

Notes on the algae of the United States / by J.W. Bailey.

Contributors

Bailey, Jacob Whitman, 1811-1857.
Royal College of Surgeons of England

Publication/Creation

New Haven : Printed by B.L. Hamlen, 1846.

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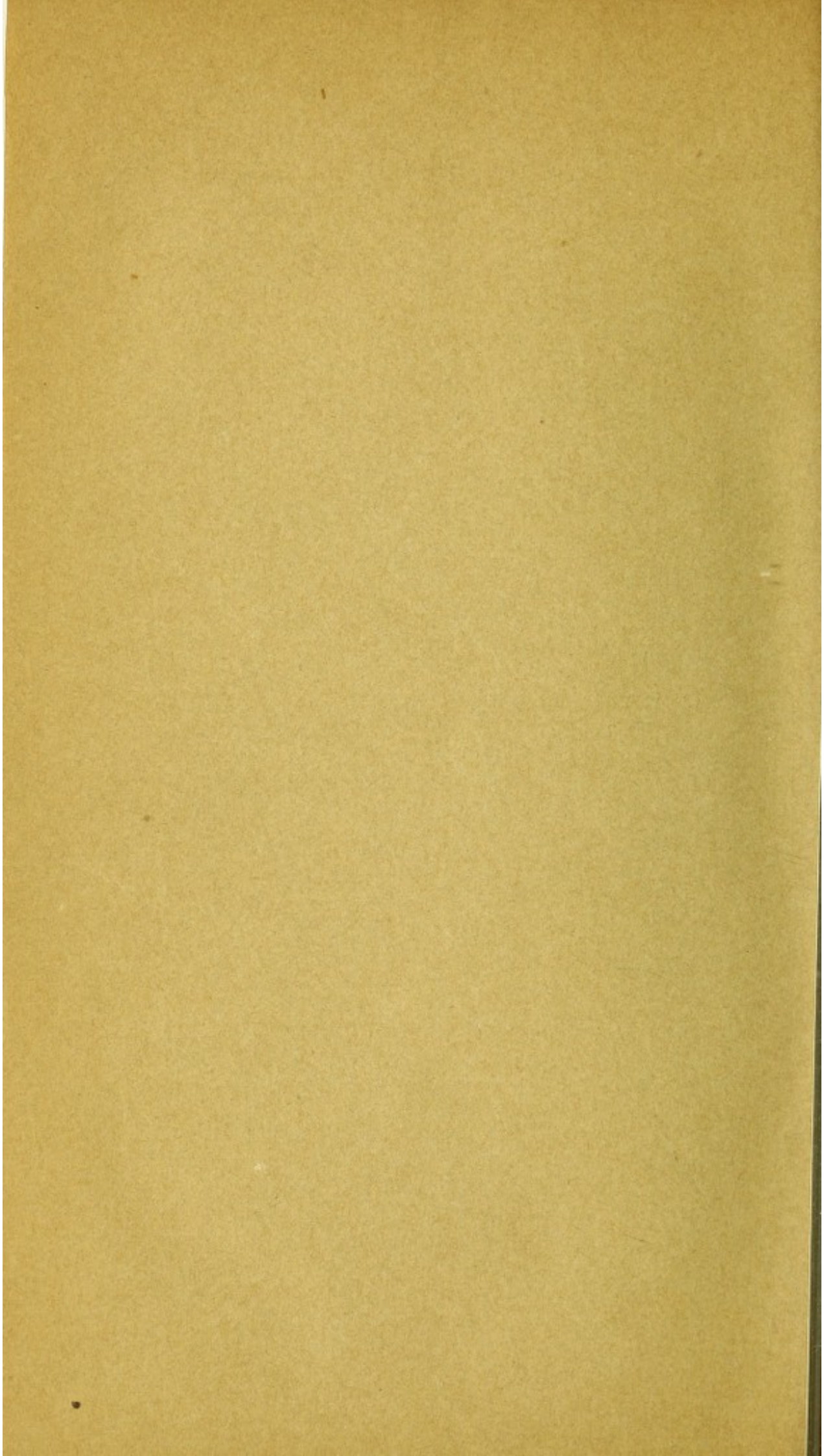
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Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

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NOTES

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ALGÆ OF THE UNITED STATES.

BY

J. W. BAILEY,

Prof. of Chemistry, &c. at the U. S. Military Academy.



From the American Journal of Science and Arts, Second Series, Vol. III.

NEW HAVEN:

PRINTED BY B. L. HAMLEN,

Printer to Yale College.

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THIRD FLOOR, COLLEGE

1880.

NOTES, &c.

SCARCELY any branch of natural history has been so much neglected in the United States as that which relates to the beautiful plants which are referred to the great group of Algæ. With the exception of six or eight species from the neighborhood of New York city, which were sent by Dr. Torrey to the elder Agardh, and which are mentioned in the *Systema Algarum*, I am not aware of any published account of any of the marine Algæ of the United States, prior to the following notice, which I find in the Proceedings of the Boston Society of Natural History, Vol. I, p. 13.

"The President (G. B. Emerson) exhibited (March 17th, 1841) dried specimens of the following marine plants found on our coasts, viz. *Fucus vesiculosus*; *Fucus nodosus*; *Alaria esculenta*; *Agarum cribrosum*; *Laminaria digitata*; *Desmarestia aculeata*; *Dichloria viridis*; *Chorda filum*; *Asperococcus echinatus*; *Punctaria latifolia*; *Delesseria sinuosa*; *Rhodomenia cristata*; *Chondrus crispus*; *Ptilota plumosa*; *Porphyra* several species; *Ulva latissima* and other species."

I can find no published notice of any of our fluviatile Algæ, although they appear to have been studied with some care by the indefatigable Schweinitz. I have seen in the herbarium of Dr. Torrey, a number of specimens of the fluviatile Confervæ of North Carolina, collected by Schweinitz, and with labels in his own hand-writing, indicating that he considered many of the species as new, and that he had assigned to them names of his own. If he ever published any notice of them, I cannot find it in the books to which I have access.

It appears then, that scarcely more than twenty species of Algæ have hitherto been accredited to our Flora. In this dearth of information, I am induced to hope that the results of my own study in this much neglected but most fascinating department of science, will be received with interest and indulgence.

My attention was first turned to this study at the request of Dr. Torrey, who wished me to prepare a notice of the Algæ of New York, to be included in his Report on the Botany of that State. He kindly placed the whole of his collection of foreign Algæ in my hands, and it is by the study of his authentic specimens received directly from Agardh, Greville, Harvey, Mrs. Griffiths, &c., that I have been enabled to proceed with some confidence in the determination of our own species.

My inland position has, however, prevented me from having many opportunities for collecting our marine Algæ. In fact, with

the exception of two days spent on the sea-shore at Stonington, Conn., in the year 1838, and an excursion with Dr. Torrey for a few hours to the shores of Staten Island, I have had no chance to gratify my desire to study these beautiful productions in their native haunts, until this summer, when in company with Messrs. S. T. Olney, G. B. Thurber, and Geo. Hunt, zealous young botanists from Providence, R. I., I visited various parts of the shores of Rhode Island and Narragansett Bay, and made large collections of the Algæ. A residence of a few weeks at Providence and Newport, also afforded me an opportunity to add much to my collection, and to study microscopically many of the species in their full state of perfection.

It will be seen from the above statements, how slight an exploration has hitherto been made of the Algæ of our shores, and it is hoped that this will serve as sufficient apology for the incompleteness of the list which it is my object now to present.

I have included in the following list every species now positively known to me as growing in the United States, together with a few other North American species. Where no other authority is given, it will be understood that the plant was found by myself growing at the locality mentioned. Where the name of the collector is given followed by a (!), it is meant that authentic specimens from his locality have been examined by myself.

In the classification and names of most of the species, I have followed the excellent Manual of British Algæ, by the Hon. W. H. Harvey, and I must refer to that work for the synonyms of the marine species. Some of the freshwater genera and species are adopted from Ralf's papers in the Annals and Magazine of Natural History, or from Hassall's British Freshwater Algæ. For some of these, synonyms are given.

The principal localities will be referred to by the following abbreviations, viz. *Newport, R. I.* = the rocky sea-shore extending south from the bathing beach at Newport,* *Narr. Pier* =

* Those who feel desirous to visit Neptune's flower-gardens, and "where the sea casts up its briny ooze, to seek for weeds," will find the whole shore at the foot of the cliffs near the bathing grounds at Newport, well worthy of a visit. I presume that almost every marine species mentioned in my list and doubtless many others, may be found there, and I fully believe that Newport is yet to rival Torquay in England, as a locality for fine Algæ. My favorite spots along the shore, are in the small coves about half a mile below "the Stairs," where at low tide it is easy to get out upon

— "the rocks where the sea-plants lift
Their boughs when the tides and billows flow,"

and where

— "with its waving blade of green,
The sea-flag streams through the silent water,
And the crimson leaf of the dulse is seen
To blush like a banner bathed in slaughter."

The shores in this neighborhood are covered at low tide with vast quantities of rejectamenta, among which many of the most beautiful of the Algæ may be found ;

the pier near Wakefield, R. I., on the west side of Narragansett Bay; *Seaconnet* = shores of Seaconnet Point, R. I., from the pier eastwardly for about two miles; *Ston. Ct.* = Stonington, Conn.; *Prov. R. I.* = Providence, R. I.; *Stat. I.* = Staten Island, N. Y., and *W. Pt.* = West Point, N. Y., and its vicinity for five miles around.

Series I. MELANOSPERMEÆ.

Sargassum vulgare, Ag. Seaconnet, Bristol Ferry, and Stone Bridge in Rhode Island. Specimens of this were found by Mr. Thurber and myself growing, *attached to stones*, below low water mark at Seaconnet Point, R. I. I afterwards found fine specimens at the other localities above mentioned. Harvey remarks, that it is "a native of the tropics," and only occasionally drifted to the shores of England; hence the discovery of it, growing attached to rocks on the coast of Rhode Island is one of considerable interest.

Sargassum bacciferum, Ag. *Gulf weed*. Floating in the Gulf Stream. My specimens were collected by Lieut. Knowlton, U. S. Army.

Halidrys siliquosa, Lyngb. Newfoundland. Edinburgh Encyclop. Fuci, p. 484.

Cystoseira ericoides, Ag. Nootka Sound. Dr. Scouler; v. sp. in herb. Tor.

Fucus vesiculosus, Linn. } These two species of *Fucus* grow
Fucus nodosus, Linn. } everywhere on our coasts in vast quantities. They are commonly known by the name of *rock weed*, and are extensively employed as manure. It is probable that several other species of *Fucus* are as common on our coast as they are on the eastern shores of the Atlantic; yet after the most careful search, these were the only species I could detect at Newport, or near New York city.

Himanthalia lorea, Lyngb. Massachusetts. G. B. Emerson.

Alaria esculenta, Grev. Shores of Newfoundland, M. de Py-laie. Massachusetts, G. B. Emerson.

Agarum cribrosum. Massachusetts. G. B. Emerson; Rev. J. L. Russell! Shores near Newburyport, Mass. J. W. Bailey.

Laminaria digitata, Lamour. Massachusetts. G. B. Emerson; Narragansett Pier, S. T. Olney!

Laminaria saccharina, Lamour. *Ribband weed*, *sole-leather-kelp*, &c. Very common on the shores of Rhode Island, Massachusetts and Connecticut. Fine specimens are often washed ashore at the bathing beach at Newport.

but I must caution the fair Algologists who may visit this spot, (some of whom I hope may yet rival in celebrity those distinguished English ladies, Mrs. Griffiths and Miss Hutchins,) that unless they are careful the tide may cut off their retreat from these rock bound bays, and leave them in a predicament from which no Edie Ochiltree could relieve them.

Desmarestia aculeata, Lamour. Mass. G. B. Emerson; Nantasket Beach, Rev. J. L. Russel! Newport, not rare.

Dichloria viridis, Grev. Mass. G. B. Emerson.

Padina pavonia, St. Domingo! It will doubtless be found on our southern coasts.

Punctaria latifolia, Grev. Mass. G. B. Emerson.

Punctaria tenuissima, Grev. Narragansett Bay, and Newport on leaves of *Zostera*.

Asperococcus echinatus, Grev. Mass. G. B. Emerson.

Chorda lomentaria, Grev. Narragansett Pier; Seatonnet and Newport, not rare.

Chorda filum, Lamour. Mass. G. B. Emerson. Common on shores of Rhode Island, and at Stonington, Conn., where I saw specimens from thirty to forty feet in length.

Cladostephus verticillatus, Lyngb. } Both these species (or as
Cladostephus spongiosus, Ag. } I believe *varieties* of the
same species) occur abundantly at Newport.

Sphacelaria cirrhosa, Ag. Stonington, Conn.; Seaconnet, R. I.

Ectocarpus siliculosus. Very common everywhere on our shores, and also in the Hudson River at West Point, sixty miles from the ocean.

Chordaria flagelliformis, Ag. Mass. G. B. Emerson. Very common on the shores of Rhode Island and Connecticut.

Series II. RHODOSPERMEÆ.

Mesogloia multifida, Ag. Common, with the preceding plant.

Halymenia furcellata, Ag. Newport.

Polyides rotundus, Grev. Newport and Seaconnet; Mass. Rev. J. L. Russel!

Delesseria sinuosa, Lamour. Mass. G. B. Emerson; Plymouth, Mass. Rev. J. L. Russel; abundant near "the Stairs" at Newport.

Delesseria Leprieurii, Montaigne. Shores of Hudson River at West Point, below low water mark. Specimens of this beautiful plant were sent by me to Montaigne, who pronounced them identical with the plant described by him from the coast of Cayenne.* It is *very abundant* at West Point; but I could only find a single specimen of it on the shores of the Hudson at Hoboken, N. J., near the ocean.

Delesseria americana, Ag. "Ad litus Americæ Septentrionalis." Ag. Syst. Alg., p. 248. I have not seen any figure or authentic specimen of Agardhs plant; but I suspect it to be the same as a fine species with fronds twelve to eighteen inches long, which grows abundantly near Providence, R. I., in Narragansett Bay. I also found a fragment of the same at Hoboken, N. J.

Rhodomenia cristata, Grev. Mass. G. B. Emerson.

* See Ann. Sci. Nat., 2d Series. Bot. tom. xiii, p. 196, pl. 5.

Rhodomenia palmata, Grev. "Dulse." Mass. Rev. J. L. Russell! Common on shores of Rhode Island and Connecticut.

Plocamium coccineum, Lyngb. Mass. Rev. J. L. Russell!

Laurencia dasyphylla? Lamour. A species of *Laurencia* occurs abundantly at Newport and at Seaconnet, which appears closely allied to *L. dasyphylla*, and is perhaps only a variety of that species.

Chylocladia parvula, Hook. Common on shores of Rhode Island, from Providence to Newport and Seaconnet. Harvey remarks that he has seen specimens from North America, agreeing in every particular with British ones.

Gigartina purpurascens, Lamour. Stonington, Conn., Narragansett Pier, Newport, and Seaconnet.

Chondrus crispus, Lyngb. This plant, which is the Carrigeen or Irish moss of the shops, is abundant everywhere on the coasts of New England. At Newport, it is generally known by the name of "Curl" or "Currel."

Chondrus membranifolius, Grev. Newport and Narragansett Pier; Mass. Rev. J. L. Russell!

Sphærococcus multipartitus, Ag. δ *angustissimus*. New York. Ag. Syst. Alg. p. 216. Shores of Staten Island. Dr. Torrey!

Sphærococcus Torreyi, Ag. New York Ag. Syst. Alg. p. 218.

Ptilota plumosa, Ag. Mass. G. B. Emerson and Rev. J. L. Russell! Seaconnet, R. I. Particularly abundant and fine near "the Stairs," at Newport.

Polysiphonia subtilissima, Montaigne. Hudson River, below low water mark, at West Point, sixty miles from the ocean. Specimens of this have been sent to Montaigne, and he pronounces them identical with those he has described from Cayenne. It is remarkable that it is accompanied, both at West Point and Cayenne, by the *Delesseria Leprieurii*, Mont.*

Polysiphonia violacea, Grev. Narragansett Bay, R. I., Staten Island, N. Y. Common.

Polysiphonia fastigiata, Grev. Common on Fuci, at Newport and Seaconnet; Plymouth, Mass. Rev. J. L. Russell!

Polysiphonia stricta β . *atropurpurea*, Ag. New York. Ag. Syst. Alg. p. 150.

Polysiphonia nigrescens, Grev. Newport.

Polysiphonia Brodæii, Grev. Plymouth, Mass. Rev. J. L. Russell! Newport, R. I.

Besides the above, I have two or three species of *Polysiphonia* from Rhode Island, which I have not yet satisfactorily determined.

Dasya pedicellata, Ag. "Ad Noveboracum." Ag. Syst. Alg. p. 211. Very beautiful specimens occur in abundance near Providence, R. I., also at Newport, R. I. I have seen a fragment of

* See Am. Sci. Nat., 2d series, Bot. tom. 13, p. 196, pl. 5.

the same from New Haven, Conn., collected by Professor C. U. Shephard.

Ceramium rubrum, Ag. Only too common, every where on our coasts.

Ceramium diaphanum, Ag. Nearly as common as the preceding.

Griffithsia —? An undetermined species occurs at Providence and Newport.

Callithamnion Turneri, Ag. Parasitic on *Cladostephus*, &c., at Newport.

Callithamnion Rothii, Lyngb. On rocks under the Fuci, at Newport.

Callithamnion —? A delicately branched species, which I have been unable to determine, occurs plentifully near the Tockwotton House, at Providence, R. I.

Trentepohlia pulchella, Ag. Cascade at West Point; parasitic on *Lemania fluviatilis*.

Series III. CHLOROSPERMEÆ.

Lemania fluviatilis, Ag. Cascade at West Point; Mountain Run, Culpepper Co., Va.; and Falls in the Rappahannock River, above Fredericksburg, Va.

Lemania tortulosa, Ag. Foot of Crow's Nest, West Point; Mass. Rev. J. L. Russell.

Thorea viridis, Bory. N. America. Ag. Syst. Alg. p. 56. Agardh suspects it to be an *Oscillatoria* adhering to some aquatic plant.

Batrachospermum moniliforme, Ag. Salem, N. Ca, Schweinitz. Abundant just below the dam of Reservoir Pond, near West Point.

Batrachospermum Americanum, Schweinitz. Salem, N. Ca. Schweinitz! Common in small streams near West Point; Hingham, Mass. Rev. J. L. Russell.

Bulbochæte setigera, Ag. Common in ponds near West Point, Spectacle Pond, near Providence, R. I., Worden's Pond, R. I.

Draparnaldia plumosa, Ag. } These species are all common
Draparnaldia glomerata, Ag. } at West Point, and I have
Draparnaldia tenuis, Ag. } specimens of them also from
 Massachusetts, sent by Rev. J. L. Russell, and from Chautauque Co., N. Y., sent by M. S. Petit, Esq.

Chætophora endiviæfolia, Ag. Mass. Rev. J. L. Russell! Ponds in New York and Rhode Island.

Coleochæte scutata, Breb. This most beautiful plant occurs abundantly in Round Pond, near West Point, where I found it in fruit in September. Both varieties, α and β , of Brebisson, (with every intermediate state,) occur, and both with fruit. The fruit of variety β is in the form of capsules on the ultimate ramuli, which do not appear to have been noticed by any previous writer.