

Supplementary Materials

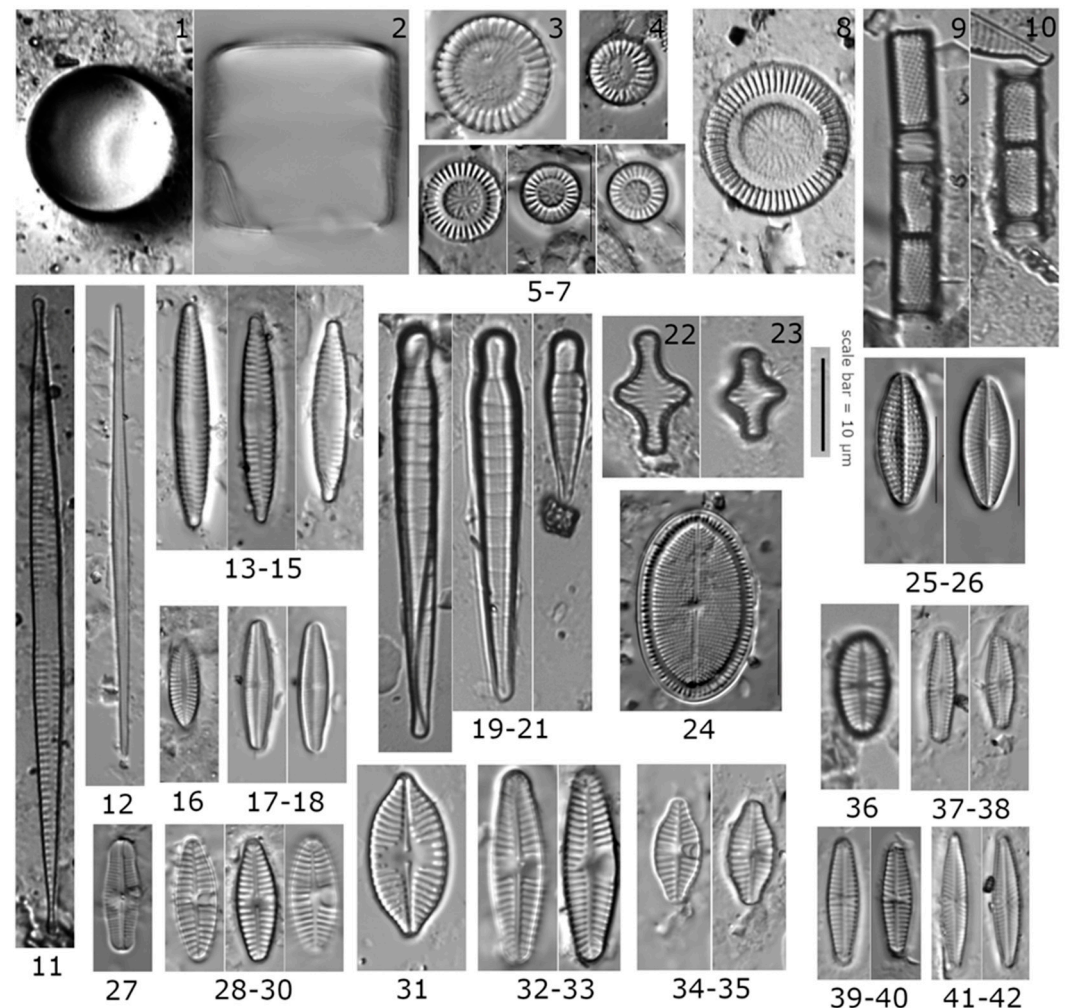


Plate S1. Light micrographs of araphid, monoraphid, and small naviculoid taxa. Figs 1-2. *Melosira varians* C.Agardh; Fig 3. *Cyclotella meneghiniana* Kützing; Fig 4. Centric diatom; Figs 5-7. *Discostella stelligera* (Cleve & Grunow) Houk & Klee; Fig 8. *Discostella* sp. 2; Figs 9-10. *Aulacoseira ambigua* (Grunow) Simonsen; Fig 11. *Fragilaria tenera* (W.Smith) Lange-Bertalot; Fig 12. *F. sepes* Ehrenberg. Figs 13-15. *F. vaucheriae* (Kützing) J.B.Petersen; Fig 16. *Achnanthisdium subhudsonis* var. *krauseli* (Cholnoky) Cantonati & Lange-Bertalot; Figs 17-18. *A. minutissimum* (Kützing) Czarnecki; Figs 19-21. *Meridion constrictum* Ralfs; Figs 22-23. *Staurosira constuens* Ehrenberg; Fig 24. *Cocconeis placentula* Ehrenberg; Figs 25-26. *Karayevia clevei* (Grunow) Bukhtiyarova. Fig 27. *Achnanthisdium reimeri* (Camburn) Ponader & Potapova; Figs 28-30. *Planothidium frequentissimum* (Lange-Bertalot) Lange-Bertalot; Fig 31. *P. delicatulum* (Kützing) Round & Bukhtiyarova; Figs 32-33. *P. lanceolatum* (Brébisson ex Kützing) Lange-Bertalot; Figs 34-35. *Planothidium* cf. *rostratum*; Fig 36. *Psammothidium chlidanos* (M.H.Hohn & Hellerman) Lange-Bertalot; Figs 37-38. *Chamaepinnularia soehrensensis* var. *musicola* (J.B.Petersen) Lange-Bertalot & Krammer; Figs 39-40. *Hippodonta pseudacceptata* (H.Kobayasi) Lange-Bertalot, Metzeltin & Witkowski; Figs 41-42. *Navicula vilaplani* (Lange-Bertalot & Sabater) Lange-Bertalot & Sabater. Scale bar = 10 µm.

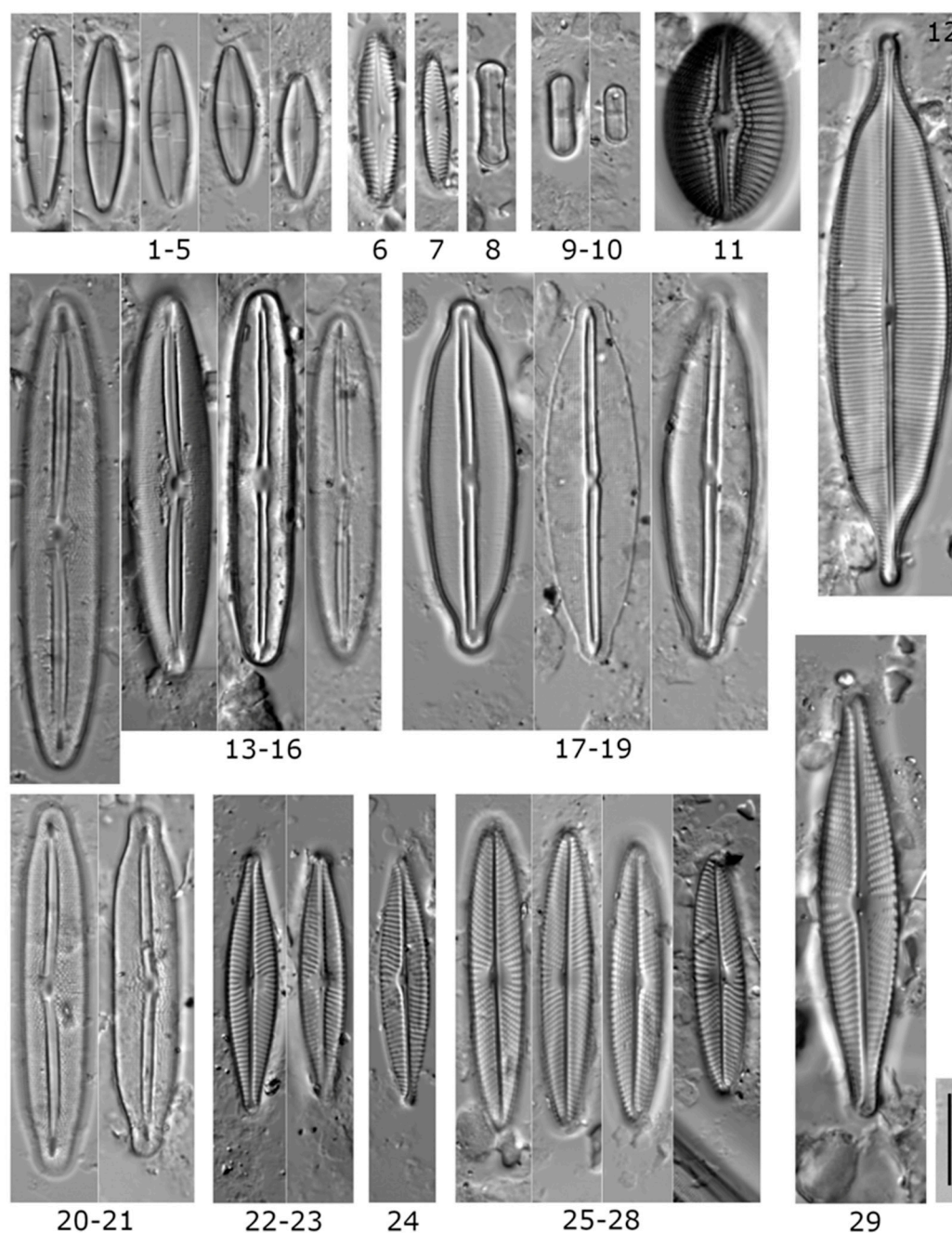


Plate S2. Light micrographs of symmetric biraphid taxa. Figs 1-5. *Caloneis hyalina* Hustedt; Fig 6. *Caloneis* cf. *bacillum* (Grunow) Cleve; Fig 7. *Pinnularia* cf. *obscura* Krasske; Fig 8. *Humidophila paracontenta* (Lange-Bertalot & Werum) R.L.Lowe & al.; Figs 9-10. *H. contenta* (Grunow) R.L.Lowe & al.; Fig 11. *Diploneis smithii* (Brébisson) Cleve; Fig 12. *Craticula ambigua* (Ehrenberg) D.G.Mann; Figs 13-16. *Frustulia vulgaris* (Thwaites) De Toni; Figs 17-19. *F. crassinervia* (Brébisson ex W.Smith) Lange-Bertalot & Krammer; Figs 20-21. *F. capitata* C.L.Graeff & Kociolek; Figs 22-23. *Navicula cryptocephala* Kützinger; Fig 24. *N.* cf. *cryptocephala*; Figs 25-28. *N. escambia* (R.M.Patrick) Metzeltin & Lange-Bertalot; Fig 28. *N. rhynchocephala* Kützinger. Scale bar = 10 μ m.

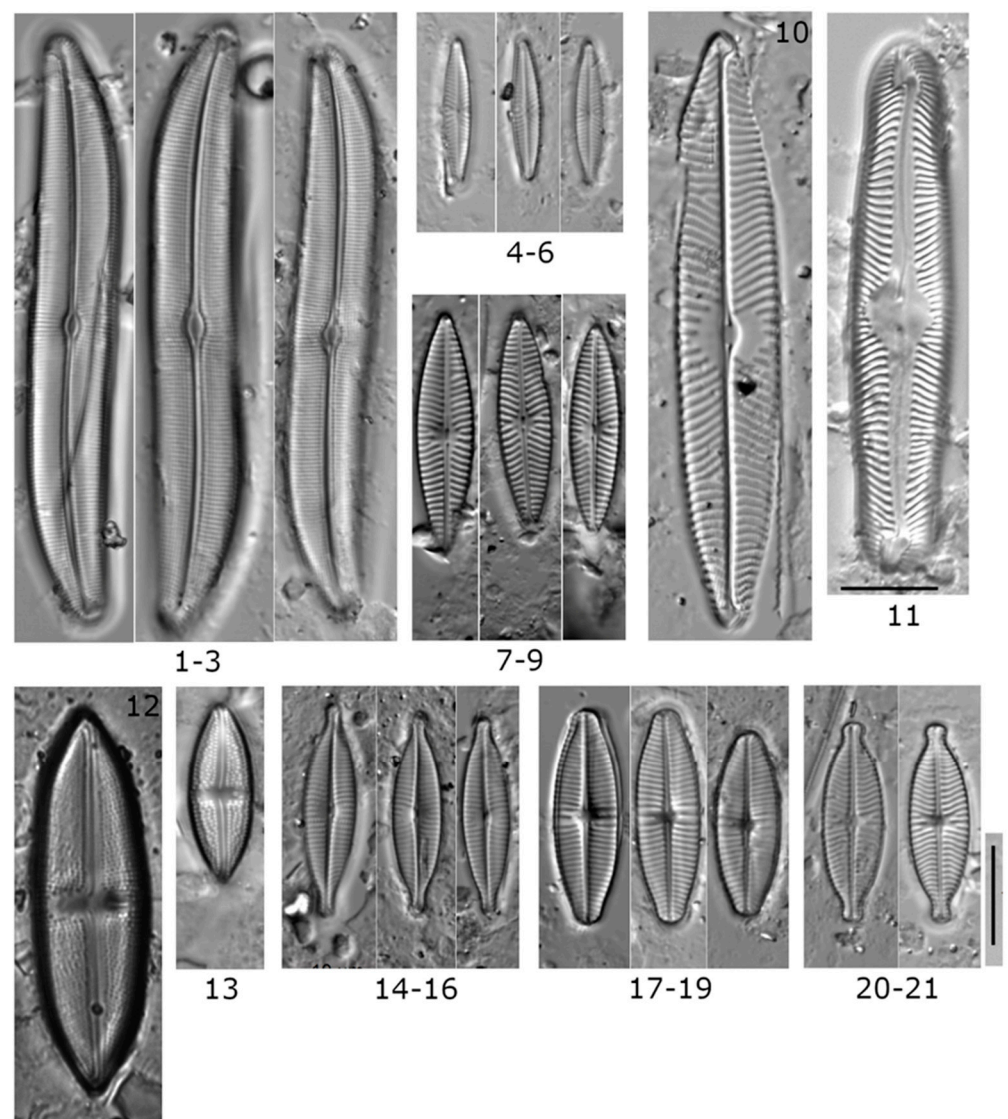


Plate S3. Light micrographs of symmetric biraphid taxa. Figs 1-3. *Gyrosigma obtusatum* (Sullivant & Wormley) C.S.Boyer; Figs 4-6. *Navicula vilaplanii* (Lange-Bertalot & Sabater) Lange-Bertalot & Sabater; Figs 7-9. *N. cryptotenella* Lange-Bertalot; Fig 10. *N. viridulacalcis* Lange-Bertalot; Fig 11. *Pinnularia mesogongyla* Ehrenberg; Fig 12. *Luticola minor* (R.M.Patrick) A. Mayama; Fig 13. *L. goepportiana* (Bleisch) D.G.Mann ex J.Rarick, S.Wu, S.S.Lee & Edlund; Figs 14-16. *Navicula gregaria* Donkin; Figs 17-19. *Geissleria lateropunctata* (Wallace) Potapova & Winter; Figs 20-21. *G. decussis* (Østrup) Lange-Bertalot & Metzeltin. Scale bar = 10 µm.

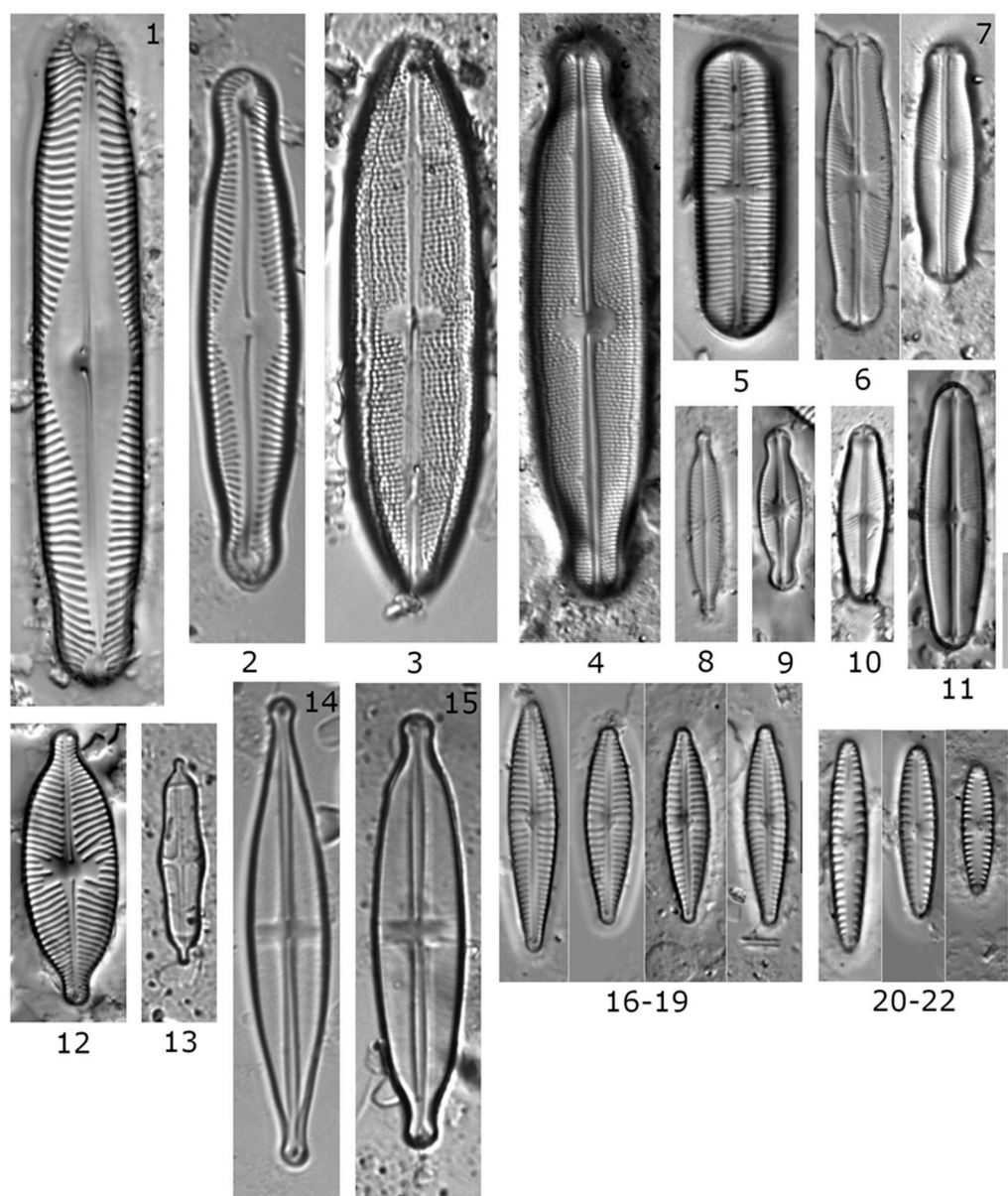


Plate S4. Light micrographs of symmetric and asymmetric biraphid taxa. Fig 1. *Pinnularia* sp. 8; Fig 2. *Pinnularia* sp.1; Fig 3. *Neidium* sp. 3; Fig 4. *Neidium* sp. 1; Fig 5. *Sellaphora* sp. 3; Figs 6-7. *Sellaphora pupula* (Kützing) Mereschkovsky; Fig 8. *Navicula longicephala* Hustedt; Fig 9. *Sellaphora hustedtii* (Krasske) Lange-Bertalot & Werum 2004. Fig 10. *Sellaphora* sp.1; Fig 11. *Sellaphora* sp.5; Fig 12. *Placoneis symmetrica* (Hustedt) Lange-Bertalot; Fig 13. *Stauroneis smithii* Grunow; Fig 14. *Stauroneis* sp.2; Fig 15. *S. kriegeri* R.M.Patrick; Figs 16-19. *Gomphonema parvulum* (Kützing) Kützing; Figs 20-22. *G. kobayasii* Kociolek & J.C.Kingston 1999. Scale bar = 10 μ m.

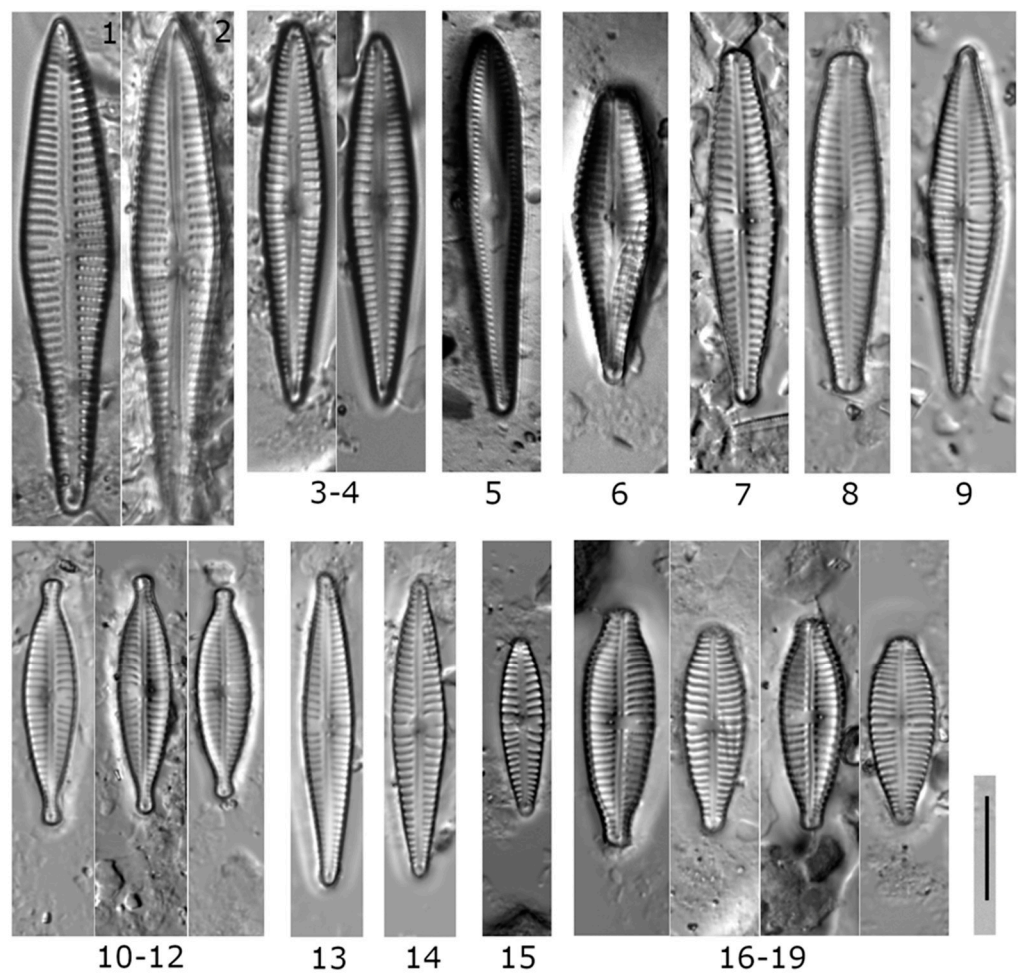


Plate S5. Light micrographs of gomphonemoid taxa. Figs 1-2. *Gomphonema* cf. *insigne* W. Gregory; Figs 3-4. *Gomphonema* sp. 1; Fig 5. *G.* cf. *brasiliense* Grunow; Fig 6. *Gomphonema* sp. 20. Fig 7. *Gomphonema* cf. *extentum* E.Reichardt & Lange-Bertalot; Fig 8. *Gomphonema* sp. 13; Fig 9. *Gomphonema* sp. 16; Figs 10-12. *G. lagenula* Kützing; Fig 13-14. *Gomphonema* cf. *lippertii* E.Reichardt & Lange-Bertalot; Fig 15. *G. innocens* E.Reichardt; Figs 16-19. *G. micropus* Kützing. Scale bar = 10 μ m.

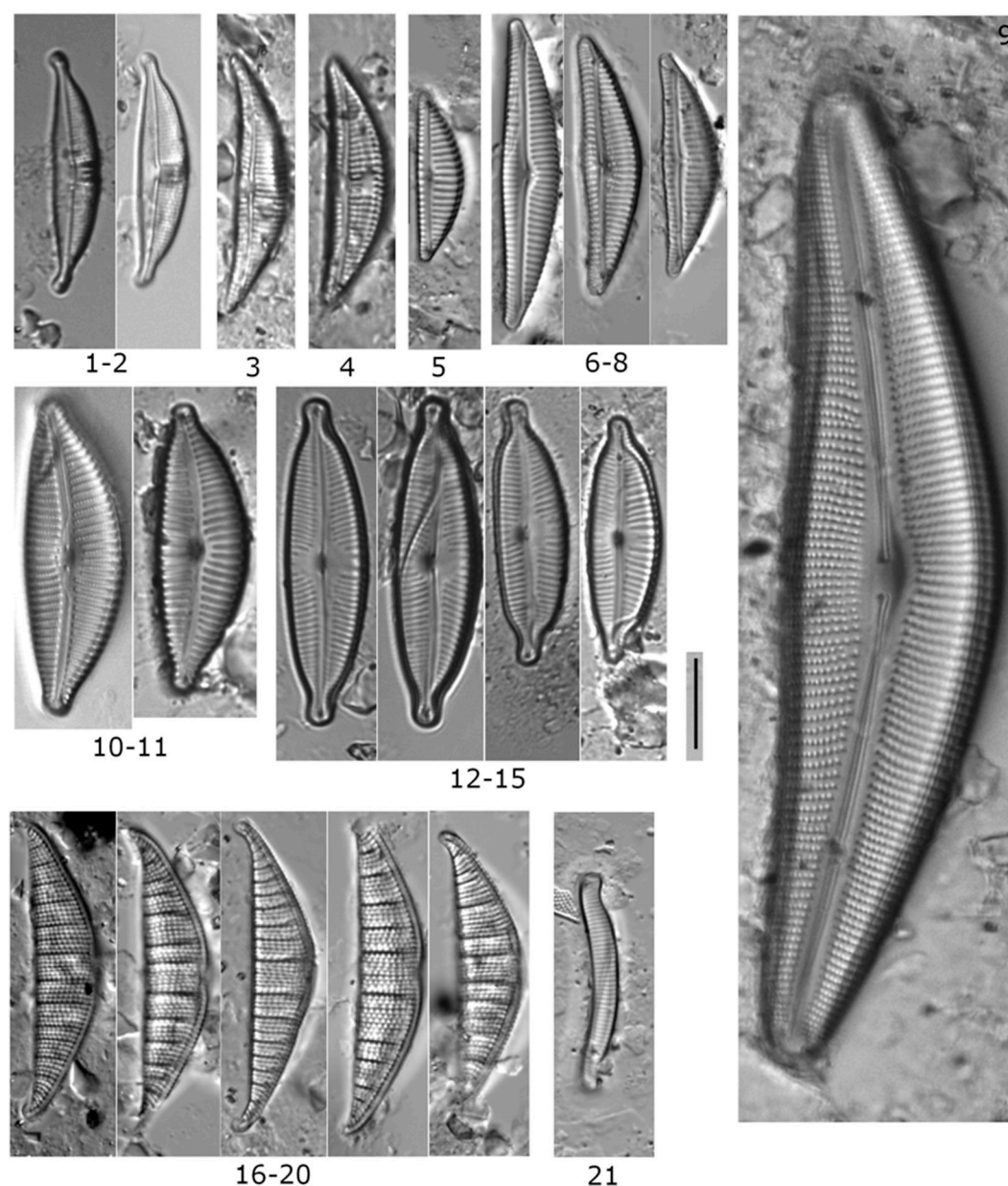


Plate S6. Light micrographs of cymbelloid, epithemoid, and eunotioid taxa. Figs 1-2. *Amphora bicapitata* M.H.Hohn & J.Hellerman; Fig 3. *A. ovalis* (Kützing) Kützing; Fig 4. *A. ovalis* var. *libyca* (Ehrenberg) Cleve; Fig 5. *Encyonema* cf. *minutum* (Hilse) D.G.Mann; Figs 6-8. *E. silesiacum* (Bleisch) D.G.Mann; Fig 9. *Cymbella aspera* (Ehrenberg) Cleve; Figs 10-11. *C. tumidula* Grunow; Figs 12-15. *Cymboplectra naviculiformis* (Auerswald ex Heiberg) Krammer; Figs 16-20. *Rhopalodia gibberula* (Ehrenberg) O.Müller; Fig 21. *Eunotia exigua* (Brébisson ex Kützing) Rabenhorst. Scale bar = 10 μ m.

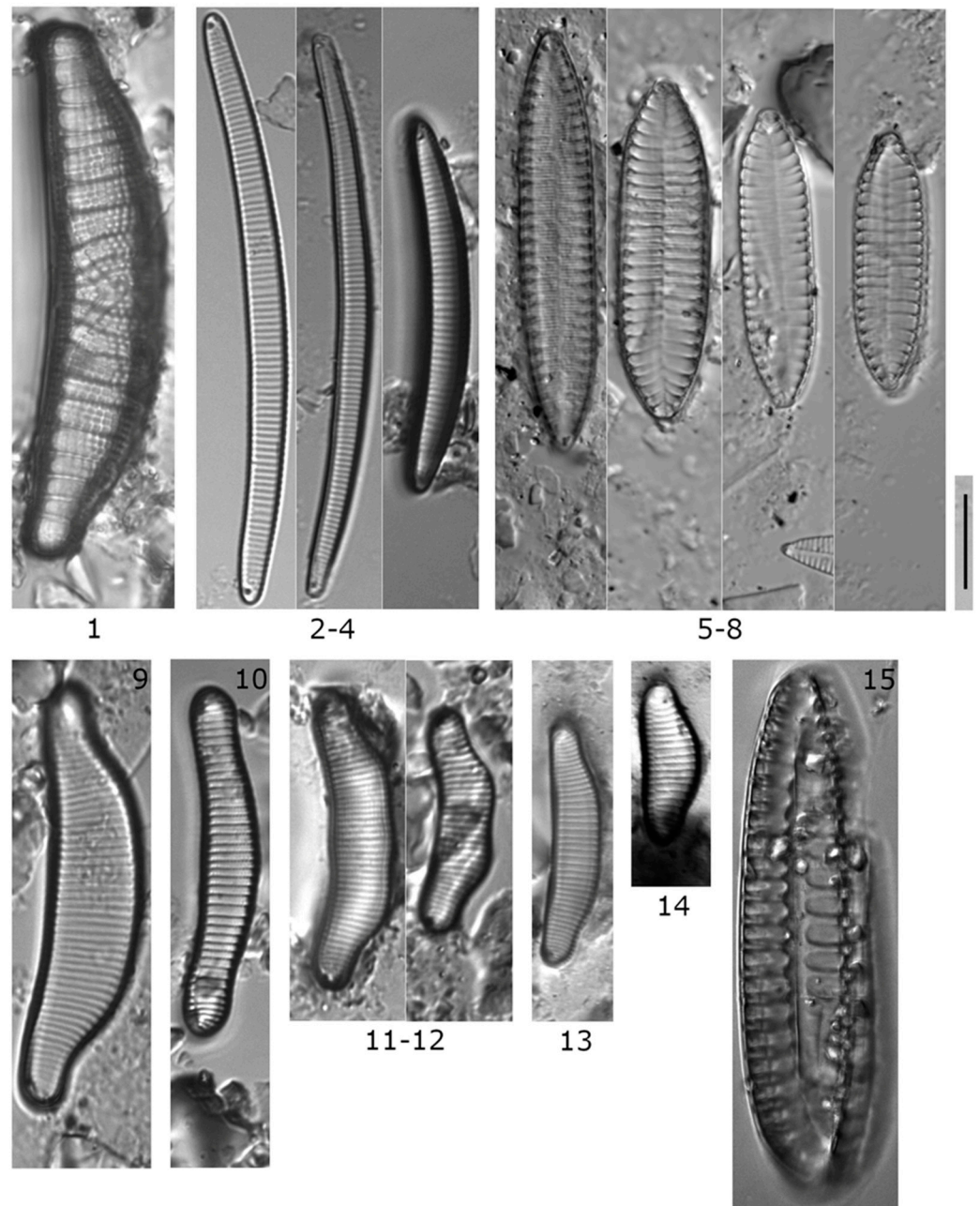


Plate S7. Light micrographs of epithemioid, eunotioid, and surirelloid taxa, Fig 1. *Epithemia adnata* (Kützing) Brébisson. Figs 2-4. *Eunotia bilunaris* (Ehrenberg) Schaarschmidt; Figs 5-8. *Surirella angusta* Kützing; Fig 9. *Eunotia cf. sudetica*; Fig 10. *E. cf. metamonodon* Lange-Bertalot; Figs 11-12. *E. pectinalis* (Kützing) Rabenhorst; Fig 13. *Eunotia soleirolii* (Kützing) Rabenhorst; Fig 14. *Eunotia* sp. 2; Fig 15. *Surirella* sp. 2. Scale bar = 10 μ m.

Table S1. Chemical values detected in samples. Values = mean \pm standard error. N = 3 for all. * below detectable limits

Chemical	Tobler Creek February 2021	Tobler Creek April 2021	Murder Creek February 2021	Murder Creek April 2021
hardness	19.75 \pm 0.26	20.55 \pm 0.26	23.63 \pm 0.13	26.84 \pm 0.04
Al (ppm)	0.61 \pm 0.03	0.82 \pm 0.13	0.61 \pm 0.01	0.23 \pm 0.01
B (ppm)	<0.01*	<0.01*	<0.01*	<0.01*
Ca (ppm)	4.09 \pm 0.07	4.33 \pm 0.09	5.58 \pm 0.03	6.31 \pm 0.01
Cr (ppm)	<0.01*	<0.01*	<0.01*	<0.01*
Cu (ppm)	<0.05*	<0.05*	<0.05*	<0.05*
Fe (ppm)	1.02 \pm 0.17	0.63 \pm 0.06	1.07 \pm 0.02	0.57 \pm 0.04
K (ppm)	0.95 \pm 0.12	1.48 \pm 0.10	1.91 \pm 0.02	2.00 \pm 0.01
Mg (ppm)	2.31 \pm 0.02	2.37 \pm 0.02	2.36 \pm 0.02	2.69 \pm 0.004
Mn (ppm)	0.13 \pm 0.04	0.08 \pm 0.002	0.06 \pm 0.001	<0.05*
Mo (ppm)	<0.01*	<0.01*	<0.01*	<0.01*
Na (ppm)	6.61 \pm 0.05	4.60 \pm 0.09	4.72 \pm 0.03	4.80 \pm 0.02
Ni (ppm)	<0.01*	<0.01*	<0.01*	<0.01*
Si (ppm)	5.00 \pm 0.07	6.13 \pm 0.17	9.39 \pm 0.05	9.11 \pm 0.01
Zn (ppm)	<0.05*	<0.05*	<0.05*	<0.05*

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