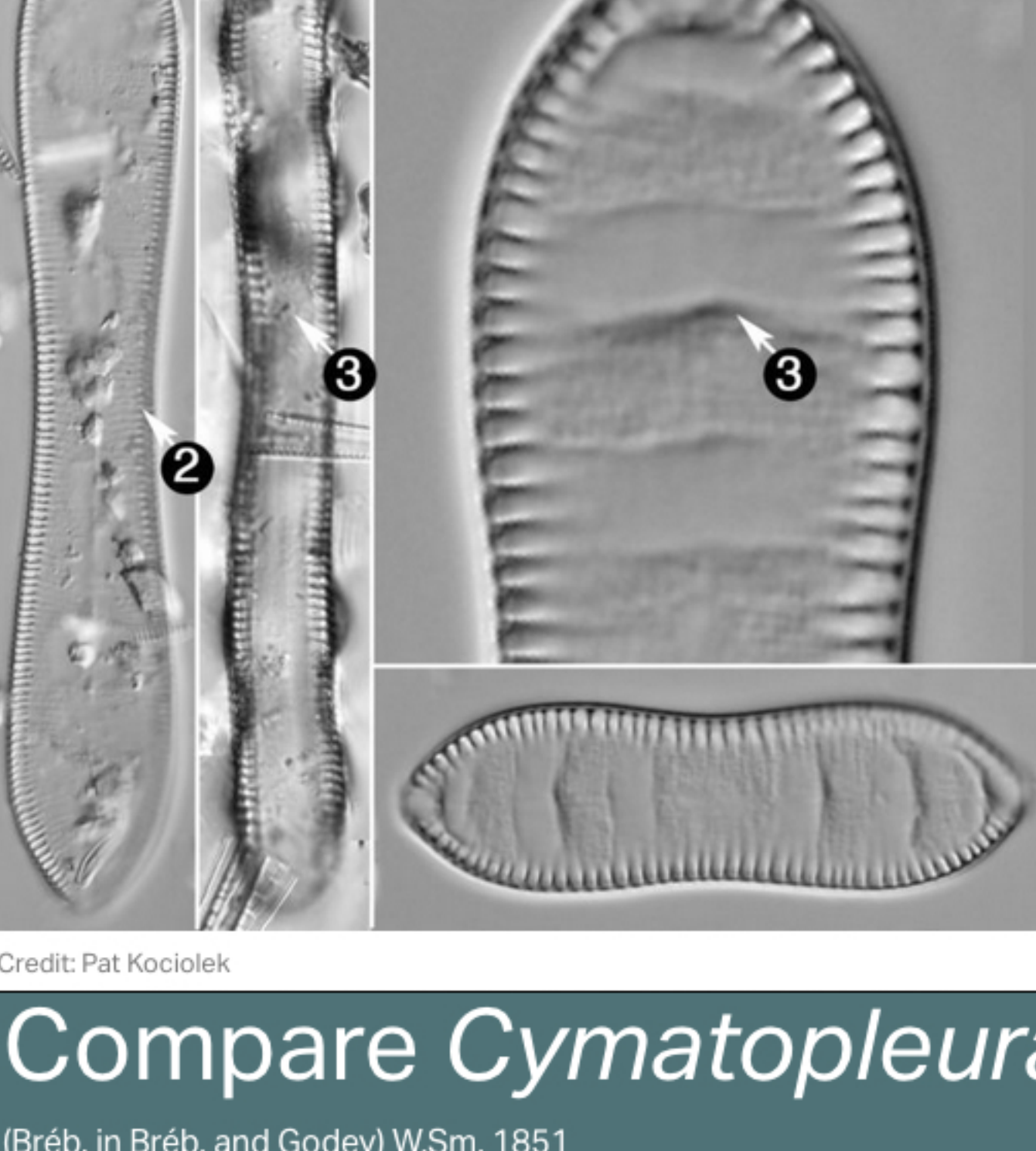
Prior to this date, length was documented as 57-177 µm, width as 14-20 µm at the midsection and 20-27 at the broadest point. Striae in 10 µm were 29-34. These values were revised based on the 2014 diatom class observations. See AUTECOLOGY tab for details. – S. Spaulding

Cite This Page

Kociolek, P. (2011). *Cymatopleura solea*. In *Diatoms of North America*. Retrieved May 18, 2020, from https://diatoms.org/species/cymatopleura_solea

Guide to Cymatopleura solea

(Bréb. in Bréb. and Godey) W.Sm. 1851



Credit: Pat Kociolek

- 1 Valves broadly linear
- 2 Central constriction
- 3 Valve face undulate

Valves are broadly linear, with a central constriction. The apices are blunt. The valve face is undulate, with the undulations oriented perpendicular to the apical axis.

Compare Cymatopleura solea

(Bréb. in Bréb. and Godey) W.Sm. 1851

Compare

This species is more elongate, as compared to other species occurring in the North American flora, such as *C. cochlea* and *Surirella undulata* (= *Cymatopleura elliptica*).

LM scalebar = 10 µm

