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APPENDIX 1

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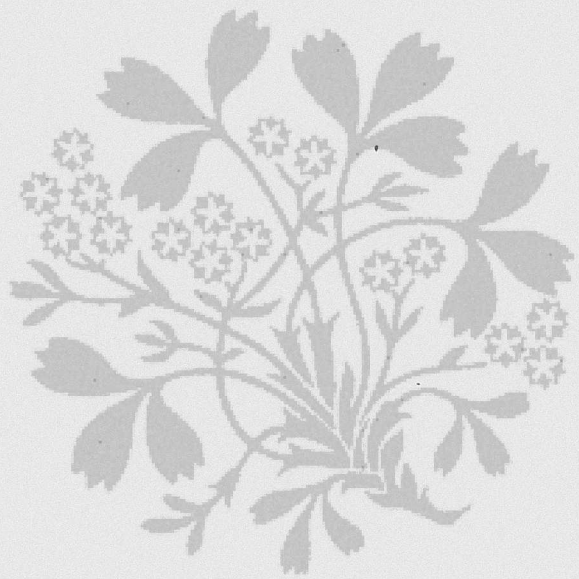
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**Atlas and catalogue of the epipelagic diatom types found
within the sediments of Loch Goil.**

The following 164 taxa, in 40 genera, were recorded from 276 samples collected from seven localities within Loch Goil (6-40 m depth), between June 1988 and September 1990.

The micrographs were taken on Kodak Technical Pan film with a POLYVAR photomicroscope, (C. Reichert AG, Hernalser Hauptstrasse 219, A-1170, Austria) equipped for brightfield and Nomarski differential interference contrast (DIC) optics. All micrographs in this work were taken with oil immersion objectives: Plan Apo 40/1.00 and 100/1.32 using either bright field or interference contrast and utilising a magnification changer module (magnification factors 0.8X, 1X, and 1.25X). The camera module was an automatic attachment (POLYMATIC camera and lamp housing control unit) with an automatic exposure meter. Diatom material was acid cleaned according to the method described in section 3.2.2.4 and mounted on slides using Naphrax, a high resolution diatom mountant. Slides are currently at the Royal Botanic Garden, Edinburgh.

Unless specified, the magnification of the micrographs is x1500. The larger species of *Nitzschia* and *Pleurosigma* are represented with a magnification of x1000, x750 or x500 owing to the constraint of page size. A small number of diatom species are represented by drawings. This method was adopted when damage to the frustule or dirt obscured structures or when a diatom was mounted in an oblique position so that a line drawing would provide substantially more information.

The atlas is arranged so that taxa are grouped according to gross morphological similarity rather than taxonomic affinity. This will increase the usefulness of the atlas and catalogue in future studies of Loch Goil. The micrographs are numbered (1-239) for reference to the taxonomic list. The treatment of a taxon in the catalogue comprises its name and authority and the taxonomic keys that I used for its identification; including reference to page numbers, plates and figures within these texts. This catalogue, and the tables of diatom assemblages that appear in the preceding sections, list the diatom genera and species in alphanumeric order.

Note: There have been some recent changes in the taxonomy of some of the species that are listed in this catalogue (Round *et al*, 1990). These include the following species: *Amphora ventricos*, *Navicula abrupta*, *Navicula atlantica*, *Navicula delognei*, *Navicula dissipata*, *Navicula forcipata*, *Navicula hennedyi*, *Navicula latissima*, *Navicula lyroides*, *Navicula pygmaea*, *Nitzschia acuminata*, *Nitzschia marginulata*, *Nitzschia panduriformis*, *Nitzschia punctata*, *Pinnularia ambigua*.

CATALOGUE

Achnanthes cf. angustata. Greville

A. brevipes Agardh. var. *angustata* (Greville) Cleve. in Foged. N. (1975) p. 7, f. 11/12, 13, 17, 18. Cleve-Euler, A. (1951-55). p. 50, f. 596h. Schmidt, A. (1874-1956). pl. 418/10-15. **Fig. 18.**

Achnanthes sp.

Raphid valve. **Fig. 58.**

Achnanthes conspicua var. *conspicua*. Mayer.

Hustedt, F. (1930). p. 202, f. 291. Hustedt, F. (1931-37). p. 387, f. 833a-d. Cleve-Euler, A. (1951-55). p. 38, f. 554. **Fig. 93.**

Achnanthes delicatula. Kützing

A. delicatula in: Pankow, H. (1976). p. 160, f. 328. Hustedt, F. (1930). p. 202, f. 293. Hustedt, F. (1931-37). p. 389, f. 836. Peragallo, H. and Peragallo, M. (1897-1908). p. 7. Cleve, P. T. and Grunow, A. (1880). p. 22. Cleve-Euler, A. (1951-55). p. 45, f. 583c, d. Cleve, P. T. (1895). p. 190. Van Heurck (1880-1885). pl. 27/3. **Fig. 92.**

Achnanthes fimbriata. Grunow

Ross, R. (1963). p. 72-76, f. 17-22. *A. stroemii* in Hustedt, F. (1931-37). p. 393, f. 841B. Pankow, H. (1976). p. 158, f. 334-5. Cleve-Euler, A. (1951-55). p. 19, f. 515. Schmidt, A. (1874-1956). pl. 399/45-50. **Fig. 85, 86, 90, 91.**

Achnanthes longipes Agardh. f. *lata*.

Convex valve with pseudoraphe. Peragallo, H. and Peragallo, M. (1897-1908). p. 5, pl. 1/10-12. and Molder, K. and Tynni, R. (1972). p. 151, f. 73, 74. *A. longipes* in Pankow, H. (1976). p. 153. Hendey, N. I. (1964). p. 174, f. 28/1-6, 42/2. Van Heurck, H. (1880-5). p. 129, pl. 26/13-16. Schmidt, A. (1874-1956). pl. 419/6, 7. *A. danica* in Cleve and Grunow (1880). p. 21. **Fig. 99.**

Amphiprora plicata Gregory.

A. plicata var. *subplicata* Grunow in Cleve, P. T. and Grunow, A. (1880). p. 65, pl. 5/88. *A. paludosa* var. *nereis* (Lewis 1861) Cleve, P. T. (1894). p. 15. *Auricula decipiens* (Grunow in Cleve and Möller 1882; Grunow in Van Heurck 1880) in Cleve, P. T. (1894). p. 20. *Tropidoneis recta* var. *subplicata* (Grunow in Cleve and Grunow 1880) Cleve, P. T. (1894). p. 28. *Amphoropsis decipiens* (Grunow in Cleve and Moller 1882) in Van Heurck (1880-1885). pl. 22B/11. **Fig. 235, 228.**

Amphora sp. A.

Fig. 126.

Amphora sp. B.

Fig. 129, 131.

Amphora sp. C.

This species may be *A. lineolata* Ehrenberg 1838. Pankow, H. (1976). p. 274, f. 576. Hustedt, F. (1930). p. 346, f. 636. Cleve, P. T. (1894). p. 126. Schmidt, A. (1874-1956). pl. 26/51. Foged, N. (1978). p. 33, pl. 36/15. **Fig. 136.**

Amphora sp. D.

Fig. 141.

Amphora sp. E.

Fig. 152.

Amphora cf. arcus Gregory.

Peragallo, H. and Peragallo, M. (1897-1908). p. 224, pl. 50/6. Cleve-Euler, A. (1951-55). p. 101, f. 695a. Cleve, P. T. (1894). p. 127, pl. 4/4. *A. sulcata* Schmidt 1875 in Schmidt, A. (1874-1956). pl. 26/46, 47. Gregory, W. (1857). p. 50, pl. 5/88. **Fig. 127.**

Amphora coffeaeformis Agardh. var. acutiuscula.

Cleve, P. T. (1894). p. 121. Hustedt, F. (1930). p. 346. Krammer, K. and Lange-Bertalot, H. (1986a). p. 348, pl. 151/ 1-6. *A. acutiuscula* in Van Heurck, H. (1880-1885). p. 57, pl. 1/18. Pankow, H. (1976). p. 279, f. 597. Peragallo, H. and Peragallo, M. (1897-1908). p. 230, pl. 50/29. *A. lineata* in Schmidt, A. (1874-1956). pl. 26/59. **Fig. 151, 154, 155.**

Amphora coffeaeformis Agardh. var. borealis.

Pankow, H. (1976). p. 279, f. 596. Hustedt, F. (1930). p. 345, f. 634. Schmidt, A. (1874-1956). pl. 26/56, 57. Ross, R. (1963). Hendey, N. I. (1964). p. 264. Peragallo, H. and Peragallo, M. (1897-1908). p. 230, pl. 50/27. *A. borealis* in Kützing, F. T. (1844). p. 108, pl. 5/37;3/18. Cleve-Euler, A. (1951-55). p. 97, f. 685b-d. Cleve, P. T. (1894). p. 121. *A. salina* var. *minor* in Van Heurck, H. (1880-1885). p. 57, pl. 1. Krammer, K. and Lange-Bertalot, H. (1986a). p. 348, pl. 151/1-6. **Fig. 150.**

Amphora graeffii Grunow. var. minor.

Peragallo, H. and Peragallo, M. (1897-1908). p. 211, pl. 46/14-15. Hendey, N. I. (1964). p. 263, pl. 37/8.

This species can be easily confused with the larger species *A. truncata* which it resembles in both the shape of the cell and pattern of striation (19 striae per 10u). **Fig. 147.**

Amphora laevis Gregory. var. perminuta.

Cleve, P. T. (1894). p. 130. Peragallo, H. and Peragallo, M. (1897-1908). p. 221, pl. 49/10. **Fig. 130.**

Amphora cf. lineolata Ehrenberg.

Pankow, H. (1976). p. 274, f. 576. Hustedt, F. (1930). p. 346, f. 636. Cleve, P. T. (1894). p. 126. Schmidt, A. (1874-1956). pl. 26/51. Foged, N. (1978). p. 33, pl. 36/15. **Fig. 137.**

Amphora ostrearia Brebisson. var. ostrearia.

Pankow, H. (1976). p. 281, f. 570. Hendey, N. I. (1964). p. 266, pl. 38/5. Peragallo, H. and Peragallo, M. (1897-1908). p. 219, pl. 49, 13. Cleve-Euler, A. (1951-

55). p. 101, f. 697. Schmidt, A. (1874-1956). pl. 26/23.
Van Heurck, H. (1880-1885). p. 55, pl. 11/25. **Fig. 132.**

Amphora cf. proteus Gregory. var. A.

Similar to *A. proteus* but striae on dorsal side (9 in 10 μm) extend for only one third of the valve length. Striae adjacent to the raphe form finger-like projections in the middle. **Fig. 146.**

Amphora cf. proteus Gregory. var. B.

Similar to but smaller (17 μm long, 7 μm wide) than *A. proteus*. **Fig. 160.**

Amphora proteus Gregory. var. oculata.

The size range of this species varies prodigiously (length from 24-73 μm). I consider that the specimens shown in Figs: 145, 156-8 and 159, 161 may represent individual varieties of *A. proteus* that have not yet been recognised formally.

A. proteus Gregory. var. *oculata* in: Peragallo, H. and Peragallo, M. (1897-1908). p. 201, pl. 44/21, 22. Cleve-Euler, A. (1951-55). p. 93, f. 673e. Schmidt, A. (1874-1956). pl. 27/42-45. Gregory, W. (1857). p. 46, pl. 5/81a-e. Foged, N. (1978). p. 34, pl. 36/12. **Fig. 145, 156-9, 161.**

Amphora proteus Gregory. var. proteus.

Pankow, H. (1976). p. 276, f. 569. Hendey, N. I. (1964). p. 262. Peragallo, H. and Peragallo, M. (1897-1908). p. 200, pl. 44/24-28. Cleve, P. T. (1895). p. 103. Cleve-Euler, A. (1951-55). p. 93, f. 673a-g. Schmidt, A. (1874-1956). pl. 27/3. Gregory, W. (1857). p. 46, pl. 5/81a-e. *A. (proteus?) var. kariana* in Cleve, P. T. and Grunow, A. (1880). p. 24, pl. 1/7. **Fig. 133-135, 153.**

Amphora truncata Gregory.

Peragallo, H. and Peragallo, M. (1897-1908). p. 212, pl. 47/5, 6. Cleve, P. T. (1894). p. 112, pl. 3/17, 18. Cleve-Euler, A. (1951-55). p. 95, f. 678. Schmidt, A. (1874-1956). pl. 28/5. **Fig. 148, 149.**

Amphora ventricosa Gregory.

Hendey, N. I. (1964). p. 269, pl. 38/12. *A. angusta* var. *ventricosa* in Cleve, P. T. (1894). p. 135. **Fig. 140, 143, 144.**

Amphora ventricosa Gregory. var. ?

Hendey, N. I. (1964). p. 269, pl. 38/12. *A. angusta* var. *ventricosa* Gregory. in Cleve, P. T. (1894). p. 135. **Fig. 142.**

Brachysira (Anomoeoneis) Pfitzer. sp. A.

Fig. 60.

Bacillaria sp. Gmelin.

Fig. 198.

Caloneis amphisbaena Cleve.

Cleve 1894. Pankow, H. (1976). p. 204. Peragallo, H. and Peragallo, M. (1897-1908). p. 77, pl. 10/10.

Cleve-Euler, A. (1951-55). p. 87, f. 1119. Schmidt, A. (1874-1956). f. 271/29, 32. **Fig. 80.**

Caloneis crassa Gregory.

Caloneis or *Navicula brevis* in: Hendey, N. I. (1964). p. 229, pl. 29. Peragallo, H. and Peragallo, M. (1897-1908). p. 80, pl. 10/13, 14. Cleve-Euler, A. (1951-55). p. 89, f. 1123b, d, e, i. **Fig. 1, 2.**

Caloneis crassa Gregory. var. distoma.

Caloneis or *Navicula brevis* var. *distoma* in: Cleve, P. T. and Grunow, A. (1880). p. 30, pl. 1/25. Cleve-Euler, A. (1951-55). p. 90, f. 1123i. Van Heurck, H. (1880-1885). p. 97, pl. 11/18. Cleve, P. T. (1894). p. 61.

This variety appears to be distinct from other forms of the species found within Loch Goil although *C. crassa* var. *distoma* is not recognised as a formal division of this species at present. **Fig. 3.**

Caloneis liber Wm. Smith. var. elongata.

Pankow, H. (1976). p. 204. Hendey, N. I. (1964). p. 229, pl. 29. Peragallo, H. and Peragallo, M. (1897-1908). p. 71, pl. 9/5, 6. Cleve-Euler, A. (1951-55). p. 90, f. 1124e. Schmidt, A. (1874-1956). f. 50. **Fig. 84.**

Caloneis liber var. excentrica Grunow.

Pankow, H. (1976). p. 204. Hendey, N. I. (1964). p. 229, pl. 29. Cleve-Euler, A. (1951-55). p. 90, f. 1124/g, h. Peragallo, H. and Peragallo, M. (1897-1908). p. 71, pl. 9. Schmidt, A. (1874-1956). f. 50.

The taxonomic placing of *C. liber* var. *excentrica* is based fundamentally on the density of the striae, although the shape of the valve does bear a notable similarity to *C. westii* Wm. Smith 1853. [Hendey, N. I. (1964). p. 230, f. 16. Pankow, H. (1976). p. 203.] which differs in possessing a courser striate pattern of 12-14 per 10 μ m. **Fig. 83.**

Campylodiscus fastuosus Ehrenberg.

Hendey, N. I. (1964). p. 290, pl. 40/13. *C. thuretii* in Peragallo, H. and Peragallo, M. (1897-1908). p. 247, pl. 57:4-9. and Schmidt, A. (1874-1956). pl. 208/12. *C. parvulus* in Peragallo, H. and Peragallo, M. (1897-1908). p. 242, pl. 54/9. Schmidt, A. (1874-1956). pl. 17/12-14. **Fig. 120.**

Chaetoceros sp. Ehrenberg.

Fig. 170.

Cocconeis scutellum Ehrenberg. cf. var. scutellum.

Pankow, H. (1976). p. 148. f. 302. Hustedt, F. (1930). p. 191, f. 267. Hustedt, F. (1931-37). p. 337, f. 790. Kützing, F. T. (1844). p. 73, pl. 5/6, f. 3, 6. Hendey, N. I. (1964). p. 180, pl. 27/8. Peragallo, H. and Peragallo, M. (1897-1908). p. 19, pl. 4/5. Cleve, P. T. (1894). p. 170. Schmidt, A. (1874-1956). pl. 190/17, 18. Van Heurck, H. (1880-1885). p. 132, pl. 29/1-3.

Fig. 117, 118 (upper valve without raphe), **119** (lower valve with median line, small central area and false stauros).

Coscinodiscus concavus Ehrenberg.

Schmidt, A. (1874-1956). pl. 59/16. **Fig. 232.**

Thassiosira (Coscinodiscus) cf. eccentrica Ehrenberg.

Hendey, N. I. (1964). p. 80, pl. 24/2. Schmidt, A. (1874-1956). pl. 58/46-49. Molder, K. and Tynni, R. (1972). p. 158, f. 22. **Fig. 234.**

Thalassiosira (Coscinodiscus) Ehrenberg. sp.

Fig. 231.

Paralia sulcata Ehrenberg.

Fig. 233.

Cylindrotheca closterium Reiman et Lewis.

Nitzschia closterium Ehrenberg. in: Pankow, H. (1976). p. 295, f. 619. Hendey, N. I. (1964). p. 283, pl. 21. Peragallo, H. and Peragallo, M. (1897-1908). p. 293, pl. 74/15. Cleve-Euler, A. (1951-55). p. 92, f. 1508. **Fig. 199.**

Cylindrotheca gracilis Grunow.

Van Heurck, H. 1882. Pankow, H. (1976). p. 289, f. 609. Hendey, N. I. (1964). p. 284. Cleve-Euler, A. (1951-55). p. 95, f. 1518. Schmidt, A. (1874-1956). pl. 349/34-37. Krammer, K. and Lange-Bertalot, H. (1988) p. 134, f. 87/3. Hustedt, F. (1930). p. 393, f. 746. **Fig. 207.**

Cymbella cistula Ehrenberg.

C. cistula var. genuina in Cleve-Euler, A. (1951-55). p. 163, f. 1251a-c. C. cistula in Hustedt, F. (1930). p. 363, f. 676b. Van Heurck, H., H. (1880-5). p. 64, pl. 2:12. Cocconema cistula in Schmidt, A. (1874-1956). pl. 10/4. **Fig. 163.**

Cymbella Agardh sp.

Fig. 162.

Dictyocha speculum Ehrenberg. var. speculum.

Pankow, H. (1976). p. 51, f. 50. (a silicoflagellate.). **Fig. 165.**

Dimeregramma minor Gregory. var. minor.

Pankow, H. (1976). p. 140, f. 276. Hustedt, F. (1931-37). p. 118, f. 640. Hendey, N. I. (1964). p. 156, pl. 27/12. Peragallo, H. and Peragallo, M. (1897-1908). p. 334, pl. 82/13, 14. Molder, K. and Tynni, R. (1969). p. 246, f. 52. D. minus in Van Heurck, H. (1880-1885). p. 146, pl. 36/10. **Fig. 123.**

Diploneis aestiva (Donkin) Cleve var. fusca Gregory.

D. fusca Gregory in Cleve, P. T. (1894). p. 93. Hustedt, F. (1931-37). p. 654, f. 1053a. Hendey, N. I. (1964). p. 255, f. 32/4. D. fusca (Gregory) var. gregorii in Cleve, P. T. (1894). p. 94. D. fusca (Gregory) var. norvegica in Cleve, P. T. (1894). p. 93. D. fusca (Gregory) var. tenuipunctata in Cleve, P. T. (1894). p. 94. **Fig. 96.**

Diploneis aestiva (Donkin) Cleve var. delicata A. Schmidt.
D. fusca var. delicata (A. Schmidt) Cleve 1894 in
Cleve-Euler, A. (1951-55). p. 81, f. 652. Schmidt, A.
(1874-1956). pl. 7/1, 7, 8. Hustedt, F. (1931-37). p. 656.
f. 1053b. **Fig. 95.**

Diploneis crabro Ehrenberg.

Hustedt, F. (1931-37). p. 616, f. 1028-34. Hendey, N.
I. (1964). p. 225. pl. 32. Peragallo, H. and Peragallo, M.
(1897-1908). p. 109-12, pl. 15/1. Cleve-Euler, A. (1951-
55). p. 86, f. 660. Schmidt, A. (1874-1956). f. 11, 12,
69, 174. Simonsen, R. (1987). pl. 332. **Fig. 116.**

Diploneis ovalis Hilse.

Hustedt, F. (1931-37). p. 671, f. 1065. Peragallo, H.
and Peragallo, M. (1897-1908). p. 128, pl. 21. Cleve-
Euler, A. (1951-55). p. 75, f. 643. Schmidt, A. (1874-
1956). f. 7/33-36. **Fig. 104, 105.**

Diploneis smithii Brebisson. var. smithii.

Pankow, H. (1976). p. 192. Hustedt, F. (1931-37). p.
647, f. 1051. Hendey, N. I. (1964). p. 225, pl. 32.
Peragallo, H. and Peragallo, M. (1897-1908). p. 132, pl.
19/26, 29, 30. Cleve-Euler, A. (1951-55). p. 81, f. 654.
Schmidt, A. (1874-1956). f. 7.

This species occurs in three apparent forms in Loch
Goil (a-c). The elliptical form (c) also fits the
taxonomic description of *D. elliptica* (Kützing) Cleve
1894. [Hustedt, F. (1931-37). p. 690, f. 1077. Peragallo,
H. and Peragallo, M. (1897-1908). p. 128, pl. 21/16.
Cleve-Euler, A. (1951-55). p. 77, f. 646. Schmidt, A.
(1874-1956). f. 7.]. *D. elliptica* is considered to be a
fresh water species (Hustedt, F. 1931-37) and is therefore
unlikely to be indigenous to the sediments of Loch Goil.
Fig. 97, 98, 100, 101.

Diploneis splendida Gregory.

Peragallo, H. and Peragallo, M. (1897-1908). p. 121,
pl. 18/15-18. Cleve-Euler, A. (1951-55). p. 71, f. 633.
Schmidt, A. (1874-1956). f. 13/32. **Fig. 115.**

Donkinia recta Donkin.

Cleve, P. T. (1894). p. 119. var. rectum *Donkinia*
recta in Hendey, N. I. (1964). p. 251, pl. 35/7.
Peragallo, H. and Peragallo, M. (1897-1908). p. 178, pl.
36/11. Van Heurck, H. (1880-1885). p. 119, pl. 17/9. **Fig.**
229.

Donkinia reticulata Norman.

Foged, N. (1975) p. 24, pl. 17:1. **Fig. 224, 225.**

Eunotia cf. pseudopectinalis Hustedt.

Hustedt, F. (1931-37). p. 314, f. 779. Cleve-Euler,
A. (1951-55). p. 93, f. 410 *E. pectinalis* Hustedt 1911 in
Schmidt, A. (1874-1956). pl. 271/8. Molder, K. and Tynni,
R. (1971). p. 210, f. 58. **Fig. 167.** This is a fresh water
species.

Eunotia cf. septentrionalis Östrup.

Hustedt, F. (1931-37). p. 292, f. 758. Cleve-Euler, A. (1951-55). p. 131, f. 478. **Fig. 166.** This is a fresh water species.

Eunotia sp. Ehrenberg.

A fresh water species, not indigenous to Loch Goil. **Fig. 106, 107.** This is a fresh water species.

Frustulia rhomboides De Toni var. rhomboides.

Hustedt, F. (1930). p. 220, f. 324. Hustedt, F. (1931-37). p. 728, f. 1098a. Hendey, N. I. (1964). p. 239. Cleve-Euler, A. (1951-55). p. 7, f. 1326a. Cleve, P. T. (1894). p. 122. Schmidt, A. (1874-1956). pl. 369/1, 2. Molder, K.. and Tynni, R. (1973). p. 165, pl. 43. **Fig. 168.** This is a fresh water species.

Frustulia rhomboides De Toni var. saxonica f. undulata.

Hustedt, F. (1930). p. 221. Hustedt, F. (1931-37). p. 729, f. 1099b. Cleve-Euler, A. (1951-55). p. 8, f. 1327g, h. Schmidt, A. (1874-1956). pl. 369/7. Molder, K.. and Tynni, R. (1973). p. 165, pl. 46. **Fig. 169.** This is a fresh water species.

Gomphonema parvulum Kutzing. var. exilis Grunow.

Hustedt, F. (1930). p. 373, f. 713. Cleve-Euler, A. (1951-55). p. 178, f. 1269n. Cleve, P. T. (1894). p. 180. **Fig. 172.**

Gyrosigma algoris Carter and Bailey-Watts.

G. obscurum in: Krammer. K. and Lange-Bertalot, H. (1986a). p. 299, f. 116:1, 2. **Fig. 223.**

Gyrosigma distortum Wm. Smith. var. parkeri Harrison.

Pankow, H. (1976). p. 177, f. 377. Cleve-Euler, A. (1951-55). p. 12, f. 1338b. G. parkerii (Harrison) Elmore 1921. in Krammer. K. and Lange-Bertalot, H. (1986a). p. 299, f. 116:4. **Fig. 222.**

Gyrosigma tenuirostrum A. Grunow.

Cleve-Euler, A. (1951-55) p. 13, f. 1340. **Fig. 221.**

Navicula Bory. sp. A.

Fig. 13, 14.

Navicula Bory. sp. B.

Fig. 36, 40-42.

Navicula Bory. sp. C.

Fig. 59.

Navicula Bory. sp. D.

Fig. 63.

Navicula Bory. sp. E.

Fig. 69.

Navicula Bory. sp. F.

Fig. 77.

Navicula Bory. sp. G.

Fig. 78.

Navicula Bory. sp. H.

Fig. 79.

Navicula Bory. sp. I.

Fig. 94.

Navicula abrupta Gregory.

Hustedt, F. (1961-66). p. 516, f. 1588. Hendey, N. I. (1964). p. 210, pl. 33. Peragallo, H. and Peragallo, M. (1897-1908). p. 132, pl. 21/34-39. Cleve-Euler, A. (1951-55). p. 106, f. 711. **Fig. 45.**

Navicula arenaria Donkin.

Hendey, N. I. (1964). p. 196, pl. 30. Peragallo, H. and Peragallo, M. (1897-1908). p. 101, pl. 13/4, 5, 6. Cleve-Euler, A. (1951-55). p. 132, f. 763. Schmidt, A. (1874-1956). f. 47. **Fig. 66, 67.**

Navicula atlantica Schmidt.

Hustedt, F. (1961-66). p. 509, f. 1553. Hendey, N. I. (1964). p. 210, pl. 33. Peragallo, H. and Peragallo, M. (1897-1908). p. 133, pl. 21. Cleve-Euler, A. (1951-55). p. 106, f. 710/e. Schmidt, A. (1874-1956). f. 2/33. **Fig. 44, 48, 57.**

Navicula cf. bryophila Boye Patersen.

Cleve-Euler, A. (1951-55). p. 174, f. 865. Schmidt, A. (1874-1956). pl. 404/41-48. Tynni, R. (1975). p. 11, pl. 1/12. Hustedt, F. (1961-66). p. 91, f. 1237. **Fig. 62.**

Navicula crucigera Wm. Smith.

Pankow, H. (1976). p. 242, f. 4. Hustedt, F. (1961-66). p. 44, f. 1199. Hendey, N. I. (1964). p. 189, pl. 27. Cleve-Euler, A. (1951-55). p. 17, f. 1350. **Fig. 32.**

Navicula cf. cryptocephala Kützing. var. veneta.

Pankow, H. (1976). p. 235. Hendey, N. I. (1964). p. 195. Peragallo, H. and Peragallo, M. (1897-1908). p. 94, pl. 12/34-38. Cleve-Euler, A. (1951-55). p. 154, f. 813. Schmidt, A. (1874-1956) f. 272.

This species is most precisely described by the var. veneta in Hendey, N. I. (1964). However identification is not conclusive as no figure provided for this species. **Fig. 53.** N. cryptocephala is typically a fresh water species.

Navicula cf. decussis Östrup. var. decussis

Cleve-Euler, A. (1951-55). p. 175, f. 866A. Schmidt, A. (1874-1956). pl. 398/37, 401/12, 13. Krammer, K. and Lange-Bertalot, H. (1986a). p. 141, f. 47:10-18. **Fig. 89.**

Navicula cf. delognei Van Heurck

Van Heurck, H. (1880) p. 110. pl. 11/13. Hendey, N. I. (1964). p. 191, pl. 30/1. Navicula grevillei (Agardh 1830) Heiberg 1863 in Cleve-Euler, A. (1951-55). p. 218, f. 962a-d. Cleve, P. T. (1894). p. 152. Van Heurck, H. (1880-1885). p. 110, pl. 16/2. Peragallo, H. and Peragallo, M. (1897-1908). p. 64, pl. 8/14. Navicula grevilleana Hendey, 1964 in Pankow, H. (1976). p. 261, f. 556. **Fig. 138, 139.**

Navicula cf. digito-radiata Gregory. var. A.

Fig. 65.

Navicula cf. digito-radiata Gregory. var. B.

Pankow, H. (1976). p. 229. Hendey, N. I. (1964). p. 202, pl. 29. Peragallo, H. and Peragallo, M. (1897-1908). p. 98, pl. 12/28, 29. Cleve-Euler, A. (1951-55). p. 160, f. 822. Schmidt, A. (1874-1956). f. 272/28-32. **Fig. 68.**

Navicula cf. digito-radiata Gregory. var. C.

Pankow, H. (1976). p. 229. Hendey, N. I. (1964). p. 202, pl. 29. Peragallo, H. and Peragallo, M. (1897-1908). p. 98, pl. 12/28, 29. Cleve-Euler, A. (1951-55). p. 160, f. 822. Schmidt, A. (1874-1956). f. 272/28-32. **Fig. 71.**

Navicula digito-radiata Gregory. var. cyprinus Ehrenberg.

Pankow, H. (1976). p. 229. Hendey, N. I. (1964). p. 202, pl. 29. Peragallo, H. and Peragallo, M. (1897-1908). p. 98, pl. 12/28, 29. Cleve-Euler, A. (1951-55). p. 160, f. 822. Schmidt, A. (1874-1956). f. 272/28-32. **Fig. 10.**

Navicula dissipata Hustedt.

Schmidt, A. (1874-1956). pl. 403/7, 8. Pankow, H. (1976). p. 216, f. 450. Hustedt, F. (1961-66). p. 549, f. 1587d. Hendey, N. I. (1964). p. 214, pl. 37/7. **Fig. 50.**

Navicula distans Wm. Smith.

Hendey, N. I. (1961-66). p. 203, pl. 27/13. Peragallo, H. and Peragallo, M. (1897-1908). p. 104, pl. 11/22, 23. Cleve-Euler, A. (1951-55). p. 133, f. 768. Cleve, P. T. (1894). p. 35. Schmidt, A. (1874-1956). f. 46/11-14. Van Heurck, H. (1880-1885). p. 87. **Fig. 70, 75, 76.**

Navicula forcipata Greville. var. densistriata Schmidt.

Hustedt, F. (1961-66). p. 531, f. 1568. Hendey, N. I. (1964). p. 211, pl. 33. Peragallo, H. and Peragallo, M. (1897-1908). p. 130, pl. 21/29, 30. Cleve-Euler, A. (1951-55). p. 105. Schmidt, A. (1874-1956). f. 70/14. **Fig. 46, 47.**

Navicula gregaria Donkin.

Pankow, H. (1976). p. 235, f. 490. Hustedt, F. (1930). p. 269, f. 437. Peragallo, H. and Peragallo, M. (1897-1908). pl. 8/7. Cleve-Euler, A. (1951-55). p. 130, f. 755a-c. Tynni, R. (1975). p. 18, pl. 1/8. **Fig. 64.**

Navicula hennedyi Wm. Smith. var. hennedyi.

Cleve-Euler (1953). p. 107, f. 713. Pankow, H. (1976). p. 221, f. 459. Hustedt, F. (1961-66). p. 453, f. 1516. Hendey, N. I. (1964). p. 213, pl. 33. Peragallo, H. and Peragallo, M. (1897-1908). p. 139, pl. 25/2, 3. Tynni, R. (1975). p. 18, pl. 4:89. **Fig. 56.**

Navicula cf. incerata Grunow.

Tynni, R. (1975) p. 20, pl8/158. Van Heurck, H. (1880-5). p. 107, pl. 14:43. Hustedt, F. (1930). p. 306, f. 542. Hendey, N. I. (1964). p. 197. Peragallo, H. and Peragallo, M. (1897-1908). p. 93, pl. 11/16. Cleve-Euler, A. (1951-55). p. 168, f. 849B. **Fig. 61.**

Navicula latissima Gregory.

Pankow, H. (1976). p. 254, 263, f. 554. Hustedt, F. (1961-66). p. 717-719, f. 1701. Peragallo, H. and Peragallo, M. (1897-1908). p. 146-7. pl. 27. Cleve-Euler,

A. (1951-55). p. 115, f. 733. Schmidt, A. (1874-1956). f. 6. **Fig. 4.**

Navicula lyroides Hendey.

N. lyra Ehrenberg. var. *elliptica* in: A. Schmidt 1874. Hustedt, F. (1961-66). p. 500, f. 1551. Hendey, N. I. (1964). p. 209, pl. 33. Peragallo, H. and Peragallo, M. (1897-1908). p. 133, pl. 22. Cleve-Euler, A. (1951-55). p. 106, f. 710/a. Schmidt, A. (1874-1956). f. 2, 129. Van Heurck, H. (1880-1885). pl. 10/2. Cleve, P. T. (1894). p. 63. **Fig. 43, 49.**

Navicula meniscus Schuman.

Krammer. K. and Lange-Bertalot, H. (1986a). p. 101, f. 30/3. **Fig. 73.**

Navicula palpebralis Brebisson. var. *minor* Grunow.

Hendey, N. I. (1964). p. 216, pl. 34. Peragallo, H. and Peragallo, M. (1897-1908). p. 82, pl. 10/16. Cleve-Euler, A. (1951-55). p. 4, f. 974. Schmidt, A. (1874-1956). pl. 191, 263. **Fig. 12.**

Navicula palpebralis var. *angulosa* Gregory.

Hendey, N. I. (1964). p. 216, pl. 34. Cleve-Euler, A. (1951-55). p. 4, f. 974. **Fig. 33-35.**

Navicula phyllepta Kützing.

Cleve-Euler, A. (1951-55). p. 139, f. 784. Hendey, N. I. (1964). p. 190, pl. 37/3. Krammer. K. and Lange-Bertalot, H. (1986a). p. 104, f. 32:5-11. **Fig. 54, 55.**

Navicula plicata Ehrenberg. var. *constricta*.

Hustedt 1962. Pankow, H. (1976). p. 260, f. 543. Hustedt, F. (1961-66). p. 328, f. 1443. Hendey, N. I. (1964). p. 193. Peragallo, H. and Peragallo, M. (1897-1908). p. 65, pl. 8/15. Cleve-Euler, A. (1951-55). p. 219, f. 965. Simonson, R. (1987). f. 734. **Fig. 15.**

Navicula cf. *pygmaea* Kützing.

This species occurs in Loch Goil in a range of frustule lengths (10-30 μm) which at its smallest is below the range described in the taxonomic literature (20-45 μm).

Pankow, H. (1976). p. 223, f. 464. Hustedt, F. (1930). p. 312, f. 561. Hustedt, F. (1961-66). p. 538, f. 1574. Hendey, N. I. (1964). p. 211. Peragallo, H. and Peragallo, M. (1897-1908). p. 130, pl. 21/20. Cleve-Euler, A. (1951-55). p. 105, f. 708. Cleve, P. T. (1894). p. 65. Schmidt, A. (1874-1956). pl. 70/7. Van Heurck, H. (1880-1885). p. 94, pl. 10/7. **Fig. 52.**

Navicula retusa Brebisson. var. *cancellata*.

N. cancellata in: Pankow, H. (1976). p. 231. Hendey, N. I. (1964). p. 203, pl. 30/18-20. Peragallo, H. and Peragallo, M. (1897-1908). p. 101, pl. 13/7, 8. Cleve, P. T. and Grunow, A. (1880). p. 36. Cleve-Euler, A. (1951-55). p. 132. **Fig. 72, 74.**

Navicula retusa Brebisson. var. *gregorii*.

N. cancellata var. *subapiculata* in: Peragallo, H. and Peragallo, M. (1897-1908). p. 102, pl. 13/9. *N. cancellata*

var. *gregorii* in Cleve-Euler, A. (1951-55). p. 133, f. 764. Schmidt, A. (1874-1956). pl. 46/43. Cleve, P. T. (1894). p. 30. **Fig. 38-39.**

Navicula cf. rhombica Gregory.

Hustedt, F. (1961-66). p. 325, f. 1441. Hendey, N. I. (1964). p. 192, pl. 30/3. Peragallo, H. and Peragallo, M. (1897-1908). p. 64, pl. 8/10. Cleve, P. T. and Grunow, A. (1880). p. 43. Cleve-Euler, A. (1951-55). p. 218, f. 961. Cleve, P. T. (1894). p. 152. **Fig. 6.**

Navicula cf. sparsistriata.

Hustedt, F. (1964). p. 547, f. 1586. **Fig. 51.**

Navicula subinflatooides Hustedt.

Hustedt, F. (1961-66). p. 294, f. 1416. Hustedt, F. (1977). f. 731. **Fig. 7, 8.**

Navicula cf. tripunctata Müller.

N. gracilis Eherenberg. in: Pankow, H. (1976). p. 236, f. 493. Cleve-Euler, A. (1951-55). p. 130, f. 756. **Fig. 24-31.**

Nitzschia Hass. sp. A.

Fig. 178. Probably a member of the lineares group described in Cleve, P. T. and Grunow, A. (1880). p. 93.

Nitzschia Hass. sp. B.

Fig. 179.

Nitzschia Hass. sp. C.

Probably a member of the lanceolatae group described in Cleve, P. T. and Grunow, A. (1880). p. 94. **Fig. 180.**

Nitzschia Hass. sp. D.

Member of the lanceolatae group described in Cleve, P. T. and Grunow, A. (1880). p. 94. **Fig. 206.**

Nitzschia acuminata Wm. Smith.

Pankow, H. (1976). p. 304, f. 646. Hustedt, F. (1930). p. 401, f. 764. Hendey, N. I. (1964). p. 280, pl. 39/10. Peragallo, H. and Peragallo, M. (1897-1908). p. 271, pl. 70/19-21. Cleve-Euler, A. (1951-55). p. 61, f. 1436a. Schmidt, A. (1874-1956). pl. 331/4, 5. **Fig. 188.**

Nitzschia angularis Wm. Smith.

Pankow, H. (1976). p. 312, f. 667. Peragallo, H. and Peragallo, M. (1897-1908). p. 285, pl. 73/6. Cleve-Euler, A. (1951-55). p. 70, f. 1461b. Schmidt, A. (1874-1956). f. 335/19. Cleve and Grunow (1880). p. 89, f. 5/99. Van Heurck, H. (1880-1885). p. 177, pl. 62/11-14. **Fig. 189, 194, 195.**

Nitzschia angularis Wm. Smith. cf. var. affinis.

Peragallo, H. and Peragallo, M. (1897-1908). p. 284, pl. 73/8. Van Heurck, H. (1880-1885). p. 177, pl. 62/11-14. **Fig. 205.**

Nitzschia bilobata Wm. Smith. var. bilobata.

Pankow, H. (1976). p. 309, f. 659. Hustedt, F. (1930). p. 405, f. 775. Hendey, N. I. (1964). p. 280, pl.

39/2, 43/15. Peragallo, H. and Peragallo, M. (1897-1908). p. 273, pl. 70/26. Cleve-Euler, A. (1951-55). p. 65, f. 1446a, b. Krammer, K. and Lange-Bertalot, H. (1986b). p. 61, pl. 46/1, 2. Van Heurck, H. (1880-1885). p. 175, pl. 60/1. **Fig. 187.**

Nitzschia aff. *distans* Gregory.

Clearly a member of the *spathulatae* group described in Cleve, P. T. and Grunow, A. (1880). p. 87. this species is most often observed with its frustule at an oblique angle.

Foged, N. (1978). p. 104, pl. 45/6. Schmidt, A. (1874-1956). pl. 334/1, 2. Peragallo, H. and Peragallo, M. (1897-1908). p. 283, pl. 73/3. **Fig. 185, 191, 192.**

Nitzschia *hybrida* cf. var. *pellucida* Grunow.

Krammer, K. and Lange-Bertalot, H. (1988) p. 61, pl. 47/4. Cleve and Grunow (1880) p. 80, f. 5/96. *N. hybrida* in Hustedt, F. (1930). p. 406, f. 778. Peragallo, H. and Peragallo, M. (1897-1908). p. 274, pl. 70/29. Cleve-Euler, A. (1951-55). p. 66, f. 1449. *N. pellucida* Cleve-Euler, A. (1951-55). p. 65, f. 1448cd. **Fig. 200, 201.**

Nitzschia *insignis* Gregory. var. *smithii*.

Cleve, P. T. and Grunow, A. (1880). p. 84. Schmidt, A. (1874-1956). pl. 333/5. Krammer, K. and Lange-Bertalot, H. (1986b). pl. 26:1. Peragallo, H. and Peragallo, M. (1897-1908). p. 295, pl. 75/3. *N. smithii* in Cleve-Euler, A. (1951-55). p. 68, f. 1454. (*Hantzschia spectabilis*) in Krammer, K. and Lange-Bertalot, H. (1986b). p. 132, pl. 91/1-4. Van Heurck, H. (1880-1885). pl. 61/1. **Fig. 183, 184, 202, 209, 210.**

Nitzschia *insignis* Gregory . cf. var. *spathulifera* Grunow.

This species may be a separate variety of *N. insignis* (not currently recognised) as the valve is shorter, with narrow spathulate extensions to the outer margin, similar to, but smaller than (82 μ m long) *N. insignis* (*N. adriatica* var. ?) Gregory. var. *spathulifera* Grunow. Cleve, P. T. and Grunow, A. (1880). p. 85. Cleve-Euler, A. (1951-55). p. 68, f. 1454a. Peragallo, H. and Peragallo, M. (1897-1908). p. 296, pl. 75/7-9. **Fig. 181, 182.**

Nitzschia *marginulata* Grunow. var. *marginulata*.

Van Heurck, H. (1880-1885). pl. 58/13. Krammer, K. and Lange-Bertalot, H. (1986b). p. 45, pl. 33/6. Peragallo, H. and Peragallo, M. (1897-1908). p. 270, pl. 70/14, 15. *N. marginulata* var. *genuina* in Cleve, P. T. and Grunow, A. (1880). p. 72, pl. 5/93. Cleve-Euler, A. (1951-55). p. 61, f. 1434a. **Fig. 186.**

Nitzschia *panduriformis* Gregory. cf. var. *minor* Grunow.

Cleve, P. T. and Grunow, A. (1880). p. 71. Cleve-Euler, A. (1951-55). p. 55. f. 1425c. *N. panduriformis* in Pankow, H. (1976). p. 310. Hendey, N. I. (1964). p. 279. Peragallo, H. and Peragallo, M. (1897-1908). p. 269, pl. 70/6. Schmidt, A. (1874-1956). pl. 331/19, 20. Van Heurck, H. (1880-1885). p. 172, pl. 58/4. **Fig. 190.**

Nitzschia cf. punctata W. Smith. var. coarctata Grunow.
f. minor.

The species found in Loch Goil is small (28-45 um long) and is most similar to the var. *minor* described by Krammer, K.. and Lange-Bertalot, H. (1988) p. 50, f. 38:14. The density of striae and the shape of the frustule is consistent with Grunow's original description of *N. punctata* var. *coarctata* although the smaller form is not reported in this, or other taxonomic texts.

Pankow, H. (1976). p. 302, f. 635. Hustedt, F. (1930). p. 401. Hendey, N. I. (1964). p. 278. Peragallo, H. and Peragallo, M. (1897-1908). p. 268, f. 26. Cleve-Euler, A. (1951-55). p. 57, f. 1429e. Schmidt, A. (1874-1956). pl. 330/16. **Fig. 193.**

Nitzschia sigma Kützing. var. ?.

Fig. 196.

Nitzschia sigma Kützing. var. intercedens Grunow.

Hendey, N. I. (1964). p. 282. Cleve-Euler, A. (1951-55). p. 75, f. 1470e. Schmidt, A. (1874-1956). pl. 336/5. Van Heurck, H. (1880-1885). p. 179. pl. 66/1. *N. intercedens* Grunow. in: Peragallo, H. and Peragallo, M. (1897-1908). p. 290, pl. 74/7. **Fig. 173, 174, 175.**

Nitzschia sigma var. rigida Kützing.

Hustedt, F. (1930). p. 420. Hendey, N. I. (1964). p. 282. *N. rigida* in Peragallo, H. and Peragallo, M. (1897-1908). p. 291, f. 74/9. Cleve-Euler, A. (1951-55). p. 75, f. 1470c, d. Schmidt, A. (1874-1956). pl. 336/6. Tynni, R. (1980). p. 20, pl. 11:182. Van Heurck, H. (1880-5). p. 179, pl. 66:2, 5. **Fig. 204.**

Nitzschia socialis Gregory . var. socialis.

Cleve and Grunow (1880) p. 85, f. 85. Pankow, H. (1976). p. 312, f. 663. Hendey, N. I. . (1964). p. 280. Peragallo, H. and Peragallo, M. (1897-1908). p. 280, pl. 72/7, 8. Cleve-Euler, A. (1951-55). p. 69. **Fig. (197?), 203.**

Biddulphia aurita Lyngbye.

(Odontella aurita) Hendey, N. I. (1964). p. 103, pl. 24/6. Cleve-Euler, A. (1951-55). p. 119, f. 257d. Schmidt, A. (1874-1956). pl. 120/6, 7. 122/1-8. Drebes, von G, 1974. **Fig. 171.**

Opephora martyi Heriband.

Pankow, H. (1976). p. 130, f. 236. Hustedt, F. (1930). p. 132, f. 120. Hustedt, F. (1931-37). p. 135, f. 654. Molder, K.. and Tynni, R. (1969). p. 246, f. 53. *Fragilaria pinnata* var. *genuina* f. *subsolitaris* (Grunow 1862) in Cleve-Euler, A. (1951-55). p. 37, f. 348n-q. **Fig. 122, 124.**

Pinnularia Ehrenberg. sp. A.

Fig. 16.

Pinnularia ambigua Cleve.

Pankow, H. (1976). p. 200, f. 425. Hendey, N. I. (1964). p. 233, pl. 34/5,8. Cleve-Euler, A. (1951-55). p. 34, f. 1040. Cleve, P. T. (1894). p. 94. *A. digitus* in

Schmidt, A. (1874-1956). pl. 26/30. Schmidt, A. (1874-1956). pl. 313/20,21. **Fig. 125,128.**

Navicula lanceolata Agardh.

Hustedt, F. (1930). p. 305, f. 540. Peragallo, H. and Peragallo, M. (1897-1908). p. 100, pl. 13/2. Cleve, P. T. and Grunow, A. (1880). p. 35. Cleve-Euler, A. (1951-55). p. 134, f. 772a. Cleve, P. T. (1894). p. 21. Krammer, K. and Lange-Bertalot, H. (1986a). p. 100, pl. 29/5-7. **Fig. 37.**

Pinnularia divergens Wm. Smith..

Foged, N. (1978) p. 114, pl. 33/1. Hustedt, F. 1930. p. 323, f. 589. Cleve-Euler, A. (1951-55). p. 51. **Fig. 17.**

Pinnularia ergadensis Gregory var. ergadensis.

Hendey, N. I. (1964). p. 216, pl. 29. Peragallo, H. and Peragallo, M. (1897-1908). p. 77, f. 14. **Fig. 108.**

Pinnularia lata Brebisson. var.?

Because the frustule was fragmented it was not possible to identify this specimen to variety level.

Hustedt, F. (1930). p. 324, f. 595. Cleve-Euler, A. (1951-55). p. 33, f. 1038. **Fig. 164.**

Pinnularia cf. microstauron Ehrenberg.

Hustedt, F. 1930. p. 320, f. 582. Foged, H. (1974) p. 98, pl. 18/14. Cleve-Euler, A. (1951-55). p. 55. **Fig. 20.**

Pinnularia quadratarea Schmidt. var. subproducta Grunow.

Cleve 1896. Pankow, H. (1976). p. 199. Peragallo, H. and Peragallo, M. (1897-1908). p. 86, pl. 11/8,9. Cleve-Euler, A. (1951-55). p. 10, f. 981. Schmidt, A. (1874-1956). f. 261/33. **Fig. 22.**

Pinnularia rupestris Rabenhorst.

Cleve-Euler, A. (1951-55). p. 75, f. 1105/g, h. Schmidt, A. (1874-1956). f. 45/38-44. **Fig. 21.**

Pinnularia subcapitata Gregory. var. hilseana Janisch and Rabenhorst.

Cleve-Euler, A. (1951-55). p. 64, f. 1090. Schmidt, A. (1874-1956). f. 44,45/59,60.65 Krammer, K. and H. Lange-Bertalot (1986a) p. 426, f. 193/1-18. **Fig. 19.**

Pinnularia viridis Ehrenberg var. mayeri Cleve-Euler.

Pankow, H. (1976). p. 199. Cleve-Euler, A. (1951-55). p. 73, f. 1103. Schmidt, A. (1874-1956). f. 42. Krammer, K. and H. Lange-Bertalot (1986a) p. 428, f. 194. **Fig. 23.**

Plagiogramma staurophorum Gregory.

Pankow, H. (1976). p. 124, f. 219. Hustedt, F. (1931-37). p. 110, f. 635. Hendey, N. I. (1964). p. 166, f. 36/1. Cleve-Euler, A. (1951-55). p. 24, f. 332. Schmidt, A. (1874-1956). pl. 209/6-8. **Fig. 121.**

Plagiotropis tayrecta.

Paddock, T. B. B. (1988). p. 25, f. 5. **Fig. 226,230.**

Pleurosigma aestaurii Brebisson. var. candida Schumann.

Peragallo, H. and Peragallo, M. (1897-1908). p. 164, pl. 33/10. *P. aesterii* in Cleve, P. T. and Grunow, A. (1880). p. 52. Cleve, P. T. (1894). p. 42. *P. angulatum* var. *aestaurii* in Van Heurck, H. (1880-1885). p. 115, pl. 18/8. **Fig. 211.**

Pleurosigma formosum W. Smith.

Hendey, N. I. (1964). p. 242. Peragallo, H. and Peragallo, M. (1897-1908). p. 156, pl. 30/1-3. Cleve, P. T. (1894). p. 45. Krammer, K. and Lange-Bertalot, H. (1986a). Krammer, K. and Lange-Bertalot, H. (1986b). Van Heurck, H. (1880-1885). p. 116, pl. 19/4. **Fig. 213.**

Pleurosigma australe Grunow.

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Pankow, H. (1976). p. 184, f. 388. Cleve-Euler, A. (1951-55). p. 23, f. 1375. *P. intermedium* var. *nubecula* in: Peragallo, H. and Peragallo, M. (1897-1908). p. 165, pl. 32/19,20. **Fig. 218.**

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Hendey, N. I. (1964). p. 246, pl. 36/7. *P. angulatum* var. *strigosum* Wm. Smith. in: Van Heurck, H. (1880-1885). p. 115, pl. 19/2. *P. angulatum* var. *convexum* Grunow. in: Cleve, P. T. (1894). p. 41. **Fig. 212, 215, 219, 220.**

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87, f. 662,930. Van Heurck, H., H. (1880-5). p. 111, pl. 17/12. **Fig. 176.**

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Hustedt, F. (1930). p. 225, f. 404. Hustedt, F. (1959). p. 766, f. 1118a. Cleve-Euler, A. (1951-55). p. 209, f. 944. Cleve, P. T. (1894). p. 148. **Fig. 177.**

Stauroneis salina Wm. Smith.

Hustedt, F. (1931-37). p. 258, f. 414. Hendey, N. I. (1964). p. 212. Pankow, H. (1976). p. 210. cf. var. Lagerstedtii Cleve-Euler. in Cleve-Euler, A. (1951-55). p. 212, f. 949e. **Fig. 5.**

Stenoneis inconspicua Gregory.

Pankow, H. (1976). p. 195, f. 415. Hendey, N. I. (1964). p. 222. Peragallo, H. and Peragallo, M. (1897-1908). p. 49, pl. 7/7,8. Cleve-Euler, A. (1951-55). p. 6, f. 1323. **Fig. 81, 82.**

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Surirella fastuosa Ehrenberg. var. fastuosa.

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Cleve and Grunow 1880. p. 105, pl. 6/114. **Fig. 239.**

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Pankow, H. (1976). p. 132. Hustedt, F. (1931-37). p. 160. Hustedt, F. (1931-37). p. 191, f. 688. Hendey, N. I. (1964). p. 163. Peragallo, H. and Peragallo, M. (1897-1908). p. 318. Cleve-Euler, A. (1951-55). p. 66, f. 387. Schmidt, A. (1874-1956). pl. 300/19-35. Molder, K. and Tynni, R. (1970). p. 137, f. 51,52. Cleve, P. T. and Grunow, A. (1880). p. 107. Van Heurck, H., H. (1880-5). p. 149, pl. 41:1-8. **Fig. 110.**

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Molder, K.. and Tynni, R. (1970). p. 137, pl. 55. Pankow, H. (1976). p. 131, f. 241. Hendey, N. I. (1964). p. 161. Cleve, P. T. and Grunow, A. (1880). p. 105. *S. tabulata* var. *genuina* in Cleve-Euler, A. (1951-55). p. 69. *S. affinis* var. *tabulata* in Van Heurck, H., H. (1880-5). p. 153, pl. 41:9a. Peragallo, H. and Peragallo, M. (1897-1908). p. 319, pl. 80/13. **Fig. 112.**

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Trachyneis aspera Ehrenberg var. aspera.

Pankow, H. (1976). p. 201, f. 426. Hendey, N. I. (1964). p. 236. pl. 29/13. Peragallo, H. and Peragallo, M. (1897-1908). p. 150, pl. 29/1,2. Cleve-Euler, A. (1951-55). p. 5, f. 976. Schmidt, A. (1874-1956). pl. 48. Cleve, P. T. (1965). p. 191. **Fig. 87,88.**

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Pankow, H. (1976). p. 169, f. 355. Hendey, N. I. (1964). p. 255, pl. 36/3. Peragallo, H. and Peragallo, M. (1897-1908). p. 191, pl. 41/7,8. Cleve-Euler, A. (1951-55). p. 28, f. 1388c. **Fig. 237,238.**

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