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NOTES ON THE FLORA OF NOVA SCOTIA—II

ALBERT E. ROLAND

CONSIDERABLE field work has been done by the author during the last few years, and especially during the summer of 1940 when work was confined almost entirely to the region adjacent to the province of New Brunswick. This is a region characterized by hardwood forests, rich intervales, and an inland flora; and since no botanist has studied this part of the province in any detail since it was visited by Macoun in the early years of this century and before, it seems desirable to indicate any new extensions of range and to confirm some of the old records, especially since the ranges of many of these plants indicated in the more recent manuals do not even approach this territory.

The previous records of the occurrence of the plants in the province are indicated in the following list. If no comment is made, no previous record of the plant being collected in the area is known to the author. Specimens of the plants are in the herbarium of the Nova Scotia Agricultural College, Truro, N. S.

ATHYRIUM THELYPTEROIDES (Michx.) Desv. forma ACROSTICHOIDES (Swartz) Gilbert. Typical *A. thelypteroides* is abundant in rich woods from Kings and Cumberland Counties to Cape Breton, often being the only fern on some of the rich slopes of the Cobequids. Forma *acrostichoides*, or any form approaching it, has been found but once. KINGS COUNTY: rich ravine, Cape Blomidon.

DRYOPTERIS FRAGRANS (L.) Schott, var. REMOTIUSCULA Komarov. CUMBERLAND COUNTY: near the falls, about a mile

above the paved road, Moose River; growing abundantly with *Asplenium Trichomanes* and *Woodsia ilvensis*.

This fern is common in northern Cape Breton, but this is the only known station on the mainland, as Rousseau (1) states that apparently it no longer grows at its original station for the province on the Strait of Canso.

Dryopteris Boottii (Tuckerm.) Underw. First found near Halifax and reported by Fernald (2) as common from Yarmouth to Lunenburg County. Colchester County: alluvial thicket, edge of the marsh, Glenholme. Guysborough County: swampy woods, Caledonia Mills.

Lycopodium sabinaefolium Willd., var sitchense (Rupr.) Fern. Reported by Nichols (3) as characteristic of the "grass sedge heath" in northern Cape Breton. It is also common in open pastures throughout the centre of the province. Pictou County: gravelly bank, Salt Springs, *Prince & Atwood*, No. 650; open woods above Trenton. Colchester County: mossy wet pasture above North River. Cumberland County: common in a foxberry pasture above Parrsboro.

Pinus Banksiana Lamb. Now, due to repeated fires and cutting, the dominant pine of Cumberland County. Cumberland County: abundant at Oxford on the sand plains; and common on the poorly drained country north and west of Springhill. Richmond County: common around Louisdale, the first record for Cape Breton.

Outside of a few scattered trees, which may be introduced, this tree has never been found on the pine barrens of Kings and Annapolis Counties.

Typha angustifolia L. Cumberland County: in several small scattered areas around a small lake near the head of tide, south of Amherst, growing with but much less abundant than *T. latifolia*.

Macoun lists it from Windsor; and in Lindsay's list (4) it is credited to Beaver Bank, near Halifax. Recent manuals, however, place the northern limit about Massachusetts or southern Maine.

Zizania aquatica L., var. angustifolia Hitchc. Kings County: one well developed clump in the Canard River, Lower Canard, now destroyed by road construction.

An extension of range southward from New Brunswick.

Milium effusum L. Kings County: common on the top of Cape Blomidon.

Another plant previously reported only from the richest localities between Hants County and Cape Breton.

Oryzopsis canadensis (Poir.) Torr. Previously found by Fernald at Springhill Junction; now found to be common on dry or sterile soil in the northern part of the province. Cumberland County: common with *O. asperifolia* Michx. on the sandy plains at Oxford. Colchester County: *Rhodora-Vaccinium* barren, Masstown.

Muhlenbergia uniflora (Muhl.) Fern. Previously found from Yarmouth to Halifax County, but to be expected in any part of the province. Colchester County: common in a bog near Truro. Cumberland County: common in a grassy meadow near Atkinson Siding. Victoria County: bog near Ingonish in northern Cape Breton.

Glyceria melicaria (Michx.) F. T. Hubbard. Very common and often the dominant grass in wet thickets and shady brooksides from Blomidon, Kings County, northward through Cumberland and Colchester Counties.

Glyceria fluitans (L.) R. Br. Colchester Co.: scattered in swales about Truro.

I have seen no records of this grass from the province, although *G. borealis*, on the other hand, is common throughout.

Spirodela polyrhiza (L.) Schleid. Common in slow-flowing streams of Kings and Cumberland Counties.

Allium tricoccum Ait. Kings County: common on the top of Cape Blomidon. Colchester County: rich hardwoods along the river at Kemptown.

Both localities are in rich deciduous woods in calcareous soil.

Populus tremuloides Michx., var. intermedia Victorin. Seen only once during the summer. Colchester County: damp, low woods at Bible Hill.

Polygonum arifolium L. var. lentiforme Fern. & Griscom. Common in rich thickets through the center of the province. The range is given from P. E. I. southward. Kings County: alder thicket by the Cornwallis River west of Kentville. Cumberland County: thicket by Patterson Lake, above Parrsboro; thicket near River Hebert; wet alder swamp, Economy, *Prince* No. 743.

Nuphar microphyllum (Pers.) Fern. Reported by Nichols as characteristic of ox-bow ponds in northern Cape Breton. It is also found in the few scattered lakes and ponds in Cumberland County: sinkhole in gypsum, Oxford; ox-bow ponds in the meadows above River Hebert.

Actaea rubra (Ait.) Willd., forma neglecta (Gillman)

Robinson. Common in Colchester County: edge of an intervale along Pleasant Valley.

Caulophyllum thalictroides (L.) Michx. Colchester County: one clump in rich deciduous woods along the river intervale, Kemptown.

In this narrow strip of sugar maples between the plowed fields and the river just below the paved road can be found most of the plants which are typical of the richest woodlands in the province, but which are very rarely or never seen to the south and west.

Draba arabisans Michx. Kings County: open coniferous woods on the slope of Cape Blomidon.

Previously known in the Maritimes only from Northern New Brunswick.

Tiarella cordifolia L. Listed by Lindsay from Pictou and Truro. This characteristic intervale plant of Colchester and Pictou Counties is found, together with *Trillium cernuum* and *Uvularia sessilifolia*, on most of the rich wooded hillsides or along the edges of the meadows.

Prunus serotina Ehrh. Groh (5) reports it only from Hants to Yarmouth County. This summer's field work has shown it to be not rare throughout the center of the province where large trees are often seen growing on the deep silty soils. Hants County: edge of a rich intervale, Shubenacadie. Colchester County: river bank at Gay's River. Cumberland County: many large trees along the sandy intervale roadside, Wentworth; roadside thicket, Atkinson Siding; brookside thicket, Springhill Junction.

Desmodium acuminatum (Michx.) DC. Kings County: a large area in deciduous woods along the Gaspereau River about two miles above White Rock.

The first record for the Maritimes.

Desmodium canadense (L.) DC. Long known from the intervales of Colchester and Pictou Counties. C. B. Robinson in 1902 (6) states that along "each of the three Pictou rivers may be seen the leaves of *Meibomia Canadensis* (L.) Kuntze, the flowers not appearing before the middle of July." Colchester County: Salmon River bank, east of the College Farm, Truro. *H. W. Smith*, Aug. 16, 1905.

Vicia tetrasperma (L.) Moench. Becoming a troublesome weed in the light soils of Kings and Annapolis Counties, and common around the edge of the marshes in Colchester and Cumberland.

Vicia hirsuta (L.) S. F. Gray. The range given in Britton & Brown is N. S. southw. but it is very rare in the province. Seen

but once during the summer: edge of the marshland at Glenholme, COLCHESTER COUNTY.

RADIOLA LINOIDES Roth. This tiny flax was long known in North America only from a single collection made at Louisburg, Cape Breton Island, by John Macoun. Recently A. E. Porsild (7) reported it from four additional places, all in Halifax County. It is by now, however, scattered along the whole Atlantic Coast of the Province.

At West Lawrencetown, HALIFAX COUNTY, it grows as thickly as grass and several cm. high over any exposed soil along the roadsides and in moist pastures close to the ocean. RICHMOND COUNTY: wet ground near Arichat, *Roland*, 40,524. SHELBURNE COUNTY: roadside, Round Bay, *Prince & Atwood*, No. 1300.

POLYGALA SANGUINEA L. CUMBERLAND COUNTY: common in a silty acid ill-drained field, Truemanville.

Several species of Polygala in the manuals have been given ranges extending northeastward to Nova Scotia; but they are rather rare and during several seasons of botanizing this has been the only collection made.

COREMA CONRADII Torr. COLCHESTER COUNTY: common in a Jack Pine barren on the site of the military training camp at Debert. CUMBERLAND COUNTY: very common on the sandy pine barrens around Oxford.

Known to be common from Halifax westward, and reported by Rousseau from Guysborough County, it is to be expected anywhere on the peninsula where the soil is thin or sandy.

RHAMNUS ALNIFOLIA L'Her. HALIFAX COUNTY: open pasture, Carroll's Corner. COLCHESTER COUNTY: along meadow thickets west of Brookfield; plentiful over more than an acre of alluvial soil, East Earltown. Reported by Nichols as characteristic of poorly drained swamps in northern Cape Breton; and by Fernald from swampy woods, Springhill Junction.

This shrub is scattered on alluvial or calcareous soil through the central part of the province, and in every locality it was heavily attacked by *Puccinia coronata*.

RHAMNUS FRANGULA L. An occasional escape around Truro and Wolfville; and abundant along roadsides near Amherst, Cumberland County.

ABUTILON THEOPHRASTI Medic. KINGS COUNTY: an occasional weed, garden near Kentville.

MALVA NEGLECTA Wallr.

The small-flowered *Malva* which is common through the Annapolis Valley proves to be this species.

Viola Selkirkii Pursh. Cited in Macoun's Catalogue only from near Windsor, Hants County, and found by Rousseau in woods near Mulgrave, Guysborough County. *V. Selkirkii* is characteristic of the richer woods from Kings County to Cape Breton, although it is not common. Kings County: cool wooded ravine on the slope of Cape Blomidon. Colchester County: rich maple woods, East Earltown; common, Mapleton, *Roland* No. 40,564. Cumberland County: hardwood slope south of Amherst.

Viola eriocarpa Schwein. var. leiocarpa Fern. & Wieg.

Yellow violets are common in rich and especially alluvial soil, or calcareous areas from Kings County to Cape Breton. In Kings County they are mostly confined to the basaltic soils of the North Mountain. Along the intervales of Colchester and Pictou they are exceedingly common and are one of the first violets to bloom in the spring. The ovaries and capsules of the Nova Scotian plants have always been found entirely glabrous.

Lythrum Salicaria L.

This loosestrife seems to be introduced in numerous widely scattered places throughout the whole province. Macoun lists it as abundant in the ruins of Louisburg. Acres of the marshes below Truro are a vivid color when it is in bloom. Fernald reported it from Yarmouth; and it occurs sparingly in a swale behind a small lake at Truemanville, Cumberland County.

Osmorhiza longistylis (Torr.) DC. Reported by Robinson as a much commoner intervale plant in eastern Nova Scotia than usually supposed. It is also found in rich woodland or alluvial soils in Kings County: hardwoods on the top of Cape Blomidon, *Roland* No. 38,133; rocky roadside at Canaan, above Kentville; deep hardwoods south of Coldbrook.

The only collection seen from the northern counties seems to be the following:

O. longistylis var. brachycoma Blake. Stem with dense short spreading hairs. Cumberland County: rich alluvial roadside, Southampton, *Roland* No. 40,587.

Heracleum Sphondylium L. Very common weed in waste places and on roadsides, Truro.

Primula mistassinica Michx. Colchester County: covering a mossy bank along the Salmon River, Valley, *Roland* No.

40,618. VICTORIA COUNTY: mossy area on gypsum cliff, Cape North.

This tiny primrose, which has been reported from several places from northern Cape Breton to Colchester County is certainly one of the rarest of our plants.

LYSIMACHIA THYRSIFLORA L. This plant, mentioned in Lindsay's list as occurring at Truro and Pictou, is very common in the Salmon River Valley, Colchester County; and the marshes at Truro are yellow when it is in bloom. It is also found about every lakeside and swale in northern Cumberland County.

THYMUS SERPYLLUM L. This is the predominating plant in several fields at Truemanville, Cumberland County, where Macoun found it forty years ago; and from here it has scattered throughout the whole region around Amherst.

GALIUM BOREALE L. var. INTERMEDIUM DC. KINGS COUNTY: common along the edge of the woods on the top of Cape Blomidon, *Roland & Eaton* No. 38216.

GALIUM MOLLUGO L. Another plant reported by Macoun from Truemanville, which has become a troublesome weed to the farmers in Cumberland County.

TRIOSTEUM PERFOLIATUM L. var. AURANTIACUM (Bicknell) Wiegand.

A typical example of the distribution of many of the intervale-plants in the province. Several plants were found in a rich intervale near Truro during the summer; it was reported by Robinson from near New Glasgow; and it reappears again in northern Cape Breton where it is practically restricted to the intervales, or to rich calcareous soils.

SUCCISA PRATENSIS Moench.

This introduced plant, mentioned by Macoun as established to some extent in fields about Louisburg, is now abundant along the roadsides and in damp fields outside that town. In early September the railroad banks were a solid blue color in many places.

LOBELIA SPICATA Lam. KINGS COUNTY: common in the run-out fields and pastures on the top of Cape Blomidon.

The only other known station for the Maritimes is in eastern New Brunswick.

RUDBECKIA LACINIATA L. var. GASPEREAUENSIS Fern. (8). This indigenous variety with the undersides of the leaves and the petioles and rhachis long-pubescent, is common in the eastern

part of Kings County, and is found also in Colchester. Kings County: shady roadside gully, common, South Berwick; roadside swamp, Cambridge; roadside swale, Lower Canard. Colchester County: roadside swamp, East Mountain, Prince No. 658.

Galinsoga ciliata (Raf.) Blake. Common weed, Lower Barrington Street, Halifax.

Lapsana communis L. A garden weed, Halifax.

Hypochaeris radicata L. Yarmouth County: a serious weed in fields and lawns about Yarmouth and Arcadia.

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Nova Scotia Agricultural College,
Truro, Nova Scotia

NOTES ON JUNIPERUS[1]

C. V. Morton

Recently Mr. V. L. Cory[2] has published a paper in which he describes, as a species, *Juniperus gymnocarpa* (Lemmon) Cory, based on *J. occidentalis* var. *gymnocarpa* Lemmon. He writes, "The characteristic feature of the mature fruit, which marks it as a distinct species, is that the solitary seed, which is large for the cone containing it, is exposed at the tip for as much as one-fourth or more of the length of the seed." He also states that " . . . in fully mature fruit it is obviously distinct from all other described junipers." The form discussed has been known

[1] Published by permission of the Secretary of the Smithsonian Institution.
[2] "Three Junipers of Western Texas." Rhodora **38**: 182–187. 1936.