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## THE PLANTS OF ISLANDS 74 AND 85 IN THE FRENCH RIVER, ONTARIO

By **LYSTER H. DEWEY**

### FOREWORD

We are fortunate in being able to publish the following account, forwarded to us by the Dominion Botanist, of the flora of two islands in the French River, Ontario, by Mr. Lyster H. Dewey, who was at one time associated with Dr. George Vasey in his work on grasses and who later was for 36 years botanist in charge of fibre investigations in the United States Department of Agriculture.

Mr. Dewey spent six weeks on these islands during the past summer and collected a fine set of specimens. Contributions such as these on the local flora of small districts can do much toward making valuable additions to our knowledge of the Canadian flora.



**A** VACATION of seven weeks, June 29 to August 16, 1939, was spent on Island 74, of about 2 acres, not previously inhabited. Plants were also collected in adjacent parts of Island 85, estimated at more than 200 acres, never inhabited. Observations were made from a motor boat of the rocky shores of many islands.

Only a small part of the time was devoted to collecting and pressing plants and only those were collected which were in flower or fruit or which could be readily identified. No attempt was made to collect lichens or mosses. Lichens were very abundant and represented by many different forms.

French River is the outlet from Lake Nipissing into Georgian Bay, in western Ontario. It is about 50 miles in a direct line from the source of the river on the south shore of Lake Nipissing to the shore of Georgian Bay where the river empties through a half dozen outlets. About 20 miles from its source, the Little Chaudiere and Great Chaudiere are the beginning of falls and rapids. Below these the river is broken up into comparatively narrow and widely separated channels. Above the falls, the river is from one-fourth

mile to two miles wide flowing southwest. It has but little current and is more like a lake than a river. The water level in this upper part of the river is controlled by a dam and sluice gates at the falls. There is a difference of about 5 feet between extremes of high and low water as is clearly shown on the vertical rocky shores of the islands. There are numerous islands, mostly on the northwest side, and three or four deep bays on the southeast side of the main channel.

Islands 74 and 85 are about 14 miles from the source of the river in Lake Nipissing and about 6 miles above the falls. They are in a group of more than 100 similar wooded, rocky islands from 3 square rods to 200 acres in size, and separated by channels ranging in width from one to sixty rods. The islands are all gray granite rock, generally in ridges extending northwest and southeast, with a dip toward the northeast. The southeast sides of the ridges are broken and precipitous and the northeast sides are usually smooth and gently sloping. Between the rocky ridges there are shallow swales from one to 5 rods in width. In these swales the rocks are covered with decaying vegetation rarely more than a foot or two in depth, but usually supporting a dense growth of bushes. The flat or sloping surfaces of the rocks are sometimes quite bare, but more often covered with lichens and mosses. In many places there is a covering two to three inches thick of lichens, mostly *Cladonias*, and through this thin covering there is a network of rootstocks and roots of Lowbush Blueberry, Black Blueberry, Law Juniper and other perennial plants. The roots unable to penetrate the rock, except at occasional crevices spread out through the thin covering on the surface.

Frequently there are depressions without drainage high up on the rocks. These depressions contain rain water, usually with *Sphagnum* and Small Cranberry plants around the margins or in



many instances they are completely filled with *Sphagnum*.

No clay and very little sand was found on Island 74 and the small part of Island 85 where this collection of plants was made. The soil is practically all organic. Sometimes traces of "grit" were found on the roots of plants pulled out of fissures in the rock. The pines and other trees had roots extending into clefts in the rocks.

There is a heavy snowfall in winter and usually plentiful showers in summer, so the moisture conditions are favourable for plant growth, but the warm summer sun quickly dries out the thin covering of lichens on the rocks. The humidity is generally low. The air in summer is dry except when it is raining.

The water in the river is remarkably clear and soft. Since it has no clay banks and receives no clay-bearing tributaries it is at all times free from sediment. Although there is a difference of about 5 feet between low and high water, controlled by the gates above the rapids, there are no overflowed lowlands, aside from small portions of bushy swales extending down to the water. Most of the island shores are nearly vertical rocks or bare sloping rocks. Even if high water did carry seeds or other propagating material, there is little opportunity for water borne introductions to become established.

Only about 25 of the islands are inhabited and these for only a few weeks in midsummer. There is no cultivation of plants on the islands and only a little by the Indians, two miles or more away on the mainland, so there are practically no introduced plants. The common weeds of cultivated lands are entirely absent. Even the native plants do not readily migrate from one island to another. Such widely distributed species as the Common Bracken, Sweet Fern, Prickly Rose and Bigleaf Aster are abundant and wide spread on Island 85, but absent on Island 74 separated by a channel only 125 feet wide.

The period between killing frosts is usually less than three months but during the frost free period the days are generally warm with temperatures ranging from 70° to 85°F. and the nights below 70°F.

With these limitations, short growing season, lack of soil, little diversity in growing conditions, and absence of introduced plants, the number of species is limited.

The plants collected are nearly all species that are widely distributed, but here, literally "on the rocks", many of them are in an unusual environment.

White Pine, *Pinus Strobus*, is the largest and most abundant tree on islands near the main channel. On some islands farther back it is largely replaced by Jack pine, *Pinus Banksiana*. Old white pine cones were abundant on the ground but very few new cones were on the trees and these green cones were being eaten by red squirrels. Some White Pines were subject to a physiological condition causing the leaves to turn brown. The White Pine Blister Rust has not reached this region.

Red Pine, *Pinus resinosa*, attains a height of 25 in. with trunks 30 to 40 cm. in diameter, but not found in abundance anywhere on the islands. No Red Pine cones were seen.

Black Spruce, *Picea mariana*, propagating by tips of the low branches spreading out and taking root in the moist leaf mould is locally abundant.

White Cedar, *Thuja occidentalis*, is found only as a small tree confined chiefly to the rocky shores, propagating mostly by shoots from the roots.

White Birch, *Betula papyrifera* Marsh. is the largest deciduous-leaved tree on the islands, attaining a height of 15 m. with trunks 20 cm. in diameter.

Red Oak, *Quercus rubra* and Silver Maple, *Acer saccharinum*, are observed on the rocky islands only as clusters of shoots 1 to 5 m. high, with some of the taller shoots dead, indicating a killing back nearly every winter.

There were no turf-forming grasses and no conditions permitting their development.

Lowbush Blueberry, *Vaccinium angustifolium* was abundant on Island 74, from 15 to 25 cm. high in thin lichen covering on rocks and 30 to 60 cm. high in swales or sphagnum, furnishing a plentiful supply of delicious berries from the last of June to the middle of August. Black Blueberry was easily distinguished by its lighter apple green leaves, less marked later in the season, and their colour not preserved in the dried specimens. Its black or dark purple berries often with and without bloom on the same bush, were larger, later, sweeter, but with less flavour than those of the Lowbush Blueberry.



## LIST OF SPECIMENS COLLECTED

Those marked Island 85 were not found on Island 74.

*Woodsia ilvensis* (L.) R. Br. Rusty Woodsia. Island 85.

*Dryopteris spinulosa* (Retz.) Kuntze, Toothed Woodfern. Island 74, 85.

*Dryopteris marginalis* (L.) A. Gray, Evergreen Woodfern. Island 85.

*Polypodium vulgare* L. Common Polypody. Island 74, 85.

*Pteridium aquilinum* L. Kuhn. Bracken. Island 85.

*Pinus Strobus* L. White Pine. Island 74, 85.

*Pinus resinosa* Ait. Red Pine. Island 74, 85.

*Pinus Banksiana* Lamb. Jack Pine. Island 74, 85.

*Larix laricina* (Du Roi) Koch. American larch. Island 85.

*Picea mariana* (Mill.) B.S.P. Black Spruce. Island 74, 85.

*Abies balsamea* (L.) Mill. Balsam. Island 85.

*Thuja occidentalis* L. White Cedar. Island 74, 85.

*Juniperus nana* Willd. Low Juniper. Island 74, 85.

*Sparganium angustifolium* Michx.-Narrow-leaved Burweed. Island 85.

*Potamogeton americanum* Cham. & Schl. Pondweed. Island 85.

*Sagittaria graminea* Michx.-Grass-leaved Sagittaria. Island 85.

*Vallisneria spiralis* L. Wild Celery. Island 85.

*Panicum xanthophyllum* A. Gray-Slender Panicum. Island 85.

*Panicum tennesseense* Ashe. Island 74, 85.

*Phalaris arundinacea* L. Reed Canary Grass. Island 74, 85.

*Agrostis hyemalis* (Walt.) B.S.P. Rough Hair Grass. Island 85.

*Calamagrostis canadensis* (Michx.) Beauv. Blue-joint Grass. Island 74, 85.

*Deschampsia flexuosa* (L.) Trin. Wavy Hair Grass. Island 74, 85.

*Danthonia spicata* (L.) Beauv. Wild Oatgrass. Island 74, 85.

*Glyceria borealis* (Nash) Batchelder. Northern Manna Grass. Island 74, 85.

*Agropyron pauciflorum* (Schwein) Hitch. Slender Wheatgrass. Island 85.

*Scirpus Torreyi* Olney. Torrey's Bulrush. Island 85.

*Scirpus cyperinus* (L.) Kunth. Wool Grass. Island 85.

*Carex utriculata* Boot. Bottle Sedge. Island 74, 85.

*Carex vesicaria* L. Island 74, 85.

*Carex scoparius* Schk. Pointed Broomsedge. Island 74, 85.

*Unifolium canadense* (Desf.) Greene. False Lily-of-the-Valley. Island 74, 85.

*Cypripedium acaule* Ait. Pink Lady Slipper. Island 74, 85.

*Spiranthes cernua* L. Nodding Ladies' Tresses. Island 74, 85.

*Epipactis pubescens* (Willd.) A. A. Eaton. Downy Rattlesnake Plantain. Island 85.

*Myrica Gale* L. Sweet Gale. Island 74, 85.

*Comptonia peregrina* (L.) Coulter. Sweet Fern. Island 85.

*Populus tremuloides* Michx. Aspen. Island 74, 85.

*Salix nigra* Marsh. Black Willow. Island 74, 85.

*Betula papyrifera*. Marsh White Birch. Island 74, 85.

*Quercus rubra* L. Red Oak. Island 74, 85.

*Aquilegia canadensis* L. Wild Columbine. Island 85.

*Corydalis sempervirens* Pers. Pink Corydalis. Island 74, 85.

*Ribes triste* Pall. American Currant. Island 74, 85.

*Spiraea tomentosa* L. Hardhack. Mainland.

*Fragaria americana* (Porter) Britton Wood Strawberry. Island 85.

*Comarum palustre* L. Marsh Cinquefoil. Island 85.

*Rosa acicularis* Lindl. Prickly Rose. Island 85.

*Aronia nigra* (Willd.) Greene Black Chokeberry. Island 74, 85.

*Lathyrus palustris* L. Marsh Vetchling. Island 85.

*Rhus hirta* (L.) Sudw. Staghorn Sumac. Island 85.

*Toxicodendron radicans* (L.) Kuntze. Island 74, 85.

*Ilex verticillata* (L.) A. Gray Winterberry. Island 74, 85.

*Acer. rubrum* L. Red Maple. Island 85.

*Acer saccharinum* L. Silver Maple. Island 74, 85.

*Epilobium angustifolium* L. Fireweed. Mainland.

*Kneiffia pumila* (L.) Spach Small Sundrops. Island 74, 85.

*Aralia nudicaulis* L. Wild Sarsaparilla. Island 74, 85.

*Aralia hispida* Vent. Prickly Sarsaparilla. Island 74, 85.



- Sium cicutaefolium* Schrank. Water Parsnip. Island 85.
- Cornus canadensis* L. Bunchberry. Island 85.
- Cornus Amonum* Mill. Silky Cornel. Island 74, 85.
- Monotropa uniflora* L. Indian Pipe. Island 85.
- Gaultheria procumbens* L. Creeping Wintergreen. Island 74, 85.
- Vaccinium nigrum* (Wood) Britton Low Black Blueberry. Island 74, 85.
- Vaccinium angustifolium* Ait. Lowbush Blueberry. Island 74, 85.
- Oxycoccus Oxycoccus* (L.) MacM. Small Cranberry. Island 74, 85.
- Trientalis americana* Pursh. Star flower. Island 85.
- Fraxinus pennsylvanica* Marsh. Red Ash. Island 74, 85.
- Fraxinus americana* L. White Ash. Island 74, 85.
- Scutellaria galericulata* L. Skullcap. Island 85.
- Lycopus virginica* L. Bugleweed. Island 74, 85.
- Lobelia cardinalis* L. Cardinal Flower. Mainland.
- Solidago juncea* Ait. Early Goldenrod. Island 85.
- Solidago nemoralis* Ait. Gray Goldenrod. Island 85.
- Euthamia graminifolia* (L.) Nutt. Bushy Goldenrod. Island 74, 85.
- Aster macrophyllus* L. Bigleaf Aster. Island 85.
- Aster Tradescanti* L. Michaelmas Daisy. Island 74, 85.

## FOUR ADDITIONAL BREEDING BIRDS OF ONTARIO

By JAMES L. BAILLIE, JR.



SINCE the publication of the *Distribution of Breeding Birds in Ontario* (Baillie and Harrington, 1936-7) it has been established that four additional species breed in the province. These four, all of them western species, bring the total of breeding birds in Ontario to 214 species.

Snyder (1938) has published the fact that the Western Meadowlark, *Sturnella neglecta*, breeds not uncommonly in Rainy River District, in extreme western Ontario. A female (now in R.O.M.Z.) containing an egg almost ready for extrusion, was collected at Emo on June 15, 1929 and on June 26, 1929 a nest with four young was found in the same area, both by Mr. Snyder.

It has long been suspected that the White-winged Scoter, *Melanitta deglandi*, might nest in north-western Ontario<sup>1</sup> but it was not until August 8, 1936, that a definite breeding record was forthcoming. On that date, Dr. Jack Satterly, geologist, saw an adult bird with downy young, on Ney Lake near the Manitoba-Ontario boundary between latitude 54° and 55°N. The species was quite common on the lake and Dr. Satterly obtained photographs of the downy young (which he presented to R.O.M.Z.).

Bonaparte's Gull, *Larus philadelphia*, constitutes the third addition. In this case also, geologists, who often penetrate areas seldom visited by the ornithologist, were again responsible. Drs. J. W. Britton and V. K. Prest, working Ivan Lake, near Lake Mimiska, on the Albany River about 100 miles north of Lake Nipigon, in northern Ontario, on July 21, 1937, came on three flightless young of this species together with their agitated parents. Dr. Britton described the birds accurately to the writer and there is no doubt in our minds of the species involved. The shore of the little lake was forested with spruce and it was in typical muskeg country. Dear (1939) has published a supporting record of two sets of three heavily-incubated eggs obtained by Mr. Clare Watson on June 16, 1938, at Rat Rapids at Lake St. Joseph on the Albany River (one of the sets presented to R.O.M.Z. by Colonel Dear), only 75 miles west of Ivan Lake. Watson had noted the presence of the species at Rat Rapids during the summer of 1937 but failed to establish a breeding record. The nests discovered in 1938 were placed about twenty-five feet up in black spruces beside a shallow muskeg lake.

The fourth and most recent addition is the White Pelican, *Pelecanus erythrorhynchos*, a small colony of which nested in 1938 on Dream Island, a few miles east of Massacre Island, in

<sup>1</sup> Sectional terminology of Snyder (1939).





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