Ans. Sept 4th
Ans Sept 18

Boston Sep 1. 1866

Dear Sir.

I have just received with great pleasure your letter of the 28th ult, because it will be in my power to send you the specimens of Isoetes you wish to procure.

It is only a few years ago that by the discovery of the Woburn Isoetes my attention was drawn to the genus, and since then in all our ponds and in the streams leading into or out of them I find it common. When I first discovered the plant that Mr. Durieu has named I. Americana I gave Dr Gray some fine specimens the largest of which he said he should divide and send you half of it.

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If therefore you received from Dolgay some three or four years ago, half of a plant of Isoetes, with long straighish leaves, it is the I. Muricata. Durieu.

I can send you other good specimens and will try to procure some living ones. A short time ago the water in the brook was so high owing to heavy rains that I could not find any plants. I can also send you specimens from the pond (Horn Pond) into which the brook discharges itself. I have also specimens from Mystic Pond, gathered at the extreme end, just at the beginning of the river, which may be the same as Tuckermans plant, and I will

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collect fresh specimens for you. I have some other specimens collected in other places in the neighbourhood. Prof Braun has ~~through~~ our friend Dr Gray requested me to send him some living plants of the S. Muricata, and I hope to be able to send them to him. Mr Darwin has expressed a strong desire to get the S. Velutina from Lake Winnipisiogee, and that from Catskill which he has named S. macrosphyra. Of the former I shall try and get living plants. The latter it would be a piece of good luck to meet with, as I believe neither the name of its discoverer or the place of its growth is known.

I have never noticed any of our

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I notice denuded of the blackened tufts or remains of the old bulbs. probably because I have not examined them early enough in the season.

Through Dr Grays kindness I have been able to read the first part of your monograph on Juncus, and am glad to discharge my share of the obligation all botanists owe me you for introducing order into so confused a genus.

If at any time I can be of any service to you, I assure that you will give me pleasure by calling upon me freely

I am Dear Respectfully
Yours,

William Boott

Dr Engelmann
St Louis

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Rec'd Sept 7
Ans Sept 18

Dr George Engelmann

Boston 3d Sept 1866

Dear Sir

I have left this morning with Dr Gray a large number of specimens of Isoetes, part of which he has promised me to send to Prof Braun and part to you. They were collected yesterday in Mystic Pond and in the brook at Woburn.

The Mystic Pond plant is from the very end at the origin of the river. I hope it will prove to be the plant Prof Braun is in quest of. Since Duchesneau collected Isoetes, the pond has been much altered. It is so contracted in the middle as really to form two ponds. The tide has always somewhat

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effected the lower pond, and the darker water is brackish and foetid. The United States government have deepened the river bed, so that the tide rises higher and falls lower than formerly. The upper pond was always fresh and never effected by the tide. It has been dammed up and the water diverted to supply the city of Charlestown, and this reduces the level of the lower pond. These effects came into operation last year. I did not yesterday find the plant so abundant as it was last year

The Bottom plant grows in a brook twenty twelve feet wide, in a depth of water from 6 inches to 2 feet, on naked gravel, and is a solitary plant.

The Mystic Pond species is rather gregarious

Brauer?

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and grows among Sphagnum & Osmunda in a bog composed of Eleocharis Acicularis Lobelia Dortmanna & Eriocaulon Septangulare and in about a foot of water.

If you should identify these plants, I should be very glad to learn the result of your examination of them

I remain Dear Sir
Very Respectfully Yours
William Boott

immersed?

Gray says
I. minuta (tall) from Mystic Pond
I. Asiatica? (small) from Mystic River

Mistake

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Rec'd Sept 22
ans Sept 24

Dr George Engelmann

Woburn 19 Sep 1866

Dear Sir

I have to day sent you by mail a small box. It contains some specimens of Isoetes gathered yesterday at a small shallow pond that has no outlet, in Woburn. Owing to the shrinking of the pond, many of the specimens were wholly emersed. I have not examined it

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but its bright colour, and
very straight leaves have
a peculiar appearance, and
I hope it may be of interest
you –
In the box are two other
specimens, readily recognized
by their curling leaves. They
were gathered in the Abbajona
River, the main feeder of
Mystic Pond

Yours Dear Sir
Yours Respectfully
M Root

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Rec'd Sept 26
Ans October 3

Dr George Engelmann

Boston Sept 22 1866

My Dear Sir

I have first received your favor of the 18th and am very glad to have Dr Sartorius an endorsement of the Bolanbrook Species as a new species. I am Dr Gray to be distributed between Prof Braun and you the Species found in the Bolanbrook easily recognized by the bright green long and straightish leaves and the Species from the lower end of Mystic Pond, a smaller plant than the other in the water and recurved leaves.

The price is as given on the page on to catch the Ilicifolia grows in the shallower and quieter parts of a pond, broth in pine as first to 18 inches greater. Its locality is marked (1) on the enclosed plan. It is always submerged. The second plant was from Mystic Pond. with Rands I have not yet been able to detect any Species in the water. Its locality is marked (2) in the plan. It is also submerged but last year when the lower pond was drained of the water of the upper pond, and the wilted decomposed, as I wrote to you the plant grew common out of water. This year only the immersed plants survive. I have good specimens of last years collecting which I will send you in a day or two.

An Isoetes probably the same. fringes the whole margin of Mystic pond, where the ground is soft, is gregarious and appears very small. I will if possible get specimens from different parts of the pond. In writing of Mystic Pond I mean only the lower pond. The upper pond has been so dammed up, and the water deepened so as to drown all plants growing in shallow water. The two specimens of Isoetes I sent you the other day with curled leaves are from station (3) on the plan – the other with bright green very straight leaves from the round shallow pond with no outlet (4).

Late last autumn I collected some remarkably fine specimens of an Isoetes, from a mill pond or dammed up stream that was drawn down at a spot marked (5) on the plan. Not at that time hearing heard of Mr. Gray's death, I sent a large number of living plants down for Mr. Durieu, and later when I heard of Mr Gray's loss, I advised Mr. Durieu of my despatch, but he did not succeed in recovering the plants. I can send you dried specimens. They were entirely immersed, in mud so soft that the pole sunk from 10 to 12 feet in it. This year the water has not been let off and the heavy rains have so increased the depth of water that I have not been able to find the plants. There is lower down the same stream an immersed Isoetes at (6) which I can get.

The Robinsonbrook plant – I Muricata is a solitary plant generally found in clean gravel.

When I spoke of Isoetes being common in this vicinity, I spoke generically. If you will look at

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the enclosed rough plan, you will see that I have marked the places where I have found it. Besides it is common in Horn Pond. I have specimens from that pond which I wish (7)x(8) and will send you. In the chain of ponds between Horn & Mystic Ponds I have noticed it growing. It is found in Rush Pond, and I think I have found it in Spot Pond. These are the only places that I have I have explored since my attention was drawn to the genus. Another season I will take a wider range

McDuncia expressed to me a strong desire to have the Cattskill Isoetes, of which there is only one specimen, in the Herbarium of the Phila. Soc. Is anything known of its locality? Dr Gray told me that Clinton had promised to look for it. Can it be the plant you mention as receiving from him?

As I am writing at my office, I cannot at this moment give you the date of my first collecting I. Muricata but will in a future letter, and from the specimen I shall send you you will get the length of leaves. From memory I should put this extreme length at a foot

Some years ago I found at Hannibal Aster Anomalus growing abundantly on the River Banks. It is exclusive to St Louis. May I ask you the favour to send me some other fruits.

I trust the paper box that I sent you last week has reached you in good condition with the Isoetes from (3)x(4) of the plan, and in a day or two I will send you all that is my herbarium will furnish

Very respectfully
Your W W Bolton

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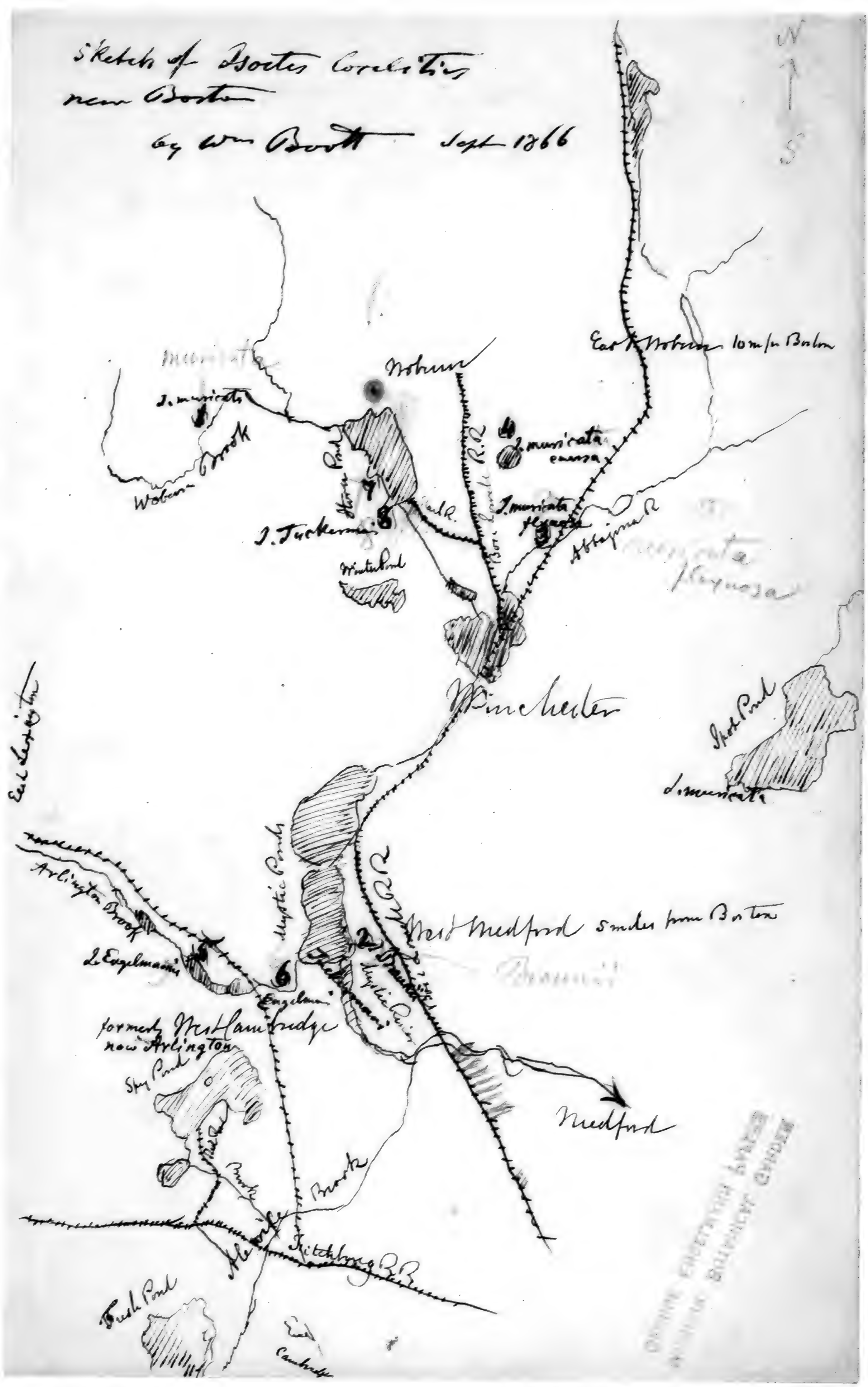
Sketch of Isoetes Coreli Tiv
near Boston

by Wm Boott Sept 1866



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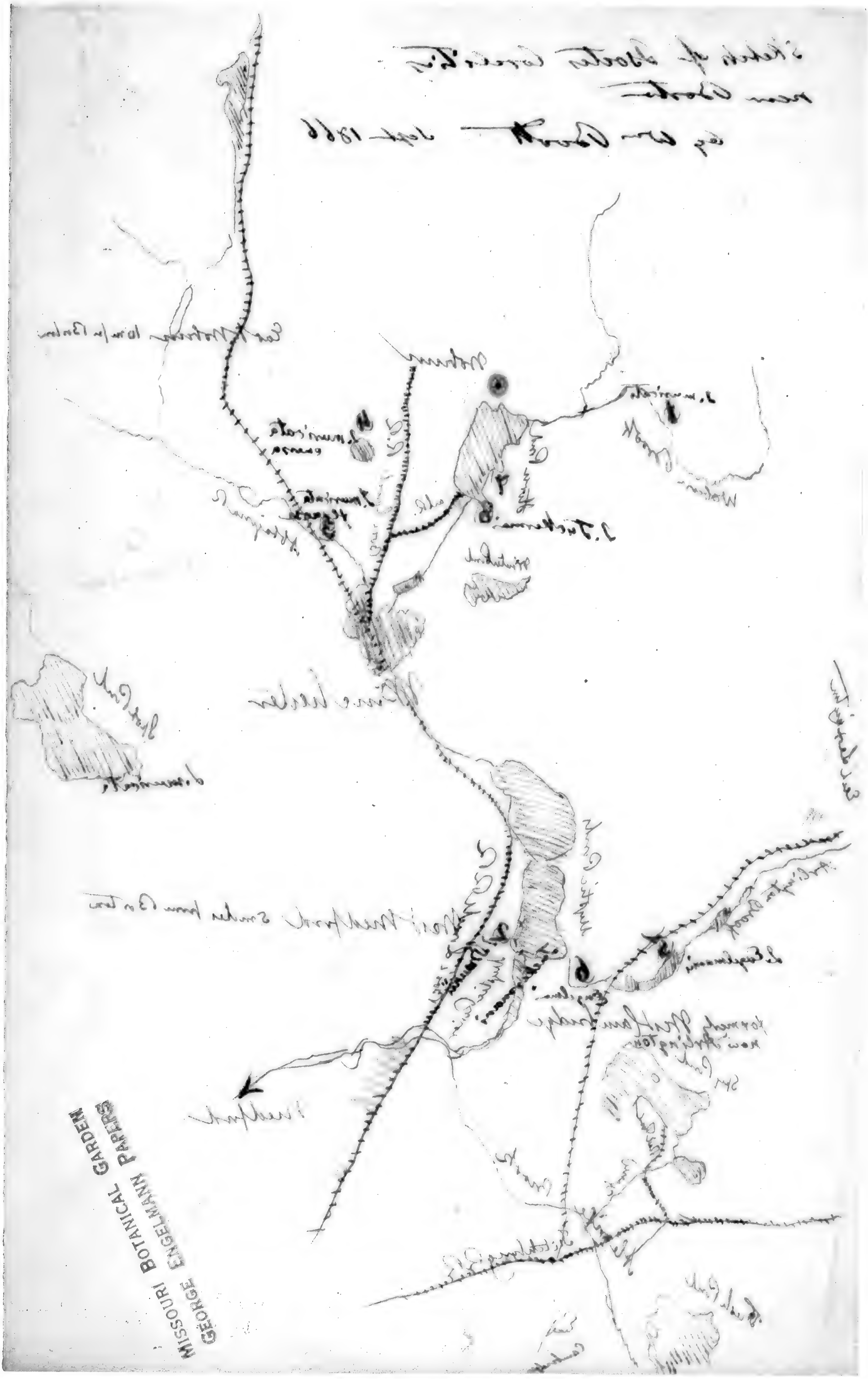

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Recd Sept 29
Ans. Octo 3

Boston 26 Sept 1866

Dear Sir

I send you to day by mail the dried specimens of Sovetes. I cannot find any from Horn Pond, but will try and collect some there this season.

The numbers refer to the numbers in the tracing of the country around Woburn which I inclosed in my last letter

No 1. the Woburn Brook

(1). 1 Specimen Collected Aug 5. 1860
(2) 1 " " Oct 7. 1860
(3) 1 " " Sep 18. 1862
(4) 1 " " Nov 16. 1862
(5) 9 " " Sep 2. 1866

No 2. Lower end of Mystic Pond

(1) 6 Specimens collected July 30. 1864
(2) 4 " " Sep 2. 1866

No (5). Mill Pond & Stream West Cambridge

(1) 4. Spec. growing out of water coll Oct 26. 1865
(2) 2 " " Nov 5. 1865

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P. Brauni — Concord Brook

Nov. 4 Specimens collected Aug 30. 1866

I first collected the Botrum Brook No 1
Isoetes Drummondii Aug 5. 1860.

The lower Mystic Pond having been lowered as I mentioned before, the specimens I collected there in July 1862 grew most of them entirely out of water. Now all such have perished, and in the water the plants are dwarf, not having yet established itself at the proper depth.

The No 5. Isoetes came from a mill pond formed by damming a large brook, the water of which was drawn off so that the plants collected in Oct. Nov 1865, were nearly all growing luxuriantly out of water. The water is this season so deep over this locality that I have not been able to approach the place

The Concord Brook - No 9 - is a small stream that one can jump across, and the Isoetes there grows in a firm bottom in about 10 inches of stagnant water.

In my last letter I rectified Gray's misapprehension of the localities of the

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two plants Gentyon. No 1. is from a brook at Woburn & No 2. from Mystic Pond not River – I have not yet found any Insects in the river. All the Woburn specimen of this year, grew within 100 yards of each other. Those of former years grew rather lower down the brook

With regard to the reddish colour of No 2. I think it is found only when the plants are out of water. The leaves are always recurved Mimicata is always bright green and always submerged. The bright green colour of No 5 is more marked, as well as the breadth of the leaves, and I think the broad wing of the base or Spore Case.

I saw yesterday at Dr Gray's an Insectis from Catskill collected there by Judge Clinton. I hope it may prove to be Macrorhiza, but under a lower power the specs did not seem to belong to the Philoflant mentioned by Dunnin, and not large. In the hopes that my plants will reach you safely and be of some value

I am Dear Sir
Your Respectfully
M Cook

Dr Engelmann

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Ans: Oct 11
ans Oct 22

Dr George Engelmann

Boston Oct 8 1866

Dear Sir

I have just received your favour of the 3d and reply to it at once - and my hastiness as I am just starting on a journey that will keep me away from home ten days or a fortnight.

On my return I will if possible endeavour to collect some good specimens of Isoetes Engelmanni under water. If the cold weather does not prevent me I have no doubt that I can get some. I am very glad that you have detected

I. [illegible]

Yours [illegible]
[illegible] Stockton

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this fine species among my plants

I intended to present you with the plants I have lost, and I regret that they were not more carefully prepared and better worth your acceptance. I have not seen D. Minicuta only water, except at the small pond in Woburn, where the evaporation has uncovered it. The two specimens of that species from the little river Abbajona, could never I think have been out of water, or even in less than a foot of water.

The Mystic Pond I. Boanini Bush

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before the artificial lowering of the Pond been always immersed. The first season after the lowering of the level of the pond, it grew flourishingly a little above and below the water line. Now all those plants have perished, and the plant is quite scarce in the water. What is now the suitable depth must have been too great for the plant before the pond was lowered. The specimens I gathered this year were all under water, and they are red at the base of the leaves. I am wrong in stating that the emerged plants only were coloured. There is iron in the land draining into the pond. Can this cause the colour? The water

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of the lower Mystic Pond, at a depth of about 20 feet is somewhat saline, and fœtid.

I will try and get other specimens of Isoetes from other parts of the Pond, and send them to you

I tried to collect some at Fresh Pond yesterday, but the wind ruffling the surface, and the decaying vegetable matter about the shore, baffled me so that I only got three very small poor leaved specimens.

I am much obliged by your for your kind offer about Aster Anomalus: At a country place of a relation I have sometimes cultivated some of our native plants

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I am always Dear Sir
Yours Respectfully
W. Boott

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Rec - Oct 26
Ans Oct 29
Dr George Engelmann

Boston 23 Oct 1866

My Dear Sir

I returned home a few days ago, and as soon as I could find leisure went to work up Isoetes in Mystic River and Mystic Pond. The resulting collections made on the 21st I send you herewith by mail in a paper box. It contains two parcels, the upper and smaller one has the River specimens, and the lower and larger one, the Pond specimens. The River specimens were gathered near the Point where it issues from the Pond and from there about 1/16 mile to Woods dam, below which I could not take my boat. The bed of the river has been deepened and much affected by the Harbor Commissioners, and there are few plants growing in it. The specimens from the Pond were taken from various parts of the shore, principally however from the South End and the West side. The East shore has been filled in in some places, dry within others and every where changed by the conduit that takes the water from the other Pond to Charlestown. The former Mystic Pond has been very much altered, partly by stopping up the water ~~pass~~ of the upper part. Respectfully

Dr Chas. Wright Dr Gray Asa Gray Boston

the City of Charlestown and secondly by deepening the inner bed for the purpose of making the pond a tidal reservoir to scour out Boston Harbour. Formerly the tide rose only a few inches in the pond. Now I think it may rise 2 feet more. At 18 feet below the surface the water is salt at 20 feet salt & sulphurous, the surface water being fresh. Forsford thinks the salt is caused by the flow into the pond of high tides, and the sulphurous matter by the tide water taking it up from the marshes about the river & carrying it into the pond. The pond is much deeper than the river, and the salt & sulphur having no outlet must accumulate in it. There is iron also on the sides about the pond, and a good iron spring near it.

Just now, Diatoms in the Mystic Pond is very abundant, giving fine leaved plants growing gregariously in a few inches of water, and the larger plants separate in a foot or more. As far as I am aware, the Potamogeton Brook Diatoms is not varied with any other — and the Mill Pond plants in Cambridge is always uniform in character. Hence the Mystic Pond plants I am not so confident.

In Nov 1862. Saml. M. Gray sent some living plants

of the Woburn Brook Isoetes, from which Mr Durieu established I. Muricata. In January I sent him some fresh direct specimens from Echo Lake, and in Apr 1865 I sent him, not having heard of his death, some fine living plants of the Cambridge Mill Pond ~~plant~~ Isoetes, which you determine to be I. Engelmannii. Afterwards on learning the sad news of his death, I advised Mr. Durieu of the package, and he made some effort to get it, but without success. This year I have sent Mr Durieu a few living plants from near Weir Landing at Lake Winnipisogee. Instead Mr. Durieu's mistake about my having collected I. Engelmannii with Minnesota, and pointed it out to him. Guy has corrected the passage and collected at Wilmington by Canby. If however Mr. Durieu saw a specimen of Engelmannii collected by me, it must have come from the Woburn Brook, or from Echo Lake. I have still some specimens from Echo L. and will send you some. I did not do so lately because I supposed the Echo L. plants to be well determined as I. Lacustris. I will try and get Mr. Guy to give the other half of the plants of each he has, in exchange for one half, and send it to you.

You note first I think that the Oyster Pond

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and inner plants are losing their colour and becoming brownish. The young plants grow in the spring & summer ground, the older ones when the ground is dry. The old bulb remains on most of the plants, and sometimes slightly & readily, and at other times adheres firmly.

I think about being able to send you any plants of I. Engelmanni pondich notes. There is no bark except that I could use at the mill pond N. Cambridge. I can get some plants home down the Jamaica stream, and I will get some I hear from Tom Pratt.

Do not think of giving me trouble. I am very glad to be able to provide you with anything I can procure, and young botanists especially will give an increased value to my collection — I do not remember anything about Juncus articulatus, but will look and see if I have any thing peculiar. I have not had time yet to do it. The only thing I remember in Juncus is a J. effusus with a contract globular kind of fruit. I never found it but once.

I congratulate you heartily in having got rid of the cholera. We have had here scarcely any deaths, but one, and that of Dr Gordon an excellent naturalist and an admirable man — a great loss.

Yours always dear Sir
Your very truly
W Poott

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Recd Nov 3
Ans same day

Boston 30th Oct 1866

Dear Sir

I have just mailed to you a box containing two parcels of Isoetes, the lower parcel filled with living specimens of I. Engelmanni from the West Cambridge brook, below the Mill Pond - No 6 on the Plan I sent you - the upper parcel contains living specimens from Horn Pond from the lower end at my Station No 8. I could not approach the part of the W Cambridge Mill Pond where the specimens I some time ago sent you of I. Engelmanni grew. These I send you now were all immersed, and the leaves were secured in the same manner as when the plant is entirely water -

I was not very successful at Horn Pond. I could not get a boat. The wind was very high and by ruffling the surface of the water made it difficult to see the bottom, which is covered thickly with leaves that are soaked through and heavier than water, while the surface is as thickly strewn with freshly fallen leaves. The few plants I could get were got by wading. I went to the other station about the middle of the West side of the Pond, against

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which the winds & waves had driven such a mass of floating matter that I could find nothing. Since I sent you the Mystic Pond Specimens, I took advantage of low tide and walked down - over the bank and over the bed of the river for some distance, and at the bed of the brook which flows out of Fresh Pond into it - all of this below the dam where I was stopped in my first excursion. The rise and fall of the tide is from four feet at the upper end to perhaps double that amount at the lower. With careful search I could not find a single Isoetes, so that I conclude that Tuckerman's plant from Mystic, must have grown on the very ground from which my specimens were collected.

With regard to your questions about colour in winter - I have not seen any Isoetes later than November. At that time I Engelmanni is of a bright green and in vigorous growth - I. Prainii in Mystic Pond becomes more of an olive colour at this season - and so I think does the Woburn Brook

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I. Articulata – I. Brannii seems now generally to have lost the outer leaves especially in the shallow places – in deeper water the plants have often a full complement

At the lower end of Mystic Pond, until within a few years there was not by the measurement of the U.S. Engineers any perceptible tide in the Pond. Now there is a rise perhaps of near two feet. The water formerly from the surface fifteen feet in depth was not brackish.

I. Brannii is in its normal condition under water, as far as my observation goes – So is I. Muricata except at the small round Pond in Woburn, where every year the outer circle of plants must emerge under evaporation.

Your question about Juncus has cleared up a doubt. The plant you speak of at first referred to I. Articulatus. But afterwards on finding it with only 3 stamens, I concluded it was I. Debilis – I know two stations for it, one on the west border of Spot Pond which you may notice in the margin of the sketch I sent you. The other station is

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a gravelly bank in Mystic R. immediately below Woods dam, where the tide now rises about 3 or 4 feet. I cannot say what its condition was formerly, but it must have been at or near the limit that brackish water would reach, and the tide could not have risen more than from 6 in to 12 in. The plant grows in a small forest of Scirpus and is generally inundated by the tide. I have very few specimens - having always in mind to make a good collection, but never having been at the place at the right time. Next season I can no doubt collect for you as many as you desire. A year or two ago I could not find it at Spot Pond, the place having been drained and cultivated. It then made a larger growth than in Mystic R. where it is now contracted. I have never doubted it to be a native. I have asked Spaulding to send you his half of the Municata from Woburn —

The season is now so late, that I am no longer in the country a part of my time, and I fear that I shall not be able to collect any more species - But if I have an opportunity I will not fail to do so, and next year I will take a wider range.

Dr George Engelmann

Yours truly Jonas D. Poole

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Recd Nov 7
Ans. Nov 22

Dr Geo Engelmann

Boston 3. Nov. 1866

Dear Sir

I have just received your letter of the 29d ult. and am very glad indeed to learn that you have probably determined our young plants to be the Isoetes that Mr. Braun thought to be a new species.

Your observations upon the difference between it and I Braunii aid me in further specifying the two plants.

If I am right I Braunii is a larger, more leafy plant than the other, growing in deeper water, and more fast maturity. It is besides a more solitary plant.

The new plant grows often in masses, is (now) few and slender leaved. It must be very much later than I Braunii. I referred to this when in a former letter, ~~when~~ I spoke of it putting forth a number of young plants, and growing in a few inches of water. I think that I can easily

distinguish the two species, from the I. Tuckermanii growing do, as to form a thin grassy turf in appearance. I think too that you will find it again in specimens from Iron Pond, that I sent you last week, and I am not mistaken in my recollection of the appearance of Isoetes in other ponds, I have passed over in them. supposing the plant to be too young to have ripe spores. – but then it must be looked for late in the season.

In speaking of the smaller plants growing in a few inches of water, and the larger in from 1 to 2 feet, I should have said that it was then low tide. But bear in mind that two or three years ago there was only a rise of a few inches in the tide in the Pond, and that was rather caused by the river tide backing up the water in the pond, and that probably no brackish water flowed into the pond except in exceptionally high tides. There was then very little tide even at Woods mill the limit of my collection of Isoetes in the river

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Below Woods mill in old times the river rapidly became a salt water tidal river with broken banks clothed with Spartina Glabra & Carex Maritima. The great change produced in the regime of the water by excavating the river bed has taken place in the pond and down the river as far as Woods mill, admitting a rise of tide of about two feet and perhaps more. The Harbour Commissioners recommend a much greater deepening of the upper part of the river bed, so as to make the pond a tidal reservoir to scour the harbour. Before that day however I will endeavour to rescue the native species from extinction

Very truly Yours

W. Podd

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Rec Nov 9th
Ans Nov 22

Boston 5 Nov. 1866

Dear Sir

I enclose some specimens of Isoetes from Echo Lake Franconia, and Lake Winnipisiogee, which may perhaps be worth your looking at

Very truly Yours.

A. Gray

Dr George Engelmann

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Rec - Dec 3
Ans Dec 14

Dr George Engelmann

Boston 28 Nov 1866

Dear Sir

I received yesterday your favour of the 22d inst and desire therefore my warmest thanks for the specimens of Isoetes, and for the Asters & Solidagos you have so kindly sent me. I shall value them very highly. You are very good also to represent the trouble I have given you in asking for Aster Anomalus as a chance of getting a pleasant ramble. I will divide the Asters & Solidagos with Gray.

Drummond writes me about the Winnipisiogee Isoetes, of which I sent him living plants, ~~that~~ he thinks will grow again

"La culture de cette forme va certainement lever les dernières doutes qui peuvent subsister encore au sujet de cette plante, bien que toutes les probabilités fassent déja entrevoir qu'il faudra n'y voir que l'I. Echinospora d'Europe. C'est bien ce qui me frappa"

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"dans le principe lorsque je t'étudiai l'échantillon de l'herbier de Berlin. que Mr A Braun m'avoit envoyé en communication. Cependant, malgré l'identité presque complète des spores (l'organe caractéristique par excellence) il me répugnait d'admettre qu'une plante Américaine fût absolument identique à une espèce que j'avais d'abord découverte dans un lac d'Auvergne. C'est pour cela que je désirais tant cultiver la forme du Winnipisiogee, afin de m'assurer si la culture ne mettrait pas en lumière quelques caractères importants, inaperçus à l'état sec. Or, nous avons maintenant une aire très étendue pour l'echinospora, qu'on peut suivre, à travers l'Europe, depuis la Lombardie et les Pyrenées, jusqu'à l'Islande et au Groenland. Il n'est donc pas aussi surprenant qu'il soit redescendu sur le continent américain et que vous le retrouviez dans vos lacs" I had supposed that my specimens from Lake Winnipisiogee & Echo were of one species, but you make the Echo lake plant I. Brauni & Mr Durieu the other I. Echinospora. I believe you gathered I. Ripania in L. Winnipisiogee. My Echo Lake Plant I found about the middle of the Southern halfopeke Lake, in from 2 to 4 feet

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of water. I remember that the depth was so great I could not reach the plants with my hands.

I plainly distinguish the spores of I. Tuckermanii from all the others - and also those of I. Engelmannii - with a Coddington lens, but not those of I. Braunii from I. Muricata. I have not been able to see that the papillae on the latter are sometimes "bifurquées" as Durieu says. But I have an excellent English Microscope, which has been packed away for some years, and I will bring it to bear down upon my plants, and see what I can discover.

I was in Spot Pond about a fortnight ago, and found there as in Mystic Pond Isoetes in plenty. The plants had lost all macro & micro spore bearing leaves. Those remaining were quite long and very slender. Out of all that I gathered, I only secured one leaf that had a few ripe microspores. I saved three or four plants, and if you wish I will send you some of them with the spore bearing leaf. The spores indicate either I. Braunii or Muricata.

I told you in my first letter, that I could not find any specimens of Isoetes that I gathered last year in Horn Pond. At that time I supposed all my plants were Muricata, & I was careless about preserving them. I find by a memo. that I sent Canby some specimens of Isoetes from the South end of Horn Pond. These are the plants I could not find in my herbarium and must be I. Tuckermanii. The other day I found in a drawer three parcels of Isoetes, that I had wrapped up in paper and left there, just as they were gathered, & had afterwards forgotten. One marked Woburn Brook is Muricata. Another from the middle of the West side of Horn Pond, where the other

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day I could not get any specimens for you. has muricata spores – & the third from the South end is clearly I. Tuckermanii and of the same lot as Cambys. –

I have sent Denton some living plants of I. Tuckermanii I found that the first collection I made this season in Mystic Pond and just which I gave Dr Gray to be forwarded to Mr. Brown. had remained in the Pond at the Botanic Garden. When I made my second collection I threw them away. and kept each of the two collections separately. and added some Muricata from the Woburn Brook – to Mr Brown at Berlin.

Next year I will endeavour through the season to collect good specimens of I. Brownii Tuckermanii & Muricata and of Engelmanii if I can get at it. If our mild weather continues I will try and find out what the species in Fresh Pond is this season. I have often seen it, when looking for Potamogeton Pauciflorus. This Potamogeton I have never found to come within 3 feet of the surface of the water, and have never found flower or fruit. P. Robbinsii is also extremely abundant in Fresh Pond, but I have never discovered it in flower or fruit –

Renewing my thanks for the plants you have sent me. I am always Very truly Yours

M A Pratt

Rec: Dec 6
Ans Dec 14

Dr George Engelmann

Boston 3rd Dec 1866

Dear Sir

Allow me again to thank you for the roots & seeds you have had the kindness to send me I received them in excellent condition on the 1st, and the same day I had them planted after dividing with Mr Sargent

I send you two specimens of Isoetes from ~~Stow~~ Spot Pond, and one specimen bearing rate of a leaf from the same locality. I think you will find a few spores imbedded in the roots of the larger specimens

Very truly yours

Alfred Gray

Fuckerman's locality of Isoetes Tuckermanii.

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Rec'd March 5th 14
Ans — 14

Dr George Engelmann

Boston 1st March 1867

My Dear Sir

I have lately been looking at the fruit of all the specimens of Isoetes that I have, and among those from the Woburn brook. I find one that in the spores differs from all that I know. I send it to you to day by mail, with the original ticket showing that it was gathered Nov 16. 1862. the specific name "Immicola" was added afterwards when I learned that Dr Eaton had so named the Woburn Isoetes. It is the only specimen I have. If I gathered any others at the time, I must have distributed

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them and probably under the name of I. Muricata. The Woburn brook is certainly not more than two miles in length, and only in a short portion of it have I found Isoetes, and that part I have searched with some care for half a dozen years. Is it not singular that among all the plants that I have taken with it, there should be this solitary one, so different from the rest? The spores of I. Muricata and I. Braunii are very much alike. As far as I have yet been able to judge, I should say that the spore is largest in Muricata. I do not think that the spinules are longest in Braunii, as a general rule. Those of Braunii appear to me more often sharp pointed, while those of Muricata are more truncate and often

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bidentate with divergent teeth – which character is rarer in Branii.

You were so kind as to promise to send me some specimens of foreign & native Isoetes. I should be very glad to receive them, and they would be very useful to me in studying the species of this neighbourhood

Yours Dear Sir

Yours Sincerely

W. Pooth

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Rec'd March 25th
Ans same day
as April 7

Boston Mar 21 1867

My Dear Sir

I received your welcome letter of the 14th, yesterday.
Some days after I sent you the single specimen of Isoetes gathered 16th Nov 1862 I happened to be at the Botanic Garden Cambridge, and as I was leaving Dr Gray told me that there was a parcel there for me. It was your package of Isoetes. How long it had been there I do not know. I did not at once acknowledge its receipt, waiting to do this I had a reply to my last letter, for which delay you will excuse me. It will be very valuable to me, and I am much indebted to you for it. At present I have only examined the macrospores of the different species, having given lately all the spare time I could employ, to looking over Lancia for Dr Gray. Having dirt his work my self in

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arranging the genus for Gray's Manual, and beyond ~~additions of~~ species to be added, I do not think much alteration is expedient.

I was surprised that you did not admit my species of Nov 16. 1862 to the dignity of a species, for it appeared to me that there is a greater difference between the markings of its macrospores and those of I. Engelmanni, than there is between those of I. Echinospora, I. Bramii, & I. Muricata. I do not remember that I have ever noticed the markings of a single macrospore of I. Engelmanni like those of the one in question.

Your determination is however of interest on another point. I believe that I have never found I. Engelmanni except in the brook that flows into the N or rather S. N. part of Mystic Pond.

But Dunn in the Annals describing I. Muricata from the specimens I sent Gray, says among them there was a single plant of I. Engelmanni. All these specimens were from the Woburn Brook, and at the time I sent them away I had never, as I believe found I. Engelmanni. Again, last November I sent to Prof. Bram living plants of I. Tuckermanni & I. Bramii from Mystic Pond, and I thought at the time and recorded I. Muricata from the Woburn Brook. He writes to me that my plants are I. Tuckermanni & I. Bramii & I. Engelmanni. If I did not blunder and in a hopeless state of muddle headedness send him the plant from the brook flowing into Mystic Pond and

label it I. Muricata, then you, Dunce & Brown agree that I. Engelmanni inhabits the Woburn Brook.

I find it difficult to assent to this. At the time I sent the plants to Prof Braun I had gathered Isoetes in both books, and the vice-versa of the plants through damaging my family is impossible. There is no confounding the Macrospores of I. Engelmanni with those of any other species known here, and I have examined under the Microscope every specimen I have from the Woburn Brook, and found them all alike and certainly not I. Engelmanni. Prof Braun asked me to send him dried specimens of Isoetes. Last month I sent him specimens from all the localities I know, and especially I. Muricata from the Woburn Brook, the Abbagina R, the shallow pond in Woburn, & Winnipisiogee & Echo Lake. I have not heard from him since, but it is evident that he had received my dried plants when he sent you his arrangement of species. In his view is I. Echinospora found in this country?

The plant from the shallow pond in Woburn, differs from Muricata in its very straight leaves, its place of growth, a pool without any stream flowing into it and shrinking greatly in autumn, rather than a pond, and in the stomata of the leaves.

I. Muricata is found only in the streams flowing into root of Horn Pond, and always immersed, and I believe in the Pond itself. I think I found it about the middle of the Westside, and sent the specimens to Canby. The season was very dry and the pond had retreated

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and left some specimens in spirits. Is it not worth while for you to ask Canby to lend you those specimens as they may exhibit some trace of stomata. The labels must show the time & place of gathering. It will be a long time before I can lend you any specimens from the same source, and most probably they will be under water, on referring to Brauns letter to me, I see that he arranged his species on specimens sent him by you and that when he wrote to you he had probably not received my dried collection.

Dr Gray gave me your paper on Isoetes to read, which I did with great interest, and as far as my knowledge goes, would indorse as a very thorough and complete description of the genus & and our species

Very Truly Yours

M Pooth

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Rec'd April 15
Ans July 21

Boston Apr 11 1867

Dear Sir

I am glad to learn by your letter of the 7th which I have just received that you have received the Woburn Isoetes from Mr Canby. The one from the sandy bottom of a bay perhaps 2 miles from the locality at Woburn brook, was gathered at about the middle of the West side of Horn Pond, and owing to the extraordinary drought of the autumn some of

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the plants were put up water.
The other from the end of the pond
in stony ground is the locality
from which you detected J.
Tuckermanii. It is a deviation of
the plants Isoetes-Engelm. Strength J
belene JB Bamii is also found there

I will not fail to observe and make
collections of the Isoetes of this
neighborhood during the season
I shall be away from home for a
fortnight in May, and for about
the same time in the latter June.
With that exception I shall not
be absent for more than a few days

Very truly Yours
M Bock

Dr George Engelmann.

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Ans July 15
Ans July 21

Dr George Engelmann

Boston July 12. 1867

Dear Sir

I am in process of making a collection of Isoetes for you, and shall continue it into September. In one of your letters, you held out the expectation that I might have the pleasure of seeing you here in August. I hope that you will be able to make your visit here, and I will gladly introduce you to the Isoetes that you are making known to the world.

I gathered yesterday specimens from four localities in Hom Pond. I have

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been twice at the little round pond in the Rotunn hills, the first visit about a month ago and the second on the 30th June. At the first visit I could not find a single Isoetes and only two at the second - growing under water but having the bright green straight leaves which Capt Baum has remarked on it.

Gray's new edition of his Manual will come out too late for use in the field this season. He has sent me two or three sets of the proofs of the parts relating to Canada, but has none by me of those containing your arrangement of Juncus. I have you a spare copy that you can send

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me. I should be very glad to get it before the publication of the whole book

I am Dear Sir

Always rightly Yours

A. D. Cook

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Rec^d Nov 18th
Ans Nov 22 29
Dr George Engelmann

Boston Nov 15 1879

Dear Sir

I yesterday had the pleasure of receiving your letter of the 9th. The day before I wrote you and sent you my collection of Isoetes made this season, and some very indifferent specimens of the new Najas.

I was owing you a letter. When you last wrote me you meant to come here in a short time. In the expectation of soon having the pleasure of seeing you I delayed writing, and then let time slip by, and waited till I could send you my harvest of Isoetes.

The plants you kindly sent me last year have done very well. Aster

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Oblongifolius is yet in flower. The Allium alone, probably from an unkindly soil has dwindled away.

If I remember rightly, you have never asked me about Vitis. I have only flowering specimens of V. Vulpina. Of V. Aestivalis & V. Cordifolia I have good fruit. These are all that I have, and are at your service if you care to have them

Ever truly Yours.

W. Lobb

You know Torrey describes Scirpus Lenticularis as "attaching on Western borders". I find a Scirpus with two cleft style and only 4 bristles growing in the neighbourhood, which I take to be S. Lenticularis. It is also found about the White Mts. Here it is a much earlier than T. Sylvaticus, which in

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other respects it bears a strong resemblance

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Dr George Engelmann

Rec^d Dec 2^d
Ans Dec 6

Boston 29th Nov 1867

Dear Sir

I am glad to learn by your letter of the 22^d that my package of Isoetes has reached you in good order.

I noticed the thick stiff leaves of the plant I collected Aug 20 on the north side of Fresh Pond, and not long after in examining it found it to be I. Lacustris. I suppose the Macrosporia of Durieu. The macrospores of I. Lacustris from surrenque are not larger than those of I. Riparia from Canby

The Fresh Pond plant was not abundant. The mud was high Aug 20. I was in a clumsy boat that I could not reach

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still, while having no other means, I had to plunge my arm its whole length, to seize a plant. When I was afterwards at Fresh Pond, I spent so much time at other points of the pond that I did not get again to the locality as I meant to do. I have reserved only two specimens with good fruit but broken leaves.

To make however I find a much more interesting plant, and I think a new species among the specimens I gathered at Arlington Brook at Station No 6. Oct 23d. To my surprise I find that all the others gathered there that I have kept are J. Engelmanni, and I have only a single specimen, and a poor one except in the fruit. The

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macrospores are smaller than any that I have seen except S. Rubenophoda. They are very closely covered with thick edged curved & twisted and anastomosing ridges. The ridges are more continuous in Lacustris and Ripania and do not run up into beaks as in those species. Is it new?

I have sent again by Echols this morning a package containing a leaf & racème of fruit of Vitis Cordifolia, or rather V. Riparia if there be two species — Specimens of Scirpus Sylvaticus & what I have called S. Lenticularis. If it does not belong to that species, the bifid style & bristles, & the much earlier flowering are enough to

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until it is stand by itself. I send you the only Medford Specimen I have, as at the time I gathered it I supposed it to be the more common S. sylvaticus. Next season I will make a good collection of it. At no time I think does S. sylvaticus shed its fruit so profusely and this may much later. I have a specimen of S. Lenticularis gathered several years ago at Willoughby Lake Vt.

I am sorry that I cannot answer your questions about S. Cordifolia, as I have never paid any attention to the genus.

I have duplicates of most introduced the ~~localities~~ species I have duplicates, and any memo. will enable me to understand any references you may make to my labels. I have examined specimens of each days collection, but not yet every specimen, so that I have yet a chance of finding another specimen of what I take to be a new species. Very truly yours

Chas. Torr

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Rec April 5th

Boston Apr 3 1882

Dear Dr Engelmann

I received your kind letter on the 1st, and the Dimorphanthus on the N. Am Isoetes this morning. I am very much obliged to you for them. I am very glad that I was able to furnish some specimens to you, and if I desired any reward for such small service, I am amply repaid by your paper which I have read once and shall study. I owe you much for clearing up my puzzles in fungus. and for your paper on ~~fungus~~ Quercus. and wish that I could do such thorough work. Some few seasons ago I promised to send you young branches of oaks. Unluckily I was taken ill shortly

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afterwards and could not move about freely

Yours faithfully
William Pooth

Dr George Engelmann

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