

FRESHWATER DIATOMS

BY

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THE following notes on the freshwater Diatoms of the Færøes are based on the freshwater Algæ material — 135 gatherings, four of which contained Plankton — collected by Mr. Børgesen, Mr. Jensen, Mr. Ostenfeld and Prof. Warming on the Danish Expeditions to the Færøes in 1895—1899.

Placochromaticæ.

AMPHIPRORA Ehr. 1843. Cl. Syn. I, p. 13.

1. *Amphiprora paludosa* W. Sm. var. *hyperborea* Grun., Cl. & Grun. arc. D. tab. V, fig. 86.

Plankton from »the mouth of Sandsvatn« (Sandö).

PLEUROSIGMA W. Sm. 1852. Cl. Syn. I, p. 32.

2. *Pleurosigma angulatum* Quekett var. *finmarchica* Cl., Cl. & Grun. arc. D. tab. III, fig. 67.

Plankton from »the mouth of Sandsvatn« (Sandö).

CALONEIS Cl. Syn. I, p. 46.

3. *Caloneis lepidula* Grun., V. H. Syn. tab. XIV, fig. 42.

Not rare in a gathering from Højefjæld on Bordö.

4. *C. bacillaris* Grun., V. H. Syn. tab. XII, fig. 27.

Nolsö.

5. *C. fasciata* Lgst., Lgst. Spetsb. tab. II, fig. 11, V. H. Syn. tab. XII, figs. 31—34.

Here and there.

I agree with Cleve (Syn. I p. 50) in including *Nav. fonticola*, *fontinatis* and *Lacunarum* under *Nav. fasciata* Lgst.

Var. *lenticularis* n. Fig. 29 ^{660/1}.

L. 0,018 mm., B. 0,005 mm. Valve lenticular. Apical area distinct; rather broad transpical fascia. Striæ very delicate, at right angles to the raphe.



Fig. 29.

This small species which appears in a gathering from Bosdalaöfos (Vaagö) is undoubtedly related to *Nav. fontinalis* Grun. V. H. Syn. tab. XII, fig. 33 which P. T. Cleve (Syn. I p. 50) refers to *Caloneis fasciata* Lgst.

6. *C. Silicula* Ehr. var. *alpina* Cl., V. H. Syn. tab. XII, fig. 21.

Var. *gibberula* Kütz., V. H. l. c., fig. 19.

Var. *ventricosa* (Ehr.?) Donk., V. H. l. c., fig. 24.

Found dispersed in the material, but not in considerable quantity in any single gathering. The variety »*gibberula*« in Plankton.

7. *C. alpestris* Greg., V. H. Syn. tab. XII, fig. 30.

Trangisvaag (Syderö).

8. *C. obtusa* W. Sm., Donk. Br. D. tab. III, fig. 12.

Trangisvaag (Syderö).

9. *C. formosa* Greg. var. *holmiensis* Cl., V. H. Syn. tab. XI, fig. 2.

Trangisvaag (Syderö).

10. *C. amphibæna* Bory var. *subsalina* Donk., V. H. Syn. tab. XI, fig. 6.

Rare (Hestö).

11. *C. brevis* Greg., V. H. Syn. tab. XI, figs. 18—19.

Trangisvaag (Syderö).

The form found by me stands with regard to its outline between the two above-mentioned figures by Van Heurck, of which Cleve (Syn. I p. 61) refers fig. 18 to the variety: *vexans* Grun.

NEIDIUM Pfitzer 1871. Cl. Syn. I, p. 67.

12. *Neidium bisulcatum* Lgst., A. S. Atl. tab. XLIX, fig. 15.

Here and there. Plankton.

13. *N. affine* Ehr. var. *amphirhynchus* Ehr., A. S. Atl. tab. XLIX, fig. 27.

Here and there.

Var. *genuina* Cl. forma *minor*, A. S. l. c., fig. 23.

Here and there.

14. *N. dubium* Ehr., A. S. Atl. tab. XLIX, fig. 24.

Nolsö.

DIPLONEIS Ehr. 1840. Cl. Syn. I, p. 76.

15. *Diploneis interrupta* Kütz., Lgst. Spetsb. tab. II, fig. 16.

Found dispersed, and usually more isolated; not rare in a gathering from Trangisvaag. Plankton.

16. *D. didyma* Ehr., V. H. Syn. Suppl. B, fig. 20.

Trangisvaag (Syderö).

17. *D. elliptica* Kütz., A. S. Atl. tab. VII, figs. 29 and 32, V. H. Syn. tab. X, fig. 10.

Found dispersed in most of the gatherings, but never in considerable quantity. (Plankton). Varies somewhat in size. In gatherings from Høje fjæld (Bordö) and Viderejde (Viderö) I have found smaller forms, which agree most closely to *D. Puella* (Schum.?) Cl. V. H. Syn. tab. X, fig. 11, and are undoubtedly only variations of *D. elliptica* (cfr. Cl. Syn. I, p. 92).

18. *D. ovalis* Hilse., A. S. Atl. tab. VII, fig. 33.

Not rare in a gathering, labelled: »Algæ, in slowly running water near Bosdalfos« (Vaagö).

19. *D. Smithii* Bréb., Grun. Fz. Jos. L. tab. I, fig. 41.

Trangisvaag (Syderö).

GYROSIGMA Hassall 1845. Cl. Syn. I, p. 112.

20. *Gyrosigma acuminatum* Kütz., V. H. Syn. tab. XXI, fig. 12.

Rare. Tværaa (Syderö) and in Plankton from the lake in Vaags Ejde (Vaagö).

FRUSTULIA Ag. 1824. Cl. Syn. I, p. 122.

21. *Frustulia vulgaris* Thw., V. H. Syn. tab. XVII, fig. 6.

22. *F. rhomboides* Ehr., V. H. Syn. tab. XVII, figs. 1--2.

Var. *saxonica* Rbh., V. H. l. c., fig. 4.

Var. *viridula* Bréb., V. H. l. c., fig. 3.

The above-mentioned species and variations of *Frustulia* occur rather often in the material. *F. rh. saxonica* appears to be the most frequent, it, however, varies in having apices more or less capitate.

23. *F. vitrea* m. Fig. 30 ⁶⁶⁰/₁.



Fig. 30.

L. 0,02--0,024 mm., B. 0,0055 mm. Valve nearly linear; apices truncate. Central pores comparatively distant. Striae exceedingly delicate, just visible on applying Zeiss' Apochromate 2 mm.; they appear to be at right angles to the raphe. I think I have seen two longitudinal lines close to and parallel with the margin, but I am not quite sure of it.

The reason why I have placed this small hyaline form under *Frustulia* is mostly on account of the appearance of its central nodule. It may perhaps be related to *Navicula El Kab* O. M. (Bacil. a. d. Natron-

thälern El Kab tab. XII, fig. 22) which the author places under the *Navicula cuspidata* group.

Here and there. More conspicuous in a gathering labelled: »Covering bare spots on peaty ground«. South side of Trangisvaagfjord (Syderö)¹.

AMPHIPLEURA Kütz. 1844. Cl. Syn. I, p. 125.

24. *Amphipleura pellucida* Kütz., V. H. Syn. tab. XVII, figs. 14—15.

Only one example occurred in Plankton from the lake in Kvalbø-Ejde (Syderö).

NAVICULÆ MESOLEJÆ Cl. Syn. I, p. 127.

25. *Navicula Rotæana* Rbh., Lgst. Spetsb. tab. I, fig. 13, V. H. Syn. tab. XIV, figs. 17—19.

Found dispersed in several of the gatherings. Plankton.

Var. *oblongella* Grun., V. H. l. c., fig. 21.

Found intermingled with the main species in gatherings from Trangisvaag (Syderö).

26. *N. bacilliformis* Grun., V. H. Syn. tab. XIII, fig. 11.

Kirkebökamp (Strömö).

27. *N. Pupula* Kütz., V. H. Syn. tab. XIII, fig. 15.

Sand (Sandö); Trangisvaag (Syderö).

NAVICULÆ ENTOLEJÆ Cl. Syn. I, p. 131.

28. *Navicula contenta* Grun. var. *biceps* Arnott, V. H. Syn. tab. XIV, fig. 31 b.

Here and there. Not rare in a gathering from Höjefjæld on Bordö.

29. *N. perpusilla* Grun., V. H. Syn. tab. XIV, figs. 22—23.

Trangisvaag, Vaag (Vaagö); Höjefjæld (Bordö). In the latter gathering, not rare.

NAVICULÆ DECIPIENTES Grun. 1880. Cl. Syn. I, p. 138.

30. *Navicula Semen* Ehr., Grun. Fz. Jos. L. tab. I, fig. 34.

Rather rare. Nolsö; Tværaa (Syderö).

31. *N. integra* W. Sm., V. H. Syn. tab. XI, fig. 22.

Rare. Trangisvaag (Syderö).

¹ Since writing this paper I have found a *Frustulia vitrea* in »Surtarbrand« from Illagil, Iceland. In »Meddelelser fra dansk geologisk Forening No. 6, p. 27 it is reported as *Navicula sp. nov.* with reference to my present paper on the Færøese Diatoms.

32. *N. subtilissima* Cl., Cl. Diat. Finl. tab. II, fig. 15.
Rather rare. Trangisvaag (Syderö); Thorshavn (Strömö).

NAVICULÆ MICROSTIGMATICÆ Cl. Syn. I, p. 141.

33. *Stauroneis anceps* Ehr. var. *linearis* Ehr., V. H. Syn. tab. IV, figs. 7—8.

Nolsö; Trangisvaag (Syderö).

Var. *amphicephala* Kütz., V. H. Syn. tab. IV, figs. 4—5.

Not rare.

34. *S. Phoenicenteron* Ehr. var. *amphilepta* Cl., Herib. Diat. d'Auv. tab. III, fig. 18.

Here and there.

35. *S. parvula* Grun. var. *prominula* Grun., Cl. Syn. I, p. 149.

Rare. Trangisvaag (Syderö).

Var. *producta* Grun., V. H. Syn. tab. IV, fig. 12.

Not common. Nolsö; Viderejde (Viderö); Trangisvaag (Syderö).

36. *S. Legumen* Ehr., V. H. Syn. tab. IV, fig. 11.

Nolsö; Örnefjæld (Syderö). Plankton.

37. *S. Smithii* Grun., V. H. Syn. tab. IV, fig. 10.

Rare. Sand (Sandö).

38. *S. javanica* Grun., Pant. III tab. VIII, fig. 143.

Rare. Nolsö.

39. *S. acuta* W. Sm. var. *densestriata* m. Fig. 31 ⁶⁶⁰/₁.



Fig. 31.

L. 0,056 mm., B. 0,01 mm. Striæ at least 25 in 0,01 mm. Valve rhombic-lanceolate. The apical area dilated in the central part of the valve. Stauros broadening towards and reaching the margin, which shows a slight incurvation at this point. Striæ delicate and obscure, distinct only at the stauros.

In spite of the delicacy of its striæ and the somewhat different aspect of its central part I regard this form as a variety of *S. acuta* W. Sm. With regard to the number of striæ it approaches more closely to *S. Frauenfeldiana* (Grun. Nov. Exp. tab. I, fig. 13), but judging from Grunow's figure of it, *S. Frauenfeldiana* and the form in question are doubtless two distinct species.

Found in a gathering labelled: »Green algæ from a swamp on Nolsö«.

CYMBELLA Ag. 1830. Cl. Syn. I, p. 156.

40. *Cymbella microcephala* Grun., V. H. Syn. tab. VIII, fig. 36.

Plankton from Sörvaagsvatn (Vaagö).

41. *C. Cesatii* Rbh., V. H. Syn. tab. VIII, fig. 35.

Rare. Kirkebökamp, Thorshavn (Strömö).

42. *C. angustata* W. Sm., Lgst. Spetsb. tab. II, fig. 10.

Rare. Örnefjæld (Syderö). Plankton.

Fig. 32 (^{660/1}) shows a *Cymbella angustata* W. Sm. which differs from the typical form in having a distinct central area. It was found in a gathering from Kirkebökamp (Strömö).



Fig. 32.

43. *C. alpina* Grun. var., Öst. Danske Diat. Afl. tab. II, fig. 18.

Rare. Kirkebökamp (Strömö), between Örnefjæld and Trangisvaag (Syderö).

44. *C. austriaca* Grun.? var. *densestriata* Öst., Öst. Danske Diat. Afl. tab. II, fig. 6.

Kirkebökamp (Strömö).

45. *C. amphicephala* Naegeli, A. S. Atl. tab. IX, fig. 65.

Örnefjæld (Syderö); Midvaag (Vaagö).

46. *C. naviculiformis* Auersw., V. H. Syn. tab. II, fig. 5.

Örnefjæld, Trangisvaag (Syderö); Nolsö.

47. *C. cuspidata* Kütz., V. H. Syn. tab. II, fig. 3.

Rare. Sand (Sandö).

48. *C. turgida* Greg., V. H. Syn. tab. III, fig. 12.

Kirkebökamp (Strömö).

49. *C. ventricosa* Kütz., V. H. Syn. tab. III, figs. 13, 15 and 18.

Rather common. Plankton.

50. *C. hebridica* Grun., Cl. Diat. Finl. tab. II, figs. 16—17.

Höjvig (Strömö).

51. *C. gracilis* Rbh., V. H. Syn. tab. III, fig. 23.

Thorshavn (Strömö); Höjefjæld (Bordö).

52. *C. incerta* Grun. var. *naviculacea* Grun., Cl. Grönl. & Argent. tab. VI, fig. 11.

Here and there.

53. *C. æqualis* W. Sm., V. H. Syn. tab. III, fig. 2.

Here and there.

54. *C. sinuata* Greg., V. H. Syn. tab. III, fig. 8.

Rather rare. Kirkebökamp (Strömö); Trangisvaag (Syderö).

Var. *antiqua* Grun.?, Öst. Danske Diat. Afl. tab. II, fig. 10.

Thorshavn (Strömö).

55. *C. affinis* Kütz., V. H. Syn. tab. II, fig. 19, A. S. Atl. tab. X, fig. 27.

Not rare. In some of the gatherings, e. g. from Ejde (Österö) and Tværaa (Syderö) very common. Plankton.

56. *C. parva* W. Sm., V. H. Syn. tab. II, fig. 14.

Kvalbö, Trangisvaag, Famievatn (Syderö).

57. *C. Botellus* Lgst., Lgst. Spetsb. tab. II, fig. 22.

Thorshavn (Strömö).

58. *C. cymbiformis* (Ag.?) Kütz., V. H. Syn. tab. II, fig. 11 a, b, c.

Here and there.

59. *C. Cistula* Hempr., V. H. Syn. tab. II, fig. 12, A. S. Atl. tab. X, fig. 1.

Not rare in many of the gatherings. Plankton.

60. *C. lanceolata* Ehr., V. H. Syn. tab. II, fig. 7.

Here and there. Plankton.

61. *C. helvetica* Kütz., V. H. Syn. tab. II, fig. 15, A. S. Atl. tab. X, fig. 23 and tab. LXXI, fig. 19.

Found dispersed. Plankton.

62. *C. aspera* Ehr., V. H. Syn. tab. II, fig. 8.

Found scattered about in the material, often as a transitional form to *Cymbella lanceolata*.

In a gathering from Nolsö I found a *Cymbella aspera*, the valve measures about 0.24 mm. in length and 0.045 mm. in breadth. Dorsal striæ 6 in 0.01 mm., more distant in the middle, somewhat closer towards the apices. Ventral striæ 6 in 0.01 mm. in the middle, then increasing in number to about 10 in 0.01 mm. towards the apices. Striæ moniform, puncta on the dorsal side 6 in 0.01 mm., on the ventral side 10 in 0.01 mm. With regard to its size this form comes near to *C. gigantea* Pant. (Pant. III, tab. XXI, fig. 321) and rather near to *C. gastroides* Kütz. in A. S. Atlas tab. IX, fig. 1 (the latter measures 0.3 mm. in length). P. T. Cleve (Syn. I, p. 175) refers both these figures to *C. aspera* Ehr.

GOMPHONEMA Agard 1824. Cl. Syn. I, p. 178.

63. *Gomphonema parvulum* Kütz., V. H. Syn. tab. XXV, figs. 7—9.

Not rare.

64. *G. angustatum* Kütz. var. *producta* Grun., Lgst. Spetsb. tab. I, fig. 14, V. H. Syn. tab. XXIV, figs. 52—55.

Not rare.

65. *G. intricatum* Kütz., V. H. Syn. tab. XXIV, figs. 28—29.

Trangisvaag, Örnefjæld (Syderö).

Var. **dichotoma** Kütz., V. H. l. c., figs. 30—31.

Örnefjæld (Syderö). Plankton.

66. **G. gracile** Ehr. var. **naviculacea** W. Sm., V. H. Syn. tab. XXIV, figs. 13—14.

Not rare.

67. **G. lanceolatum** Ehr. var. **insignis** Greg., V. H. Syn. tab. XXIV, fig. 39.

Höjefjæld (Bordö).

Var. **brevistriata** m. Fig. 33 ⁶⁶⁰/1.

L. 0,038 mm., B. 0,008 mm. Striæ 10 in 0,01 mm.

By an interruption of the striæ a rather broad apical area is formed, dilated in the middle of the valve to a round space. This variety approaches nearest to *G. lanceolatum insignis*.



Found in a gathering labelled: »Trangisvaag (Syderö) at some 200 metres«.

Fig. 33.

68. **G. subclavatum** Grun., V. H. Syn. tab. XXIV, fig. 1 and tab. XXIII, figs. 38—41.

Var. **montana** Schum., V. H. Syn. tab. XXIII, fig. 36.

Not rare. The variety occurs intermingled with the main species.

69. **G. acuminata** Ehr. var. **coronata** Ehr., V. H. Syn. tab. XXIII, figs. 15—17.

Rather common, but generally does not occur in any considerable quantity in any of the gatherings.

70. **G. constrictum** Ehr., V. H. Syn. tab. XXIII, figs. 5—6.

Tværaa (Syderö); Næs (Österö); Vedvig (Viderö). Common in a gathering from the latter locality.

71. **G. geminatum** Lyngb., W. Sm. Syn. tab. XXVII, fig. 235.

Here and there. Occurs in large quantity in a gathering labelled: »Trangisvaag (Syderö), at the northern Hammer«.

72. **G. olivaceum** Lyngb., V. H. Syn. tab. XXV, figs. 20—21.

Trangisvaag, Tværaa (Syderö); Nordreöer.

73. **G. ? inflatum** m. Fig. 34 ⁶⁶⁰/1.

L. 0,031 mm., B. in the middle 0,006 mm. Striæ 15 in 0,01 mm.

Valve slightly undulated, broadest in the middle. Narrow apical area. Central area orbicular, reaching half way between the central nodule and the margin. Striæ more distant, slightly radiant in the middle, but at the dorsal end of the



Fig. 34.

apical axis at right angles to the raphe. Terminal nodules at a little distance from the apices. No unilateral stigma.

I have referred this species to *Gomphonema* on account of the form being somewhat unsymmetrical with regard to the transapical axis and the differently directed striæ at its apices, the latter character in particular appears to point to *Gomphonema*. Perhaps it comes nearest to *G. angustatum* Kütz. as according to Cleve (Syn. I p. 181) the unilateral stigma of the latter is »indistinct«, and sometimes it even appears to be wanting. Cfr. *G. angustatum* var.? *lapponica* A. Cl. in A. Cl. Lule Lap., fig. 20.

ANOMOEONEIS Pfitzer 1871. Cl. Syn. II, p. 5.

74. *Anomoeoneis serians* Bréb., V. H. Syn. tab. XII, fig. 7 and Supl. B, fig. 31.

75. *A. brachysira* (Bréb.) Grun., V. H. Syn. tab. XII, figs. 8—9.

76. *A. exilis* (Kütz.) Grun., V. H. Syn. tab. XII, figs. 11—12.

Var. *thermalis* Grun., V. H. l. c., fig. 10.

The above species or varieties of *A. serians* are fairly common in the material. Plankton. A variety which was found intermingled with them agrees most closely with Van Heurek's fig. 12, but the capitate apices shown in this figure are wanting.

77. *A. zellensis* Grun., V. H. Syn. tab. XII, fig. 14.

Rather rare. Vaag (Syderö); Højefjæld (Bordö).

NAVICULÆ HETEROSTICHÆ. Cl. Syn. II, p. 8.

78. *Navicula cocconeiformis* Grun., V. H. Syn. tab. XIV, fig. 1.

Occurs in several of the gatherings, but rarely in any considerable quantity.

NAVICULÆ LINEOLATÆ. Cl. Syn. II, p. 10.

79. *Navicula cryptocephala* Kütz., V. H. Syn. tab. VIII, fig. 5.

Here and there.

Var. *exilis* Kütz., V. H. l. c., fig. 2.

Thorshavn (Strömö); Trangisvaag (Syderö).

80. *N. rhynchocephala* Kütz. var. *amphiceros* Kütz., V. H. Syn. tab. VII, fig. 30.

Sand (Sandö).

81. *N. viridula* Kütz., V. H. Syn. tab. VII, fig. 25.

Var. *slesvicensis* Grun., V. H. l. c., fig. 26.

Var. *rostellata* Kütz., V. H. l. c., figs. 23—24.

Not rare. The variety *slesvicensis* occurs more frequently than the main species; I have found *rostellata* in gatherings from Midvaag (Vaagö) and Sandö.

82. *N. hungarica* Grun., Grun. Öst. Ung. tab. XXX, fig. 42.

Rare. Plankton from »the mouth of Sandsvatn (Sandö).

Var. *capitata* Ehr., Lgst. Spetsb. tab. II, fig. 5.

Rare. Sand (Sandö).

83. *N. cincta* Ehr., V. H. Syn. tab. VII, figs. 13—14.

Midvaag (Vaagö).

Var. *Heufferi* Grun., V. H. l. c., figs. 12 and 15.

Midvaag (Vaagö), mixed with the main species, Thorshavn (Strömö).

Var. *angusta* Grun., V. H. l. c., fig. 17.

Found dispersed in some of the gatherings, but never in large quantities.

84. *N. radiosa* Kütz., V. H. Syn. tab. VII, fig. 20.

Scattered about in the material, but rarely in large quantities.

Var. *tenella* Bréb., V. H. l. c., fig. 21.

Kirkebökamp (Strömö).

85. *N. gracilis* Ehr., V. H. Syn. tab. VII, figs. 7—8.

Trangisvaag (Syderö).

86. *N. peregrina* Ehr., A. S. Atl. tab. XLVII, figs. 57—60.

Trangisvaag (Syderö); Ejde (Österö).

Var. *Meniscus* Schum., V. H. Syn. tab. VIII, fig. 19.

Trangisvaag, Tværaa (Syderö).

Var. *Kefvingensis* Ehr., A. S. Atl. tab. XLVII, fig. 62.

Trangisvaag (Syderö).

87. *N. peregrina* Ehr. var. *Menisculus* Schum.? Fig. 35 ⁶⁶⁰/1.

L. 0,035 mm., B. 0,01 mm. Striæ 10 in 0,01 mm.

Valve elliptical lanceolate with obtuse apices. Striæ radiate in the middle, convergent towards the apices. Apical area narrow; central area small, orbicular. I have some doubts about regarding this form as a *N. peregrina Menisculus*.

Found in a gathering labelled: »Algæ from Kvanhaugen«, Trangisvaag (Syderö).



Fig. 35.

88. *N. digitoradiata* Greg., V. H. Syn. tab. VII, fig. 4.

Trangisvaag (Syderö).

89. *N. dicephala* (Ehr.?) W. Sm., V. H. Syn. tab. VIII, figs. 33—34.

Here and there.

Var. *subcapitata* Grun., Grun. Foss. Diat. Öst. Ung. tab. XXX, fig. 54.

Hvidenæs (Strömö).

90. *N. Gastrum* Ehr. var. *exigua* Greg., V. H. Syn. tab. VIII, fig. 32.

Kvalbø, Trangisvaag (Syderø).

91. *N. Placentula* Ehr., V. H. Syn. tab. VIII, fig. 28.

Plankton from »the mouth of Sandsvatn« (Sandø).

NAVICULÆ PUNCTATÆ Cl. Syn. II, p. 37.

92. *Navicula scutelloides* W. Sm., var. *minutissima* Cl., Cl. Grönl. & Argent. tab. XVI, fig. 10.

Rare. Sand, Plankton from »the mouth of Sandsvatn« (Sandø).

93. *N. pusilla* W. Sm., V. H. Syn. tab. XI, fig. 17.

Here and there.

Var. *lanceolata* Grun., Ströse Kl., fig. 10.

Plankton from »the mouth of Sandsvatn« (Sandø).

94. *N. humerosa* Bréb., V. H. Syn. tab. XI, fig. 20.

Plankton from »the mouth of Sandsvatn« (Sandø).

95. *N. amphibola* Cl., Lgst. Spetsb. tab. II, fig. 7.

Rare. Nolsø; Trangisvaag (Syderø).

NAVICULÆ LYRATÆ Cl. Syn. II, p. 52.

96. *Navicula pygmæa* Kütz., A. S. Atl. tab. LXX, fig. 7.

Trangisvaag (Syderø). Only found in one gathering where it was rather common.

NAVICULÆ LEVISTRIATÆ Cl. Syn. II, p. 96.

97. *N. elegans* W. Sm., Donk. Br. Diat. tab. IV, fig. 1.

Rare. Trangisvaag (Syderø). Plankton.

98. *N. palpebralis* Bréb. var. *Barclayana* Greg., Greg. Diat. Cl. tab. IX, fig. 9.

Rare. Trangisvaag (Syderø).

Var. *obtusa* V. H., V. H. Syn. tab. XI, fig. 8.

Rare. Örnefjæld (Syderø).

99. *N. tubulata* m. Fig. 36 ⁶⁰⁰/₁.

L. 0,026 mm., B. 0,011 mm. Striæ about 20 in 0,01 mm.

Valve lanceolate with apices obtuse, truncate. Terminal nodules small, situated at the apices. Striæ parallel, absent from the centre. This unstriated part is oval on the one side of the raphe and extends right to the margin, while on the other side it only reaches about half way between



Fig. 36.

the central nodule and the margin. An elevated apical part occurs on both side of the raphe. This species bears a fairly close resemblance to *N. carinifera* Grun. A. S. Atl. tab. III, fig. 2 from Campeche Bay, but the striæ are much closer and, as far as I can see, not punctate.

Found in a gathering from Midvaag (Vaagö).

PINNULARIA Ehr. 1843. Cl. Syn. II, p. 71.

Gracillimæ Cl. Syn. II, p. 74.

100. *Pinnularia undulata* Greg. var. *subundulata* Greg., Van Heurck: Types Nr. 140.

Rare. Nordreöer.

101. *P. sublinearis* Grun., V. H. Syn. tab. VI, fig. 25.

Kirkebökamp, Thorshavn (Strömö).

102. *P. leptosoma* Grun., V. H. Syn. tab. XII, fig. 29.

Kvalbö (Syderö).

Capitatae Cl. Syn. II, p. 75.

103. *Pinnularia appendiculata* Ag., V. H. Syn. tab. VI., figs. 30—31.

Nolsö; Kirkebökamp (Strömö); Trangisvaag (Syderö). Not rare in a gathering labelled: »Covering bare spots on peaty ground«, south side of Trangisvaagfjord (Syderö).

104. *P. subcapitata* Greg., V. H. Syn. tab. VI, fig. 22, A. S. Atl. tab. XLIV, fig. 53.

Not common. Thorshavn (Strömö).

105. *P. interrupta* W. Sm. forma *stauroneiformis*, O. M. Riesengeb. tab. III, fig. 18.

Klakken (Bordö). Common in a gathering from Trangisvaag (Syderö).

106. *P. mesolepta* Ehr., V. H. Syn. tab. VI, figs. 10—11.

Trangisvaag (Syderö); Midvaag (Vaagö); Nolsö.

Var. *stauroneiformis* Grun., A. S. Atl. tab. XLV, figs. 52—53.

Nolsö; Syderö.

Var. *angusta* Cl., A. S. l. c., fig. 63.

Midvaag (Vaagö).

Var. *polyonca* Bréb., O. M. Riesengeb. tab. III, fig. 20.

Nolsö.

In a gathering from Syderö I found a small triundulated *Pinnularia* with apices capitate. It approaches *P. mesolepta stauroneiformis* in size,

form and number of striæ, but its transapical fascia is bordered by two stronger striæ such as *O. Müller* (Bac. a. d. Hochs Riesengeb. p. 23) has noticed in *P. Brébissonii* and *P. microstauron*. Perhaps this small form might therefore be referred to *P. microstauron*.

107. ***P. microstauron*** Ehr., A. S. Atl. tab. XLIV, fig. 14, Herib. Diat. d'Auv. tab. IV, fig. 1.

Nolsö; Trangisvaag (Syderö); Sand (Sandö); Höjvig, Kirkebökamp (Strömö).

108. ***P. termitina*** Ehr., A. S. Atl. tab. XLV, fig. 64.

Trangisvaag (Syderö).

109. ***P. Oculus*** Öst., Öst. Fersky. Diat. Östg. tab. I, fig. 6.

Trangisvaag (Syderö); Sand (Sandö).

This species, which has been found in the Færøes only in the two gatherings richest in saltwater forms, has also been met with in East Greenland in a locality which seems to suggest that it is a saltwater form (cfr. l. c. p. 269).

Divergentes Cl. Syn. II, p. 77.

110. ***Pinnularia divergentissima*** Grun., V. H. Syn. tab. VI, fig. 32.

Here and there.

A small *Pinnularia* occurs in a gathering from Midvaag (Vaagö). L. 0.026 mm., B. 0.004 mm., Striæ 12—13 in 0.01 mm. Its strongly radiant and convergent striæ proves its relationship to *P. divergentissima*, but it differs from this species in being altogether linear.

111. ***P. Brébissonii*** Kütz., V. H. Syn. tab. V, fig. 7.

Kirkebökamp, Hvidenæs (Strömö).

Var. ***diminuta*** V. H., V. H. l. c., fig. 8.

Viderejde (Viderö).

112. ***P. Legumen*** Ehr., V. H. Syn. tab. VI, fig. 16.

Nolsö; Kirkebökamp (Strömö); Trangisvaag (Syderö).

Forma ***vix undulata***, V. H. l. c., fig. 17.

Nolsö.

113. ***P. platycephala*** Ehr., Cl. Diat. of Finl. tab. II, fig. 1.

Næs (Österö). Found one example only, it differs from the typical form in being somewhat shorter and comparatively broader.

L. 0.078 mm., B. 0.019 mm.

114. ***P. divergens*** W. Sm., W. Sm. Syn. tab. XVIII, fig. 177.

Not rare.

Var. ***elliptica*** Grun., A. S. Atl. tab. XLIV, figs. 6—7.

Kirkebökamp (Strömö).

Forma ***minor***, O. M. Riesengeb. tab. III, fig. 9.

Famievatn (Syderö).

115. *P. diversa* m. Fig. 37 ^{660/1}.

L. 0,039 mm., B. 0,006 mm. Striæ 15 in 0,01 mm.

Valve narrow, rhombic-lanceolate. Striæ radiant, but about midway between the centre and the apices suddenly convergent. The apical area dilated towards the middle and here forming a transapical fascia. This species undoubtedly comes very near to the form — without name — from »Grim Brigs Aberdeen« figured in A. S. Atlas tab. 44, fig. 52, but its striæ are closer.



Fig. 37.

Rare. Viderejde (Viderö).

Distantes Cl. Syn. II, p. 80.

116. *Pinnularia intermedia* Lgst., Lgst. Spetsb. tab. I, fig. 3.

Here and there, but never in any considerable quantity.

117. *P. Balfouriana* Grun., Cl. Syn. II, tab. 1, fig. 18.

Not common. Trangisvaag (Syderö); Ejde (Österö); Højefjæld (Bordö).

118. *P. borealis* Ehr., V. H. Syn. tab. VI, fig. 3.

Scattered about in the material.

119. *P. lata* Bréb., W. Sm. Syn. tab. XVIII, fig. 167.

Not rare, but never in large quantity in any of the gatherings.

In fig. 38 (^{660/1}) I have figured a fragment of *P. lata* which is distinguished by its size and linear form. For, while *P. lata* (cf. Cl. Syn. II, p. 81) is said to attain a length of 0,13 mm., the specimen in question would when complete measure at least 0,192 mm. Unfortunately I have only succeeded in finding this incomplete specimen; it occurred in a gathering from Kvanhaugen (Syderö).

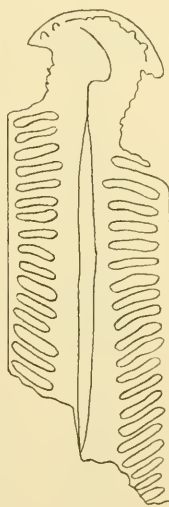


Fig. 38.

120. *P. alpina* W. Sm., Donk. Br. Diat. tab. IV, fig. 6.

Found dispersed in the gatherings as the preceding species, but not in great numbers. Plankton.

Tabellariæ Cl. Syn. II, p. 81.

121. *Pinnularia stauroptera* Grun., Donk. Br. Diat. tab. XII, fig. 3.

Trangisvaag, Kvalbø (Syderö); Højvig (Strömö).

Var. *interrupta* Cl., V. H. Syn. tab. VI, figs. 6—7.

Næs (Österö); Kirkebökamp (Strömö).

122. *P. stomatophora* Grun., A. S. Atl. tab. XLIV, figs. 27—29.

Found dispersed, but not rare.

In a gathering from Trangisvaag a *P. stomatophora* occurred in which the transapical fascia was reduced to a very narrow area, formed by the absence of a single stria on each side of the central nodule, and thus it forms a transitional form to f. *continua* Cl.

123. *P. mesogongyla* Ehr., Cl. Vega Exp. tab. XXXVI, fig. 20.
Trangisvaag (Syderö).

Brevistriatae Cl. Syn. II, p. 85.

124. *Pinnularia brevicostata* Cl., Cl. Diat. Finl. tab. I, fig. 5.
Thorshavn (Strömö).

125. *P. acrosphæria* Bréb. forma *genuina*, A. S. Atl. tab. XLIII, fig. 16.

Nolsö; Kirkebökamp, Thorshavn (Strömö); Trangisvaag (Syderö).
Rather rare in gatherings from these localities.

126. *P. nodosa* Ehr. forma *genuina*, A. S. Atl. tab. XLV, figs. 57—58.

Kvanhaugen (Syderö).

127. *P. parva* (Ehr.) Greg. var. *Lagerstedtii* Cl., Lgst. Spetsb. tab. II, fig. 4.

Rather rare. Tværaa, Trangisvaag (Syderö).

Majores Cl. Syn. II, p. 88.

128. *Pinnularia major* Kütz., V. H. Syn. tab. V, fig. 3, A. S. Atl. tab. XLII, fig. 8.

Not rare. Plankton.

129. *P. Dactylus* Ehr., A. S. Atl. tab. XLII, figs. 3, 4, 6.

Here and there. Common in a gathering labelled: »Algæ from a stream at the head of Trangisvaagfjord« (Syderö).

Complexæ Cl. Syn. II, p. 90.

130. *Pinnularia viridis* Nitzsch, V. H. Syn. tab. V, fig. 5.

Var. *intermedia* Cl., A. S. Atl. tab. XLII, figs. 9—10.

Var. *commutata* Grun., W. Sm. Syn. tab. XVIII, fig. 163 a.

Var. *leptogongyla* (Ehr.?) Grun., Donk. Br. Diat. tab. XII, fig. 4.

Var. *rupestris* Hantzsch, A. S. tab. XLV, fig. 44.

Scattered about in the whole of the material, the varieties mixed together with the main species.

131. *P. distinguenda* Cl., Cl. Diat. Finl. tab. I, fig. 1.

Plankton from »the mouth of Sandsvatn« (Sandö).

132. *P. gentilis* Donk., A. S. Atl. tab. XLII, fig. 2.

Here and there. Not rare in a gathering from Næs (Österö).

133. *P. nobilis* Ehr., V. H. Syn. tab. V, fig. 2.

Here and there.

134. *P. streptoraphe* Cl. var. *subconstricta* m. Fig. 39^{660/1}.

L. 0,102 mm., B., greatest, 0,017 mm.; in the middle 0,015 mm. Striæ 6—7 in 0,01 mm.

Differs from the typical *P. streptoraphe* in being slightly constricted in the middle.

Nolsö.

135. *P. isostauron* (Ehr.?) Grun., Cl. & Grun. arc. D. tab. I, fig. 14.

Not common. Nolsö.

Marinæ Cl. Syn. II, p. 94.

136. *Pinnularia cruciformis* Donk. var. *Færøensis* m. Fig. 40^{660/1}.

L. 0,029 mm., L. 0,01 mm. Striæ 10 in 0,01 mm.

Valve oval, almost linear; apices obtuse, truncate. Striæ radiant in the middle, convergent towards the apices. Transapical area rather broad. This variety comes nearest to *P. cruciformis* Donk. var. *brevior* Cl. (Vega Exp. tab. XXXV, fig. 18), but it is comparatively broader, more linear, and the striæ are more distant.

Arge (Strömö); Trangisvaag (Syderö).

P. sp. forma anormalis. Fig. 41^{660/1}.

Found in a gathering from Nolsö.

AMPHORA Ehr. 1840. Cl. Syn. II, p. 99.

137. *Amphora ovalis* Kütz. var. *libyca* Ehr., V. H. Syn. tab. I, fig. 2.

Found in several of the gatherings, but always only in small quantities.

138. *A. perpusilla* Grun., V. H. Syn. tab. I, figs. 8—9.

Here and there.

Halamphora Cl. Syn. II, p. 117.

139. *Amphora acutiuscua* Kütz., V. H. Syn. tab. I, fig. 18.

Rather rare. Trangisvaag (Syderö); Sand (Sandö).

140. *A. Terroris* Ehr., A. S. Atl. tab. XXV, fig. 18.

Rare. Trangisvaag (Syderö).



Fig. 39.



Fig. 40.



Fig. 41.

MASTOGLOIA Thwaites 1848. Cl. Syn. II, p. 142.

141. *Mastogloia Smithii* Thw. var. *lacustris* Grun., V. H. Syn. tab. IV, fig. 14.

Rare. Ejde (Strömö).

Var. *amphicephala* Grun., V. H. I. c., fig. 27.

Örnefjæld, Trangisvaag, Frodebö (Syderö); Sand (Sandö).

142. *M. elliptica* Ag., A. S. Atl. tab. CLXXXV, fig. 19.

Ejde (Österö).

Var. *punctata* Cl.

Rare. Thorshavn (Strömö).

ACHNANTHÆ Cl. Syn. II, p. 163.

Rhoicosphenia Grun. 1860. Cl. Syn. II, p. 163.

143. *Rhoicosphenia curvata* Kütz., V. H. Syn. tab. XXVI, figs. 1—3. Hestö; Nordreöer. Plankton.

Cocconeis (Ehr.) Cl. Syn. II, p. 168.

144. *Cocconeis Pediculus* Ehr., V. H. Syn. tab. XXX, figs. 28—30. Here and there.

A *Cocconeis* which appears in a gathering from Kvanhaugen (Syderö) must, as far as I can see, be regarded as a variety of *C. Pediculus* Ehr. As it, however, does not quite agree with any of the figures which Cleve refers to this species, I have given a figure of it in fig. 42 ($\frac{660}{1}$). L. 0,022 mm., B. 0,01 mm. Striæ 15—20 in 0,01 mm. On the hypotheca the striæ are only visible at the margin.

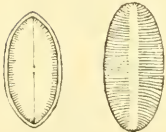


Fig. 42.

145. *C. Scutellum* Ehr., V. H. Syn. tab. XXIX, figs. 1—2. Trangisvaag (Syderö).

Eucoconeis Cl. Syn. II, p. 172.

146. *Cocconeis flexella* Kütz., V. H. Syn. tab. XXVI, figs. 29—31. Not rare. Plankton.

In a gathering from Sand I found a form which excepting its size corresponds exactly to *Achnanthidium maximum* A. Cl. (A. Cl. Lule Lapm. fig. 23), and as in *A. maximum* the pseudoraphe is almost rectilinear. L. 0,046 mm., B. 0,015 mm. I only saw the epitheca.

147. *C. minuta* Cl., Lgst. Spetsb. tab. II, fig. 16.

Here and there together with the above-mentioned.

Var. *alpestris* Br., Le Diatomiste II, tab. V, fig. 15.

Rare. Örnefjæld (Syderö); Thorshavn (Strömö).

Heteroneis Cl. Syn. II, p. 182.

148. *Achnanthes gibberula* Grun., V. H. Syn. tab. XXVII, figs. 47—49.

Kirkebökamp (Strömö).

149. *A. Liljeborgii* Grun., Le Diatomiste II tab. III, fig. 19.

Plankton from Sörvaagsvatn (Vaagö). Only one example of the epitheca was found. As it does not exactly correspond to the above-mentioned figure of Cleve I have given a figure of it in fig. 43 (^{660/1}).



Fig. 43.

Microneis Cl. Syn. II, p. 187.

150. *Achnanthes minutissima* Kütz., V. H. Syn. tab. XXVII, figs. 35—38.

Var. *cryptocephala* Grun., V. H. l. c., figs. 41—44.

The main species as well as the variety are rather common in many of the gatherings. In one gathering from Örneffjæld (Syderö) the var. *cryptocephala* occurs most frequently.

151. *A. linearis* W. Sm. var. *pusilla* Grun., V. H. Syn. tab. XXVII, fig. 33.

Thorshavn (Strömö).

152. *A. delicatula* Kütz., V. H. Syn. tab. XXVII, figs. 3—4.

Midvaag (Vaagö); Trangisvaag (Syderö).

Achnanthidium (Kütz. 1844) Heib. 1863. Cl. Syn. II, p. 191.

153. *Achnanthes lanceolata* Bréb., V. H. Syn. tab. XXVII, figs. 8—11.

Not rare in many of the gatherings. Occurs abundantly in a gathering labelled: »Algæ in slowly running water near Bosdalafos» (Vaagö).

Var. *Færoensis* m. Fig. 44 ^{660/1}.

L. c. 0,03 mm., B. 0,007—0,008 mm. Striae about 12 in 0,01 mm.

Valves narrow, lanceolate; epitheca with horseshoe-like mark; hypotheca with transapical fascia nearly reaching the margin. Otherwise both the valves of about the same form and size.



Fig. 44.

Not rare in some of the gatherings. Occurs rather abundantly in a gathering labelled: »Algæ in slowly running water near Bosdalafos» (Vaagö).

154. *A. coarctata* Bréb., Lgst. Spetsb. tab. I, fig. 16.

Here and there, but in the gatherings in which they occur, generally occurring in a few examples only. Plankton.

155. *A. brevipes* Ag. var. *intermedia* Kütz., V. H. Syn. tab. XXVI, figs. 21—22.

Rare. Midvaag (Vaagö).

EPITHEMIA Bréb. 1838. V. H. Syn., p. 138.

156. *Epithemia turgida* (Ehr.) Kütz., V. H. Syn. tab. XXXI, figs. 1—2.

Here and there.

Var. *Westermannii* Kütz., V. H. l. c., fig. 8.

Var. *granulata* Grun., V. H. l. c., figs. 5—6.

Both the varieties intermingled with the main species.

157. *E. Sorex* Kütz., V. H. Syn. tab. XXXII, figs. 7—8.

Trangisvaag (Syderö); Nordreöer. In a gathering from the latter locality this species occurs in considerable quantity. Plankton.

158. *E. Argus* Kütz., V. H. Syn. tab. XXXI, figs. 15—17.

Here and there.

159. *E. Zebra* (Ehr.) Kütz., V. H. Syn. tab. XXXI, figs. 9, 11—14.

Not rare in many of the gatherings.

Var. *proboscidea* Grun., V. H. l. c., fig. 10.

Trangisvaag (Syderö).

Var. *longicornis* M. Per. et. F. Herib., Herib. Diat. d'Auv. tab. III, fig. 13.

Selletræ (Österö).

Var. *longissima* M. Per. et. F. Herib., Herib. l. c., fig. 14.

Nordreöer.

160. *E. sp.* Fig. 45 ⁶⁶⁰/₁.

L. 0,06 mm., B. 0,012 mm. Costæ 11—12 in 0,01 mm.

Dorsal side of valve irregularly undulated. Costæ slightly radiant alternating with a — as far as I can see — double row of exceedingly small puncta. As I have seen one example only, and have not seen this form from the pleura-side I have not felt justified in introducing it as a new species.

Grothusvatn near Sand (Sandö).



Fig. 45.

RHOPALODIA O. Müller. Engl. Bot. Jahrb. XXII, 1895.

161. *Rhopalodia gibba* (Kütz.) O. M., V. H. Syn. tab. XXXII, figs. 1—2.

Not rare in many of the gatherings I have had for examination.

162. *R. ventricosa* (Grun.) O. M., V. H. Syn. tab. XXXII, figs. 4—5.

Frequently intermingled with the above.

163. *R. parallela* (Grun.) O. M., V. H. Syn. tab. XXXII, fig. 3.

Here and there mixed with the two above-mentioned. A short form of *R. parallela* appeared in a gathering labelled: »Algæ, ravine near Vaag« (Syderö).

164. *R. gibberula* (Ehr.) var. *rupestris* (Grun.) O. M., Sm. Syn. tab. I, fig. 12.

Not rare, but never in large quantities in any of the gatherings.

EUNOTIA Ehr. 1837. V. H. Syn., p. 141.

165. *Eunotia Arcus* Ehr., V. H. Syn. tab. XXXIV, fig. 2.

Kirkebökamp (Strömö).

Var. *uncinata* Grun., V. H. l. c., fig. 13.

Thorshavn (Strömö).

Var. *bidens* Grun., V. H. l. c., fig. 7.

Thorshavn, Kirkebökamp (Strömö).

166. *E. impressa* Ehr. var. *angusta* Grun., V. H. Syn. tab. XXXV, fig. 1.

Kvalbö (Syderö).

167. *E. major* (W. Sm.) Rabh., V. H. Syn. tab. XXXIV, fig. 14.

Here and there.

Var. *bidens* (Greg.) W. Sm., V. H. l. c., fig. 15.

Thorshavn (Strömö).

168. *E. gracilis* (Ehr.) Rabh., W. Sm. Syn. tab. XXXIII, fig. 285.

Not rare.

169. *E. exigua* Bréb., V. H. Syn. tab. XXXIV, fig. 11.

Not rare, but generally occurs only in small quantities in the gatherings.

170. *E. Nymanniana* Grun., V. H. Syn. tab. XXXIV, fig. 8.

Not rare in a gathering from Höjvig (Strömö).

171. *E. pectinalis* (Kütz.) Rbh., V. H. Syn. tab. XXXIII, figs. 15—16.

Found scattered about in many of the gatherings. A single gathering from Vatsndal (Syderø) consists almost exclusively of this species.

Var. *stricta* Rbh., V. H. l. c., fig. 18.

Var. *minor* Rbh., V. H. l. c., figs. 20—21.

These two varieties occur rather often mixed with the main species. The form *Himantidium Soleirolii* Kütz. W. Sm. Syn. tab. XXXIII, fig. 282 b' occurs rather often intermingled with the typical form and forming parts of the bands.



Fig. 46.

In fig. 46 (⁶⁶⁰/1) I have figured an *Eunotia* which I found in a gathering labelled: «Freshwater algae from a stream near «Kedlerne» near Thorshavn». L. 0,044 mm., B. 0,01 mm. Striae 15 in 0,01 mm., delicate, transversely lineate, radiant, in the middle more distant. Terminal nodules situated at the ventral side. This somewhat short and proportionally broad form perhaps ought most properly to be regarded as a variety either of *E. monodon* Ehr. or of *E. pectinalis*. In Lule Lapm. p. 31 A. Cleve mentions an *E. pect.* var. *compacta* which with regard to its dimensions agrees fairly well with the species in question; it is not figured.

172. *E. incisa* Greg., V. H. Syn. tab. XXXIV, fig. 35 a.

Here and there.

Var. *obtusiuscula* Grun., V. H. l. c., fig. 35 b.

Sand (Sandø).

173. *E. tridentula* Ehr. var. ? *perminuta* Grun., V. H. Syn. tab. XXXIV, figs. 29—30.

Kirkebökkamp (Strömø); Sandø Bæk (Sandø).

174. *E. prærupta* Ehr., V. H. Syn. tab. XXXIV, fig. 19.

Rare. Kirkebökkamp (Sandø).

Forma *curta*, V. H. l. c., fig. 24.

Occurs in several of the gatherings, but always only sparingly.

Var. *bidens* Grun., V. H. l. c., fig. 20.

Here and there, mixed with the above.

175. *E. robusta* Ralfs var. *Papilio* Grun., V. H. Syn. tab. XXXIII, fig. 8.

Kirkebökkamp (Strömø); Trangisvaag (Syderø). Only a few examples from both places.

Var. *Diadema* (Ehr.) Ralfs, V. H. l. c., fig. 12.

Ørnefjæld (Syderø); Næs (Østerø); Sand (Sandø). As the above, sparingly only.

176. *E. Triodon* Ehr., V. H. Syn. tab. XXXIII, fig. 9.

Rare. Klakken (Bordø).

177. **E. Diodon** Ehr., V. H. Syn. tab. XXXIII, fig. 6.

Kirkebökkamp, Thorshavn, Højvig (Strömö).

Forma **minor**, V. H. l. c., fig. 5.

Gjerdumrejn (Bordö).

178. **E. lunaris** (Ehr.) Grun., V. H. Syn. tab. XXXV, figs. 3—4.

Here and there.

179. **E. flexuosa** (Kütz.) var. **pachycephala** Grun., V. H. Syn. tab. XXXV, fig. 7.

Rare. Svartafos (Strömö), Ejde (Österö).

CERATONEIS Ehr. 1840. V. H. Syn., p. 148.

180. **Ceratoneis Arcus** Kütz., V. H. Syn. tab. XXXVII, fig. 7.

Not rare in many of the gatherings, one from Bosdalafos (Vaagö) consists mainly of this species.

SYNEDRA Ehr. 1831. V. H. Syn., p. 149.

181. **Synedra pulchella** Kütz., V. H. Syn. tab. XL, fig. 27.

Here and there. Plankton.

Var. **Smithii** Ralfs, V. H. Syn. tab. XLI, fig. 4.

Nolsö; Bosdalafos (Vaagö).

Var. **lanceolata** O'Meara, V. H. l. c., fig. 7.

Hestö; Trangisvaag (Syderö).

182. **S. Ulna** (Nitzsch.) Ehr., V. H. Syn. tab. XXXVIII, fig. 7.

Var. **danica** Kütz., V. H. l. c., fig. 14 a and b.

Var. **vitrea** Kütz., V. H. l. c., fig. 12.

Synedra Ulna is one of the commonest Diatoms of the Færøes; most frequent is the variety *danica*, fig. 14 a of Van Heurck. It occurs abundantly in several of the gatherings, e. g. from Trangisvaag (Syderö), Vedvig (Viderö), Vestmanhavn and Kirkebökkamp (Strömö). Plankton.

Var. **contracta** n. Fig. 47 ⁶⁶⁰/₁.

L. 0,112 mm., Br., greatest, 0,075 mm., in the middle 0,06 mm. Striæ 9 in 0,01 mm.

Slightly constricted. Striæ absent from the centre. This variety must doubtless be regarded as a transitional form of *Synedra Goulardii* Bréb. in litt. (Cl. & Grun. arc. Diat. tab. VI, fig. 119), which is, however, shorter and broader. *S. Goulardii* has been found in Buenos Ayres, Porto Rico, Kamtchatka and near Jenisei.

Found in a gathering from the Færøes labelled: »Green algæ from a swamp on Nolsö«.



Fig. 47.

183. *S. oxyrynchus* Kütz. var. *undulata* Grun., V. H. Syn. tab. XXXIX, fig. 2.

Hvidenes (Strömö).

184. *S. Acus* (Kütz.) V. H. Syn. tab. XXXIX, fig. 4.

Kirkeböcamp (Strömö).

185. *S. delicatissima* W. Sm. var. *mesoleja* Grun., V. H. Syn. tab. XXXIX, fig. 6.

Here and there. Rather common in a gathering from Bosdalafos (Vaagö). Plankton.

186. *S. Gaillonii* Ehr., V. H. Syn. tab. XXXIX, fig. 18.

Rare. Trangisvaag (Syderö).

187. *S. austriaca* Grun., V. H. Syn. tab. XXXIX, fig. 16 a and b.

Midvaag (Vaagö).

188. *S. fallax* Grun., V. H. Syn. tab. XXXIX, fig. 16 c.

Kirkeböcamp (Strömö).

189. *S. rumpens* Kütz. var. *fragilaroides* Grun., V. H. Syn. tab. XL, fig. 12.

Tværaa (Syderö); Nolsö; Thørshavn, Kirkeböcamp (Strömö).

These three species undoubtedly comes very near to *Fragilaria intermedia* Grun., V. H. Syn. tab. XLV, figs. 9—11. (Cfr. V. H. Syn. descriptions of tab. XXXIX, XL and XLV).

ASTERIONELLA Hassall 1855. V. H. Syn., p. 154.

190. *Asterionella formosa* Hass., V. H. Syn. tab. LI, figs. 19—20.

Plankton from Sörvaagsvatn (Vaagö).

NITZSCHIA Hassall 1845. Cl. & Grun. arc. Diat., p. 67.

Tryblionella (W. Sm.) Grun. Cl. & Grun. l. c., p. 67.

191. *Nitzschia debilis* Arn. & Ryl., Lgst. Spetsb. tab. II, fig. 3.

Midvaag (Vaagö).

192. *N. Tryblionella* Hantzsch var. *Victoriæ* Grun., V. H. Syn. tab. LVII, fig. 14.

Rare. Hestö.

193. *N. angustata* (W. Sm.) Grun. var. *hantzschoides* m. Fig. 48 ⁶⁶⁰/₁.

L. 0,045 mm., B. 0,007 mm. Striæ 15 in 0,01 mm.

Hantzschia-formed, sometimes nearly linear. Striæ delicate, transversely lineate.

Found dispersed in the material.



Fig. 48.

Apiculatæ Cl. & Grun. l. c., p. 72.

194. *Nitzschia apiculata* (Greg.) Grun., V. H. Syn. tab. LVIII, figs. 26—27.

Not rare in a gathering from Højeffjæld (Bordö).

Dubiæ Cl. & Grun. l. c., p. 77.

195. *Nitzschia thermalis* Kütz. var. *minor* Hilse, V. H. Syn. tab. LIX, fig. 22.

Vaags Ejde, Trangisvaag (Syderö).

Bilobatæ Cl. & Grun. l. c., p. 79.

196. *Nitzschia bilobata* W. Sm. var. *minor* Grun., V. H. Syn. tab. LX, figs. 2—3.

Here and there, but never in large quantity in any of the gatherings.

Grunovia Cl. & Grun. l. c., p. 82.

197. *Nitzschia Denticula* Grun., V. H. tab. LX, fig. 10.

Örneffjæld (Syderö); Nolsö; Vaag (Vaagö). Not rare in a gathering from the latter locality.

198. *N. sinuata* (W. Sm.) Grun., V. H. Syn. tab. LX, fig. 11.

Here and there.

Dissipatæ Cl. & Grun. l. c., p. 90.

199. *Nitzschia dissipata* (Kütz.) Grun., V. H. Syn. tab. LXIII, fig. 1.

Kirkeböcamp, Thorshavn (Strömö); Midvaag (Vaagö).

Sigmoideæ Cl. & Grun. l. c., p. 90.

200. *Nitzschia vermicularis* (Kütz.) Grun., V. H. Syn. tab. LXIV, fig. 1.

Thorshavn, Kirkeböcamp (Strömö); Ejde (Österö).

Sigmata Grun. Casp. S., p. 118.

201. *Nitzschia Sigma* W. Sm., V. H. Syn. tab. LXV, fig. 7.

Trangisvaag (Syderö); Bosdalafos (Vaagö).

Var. *rigida* (Kütz.) Grun., V. H. Syn. tab. LXVI, fig. 2.

Rare. Trangisvaag (Syderö).

Var. *diminuta* Grun., V. H. l. c., fig. 9.

Midvaag (Vaagö).

202. *N. Clausii* Hantzsch, V. H. Syn. tab. LXVI, fig. 10.

Midvaag (Vaagö).

Lanceolata Cl. & Grun. arc. Diat., p. 94.

203. *Nitzschia gracilis* Hantzsch., V. H. Syn. tab. LXVIII, figs. 11—12.

Nolsö.

204. *N. Palea* W. Sm., V. H. Syn. tab. LXIX, fig. 22 b.

Kirkebökamp (Strömö); Nolsö; Syderö.

205. *N. Kützingiana* Hilse, V. H. Syn. tab. LXIX, figs. 24—26.

Bosdalafos (Vaagö).

206. *N. communis* Rbh. var. *abbreviata* Grun., V. H. Syn. tab. LXIX, fig. 35.

Kirkebökamp (Strömö).

207. *N. Frustulum* (Kütz.) Grun., V. H. Syn. tab. LXVIII, figs. 27—29.

Here and there.

Var. *minutula* Grun., V. H. Syn. tab. LXIX, fig. 5.

Nolsö.

208. *N. Hantzschiana* Rbh., V. H. Syn. tab. LXIX, figs. 1—2.

Nolsö.

Var. *glacialis* Grun., V. H. l. c., fig. 9.

Höjefjæld (Bordö); Nolsö.

HANTZSCHIA Cl. & Grun. arc. Diat., p. 103.

209. *Hantzschia amphioxys* Grun., V. H. Syn. tab. LVI, figs. 1—2.

Rather rare. Nolsö.

Var. *leptocephala* Öst., Öst. Ferskv. Diat. Östg. tab. I, fig. 8.

Rare. Nolsö.

210. *H. elongata* (Hantzsch) Grun., V. H. Syn. tab. LVI, figs. 7—8.

Nolsö.

STENOPTEROBIA Bréb. O. M. Riesengeb., p. 33.

211. *Stenopteroberia anceps* (Lewis) Bréb., O. M. Riesengeb. tab. III, figs. 35—37.

Here and there in a gathering from Trangisvaag (Syderö); single examples in a gathering from Höjvig (Strömö) and in Plankton.

CYMATOPLEURA W. Sm. 1855. V. H. Syn. p. 167.

212. **Cymatopleura Solea** (Bréb.) W. Sm., V. H. Syn. tab. LV, fig. 5.
Rare. Plankton from the mouth of Sandsvatn (Sandö).

CAMPYLODISCUS Ehr. 1841. V. H. Syn., p. 189.

213. **Campylodiscus noricus** Ehr., A. S. Atl. tab. LV, fig. 8.
Rare. Plankton from Sörvaagsvatn (Vaagö).

SURIRELLA Turpin 1826. V. H. Syn., p. 186.

214. **Surirella Smithii** Ralfs., W. Sm. Syn. tab. VIII, fig. 59.
Trangisvaag (Syderö).
215. **S. biseriata** Bréb., A. S. Atl. tab. XXII, figs. 12—13 and tab. XXIII, fig. 2.

Scattered about in several of the gatherings. It occurs in great numbers in a gathering from Thorshavn (Strömö) and varies somewhat with regard to its outline.

216. **S. linearis** W. Sm., A. S. Atl. tab. XXIII, figs. 26 and 29, W. Sm. Syn. tab. VIII, fig. 58.

Found dispersed in many of the gatherings, varies somewhat.

217. **S. Lagerheimii** A. Cl., A. Cl. Lule Lapm., fig. 27.

Very rare. Only one example occurred in a gathering from Thors-havn (Strömö).

218. **S. Moelleriana** Grun., A. S. Atl. tab. XXIII, fig. 36 and tab. LVI, figs. 21—23. Fig. 49^{660/1}.

L. 0,032—0,066 mm., B. 0,014—0,016 mm.
Striæ 14—15 in 0,01 mm., canaliculi 3 in 0,01 m.

Valve rhombic-lanceolet or linear with apices cunate, in the latter case slightly constricted in the middle.

This characteristic *Surirella* is recorded by A. Schmidt from three localities: Holstein; Pensacola; Scotland: Lodgie Coldstone. As de Toni (Syll. p. 595) mentions it as occurring »ad« Holstein these three localities are doubtless salt or brackish-water localities. From the Færøes it appears scattered about in many of the gatherings and it suits the form figured in A. S. Atl. figs. 21 and 22 on tab. LVI so perfectly that I do not hesitate in placing it under this species.

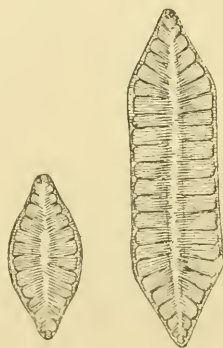


Fig. 49.

219. *S. ovalis* Bréb. var. *ovata* Kütz., V. H. Syn. tab. LXXIII, figs. 5—6.

Found dispersed in the material.

Var. *minuta* Bréb., V. H. l. c., fig. 10.

Lejnum (Strömö).

In a gathering from Bosdalafof (Vaagö) I found a small almost circular *Surirella*, the valve measures 0,02 mm. in length and 0,018 mm. in breadth. The canaliculi — ten on each side — extend far towards the central line, so that the breadth of the area is reduced to 0,004 mm. It corresponds most closely to the form figured in A. S. tab. XXIII, fig. 54 under the name of *S. ovata* Kütz.

220. *S. Brightwellii* W. Sm., A. S. Atl. tab. LVI, figs. 17—18.

Bosdalafof (Vaagö).

Coccochromaticæ.

MERIDION Ag. 1824. V. H. Syn. p. 161.

221. *Meridion circulare* Ag., V. H. Syn. tab. LI, figs. 10—15.

Scattered about in many of the gatherings, but never in large quantity.

DENTICULA Kütz. 1844. V. H. Syn., p. 159.

222. *Denticula tenuis* Kütz. var. *frigida* Grun., V. H. Syn. tab. XLIX, figs. 35—38.

Plankton from Sörvaagsvatn (Vaagö).

DIATOMA De Cand. 1805. V. H. Syn., p. 159.

223. *Diatoma elongatum* Ag., W. Sm. Syn. tab. XLI, fig. 311, V. H. Syn. tab. L, figs. 14, 18—22.

Scattered about in many of the gatherings. In one from Skopen (Sandö) more common. Varies somewhat in size. Plankton.

224. *D. hiemale* (Lyngb.) Heib., V. H. Syn. tab. LI, figs. 1—2.

Var. *mesodon* Kütz., V. H. l. c., figs. 3—4.

Very common in the material I have had for examination. Several of the gatherings, e. g. from Klakken (Bordö, Nolsö and Sandö Bæk (Sandö)) consist mainly of this species. The variety occurs intermingled with the main species.

FRAGILARIA Lyngbye 1819. V. H. Syn., p. 155.

225. *Fragilaria virescens* Ralfs, V. H. Syn. tab. XLIV, fig. 1.

Not rare. In gatherings from Skjælling (Strömö) and Nolsö, common.

Var. *exigua* Grun., V. H. l. c., figs. 2—3.

Kirkebökamp (Strömö).

Var. *subsalina* Grun., V. H. l. c., fig. 5.

Sand (Sandö).

226. *F. undata* W. Sm., V. H. Syn. tab. XLIV, fig. 9.

Næs (Österö); Sand (Sandö); Trangisvaag (Syderö).

227. *F. capucina* Desm., V. H. Syn. tab. XLV, fig. 3.

Var. *acuta* Grun., V. H. l. c., fig. 4.

Var. *lanceolata* Grun., V. H. l. c., fig. 5.

Not rare in many of the gatherings. The varieties, however — especially *lanceolata* — occur almost as frequently as the main species.

228. *F. intermedia* Grun., V. H. Syn. tab. XLV, figs. 9—11.

Not rare in several of the gatherings. In some gatherings, e. g. from Trangisvaag, Kvanhaugen (Syderö) and Thorshavn (Strömö), common.

229. *F. æqualis* Hub. var. *producta* Lgst., Lgst. Spetsb. tab. I, fig. 1.

Kirkebökamp (Strömö); Klaksvig (Bordö).

230. *F. mutabilis* (W. Sm.) Grun., V. H. Syn. tab. XLV, fig. 12.

Nolsö.

Var. *elliptica* Schum., V. H. l. c., figs. 15—17.

Here and there.

231. *F. construens* (Ehr.) Grun. var. *Venter* Grun., V. H. Syn. tab. XLV, fig. 26.

Plankton from Sörvaagsvatn (Vaagö).

232. *F. parasitica* (W. Sm.) Grun., W. Sm. Syn. tab. LX, fig. 375.

Kirkebökamp (Strömö).

233. *F. pacifica* Grun., V. H. Syn. tab. XLIV, fig. 22.

Trangisvaag, Kvalbøejde (Syderö); Hestö.

234. *F. lævissima* Cl. var. *undulata* m. Fig. 50^{660/1}, cfr. Cl. Fz. Jos. L. p. 9, fig. 9.

L. 0,018 m., B. 0,005 m.

In »Diatoms from Franz-Josef Land« P. T. Cleve mentions a new *Fragilaria*, L. 0,011—0,016 mm., B. 0,004 mm. He names it *F. lævissima* as he has not seen any transverse striae. It has been found »abundant in one sample fra Cape Flora«. Through the kindness of Professor Cleve it has been possible for me to compare the form found here with the original specimens of *F. lævissima* to which it corresponds fairly well, excepting that it is slightly undulated. I have just been able to catch a glimpse of the striae, they are exceedingly delicate and, as is generally the case in *Fragilaria*, are transversely parallel.

In a gathering from Høje fjæld on Bordö, rather rare.



Fig. 50.

PERONIA Bréb. & Arn. 1868. V. H. Syn., p. 145.

235. *Peronia erinacea* Bréb. & Arn., V. H. Syn. tab. XXXVI, fig. 19.

Trangisvaag (Syderö); Hestö; Kirkeböcamp (Strömö).

TABELLARIA Ehr. 1839. V. H. Syn., p. 162.

236. *Tabellaria fenestrata* (Lyngb.) Kütz., V. H. Syn. tab. LII, figs. 7—8.

Occurs in many of the gatherings, but only exceptionally in large quantities. Plankton.

237. *T. flocculosa* (Roth.) Kütz., V. H. Syn. tab. LII, figs. 10—12.
Very common. In some gatherings, e. g. from Höjefjæld (Bordö) and Svartafos (Strömö), abundant. Plankton.

DIATOMELLA Grev. 1855. De Toni Syll. II, p. 742.

238. *Diatomella Balfouriana* W. Sm., W. Sm. Syn. tab. LXI, fig. 383.

Found dispersed in several of the gatherings. Common in two gatherings only — one from Trangisvaag (Syderö) and one from Höjefjæld (Bordö).

RHABDONEMA Kütz. 1844. V. H. Syn., p. 165.

239. *Rhabdonema arcuatum* (Ag.) Kütz., V. H. Syn. tab. LIV, figs. 14—16.

Rare. Trangisvaag (Syderö).

TETRACYCLUS (Ralfs) Grun. 1862. V. H. Syn., p. 166.

240. *Tetracyclus emarginatus* W. Sm., Herib. Diat. d'Auv. tab. III, fig. 27.

Here and there, but not common in any of the gatherings.

MELOSIRA Ag. 1814. V. H. Syn., p. 197.

241. *Melosira varians* Ag., V. H. Syn. tab. LXXXV, figs. 10, 11 and 14, 15.

Not rare. Common in gatherings from Thorshavn and Kvanhaugen (Syderö); a gathering from Bosdalafos (Vaagö) consisted mainly of it.

242. *M. Roeseana* Rbh., V. H. Syn. tab. LXXXIX, figs. 1—3.

Rather rare and occurring only in a few examples. Nolsö; Vaag (Vaagö); Höjefjæld (Bordö).

243. *M. distans* Kütz. var. *nivalis* W. Sm., V. H. Syn. tab. LXXXVI, figs. 25—27.

Kirkebökamp, Thorshavn (Strömö); Midvaag (Vaagö).

244. *M. crenulata* Kütz., V. H. Syn. tab. LXXXVIII, figs. 3—5, W. Sm. Syn. tab. LIII, fig. 337.

Not rare. Occurs abundantly in gatherings from Hvidenæs (Strömö); Trangisvaag (Syderö) and Bordö.

245. *M. (Paralia) sulcata* (Ehr.) Kütz., W. Sm. Syn. tab. LIII, fig. 338.

Midvaag (Vaagö).

Var. *coronata*, A. S. Atl. tab. CLXXVI, fig. 20.

Rare. Trangisvaag (Syderö).

CYCLOTELLA Kütz. 1833. V. H. Syn., p. 213.

246. *Cyclotella comta* (Ehr.) Kütz. var. *radiosa* Grun., V. H. Syn. tab. XCIII, fig. 2.

Rare. Bosdalafos, Midvaag (Vaagö).

247. *C. antiqva* W. Sm., V. H. Syn. tab. XCII, fig. 1.

Plankton from Sörvaagsvatn (Vaagö).

BIDDULPHIA Greg. 1871. V. H. Syn., p. 203.

248. *Biddulphia aurita* (Lyngb.) Bréb., V. H. Syn. tab. XCVIII, figs. 4—9.

Rare. Trangisvaag (Syderö).

From Lyngbye's Herbarium in the Botanical Gardens, Copenhagen, I have had six sheets for examination and only three of these sheets contained freshwater species and among these the following forms occurred: —

Frustulia vulgaris Thw., V. H. Syn. tab. XVII, fig. 6.

Cymbella ventricosa Kütz., V. H. Syn. tab. III, fig. 14.

— *cymbiformis* (Ag.) Kütz., V. H. Syn. tab. II, fig. 11.

Navicula viridis Kütz. var. *slesvicensis* Grun., V. H. Syn. tab. VII, fig. 26.

Gomphonema geminatum Lyngb., W. Sm. Syn. tab. XXVII, fig. 235.

Achnanthes minutissima Kütz. var. *cryptocephala* Grun., V. H. Syn. tab. XXVII, figs. 41—44.

Eunotia praerupta Ehr. var. *curta* Grun., V. H. Syn. tab. XXXIV, fig. 24.

Synedra Ulna (Nitzsch.) Ehr., V. H. Syn. tab. XXXVIII, fig. 7.

Diatoma elongatum Ag., W. Sm. Syn. tab. XL and XLI, fig. 311.

— *hiemale* (Lyngb.) Heib., V. H. Syn. tab. LI, figs. 1—2.

- Fragilaria virescens* Ralfs, V. H. Syn. tab. XLIV, fig. 1.
 — *intermedia* Grun., V. H. Syn. tab. XLV, fig. 11.
Tabellaria flocculosa Kütz., W. Sm. Syn. tab. XLIII, fig. 316.

The following freshwater species are mentioned in Rostrup's list in Bot. Tidsskr., vol. IV: —

- Surirella ovala* Kütz. Found among *Conferva implexa* from a larger stream on Strömö.
Cocconeis communis Heib. This and all the following Diatoms which are given without habitat were found in a large stream near Thorshavn.
Ceratoneis Arcus (Ehr.) Kütz.
Cymbella variabilis (Cramer) Heib.
Himantidium Arcus (Ehr.) var. *bidens* Ehr.
Epithemia gibba Ehr.
 — *turgida* Kütz. Thorshavn; coast of Skuvö.
 — *Sorex* Kütz.
 — *Zebra* Kütz.
Gomphonema geminatum (Lyngb.) Ag. Has already been recorded by Lyngbye as found in alpine rivers at Arge and Skælling. We found it near Thorshavn.
 — *acuminatum* Ehr. Amongst *Fontinalis* on Vaagö.
Navicula elliptica Kütz.
Tabellaria flocculosa (Rbh.) Kütz. Amongst *Fontinalis* Vaagö, and *Sphagnum*, Strömö.
 — *fenestrata* Kütz. With the above.
Synedra splendens Kütz.
 — *longissima* W. Sm.
Fragilaria pectinalis (Müll.) Lyngb. In stream on aquatic plants. Lyngb.
Diatoma hyemale (Lydgb.) Heib. Here and there in streams. Lyngb. We found it near Thorshavn.
Melosira nivalis W. Sm. Amongst *Sphagnum*, Strömö.
Pinnularia major Rbh. With the above.
 — *alpina* W. Sm. With the two above-mentioned.

In a fragment of *Diatomaceous silex* picked up near Thorshavn and examined by Mr. C. Hansen of Høyer the following Diatoms were found: —

- Epithemia proboscidea* Kütz.
 — *turgida* Kütz.
 — *Zebra* Kütz.
Cymbella variabilis (Cramer) Heib.
Navicula viridis Nitzsch.
 — *acuta* W. Sm.
Tabellaria flocculosa Kütz.
Fragilaria parasitica (W. Sm.) Heib.
Gomphonema geminatum (Lyngb.) Heib.