

EXPLANATION OF PLATES.

PLATE I.

J. H. Blake and W. G. Farlow.

- Fig. 1. *Glæocapsa orepidinum*, Thuret. 600 diam.
2. *Isactis plana*, Thuret. 600 diam.
3. *Sphærozyga Carmichaelii*, Harv.: a, heterocyst; b, b, spores. 600 diam.
4. *Lyngbya majuscula*, Harv. 400 diam.
5. *Oscillaria subuliformis*, Harv. 500 diam.
6. *Calothrix confervicola*, Ag.: a, a, hormogonia; b, b, heterocysts; c, cell of host-plant. 400 diam.

PLATE II.

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- Fig. 1. *Hormactis Quoyi*, (Ag.) Bornet: a, a, heterocysts. 600 diam.
2. *Ricularia atra*, Roth: a, a, heterocysts; the cross-lines represent the gelatinous matrix. 500 diam.
3. *Microcoleus chthonoplastes*, Thuret: a, free trichomata projecting beyond the ruptured sheath. 500 diam.
4. *Spirulina tenuissima*, Kütz. 900 diam.

PLATE III.

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- Fig. 1. *Ulva Lactuca*, (L.) Le Jolis: a, microzoospores which have escaped from marginal cells; b, cells in which zoospores are forming; c, cells from which zoospores have escaped. 500 diam.
2. *Rhizoclonium riparium*, Kütz. 20 diam.
3. *Cladophora latevirens*, (Dillw.) Harv. 20 diam.

PLATE IV.

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- Fig. 1. *Bryopsis plumosa*, (Huds.) Ag.; portion of upper division of the unicellular frond. 10 diam.
2. *Vaucheria Thuretii*, Woronin: a, a, young antheridia; a', antheridium which has discharged its antherozoids; c, c, oogonia with oospores. 100 diam.
3. *Phyllitis fascia*, Kütz.; section of frond with plurilocular sporangia, a, covering the surface. 500 diam.
4. *Derbesia tenuissima*, (De Not.) Crouan: a, spores (zoosporangia?) nearly mature; b, b', cross-partitions forming cell at base of sporangium. 100 diam.
5. *Punctaria plantaginea*, (Roth) Grev.; transverse section of frond: a, plurilocular sporangia with zoospores; a', the same when old, after the zoospores have been discharged and the internal cell-walls obliterated.

PLATE V.

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- Fig. 1. *Leathesia difformis*, (L.) Aresch.; dissection showing a portion of cortical layer: *a, a*, unilocular sporangia; *b, b*, hairs. 400 diam.
2. *Chordaria flagelliformis*, Ag.; longitudinal section of outer part of frond showing cortical filaments with unilocular sporangia, *a*, and a few cells of internal layer. 500 diam.
3. *Asperococcus echinatus*, Grev.; transverse section of frond: *a*, unilocular sporangia; *b*, hairs. 150 diam.
4. *Stilophora rhizodes*, Ag.; longitudinal section of outer part of frond showing sorus with paraphyses and unilocular sporangia. 400 diam.
6. *Ralfsia verrucosa*, Aresch.; vertical section of frond with a sorus containing unilocular sporangia.
6. *Sphacelaria cirrhosa*, (Roth) Ag.; a portion of frond with propagulum. 200 diam.

PLATE VI.

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- Fig. 1. *Chorda flum*, L.; transverse section of portion of a frond showing paraphyses, *b*, and unilocular sporangia, *a*. 200 diam.
2. *Stilophora rhizodes*, Ag.; portion of sorus taken from Pl. V, Fig. 4, more highly magnified to show unilocular sporangia, *a, a'*, and paraphyses, *b*. 600 diam.
3. *Ectocarpus littoralis*, Lyngb., var. *robustus*, Farlow; plurilocular sporangia. 200 diam.
4. The same with unilocular sporangia.
5. *Myrionema Leclancherii*, (Chauv.) Harv.; vertical section showing plurilocular sporangia. 400 diam.

PLATE VII.

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- Fig. 1. *Castagnea virescens*, (Carm.) Thuret; unilocular sporangium and hair, *b*. 400 diam.
2. *Castagnea Zosteræ*, (Mohr.) Thuret; transverse section of outer portion of frond showing plurilocular sporangia, *a, a'*, and hair, *b*. 400 diam.
3. *Elachistea fucicola*, Fries; dissection of superficial part of frond, showing unilocular sporangia, *a, a'*, and colored exerted filaments, *b*. 300 diam.

PLATE VIII.

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- Fig. 1. *Fucus vesiculosus*, L.; fructifying tip of frond: *a*, air-bladder; *b*, conceptacles. Natural size.
2. *Laminaria longicurvis*, De la Pyl.; section through fructiferous portion of frond showing unilocular sporangia, *a*, and paraphyses, *b*. 400 diam.

PLATE IX.

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- Fig. 1. *Fucus vesiculosus*, L.; section through a female conceptacle showing oospores and paraphyses. 200 diam.
2. The same; section through male conceptacle showing antheridia. 200 diam.

PLATE X.

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- Fig. 1. *Spyridia filamentosa*, Harv.; axis with branch bearing antheridia, *a*. 200 diam.
 2. *Callithamnion corymbosum*, Lyngb.; branch with antheridia. 200 diam.
 3. *Trentepohlia virgatula*, Harv.; showing the undivided spores, *a, a*. 200 diam.
 4. *Griffithsia Bornetiana*, Farlow; tip of male plant with antheridia. 400 diam.
 5. The same; portion of tetrasporic plant with tetraspores, *a*, and involucre, *b*. 200 diam.

PLATE XI.

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- Fig. 1. *Callithamnion Baileyi*, Harv.; plant with tetraspores: *a*, before separation from the mother-cell; *d*, free from the mother-cell. 200 diam.
 2. The same; plant bearing binate cystocarp.
 3. *Griffithsia Bornetiana*, Farlow; plant bearing cystocarp (favella). 200 diam.

PLATE XII.

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- Fig. 1. *Nemalion multifidum*, Ag.; dissection of outer part of the plant to show the cystocarp. 400 diam.
 2. *Spyridia filamentosa*, Harv.; tip of female plant with a double cystocarp, the right-hand portion of figure representing the cystocarp and branch in section; the left-hand cystocarp being seen superficially. 400 diam.

PLATE XIII.

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- Fig. 1. *Polysiphonia Olneyi*, Harv.; branch with antheridium, *a*. 200 diam.
 2, 3, and 4. *Grinnellia Americana*, Harv.: Figs. 3 and 4 represent the antheridia seen from above and in section, *a*; Fig. 2, section through a cystocarp. 400 diam.

PLATE XIV.

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- Fig. 1. *Petrocelis cruenta* J. Ag.; dissection of frond showing the tetraspores, *a, d*. 400 diam.
 2. *Rhabdonia tenera*, J. Ag.; transverse section of frond showing cystocarp and carpostome. 200 diam.

PLATE XV.

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- Fig. 1. *Dasysia elegans*, Ag.; branch with stichidium bearing tetraspores. 300 diam.
 2 and 5. *Champia parvula*, Harv.: Fig. 5, portion of frond bearing a cystocarp, *a*; slightly enlarged; Fig. 2, section through *a*, showing arrangement of spores, carpogenic cell, and carpostome. 400 diam.
 3 and 4. *Polysiphonia Harveyi*, Bail.: Fig. 4, branch with cystocarp; Fig. 3, section through the same, showing spores and carpogenic cell. 400 diam.