

- X *Astragalus alpinus* L. [Tragant] TRAGACANTH.
 X *Empetrum nigrum* L.—[Krähenbeere].
 X *Epilobium latifolium* L. [Weidenröschen] WILLOW HERB.
 X *Epilobium spicatum* Lam.
 XX *Pyrola rotundifolia* L. var. *grandiflora* (Rad.) D.C. (= *pumila* Hook ?)—[Birnkraut] PEAR-WEED.
 XX *Arctostaphylos alpina* Spr.—[Bärentraube] BEAR BERRY, Kallakotit—Berries of this and other species eaten with relish; prophylactic for rash (Kallak).
 X *Vaccinium uliginosum* L. [Trunkelbeere] Kigutangerek.
 X *Bryanthis Taxifolius* Gray.
 X *Diapensia Lapponica* L.
- XX *Armeria vulgaris* Willd. var. *Labradorica* Wahlbg. [Grasnelke].
 XX *Veronica alpina* L. [Ehrenpreis]
 XX *Pedicularis flammea* L. [Rodel.]
 XX *Campanula uniflora* L. [Glockenblume] BELL-FLOWER.
 XX *Erigeron uniflorus* L. [Berufkraut] Ussat.
 X *Erigeron debilis* Gray.
 XX *Antennaria alpina* R. Br. [Katzenpfötchen]. EVERLASTING.
 XX *Taraxacum officinale* Webb. var. *ceratophorum* (Ledeb.) D.C.—[Löwenzahn] DANDELION. Missaktak—Leaves and stems eaten.

(To be continued)

AN ANNOTATED LIST OF VASCULAR PLANTS COLLECTED ON THE NORTH SHORE OF THE GULF OF ST. LAWRENCE, 1927-1930

By HARRISON F. LEWIS

(Continued from page 135)

THAT the elevation of this coast that has gone on since the last glaciation is still in progress, and that at a fairly rapid rate, at least on the part of the coast between Natashquan and Bradore Bay, is readily observed. It impresses itself very strongly on the local fishermen, who, while lacking any generalized ideas on the subject of such movements, are forced by their experience, much to their own perplexity, to recognize the local reality of this one. Shoals that gradually rise above sea-level, passages and harbours that become too shallow for use, and structures built at the shore that gradually become removed from it are among the indisputable signs of such a change that they see.

The most definite evidence of the present rate of rise of this coast that has come to my attention is furnished by certain iron ring-bolts set in the solid rock at La Tabatière to furnish attachments for heavy nets used in the important seal-netting practised at that place. This netting is carried on in November and December, and in order to avoid as far as possible any disturbance of the nets by the new ice that frequently forms at that time of year, every endeavour is made to keep the nets and their fastenings below the level of the ice. Among other precautions, the ring-bolts that form the shore fastenings of the nets are set in the rock just as low down as it is possible to get a suitable uncovered rock surface to work on at extreme low water of the lowest spring tides. The continual rise of the coast, however, brings these ring-bolts higher and higher, until they

reach positions where they are uncovered for a considerable period at every low tide, spring or neap, when so much trouble with ice in the season of the seal-fishery results that a new set of holes must be drilled lower down in the rock and new bolts must be set in them. This process is repeated again and again at intervals of 20 to 30 years. Seal-fishing by this method has been carried on at La Tabatière for more than 100 years, and I have seen there old bolt-ends, much eaten away by rust, that were presumably set at the lowest accessible point at low water of spring tides, and that, while still fast in their places in solid rock, are now above the highest point reached by the sea at high tide.

In 1928 Mr. Hiram Robertson, who conducts a seal-fishery at La Tabatière, showed me a ring-bolt in place that he personally had set in the rock 22 years before and that he was about to replace by a new ring-bolt set at a lower level, as far down as he could place it at the lowest tide. The vertical distance between the center of the old ring-bolt and the point where the center of the new one was to be was 29 inches. If we consider this as indicating roughly the amount of rise that this part of the coast has undergone in 22 years we find that the rate of rise is more than an inch a year, or is nearly eleven feet in a century! Possibly local factors, such as the configuration of the rock surface at the point in question, influenced somewhat the precise points chosen by Mr. Robertson for the setting of these two bolts and so the rate of rise may be somewhat less than that stated, but all the data on the subject that

I have been able to discover indicate a rate of rise in the region near La Tabatière of at least six feet, and probably somewhat more, in a century. Precise observations on this subject are much to be desired, as the question is important in its relation to biology, geology, history, and navigation. The comparatively rapid rise that is evidently going on undoubtedly affects the local distribution of plants, and is particularly effective in carrying strand plants, especially those that seek the strand for the sake of the lime that it contains, to higher elevations. Deposits of sea-shells formed by sea-birds at moderate elevations above the shore may also, if contained in impervious rock basins, be elevated, with their calcicolous plants, to heights so great that the birds no longer frequent them, without losing their characteristic calcicoles for a long time.

On page 14 of his "Botanical Exploration", St. John (1922) says, "Little is known of the flora of Manowin Island, which has calcareous, fossil-bearing rocks . . .". My curiosity was strongly stimulated by this sentence, for, as viewed from the deck of the mail-steamer, which passes close to it, Manowin Island certainly appears to be formed of igneous, rather than sedimentary rocks, while the "Pilot Guide" (1916) states of all the "Seven Islands", of which Manowin is one, "Seven islands are high and steep, of primary rocks . . .".

On September 12, 1928, I visited Manowin Island and spent several hours on it and in its vicinity. This island, wherever I observed, it is of igneous rock, and in general has a typical flora of oxyphytes and indifferent plants. *Thalictrum confine*, *Gentiana Amarella* and *Campanula rotundifolia* were found growing on it, but their presence is explained by the fact that they were growing on a raised beach, which probably still contained some lime derived from sea-shells.

Close north-east of Manowin Island, and connected with it at low tide, is, however, a small island called Caye à Chaux. It is composed of Silurian limestone, the strata dipping to the north-east. At low tide it is about a quarter of a mile long and 800 feet wide, but on account of its gently sloping shores its dimensions are reduced at high tide to a length of about 500 feet and a width of about 400 feet. Its highest point is only some 10 or 15 feet above high tide level, and it is entirely exposed to south-east storms, with the result that vegetation on it is very scanty. I recognized on it only the following vascular plants: *Elymus arenarius*, var. *villosus*, *Juncus balticus*, var. *littoralis*, *Smilacina stellata*, *Ribes hirtellum*, *Lathyrus maritimus*, var. *aleuticus*, *Epilobium angustifolium*, *Conioselinum chinense*,

Primula laurentiana, *Lomatogonium rotatum*, f. *americanum*, *Plantago* sp. and *Campanula rotundifolia*. Evidently this small, exposed island had not yet succeeded in developing a marked calciphilous flora. A description of it was published by James Richardson in 1869.

Another point which I long desired to visit is the summit, 1264 feet high, of Mount Cartier, which is the highest of the three "Bradore Hills", conspicuous elevations a few miles inland north-east of Bradore Bay. I finally succeeded in climbing to this summit in company with Mr. E. C. Abbe on July 22, 1929. The result was disappointing. No relict plants were observed and the summit was found to be of granitic rock which was clearly shown by the presence of erratics to have been subject to glaciation. On the northern side of this and of other similar summits in the neighbourhood were areas of red sandstone.

Since it is seldom that one finds on this coast more than three or four species of ferns associated together at one place, it is worthy of special mention that in and about a basaltic dyke ravine on the hill just east of Mutton Bay no less than nine species were found growing in an area with a diameter of one hundred yards. These species were: *Woodsia ilvensis*, *Cystopteris fragilis*, *Thelypteris spinulosa*, *Thelypteris Phegopteris*, *Thelypteris Dryopteris*, *Athyrium angustum*, var. *rubellum*, *Polypodium virginianum*, *Osmunda Claytoniana*, and *Osmunda cinnamomea*. A sample of basalt from this ravine was submitted to the division of Chemistry of the Mines Branch of the Canadian Department of Mines for analysis and was reported to contain 1.29 per cent of calcium. This calcium content and the excellent shelter provided within the ravine were probably effective factors in the production of the rich and varied fern growth found there.

ANNOTATED LIST

The names in large and small capitals are those of introduced plants.

In connection with each plant listed, localities of collection are named in order from west to east.

The total number of plant names in the list is 567.

POLYPODIACEAE

Woodsia ilvensis (L.) R. Br.

Matamek River, Sept. 5, 1928, crevices in small cliff beside river near mouth. Mutton Bay, July 23, 1928, crevices in small cliff, side of basaltic dyke ravine. Recorded by St. John from "Brest: riviére a la Truite" only. Range extension, 410 miles W.

Cystopteris fragilis (L.) Bernh.

Betchewun, June 3, 1928, crevice in limestone

ledge. Mascanin, Aug. 20, 1928, crevice in granite cliff in dense, shady, coniferous woods. Blanc Sablon, July 11, 1928, rocky bank of stream, east slope of main valley.

Onoclea sensibilis L.

Bradore Bay, July 13, 1928, brookside on calcareous sandstone.

Thelypteris spinulosa (O. F. Müll.) Nieuwl.

Lake Island, July 18, 1927, steep sloping side of rocky draw. Aylmer Sound, Aug. 18, 1927, turfy slope of island. Abundant everywhere in the region.

Thelypteris Phegopteris (L.) Slosson.

Harrington Harbour, July 25, 1928, thicket on sand bluff on mainland. Bradore Bay, June 30, 1927, shaded brookside on granitic rock at head of bay.

Thelypteris Dryopteris (L.) Slosson.

Kegaska, Aug. 15, 1928, thicket back of mussel-shell beach on Kegaska Island. Lake Island, July 18, 1927, turfy draw between rocky eminences. Bradore Bay, P.Q., June 28, 1927, wet gravelly hillside on calcareous sandstone.

Thelypteris Robertiana (Hoffm.) Slosson.

Betchewun, Aug. 26, 1928, crevices in limestone ledge.

Athyrium angustum (Willd.) Presl., var. *rubellum* (Gilbert) Butters.

Mutton Bay, July 23, 1928, basaltic dyke ravine. Recorded by St. John from "Charnay: Etamamiou river". Range extension, 54 miles E.

**Athyrium angustum* (Willd.) Presl., var. *laurentianum* Butters.

Seven Islands, Sept. 12, 1928, raised boulder beach, on Manowin Island. Lourdes de Blanc Sablon, Aug. 26, 1927, and July 12, 1928, shallow depression on mossy, open slope of hill of calcareous sandstone. While collections from both of these places appear to come within the description of variety *laurentianum*, yet they differ notably, those from Manowin Island representing a large, complex extreme and those from Lourdes de Blanc Sablon representing a small, simple extreme.

Asplenium viride L.

Betchewun, June 3, 1928, crevices in limestone cliff.

Cryptogramma Stelleri (Gmel.) Prantl.

Ste. Genevieve Island, Aug. 23, 1928, low, shaded limestone cliff.

Pteridium latiusculum (Desv.) Maxon.

Mascanin, Aug. 20, 1928, dry, open hillside. Observed also at Magpie and on Manowin Island, at Seven Islands.

Polypodium virginianum L.

Matamek River, Sept. 5, 1928, clefts in

small cliff beside river near mouth. Mutton Bay, July 9, 1927, crack in side of granite boulder. Great Mecatina Island, July 17, 1930, crevices in granite boulders. Observed also in two other small stations at Mutton Bay and at Cross Harbour, Little Mecatina Island. Recorded by St. John, as *P. vulgare* L., from "Letellier: Seven Islands" and possibly from "Mingan seigniory: Mingan river, falls of" (report of D. N. Saint Cyr.). Range extension (from Mingan River), 234 miles E.

OSMUNDACEAE

Osmunda Claytoniana L.

Mutton Bay, July 9, 1927, basaltic dyke ravine. Bradore Bay, July 22, 1929, steep rocky slope between Mount Cartier and the head of the bay. Most easterly station cited by St. John is "Brouague: Shekatika River". Range extension, 47 miles E.

Osmunda cinnamomea L.

Lake Island, July 18, 1927, turfy slope. Mutton Bay, July 23, 1928, in hollow on hillside. Bradore Bay, July 22, 1929, rocky brookside between Mount Cartier and head of bay.

OPHIOGLOSSACEAE

Botrychium Lunaria L.

St. Augustin, July 20, 1928, upper part of sandy beach on Gull Island in St. Augustin Bird Sanctuary, about 3 miles west of St. Augustin Island. Blanc Sablon, July 11, 1928, damp, mossy bank, about 100 feet elevation, east side of river.

Botrychium silaifolium Presl.

Natashquan, Aug. 5, 1927, and Aug. 18, 1928, sand dunes. Kegaska, Sept. 4, 1927, opening in sandy woods. Recorded by St. John as *B. ternatum* (Thunb.) Sw., var. *rutæfolium* (A. Br.) D. C. Eaton.

Botrychium virginianum (L.) Sw., var. *europæum* Ångström.

Betchewun, Aug. 25, 1928, and Sept. 3, 1929, grassy clearing. Determined by Dr. F. K. Butters. Recorded by St. John as *B. virginianum* (L.) Sw., var. . . .

EQUISETACEAE

Equisetum arvense L.

Betchewun, June 5, 1927, grassy area on limestone near shore. Harrington Harbour, July 25, 1928, face of sand and clay bluff beside shore of mainland.

**Equisetum arvense* L., f. *ramulosum* (Rupr.) Klinge.

Harrington Harbour, July 25, 1928, face of sand and clay bluff beside shore of mainland.

Recorded from Sheldrake by Frère Marie-Victorin (1927).

Equisetum arvense L., f. *decumbens* (G.F.W. Meyer) Klinge.

Harrington Harbour, July 25, 1928, face of sand and clay bluff beside shore of mainland. Greenly Island, June 29, 1927, gravelly hillside on calcareous sandstone. Recorded by St. John as *E. arvense*, var. *decumbens* Meyer.

**Equisetum arvense* L., var. *boreale* (Bongard) Rupr.

Natashquan, Aug. 7, 1927, border of fresh marsh by Little Natashquan River. Harrington Harbour, July 25, 1928, face of sand and clay bluff beside shore of mainland. Head of Bradore Bay, June 30, 1927, sandy river bank on granitic rock. Greenly Island, June 29, 1927, gravelly hillside. Recorded from a number of localities by Frère Marie-Victorin (1927).

Equisetum sylvaticum L., var. *pauciramosum* Milde.

Mistanoque Harbour, June 24, 1927, grassy bank on Shekatika Island. Rocky Bay, June 24, 1927. Blanc Sablon, June 28, 1927, turf hillside on calcareous sandstone, west side of river.

Equisetum sylvaticum L., var. *pauciramosum* Milde, f. *multiramosum* Fernald.

Baie Johan Beetz, Aug. 22, 1928, wet black spruce swamp. Kegaska River, June 25, 1928, face of turf, sandy bank facing the sea near mouth of river. Harrington Harbour, July 25, 1928, face of sand and clay bluff beside shore of mainland.

**Equisetum palustre* L., var. *americanum* Vict., f. *luxurians* Vict.

Thunder River, Sept. 2, 1928, tidal mud bank (fresh) near mouth of river. Recorded from "Natashquan River" by Frère Marie-Victorin (1927).

Equisetum limosum L.

Natashquan, Aug. 7, 1927, fresh marsh by Little Natashquan River. Bradore Bay, June 30, 1927, bushy brookside on tundra at head of bay. Blanc Sablon, July 11, 1928, turf, sandy bank, east side of river.

**Equisetum limosum* L., f. *verticillatum* Döll.

Kegaska, Sept. 4, 1927, slow-flowing brook, 18 inches water.

Equisetum scirpoides Michx.

Betchewun, Aug. 25, 1928, mossy hillside.

LYCOPODIACEAE

Lycopodium Selago L., var. *appressum* Desv.

Wolf Bay, Aug. 13, 1927, bare, rocky summit. Mistanoque Harbour, June 24, 1927, on Shekatika Island.

Lycopodium Selago L., var. *patens* (Beauv.) Desv. Betchewun, June 15, 1929, open border of clearing in mixed woods.

**Lycopodium inundatum* L.

Mingan, Aug. 31, 1928, muddy, dried-up pond margin.

Lycopodium annotinum L.

Natashquan, Aug. 5, 1927, sandy woods. Wolf Bay, Aug. 13, 1927, wet, mossy woods. Bradore Bay, June 30, 1927, mossy woods at head of bay.

Lycopodium annotinum L., var. *pungens* (La Pyraie) Desv.

Bradore Bay, June 28, 1927, damp, boggy hilltop on calcareous sandstone. Blanc Sablon, Aug. 26, 1927, mossy hillside on calcareous sandstone.

Lycopodium clavatum L.

Coacocho, June 19, 1928, in sphagnum beside woodland path.

Lycopodium clavatum L., var. *megastachyon* Fernald and Bissell.

Magpie, Sept. 1, 1928, sandy roadside.

**Lycopodium clavatum* L., var. *laurentianum* Vict.

Betchewun, Aug. 26, 1928, border of woods.

Lycopodium obscurum L.

Matamek River, Sept. 5, 1928, deep, shaded coniferous woods near mouth of river.

Lycopodium obscurum L., var. *dendroideum* (Michx.) D. C. Eaton.

Thunder River, Sept. 2, 1928, sandy ridge. Magpie, Sept. 1, 1928, hummock in swamp. Mascanin, Aug. 20, 1928, dry open hillside, in reindeer moss.

Lycopodium sabinæfolium Willd., var. *sitchense* (Rupr.) Fernald.

Seven Islands, Sept. 11, 1928, sandy hillside in jack-pine woods. Romaine, Aug. 10, 1928, dry, sandy raised beach. Blanc Sablon, Aug. 26, 1927, mossy hillside on gneiss in valley of Blanc Sablon River. Recorded by St. John as *L. sitchense* Rupr.

Lycopodium complanatum L.

Seven Islands, Sept. 11, 1928, sandy hillside in jack-pine woods.

**Lycopodium complanatum* L., var. *canadense* Vict.

Seven Islands, Sept. 11, 1928, in sandy jack-pine woods. Mingan, Aug. 31, 1928, in coniferous woods. Natashquan, Aug. 5, 1927, among sand dunes. Recorded from various localities in this region by Marié-Victorin (1925).

ISOETACEAE

Isoetes echinospora Dur., var. *Braunii* (Dur.) Engelm.

Kegaska, Sept. 4, 1927, slow-flowing brook,

in 2 feet of water. Lake Island, July 18, 1927, gravel bottom of pond in 4 inches of water.

TAXACEAE

Taxus canadensis Marsh.

Quarry Island, June 2, 1928, shady coniferous woods. Recorded by St. John as *Taxus canadensis* Willd.

PINACEAE

Pinus Banksiana Lamb.

Matamek River, Sept. 5, 1928, high sandy plain near mouth of river. This collection was made, and the tree was found to be common, about three miles east of the nearest part of the Moisie River.

Larix laricina (Du Roi) Koch.

Salmon Bay, July 1, 1927, sphagnum bog behind beach. Bradore Bay, June 28, 1927, turf hillsides.

Picea canadensis (Mill.) B.S.P.

Natashquan, Aug. 18, 1928, sandy woods near shore. Especially common on the sand accumulated near river mouths.

**Picea canadensis* (Mill.) B.S.P., f. *parva* Vict.

Bradore Bay, June 29, 1927, damp brookside on calcareous sandstone. Recorded and described by Marie-Victorin (1927a).

Picea mariana (Mill.) B.S.P.

Baie Johan Beetz, Aug. 22, 1928, in sphagnum bog. The most abundant tree of the region.

**Picea mariana* (Mill.) B.S.P., f. *semiprostrata* (Peck) Blake.

Bradore Bay, June 29, 1927, damp brookside on calcareous sandstone.

Abies balsamea (L.) Mill.

Lake Island, July 29, 1927, sheltered area at foot of bank. Often prostrate in exposed situations.

Juniperus communis L., var. *montana* Ait.

La Tabatière, July 7, 1927, gravelly hillside. Common throughout.

Juniperus horizontalis Moench.

Betchewun, June 5, 1927, shallow soil on limestone near shore, and June 6, 1927, top of limestone shingle beach of Wood Island. Watshishu, Aug. 21, 1928, on an outer island. St. John speaks of it as "common as far east as Mingan islands, local from there to the strait of Belle Isle", but it is common on the numerous small granitic islands at and near Watshishu telegraph office, 20 miles east of the Mingan Islands. Observed shedding pollen at Watshishu, May 26, 1928.

**Juniperus horizontalis* Moench, f. *alpina* (Loud.) Rehder.

St. Genevieve Island, Aug. 23, 1928, top of

limestone boulder just above beach. Recorded from "Ile Herbée, archipel du Vieux-Fort (Saguenay County)" by Marie-Victorin (1927a), on the basis of a collection by St. John.

SPARGANIACEAE

**Sparganium chlorocarpum* Rydb., var. *acaule* (Beeby) Fernald and Eames.

Natashquan, Aug. 18, 1928, erect in wet marsh beside Little Natashquan River, in 3 inches of water.

Sparganium angustifolium Michx.

Kegaska, Aug. 14, 1928, small pond on Green Island, in 18 inches water. The Bluff Harbour, Aug. 1, 1927, small, fresh pond on a large island, in 2 feet of water. Pointe au Maurier, July 13, 1927, small, shallow pond in tundra, in about 6 inches water. Blanc Sablon, Aug. 26, 1927 in a deep brook, an affluent of the Blanc Sablon River from the west.

**Sparganium glomeratum* Laestad.

Natashquan, Aug. 5, 1927, shallow pond, in 6 inches of water, and Aug. 13, 1929, and July 31, 1930, shallow pond border. Determined by Prof. M. L. Fernald, who informs me that these are the first collections of this species in North America.

**Sparganium minimum* Fries.

Natashquan, Aug. 7, 1927, shallow pool in fresh marsh by Little Natashquan River, in 6 inches water.

Sparganium hyperboreum Laestad.

Natashquan, Aug. 5, 1927, drying, muddy pond margin. Natashquan, Aug. 7, 1927, pond in fresh-water marsh beside Little Natashquan River, in 6 inches of water. Blanc Sablon, Aug. 26, 1927, in a deep brook, an affluent of the Blanc Sablon River from the west.

POTAMOGETONACEAE

Potamogeton natans L.

Havre St. Pierre, Aug. 28, 1928, small pond in bog, in 1 foot of water.

Potamogeton epihydrus Raf.

Bradore Bay, Aug. 27, 1927, slow-flowing brook, in 1 foot of water, on calcareous sandstone.

Potamogeton microstachys Wulfg.

Natashquan, Sept. 8, 1927, small pond in village, in 1 foot of water. Kegaska, Sept. 4, 1927, in 1 foot of water in slow-flowing brook, and Aug. 14, 1928, in 18 inches of water in small pond on Green Island. Bradore Bay, Aug. 27, 1927, in 1 foot of water in slow-flowing brook, on calcareous sandstone. Recorded by St. John as *P. alpinus* Balbis.

Potamogeton gramineus L.

Natashquan, Aug. 5, 1927, in 6 inches of water in shallow pond, and Aug. 18, 1928, dried-up pond bed. Recorded by St. John as *P. heterophyllus* Schreb.]

**Potamogeton gramineus* L., f. *terrestris* Schlecht.

Natashquan, Aug. 18, 1928, dried-up pond bed.

Potamogeton perfoliatus L., var. *gracilis* Fries.

Blanc Sablon, Aug. 26, 1927, Blanc Sablon River.

Potamogeton filiformis Pers., var. *borealis* (Raf.) St. John

Ste. Genevieve Island, Aug. 23, 1928, shallow pool with marl bottom, in 2 inches of water.

**Potamogeton filiformis* Pers., var. *Macounii* Morong.

Fog Island, Aug. 9, 1928, in 6 inches of water in shallow pond. Lake Island, July 18, 1927, shallow pond near shore.

Potamogeton vaginatus Turcz.

Blanc Sablon, Aug. 26, 1927, Blanc Sablon River. Recorded by St. John as *P. moniliformis* St. John.

Zannichellia palustris L.

Natashquan, Aug. 7, 1927, pool in brackish marsh near mouth of Little Natashquan River.

Ruppia maritima L., var. *rostrata* Agardh.

Mascanin, Aug. 20, 1928, shallow pool in salt marsh, in 4 inches of water.

**Ruppia maritima* L., var. *exigua* Fernald and Wiegand.

Wolf Bay, Aug. 13, 1927, saline shore at head of bay, between tide marks.

Zostera marina L.

Harrington Harbour, Sept. 1, 1927, shallow cove.

Zostera marina L., var. *angustifolia* Hornem.

St. Charles Island, Aug. 27, 1928, sheltered cove.

JUNCAGINACEAE

Triglochin palustre L.

Matamek River, Sept. 5, 1928, in 2 inches of water in shallow pool on rock near shore near mouth of river.

Triglochin maritimum L.

Natashquan, Aug. 7, 1927, edge of brackish marsh near mouth of Little Natashquan River. Whale Head, July 10, 1927, turfy saline border of cove head at Jas. Mauger's harbour.

Scheuchzeria palustris L., var. *americana* Fernald.

Natashquan, Aug. 17, 1928, wet sphagnum bog. Observed also at Thunder River. Recorded by St. John as *Scheuchzeria palustris* L.

ALISMACEAE

**Sagittaria cuneata* Sheld.

Mingan, Aug. 30, 1928, mud-hole beside Little Manitou River. Kegaska, Sept. 4, 1927, slow-flowing brook, in 2 feet of water.

(To be continued)

NOTES AND OBSERVATIONS

MUSKRAT VS. WEASEL.—Chief John James Sinclair of the Lake St. Martin (Saulteux) Indian Band, has told me that about thirty years ago, Edwin Sanderson, who now lives at Fairford, once came across a trail as he was coming along Basket Creek from Basket Lake on his way to Davis Point, Lake Manitoba. This trail was in the snow and showed signs of a struggle between two small animals. He followed it for about two hundred yards, and it became more blood-marked all the time. At last the trails parted and he noticed that one was the trail of a muskrat. This he followed for about one hundred and fifty yards and he came across a dead muskrat. He went back and followed the other trail, which was of an ermine, and he found the ermine dead in its tracks about one hundred yards along the trail. The fight had taken place that morning.—SAM WALLER.

three young under conditions which to my mind indicated that they had been born only recently. The snow around them was bloodstained. The young were frozen when discovered.

Later the same day, and in the same vicinity, I shot a female hare which, from the appearance of her reproductive organs, I judged to have been the mother of the three young.

During the following winter (December, 1929, and January and February, 1930) I examined several female European hares and three of them contained young, two each in the case of two of them, and one in the case of the third. From the condition of the reproductive organs of a fourth it was evident that she had recently given birth to young. It would be interesting to know whether this is the usual habit of these hares and, if so, whether it will persist here. These observations were made in the neighbourhood of Warkenton, Ontario.—H. L. YACK.

YOUNG OF EUROPEAN HARE BORN IN WINTER.—During the first week of January, 1929, while following the track of a European hare, I found

BLACK-CAPPED CHICKADEE.—On July 13, 1930, at 11 a.m., a bright sunny day, I watched a



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