QK572

.W4

W41

West, William

A further contribution to the
freshwater algae of the West
Indies.

QK572

.W4

W41

shorter and much less deeply bifid than in *C. rhynchophysa*. It also appears to be rather more slender than in that species. I therefore venture to contend that *C. rhynchophysa* of Fisch. Mey. & Avé-Lall. Ind. Sem. Hort. Petrop. ix. Suppl. 9, is still a desideratum to the flora of Great Britain and Ireland.

LIBRARY
NEW YORK
BOTANICAL
GARDEN

Journ. Linn. Soc. Bot. 34:1899.

A further Contribution to the Freshwater Algæ of the West Indies. By W. WEST, F.L.S., and G. S. WEST, B.A., A.R.C.S.

[Read 16th March, 1899.]

THE Algæ included in this paper were collected mainly in the Island of Dominica by Mr. W. R. Elliott in January and February, 1896, and consisted of dried specimens, numbered and localized. The numbers following the localities refer to the numbered sheets at the British Museum, at which place the specimens can be consulted.

In 1894 we published a short paper "On some Freshwater Algæ from the West Indies" (Journ. Linn. Soc., Bot. vol. xxx.), in which 63 species were recorded from the islands of Dominica and St. Vincent, and the present paper considerably enlarges our knowledge of West Indian species of these plants. Of the 63 species mentioned in the previous paper, 21 have been found in other localities, and 66 additional ones are recorded, the latter being prefixed by an asterisk (*). One species (*Rhaphidium fractum*) and two varieties (*Mesotænium Kramstai*, Lemmerm., var. *brevis*, and *Cylindrocystis tumida*, F. Gay, var. *dominicensis*) are described as new. One alga, *Lyngbya majuscula*, Harv., is truly a marine species, but it was found in the collection, and is therefore recorded.

A number of both Desmids and Diatoms were noted from subaërial habitats—a sure indication of a constantly moist atmosphere; these occurred chiefly among patches of *Scytonema*, *Schizothrix*, and other filamentous algæ, and often on trees.

In the measurements given of the Myxophyceæ in this paper, "crass. fil." = the diameter of the sheath containing the trichomes, and "crass. trich." = the diameter of the cells without the sheath.

MAR 15 1899

Class CHLOROPHYCEÆ.

Ord. CONFERVACEÆ ISOGAMÆ.

Fam. CONFERVACEÆ.

*1. MICROSPORA ABBREVIATA, *Lagerh. in Bericht. Deutsch. Bot. Gesellsch.* v. 1887, p. 417.—*Conferva abbreviata, Rabenh. Krypt. Flor. v. Sachs.* 1863, p. 246; *Flor. Europ. Algar.* iii. p. 323.

Hab. On roadside near Roseau Lake, Dominica (2700 ft.). No. 1160.

*2. MICROSPORA PACHYDERMA, *Lagerh. l. c.*—*Conferva pachyderma, Wille, "Om Hvilecell. hos Conferva," Öfvers. af K. Vet.-Akad. Förh.* 1881, no. 8, p. 20.

Hab. On rocks, Castle Bruce River, Dominica (2000–3000 ft.). No. 1697.

Fam. CHROOLEPIDACEÆ.

3. TRENTEOHLIA VILLOSA, *De Toni, Syll. Algar.* i. p. 239.—*Chroolepus villosa, Kuetz. Phyc. gener.* p. 284; *Spec. Algar.* p. 428.

Crass. cell. veget. 18–22 μ .

Hab. On trees in woods round Roseau Lake, Dominica. No. 1164.—On trees, St. Aroment, Roseau, Dominica. No. 1254.

A species was noticed on banks at Emsol, Roseau, Dominica. No. 986. The specimens were probably young forms of *T. villosa*. Branches few, short, and situated at long intervals along the primary filaments.

Crass. fil. 18–20 μ .

*4. TRENTEOHLIA sp.

Specimens very fragmentary; thickness of cells 8.5–14.5 μ , 1½ times longer than their diameter.

Hab. Roseau Valley, Dominica, on bark. No. 1344.

Fam. CLADOPHORACEÆ.

*5. RHIZOCLONIUM HIEROGLYPHICUM, *Kuetz. Phyc. gener.* p. 205; *Spec. Algar.* p. 385; *Stockmayer, "Ueber die Algen-*

gattung Rhizoclonium," Verhand. zool.-bot. Gesellsch. Wien, 1890, p. 578.

Var. TORTUOSUM, *Stockm. in Verh. zool.-bot. Gesellsch. Wien, 1890, p. 583.*—*Rhizoclonium tortuosum, Kuetz. Phyc. Germ. p. 205; Spec. Algar. p. 384.*

Short lateral branches entirely absent; cell-membrane lamellose.

Crass. fil. 25–32.5 μ ; crass. membr. cell. 3.5–5.5 μ .

Hab. Growing in small stream, Roseau Valley, Dominica. No. 1176.

Ord. CONJUGATÆ.

Fam. ZYGNEMACEÆ.

*6. MOUGEOTIA sp.

Crass. cell. veget. 8.6 μ .

Hab. On leaves in warm stream, road to Roseau Lake, Dominica (2500 ft.). No. 1178.

*7. ZYGNEMA ERICETORUM, *Hansg. in Archiv Naturw. Landesdurchf. von Böhmen, Bd. vi. 1888, pp. 155–6.*—*Zygogonium ericetorum, Kuetz. Phyc. gener. 1843, p. 280.*

Crass. cell. veget. 16–22 μ .

Hab. On bank, road to Lake, Dominica. No. 1222.—In stream, Wotten Waven, Dominica. No. 1248.—On ground, crater, Grande Soufrière, Dominica. Nos. 1835 and 1840.

*8. SPIROGYRA NEGLECTA, *Kuetz. Species Algar. 1849, p. 441.*—*Zygnema neglecta, Hass. Brit. Freshw. Alg. 1845, p. 142, t. 23. ff. 1, 2.*

Var. TERNATA, *West & G. S. West, "Welw. Afric. Freshw. Alg.," Journ. Bot. xxxv. 1897, p. 41.*—*S. ternata, Ripart, in Bull. Soc. Bot. Fr. xxiii. 1876, p. 162.*

Crass. cell. veget. 44–57 μ ; long. zygosp. 84–100 μ ; lat zygosp. 48–54 μ .

Hab. In stream, Wotten Waven, Dominica. No. 1248.

*9. CHOASPIS STICTICA, *O. Kuntze, Revis. Gen. Plant. 1891, p. 887.*—*Conferva stictica, Engl. Bot. Choaspis serpentaria, S. F. Gray, Arrangement Brit. Pl. 1821, vol. i. p. 299 (nomen prius).* *Sirogonium sticticum, Kuetz.*

Crass. cell. veget. $36-41\ \mu$; long. zygosp. $90-104\ \mu$; lat. zygosp. $57-61\ \mu$.

Hab. On bank at roadside, Emsol, near Roseau, Dominica. No. 983.

Gray's description of *Choaspis* is a very good one of the plant, and is twenty-two years previous to Kuetzing's description of *Sirogonium*. We think that the peculiar conjugation sufficiently separates this genus from *Spirogyra*.

Fam. DESMIDIACEÆ.

*10. GONATOZYGON RALESII, *De Bary, Conj.* p. 76-7, t. 4. ff. 23-25.

Long. cell. $224\ \mu$; lat. $12\cdot5\ \mu$.

Hab. Head of Castle Bruce River, Dominica. No. 1484.

*11. MESOTÆNIUM ENDLICHERIANUM, *Näg. Gattung. einz. Alg.* 1849, p. 109. t. vi. B.

Hab. On banks, Morne Micotrin, Dominica. No. 1109.

*12. M. KRAMSTAI, *Lemmermann, "Zur Algenfl. des Riesengebirges," Forschungsberichte aus der Biol. Stat. zu Plön.* iv. 1896, pp. 115-117, c. fig.

Var. BREVIS, var. nov.

Var. cellulis angustioribus brevioribusque.

Long. $25-34\cdot5\ \mu$; lat. $6\cdot5-7\ \mu$.

Hab. On bank, Morne Micotrin, Dominica. No. 1109.

13. M. MICROCOCCUM, *Kirchn. Alg. Schles.* p. 134.—*Palmogloea micrococca*, *Kuetz. Tab. phycolog.* i. p. 20, t. 25. f. 5.

Long. $17-18\ \mu$; lat. $8-8\cdot5\ \mu$.

Hab. On bank, road to Lake, Dominica (2700 ft.). No. 1222.

*14. CYLINDROCYSTIS TUMIDA, *F. Gay, 'Essai monogr. loc. Conj.,' Montpellier*, 1884, p. 52, t. 1. f. 1; "*Note Conj. du midi France*," *Bull. Soc. bot. Fr.* vol. xxxi. p. 334.

Var. DOMINICENSIS, var. nov.

Var. cellulis multe minoribus, diametro $2-2\frac{1}{4}$ -plo longioribus, ad medium leviter sed distincte constrictis.

Long. $42\cdot5-48\ \mu$; lat. $20-21\ \mu$.

Hab. On rocks, Castle Bruce River (2000-3000 ft.), Dominica. No. 1697.

*15. *PENIUM CURTUM*, Bréb. in Kuetz. *Species Algar.* 1849, p. 167.—*Closterium curtum*, Bréb. 1840. *Cosmarium curtum*, Ralfs, *Brit. Desm.* p. 109, t. 32. f. 9.

Hab. With the preceding species.

*16. *P. DIDYMOCARPUM*, Lund., “*Desm. Suec.*,” *Act. Reg. Soc. Scient. Upsal.* 1870, p. 85, t. 5. f. 9.

Forma cellulis latioribus; long. 29μ ; lat. 17μ .

Hab. On banks, Morne Micotrin, Dominica. No. 1109.

This form is somewhat similar to the “*Penium* sp.? mit *Penium didymocarpum* Lundell verwandt” figured by Heimerl in *Verhandl. zool.-botan. Gesellsch. Wien*, 1891, t. 5. f. 5, but is comparatively a little broader.

*17. *P. NAVICULA*, Bréb. in *Mém. Soc. Sc. Nat. Cherbourg*, vol. iv. 1856, p. 146, t. 2. f. 37.

Long. 30μ ; lat. 11.5μ .

Hab. Among *Trentepohlia villosa*, De Toni, on trees in woods round Roseau Lake, Dominica. No. 1164.

18. *TETMEMORUS LEVIS*, Ralfs, *Brit. Desm.* p. 147, t. 24. f. 2.

Hab. On banks, Morne Micotrin, Dominica. No. 1109.

*19. *T. GRANULATUS*, Ralfs in *Ann. & Mag. Nat. Hist.* vol. xiv. 1844, p. 257, t. 8. f. 2; *Brit. Desm.* p. 147, t. 24. f. 2, t. 33. f. 1.

Forma MINOR, Nordst. *Alg. Sandvic.* p. 10.

Long. 100μ ; lat. 26.5μ .

Hab. On roadside near Roseau Lake (2700 ft.), Dominica. No. 1160.

20. *COSMARIUM PSEUDOPYRAMIDATUM*, Lund., “*Desm. Suec.*,” *Act. Reg. Soc. Scient. Upsal.* 1870, p. 41, t. 2. f. 18.

Hab. On banks, Morne Micotrin, Dominica. No. 1109.—On bank near Roseau Lake (2700 ft.), Dominica. No. 1180.

A proportionately longer form was noticed: long. 57μ ; lat. 28μ ; lat. isthm. 12μ .

*21. *C. QUADRATUM*, Ralfs in *Ann. & Mag. Nat. Hist.* vol. xiv. 1844, p. 395, t. 11. f. 9.

A small form: long. 46μ ; lat. 26.5μ ; lat. isthm. 12μ .

Hab. In warm stream, road to Roseau Lake (2500 ft.), Dominica. No. 1177.

*22. *COSMARIUM RECTANGULARE*, *Grun. in Rabenh. Flor. Europ. Algar.* iii. p. 166.—*C. gotlandicum*, *Wittr. in Bih. till K. Sv. Vet.-Akad. Handl.* Bd. i. no. 1, p. 60, t. 4. f. 14.

A form somewhat approaching var. *africanum*, West & G. S. West ("Algæ from Central Africa," *Journ. Bot.* xxxiv. 1896, p. 379, t. 361. f. 14).

Long. 31 μ ; lat. 23 μ ; lat. isthm. 10 μ .

Hab. On banks, Morne Micotrin, Dominica. No. 1109.

23. *C. OBLIQUUM*, *Nordst.*, "*Norges Desmid.*," *Acta Univ. Lund*, vol. ix. p. 23, t. 1. f. 8.

Long. 19–22 μ ; lat. 16.5–17 μ ; lat. isthm. 6.5–8 μ ; crass. 9.5 μ .

Hab. On banks, Morne Micotrin, Dominica. No. 1109.—On rocks, Castle Bruce River (2000–3000 ft.), Dominica. No. 1697.

*24. *C. LÆVE*, *Rabenh. Flor. Europ. Algar.* iii. p. 161; *Nordst. in Öfvers. af K. Vet.-Akad. Förh.* 1876, no. 6, p. 29, t. 12. f. 4.

Long. 30 μ ; lat. 19 μ ; lat. isthm. 7 μ .

Hab. On leaves, Wotten Waven, Dominica. No. 1240.

*25. *C. ANNULATUM*, *De Bary, Conj.* p. 46.—*Dysphinctium annulatum*, *Näg. Gattung. einz. Alg.* p. 110. t. 6 f.

Var. *ELEGANS*, *Nordst.*, "*Norges Desmid.*," *Acta Univ. Lund*, vol. ix. p. 23.

Long. 36–39 μ ; lat. 19–21 μ .

Hab. On rocks, Castle Bruce River (2000–3000 ft.), Dominica. No. 1697.

*26. *HYALOTHECA DISSILIENS*, *Bréb. in Ralfs, Brit. Desm.* p. 51, t. 1. f. 1.

Lat. 17 μ .

Hab. On leaves in warm stream, road to Roseau Lake (2500 ft.), Dominica. No. 1178.

Ord. PROTOCOCCOIDEÆ.

Fam. PALMELLACEÆ.

*27. *RHAPHIDIUM FRACTUM*, sp. n.

R. cellulis semper singulis, gregariis, leviter curvatis, diametro

7-10-plo longioribus, apices versus plus incurvatis, apicibus acutis; contentum chlorophyllosum cellularum viride, in partibus subæqualibus quatuor distincte divisum.

Long. 19-36.5 μ ; lat. 2.6-3.4 μ .

Hab. In stream, Wotten Waven, Dominica. No. 1249.

This species is nearest to *Rhaphidium Braunii*, Näg. (in Kuetz. Spec. Algar. p. 891; Rabenh. Flor. Europ. Algar. iii. p. 45), but the form of the cells, which are narrower, and the peculiar division of the contents easily distinguish it. Some specimens were noticed in which the contents were divided into 3 or 5 parts, but these were abnormal and very scarce.

*28. OOCYSTIS SOLITARIA, *Wittr. in Wittr. & Nordst. Alg. Exsic.* no. 244.

Hab. On trees in woods round Roseau Lake, Dominica. No. 1164.

*29. GLÆOCYSTIS GIGAS, *Lagerh. in Öfvers. af K. Vet.-Akad. Förh.* 1883, no. 2, p. 63.—*Protococcus gigas*, *Kuetz. Phyc. Germ.* 1845, p. 145. *Chlorococcum gigas*, *Grun.*

Hab. With the preceding species.

*30. TROCHISCIA ASPERA, *Hansg. in Hedwigia*, 1888, Heft 5 u. 6.—*Acanthococcus aspera*, *Reinsch, in Berichte der Deutsch. bot. Gesellsch. in Berlin*, 1886, p. 239, t. 11, f. 2.

Diam. cell. 15-17.5 μ .

Hab. In stream, Wotten Waven, Dominica. No. 1249.

Class MYXOPHYCEÆ.

Ord. HORMOGONEÆ.

Sub-ord. HETEROCYSTEEÆ.

Fam. RIVULARIACEÆ.

*31. CALOTHRIX EPIPHYTICA, *West & G. S. West*, "*Welw. Afric. Freshw. Alg.*," *Journ. Bot.* xxxv. 1897, p. 240.

Hab. Epiphytic on *Tolypothrix byssoidea*, on leaves, Wotten Waven, Dominica. No. 1240.

Fam. SIROSIPHONIACEÆ.

32. *HAPALOSIPHON INTRICATUS*, West, "*Alg. from West Indies*," *Journ. Linn. Soc., Bot.* vol. xxx. (1894) p. 271-2, t. 15. ff. 16-28; West & G. S. West, "*Welw. Afric. Freshw. Alg.*," *Journ. Bot.* xxxv. 1897, p. 242.

Hab. In stream, Wotten Waven, Dominica. No. 1249.

33. *STIGONEMA HORMOIDES*, Born. et Flah., "*Révis. de Nostoc. Hétérocyst.*," *Ann. Sci. Nat.* 7^e série, *Bot.* vol. v. (1887) p. 69.—*Scytonema hormoides*, Kuetz. *Sirosiphon brevis*, Kuetz. in *Bot. Zeit.* 1847, p. 196; *Tab. Phyc.* ii. p. 10, t. 34. f. ii. *Sirosiphon hormoides*, Kuetz. *Spec. Algar.* p. 316; *Tab. Phyc.* ii. p. 10, t. 34. f. iv.

Crass. fil. 10-14.5 μ .

Hab. Abundant on banks, Morne Micotrin, Dominica. No. 1109.—On roadside and on bank, near Roseau Lake (2700 ft.), Dominica. Nos. 1160 and 1180.—On rocks, Castle Bruce River, (2000-3000 ft.), Dominica. No. 1697.

34. *S. MINUTUM*, Hass. *Brit. Freshw. Alg.* i. p. 230, t. 67. ff. 3-4; Born. et Flah. l. c. pp. 72-74.

Hab. In stream, Wotten Waven, Dominica. No. 1249.

*35. *S. OCELLATUM*, Thur. in *Ann. Sc. Nat.* 6^e sér. *Bot.* i. (1875) p. 380.—*Sirosiphon ocellatus*, Kuetz. *Spec. Algar.* p. 317; *Tab. Phyc.* ii. p. 11, t. 37. f. ii.

Hab. On rocks, Castle Bruce River (2000-3000 ft.), Dominica. No. 1697.

Fam. SCYTONEMACEÆ.

36. *MICROCHÆTA TENUISSIMA*, West, "*Alg. West Ind.*," *Journ. Linn. Soc., Bot.* vol. xxx. (1894) p. 269.

Hab. With the preceding species.

37. *SCYTONEMA AMBIGUUM*, Kuetz. *Spec. Algar.* p. 894; *Tab. Phyc.* ii. p. 7, t. 26. f. ii.

Crass. fil. 10.5 μ ; crass. trich. 2.7-3 μ .

Hab. On bank near summit, Couliabon (3700 ft.), Dominica. No. 1899.

*38. *SCYTONEMA HOFMANNI*, *Agardh, Syn. Algar. Scand.* 1817, p. 117; *Born. et Flah.*, "Revis. des Nostoc. Hétérocyst.," *Ann. des Sci. Nat.* 7^e sér. Bot. vol. v. (1887) p. 97.—*Scytonema Julianum*, *Menegh.*

The filaments, which were not incrustated with lime, were strongly agglutinated together in vertical tufts about 2 to 4 mm. high, in the manner of a *Symploca* or some species of *Schizothrix*. The sheath was perfectly colourless and very thin; the branches were very scarce and sometimes single. The cells were more often longer than broad, and varied from subquadrate to twice longer than their diameter.

Crass. fil. 9·5–10·5 μ ; crass. trich. 7–7·5 μ .

Hab. Head of Castle Bruce River, Dominica. No. 1484.

39. *S. AMPLUM*, *West, "Alg. West Indies," Journ. Linn. Soc., Bot.* vol. xxx. (1894) p. 270.

Hab. On rocks, Castle Bruce River (2000–3000 ft.), Dominica. No. 1697.

40. *S. MIRABILE*.—*Conferva mirabilis*, *Dillw. Scytonema figuratum*, *Agardh, Syst. Algar.* p. 38. *S. calotrichoides*, *Kuetz. Spec. Algar.* p. 307; *Tab. Phyc.* ii. p. 6, t. 22. f. ii.; *Rabenh. Flor. Europ. Algar.* ii. p. 253.

Crass. fil. 20–23 μ ; crass. trich. 7·5–9·5 μ .

Hab. On rocks, Hampstead Valley (850 ft.), Dominica. No. 2171.

*41. *TOLYPOTHRIX BYSSOIDEA*, *West & G. S. West, "Welw. Afric. Freshw. Alg.," Journ. Bot.* xxxv. 1897, p. 267.—*Hassallia byssoides*, *Hass. Brit. Freshw. Alg.* i. p. 233–4; ii. t. 67. f. 5; *Born. et Flah.*, "Revis. des Nostoc. Hétérocyst.," *Ann. Sci. Nat.* 7^e sér. vol. v. (1887) p. 116.

Crass. fil. 16·5–18 μ ; crass. trich. 10·5–12·5 μ .

Hab. On leaves, Wotten Waven, Dominica. No. 1240.

Although the form seen occurred on the leaves of trees, it agreed with the f. *saxicola*, Grunow (in *Born. et Flah. l. c.* p. 117) and not with the f. *lignicola*, *Born. et Flah.* The sheaths of the younger filaments were almost colourless, and those of the older filaments were somewhat rough on the exterior. The cells in some of the filaments were almost as long as broad.

Fam. NOSTOCEÆ.

*42. *NOSTOC MUSCORUM*, *Agardh, Dispos. Algar. Suec.* 1812, p. 44; *Cooke, Brit. Freshw. Alg.* p. 230, t. 90. ff. 12-18.

The specimens approached var. *tenax*, Thuret, in the thickness of the trichomes and in the small size of the spores.

Crass. trich. 3-3.5 μ ; crass. heterocyst. 5.5 μ ; crass. spor. 6-7.5 μ .

Hab. Growing on sides of road, Fort Charlotte, St. Vincent. No. 203.

43. *N. HUMIFUSUM*, *Carm. ex Harvey in Sm. Engl. Flora*, 1833, v. p. 399; *Kuetz. Spec. Algar.* p. 301; *Rabenh. Flor. Europ. Algar.* ii. p. 183.

Hab. In stream, Wotten Waven, Dominica. No. 1249.

Sub-ord. HOMOCYSTEE.

Fam. VAGINARIEÆ.

*44. *PORPHYROSIPHON NOTARISII*, *Kuetz. Tab. Phyc.* ii. 1850-2, p. 7, t. 27. f. i.; *West & G. S. West, "Welw. Afric. Freshw. Alg.," Journ. Bot.* xxx. 1897, p. 271.

Crass. fil. 20-23 μ ; crass. trich. 14 μ .

Hab. On the sides of road, Fort Charlotte, St. Vincent. No. 203.

45. *SCHIZOTHRIX CUSPIDATA*, *West & G. S. West in Journ. Roy. Micr. Soc.* 1896, p. 164.—*Symploca cuspidata*, *West, "Alg. West Ind.," Journ. Linn. Soc., Bot.* vol. xxx. (1894) p. 273, t. 16. ff. 1-7.

Var. *LUTEO-FUSCA*, *West & G. S. West*.—*Symploca cuspidata* var. *luteo-fusca*, *West, l. c.* (1894) p. 274.

Hab. On banks, Morne Micotrin, Dominica. No. 1109.—On roadside near Roseau Lake (2700 ft.), Dominica. No. 1160.—On bank near summit, Couliabon (3700 ft.), Dominica. No. 1899.

Fam. LYNGBYEÆ.

*46. *LYNGBYA MAJUSCULA*, *Harv. in Sm. Engl. Fl.* 1833, v. p. 370; *Gomont, Monogr. des Oscillariées*, pp. 151-6, t. 3. ff. 3-4.

Crass. fil. 40–46 μ ; crass. trich. 34–38 μ .

Hab. Shallow bays, Anguilla. No. 20.

*47. *LYNGBYA ÆRUGINEO-CÆRULEA*, Gomont, *Monogr. des Oscillariées*, p. 166, t. 4. ff. 1–3.—*Oscillaria æruginéo-cærulea*, Kuetz. *Phyc. gener.* p. 185; *Tab. Phyc.* i. p. 28, t. 39. f. ix.

Crass. trich. 4–5·5 μ .

Hab. On leaves in warm stream, road to Roseau Lake (2500 ft.), Dominica. No. 1178.—On ground (2000–3000 ft.), and in stream, crater of Grande Soufrière, Dominica. Nos. 1832 and 1842.

*48. *PHORMIDIUM LURIDUM*, Gomont, *l. c.* p. 185–6, t. 4. ff. 17–18.—*Leptothrix lurida*, Kuetz.

Crass. trich. 2 μ .

Hab. Growing on sides of road, Fort Charlotte, St. Vincent.

*49. *P. FRAGILE*, Gomont, *l. c.* p. 183–4, t. 4. ff. 13–15.—*Anabæna fragilis*, Menegh.

Crass. trich. 1·7 μ .

Hab. In stream, Wotten Waven, Dominica. No. 1249.

Ord. CHROOCOCCACEÆ.

*50. *GLÆOCAPSA GELATINOSA*, Kuetz. *Phyc. gener.* p. 174; *Tab. Phyc.* i. t. 20. f. vi. b; *Rabenh. Flor. Europ. Algar.* ii. p. 39.

Diam. cell. 2·5–3 μ ; diam. fam. 7·5–19 μ .

Hab. On banks, Morne Micotrin, Dominica. No. 1109.

Class BACILLARIEÆ.

Ord. RAPHIDIEÆ.

Fam. CYMBELLEÆ.

*51. *CYMBELLA CISTULA*, Kirchn.—*Cocconema Cistula*, Hempr. 1828; *Van Heurck, Diatom.* (Engl. transl.) p. 149, t. 1. f. 45.

Hab. On rocks, Castle Bruce River (2000–3000 ft.), Dominica. No. 1697.

*52. *ENCYONEMA VENTRICOSUM*, Kuetz. *Bacill.* p. 80, t. 6. f. 16.—*Cymbella ventricosa*, Agardh.

Hab. With the preceding species.

Fam. NAVICULEÆ.

*53. NAVICULA MAJOR, *Kuetz. Bacill.* t. 4. f. 19.—*Pinnularia major*, *Rabenh. Süssw. Diatom.* p. 42, t. 6. f. 5; *Flor. Europ. Algar.* i. p. 210.

Hab. On bank near Roseau Lake (2700 ft.), Dominica. No. 1180.—In stream, Wotten Waven, Dominica. Nos. 1248 and 1249.

*54. N. VIRIDIS, *Kuetz. Bacill.* t. 4. f. 18.—*Pinnularia viridis*, *Rabenh. Süssw. Diatom.* p. 42, t. 6. f. 4; *Flor. Europ. Algar.* i. p. 212.

Hab. On bank near Roseau Lake (2700 ft.), Dominica. No. 1180.—In stream, Wotten Waven, Dominica. No. 1248.

55. N. BOREALIS, *Kuetz.*—*Pinnularia borealis*, *Ehrenb.; W. Sm. Brit. Diat.* ii. p. 94; *Rabenh. Flor. Europ. Alg.* i. p. 216.

Hab. Among *Nostoc muscorum*, Agardh, on side of road, Fort Charlotte, St. Vincent. No. 203.—On banks, Emsol, near Roseau, Dominica. No. 983.

*56. N. HILSEANA, *Janisch in Schmidt, Atlas Diatom.* p. 45, f. 65; *Van Heurck, Diatom.* (Engl. transl.) p. 171, t. 2. f. 81.

Hab. Among *Lyngbya ærugineo-cærulea*, Gomont, on ground, crater of Grande Soufrière (2000–3000 ft.), Dominica. No. 1832.

*57. N. SUBCAPITATA, *Greg. in Quart. Journ. Micr. Sci.* 1856, p. 9, t. i. f. 30; *Van Heurck, Diatom.* (Engl. transl.) p. 173, t. 2. f. 91.

Hab. In small stream, Roseau Valley, Dominica. No. 1176.

*58. N. APPENDICULATA, *Kuetz. Bacill.* p. 93, t. 3. f. 18; *Van Heurck, l. c.* p. 173, t. 2. f. 93.

Hab. On ground, crater of Grande Soufrière (2000–3000 ft.), Dominica. No. 1832.

*59. N. GLOBICEPS, *Greg. in Quart. Journ. Micr. Sci.* 1856, p. 10, t. i. f. 34; *Van Heurck, l. c.* p. 173, t. 2. f. 94.

Hab. On bank near Roseau Lake (2700 ft.), Dominica. No. 1180.

*60. N. LEGUMEN, *Ehrenb.; Van Heurck, l. c.* p. 174, t. 2. f. 98.

Hab. In small stream, Roseau Valley, Dominica. No. 1176.—
In stream, Wotten Waven, Dominica. No. 1248.

*61. *NAVICULA GRACILIS*, *Kuetz. Bacill.* p. 91, t. 3. f. 48; *Van*
Heurck, l. c. p. 179, t. 3. f. 109.

Hab. On bank at roadside, Emsol, near Roseau, Dominica.
No. 983.

62. *N. CRYPTOCEPHALA*, *Kuetz.; W. Sm. Brit. Diat.* p. 53,
t. 17. f. 155.

Hab. In warm stream, road to Roseau Lake (2500 ft.),
Dominica. No. 1177.—In stream, Wotten Waven, Dominica.
No. 1248.

*63. *N. ELLIPTICA*, *Kuetz. Bacill.* p. 98, t. 30. f. 55; *Van*
Heurck, l. c. p. 201, t. 4. f. 156.

Hab. On leaves of trees and in stream, Wotten Waven,
Dominica. Nos. 1240 and 1249.

*64. *N. CONTENTA*, *Grun. in Van Heurck, Atlas*, t. 14.
f. 31*, sub. n. *N. trinodis*; *Van Heurck, Diatom.* (Engl. transl.)
p. 230, t. 5. f. 239.

Var. *BICEPS*, *Van Heurck, l. c.* p. 230, t. 5. f. 240.

Hab. On leaves of trees, Wotten Waven, Dominica: very
abundant. No. 1240.—Also scarce in stream, Wotten Waven,
Dominica. No. 1249.

65. *VANHEURCKIA RHOMBOIDES*, *Bréb.; Van Heurck, Diatom.*
(Engl. transl.) p. 240, t. 5. f. 249.—*Frustulia rhomboides*,
De Toni, Sylloge Algar. ii. p. 227.—*Navicula rhomboides*, *Ehrenb.;*
W. Sm. Brit. Diat. i. p. 46, t. 16. f. 129.

Hab. On bank, near Roseau Lake (2700 ft.), Dominica.
No. 1180.—In stream, Wotten Waven, Dominica. Nos. 1248
and 1249.

Var. *SAXONICA*.—*Frustulia saxonica*, *Rabenh. Navicula crassi-*
nervia, *Bréb. in W. Sm. Brit. Diat.* i. p. 47, t. 31. f. 271.

Hab. On banks, Morne Micotrin, Dominica. No. 1109.—On
roadside near Roseau Lake (2700 ft.), Dominica. No. 1160.—
On leaves in warm stream and on bank, road to Roseau Lake
(2500–2700 ft.), Dominica. Nos. 1178 and 1222.—Head of
Castle Bruce River, Dominica. No. 1484.

*66. *VANHEURCKIA VULGARIS*, *Van Heurck, Diatom.* (Engl. transl.) p. 240, t. 5. f. 252.—*Colletonema vulgaris*, *Thwaites*.

Hab. In small stream, Roseau Valley, Dominica. No. 1176.—
In stream, Wotten Waven, Dominica. Nos. 1248 and 1249.

Fam. GOMPHONEMEE.

*67. *GOMPHONEMA GRACILE*, *Ehrenb.*; *Van Heurck, l. c.* p. 272, t. 7. f. 309.

Var. *DICHOTOMUM*, *Van Heurck, l. c.* p. 273, t. 7. f. 310.—
G. dichotomum, *W. Sm.*

Hab. In warm stream, road to Roseau Lake (2500 ft.), Dominica. No. 1177.

*68. *G. ANGUSTATUM*, *Kuetz. Bacill.* p. 83, t. 8. f. 4.

Hab. In warm stream, road to Roseau Lake (2500 ft.), Dominica. No. 1177.—In stream, Wotten Waven, Dominica. No. 1248.

*69. *G. OLIVACEUM*, *Kuetz. l. c.* p. 85, t. 7. ff. 13, 15.

Hab. In small stream, Roseau Valley, Dominica. No. 1176.

70. *G. TENELLUM*, *Kuetz.*; *W. Sm. Brit. Diat.* i. p. 80, t. 29. f. 243.

Hab. In stream, Wotten Waven, Dominica. No. 1249.

Fam. ACHNANTHEE.

*71. *ACHNANTHES LINEARIS*, *Grun.*—*Achnanthidium lineare*, *W. Sm. Brit. Diat.* ii. p. 31, t. 61. f. 381.

Hab. On banks, Emsol, Roseau, Dominica. No. 986.—In small stream, Roseau Valley, Dominica. No. 1176.

*72. *A. LANCEOLATA*, *Grun.*—*Achnanthidium lanceolatum*, *Bréb. in Kuetz. Spec. Algar.* p. 54.

Hab. Among *Nostoc muscorum*, Agardh, on sides of road, Fort Charlotte, St. Vincent. No. 203.—On leaves of trees, Wotten Waven, Dominica. No. 1240.

Fam. COCCONEIDEE.

*73. *COCCONEIS PEDICULUS*, *Ehrenb.*; *Kuetz. Bacill.* t. 5. f. ix. 1; *W. Sm. Brit. Diat.* i. p. 21, t. 3. f. 31.

Hab. Attached to *Lyngbya majuscula*, Harv., in shallow bays, Anguilla. No. 20.

Ord. PSEUDO-RAPHIDIEÆ.

Fam. EPITHEMIEÆ.

*74. *EPITHEMIA GIBBERULA*, *Kuetz. Bacill.* t. 30. f. 3*; *Van Heurck, Diatom.* (Engl. transl.) p. 297, t. 30. f. 825.

Hab. On sides of road, Fort Charlotte, St. Vincent. No. 203.—In warm stream, road to Roseau Lake (2500 ft.), Dominica. Nos. 1177 and 1178.—On bank, road to Lake, Dominica. No. 1222.—Head of Castle Bruce River, Dominica. No. 1484.—On rocks, Hampstead Valley, Dominica (850 ft.). No. 2171.

75. *EUNOTIA GRACILIS*, *Rabenh. Flor. Europ. Algar.* i. p. 72.—*Himantidium gracile*, *Ehrenb.*; *W. Sm. Brit. Diat.* ii. p. 14, t. 33. f. 285.

Hab. On banks, Morne Micotrin, Dominica. No. 1109.—On roadside, on bank and on trees in woods round Roseau Lake, Dominica (2700 ft.). Nos. 1160, 1161, and 1164.—On leaves in warm stream, road to Roseau Lake (2500 ft.), Dominica. No. 1178.—On rocks, Castle Bruce River, Dominica. No. 1697.—On rocks, Hampstead Valley, Dominica. No. 2171.

*76. *E. PECTINALIS*, *Rabenh. Flor. Europ. Algar.* i. p. 73.—*Himantidium pectinale*, *Kuetz. Bacill.* t. 16. f. 2.

Hab. In warm stream, road to Roseau Lake (2500 ft.), Dominica. No. 1177.—On ground, crater of Grande Soufrière (2000–3000 ft.), Dominica. No. 1835.

*77. *E. VENERIS*, *Kuetz. Bacill.* p. 40, t. 30. f. 7.—*E. incisa*, *Greg.*

Hab. In warm stream, road to Roseau Lake (2500 ft.), Dominica. Nos. 1177 and 1178.

*78. *E. LUNARIS*, *Grun.*—*Synedra lunaris*, *Ehrenb.*; *W. Sm. Brit. Diat.* i. p. 69, t. 11. f. 82.

Hab. On leaves in warm stream, road to Roseau Lake (2500 ft.), Dominica. No. 1178.—On ground, crater of Grande Soufrière, Dominica (2000–3000 ft.). No. 1835.

Fam. SYNEDREÆ.

*79. *SYNEDRA PULCHELLA*, *Kuetz. Bacill.* p. 68, t. 29. f. 87.

Hab. In small stream, Roseau Valley, Dominica. No. 1176.—
In stream, Wotten Waven, Dominica. No. 1249.

*80. *S. RADIANS*, *Grun.*; *Van Heurck, Diatom.* (Engl. transl.)
p. 312, t. 10. f. 423.

Hab. In stream, Wotten Waven, Dominica. No. 1249.

Fam. DIATOMEÆ.

*81. *DENTICULA TENUIS*, *Kuetz. Bacill.* t. 18. f. 8.

Var. *INFLATA*, *Van Heurck, Diatom.* (Engl. transl.) p. 352,
t. 11. f. 462.—*D. inflata*, *W. Sm.*

Hab. In small stream, Roseau Valley, Dominica. No. 1176.—
Head of Castle Bruce River, Dominica. No. 1484.

Fam. NITZSCHIEÆ.

82. *NITZSCHIA DISSIPATA*, *Grun.*; *Van Heurck, Diatom.*
(Engl. transl.) p. 394, t. 16. f. 525. (? *N. minutissima*, *W. Sm.*
Brit. Diat. p. 41, t. 13. f. 107.)

Hab. On leaves in warm stream, road to Roseau Lake,
Dominica (2500 ft.). No. 1178.—On leaves, Wotten Waven,
Dominica. No. 1240.—On ground, crater of Grande Soufrière
(2000–3000 ft.), Dominica. No. 1832.

*83. *N. OBTUSA*, *W. Sm. Brit. Diat.* i. p. 39, t. 13. f. 109.

Var. *NANA*, *Grun.*; *Van Heurck, Diatom.* (Engl. transl.)
p. 398, t. 16. f. 539.

Hab. On bank, at roadside, Emsol, near Roseau, Dominica.
No. 983.

84. *N. LINEARIS*, *W. Sm. Brit. Diat.* i. p. 39, t. 13. f. 110.

Hab. In small stream, Roseau Valley, Dominica. No. 1176.

Var. *TENUIS*, *Grun.*—*N. tenuis*, *W. Sm.*

Hab. On ground, crater of Grande Soufrière (2000–3000 ft.),
Dominica. Nos. 1832 and 1835.

*85. *N. COMMUNIS*, *Rabenh.*; *Flor. Europ. Algar.* i. p. 159.

Hab. Among *Nostoc muscorum*, Agardh, on sides of road, Fort
Charlotte, St. Vincent. No. 203.—On bank, at roadside, Emsol,
near Roseau, Dominica. No. 983.

Ord. Crypto-Raphidaleae.

Fam. Melosireae.

86*. *Melosira varians*, Agardh: W. Sm.
Brit. Diat. ii. p. 57, t. 51. f. 332.

Hab. In warm stream, road to Roseau
Lake. (2500 ft.), Dominica. No. 1177.

Fam. Biddulphiaceae.

*87. *Terpsinoe lutea*, Ehrenb.; Van Heurck,
Diatom. (Engl. transl.) p. 452, cum
fig. xylogr. 176.

Hab. In cold and warm streams, road to
Roseau Lake (2500 ft.), Dominica: very ab-
undant. Nos. 1176 and 1177.

This species is highly interesting as
most of the genera of this family are not-
ably marine.

New York Botanical Garden Library

QK572.W4 W41

West, William/A further contribution to

gen

3 5185 00115 9209