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# Castalia Tetragona in Salmon Brook Lake Bog

Olof O. Nylander

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CONTRIBUTION TO  
**Free Booters Club**  
OF  
**Knowledge**

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**Castalia Tetragona**

IN  
**Salmon Brook Lake Bog**

*By Olof O. Nylander*

Caribou, Maine, January, 1938

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## PREFACE

For the past three or four years, I have had the privilege of accompanying Mr. Nylander on many of his field trips of exploration, and during the past summer I was with him on several trips to the locality known to the natives hereabout, as the Salmon Brook Bog. The purpose of these trips was to determine whether a small unknown pond lily still grew in the marshy inlet of Salmon Brook Lake. This lily, *Castalia Tetragona*, was discovered there many years ago by Mr. Nylander, who wished to check this previous discovery before printing the following article.

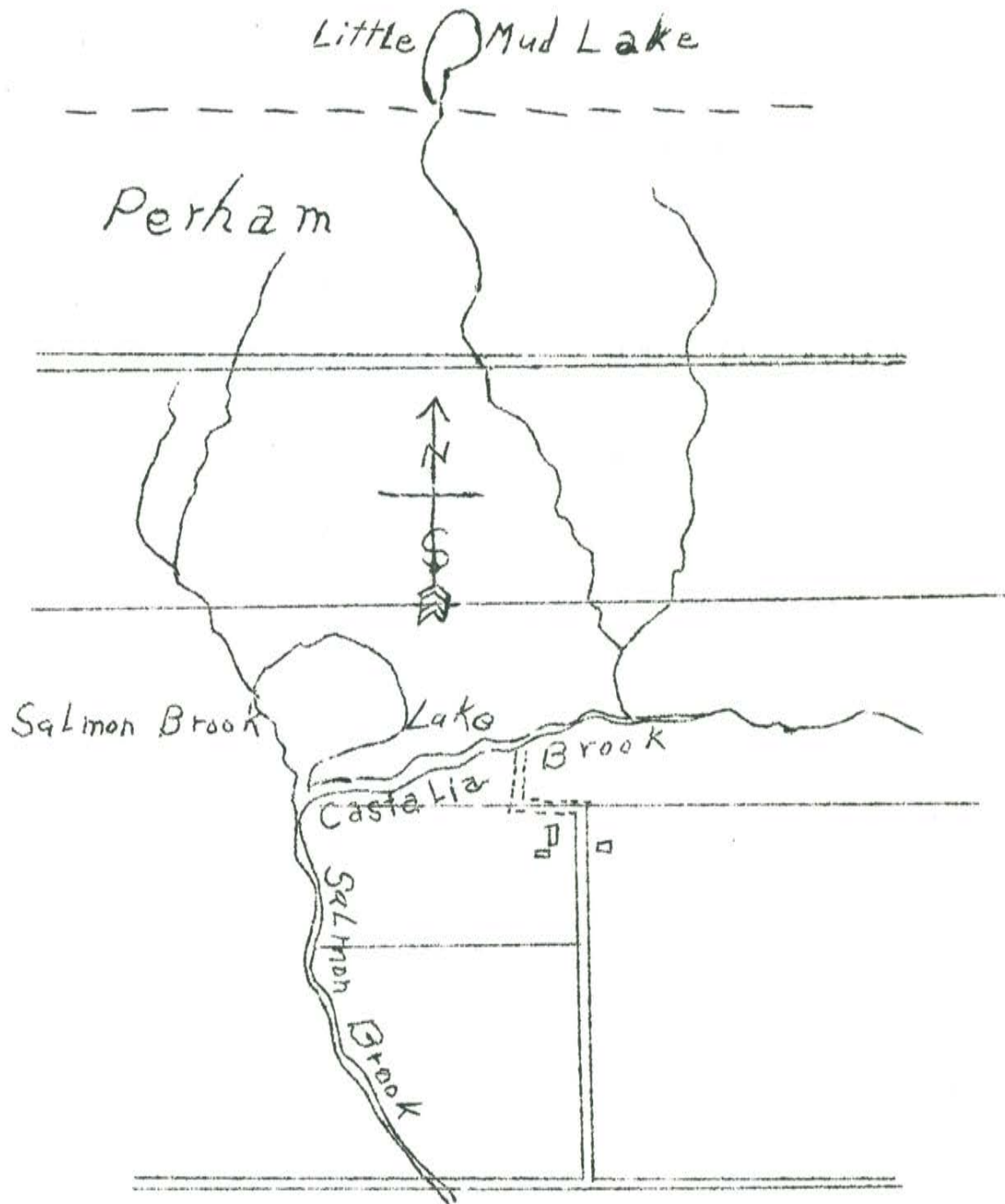
I am neither a botanist nor a geologist, but I have gathered some very definite facts from these trips with Mr. Nylander regarding the natural resources of Maine, and also about the man who really knows the plant life and mineral deposits of this section of our State. The work of publicising and advertising the vast array of plants, fossils, and minerals collected by Mr. Nylander has begun, and a museum is soon to be built in the town of Caribou to house this collection. When this wealth of material is publicly displayed in proper surroundings, scientific minds will acclaim the discoveries and congratulate the discoverer, and you and I as laymen, will at least realize the industry and knowledge possessed by the man who made this collection.

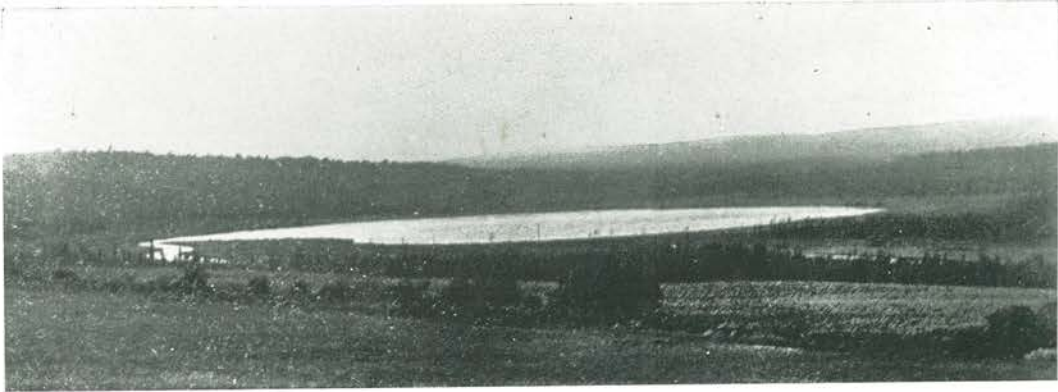
Aroostook County will be better known and longer remembered because of the life and work of Olof O. Nylander.

A resident of Caribou, Maine,

Jan. 18, 1938

Walter Dale Currier





SALMON BROOK LAKE AND BOG--At left the outlet of the lake and Castalia Brook. View looking northwest. Photo taken July 27, 1937.



Castalia Brook looking southeast. *Castalia tetragona* growing about six feet from the shore where the author stands. Photo taken July 7, 1937.

FREE BOOTERS CLUB  
OF  
KNOWLEDGE

CASTALIA TETRAGONA  
IN SALMON BROCK LAKE BOG  
BY

OLOF G. NYLANDER

CARIBOU, MAINE, JAN., 1938

Carl von Linne, in the year 1759, in his suggestions as to what traveling naturalists should observe, says among other things, "After the traveler has commenced his journey, and has become transplanted so to speak, into a new world, he should consider it his duty to observe everything, not carelessly or at random, but so that nothing will escape his keen vision and alert attention." A naturalist should make himself familiar with his home surroundings before he goes to another part of the world. "In order that he, the traveler, may not, so to speak, cross the stream for water and waste his money endeavoring to learn in a foreign country what he might have acquired at home, and for almost nothing." This advise was given me when I went to school in my home in Sweden, and I have always tried to follow the same.

Many of my friends in America and Europe are urging me to prepare and publish my observations in Maine. But I have no means at my disposal, and the Maine people have no interest in making their natural resources known so as to attract scientific workers to their state.

*Castalia tetragona*, Georgi, and how I discovered the same: In the month of October, 1894, I went on a day's exploration to the north part of Perham locally known as Tangle Ridge. The

road led through forest, with small clearings, few settlers, and loghouses. My special object was to study the geology, and to see if I could find some fossils. In the sandstone on Carl Helstrom's farm, I found some poor casts of Brichopodes and fragments of crenoid stems. On the next farm on a prominent knoll, I found a fragment of a Graptolite. Mr. Mic Wardwell had the largest clearing and he showed me around his farm, and invited me to have dinner with them, which was appreciated greatly. From Mr. Wardwell's farm, I went west for about one mile to the end of the road. I had no desire to return on the same road, so Mrs. Gosway Green showed me a lumber road through the woods which led me to the dam at the foot of Salmon Brook Lake. Here is a small outcrop of sandstone. Crossing over the dam, I picked up a large clam-shell, the largest I had seen in Aroostook. (*Elliptio complanatus* Solander.)

After going for some distance through bushes over an open bog and a tangle of spruce trees and some hardwood forest, I came to the farm of Mr. Thomas Lange after dark, and from there I walked in the dark along the road to my home in Woodland. This made a tramp of about twenty-five miles over a very poor road the most of the way.

The large clamshell interested me very much, so in the summer, 1896, I decided to go and make an examination of what kind of freshwater shells there could be found in Salmon Brook Lake.

Mr. Lange had a small flat-bottom boat in the stream by which we entered the lake at its outlet. Going down this dead-water brook for nearly one mile, I noticed large patches of

yellow pond lilies, and among those, I observed several pure white flowers of a very small pond lily, not seen before. I took two flowers and brought them home to my mother who was always a great lover of flowers.

Salmon Brook Lake is located in the north central part of Perham, nearly circular in shape, and about one-hundred acres of water surrounded by a large open bog. The water is so shallow in the lake, that it is difficult to paddle across it even in a flat bottom boat, and there is no shore anywhere. The plant typical of heat bogs is growing around the lake. There are three small spring brooks coming into the lake. The elevation of the lake is 683 feet. It is the head water of Salmon Brook, and running in a south to east direction through Perham and Washburn, where it enters the Aroostook River ten miles away. Rolling hills surround the lake in all directions. The biggest hill in north of Perham is 960 feet, and about two miles north of the lake. South of the lake one-half a mile away, the elevation is 860 feet.

Little Mud pond, located in the town of Westmanland has a water surface of about 20 acres. It is just north of the Perham town line, the elevation being about 840 feet with deposits of shell marl. This lake forms the head waters of a small stream without a name, running through a Cedar and Spruce forest, and into the open bog of Salmon Brook about one and one-half miles south, and lingers in a south and then ~~east~~<sup>West</sup> direction for over two miles in the open bog and into the Salmon Brook just at the south end of the lake, and it is at the lower end of this dead water brook, the *Castalia tretagona* is growing.



It would be a very appropriate name to call this brook,  
Castalia Brook.

The Salmon Brook Lake is located about 54 miles north of the 46th parallel, and 15 miles west of the 68th meridian. The flora is very rich and a large number of plants can be collected here for the systematic botanist. This large open bog has not been changed practically any by the settlement, but some parts of the bushes and grass has been burned over probably several times. There is the remnants of a lumber dam they used to store water for log driving some years ago, but there is no longer any lumber to drive, nor has there been any, for the last thirty years.

The most serious effect was some 20 years ago. The beavers built a dam on the same spot as the lumber dam was, and the water penetrated the bog for a long distance, and it killed a great many *Cypripedium reginae* at the north end of the lake, and probably many other plants, but someone trapped the beavers and the Beaver Dam was blasted so the bog was under its natural condition again.

I have been informed by one of the old settlers, that there was a large Beaver Dam at this very place before they built the lumber dam when the town was first settled.

My friend and companion, Nils Gril, on many collecting trips, had a light, flat-bottomed boat in the Castalia Brook. On July 12, 1917, we decided to make a careful examination of everything we could find. My companion spent his time fishing. On this date, there were a number of the small white water lilies in bloom. I picked a handful of the flowers and some of

the leaves, and brought them home to my wife. We had those for some time, and I pressed four specimens and four leaves. No further attention was paid to this plant. My friend, Chamberlain of the Presque Isle High School, informed me Oct., 1936, that one of the rarest of plants in America had been discovered in Chase Brook, a very small white pond lily. He had read the notice in *Rodora*. I told Mr. Chamberlain I had collected this plant for over forty years, just a short distance from my home. (Three miles west of my home, and twelve miles west of Caribou.) After this interview I went home and made up my mind to make a careful examination of the habits of this white water lily. I gave one flower and leaf to Mr. Chamberlain, and sent one flower and leaf to Dr. Homer D. House to have identified, and this is what he answers: "The leaf and flower of the small water lily sent with your letter of February 28, 1937, is *Castalia tetragona* (Georgi) Lawson. (*Nymphaea tetragona* Georgi, *Reise in Russ. Reichs.* 1:220, 1775.) It is an interesting find, and probably quite rare in northern Maine. Britten and Brown report it (1913) only from the Misinaibi River, Ontario; in ponds along the Severn River, Keewatin, and northern Idaho. Also in Siberia, Japan, and the Himalayas. It is also said to grow in Isle Royal, Michigan.

Now, let us think it over! This rare little white water lily has been found in only the above localities, and so enormously far apart! How is it possible for a plant to spread in an east and west direction and not in any intermediate point? If the direction had been from north to south, it might have been distributed by immigration birds. If it had been a land

plant, the west and north-west winds might have carried the seeds.

Here is one of those puzzling problems that need so much careful studying, and the reason for making these notes, is to draw attention to the subject so botanists will have an opportunity to come and see the locality in which it is found.

I have visited the Salmon Brook Lake bog nearly every summer since 1905, and have collected over 30,000 plants, mostly Orchids, without making any serious damage to the native flora. By digging out a large number of the biggest plants, the other made a very vigorous growth.

We are establishing a department at the Caribou High School, having an exhibition room so as to give information to those visiting Caribou, and is really interested in obtaining new knowledge. Everybody is welcome.

On June 15, 1937, in company with my friend Mr. W. Dale Currier, we made a careful examination of Castalia Brook. The Yellow Pond lilies were coming up in the water, and those growing nearest to the bank on the north side of the brook, had leaved, a great many buds, and some partly opened. Along the bank of the brook in the shrub growth, *Kalmia polifolia* Wang. *Ledum groenlandicum* Oeder. *Chamaedaphne calyculata* Linne, some fine *Iris versicolor* Linne, and small patches of *Eriophorum callithrix* Chamisso were in bloom.

Mr. Currier took a series of photographs of the lake, and Castalia Brook. July 7th we made an examination of the same locality, and found the surface of the water covered with leaves of the different species of the water lilies. For long stretches

on the north side of Castalia Brook, from the middle to the south side of the Brook, the water is too deep for those plants to grow. The large yellow pond lily, *Nymphaea advena* Solander, with their flowers three to five inches above the water, and some growing in the bank along the Brook was quite common.

A smaller species, *Nymphaea rubrodisca* Morong, common along the shore. The smallest yellow pond lily, *Nymphaea microphylla* Pers. covered the outer zone of the lily patches in extreme abundance. In the upper part of the dead water we found among the other plants, about six feet from the shore in about two feet of water, four buds, one partly opened, floating on the surface of *Castalia tetragona* Georgi. This is probably about its first appearance in the season. We followed the whole north shore of Castalia Brook to its outlet, and found no more of these buds. The *Castalia tetragona* is found growing along the outer margin among the yellow species, and some distance from the shore in rather deep water, and had probably not reached to the surface. There was no boat for us to use for this examination, so it was impossible for us to see the buds on, or near, the surface so far from the shore.

We found the common wild rose, *Rosa virginiana* Mill, a few hardhack *Spiraea tomentos* Linne, and a large bunch of the large American cranberry, *Oxycoccus Macrocarpus* Aiton near the bank in full bloom, which were really beautiful. Mr. Carrier took a series of photographs along the bank to show the condition of the plant growth in the water.

On July 27, Mr. Carrier and Mr. Charles Harmon both accompanied me on this trip. The yellow pond lilies were in full

bloom all over the patches, and we observed some buds of *Castalia tetragona* about one-quarter of a mile west from the station seen on July 7. *Camarum palustre* Linne was in fine bloom at this time. Mr. Currier took another series of photographs of the same places along the *Castalia* Brook.

August 23, 1937, Mr. Harmon accompanied me to *Castalia* Brook, and we found the bog much wetter than it had been on the previous visit. The pond lilies were all done blooming for the summer, and the seed ripened. On the south side under bushes in a very shady spot, we noticed three flowers of the large yellow pond lily.

This makes me 41 years of continuous observation of the *Castalia tetragona* in this body of water, and there are just about the same few flowers among the yellow for a distance of nearly one-half a mile. This summer I noticed there was a great destruction of the pond lilies, masses of leaves were torn, and floating on the water, and nearly every leaf was more or less eaten into by insects. Crysalis was very common on the under side of the leaves, covered by a small patch of a leaf pasted over the crysalis. We collected in the grass along the bank, *Hypericum* (*Treadenum*) *virginicum* Linne which were very abundant.

The two flowers of *Castalia tetragona* Georgi, collected on July 12, 1917, measures, of the pressed specimens,  $1\frac{1}{2}$  inch for the largest, and  $1\frac{1}{4}$  inch for the smallest, in diameter.

Specimens of *Castalia odorata* Aiton, common in Portage Lake, average  $3\frac{1}{2}$  to 4 inches in diameter, according to the pressed specimens collected by Mrs. Nathan A. Currier on August 2, 1937.

Specimens of *Castalia odorata* var *minor* Sims, collected in Chase Brook by Mrs. Nathan A. Currier, August 24, 1937, averages around  $2\frac{1}{4}$  to 3 inches in diameter.

Gray's Manual of Botany has been the standard reference book for students of plant of the north-east part of United States for nearly 100 years, but in the several editions of this publication, there is no reference to *Castalia tetragona*. We have other plants besides this, up here in the north of Maine that has never been published either.

Britten and Brown gives us an illustration, and also the note referred to on a previous page.

The above referred to publications are having a cat and dog fight about the best classification of Systematic Botany. As the Britten and Brown publication covers north America, it is naturally the best to follow for a guide.

I am following Dr. Homer D. House, New York State Botanist, as his Book on the Wild Flowers of New York is the best illustrated book in natural color in the world, and it is cheap and easily obtainable. It has a wide distribution, and the latest edition was printed in 1936.

Every bog seems to have some plant peculiar to its own, and some seasons they are to be found in abundance, and the next season it is impossible to find a single specimen. Then again, they will be found as plentiful as before.

