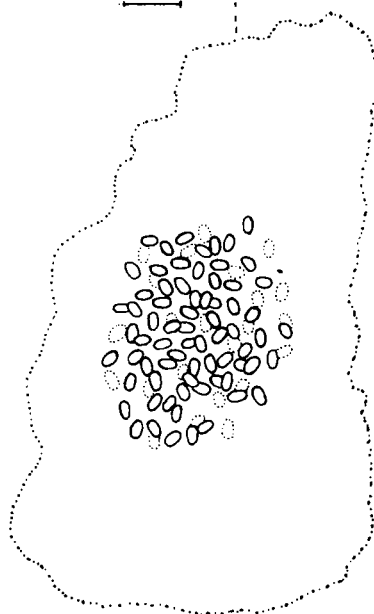
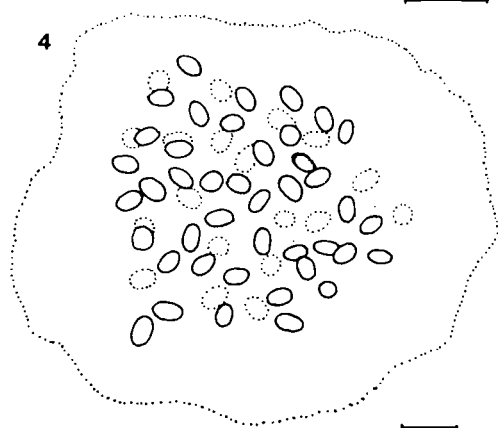
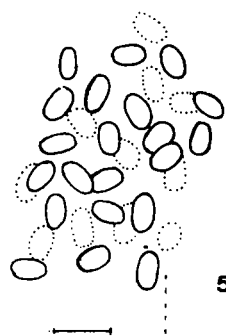
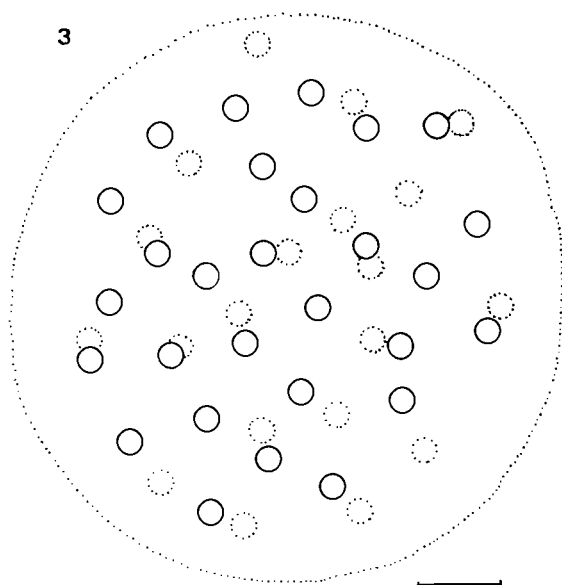
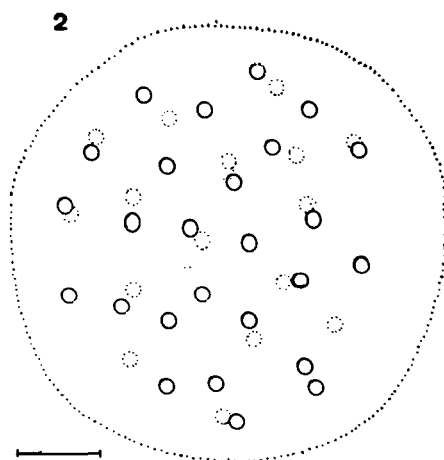
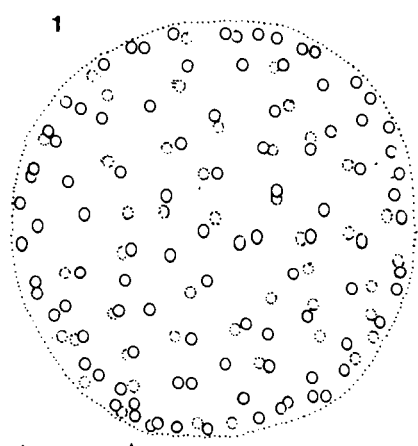


L A M I N A S

(Los trazos que figuran al lado de los dibujos y en las fotomicrografías indican 10μ).

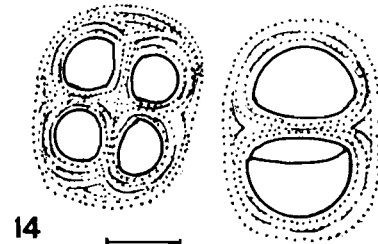
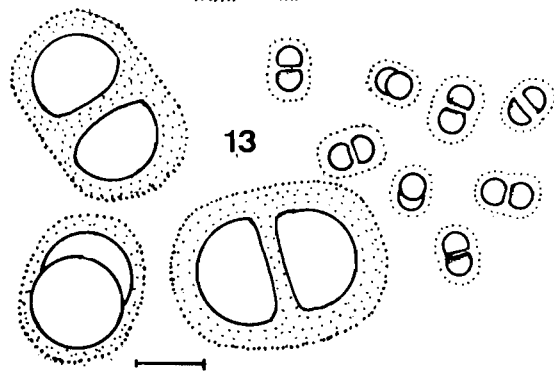
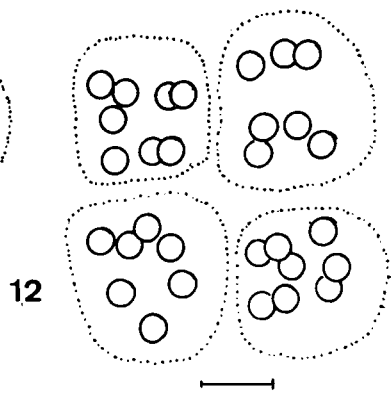
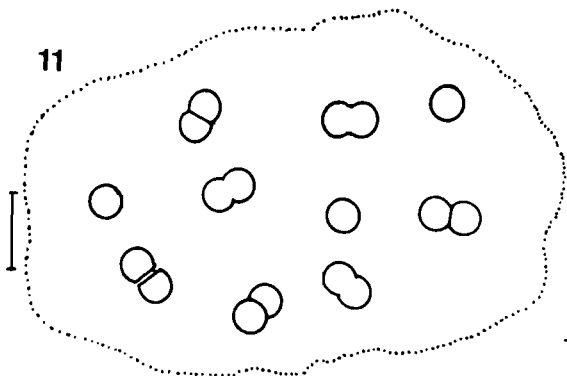
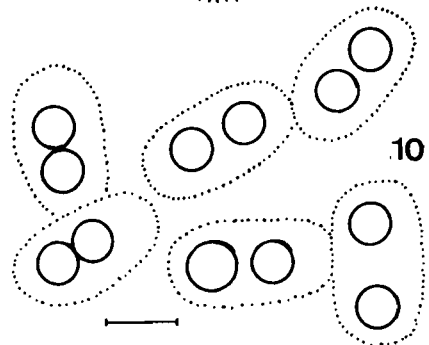
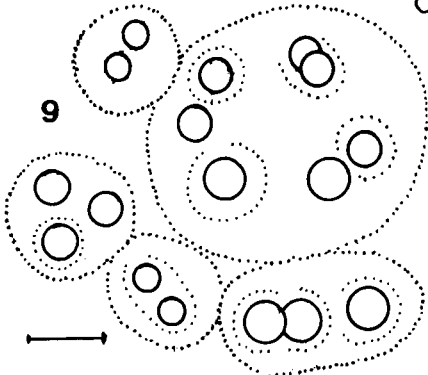
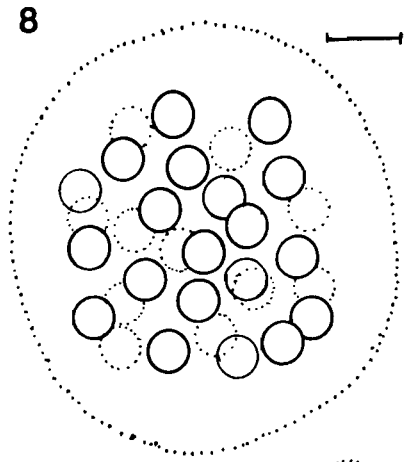
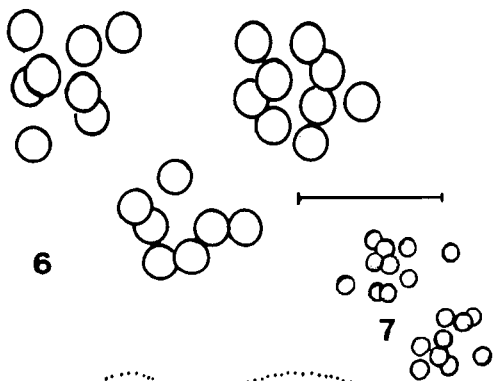
LAMINA I

1. *Aphanocapsa delicatissima* West W. y West **G. S.**
2. *Aphanocapsa elachista* var. *planctonica* G. M. Smith.
3. *Aphanocapsa pulchra* (Kütz) Rabenh.
4. *Aphanothece Castagnei* (Bréb.) Rabenh.
5. *Aphanothece microscopica* Näg.



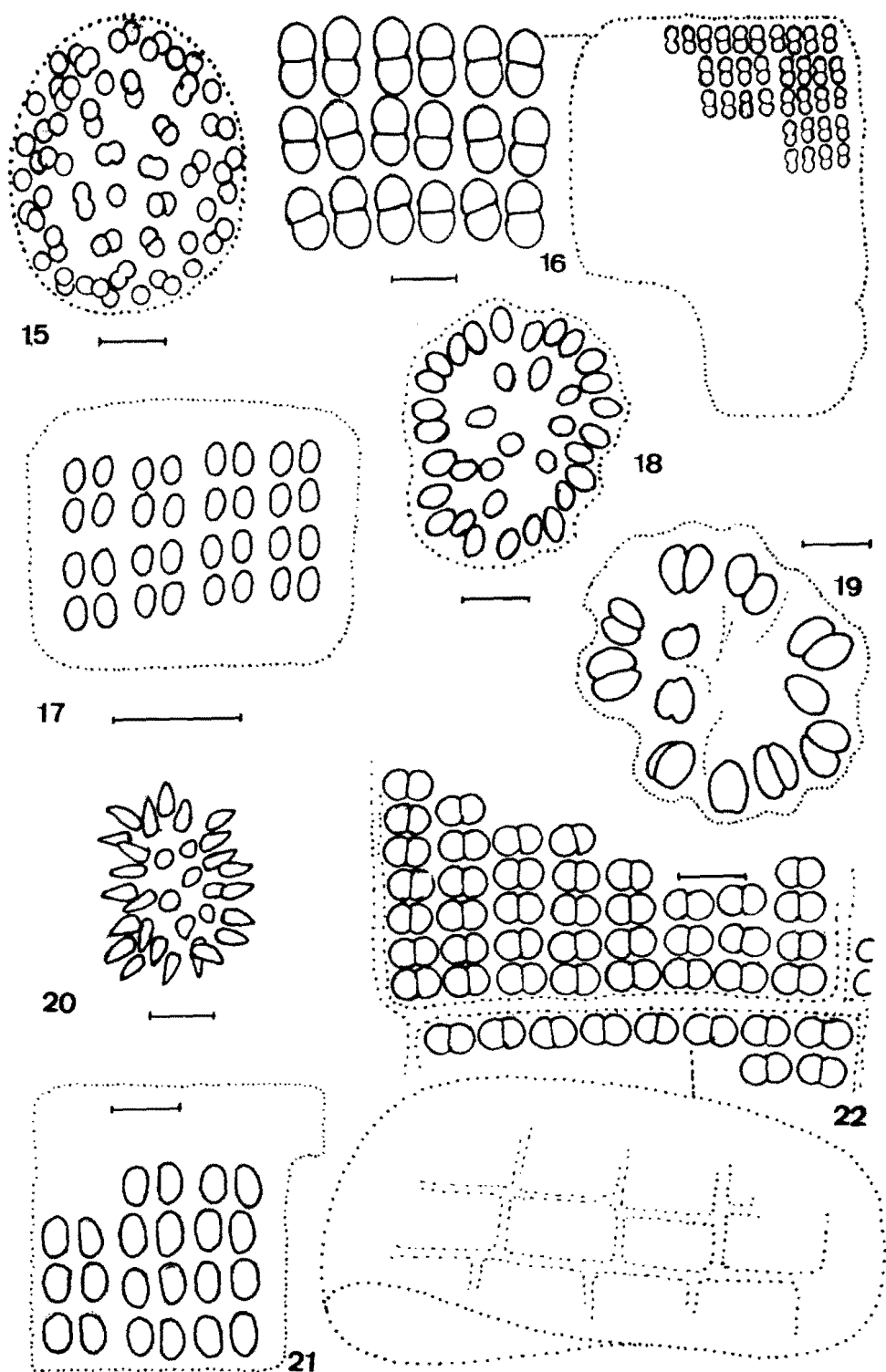
LAMINA II

6. *Chroococcus dispersus* (Keissl.) Lemm.
7. *Chroococcus dispersus* var. *minor* Smith.
8. *Microcystis robusta* (Clark) Nygaard.
9. *Gloeocapsa granosa* (Berk.) Kütz.
10. *Chroococcus pallidus* Näg.
11. *Synechocystis aquatilis* Sauv.
12. *Gloeocapsa conglomerata* Kütz.
13. *Chroococcus turgidus* (Kütz.) Näg.
14. *Chroococcus tenax* (Kirchn.) Hieron.



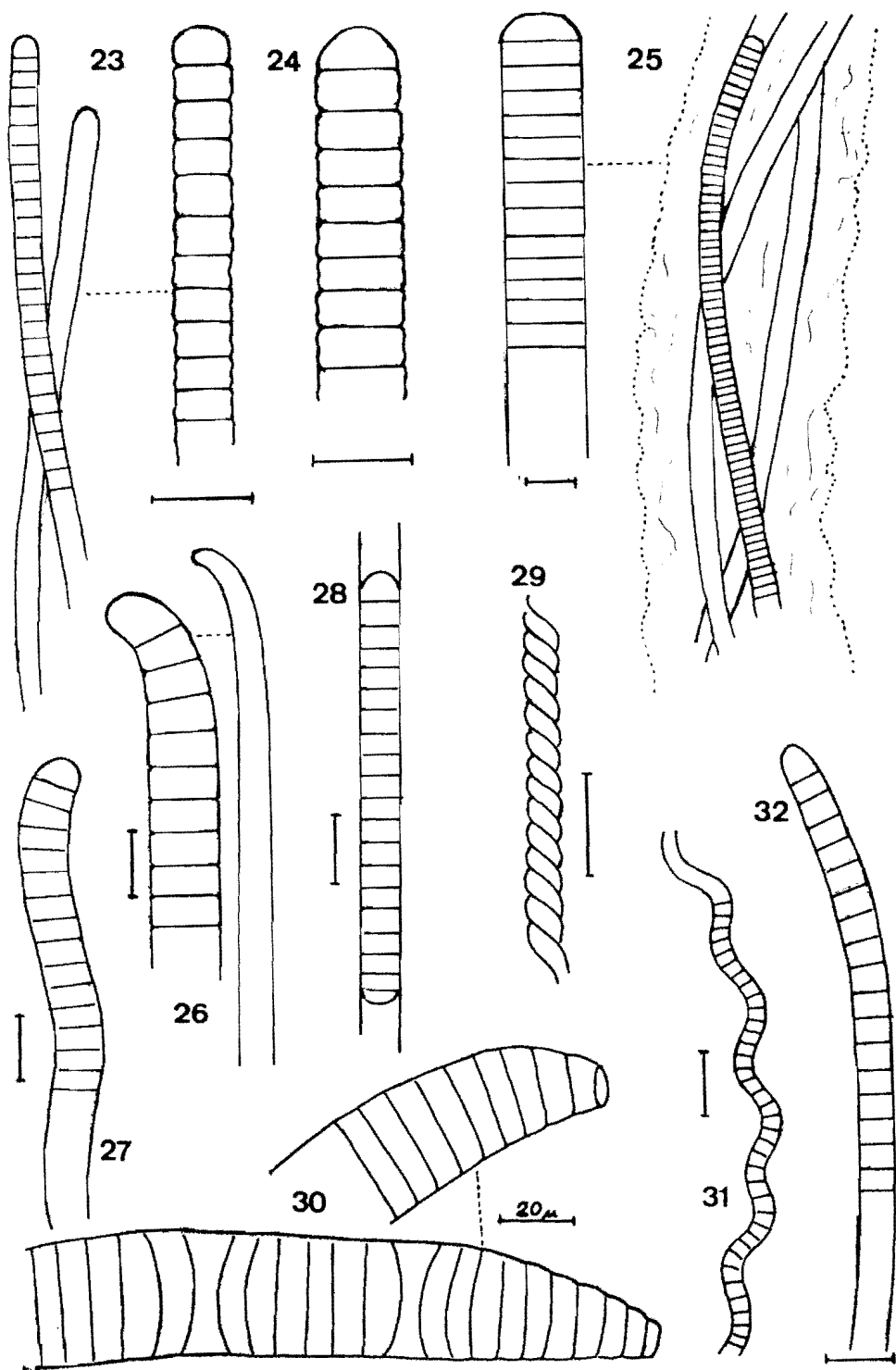
LAMINA III

15. *Coelosphaerium Kuetzingianum* Näg.
16. *Merismopedia elegans* A. Braun.
17. *Merismopedia tenuissima* Lemm.
18. *Coelosphaerium Naegelianum* Unger.
19. *Gomphosphaeria aponina* Kütz.
20. *Marssoniella elegans* Lemm.
21. *Merismopedia glauca* (Ehr.) Näg.
22. *Merismopedia convoluta* Bréb.



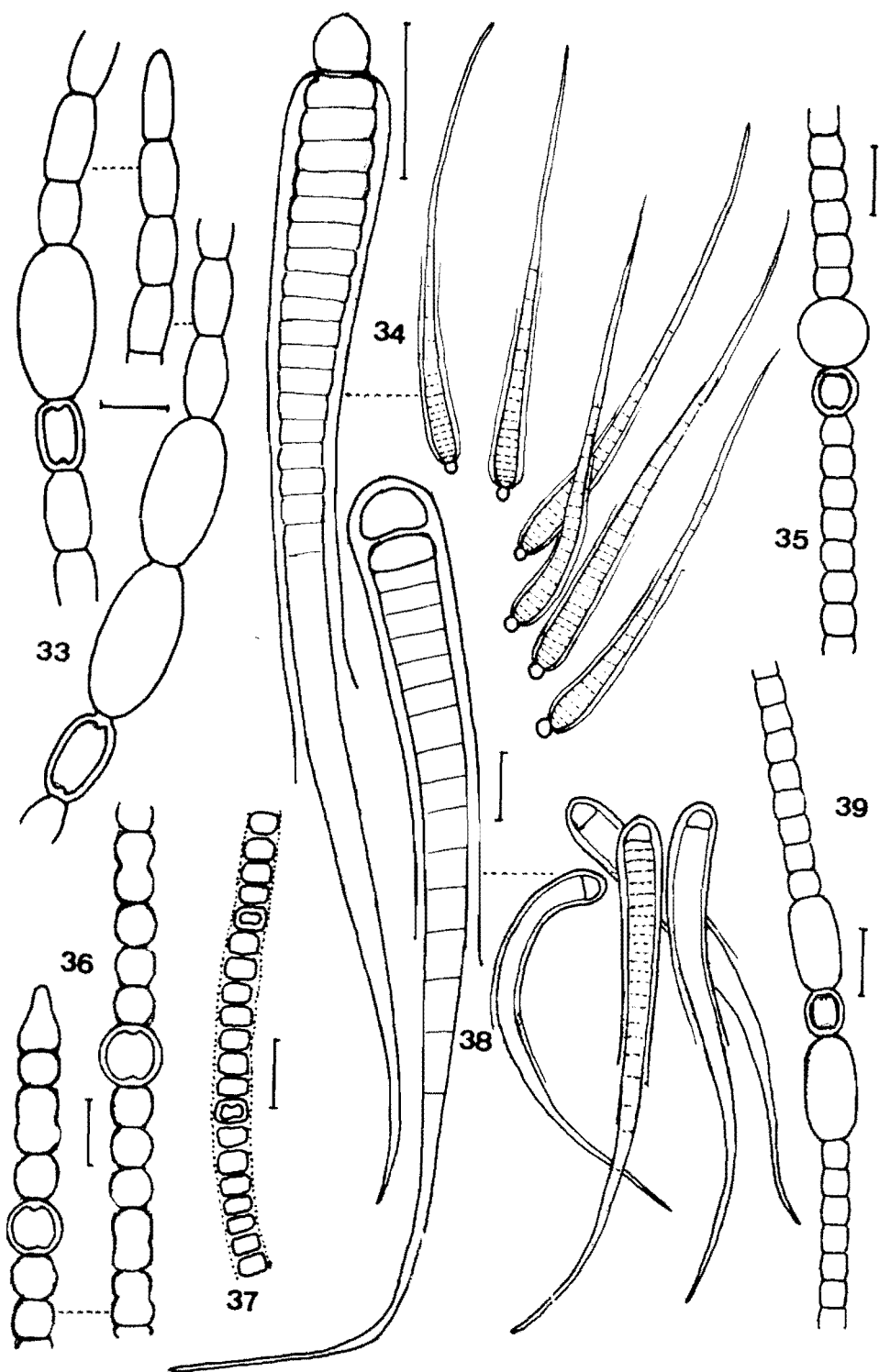
LAMINA IV

23. *Oscillatoria tenuis* C. A. Agardh.
24. *Oscillatoria tenuis* var. *natans* Gomont.
25. *Hydrocoleum heterotrichum* Kütz. em. Gomont.
26. *Oscillatoria chalybea* (Mertens) Gomont.
27. *Oscillatoria curviceps* var. *angusta* Ghose.
28. *Lyngbya aerugineo-caerulea* (Kütz.) Gomont.
29. *Spirulina subsalsa* Oerst.
30. *Oscillatoria princeps* Vaucher.
31. *Arthrospira Gomontiana* Setchell.
32. *Oscillatoria Willei* Gardner.



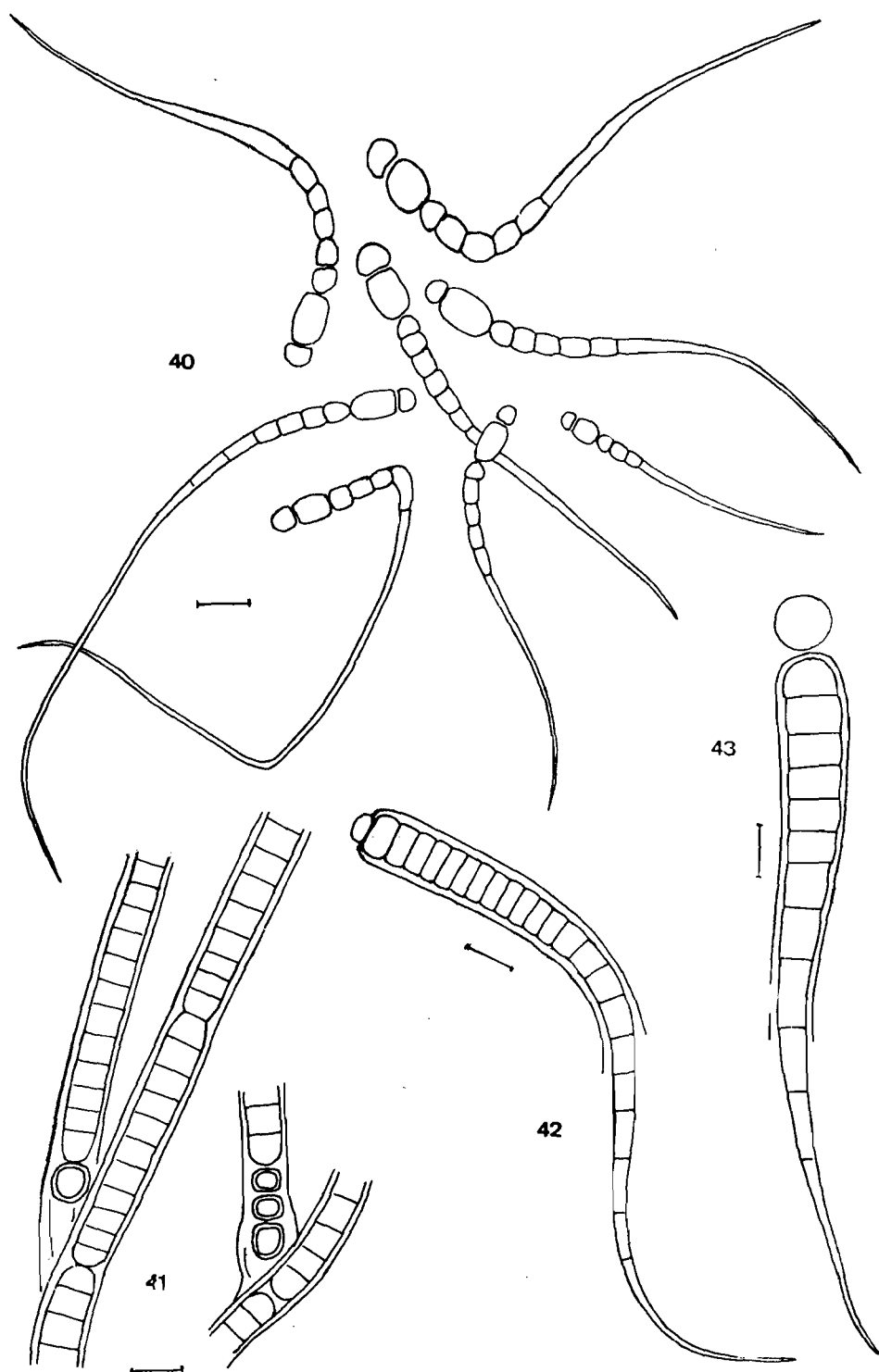
LAMINA V

- 33. *Anabaena Wolzii* Lemm.
- 34. *Calothrix Braunii* Born. y Flah.
- 35. *Anabaena sphaerica* var. *tenuis* G. S. West.
- 36. *Anabaena torulosa* (Carm.) Lagerh.
- 37. *Nodularia Harveyana* Thur.
- 38. *Calothrix fusca* (Kütz.) Born y Flah.
- 39. *Anabaena oscillarioides* Bory.



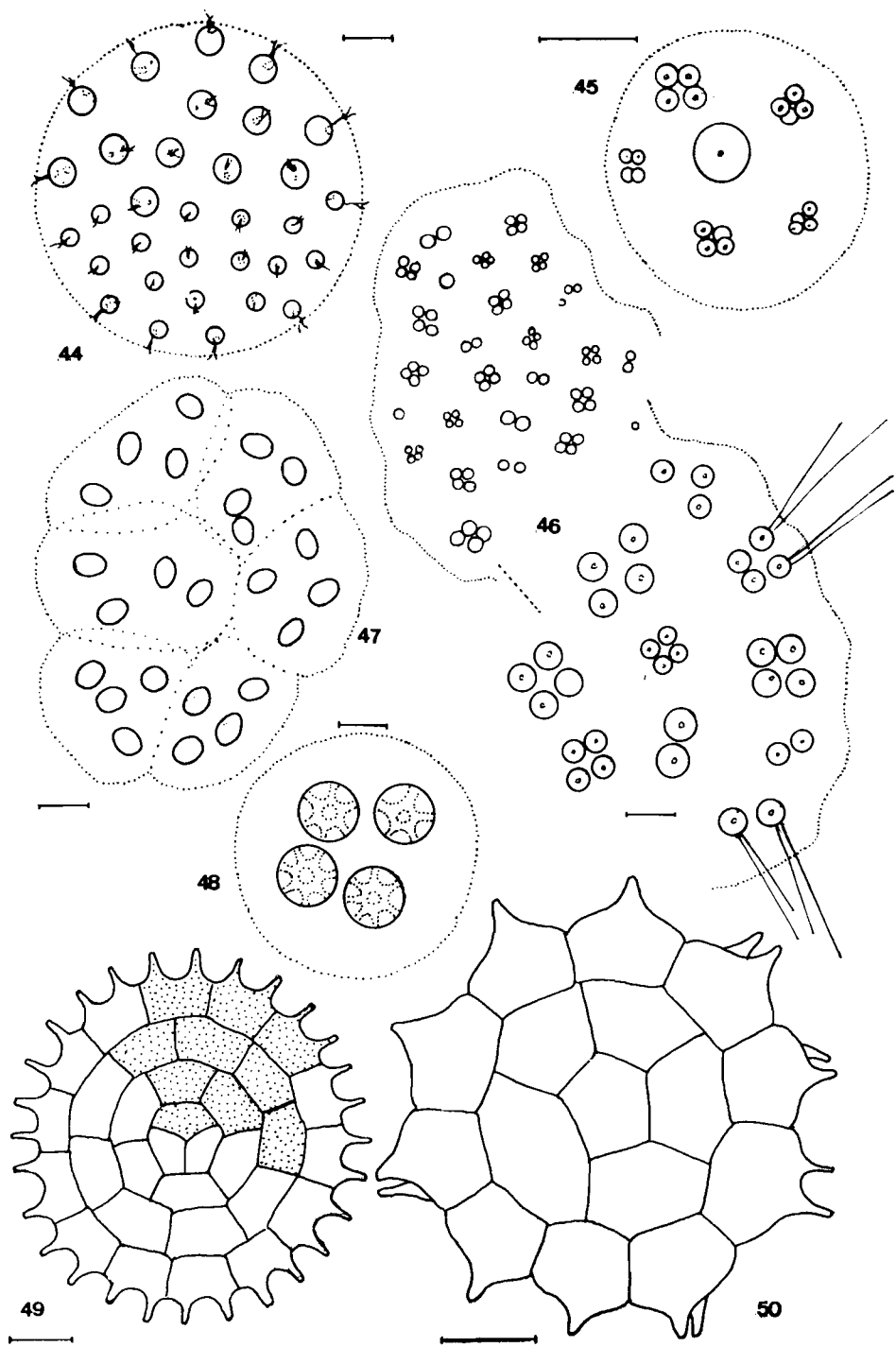
LAMINA VI

- 40. *Calothrix stagnalis* Gom.
- 41. *Tolypothrix tenuis* (Kütz.) Johs. Schmidt emend.
- 42. *Calothrix castellii* (Massal.) Born. y Flah.
- 43. *Calothrix clavatoides* Chose.



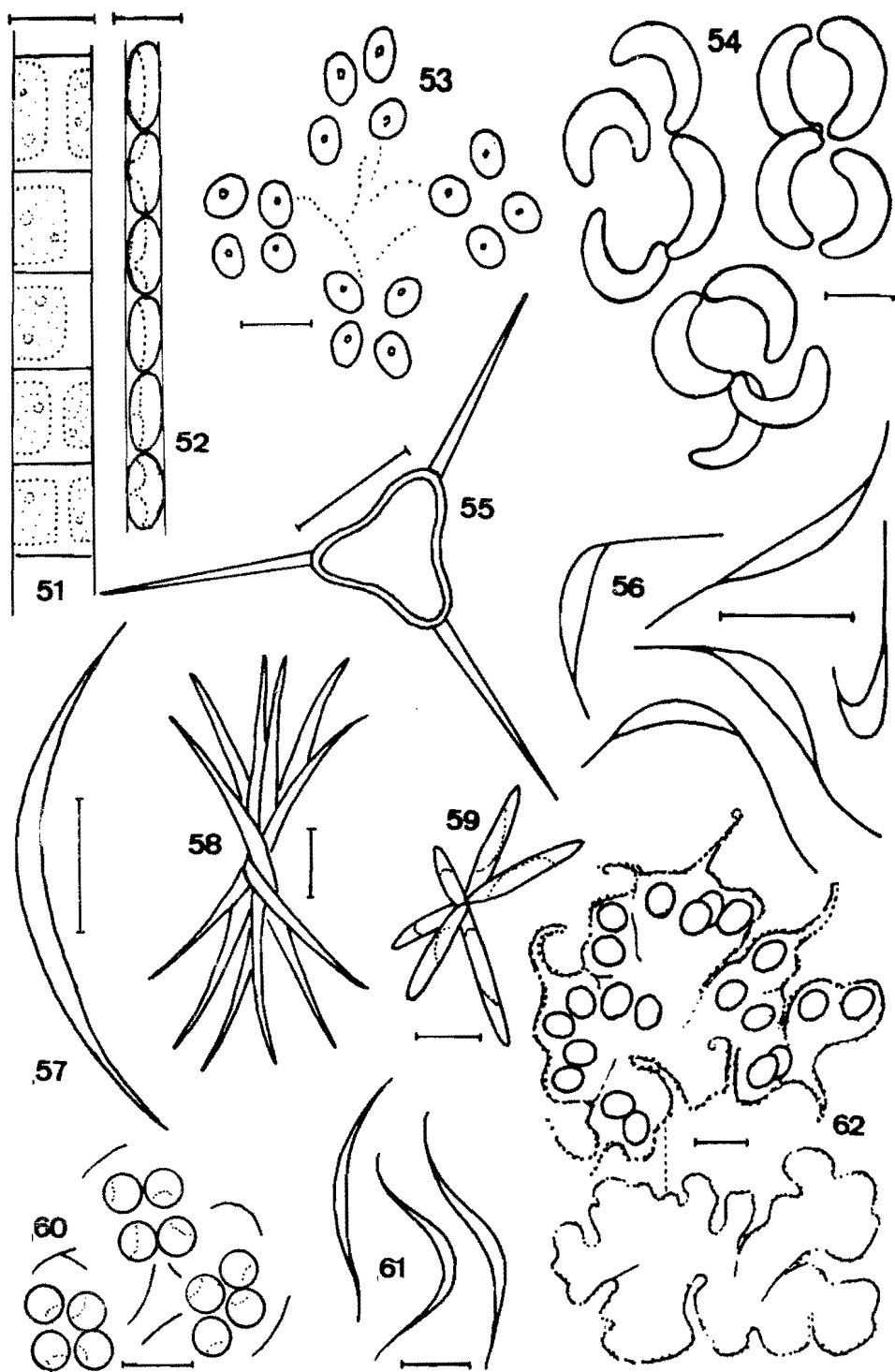
LAMINA VII

- 44. *Pleodorina californica* Shaw.
- 45. *Sphaerocystis Schroeteri* Chod.
- 46. *Tetraspora lacustris* Lemm.
- 47. *Gloeocystis ampla* (Kütz.) Lagerh.
- 48. *Asterococcus limneticus* G. M. Smith.
- 49. *Pediastrum Boryanum* (Turp.) Menegh.
- 50. *Pediastrum Kawraiskyi* Schm.



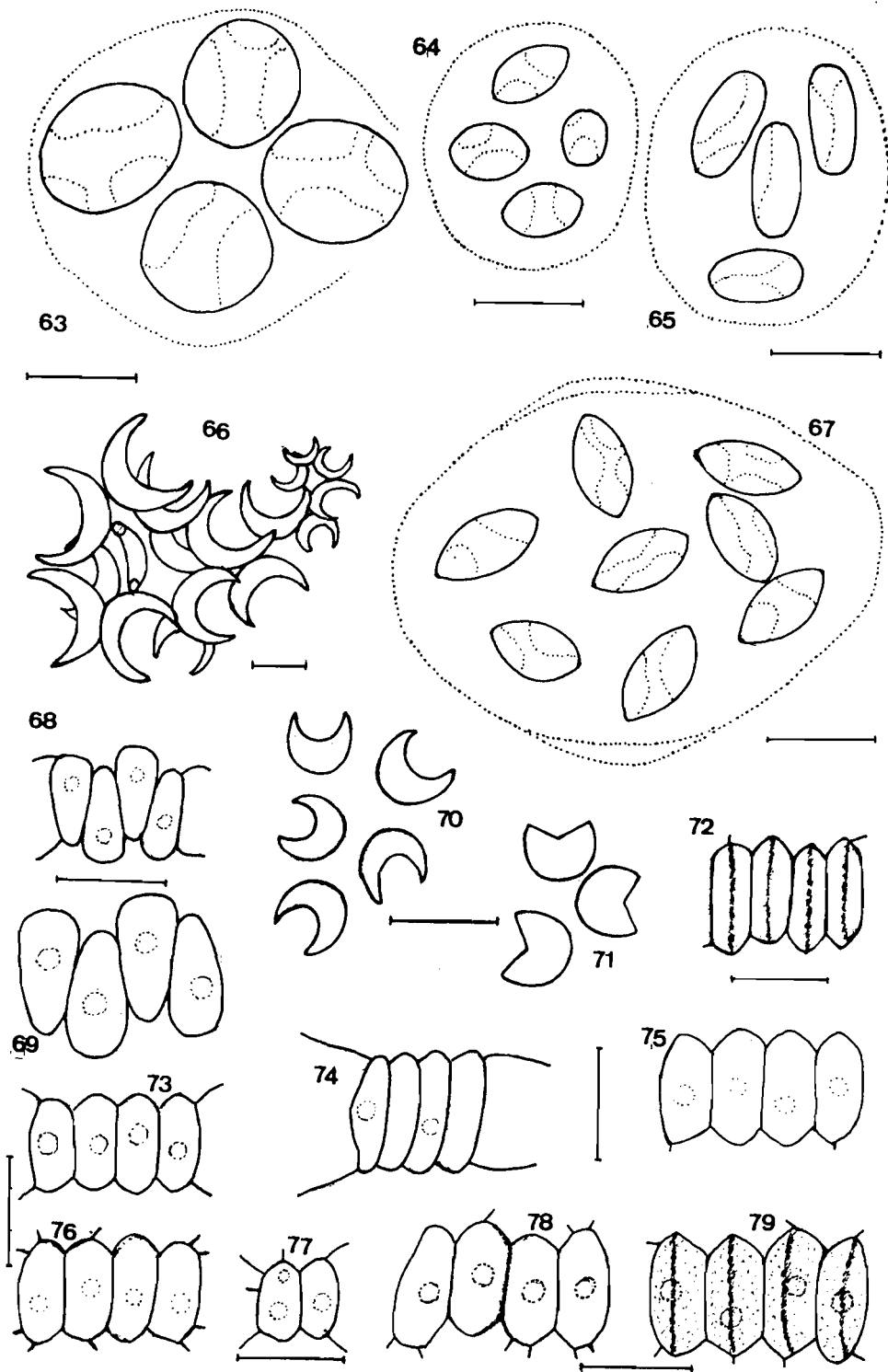
LAMINA VIII

51. *Ulothrix tenerrima* Kütz.
52. *Planctonema Lauterbornii* Schm.
53. *Dictyosphaerium Ehrenbergianum* Näg.
54. *Tetrallantos Lagerheimii* Teiling.
55. *Treubaria triappendiculata* Bernard.
56. *Schroederia setigera* (Schroed.) Lemm.
57. *Ankistrodesmus falcatus* var. *mirabilis* (West W. y West G.S.) G.S. West.
58. *Ankistrodesmus spiralis* (Turner) Lemm.
59. *Actinastrum Hanzschii* Lagerh.
60. *Westella botryoides* (W. West) de Wildemann.
61. *Hyaloraphidium contortium* Pasch. y Korch.
62. *Botryococcus Braunii* Kütz.



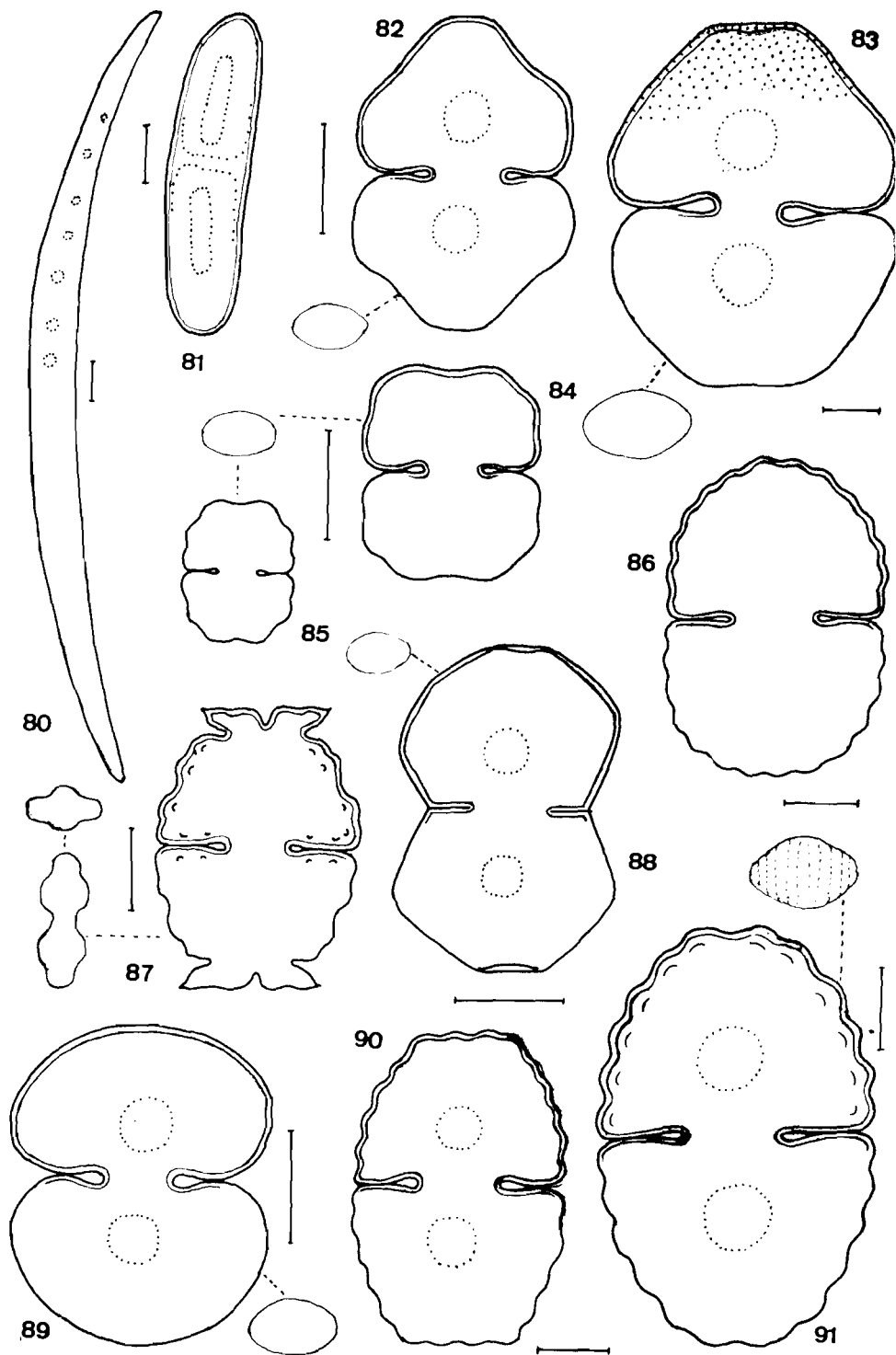
LAMINA IX

63. *Oocystis Borgei* Snow.
64. *Oocystis parva* West W. y West G. S.
65. *Oocystis pusilla* Hansg.
66. *Selenastrum gracile* Reinsch.
67. *Oocystis lacustris* Chod.
68. *Scenedesmus intermedius* Chod.
69. *Scenedesmus intermedius* var. *acaudatus* Hortob.
70. *Kirchneriella lunaris* (Kirch.) Moebius.
71. *Kirchneriella obesa* var. *aperta* (Teil.) Brunnth.
72. *Scenedesmus circumfusus* var. *bicaudatus* Hortob.
73. *Scenedesmus quadricauda* var. *quadrispina* (Chod.) G. M. Smith.
74. *Scenedesmus quadricauda* var. *longispina* (Chod.) G. M. Smith.
75. *Scenedesmus brevispina* (G. M. Smith) Chod.
76. *Scenedesmus dispar* Bréb.
77. *Scenedesmus spinosus* Chod.
78. *Scenedesmus denticulatus* var. *linearis* Hansg.
79. *Scenedesmus denticulatus* var. *linearis* fa. *costato-granulatus* (Hortob.) Uherk.



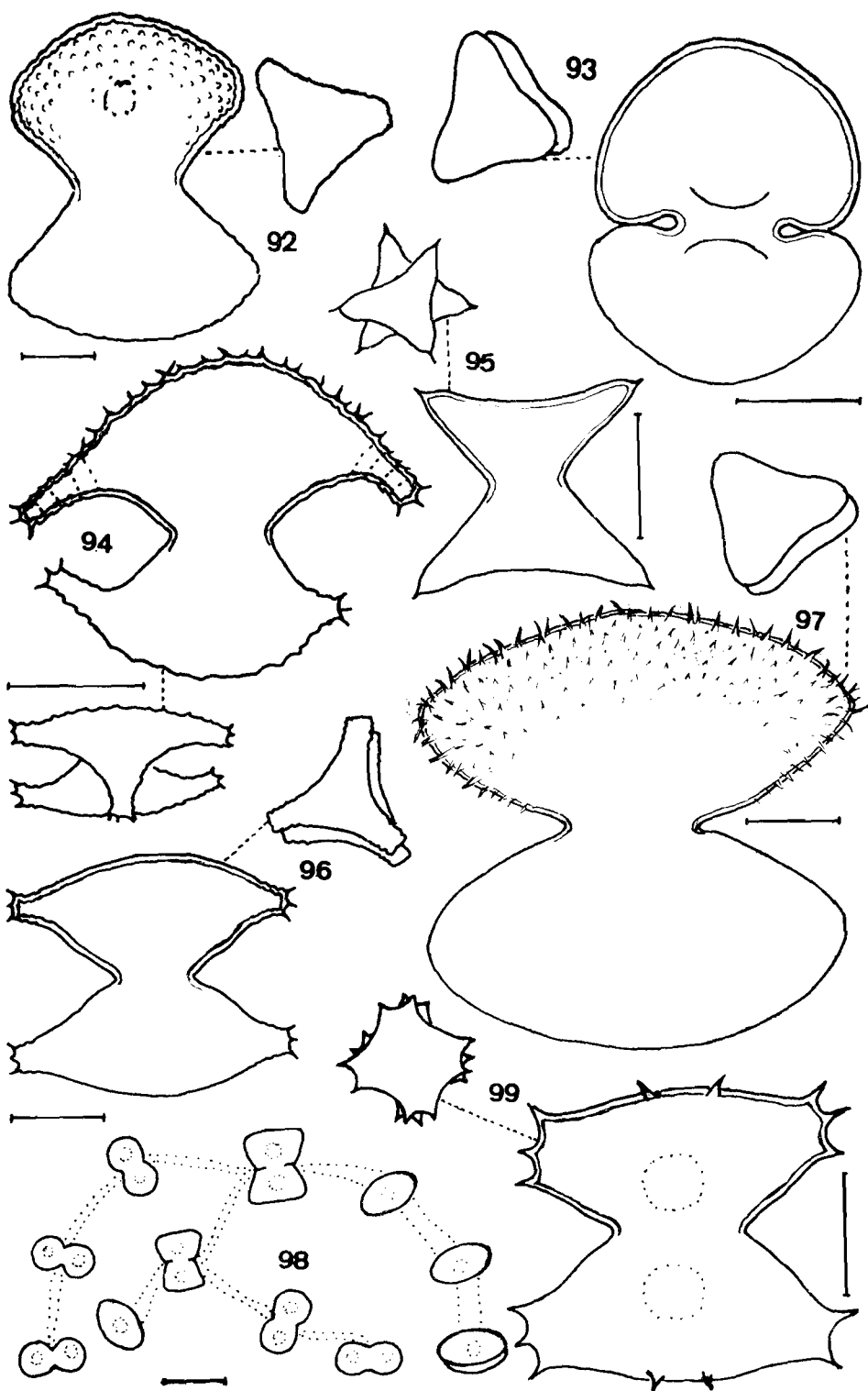
LAMINA X

- 80. *Closterium diana* var *pseudodiana* (Roy) Krieg.
- 81. *Cylindrocystis Brebissonii* var. *Jenneri* (Ralfs.) Hansg.
- 82. *Cosmarium Hammeri* Reinsch fa.
- 83. *Cosmarium subtumidum* var. *Croasdaleae* Förster.
- 84-85. *Cosmarium Meneghinii* Bréb.
- 86. *Cosmarium undulatum* Corda.
- 87. *Euastrum Turneri* W. West.
- 88. *Cosmarium pseudoprotuberans* var. *angustius* Nordst. fa.
- 89. *Cosmarium subtumidum* var. *Borgei* Krieg. y Gerl.
- 90. *Cosmarium notabile* var. *heterocrenatum* (West W. y West G. S.).
Krieg. y Gerl.
- 91. *Cosmarium speciosum* Lund.



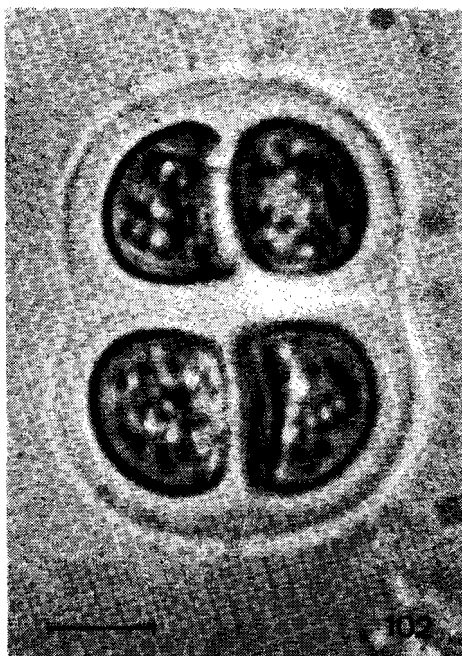
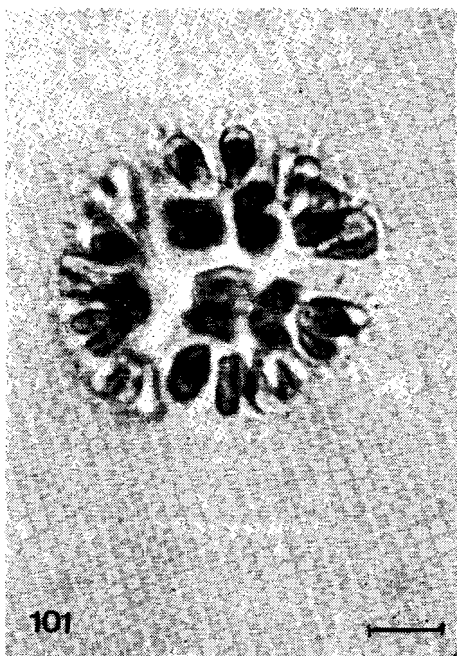
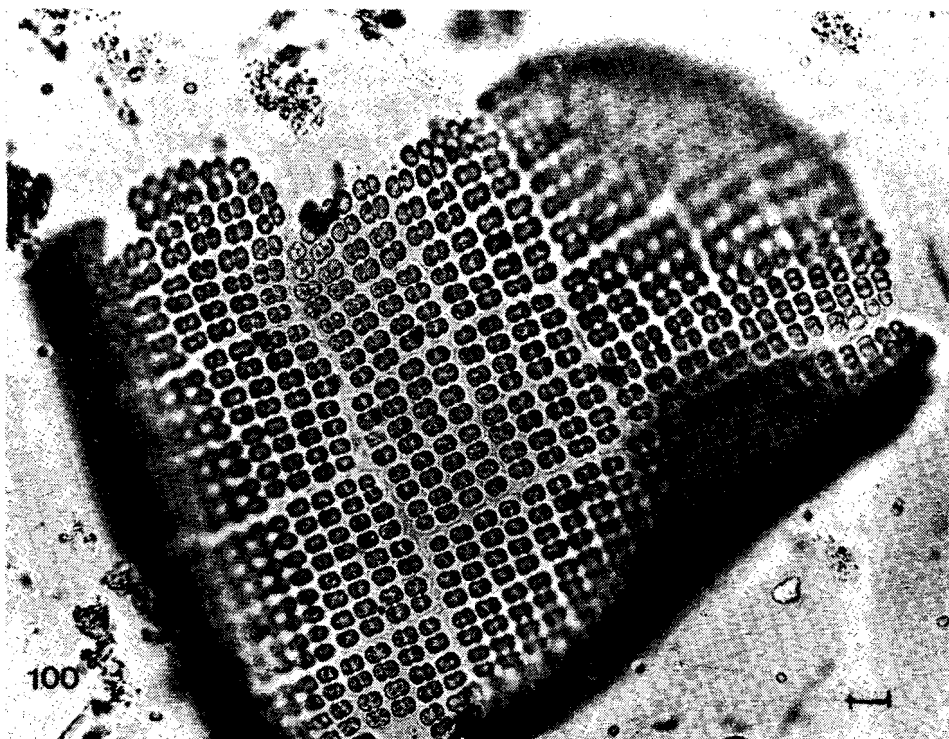
LAMINA XI

- 92. *Staurastrum punctulatum* Bréb.
- 93. *Staurastrum orbiculare* Ralfs.
- 94. *Staurastrum oxyacanthum* Arch.
- 95. *Stauroidesmus pterosporus* (Lund.) Bourrelly.
- 96. *Staurastrum hexacerum* (Ehr.) Wittr.
- 97. *Staurastrum pilosum* (Näg.) Arch.
- 98. *Cosmocladium pusillum* Hilse.
- 99. *Staurastrum quadrangulare* Bréb.



LAMINA XII

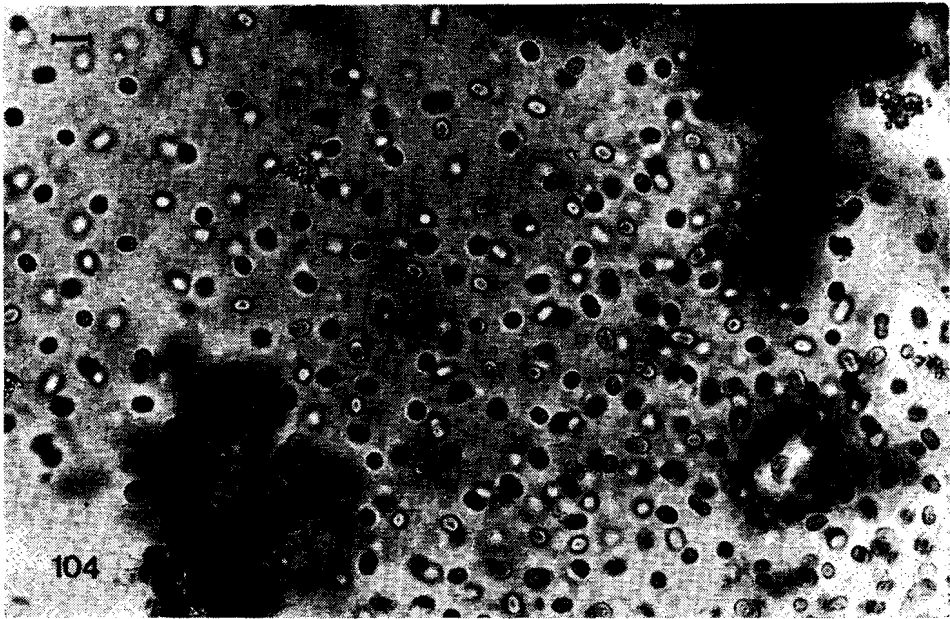
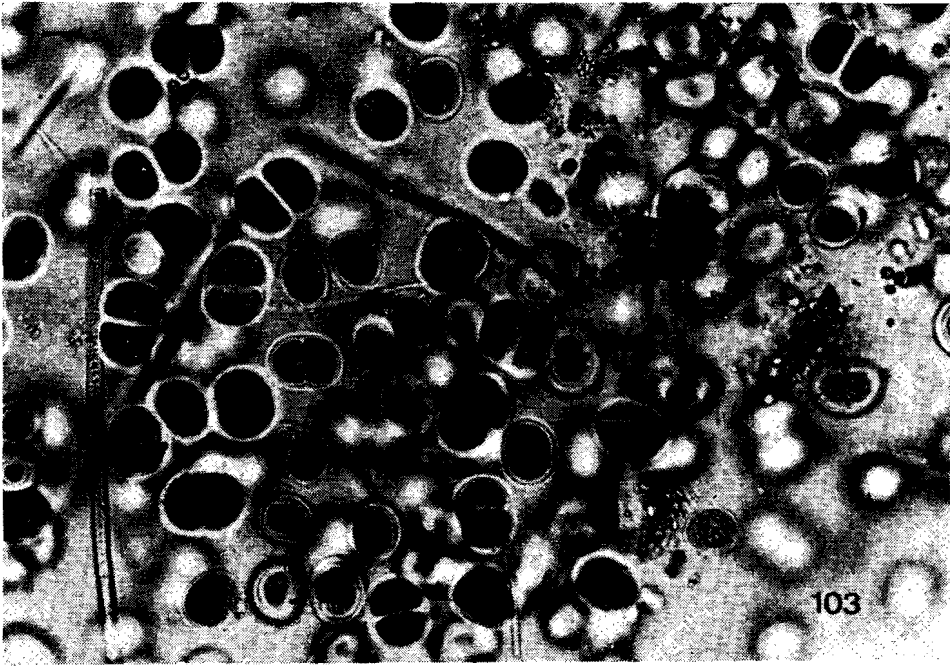
- 100. *Merismopedia convoluta* Bréb.
- 101. *Gomphosphaeria aponina* Kütz.
- 102. *Chroococcus turgidus* (Kütz.) Näg.



LAMINA XIII

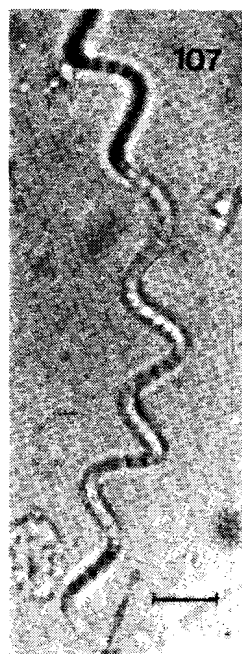
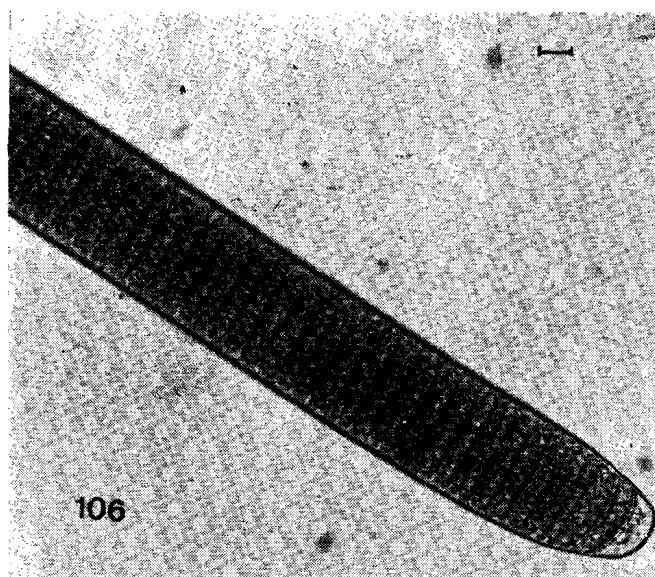
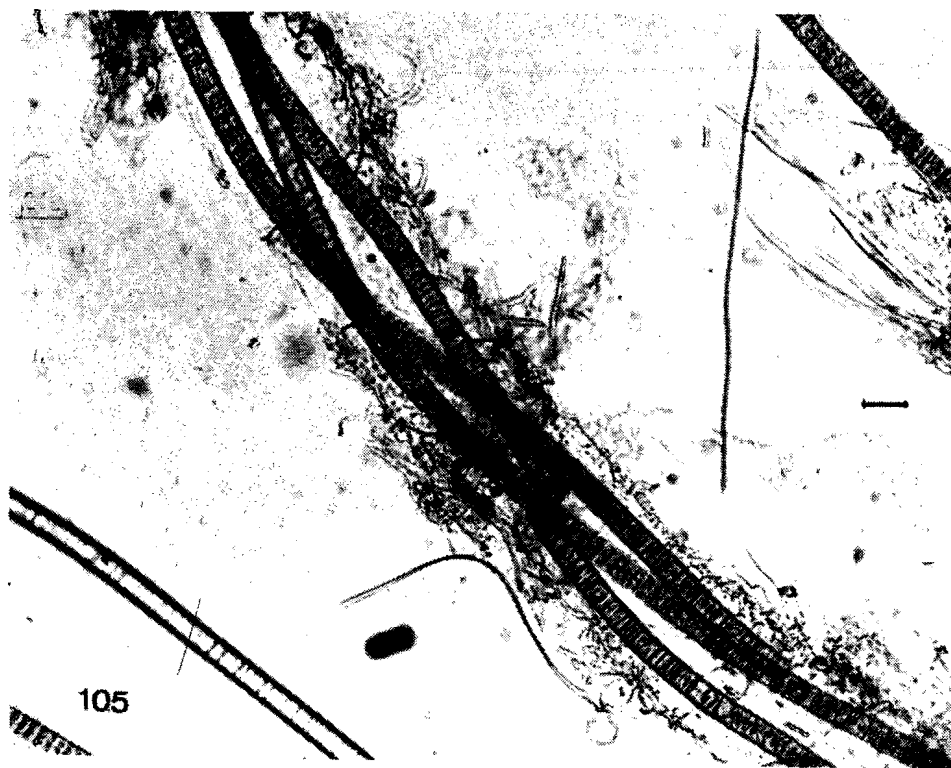
103. *Chroococcus turgidus* (Kütz.) Näg.

104. *Aphanothece microscopica* Näg.



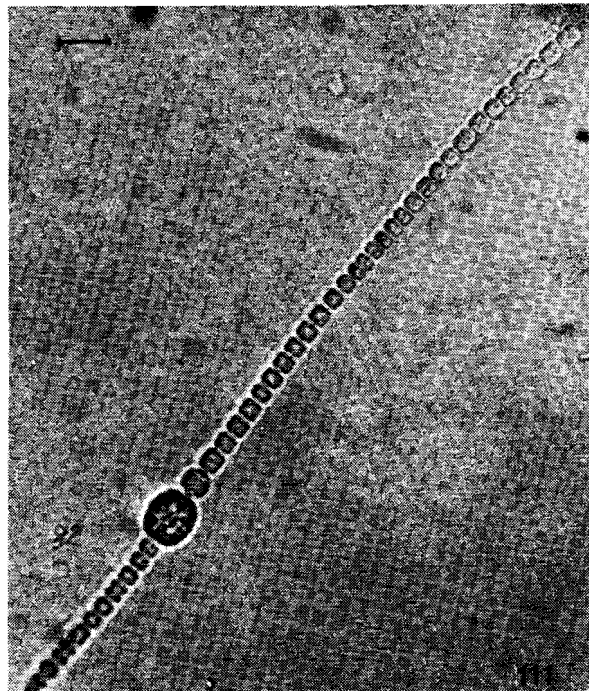
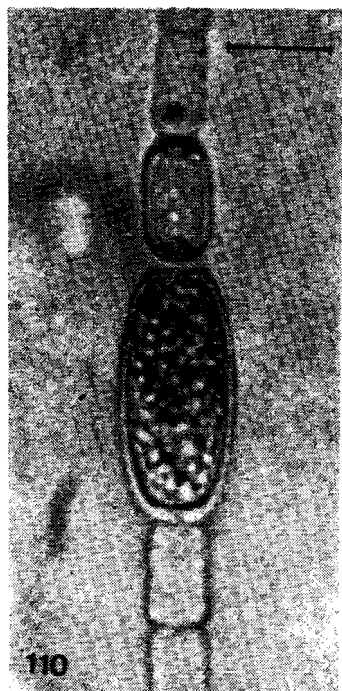
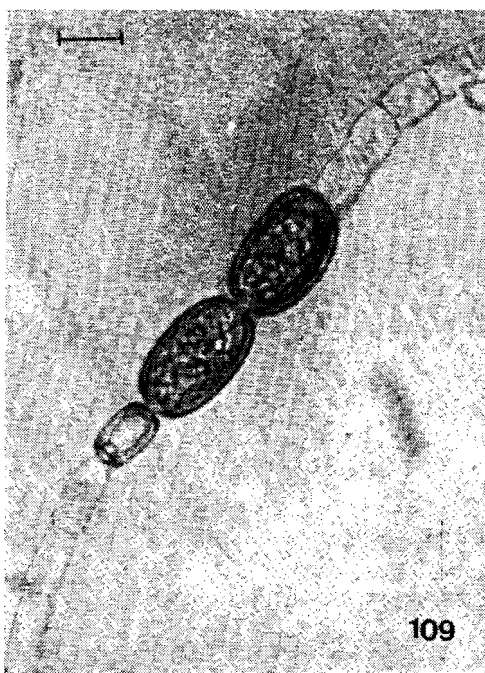
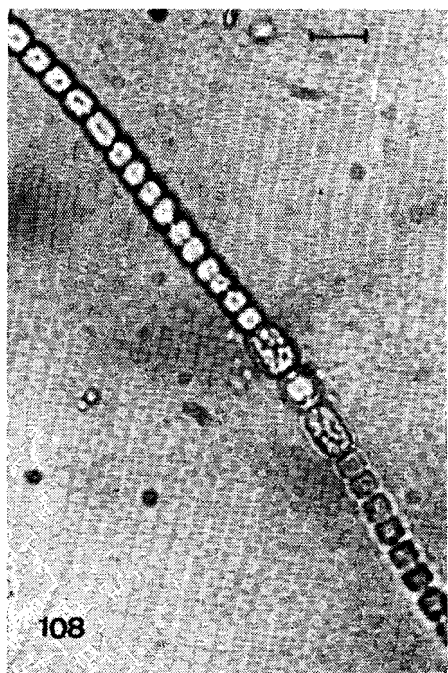
LAMINA XIV

- 105. *Hydrocoleum heterotrichum* Kütz. em. Gomont.
- 106. *Oscillatoria princeps* Vaucher.
- 107. *Arthrospira Gomontiana* Setchell.



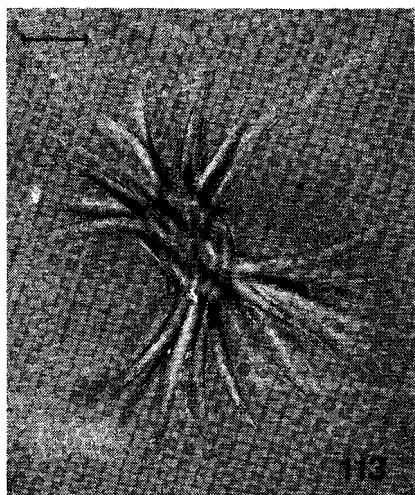
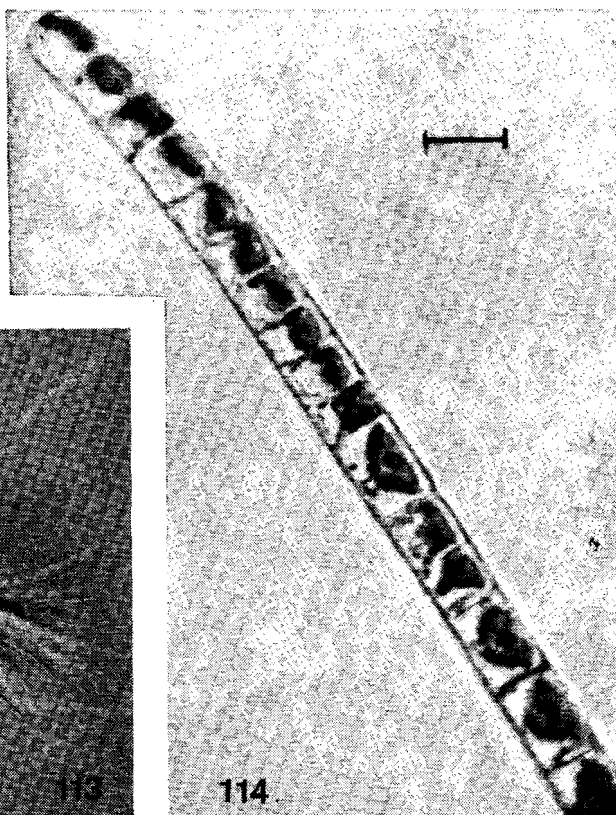
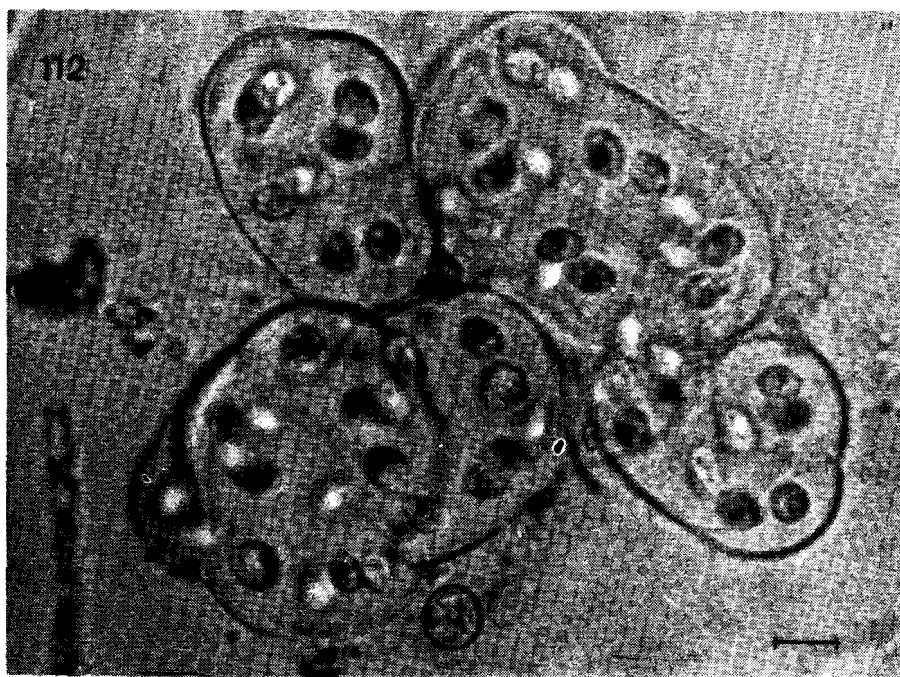
LAMINA XV

- 108. *Anabaena oscillarioides* Bory.
- 109. *Anabaena Wolzii* Lemm.
- 110. *Anabaena Wolzii* Lemm.
- 111. *Anabaena sphaerica* var. *tenuis* G. S. West.



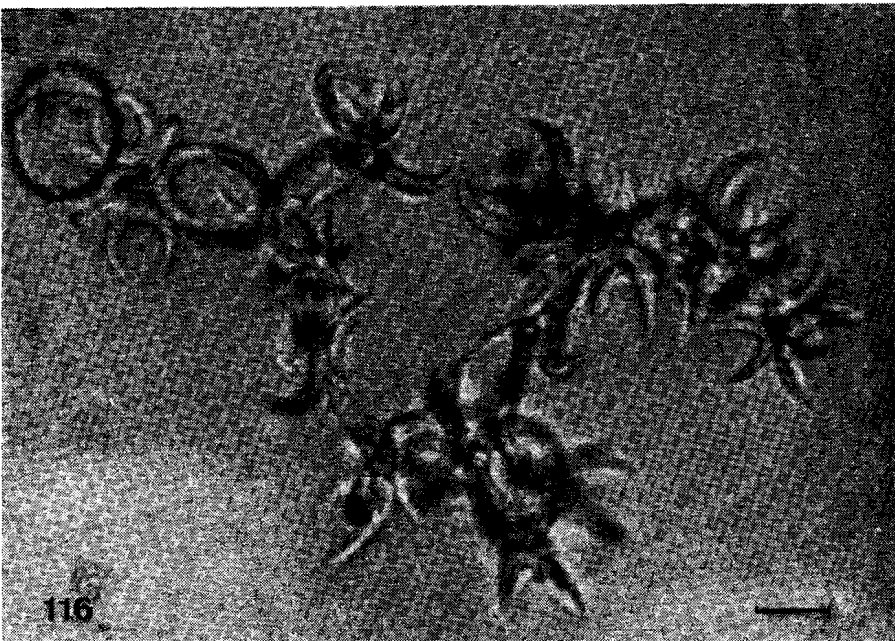
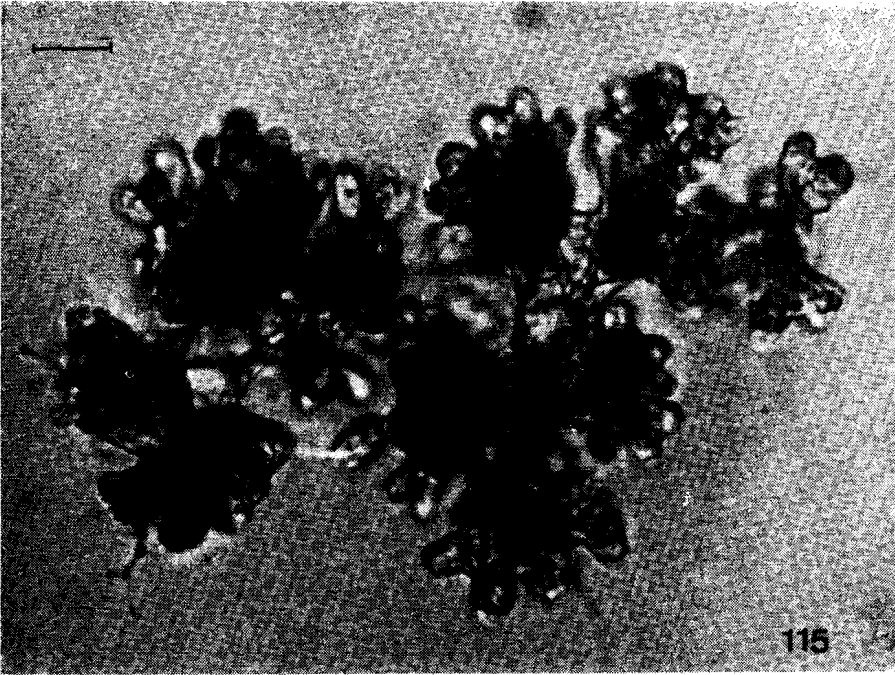
LAMINA XVI

- 112. *Gloeocystis ampla* (Kütz.) Lagerh.
- 113. *Ankistrodesmus spiralis* (Turner) Lemm.
- 114. *Ulothrix tenerrima* Kütz.



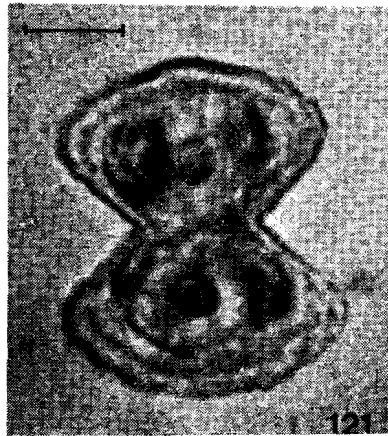
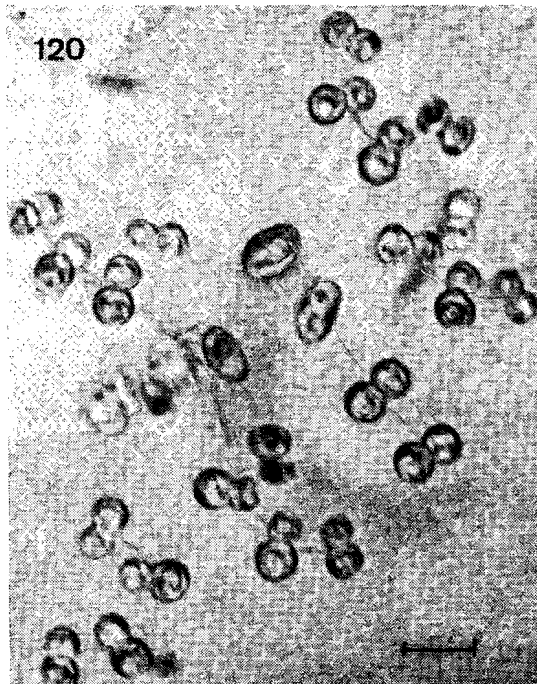
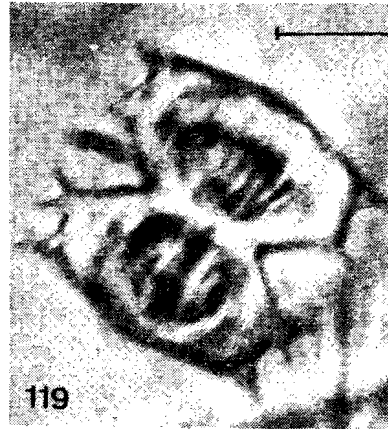
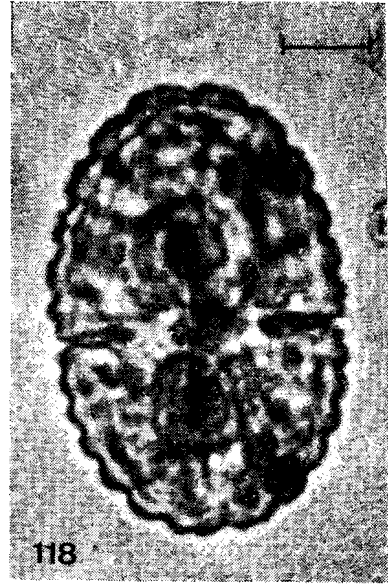
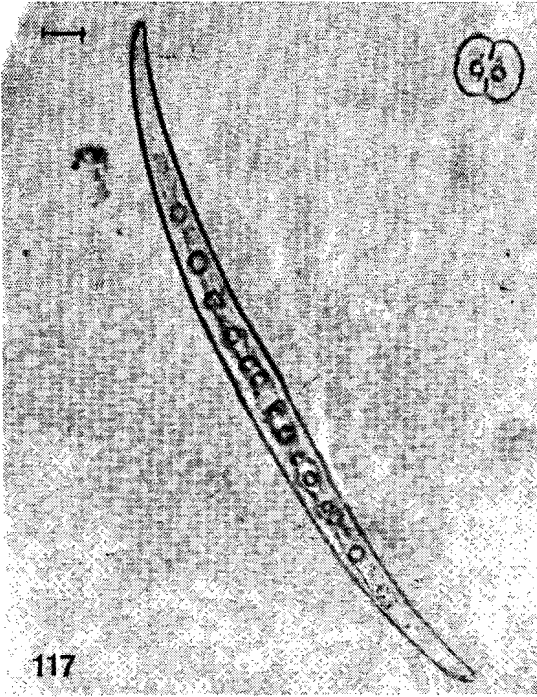
LAMINA XVII

- 115. *Botryococcus Braunii* Kütz.
- 116. *Selenastrum gracile* Reinsch.



LAMINA XVIII

- 117. *Closterium diana* var. *pseudodiana* (Roy) Krieg.
- 118. *Cosmarium speciosum* Lund.
- 119. *Staurastrum quadrangulare* Bréb.
- 120. *Cosmocladium pusillum* Hilse.
- 121. *Staurastrum punctulatum* Bréb.



RESUMEN

Se describen 98 taxones de algas (*Cyanophyta* y *Chlorophyta*) que se registran como nuevas para Venezuela. 43 pertenecen a las *Cyanophyta* (22 *Chroococcaceae*, 10 *Oscillatoriaceae*, 5 *Nostocaceae*, 5 *Rivulariaceae* y 1 *Scytonemataceae*) y 55 a las *Chlorophyta* (1 *Volvocaceae*, 3 *Palmellaceae*, 1 *Tetrasporaceae*, 2 *Ulotrichaceae*, 2 *Hydrodictyaceae*, 1 *Botryococcaceae*, 15 *Oocystaceae*, 11 *Scenedesmaceae*, 1 *Mesotaeniaceae* y 18 *Desmidiaceae*). En total abarcan 45 géneros, de los cuales 24 (8 *Cyanophyta* y 16 *Chlorophyta*) se mencionan por primera vez para el país. 84 spp. (40 pertenecientes a las *Cyanophyta* y 44 a las *Chlorophyta*), 17 variedades (5 *Cyanophyta* y 12 *Chlorophyta*) y 3 formas de *Chlorophyta* no habían sido registradas antes para Venezuela. El material fue coleccionado en diferentes ambientes acuáticos continentales situados en la región de Oriente, a distintas alturas en la Cordillera de los Andes y en el Lago de Maracaibo, en el occidente del país.

SUMMARY

Ninety eight taxa of algae (*Cyanophyta* and *Chlorophyta*) are described as new for Venezuela. 43 belong to the *Cyanophyta* (22 *Chroococcaceae*, 10 *Oscillatoriaceae*, 5 *Nostocaceae*, 5 *Rivulariaceae* and 1 *Scytonemataceae*) and 55 to the *Chlorophyta* (1 *Volvocaceae*, 3 *Palmellaceae*, 1 *Tetrasporaceae*, 2 *Ulotrichaceae*, 2 *Hydrodictyaceae*, 1 *Botryococcaceae*, 15 *Oocystaceae*, 11 *Scenedesmaceae*, 1 *Mesotaeniaceae* and 18 *Desmidiaceae*). Included are 45 genera of which 24 (8 *Cyanophyta* and 16 *Chlorophyta*) are reported for the first time in this country. 84 spp. (40 belonging to the *Cyanophyta* and 44 to the *Chlorophyta*), 17 varieties (5 *Cyanophyta* and 12 *Chlorophyta*) and 3 forms of *Chlorophyta* had not been reported before for Venezuela. The material was collected from different inland aquatic environments in the Oriente region, at different heights in the Cordillera de los Andes and in the lake of Maracaibo, in the western part of the country.

BIBLIOGRAFIA

- Bourrelly P. y Leboime R. 1946 Notes sur quelques Algues d'eau douce de Madagascar 13e. Biol. Jaarb. Dodonaea.
- Bourrelly P. y Manguin E. 1949 Contribution a l'étude de la flore algale d'eau douce de Madagascar: Le Lac de Tsimbazaza. Mém. Inst. Sci. Madagascar, ser. B 2 (2): 161-190.
- Bourrelly P. 1957 Algues d'eau douce du Soudan Francais, région du Macina (A.O.F.) Bull. de l'I.F.A.N. 19, sér. A, 4: 1047-1102.
- Bourrelly P. 1961 Algues d'eau douce de la République de Côte d'Ivoire. Bull. de l'I.F.A.N. 23, sér. A. 2: 283-374.
- Bourrelly P. 1966 Quelques Algues d'eau douce du Canada. Intern. Revue Hidrobiol. 51.
- Croasdale H. 1955 Freshwater Algae of Alaska I. Some Desmids from the Interior. Farlowia 4 (4): 513-565.
- Croasdale H. 1956 Freshwater Algae of Alaska I. Some Desmids from the Interior Part 2, Trans. Amer. Micr. Soc. 75 (1): 1-70
- Croasdale H. 1957 Freshwater Algae of Alaska I. Some Desmids from the Interior Part 3, Trans. Amer. Micr. Soc. 76 (2): 116-158.
- Croasdale H. 1962 Freshwater Algae of Alaska 3. Desmids from the Cape Thompson Area. Trans. Amer. Micr. Soc. 81 (1): 12-42
- Croasdale H. y Grönblad R. 1964 Desmids of Labrador 1. Desmids of the southeastern coastal area. Trans. Amer. Micr. Soc. 83 (2): 142-212.
- Croasdale H. 1965 Desmids of Devon Island. Trans. Amer. Micr. Soc. 84 (3): 301-335.
- Deflandre G. 1927 Algues d'eau douce du Venezuela. Rev. Algol. 3: 211-241.
- Desikachary T.V. 1959 *Cyanophyta*. Ind. Coun. Agric. Res. New Delhi.
- Flensburg T. 1967 Desmids and other Benthic Algae of Lake Kävsjön and Store Mosse, Sw Sweden. Acta Phytogeogr. Suecica 51.
- Florin M. B. 1957 Plankton of Fresh and Brackish Waters in the Södertälje Area. Acta Phytogeogr. Suecica 37: 1-144.
- Förster K. 1965 Beitrag zur Desmidiaceen-Flora der Torne-Lappmark in Schwedisch-Lappland. Ark. Bot. Kungl. Sv. Vet. Ser. 2, 6: 109-161.
- Förster K. 1965 Beitrag zur Desmidiaceenflora in Nepal Ergebn. Forsch.-Unt. Nepal Himalaya. Springer Verlag, Berlin. Lief. 2: 25-58.

- Gessner F. 1956 Das Plankton des Lago Maracaibo. *Ergebn. Deutsch. Limnol. Venezuela Exp.* 1952, 1: 67-92 Deutsch. Verlag Wissensch. Berlin.
- Grönblad R. 1956 Desmids from the United States, collected in 1947-1949 by Dr. H. Croasdale and Dr. E. T. Moul, *Soc. Scient. Fennica, Comm. Biol.* 15 (12): 1-38.
- Grönblad R. 1960 Contribution to the knowledge of the Freshwater Algae of Italy. *Soc. Scient. Fennica, Comm. Biol.* 22 (4): 1-85.
- Hortobágyi T. 1963 Algen aus den Fischteichen von Buzsák. *Nova Hedwigia* 6 (3-4): 353-390.
- Hortobágyi T. 1968 Die Algen Vietnams III *Euglenophyta, Chlorophyta* I. *Acta Bot. Acad. Scient. Hungar.* 14 (1-2): 41-58.
- Hortobágyi T. 1968 Vietnami Algák II *Cyanophyta*. *Bot. Közlem.* 55 (3): 153-160.
- Huber-Pestalozzi G. 1938 Das Phytoplankton des Süßwasser. *System. und Biologie*, en Thienemann A., *Die Binnengewasser*, Stuttgart 16, Teil 1.
- Huber-Pestalozzi G. 1955 Das Phytoplankton des Süßwassers *System. und Biologie*, en Thienemann A., *Die Binnengewasser*, Stuttgart 16, Teil 4.
- Huber-Pestalozzi G. 1961 Das Phytoplankton des Süßwassers *System. und Biologie*, en Thienemann A., *Die Binnengewasser*, Stuttgart 16, Teil 5.
- Irenée-Marie Fr. 1938 Flore Desmidiale de la région de Montreal. *La Prairie. Canad.*
- Irenée-Marie Fr. 1949 Contribution à la connaissance des Desmidiées de la région de Trois Rivières, V^e partie. *Nat. Canad.* 76 (3-4).
- Irenée-Marie Fr. 1952 Contribution à la connaissance des Desmidiées de la région du Lac St. Jean. *Hydrobiologia* 4 (1-2).
- Irenée-Marie Fr. 1954 Flore Desmidiale de la région de Trois Rivières *Nat. Can.* 81 (1-2): 5-49.
- Heimans J. 1935 Das Genus *Cosmocladium*. *Pflanzenforschung* Heft 18.
- Krieger W. y Bourrelly P. 1956 Desmidiacées des Andes du Venezuela. *Ergebn. Deutsch. Limnol. Venezuela Exped.* 1952. 1: 141-195.
- Krieger W. y Gerloff J. 1962 Die Gattung *Cosmarium*. *Cramer Weinheim* Lief. 1: 1-112.
- Krieger W. y Gerloff J. 1965 Die Gattung *Cosmarium*. *Cramer Weinheim* Lief. 2: 113-240.
- Krieger W. y Gerloff J. 1969 Die Gattung *Cosmarium*. *Cramer Lehre* Lief. 3+4: 241-410.
- Margalef R. 1961 La vida en los charcos de agua dulce de Nueva Esparta (Venezuela) *Mem. Soc. Cienc. Nat. La Salle* 21: 75-110.
- Margalef R. 1965 Composición y distribución del fitoplancton. *Est. Ecosist. Pelágico del NE Venezuela. Mem. Soc. Cienc. Nat. La Salle* 25: 1-379.
- Prescott G. W. 1938 Further notes on the Desmids of Isle Royal, Michigan. *The genus Cosmarium*. *Pap. Mich. Acad. Sci. Arts. and. Lett.* 23: 203-213.
- Prescott G. W. y Croasdale H. T. 1942 The Algae of New England II. *Amer. Midl. Natur.* 27 (3): 662-676.
- Prescott G. W. 1944 New Species and varieties of Wisconsin Algae. *Farlowia* 1 (3): 347-385.
- Prescott G. W. 1951 Algae of the Western Great Lakes Area. *Cranbrook Inst. Sc. Michigan. Bull.* 31.
- Prescott G. W. 1957 The Machris Brazilian Expedition. *Botany: Chlorophyta, Euglenophyta*. Los Angeles County Museum. *Contrib. in Sci.* 11.
- Prescott G. W. y Vinyard W. C. 1965 Ecology of Alaskan Freshwater Algae V. *Limnology and Flora of Malikpuk Lake. Trans. Amer. Micr. Soc.* 84 (4): 427-478.
- Scott A. M. y Grönblad R. 1957 New and interesting desmids from the Southeastern United States. *Acta Soc. Sci. Fenn. n. S. B.*, 2: 1-62.

- Scott A. M. y Prescott G. W. 1958 Some Freshwater Algae from Arnhem Land in the Northern territory of Australia. Rec. Amer. Austr. Sc. Exped. to Arnhem. Land 3: 9-136.
- Skuja H. 1956 Taxonomische und Biologische studien über das Phytoplankton Schwedischer Binnengewässer. Nova Acta Reg. Soc. Scien. Upsal. Ser. IV, 16 (3).
- Smith G. M. 1920 Phytoplankton Inland Lakes of Wisconsin Part I. Geol. and Nat. Hist. Surv. Bull. 57: 1-243.
- Smith G. M. 1924 Phytoplankton Inland Lakes of Wisconsin Part. II. Geol. and Nat. Hist. Surv. Bull. 57: 1-227.
- Tilden Josephine 1910 Minnesota Algae. Vol. 1 Minneapolis.
- Uherkovich Gábor 1966 Die Scenedesmus-Arten Ungarns. Akad. Kiadó, Budapest.
- West W. y West G. S. 1904-1911 A Monograph of the British *Desmidiaceae* Ray Soc. London I-IV.
- West W. y Carter N. 1923 A Monograph of the British *Desmidiaceae* Ray Soc. London V.
- Yacubson S. 1960 Desmidiáceas del Lago San Roque y tributarios (Prov. de Córdoba, Argentina) Bol. Soc. Arg. Bot. 8 (2): 63-89.
- Yacubson S. 1965 El Fitoplancton de la laguna de Chascomús (Prov. de Buenos Aires, Argentina) con algunas consideraciones ecológicas. Rev. Museo Arg. Cienc. Nat. "B. Rivadavia" e Inst. Nac. Inv. Cienc. Nat., Hidrobiología 1 (7): 197-267.
- Fritsch F. E. y Stephens 1921 Contrib. to our knowl. of the Freshw. Alg. of Africa 3. Freshw. algae Transkei Territ. Cape Colony. Trans. Roy. Soc. S. Africa 9 (1): 1-72.
- Grönblad R., Scott A. M. y Croasdale H. 1964 Desmids from Uganda and Lake Victoria. Acta Bot. Fenn. 66 Ed. Soc. Pro Fauna et Flora Fennica 1-57.
- Gupta A. B. 1956 A Contrib. of the Algal flora of the Allahabad Distr. J. Res. D. A. V. Coll. Kanpur 3 (1): 76-81.
- Petersen J. B. 1923 The Freshw. *Cyanophyceae* of Iceland. The Botany of Iceland 2 (2): 249-324.
- Skuja H. 1937 Algae. Symbolae Sinicae I. Wien.
- Thomasson K. 1965 Notes on algal vegetation of Lake Kariba. Nova Acta Reg. Soc. Scient. Upsal. IV, 19 (1): 1-34.