# THE FLORA OF MONT RIGAUD

by

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# ABSTRACT

M.Sc. Linda E. Newstrom Plant Science

A floral survey was made of Mont Rigaud located in Vaudreuil County on the south shore of the Ottawa River in Quebec, Canada. Both field collections on the mountain and herbarium searches of the Herbier Marie-Victorin at the Université de Montréal, the McGill University Herbarium and the Ecole Normale de Saint-Viateur Herbarium from Rigaud provided the basis for the checklist of vascular plants. This list, in the form of an annotated catalogue, comprised 754 taxa. Studies of six habitats: rocky outcrops, cliffs, boulder beds, cedar-orchid swamp, marsh and swamp, and beaver ponds were made. The history of 111 years of botanical collecting was summarized. Recommendations for conservation of the remaining natural areas on Mont Rigaud were made.

Résumé

M.Sc. Linda E. Newstrom Plant Science

UN INVENTAIRE DE LA FLORE DU MONT RIGAUD

Un inventaire de la flore du Mont Rigaud, comté de Vaudreuil, situé sur la rive sude de la rivière des Outaouais, dans la province de Québec, Canada, fut effectué. Des collections sur place de même que des recherches en herbier tel que dans l'herbier Marie-Victorin de l'Université de Montréal, l'herbier de l'Université McGill et l'herbier de l'école normale Saint-Viateur de Rigaud ont fourni la base pour la préparation de la liste des plantes vasculaires. Cette liste, qui est sous forme de catalogue annoté, comprend 754 espèces et variétés. Six habitats: les affleurements rocheux, les escarpements, le lit rocheux, le marécage cèdre-orchidée, le marais et marécage, les étangs de castor furent étudiés. Un sommaire de 111 ans de collection botanique a été préparé. Des recommendations pour la conservation des aires naturelles qui subsistent encore ont été faites.

ACKNOWLEDGEMENTS

It is with pleasure that I thank Dr. D. W. Woodland, not only for his guidance but also for his encouragement, continual assistance and the help he has afforded me toward the shaping of my career.

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I am indebted to Dr. B. Boivin for his considerable contribution to the historical section which came from his personal files. Dr. R. Doig kindly identified the rock specimens for the Cliff and Boulder Bed Habitats and reviewed the physical description section. R. Lamarche printed the photographs and diagrams and B. Howland drew the maps.

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TABLE OF CONTENTS

# LIST OF TABLES

LIST OF FIGURES

# INTRODUCTION

Mont Rigaud, in Southwestern Quebec, Canada, disrupts the St. Lawrence lowlands on the south shore of the Ottawa River and presents unique botanical and wildlife features for the area. The geology, soils and microclimates differ markedly from those of the surrounding area, resulting in plant communities on the cliffs and rocky outcrops which are not represented on the plains. The flora on the mountain is much richer than in the lowlands because of the greater diversity of habitats. The steep slopes, cliffs and rocky terrain have prevented the agricultural exploitation of all but the foothills where there are pastures, some field crops and abandoned orchards. Mont Rigaud, like mountainous Oka, Quebec, supports a well conserved forest in contrast to the plains. These forests, in the transition zone named the Northern Conifer Hardwoods, contain species representative of the American Deciduous forests to the south and the Boreal forest to the north. On Mont Rigaud is found one of the few remaining Maple-Hickory forest remnants in Quebec (Lemieux, 1976b). Geographically located in one of the warmest vegetation zones of Quebec (Ouellet and Sherk, 1967; Rousseau, 1974), Mont Rigaud harbours many species with southern affinities which are rare for the province.

Another factor contributing to the botanical uniqueness of Mont Rigaud is that in postglacial times, the mountain was one of a chain of islands remaining emergent in the Champlain Sea. During the retreat of the sea, Mont Rigaud served as a valuable local ecological niche for the invasion and later migration of plants (Lajoie and Stobbe, 1950).

The history of Mont Rigaud's floristic investigations resembles the pattern of botanical exploration in Quebec. The local priests of the

Clercs de Saint-Viateur were the most active collectors and established a herbarium in each of their two schools in Rigaud. Although professional and amateur botanists have been collecting on the mountain for over 110 years, no published reports on the flora exist. In 1975, Mont Rigaud was proposed for a provincial ecological reserve and information on its flora, fauna and ecology was needed.

The object of this work was to compile a check list of the present flora, based on intensive field collecting in the summers of 1976 and 1977, and augmented by herbarium searches of the McGill University Herbarium at Macdonald College, the Herbier Marie-Victorin at the Université de Montréal and the Ecole Normale Saint-Viateur Herbarium, the last now housed at Biosystematics Research Institute, Department of Agriculture, Ottawa. The herbarium search has provided information on the history of collecting carried out in the Rigaud area and a plant list which may be useful for observing future changes in the flora.

A descriptive floristic approach was used to portray the general vegetation and disturbance on the mountain, with an emphasis on distinctive habitats. The general physical features of the mountain are presented, as well as a partial list of the fauna, to complete the information required for an ecological reserve proposal.

The imminent destruction by suburban infringement on Mont Rigaud has concerned many of its residents recently. It is the author's hope that this report may be used by the citizens of Mont Rigaud to plan the management of their valuable and unique natural flora and fauna, and that representatives of this rich heritage may be preserved for the enjoyment of generations to follow.

# PHYSICAL DESCRIPTION OF THE MOUNTAIN

## Location

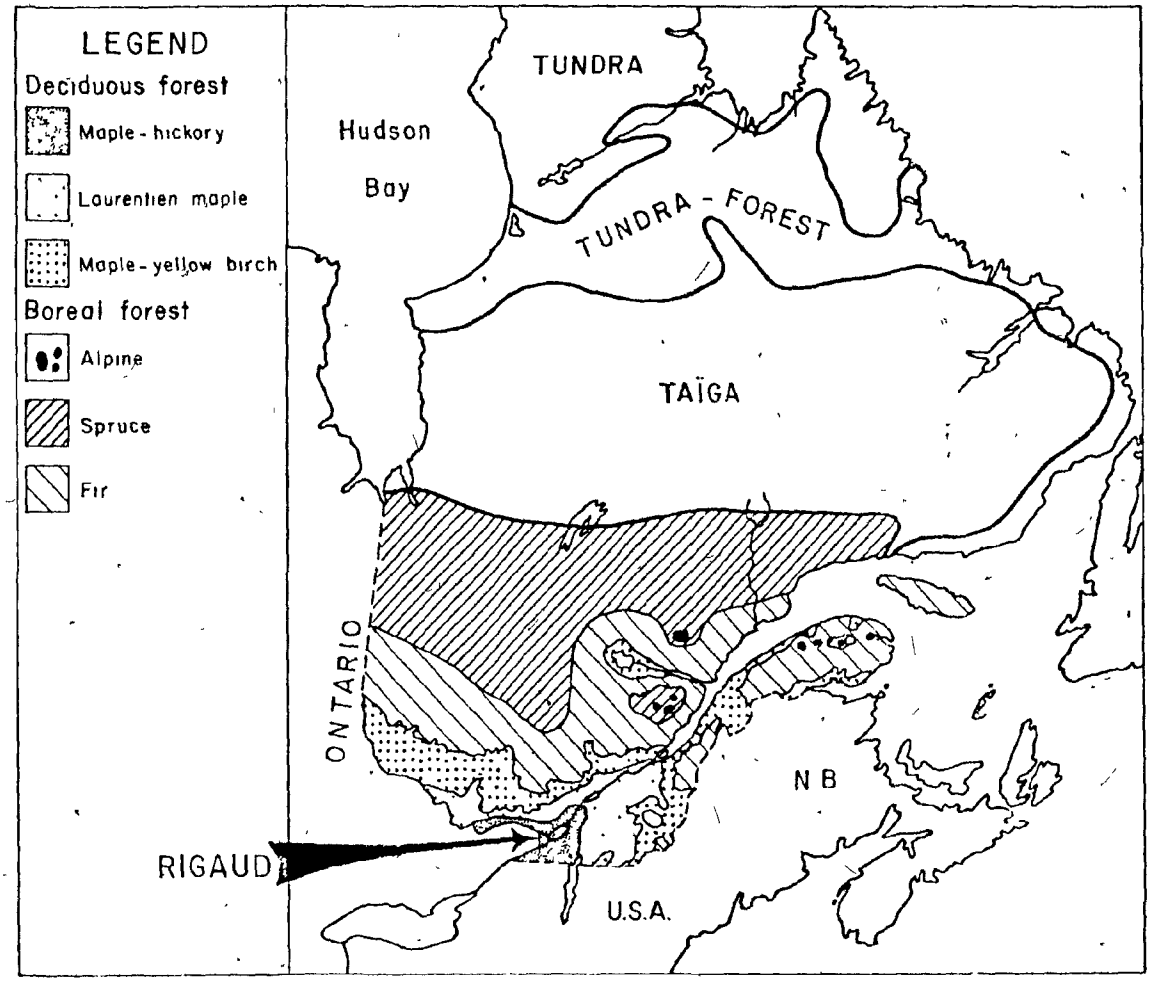
Mont Rigaud, located near the confluence of the Ottawa and St. Lawrence Rivers, is in the northwest corner of Vaudreuil County, in the extreme southwest of Quebec (Fig. 1). It lies about 48 km southwest of Montreal and is accessible by the Trans-Canada Highway No. 40 and the Canadian Pacific Railroad (Fig. 2). St. Georges Road bisects the mountain from east to west and numerous abandoned logging trails and skidoo trails form a network through the forests. The boundaries of the present study (Fig. 3) are defined on the west by the paved road, Rue de la Montagne; on the south by the gravel road, Rue St. Henri; east by the 201 Highway and the gravel road, Chemin Parc; and north by the paved service road for Mountain Ranches Estates, the outskirts of the town of Rigaud and the paved road, Rue des Erables. These boundaries correspond roughly to longitude $74^{o}14'W$ to $74^{o}21'W$ and latitude $45^{o}25'N$ to $45^{o}29'N$.

## Glacial and Postglacial History

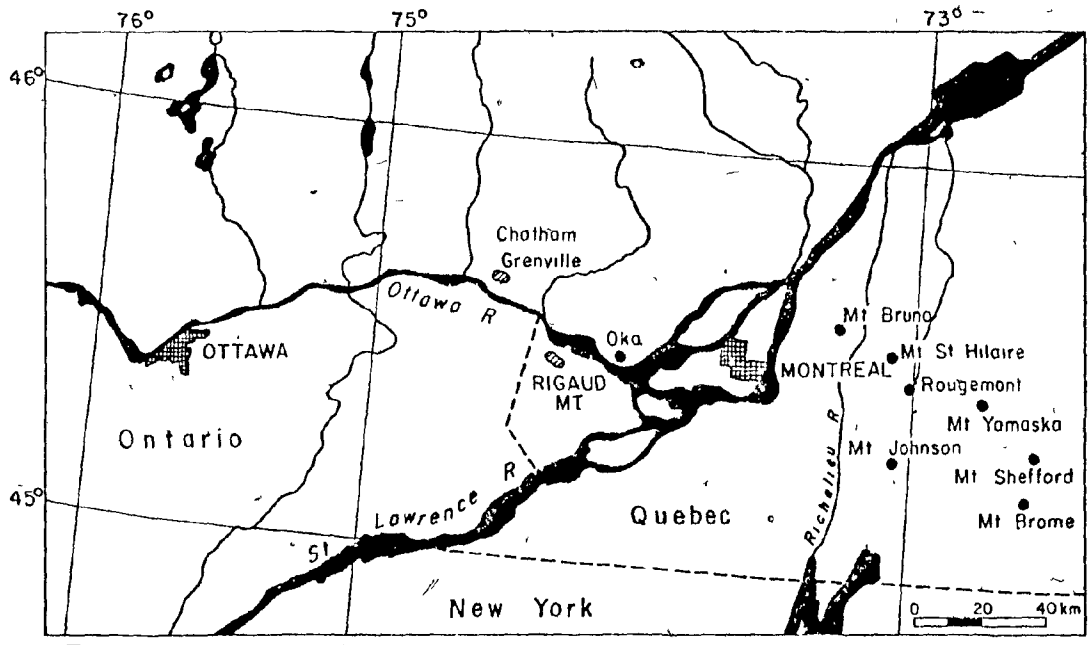
Mont Rigaud was formed during the Ordovician period. The surface deposits on and around Mont Rigaud show the effect of the much more recent (10,000 years ago) glaciation and subsequent sea submergence. The history of the glacial periods is described by Flint (1957), MacClintock and Stewart (1965), Lasalle (1966) and Terasmae (1960). Mont Rigaud was completely covered by the Laurentian ice cap at the maximum stage of glaciation. The Pleistocene advances and retreats scraped off preglacial soils and loose rocks and crushed materials into finer particles. This unsorted loose debris gathered and

Figure 1. The vegetation zone of Mont Rigaud relative to the major vegetation zones of Quebec (after Richard , 1976).

Figure 2. The location of Mont Rigaud in Southwestern Quebec showing the Monteregian hills (Mt. Bruno to Mt. Brome), Oka and Chatham Grenville.


LEGEND
Deciduous forest
Maple - hickory
Laurentien maple
Maple - yellow birch
Boreal forest
Alpine
Spruce
Fir
TUNDRA
Hudson
Bay
TUNDRA - FOREST
TAÏGA
ONTARIO
NB
RIGAUD
U.S.A.

1


76°
75°
73°
46°
45°
Chatham
Grenville
Ottawa R
OTTAWA
Oka
RIGAUD
MT
MONTREAL
Mt Bruno
Mt St Hilaire
Rougemont
Mt Yamaska
Mt Johnson
Mt Shefford
Mt Brome
Ontario
Quebec
St Lawrence R
Richelieu R
New York
0 20 40km

2

Figure 3. Landmarks and boundaries of the study area for the Flora of Mont Rigaud.

Abbreviations:

Locations of intensively studied habitats:

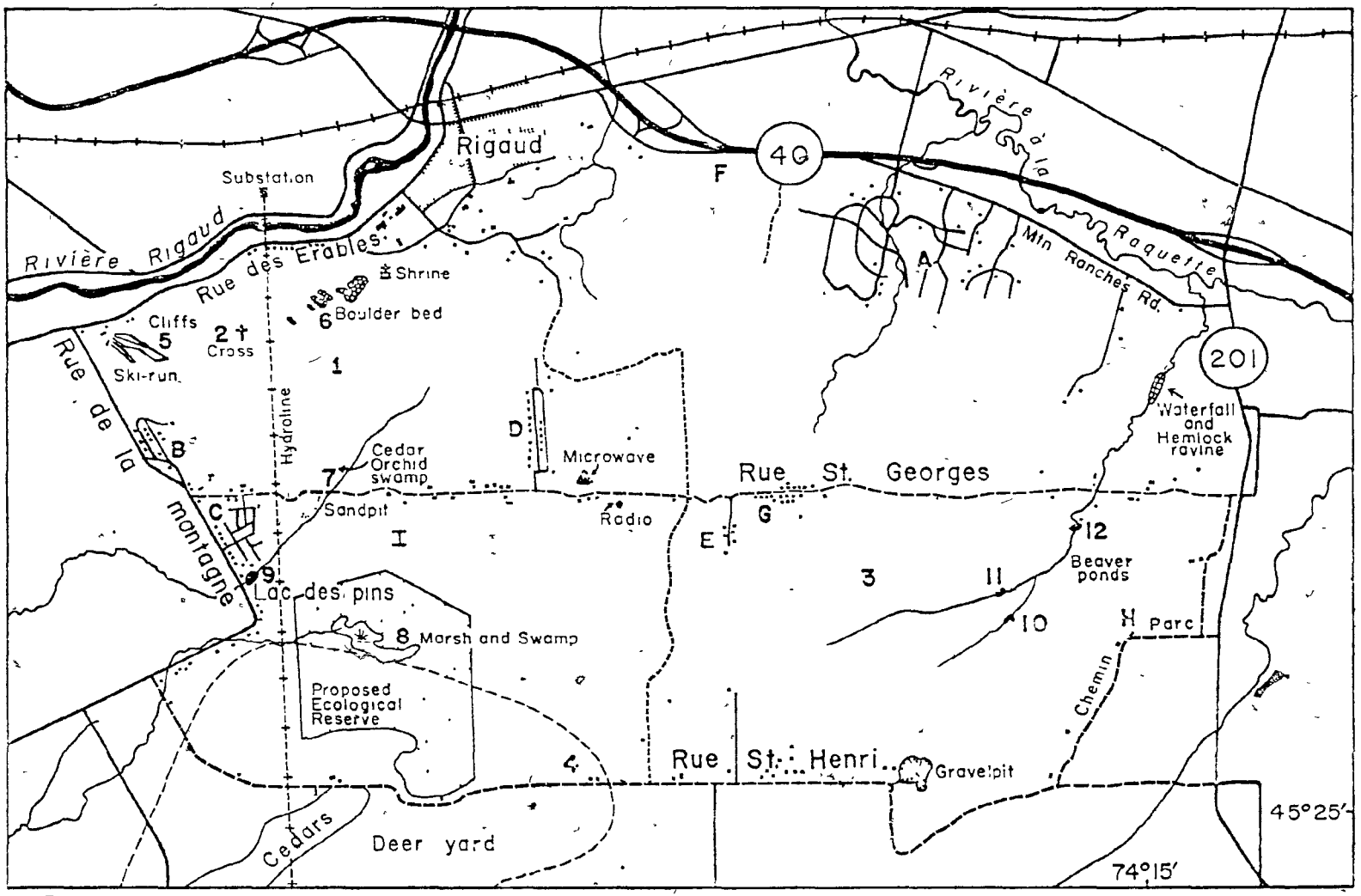
1-4 = Rocky Outcrops; 5 = Northwest Cliffs; 6 = Boulder Bed; 7 = Cedar-Orchid Swamp; 8 = Southwest Marsh and Swamp; 9 = Lac des Pins; 10-12 = Beaver Ponds.

Location of housing developments:

A = Mountain Ranches Estates; B = Domaine du Sommet; C = Domaine Brunnette; D = Domaine Bellevue; E = Domaine Bonair; F = Domaine au Cedres; G = Le Village; H = Domaine Mont Parc (new in 1977); I = Domaine St. Georges (new in 1977).

Symbols:

----- gravel roads except for those in developments
——— paved roads except for those in developments
▪ buildings
- - - deer yard boundary


Rigaud
Substation
Rivière Rigaud
Rue des Erables
Shrine
Boulder bed
Cliffs
Cross
Ski-run
Rue de la montagne
Hydroline
Cedar Orchid swamp
Sandpit
Microwave
Radio
Rue St. Georges
Lac des pins
Marsh and Swamp
Proposed Ecological Reserve
Rue St. Henri
Gravelpit
Cedars
Deer yard
Rivière à la Raquette
Mtn Ranches Rd.
40
201
Waterfall and Hemlock ravine
Beaver ponds
Parc
Chemin
45°25'
74°15'
A
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8
9
10
11
12

3

moved by ice was deposited as glacial till in the form of end, ground and hummocky moraines. Today, approximately 15% of Vaudreuil-Soulanges Counties are covered with glacial till deposits found mainly on the ridges near the Ontario border, on Mt. Rigaud, and on the northern part of Ile Perrot (Lajoie and Stobbe, 1950). The tills on Mt. Rigaud and Ile Perrot contain considerable amounts of gravel and were derived from noncalcareous material, whereas those on the western ridges of Vaudreuil-Soulanges Counties are sandy loam derived from calcareous rocks (Lajoie and Stobbe, 1950).

As a result of the weight of the glaciers, the land was depressed so that when the ice melted the St. Lawrence lowlands were invaded by part of the Champlain Sea. All but the highest summits on both sides of the Ottawa River were inundated by this inland sea. The water rose to a height of 200 m above the present sea level, leaving only the top 24 m of Mont Rigaud exposed (Lajoie and Stobbe, 1950).

As the glaciers retreated, the loss of weight resulted in isostatic uplift and the recession of the marine waters. The Champlain Sea retreated slowly and irregularly, interrupted by periods of stability.

Drainage of water, from the high-lying regions, through the soil boulder mixture, polished and rounded the boulders in certain areas. For those areas with no source of soil replenishment, all the fine sediments were carried down the slopes. Two such deposits of boulders in the northwest sector of Mont Rigaud remain free of inter-boulder material. Commenting on the dual origin of these deposits, LeRoy (1901) stated:

> "The boulder plains on Rigaud would to some extent have been worked over by wave action, and thus arranged in parallel ridges or beaches as they are found at present."

Many different beach levels are seen on the higher outcrops on both sides of the Ottawa River where the exposure to wave action at different levels has resulted in very shallow till, or no soil mantle at all (Lajoie and Stobbe, 1950). Sand deposits on Mt. Rigaud containing fossil sea shells from the Champlain Sea indicate former beach levels at 165 m (Filion and Blouin, 1977). Around Mont Rigaud, the country is covered by clay or silt sediments filling the depressions, and covering the ridges, so as to leave a level surface over the larger part of Vaudreuil-Soulanges Counties (Lajoie and Stobbe, 1950).

Topography

The topography of the central St. Lawrence lowlands is flat to gently undulating. This flatness is broken particularly by the intrusions of the hills of Rigaud and Oka and also the morainic ridges and the sandy plateau of St. Lazare.

> "Mont Rigaud, owing to the general levelness of the immediate surrounding plains, occupies a more prominent position than its height would otherwise warrant" (Leroy, 1901).

Locally it is known as a mountain, yet it attains a maximum altitude of only 210 m above sea level, 150 m above the surrounding plain. Its 9 by 4¼ km oblong shape trends west-north-west to east-south-east covering about 40,468 hectares (15 sq miles). The higher steeper northwest and lower gentler southeast slopes of Mont Rigaud resemble the typical shape of the Monteregian hills to the southeast (Walther, 1963). The topographic features resemble the Laurentian Mountains: rounded ridges, steep cliffs and knobs of rock with drift floored valleys of varying width between them. The surface forms a mosaic of exposed rock on the summits and abrupt slopes with boulder-strewn lower areas largely constituted of glacial till.

The western region of Mont Rigaud is characterized by an extremely rugged topography consisting of a series of interrupted ridges trending east-south-east (Fig. 4).

> "The tops of the ridges are at approximately similar elevations thereby giving the area a plateau like appearance" (Greig, 1968).

The most prominent ridges form steep heavily jointed cliffs 9 to 27 m high which face the Town of Rigaud and the Ottawa River on the north and mark the northwest extremity of the mountain (Greig, 1968). The rocks of the steep north talus slopes joint easily and numerous small precipices 3 to 12 m tall are strewn with large erratic blocks and boulders. The iron cross, erected in 1917, marks the highest peak of this section at 210 m. The southwest part of this western region is quite flat while the northeast slopes are gentle. Northeast of the cross are large areas covered by accumulations of pebbles and boulders, mixed with angular blocks and bedrock. Some of these are the boulder beds entirely free of soil and higher vegetation (Fig. 3, No. 6) but others are covered with shrubs and trees as described in the vegetation section below.

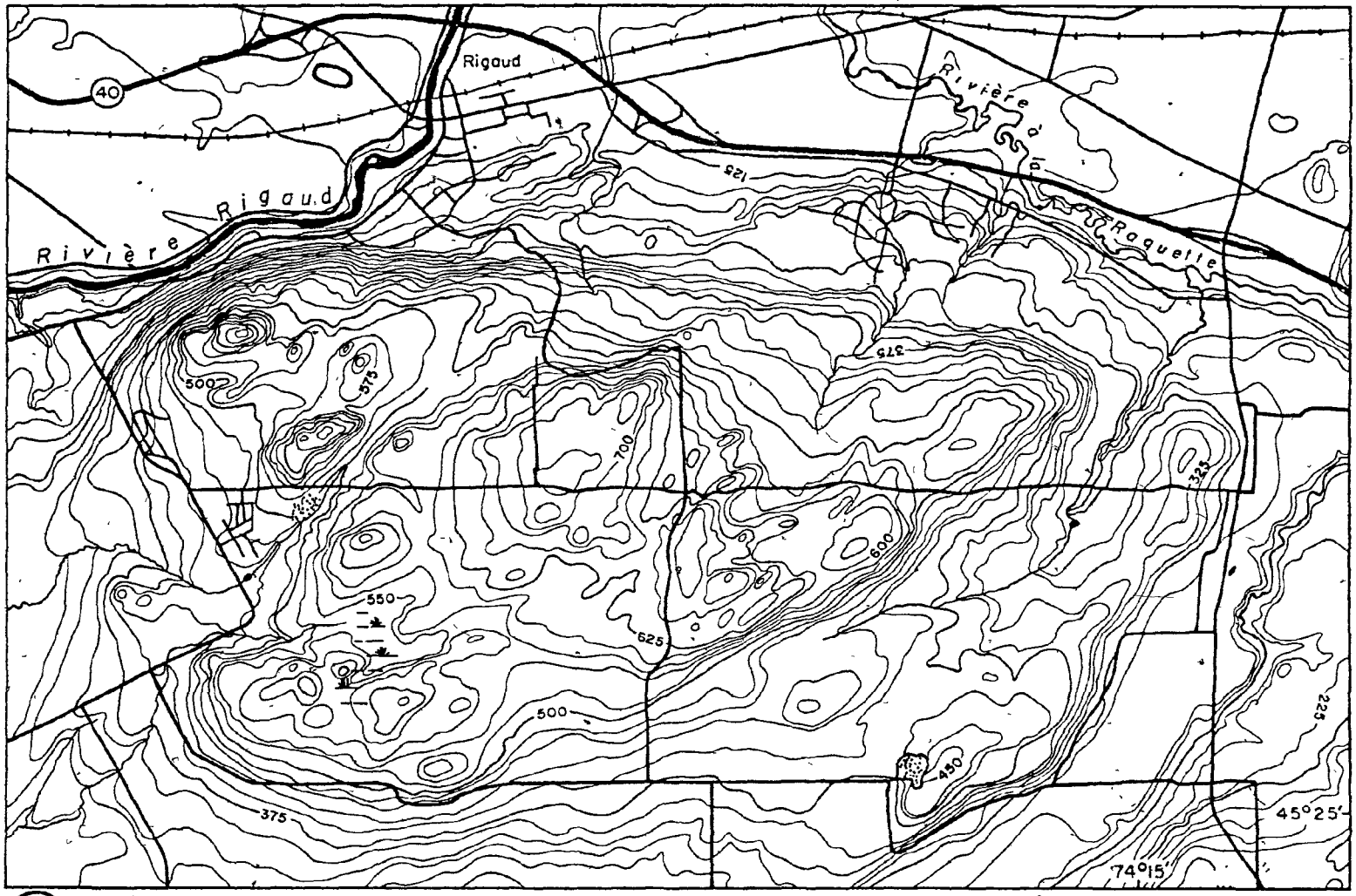
It is unusual to find boulder deposits that are completely free of material in their interspaces. Those on Mont Rigaud have attracted the attention of geologists since 1832 (Bouchette, 1832). The larger of the two deposits, popularly known as the Devil's Garden, adjacent to the Sanctuary of Our Lady of Lourdes, is a tourist attraction. In 1863, Logan et al. examined the boulder fields and in 1913 Goldthwaite claimed that the Devil's Garden is "unequalled in size of boulders and number of ridges in North America". These ridges do not exist today, but rather there is a flat depression which is the result of commercial exploitation of the 1930's. The original appearance of the bed as described so well by LeRoy

Figure 4. Topography of Mont Rigaud, Vaudreuil Co., Quebec.

Symbols:

 = gravel pits

 = marsh


Rigaud
40
Rivière Rigaud
Rivière
Raquette
125
375
500
700
325
550
625
450
225
45°25'
74°15'

4

(1901) was much like cultivated terraces. Possibly 25 parallel ridges at right angles to the long axis of the oval-shaped bed were 1 to 2 m high, 18 to 28 m apart and had convex crests to give an undulating appearance. The field, gradually rising 18 m to the southwest is surrounded on all sides by higher ground except in the northeast where it terminates abruptly with a steep 6 m fall near the shrine.

The second deposit, a triangular area just north of the peak and west of the Devil's Garden, was similar in characteristics to the Devil's Garden except that it was not as thick.

> "The ridges are at first irregular and are composed of very large and slightly rounded boulders but gradually they broaden out and develop into a series as regular and better marked than those of the (original) Devil's Garden" (LeRoy, 1901).

The boulders range from well rounded and polished 5 to 8 cm diameter cobbles, generally found on top, to the irregular almost 1 m diameter boulders, generally found in the bottom layers. Excavations made in the beds demonstrate these layers and show no bedrock or accumulation of soil for at least 8 m. LeRoy (1901) postulated that the deepest part does not exceed 8 m because part of the country to the south is drained under the boulder bed in wet seasons when a trickle of water is distinctly heard, and on one visit LeRoy saw running water in one of the 8 m holes. LeRoy (1901) stated that practically all the boulders are debris of the mountain, not more than 10% are Paleozoic or Laurential erratics.

> "The character of the boulders in the Devil's Garden is such as to show that they came from the mountain immediately to the east, while those composing the second deposit were derived from the cliffs below the peak" (LeRoy, 1901).

Dr. Doig of McGill University Geology Department has looked at 25 samples of rocks from the boulder beds and confirmed that the majority are derived from Mont Rigaud but occasionally there are a few Potsdam sandstones,

Ordovician limestones and some Precambrian rock.

The central part of Mont Rigaud was described as:

"....rather plateau like in character and is made up of subordinate elevations of the roche moutonée type, which exhibit in many instances stoss and lee slopes. On the line between St. George and Ste. Marthe the plateau terminates in an abrupt slope to the south and on this line the highest point of the mountain is situated, there attaining a height of 750 feet above sea level. From this slope southwards the area is but little higher than the immediate surrounding country" (LeRoy, 1901).

The eastern part of Mont Rigaud was described as:

"....marked by one ridge which is continuous throughout the width of the mountain and runs in a northeast direction" (LeRoy, 1901).

## Drainage

Two major rivers skirt the main stock of the mountain, the Rigaud River (formerly à la Graisse) on the west and the Raquette River on the east (Fig. 3). Both flow north into the Ottawa River which follows the north boundary of the mountain in a straight course resulting from an east-west trending fault.

No large streams are found anywhere on the intrusion but there are many small streams, several of them seasonal or intermittent (Fig. 3). These streams drain the comparatively broad shallow depressions between the plateau and ridges and are floored with gravel sand and sandy loam which show very even stratification (LeRoy, 1901).

In the northwest sector, two small seasonal streams flow into the Raquette River, but they are intermittent during the year. In the southwest sector three westward flowing streams join the Rigaud River. One drains the marsh which was formerly known as Lac George, when it was a

large man-made lake. Another arises north of the Cedar-Orchid swamp and flows through Lac des Pins. In the northeast sector three streams flow north through Mountain Ranches Estates to the Raquette River. A larger and much longer stream originating in the southeast sector flows north through a steep rocky ravine containing a waterfall about 4 m high. These four eastern streams and the western stream draining the marsh support beaver populations and, as a result, there are several ponds.

Geology

On a regional scale, Rigaud is a syenitic stock near the western extremity of the St. Lawrence rift at the junction with the Ottawa-Bonnachère Graben. Doig and Barton (1968) showed that this shallow seated knoblike mass was emplaced by vertical intrusion into the Grenville basement and overlying sedimentary rocks about 450 million years ago (Ordovician times). Rigaud is much older than the Monteregian hills which are about 85 to 120 million years old (Cretaceous age) and on the other hand, much younger than the rocks of the Laurentian Mountains which are 800 to 1200 million years old (Precambrian). Rigaud differs from the Mounteregions in petrography in that Rigaud syenite is quartz rich and has no associations with basic rocks (Walther, 1963). The rocks of Oka, 28 km northeast of Rigaud, are of Monteregian age, intruded into an exposed isolated basement high of Precambrian rocks within the lowland region. The Chatham-Grenville stock, 21 km northwest of Rigaud, is considered to be most similar in age and petrography to the Rigaud stock (Greig, 1968). Figure 2 shows the positions of Monteregians, Oka and Catham-Grenville.

Bonin (1940) compiled a bibliography on the geology of Mont Rigaud.

LeRoy (1901) and Greig (1968) studied the petrography of the Rigaud rocks and related their findings to the Grenville, Monteregian and other intrusives in the vicinity of the St. Lawrence lowlands. Greig (1968) mapped the geology of Mont Rigaud, reproduced in Fig. 5, and examined the petrochemistry of the rocks. He made conclusions about the order of crystallization and order of intrusion of the different rock types found on the mountain.

The greater part of the mountain is composed of hornblende syenite with various other intrusive phases.

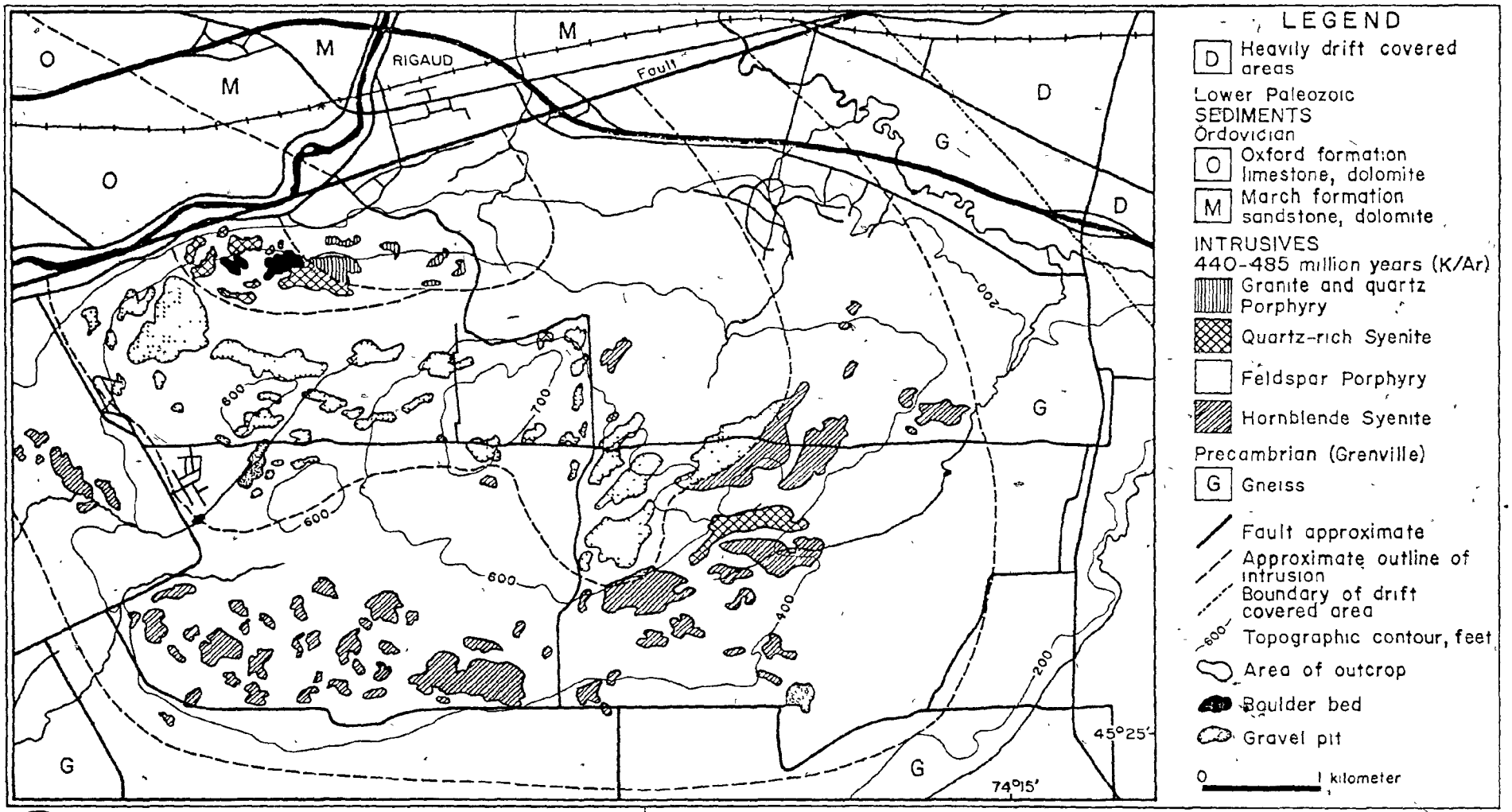
> "In the northern half the hornblende syenite is intruded in the Northwest by a feldspar porphyry mass, which grades eastwards through syenite and granite into quartz porphyry. Vertical and horizontal jointing are extensive in this half of the mountain .... The southern half is composed entirely of coarse grained grey to pink hornblende syenite, into which an oblong shaped mass of pink syenitic porphyry is intruded in the southeast sector.... Numerous dykes rhyolitic and syenitic in composition intrude the hornblende syenite" (Greig, 1968).

> "The drift surrounding Rigaud mountain and separating it from the paleozoic and Laurentian rocks has undergone a certain amount of sorting by water. This broad zone of gravel and sand gradually passes into the sandy clays and clays of the plains. Erratics are more common in the northern margin than elsewhere, and consist chiefly of angular boulders of Potsdam sandstone. Fragments of Laurentian rock, together with those of upper Cambrian age are found generally though sparingly over the whole area" (LeRoy, 1901).

## Soils

The soils on Mont Rigaud are transported soils developed from two different sources; unsorted glacial till and sorted water deposited sands and silt. There has been little or no weathering of the rocks of Rigaud Mountain itself. In fact, glacial striae can still be seen on the rocky exposures (Doig, personal communication). The glacial soil, named the

Figure 5. Geology of Mont Rigaud, Vaudreuil Co., Quebec (after Greig, 1968).


O
M
M
RIGAUD
Fault
M
D
G
D
O
600
700
600
600
400
200
200
G
G
G
45°25'
74°15'
LEGEND
D Heavily drift covered areas
Lower Paleozoic SEDIMENTS
Ordovician
O Oxford formation limestone, dolomite
M March formation sandstone, dolomite
INTRUSIVES
440-485 million years (K/Ar)
Granite and quartz Porphyry
Quartz-rich Syenite
Feldspar Porphyry
Hornblende Syenite
Precambrian (Grenville)
G Gneiss
Fault approximate
Approximate outline of intrusion
Boundary of drift covered area
600 Topographic contour, feet
Area of outcrop
Boulder bed
Gravel pit
0 1 kilometer

5

Rigaud series, covers most of the mountain, but on lower levels deposits of various sandy outwash or alluvial soils occur (Fig. 6). The remaining 1120 hectares, classed as rough stony land, is represented by ledges, bedrock exposures and land literally covered with boulders of all sizes including the two boulder beds.

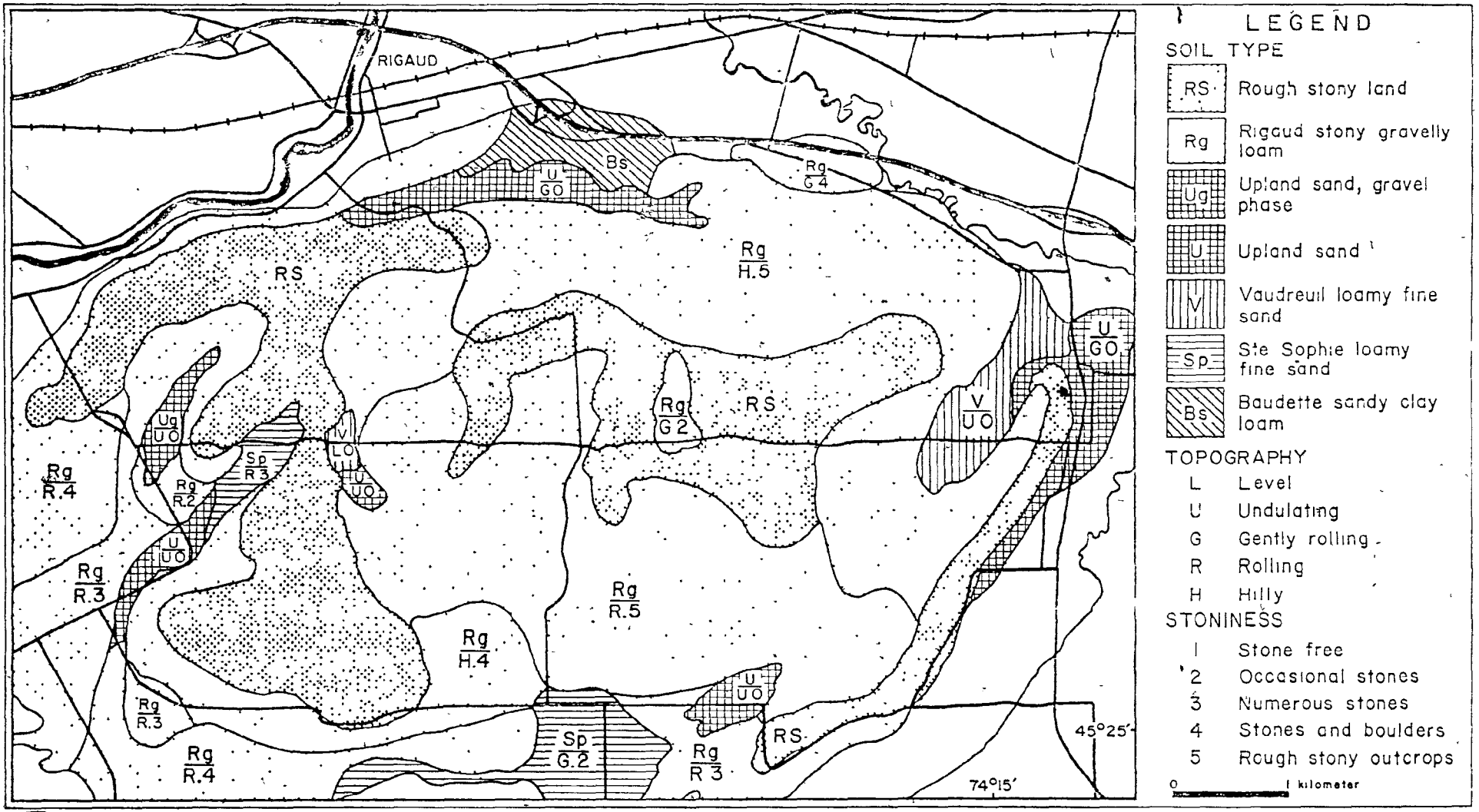
The Rigaud series is a well drained loam and a member of the Brown Podzolic great soil group. Derived from hard rocks of gneiss and quartzite with an admixture of syenite, the noncalcareous till from which this soil has developed is a grey, stony, gravelly sandy loam (Lajoie and Stobbe, 1950).

> "The drainage is good except in some small depressions and at the foot of some long slopes.... On steep slopes the finer soil particles tend to wash off readily if the natural tree cover is removed. The result of such erosion is to leave an eroded surface made up almost exclusively of gravel and rounded stones of all sizes.
>
> A profile description of the Rigaud stony gravelly sandy loam is given below.

| Horizon | Variation in depth | Description |
|---|---|---|
| Ac | 3"- 6" | Dark brown sandy loam, many rounded stones on the surface and in the upper horizon. pH 5.8. |
| A2 | 0"- 1" | Thin streaks of grey loamy sand, may occur intermittently under virgin conditions. |
| B | 16"-30" | Brown gravelly sandy loam with a soft fine granular structure between a skeleton of angular or semi-angular stones. |
| C | | Brownish grey, firm, gravelly, stony till. The depth of the unweathered till over bedrock varies from few inches on the mountain top to many feet at the foot of the mountain. pH 6.5. |

The Rigaud soil is moderately acid throughout the profile; the cultivated soil surface is about pH 5.8. There is often an

Figure 6. Soils of Mont Rigaud, Vaudreuil Co., Quebec (after Lajoie and Stobbe, 1950).




## LEGEND

SOIL TYPE

- RS — Rough stony land
- Rg — Rigaud stony gravelly loam
- Ug — Upland sand, gravel phase
- U — Upland sand
- V — Vaudreuil loamy fine sand
- Sp — Ste Sophie loamy fine sand
- Bs — Baudette sandy clay loam

TOPOGRAPHY

- L — Level
- U — Undulating
- G — Gently rolling
- R — Rolling
- H — Hilly

STONINESS

- 1 — Stone free
- 2 — Occasional stones
- 3 — Numerous stones
- 4 — Stones and boulders
- 5 — Rough stony outcrops

0 — 1 kilometer

> accumulation of cobbles or rounded stones to a depth of 6 to 10 inches on the surface of the soil. These rounded stones and the gravel which accumulated at certain places on the mountain are apparently the materials of former beaches which formed by the wave action of the Champlain Sea. These gravelly beaches are of small extent and of shallow depth" (Lajoie and Stobbe, 1950).

The sandy soils found in patches on the lower levels of the mountain are soils developed from water deposited and sorted materials. These light textured soils represent the following classes: the Upland series, the Ste. Sophie series and the Vaudreuil series. These are all found elsewhere in Vaudreuil-Soulanges Counties.

The Upland series are deep sands reworked by winds and are found also on the St. Lazare sand plateau. Four deposits of Upland sand occur around the margin of the mountain, and one deposit of the gravelly subsoil phase of the Upland sand occurs on the extreme west of the mountain. The Upland sand, a member of the Podzol great soil group, is excessively drained, considerably leached and contains little organic matter and plant nutrients.

Another type of well drained sand, belonging to the Podzolic great soil group, is the Ste. Sophie series found on the west end of the mountain including the St. Georges Road sand pit. Derived from sandy alluvial deposits over 79 cm or more of clay, it is dry and acid, low in fertility and contains large boulders and small stones.

The third type of sand on Mont Rigaud, the Vaudreuil series, consists of one deposit on the west and another much larger deposit on the east. It is a poorly drained loamy fine sand belonging to the Half Bog great soil group. A highly organic black surface has formed on these slightly acid soils which are cold due to excess moisture.

The Baudette clay loam deposit (Lajoie and Stobbe, 1950) on the north of the mountain is an area that was not considered in this study because it is under cultivation.

Climate

The climate for the upper St. Lawrence lowlands is humid and moderate; that is, the temperate summers are warm and humid, and the cold winters are long with a deep snow cover. In this climate the soils tend to become acid and more or less leached (Lajoie and Stobbe, 1950). The southwestern part of Quebec is subject to the moderating climate due to the proximity of the Great Lakes but without the kind of protection of the Great Lakes which benefits the eastern counties of Ontario (Op de Beeck, 1972). Mont Rigaud is in plant hardiness zone 5a, one of the warmest zones in Quebec, exceeded only by zone 5b around Montreal (Ouellet and Sherk, 1967).

The mean annual temperature for the area (an average over 1941 to 1970 for Oka, Cedars and St. Amers) is 6°C. The winters are very cold; the mean for January at -10°C; and the summers are warm, the mean for July at 20°C. The number of days with frost averages 155. The last spring frosts usually occur in May and the first fall frosts in the first week of October, but this can vary considerably.

The average annual precipitation of 91 cm is fairly well distributed throughout the year. On the average, 75 cm of rain fall per year and 2 m of snow. A considerable amount of the precipitation is transpired by plants, or is lost by evaporation, while the remainder, or surplus water, about 39 cm for this area, percolates through the soil or runs off the surface (Lajoie and Stobbe, 1950). The actual evapotranspiration for the

St. Lawrence lowlands is 60 cm (Op de Beeck, 1972). There is no serious shortage of water on the average, however, drought periods occasionally occur causing temporary damage to the vegetation. The ferns in particular, and much of the herbaceous understorey, as well as the smaller trees, suffered from wilting during a dry period in May of 1977. The monthly average temperature and precipitation pattern for the years 1976 and 1977 are presented in Table I.

There are several other relevant climatic indices for interpreting the effects of meteorological events on vegetation such as the Lang index. These are well described by Grandtner (1966) for the southwest of Quebec.

Table I. Monthly average temperature and precipitation pattern for the years 1976 and 1977 recorded at Rigaud*.

| Month | Average temperature (°C) 1976 | 1977 | Average Precipitation (cm) 1976 | 1977 |
|---|---|---|---|---|
| January | - 8.8 | -13.0 | 11.20 | 4.72 |
| February | - 7.5 | - 8.5 | 8.68 | 4.11 |
| March | - 3.5 | + 1.4 | 10.89 | 12.10 |
| April | +13.2 | + 7.1 | 5.25 | 7.77 |
| May | +17.8 | +15.3 | 10.00 | 1.80 |
| June | +20.3 | +17.5 | 10.60 | 7.90 |
| July | +20.1 | +22.3 | 7.06 | 8.34 |
| August | +18.2 | +18.1 | 9.19 | 14.22 |
| September | +13.8 | +13.9 | 8.61 | 13.43 |
| October | + 6.1 | + 7.9 | 11.27 | 9.95 |
| November | - 0.4 | - 2.8 | 3.98 | 10.41 |
| December | -14.0 | - 8.0 | 5.96 | 8.78 |

*From the Service de Météo, Ministère Richesses Naturelles, Québec City, Québec.

# PHYTOGEOGRAPHIC CLASSIFICATION

## Floristic Provinces

A floristic province is based on the total list of species irrespective of their arrangement or numerical abundance (Curtis, 1971; Dansereau, 1957). Marie-Victorin (1952) included Mont Rigaud in one of three floristic districts of the alluvial plain of the St. Lawrence River, the "Ottawa" section of his "Fluvial" district. He commented that this section has a relatively little known flora, and is unique in that it results from an ancient migration probably going back to the beginning of post glacial times.

Following Marie-Victorin's categories in part, Raymond (1950) divided Quebec into three main floristic regions; namely the Arctic, the Hudsonian, and the Laurentian. He again divided the most southerly region, the Laurentian, into eighteen sub-provinces with Mont Rigaud falling into the Ottawa Valley division. This division is rich in limestone and consequent calciphilous plants. As well, small rivers flowing into the Ottawa River deposit large masses of sand suited to xerophytic plants. Raymond listed many of the common and rare plants of the area, with notes of their distribution and the probable route by which they reached the Ottawa Valley.

The most recent floristic classification for Quebec is by Rousseau (1974) who divided the province into nine bioclimatic zones. Mont Rigaud belongs to the most southwesterly zone with a relatively mild climate, which has greater than or equal to 3,250 degree days.

## Vegetation Zones

A vegetation formation is based on the relative abundance and

stratification of combinations of species present in a given region (Curtis, 1971; Dansereau, 1957). In relation to the vegetation of northeastern North America, Mont Rigaud lies within the Hemlock-White Pine-Northern Hardwoods formation according to Nichols (1935) and Braun (1950). In the more detailed scheme of Braun, Mont Rigaud is placed in the Laurentian section of the Great Lakes-St. Lawrence division of this formation. Braun and Nichols both emphasize the transitional nature of Hemlock-White Pine-Northern Hardwood forest situated between the Boreal forest complex to the north, and the Maple-Beech complex to the south. Such a mixture has generated controversy on the identification of the climax forest type for this area (Dansereau, 1959; Braun, 1950; Grandtner, 1966 ).

On a national scale, Mont Rigaud is in the Great Lakes-St. Lawrence forest region, one of Canada's eight forest types (Rowe, 1972). These forest regions, based on major tree species composing the dominant cover, are subdivided into forest sections conforming to geographic entities. Of the twelve sections of the Great Lakes-St. Lawrence forest, region L2, the Upper St. Lawrence, contains Mont Rigaud.

A map of the vegetation zones of Quebec combining the work of Grandtner (1966a) and Rousseau (1968) was produced by Richard (1976) for his study of the relations between pollen profiles and the existing vegetation of Quebec. This map (Fig. 1) illustrates that Mont Rigaud is within a relatively small area, the Maple-Hickory zone, which is confined to the valleys of the southwest of Quebec. "La, où elle subsiste encore, elle est representée par une forêt décidue quasi pure, assimilable au type 'Oak-Hickory' des forestiers américains" (Grandtner, 1966a). Natural or reconstituted Maple-Hickory forests no longer occupy large areas of southwest Quebec, because much of

the forests within this region have been cut-over and are replaced by substitute groups, or the land has been turned over to field crops (Grandtner, 1966 ).

Grandtner's division of the deciduous forest of Quebec into three domains (Fig. 1) contrasts with Dansereau's (1972) classification of the deciduous forests into only two zones: the "bois francs" (northern coniferous hardwood forest) to the east and the "érablière" (maple forest) to the west. Dansereau described the floristic composition and the typical vegetation patterns of the "érablière", a zone extending southwest as far as Indiana. Mont Rigaud is included in the "érablière" zone.

# PREVIOUS STUDIES OF THE VEGETATION

## Studies Including the Mountains

The published work on Mont Rigaud per se has dealt with the geology rather than the vegetation. Consequently, relevant literature on the vegetation includes the mountain as part of a broader geographical treatment. Grandtner (1966) used the methods of the Braun-Blanquet (1932) school of phytosociology to comprehensively study the forests of southern Quebec between $45^0$ and $50^0$ latitude. He described not only the geology, climate and soils, but also the forest's origin, phytogeography, biological forms and ecology. For each of seven different forest types he provided information on their physiognomy, floristic composition, structure, dynamism, edaphic character, distribution and value. The sugar-maple forests were divided by him into nine sub-associations. Four of these forest types are prevalent on Mont Rigaud, the Laurentian Maple, the Maple-Hickory, the Maple-Red oak and the Red-oak. The Maple-Hickory, as previously mentioned, is confined to the clayey plains of Montreal. The Maple-Red oak association is particularly abundant in the southwest of Quebec along the Ottawa valley and its tributaries, as well as on the Monteregian hills. It is uncommon outside the Montreal plains. One of the samples for the Maple-Hickory association and one for the Red oak association were studied on Mont Rigaud in May 1960 by Grandtner (1966).

Dansereau (1943, 1946, 1959) also used Braun-Blanquet methods to describe the plant communities of the St. Lawrence Valley but he included herb and shrub associations. In his first work, Dansereau (1943) assessed index values for 346 species from 180 stands of sugar maple; differentiating

the purely deciduous Laurentian Maple bush (ACERETUM SACCHAROPHORI LAURENTIANUM) growing under ideal conditions from the naturally or artificially degraded formations. The successional patterns leading to the Laurentian Maple, proposed as the climatic climax for the St. Lawrence lowlands, are discussed in the second report (Dansereau, 1946). In his final paper, Dansereau (1959) listed 60 associations of trees and shrubs and 107 associations of herbs as tentative vegetation units which he defined by their dominants, physiognomy and ecological positions. He classified 14 natural and disturbed sub-associations of the Maple forest complex. The five forest associations prevalent on Mont Rigaud, the Laurentian Maple, the Maple-Hemlock, the Maple-Hickory, the Maple-Red oak and the Red oak, are compared to Grandtner's (1966) classification in Table II. Some of the many relevant lesser communities are particularly worth mentioning. The pioneer xerosere, RUMICETUM PUMILUM with Cladonia spp and Rumex acetosella is similar to the community colonizing the Rocky Outcrops on Mont Rigaud, and the pioneer hydrosere CALAMAGROSTETUM CANADENSIS is found in the Southwest Marsh. Communities similar but not identical to the rupicolous association of sheer cliffs, the ASPLENIETUM RUPICOLUM, inhabit the Northwest Cliffs. The CRATAEGETUM LAURENTIANUM, an open savannah-like formation of hawthorns, and the SOLIDAGINETUM LAURENTIANUM, a late summer association of composites, are typical successional communities invading disturbed sites of the mountain.

In his study of the Northern Conifer Hardwood forests of the Central St. Lawrence lowlands of Quebec and Ontario, Op de Beeck (1972) reviewed in detail the previous floristic and vegetation studies that are relevant for Mont Rigaud. He used the methods of the Wisconsin school of phytosociology

Table II. Main types of forests on Mont Rigaud compared to the forest classifications of Filion and Blouin (1977), Grandtner (1966a) and Dansereau (1959).

| Author | Filion & Blouin (1977) | Grandtner (1966a) | Dansereau (1959) |
|---|---|---|---|
| Area Studied | Ecological reserve proposal area in southwest sector on Mont Rigaud | Southern Quebec between 45° N and 50°N | St. Lawrence Valley |
| Laurentian Maple | Erablière laurentienne No. 1 | Aceretum sacchari ss. laurentianum (p. 123) | Aceretum saccharophori laurentianum (p. 31) |
| | Erablière à pruche No. 3 | | Aceretum saccharophori tsugosum (p. 37) |
| Maple-Hickory | Erablière à caryer No. 2 | Caryeto-Aceretum caryetosum n.n. (p. 114) | Aceretum saccharophori caryosum (p. 28) |
| Maple-Red oak | Erablière à chêne | Aceretum sacchari quercetosum (p. 138) | Aceretum saccharophori quercosum (p. 36) |
| Red oak | Chenaie rouge ouverte No. 7 | Quercetum boreale (p. 167) | Quercetum boreale (p. 118) |

(Curtis, 1971) to place the characteristic forest complexes on a continuum in relation to soil moisture. Qualitative and quantitative data on the ecological relationships of 54 tree and 516 herb and shrub species provided Op de Beeck with the basis for a comparison of these forest communities with those of central southern Ontario and the Appalachian foothills.

Studies on the Mountain

In October 1975, a 240 hectare area (Fig. 3) in the southwest sector of Mont Rigaud, representing the richness and diversity of the entire mountain, was proposed for a provincial ecological reserve (Lemieux, 1976b). Mont Rigaud interested the ecologists because it supports a wide variety of well conserved forest ecosystems, particularly the Maple-Hickory forests. Secondly, Cypripedium reginae, a rare plant in need of protection, occurs on the mountain (Fig. 3, No. 7). Vegetation types on the mountain range from the wet prairie of Calamagrostis canadensis (Fig. 3, No. 8) to the scrubby Quercus borealis stands and the Cladonia-Polytrichum communities on rock outcrops (Fig. 3, Nos. 1-4). This diversity of environments, along with the variety of pioneer communities which illustrate the different stages of succession, was thought to be relevant to the plans of the provincial Ministry of Lands and Forests for research, education and conservation.

Further government investigation revealed that protecting these areas is less practical than in other similar proposed ecological reserves (Filion and Blouin, 1977). The evaluation comprised a vegetation map of the proposed 240 hectares of Maple-Hickory forest which included the Southwest Marsh and a report on the Cypripedium reginae colony and the deer yard. Filion and Blouin (1977) described twelve plant communities for the study

area. Five of their major forest associations: Laurentian Maple, Maple-Hemlock, Maple-Hickory, Maple-Red oak, the Red oak, are compared to those of Grandtner and Dansereau in Table II. The seven other communities are Elm-Ash forest, Larch-Cedar swamp, Red maple-Hemlock forest, Maple sugar-Trembling aspen grove, Large-toothed aspen grove, Inundated Red-maple, and Calamagrostis canadensis prairie. In Appendix B, the list of characteristic species, soil types, deposits and drainage classes for each of the twelve communities are reproduced along with the vegetation map and the diagram of the characteristic physiographic sere.

## HISTORY OF BOTANICAL INVESTIGATION ON MONT RIGAUD

The early botanical exploration of Mont Rigaud corresponds closely with the periods of floristic investigation in Quebec (Dansereau, 1944). In the 1860's, English members of the Montreal Natural History Society (M.N.H.S.), founded in 1823, and French members of the clergy first collected on the mountain. From the beginning of the Marie-Victorin era, circa 1920, botanical activity steadily increased, reaching a peak in 1934-36, when the Clercs de Saint-Viateur (c.s.v.) formed the "Cercle Pasteur" at their Rigaud schools. World War II curtailed this activity and the subsequent supression of religious schools in Quebec prevented its reorganization. Postwar collecting was sporadic, but in the 1960's, Maycock's McGill University group and Swales of Macdonald College collected on the mountain, followed by Woodland's McGill University group in the 1970's (Table III).

### The Dawson-Penhallow Era: The M.N.H.S. Collectors

In 1897, D. P. Penhallow, Professor of Botany at McGill, published a broad-based survey of Canadian botany (Deane, 1911). Circa 1880 to 1910, he and Sir William Dawson formed the nucleus of an active group of English naturalists in the M.N.H.S. (Milne, 1969). Three of these members, Harrington, Van Horn and Campbell, all amateur botanists, collected on Mont Rigaud at the turn of the century.

The first collections on Rigaud are the 1867 specimens of *Acer spicatum* and *Corydalis sempervirens* by B. J. Harrington (1848-1907). He was a Professor of Mining and Chemistry at McGill for 36 years, as well as proficient in many fields of natural history, a breadth of interest common

Table III. Chronological list of collectors for Mont Rigaud 1867-1975.

| Collector | No. of Specimens | Dates of Collection | Herbarium | Occupation |
|---|---|---|---|---|
| M.N.H.S. Collectors | | | | |
| B. J. Harrington | 2 | 1867 | MTMG | Prof. Chemistry and Mining, Naturalist |
| Miss Van Horn | 1 | 1898 | MTMG | No information |
| Robert Campbell | 1 | 1886-1911 | MTMG | Major amateur collector for M.N.H.S. |
| Pioneer Clercs de St-Viateur | | | | |
| Desrochers | | - | - | Botanist, c.s.v. |
| Hippolyte Dupret | | - | - | Bryologist, p.s.s. |
| Gaspard Ducharme | 224 | 1886-1941 | DAO | Botanist, c.s.v. |
| Joseph Ouellet | 5 | 1898-1905 | DAO | Entomologist, c.s.v. |
| Lois Gareau | 1 | 1898 | DAO | Amateur botanist, c.s.v. |
| Later Clercs de St-Viateur | | | | |
| Edmond Roy | 608 | 1920-1936 | DAO | Director "Cercle Pasteur", c.s.v. |
| Armand Caron | 21 | 1932-1938 | DAO | "Cercle Pasteur", c.s.v. |
| Germain Valiquette | 88 | 1933-1936 | DAO | "Cercle Pasteur", c.s.v. |
| F. Cloutier | 5 | 1933-1934 | DAO | Scholasticat St-Charles |
| A. Robert | 9 | 1931-1938 | DAO, MT | "Cercle Pasteur", c.s.v., entomologist |
| Lucien Charbonneau | 71 | 1935-1941 | DAO | "Cercle Pasteur", c.s.v. |
| R. Jolicoeur | 3 | 1935 | DAO | "Cercle Pasteur", c.s.v. |
| Roland Dion | 4 | 1935 | DAO | c.s.v., no information |
| Wilfred Gaboriault | 2 | 1941 | DAO | "Cercle Pasteur", c.s.v. |
| Lorenzo | 1 | 1939 | MTMG | No information |
| Omer Beaudoin | 1 | 1939 | DAO | No information |
| Yves Quesnel | 500 | 1933-1941 | Private & MTMG | Amateur botanist |

Table III. (cont'd.)

| Collector | No. of Specimens | Dates of Collection | Herbarium | Occupation |
|---|---|---|---|---|
| **Marie-Victorin's Students** | | | | |
| Adrien Rivard | 6 | 1926 | MT | Botanist |
| Louis-Marie | 2 | 1927 | MT | Botanist |
| Marie-Victorin and Rolland-Germain. | 2 | 1936 | MT | Botanist |
| M.V., R.G. and Dominique | 2 | 1936 | MT | Botanist |
| Marcel Raymond | 1 | 1937 | MT | Botanist |
| M.V., R.G., E. Rouleau & B. Boivin | 3 | 1940 | MT | Botanist |
| **Interim Period** | | | | |
| Lionel Cinq-Mârs & L.P. Gagnon | 1 | 1945 | CAN | Botanists |
| L. M. Terrill | 2 | 1948 | MTMG | Amateur botanist and naturalist |
| Rolland-Germain | 1 | 1956 | MT | Botanist |
| **McGill University Groups** | | | | |
| Amy Pokorny | 25 | 1963 | MTMG | Amateur botanist |
| Patsy Bahr | 24 | 1962-1963 | MTMG | Amateur botanist |
| J. Op de Beeck | 15 | 1969 | MTMG | M.Sc. student in plant ecology |
| D. E. Swales | 43 | 1966-1974 | MTMG | Botanist, Curator Emeritus of MTMG |
| Cassie Gibbs | 2 | 1968 | MTMG | Amateur botanist |

Table III. (cont'd.)

| Collector | No. of Specimens | Dates of Collection | Herbarium | Occupation |
|---|---|---|---|---|
| McGill University Groups | | | | |
| A. C. Sheppard | 1 | 1973 | MTMG | Entomologist |
| Alfred W. Prescott | 1 | 1971 | MTMG | Woodland's student |
| John Gardner | 1 | 1971 | MTMG | Woodland's student |
| Morni Otham | 1 | 1973 | MTMG | Woodland's student |
| Daphne Mitchell | 1 | 1973 | MTMG | Woodland's student |
| Donald Sutherland | 1 | 1973 | MTMG | Woodland's student |
| Charles Thompson | 1 | 1973 | MTMG | Woodland's student |
| D. W. Woodland | 8 | 1973 | MTMG | Botanist, Curator MTMG |
| Elizabeth Parnis | 411 | 1973-1975 | MTMG | Botanist, Assistant Curator MTMG |

Abbreviations: c.s.v. = Clerc de Saint-Viateur; M.V. = Marie-Victorin; R.G. = Rolland-Germain.

in those days. He was Curator of the Redpath Museum and a staff member of the Geological Survey of Canada (Dörfler, 1909; Wallace, 1963).

As an entomologist, he contributed a significant collection of Hymenoptera (Gibson, 1951). As a botanist, he wrote "Notes on the Botany of a portion of the Counties of Hastings and Addington" and several other articles (Penhallow, 1897).

In 1898, Miss Van Horn collected Cypripedium calceolus. She was probably an amateur botanist and a member of the M.N.H.S., but her biography is not available. Robert Campbell (1835-1921) made one collection on Mont Rigaud between 1886 and 1911. He was a Presbyterian Minister, but one of the most active members of M.N.H.S., adding the greatest numbers to their Herbarium. He read many papers on the floras of Montreal and the Rocky Mountains at M.N.H.S. meetings and travelled extensively in Canada (Milne, 1969; Penhallow, 1897).

The Provancher Era: The Pioneer Clercs de Saint-Viateur

Abbé Léon Provancher, author of the first French Canadian flora "Flore Canadienne" (1862) and founder of the journal "Le Naturaliste Canadien" (1868) stimulated the interest of a small group of people in botany (Holland, 1966). His was the only flora available to the French pioneers of Canadian botany. In 1900, barely a dozen French Canadians knew the Quebec plants, and of those mentioned by Marie-Victorin (1941), Ducharme, Ouellet, and Dupret collected on Rigaud mountain, beginning in 1886.

Ducharme and Ouellet belonged to the order of the Clercs de Saint-Viateur (c.s.v.) and were often accompanied by Desrochers and Gareau, also C.S.V. The tradition of natural science study has existed for a long time

in the order. Around 1850, Père Champagneur, c.s.v. established a botanical garden and college at Joliette. Desrochers continued this work in the 1880's (Charlebois, 1927).

Père Jules Edmond Desrochers, c.s.v. (1853-1911) taught French, Mathematics and Natural History for nine years at the Collège Bourget in Rigaud, and for eight years at Joliette. From an early age he showed a remarkable aptitude for botany. He walked over the whole mountain, learned all the plants there, navigated the Ottawa River, knew all its islands and reefs, and returned from these excursions with plant, rock and animal specimens (Charlebois, 1927). He left to the Colleges of Bourget and Joliette well ordered insect and plant collections. Provancher (1889) visited and praised Desrocher's herbarium in 1888. Over the years, amateur botanists at the Collège Bourget used the herbarium initiated by Desrochers. They frequently corresponded with Ottawa (Boivin, unpublished manuscript) and, by 1938, the herbarium had grown to 2000 specimens (Anon., 1941). A fire in 1974 destroyed the herbarium, so the contents are unknown and no vouchers of Desrochers' collecting on Rigaud exist. Père Larochelle, c.s.v., presently Biology Professor at Collège Bourget, was the last curator. Desrochers published in "le Naturaliste Canadien" in several fields including botany (Charlebois, 1927). At his death in 1911, Desrochers was praised for the marked advances made by him in the natural sciences at both the colleges at Rigaud and Joliette (Charlebois, 1927).

The most influential among the Rigaud botanists was Père Gaspard Ducharme, c.s.v. (1872-1942) for he not only collected a large number of specimens (224) over the longest period (55 years), but also, as a teacher of natural history, inspired many young clergy to follow his love for

botany. From 1886, at age 14, until his death in 1942, Ducharme contributed steadily to the herbaria at Rigaud. An excellent teacher, he also studied entomology, minerology, ornithology and held responsible provincial positions in the order. He was the first Vice President of the Société Canadienne d'Histoire Naturelle, whose founding meeting was in the laboratory of Marie-Victorin in 1923 (Rumilly, 1949). Whenever he was stationed elsewhere he returned to his beloved Mont Rigaud as frequently as possible. In 1924, he spent an entire year working on the botanical collections at Rigaud while he recuperated from a serious illness. In 1930, after fire denuded the northwest slopes of the mountain, Ducharme himself planted conifers to restore them. During the most active year of the "Cercle Pasteur" of the Cercle des Jeunes Naturalistes(C.J.N.) in 1935, Ducharme collected 48 specimens. Boivin (unpublished manuscript) states that Ducharme was probably the most important collector for the Herbarium of the Collège Bourget. The Ecole Normale Saint-Viateur herbarium, the second herbarium of the C.S.V.'s in Rigaud, contained 220 Rigaud collections by Ducharme. Marie-Victorin paid homage to Ducharme in le Devoir, January 8, 1944, by stating that he contributed to the studies of nature with unparalleled intelligence and enthusiasm, and was a pioneer in natural sciences responsible for remarkable collections, many deposited at the Herbier Marie-Victorin.

A disciple of Desrochers, Frère Joseph Ouellet, c.s.v. (1869-1952), is the dean of French Canadian entomology (Robert,1952). He began his studies of the natural sciences at age 18 at the Institution des Sourds-Muets. Ouellet differed from Ducharme in that he liked to move around a lot and he created a herbarium and an insect collection in each place he

worked. In the 1890's, he collected one of the first important collections of Coleoptera for the Montreal region while his companion, L. Gareau, gathered plants (Charlebois, 1927). In these early days, he scoured the woods in the Montreal region with Desrochers and taught natural history during his vacations. His plant collections from Mont Rigaud number five specimens, collected in 1898, 1901 and 1905. Beginning in 1902, his list of insect discoveries was serialized in "le Naturaliste Canadien".

In 1923, he joined Ducharme as one of the 13 founding members of the "Société Canadienne d'Histoire Naturelle" (Rumilly, 1949). He was active in the young naturalists movement, the Cercle des Jeunes Naturalistes in the 30's. During the school year he taught French and Music but, in 1935, he was asked to join the Institut de Biologie at the Université de Montréal as Systematic Entomologist. There he remained until 1941, earning an international reputation for his important pioneer collections of insects in which he had added 300 new species of Quebec's fauna by 1944. His plant collections are significant too, the largest at the Institution des Sourds-Muets in Montreal (Robert, 1952).

In 1898, Frère Louis Gareau, c.s.v. (1871-1949) contributed one specimen from Rigaud. An amateur botanist, he often collected plants with Ouellet who spoke of Gareau's enthusiasm in the field and the good times they had together on excursions in Rigaud and Outremont (Robert, 1952; Anon., 1954).

An important bryologist collecting on Rigaud belongs to this early period. Hippolyte Dupret (1853-1932) of the order of Saint Sulpice, is considered one of the pioneer natural scientists in Quebec by Marie-Victorin (1941) and Kucyniak (1946b). His specimens are deposited in Herbier

Marie-Victorin and in the Hepatic Herbarium of the American Bryological Society (Anon., 1912). Dupret's work was published posthumously as "Etudes sur des mousses de la région Montréal" (1934) by A. Beaulac who mentions, in the biographical sketch, that Dupret botanized during his vacations on Mont Rigaud, Oka and Mt. Ste. Hilaire.

The Marie-Victorin Era: The Later Clercs de Saint-Viateur

Marie-Victorin took the chair of Botany at the Université de Montréal in 1920, and, until his death in 1944, dominated floristics in Quebec. During this period Ducharme continued his activities as teacher and collector, although he was often stationed away from Rigaud. From the information in the herbarium search, it appears that only Ducharme collected on the mountain between 1906 and 1920.

Frère Edmond Roy (1894-1978) started collecting on Mont Rigaud in 1920 and, by 1936, his collection numbered 608 specimens, the largest single collection from the mountain. While at the Juvenat des Clercs de Saint-Viateur in Outremont from 1907 to 1911, Roy collected plants on Mont Royal with Ouellet (Clarence Roy, personal communication). He then entered the novitiate of the Clercs de Saint-Viateur and became a teacher of French, History and Natural Sciences for 18 years. In 1923, he collected plants with Ducharme on Mont Rigaud. He returned to his formal studies in 1926, completing a B.A. (1933) and a General Diploma in Botany (1935) at the Université de Montréal. At the same time, he taught at the Ecole Normale Saint-Viateur and collected, at Rigaud, 274 specimens in 1934 and 260 in 1935. These were deposited at the Herbier Marie-Victorin with a duplicate set at DAO. Boivin (unpublished manuscript) considers Roy one of the major

contributors to the Herbier Marie-Victorin. Surprisingly, the Ecole Normale Saint-Viateur herbarium contains only 48 of Roy's specimens and few of these are from Rigaud. A photograph published in Le Canada, September 10, 1935, shows Roy on a botanical expedition on Mont Royal with Jules Brunel and students of the Université de Montréal. According to Clarence Roy (personal communication), Edmund Roy botanized during several vacations with Marie-Victorin who requested Roy to be his assistant but Roy was refused permission by his superior. A frequent companion of Roy's, Yves Quesnel (personal communication), states that Roy was the teacher of a group of students in Rigaud during spare time and on holidays and was the director of the "Cercle Pasteur" of C.J.N. From 1936 to 1939, Roy directed studies at the Ecole Superière Saint-Louis de Montréal, and was the curator of their herbarium which contained 2000 specimens (Boivin, unpublished manuscript). No collections by Roy from Rigaud subsequent to 1936 were found in my herbarium searches; however, Roy collected in other localities in Quebec, particularly Nomininque and Rawdon. In 1939, he pursued a second career, this time in accountancy. He was treasurer at the provincial office in Outremont from 1939 to 1948, and accountant at Collège Bourget in Rigaud from 1950 to 1971. He then retired to Joliette and died May 18, 1978. Rigaud specimens collected by Roy after 1936 may have been lost in the fire destroying the Herbarium of the Collège Bourget.

A few collections by Roy in 1934 were made with Frère Georges Héroux (1900- ) who also taught for a time at the Ecole Normale Saint-Viateur in Rigaud but no botanical activity of Héroux is published for that period (Boivin, personal communication).

The most active collecting by Roy and Ducharme in the 30's coincides

with a burst of botanical activity by ten other collectors on Mont Rigaud. Boivin (personal communication) contributes three reasons for the increase in collecting. First, in 1931, the "Flore-Manuel de la Province de Québec" by Louis-Marie was published. Prior to this, Provancher's 1862 "Flore Canadienne" was the only local flora available in French. Secondly, on June 13, 1934, the Cercle des Jeunes Naturalistes authorized the formation of the "Cercle Pasteur" at the Ecole Normale Saint-Viateur in Rigaud (Boivin, personal communication). Six of the ten c.s.v. collectors of this decade used the printed labels of the "Cercle Pasteur". These nature study clubs, extant in Quebec today, were probably patterned after those of Cornell University (Palmer, 1944). The history and function of the C.J.N. are given in their journal "Tour d'horizon" and by Rumilly (1949).

The third impetus to collecting on the mountain was the move in 1931 of the Ecole Normale Saint-Viateur and its herbarium to Rigaud. At the same time its name was changed from Scolasticat Saint-Charles to Ecole Normale Saint-Viateur. Before the 1931 move to Rigaud, its location had changed many times. The early history of the Scholasticat and its herbarium is unknown, but Boivin (unpublished manuscript) estimated its origin to be 1915 even though some collections are dated 20 years earlier. The labels for the Rigaud collections are printed as "Herbier Ducharme", "Ecole Normale Saint-Viateur", "Scolasticat Saint-Charles", "Herbier du Collège Bourget" and, after 1934, mainly "Cercle Pasteur". On the earliest labels there is often no space for the name of the collector, only for the identifier, usually the same person, as in Ouellet's collections. This is not the case, however, for labels recorded with M. O., Malte and Jos. Fletcher as identifier, since neither is known to have collected on Mont Rigaud (Boivin, unpublished

manuscript). Rigaud is the location for 543 of the 2105 sheets, the remainder from Rawdon, Nomininque, Otterburne and other stations of the Clercs de Saint-Viateur. Out of a total of 30 collectors, for this herbarium, the major collectors are J. Ouellet (688 specimens), G. Ducharme (641), L. Charbonneau (173) and G. Valiquette (98). Some sheets are exchanges from the Institut Agricole d'Oka. In 1938, the size was reported to be 1200 sheets (Anon., 1941) but, by 1940, the herbarium became inactive and the Ecole Normale Saint-Viateur was closed in 1969. In 1974, 3000 sheets were donated to DAO; 2105 were adequately labelled and filed (Boivin, unpublished manuscript).

A fourth reason for the increase in collecting during the 30's may have been the growing impact of Marie-Victorin and Rolland-Germain's floristic work in Quebec. On Mont Rigaud, however, Ducharme and Roy were the more direct influence on the students at Collège Bourget and the clergy of the Ecole Normale Saint-Viateur. Ducharme was absent much of the time, so most of the leadership for the C.J.N. members was from Roy.

Frère Adrien Robert, c.s.v. (1906-1964) collected nine specimens for the "Cercle Pasteur" during 1931-1938, deposited at the Ecole Normale Saint-Viateur and the Herbier Marie-Victorin. After joining the order, he worked and studied with Ouellet at the Institution des Sourds-Muets. He became competent in the field of entomology, obtaining his doctorate in 1952, and succeeding Ouellet at the Université de Montréal as Systematic Entomologist (Crête, 1964).

Armand Caron, c.s.v. (1906- ) deposited 21 specimens from Rigaud in the Ecole Normale Saint-Viateur Herbarium, from 1932 to 1938. Although he joined Roy on excursions to Mont Royal in the spring of 1924, he states that

he did not begin his plant collection until 1926 (Caron, personal communication). Twice he registered in the "l'Ecole de la route" under the direction of Marie-Victorin. In 1934, he was stationed at Ecole Saint-Viateur de Montréal, and again botanized with Roy. He participated in the "Cercle Pasteur" and, for three years, in the C.J.N. at Cap Jaseaux. He has collected in Nominingue, Montreal, Berthierville, Saint Come and Rigaud. About 800 of his specimens are housed at the Université de Sherbrooke and 1000 at the Collège de Joliette. He left his work in botany for entomology in 1945 and added 1000 species of Coleoptera to the collection at Collège Joliette (Caron, personal communication to Boivin).

Lucien Charbonneau, c.s.v. (1905-1967) collected 71 Rigaud specimens for the "Cercle Pasteur" between 1935 and 1941. Although no mention of his botanizing is made in his biography, it is stated that he was sickly and spent some time recuperating in nature. He was a student at the Ecole Normale Saint-Viateur in the 30's and 173 of his specimens are in the herbarium of Ecole Normale Saint-Viateur.

A collection of 88 plants from Rigaud dated 1933 to 1936 was made by Germain Valiquette, c.s.v. using the "Cercle Pasteur" label, but his biography is not available. He was a student of Roy's, according to Yves Quesnel (personal communication). No information is available for R. Jolicoeur, c.s.v., who collected two plants in 1935 or for Wildred Gabori̇ault, c.s.v., who collected two in 1941, both with the "Cercle Pasteur".

In addition, T. Cloutier, c.s.v. collected five specimens from 1933 to 1934, using the label of Scholasticat Saint-Charles, and Rolland Dion (1914- ) collected four plants in 1935, using his own printed label. A few of

Rolland Dion's specimens were collected with d'Ostie and Dion's name appears in the l'Institut d'Oka Cinquantenaire (Louis-Marie, 1944). No biographies are available.

The private herbarium of Yves Quesnel (1917- ), containing about 1000 sheets, was discovered at the end of this project in June 1978. It is estimated that from 350 to 450 sheets collected by Quesnel are from Rigaud. The remainder are from other locations or by other collectors, particularly exchanges with Ducharme and Roy. Yves Quesnel began collecting in 1933 while attending Collège Bourget. He botanized as an assistant to Ducharme for four years. On many excursions to the mountain, he learned botany with Roy, his collecting companion for ten years. He participated in botanical expeditions with Marie-Victorin and Rolland-Germain as well. After graduating from Collège Bourget in 1937, he spent two years at the Institut Agricole d'Oka, where he botanized with and assisted Père Louis-Marie. He then practiced agriculture on the family farm in Rigaud, managing the Cooperative Agricole. From 1956 to 1975 he worked as controller at the Côte Ste. Catherine locks in the St. Lawrence Seaway and has become one of the local experts in genealogy. His most active botanizing ended in 1940, but he still collects occasionally and his Rigaud collection is second in size only to Roy's. In addition, he collected many mosses and insects on Rigaud, as well as fish from the local rivers.

The Marie-Victorin Era: Marie Victorin's Students

Marie Victorin inspired a number of students in botany, many of whom went on to brilliant careers in floristics and taxonomy (Rumilly, 1949; Dansereau, 1964). Marie-Victorin and several of his students have collected

on Mont Rigaud, but none of the expeditions were more than casual visits with few collections made. A chronological summary of their collecting on Mont Rigaud is presented with references to their biographies. All of their specimens are deposited at the Herbier Marie-Victorin.

In 1926, Frère Adrien Rivard, c.s.c. (1890-1969) collected six specimens on Mont Rigaud. He graduated in natural sciences from the University of Montréal and became a teacher. In 1931, he founded the students' naturalist organization called les Cercles des Jeunes Naturalistes which grew to 50,000 members by 1969. He collaborated with Marie-Victorin in the development of the Montreal Botanic Gardens (Rumilly, 1949; Senecal, 1970; Marie-Jean Eudes, 1974).

Of Marie Victorin's students, Père Louis-Marie, oc.r. (1896- ) probably collected the most on Mont Rigaud as he was Professor of Botany and Genetics at the Institut Agricole d'Oka, La Trappe, only 28 km from Rigaud. He is known to have collected frequently on the mountain (Bonneau, 1964), but only two specimens collected in 1927 were found in the herbarium searches. There are most likely Rigaud specimens in the Université de Laval Herbarium where his collections were deposited in 1962 when the Oka school closed (Boivin, unpublished manuscript). After receiving his Ph.D. at Harvard, he became noted for his work in the systematics of grasses, his "Flore Manuel de la Province de Québec" (1930) and his publications in "La Revue d'Oka (Taché, 1973).

Marie-Victorin (1885-1944) and Rolland-Germain (1881-1972) visited Mont Rigaud several times collecting a few plants. These two brothers in the order of the Ecoles Chrétiennes are responsible for "Flore Laurentienne" (1964), Quebec's most important flora. Many biographies have been written for Marie-Victorin (Brunel, 1944; Dansereau, 1945; Kucyniak, 1946a;

Maur-Alphonse, 1964, 1965; Rumilly, 1949) and for Rolland-Germain (Legault, 1973; Maur Alphonse, 1966) to mention only a few. In 1936, they investigated what was thought to be a simple leaved Fraxinus americana (discussed in the Flora section) and collected Aronia melanocarpa. They returned to observe the Fraxinus in 1936 with Frère Dominique of the same religious order, who was a Professor of French at Mont Saint-Louis and frequently joined them on their botanical excursions (Dominique, personal communication to Boivin).

On their third expedition to Mont Rigaud, in 1940, Marie-Victorin and Rolland-Germain, with their students Bernard Boivin and Ernest Rouleau, collected Fagus grandifolia, Polygonum cilinode and Pinus sylvestris. Boivin (1916- ) later earned a Ph.D. at Harvard and became research botanist at the Biosystematic Research Institute, Department of Agriculture, in Ottawa. He is noted for his "Enumeration des Plants du Canada" (1966-68) and the "Flora of the Prairie Provinces" (1967-72). Rouleau (1916- ) received his Ph.D. at the Université de Montréal and is director of the Herbier Marie-Victorin. He is known for his second edition of the "Flore Laurentienne" (1964), the Flora of Isle Ste. Hélène (1945) and his work on the flora of Newfoundland.

Another eminent student of Marie-Victorin's, Marcel Raymond (1915-1972) made one collection on Mont Rigaud in 1937. He received his Lsc. at the Université de Montréal and is reknowned for his "Equisse phytogeographie du Québec" (1950) as well as his work on Carex and Eriophorum (Boivin, 1973a).

The Interim Period: 1940 to 1960

The heyday of plant collecting on Rigaud subsided as a result of World

War II. Edmund Roy moved in 1936 to Ecole Superieur Saint Louis de Montréal where he took on new responsibilities as Director of Studies and began his second career in economics in 1939. Ducharme died in 1942 and Marie-Victorin in 1944.

Part of the sporadic botanizing during this period was in 1945 by Lionel Cinq-Mars and L. P. Gagnon who collected Botrychium multifidum. Cinq-Mars (1919-1973) was a professor at Laval University with many publications in plant pathology, extension service and vascular plant systematics (Boivin, 1973b, 1974). Lewis McIver Terrill (1878-1968) collected two specimens on Mont Rigaud in 1948. A banker by profession, he was a great naturalist and conservationist. His greatest love was birds on which he published many articles, but he was also interested in geology and botany. He amassed a herbarium of almost 8000 sheets of plants from Quebec and Ontario (Godfrey, 1972). Rolland-Germain collected Betula populifolia on Mont Rigaud in 1956.

Post war public reaction against excessive church control of education in Quebec dampened any resurgence of interest in botany by the clergy in Rigaud. By 1960, most of the religious schools were closing and religious vocations dwindled. In 1969, Ecole Normale Saint-Viateur closed its doors and today College Bourget is a C.E.G.E.P., although the Clercs de Saint Viateur still teach there. These clergymen are active today in teaching the natural sciences on Mont Rigaud and some of the specimens in the destroyed herbarium of the College Bourget were probably collections made by them after 1940.

## Recent History: The English McGill University Groups

The herbarium search indicates that collecting since 1960 was by McGill

University staff and students exclusively, although there may be collections by others in herbaria not seen for this study. New activity in the McGill University Herbarium, dormant since 1910, was stimulated by P. F. Maycock, Professor of Ecology (Milne, 1969; Woodland, 1974). He encouraged Amy Pokorny and Patsy Bahr, both amateur botanists, to collect for MTMG. In 1962 and 1963, Bahr, a technician in chemical taxonomy for D. Gibbs of the McGill Botany Department, collected 24 specimens from Mont Rigaud. Pokorny, a volunteer in the herbarium since 1959, collected 25 plants from the mountain in 1963. Jacques Op de Beeck collected 15 vouchers of plants from the northwest slopes of the mountain in 1969 for his M.Sc. thesis on the Northern Conifer Hardwoods of the Central St. Lawrence lowlands under Maycock's direction. He was sometimes accompanied by L. Gohier.

Between 1966 and 1974, D. E. Swales, now Emeritus Curator of MTMG at Macdonald College, collected 43 plants from Mont Rigaud compiling species lists for Lac des Pins, a beaver pond (Fig. 3, No. 12) and the Cedar-Orchid swamp. Also at Macdonald College, Cassie Gibbs, an amateur botanist, collected two plants in 1968 and A. C. Sheppard, Honorary Curator of the Lyman Entomological Museum, collected one in 1973.

The final period of Rigaud's long history of botanical collection begins in 1971 with the arrival of D. W. Woodland as Curator of the Macdonald College Herbarium. He combined the 65,000 sheets from the McGill University herbarium, unused since Maycock's departure in 1968, to the 13,000 sheets of the Macdonald College herbarium in 1972. Students of Woodland's Systematic Botany course, collecting plants in 1971 and 1973 on Mont Rigaud, are listed in Table III. In 1973, Woodland collected one specimen with W. F. Grant, Professor of Genetics at McGill, and five specimens with the herbarium

assistant, S. Prochevera. Woodland encouraged Elizabeth Parnis, the Assistant Curator of the Herbarium, to collect on Mont Rigaud intensively. Between 1973 and 1975, she compiled a list of over 200 species represented by 411 collections, the third largest collection from Mont Rigaud.

None of the above collectors published their floristic work on Mont Rigaud, so, in summary, the number of specimens collected demonstrates the relative importance of each group of collectors. The early M.N.H.S. members made four collections beginning in 1867. The French Canadian pioneers contributed 230, most of these by Ducharme whose 224 collections span 55 years. Over 1250 collections were made by the Rigaud Clercs de Saint-Viateur and their students between 1920 and 1940, mainly by Edmund Roy (608), Yves Quesnel (around 450) and the six c.s.v. members of the "Cercle Pasteur" (187 altogether). During this same period, the importance of the collections, a total of only 16 by Marie-Victorin, Rolland-Germain, and their students, all prominent botanists in Canada, is not as great. Between 1940 and 1960, only four collections were made, but beginning in the 1960's, Maycock's McGill University group collected 64 specimens; Swales and co-workers at Macdonald College, 46 specimens (43 by Swales alone) and Woodland's group, 419 specimens (411 of which were by Parnis).

# MATERIALS AND METHODS

## The Habitat Description

The size of Mont Rigaud precluded a detailed study of the vegetation of the whole mountain in two summers, although it was practical to choose certain communities for intensive study. Six habitats were chosen because they were distinctive vegetatively or the sites of either rare plants for Quebec or uncommon species for the mountain. The six habitats were: the Rocky Outcrops, the Northwest Cliffs, the Boulder Beds, the Cedar-Orchid Swamp, the Southwest Marsh and Swamp and the Ponds. The Boulder Bed Habitat was included because it represents a unique geological and ecological phenomenon. No quantitative vegetation analysis was carried out. The objective was to describe distinctive plant communities by listing the species present with notes on their relative dominance and by illustrating them with diagrams and photographs. Some mosses and lichens were collected whenever they were numerous enough to represent an important stratum in the habitat and are cited in Appendix C. The soil pH measurements for the Northwest Cliffs, Boulder Bed, and Cedar-Orchid Swamp were determined by the Soil Analysis Laboratory at Macdonald College using an aqueous solution with one-third soil to water (McLean, 1973). The rock substrate under the Dryopteris fragrans and Woodsia ilvensis in the Northwest Cliffs Habitat was identified by Dr. R. Doig of the Geology Department of McGill University. He used 10% HCl to test their calcium content.

Otherwise, the main vegetation on the mountain has been described by referring to the literature which is cited in the appropriate places. Although the maps are scaled to identical size for superimposition, no

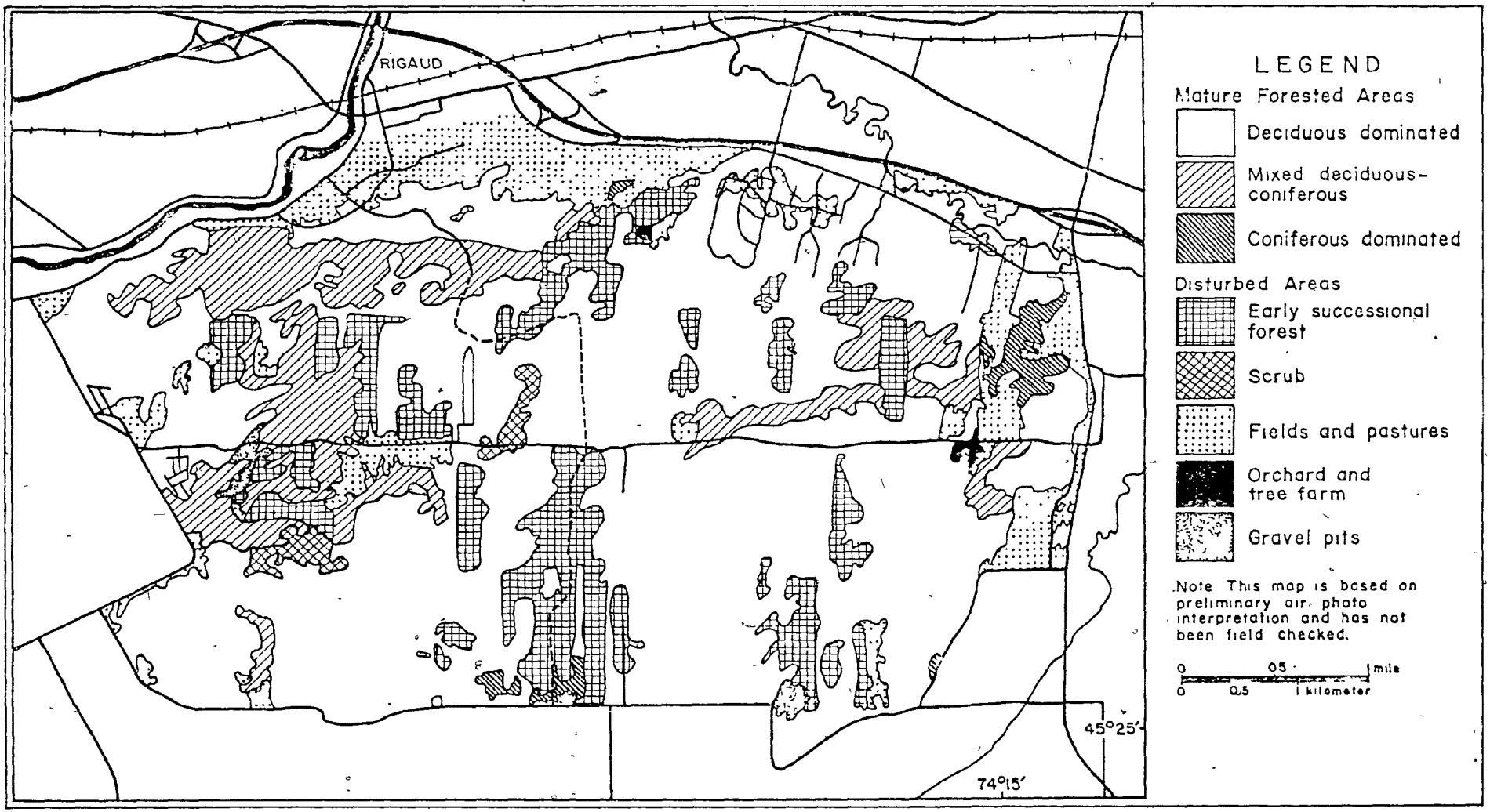
interpretation of biophysiographic units was undertaken. Field work in conjunction with air photo interpretation (Fig. 7) was beyond the scope of this thesis. The ecological terms used in this work are defined by Carpenter (1956).

The Checklist

The checklist of vascular plants for the Flora of Mont Rigaud is presented in Appendix D as an annotated catalogue including specimen citations. It was compiled from the author's collections made in the field from all vegetation types on the mountain during the summers of 1976 and 1977 and the herbarium searches described below.

The plant collecting techniques used in the field work are described by Savile (1962). The taxonomic treatment was limited to species except when decreed otherwise through examination by specialists in the taxa, or when a particular variety was distinctive for the area. The nomenclature follows that of Gleason and Cronquist (1963) with some exceptions. The deviation from Gleason and Cronquist was based on the opinion of specialists actively working on the particular taxa at the present time. For example, in Spiranthes lacera, Scirpus atrocinctus and Solidago altissima the nomenclature of Fernald (1950) was selected; for Toxicodendron, Gillis (1971) and for Viola pubescens, Boivin (1967). The specialists to whom specimens were submitted for critical examination are: G. Argus, Salix; M. Barkworth, Gramineae; B. Boivin, Amelanchier, Crataegus, Rubus, Goodyera; A. Cronquist, Aster, Antennaria; R. Gauthier, Potamogeton; A. R. C. Jones, Quercus, Ulmus; A. A. Reznicek, Carex; E. Rouleau, Viola; R. L. Stuckey, Potamogeton, Callitriche, Sparganium, Sagittaria; W. H. Wagner, Ophioglossaceae

Figure 7. Preliminary map of the vegetation of Mont Rigaud, Vaudreuil Co., Quebec.


RIGAUD
45°25'
74°15'
LEGEND
Mature Forested Areas
Deciduous dominated
Mixed deciduous-coniferous
Coniferous dominated
Disturbed Areas
Early successional forest
Scrub
Fields and pastures
Orchard and tree farm
Gravel pits
Note This map is based on preliminary air photo interpretation and has not been field checked.
0 .5 1 mile
0 0.5 1 kilometer

7

Osmundaceae, Polypodiaceae; W. H. Wagner and J. M. Beitle, Lycopodiaceae; D. W. Woodland, Urticaceae. Some nonvascular plants were collected for the habitat descriptions and were identified by R. R. Ireland, mosses; I. Brodo and P. Wong, lichens and H. Crum, one Sphagnum. The identification of all personal collections were confirmed by the staff of the McGill University Herbarium: D. E. Swales, M. Waterway and D. W. Woodland. All plants were collected in triplicate with the exception of Carex, Gramineae, Salix, Rubus and Crataegus, in which more than three were collected. The first set of voucher specimens has been deposited at the McGill University Herbarium (MTMG). Abbreviations for herbaria follow Holmgren and Keuken (1974).

The Rigaud specimens from the herbarium of the Ecole Normale Saint-Viateur, at DAO, were loaned to the McGill University Herbarium for study. The identification of these specimens was confirmed by B. Boivin, D. E. Swales and the author. Assistants were hired to search the Herbier Marie-Victorin at l'Université de Montréal (MT) and the McGill University Herbarium (MTMG). The 1000 sheet private herbarium of Yves Quesnel* was discovered too late for proper study and could not be included in the catalogue but there is no doubt that new species would be added to the list judging from a preliminary viewing of the collection. Revision of past collections was not made except for rare and unusual taxa that were not found in the field on Mont Rigaud. Ernest Rouleau confirmed the identification of these specimens at the Herbier Marie-Victorin.

The species added from the herbarium searches were divided into three

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*C. P. 430, Rigaud, Quebec, Canada. JOP 1PO.

categories:- (1) species labelled as collected specifically on Mont Rigaud; (2) species labelled as collected from the general Rigaud area, which could have been found on the mountain, and (3) those which have been excluded from the list because they were unlikely to be found on the mountain. Category Two, the "Potential species for the Flora of Mont Rigaud", is listed separately in Appendix D because labels such as "Rigaud, Co. Vaudreuil" did not indicate whether the site was on the mountain or in the area surrounding it. This ambiguity was noted mainly in the old collections prior to 1940. Exceptions were made in the case of Celtis occidentalis, Panax quinquefolius and Quercus alba. Although there are no voucher specimens to prove they occur on Mont Rigaud, Yves and Jean Quesnel (personal communication) state that they have seen them there. In Category Three, listed in Appendix E, are excluded species known to occur only in habitats unrepresented on the mountain such as rivers and lakes. Cultivars from gardens unlikely to proliferate in the wild are also excluded. In addition, species considered to be out of our range by Gleason and Cronquist (1963), Fernald (1950) or Marie-Victorin (1964) are not included because some early collectors put their place of residence on the label rather than the location of the collection (Boivin, personal communication).

The sequence of families used in the annotated catalogue follows Gleason and Cronquist (1963) but, within each family, the genera and species are listed in alphabetical order. Each citation in the catalogue includes the habitat, if recorded on the label; the frequency or abundance, if known; the collector's name, number and date of collection, and the herbarium where deposited. Abbreviations used in the catalogue are "Anon." for no collector's name, "s.n." (sine numero) for no collector's number, and "s.d."

(sine die) for no date. In the case of Ducharme's collections, the number on the specimen corresponds to a checklist compiled by Paul in 1939 based on Victorin's Flore Laurentienne and not to his own collection numbers. When more than three specimens of a common species were collected by the same collector, the words "numerous coll." (numerous collections) were substituted for an exhaustive list of the collectors' numbers and dates. Synonyms are given for those taxa found under a different name in Marie-Victorin (1964) the local flora for Quebec.

# VEGETATION OF MONT RIGAUD

## Disturbances

The plant cover on Mont Rigaud, primarily deciduous Maple forest and Northern Conifer-Hardwood forests, is considered to be well conserved relative to regional vegetation patterns (Anon., 1976). Most of the forests are secondary, however, as some of the oldest settled districts in the province dating back to the eighteenth century are in Vaudreuil-Soulanges Counties (Lajoie and Stobbe, 1950; Op de Beeck, 1972). First settlers established the town of Rigaud in 1783 and erected the parish of St. Marie-Madeleine de Rigaud early in the 1800's. The sanctuary of Our Lady of Lourdes on the north slope of the mountain has attracted thousands of pilgrims since 1874 (Anon., 1974).

Mont Rigaud has been used primarily as a source of wood. There were white pines over one meter in diameter (Jean Quesnel, personal communication) but, following World War II, most of the mountain was cutover, patch by patch, to supply the pulp and paper industry. Orchards, pastures and maple sugar bushes have existed on most of the lower slopes, the vegetation pattern appearing as a patchwork of rectangles reflecting the private ownership of the mountain. Abandoned pastures and clear-cut strips have developed to secondary stages, creating habitats favourable to the beaver and deer. Partial logging resulted in the degradation of the maple forest, favouring the increase of hemlock, an ideal habitat for deer (Filion and Blouin, 1977). Sugar bush management has resulted in pure sugar maple stands with a "park-like" aspect due to the removal of the shrub layer (Grandtner, 1966 ; Dansereau, 1959). Only areas too steep or rocky have been left undisturbed.

The preliminary map (Fig. 7), traced from aerial photographs, shows that the present (1975) mosaic of fields, scrub and early successional forests, approaches a total of one-quarter of the acreage on the mountain. This map has not been checked in the field and must be considered tentative but is thought useful because the differentiation on air photos between secondary and mature forests is fairly obvious. The successional communities on Mont Rigaud are common throughout southwest Quebec. Herbaceous communities of introduced and weedy annuals such as Epilobium angustifolium, Aster and Solidago occupy the fields. Scrub assemblages dominated by Rubus and thickets of Crataegus are frequent as later successional seres. Finally, the early successional forests contain Betula papyrifera, B. populifolia, Populus grandidentata, in pure stands or various mixtures accompanied by Pinus strobus, Tsuga canadensis, Ulmus americana, Acer rubrum and Fraxinus americana. The understory in these open successional forests is a diverse and rich mixture of pioneer wasteland species and representatives of the climax Sugar maple forest. Some old fields are colonized by Thuja occidentalis in pure stands so dense that little understorey vegetation can develop.

Besides logging, other commercial exploitation is the 30 meter wide hydro line (Fig. 8) kept clear by herbicide treatment at three-year intervals, and the access roads which have a more permanent impact. Disturbed sandy areas in the two gravel pits support xerophytic pioneer communities often dominated by Rubus and hydrophytic communities dominated by Salix (Fig. 9).

Recreational use of the mountain has left its scars, particularly the northwest ski-run and the skidoo trails so heavily used in the winter. Hiking and horseback riding are more gentle in their disturbance of the

Figure 8. The Hydroline.

Figure 9. The St. Georges Road sand pit.

Figure 10. Northwest slopes of Mont Rigaud.

(8)

(9)

flora and fauna. The most serious threat to the remaining natural areas on Mont Rigaud, only 48 km from the metropolis of Montreal, is real estate development. The mountain is entirely privately owned, zoned for intensive residential use permitting 2000 sq m (25,000 sq ft) lots. Already largely in the hands of promoters, the mountain is disturbed by nine subdevelopments, two of which are very recent (Fig. 3).

Natural disturbance of the vegetation has resulted from fires and animals. In 1933, parts of the northwest sector burned; in 1960, about one-eighth of the southeast sector and, in 1968, approximately 240 hectares of the northeast sector (Jean Quesnel and Keith Pitcairn, personal communication). Beavers, proliferating since 1940, have created dams that inundate the Maple forest. About 100 deer overwinter in the southwest deer yard (Fig. 3) and browse selectively on cedar and dogwood (Massé, 1973), but their impact is minor compared to that of the beavers. Another natural disturbance is the elimination of Ulmus americana due to the spread northward of the dutch elm disease (Op de Beeck, 1972).

Forest Communities

Sugar maple forests dominate Mont Rigaud (Fig. 10). On a closer look, however, one can see that the mountainous terrain presents a complex ecological situation within a very small area because the diversity in topography creates widely different local site conditions and microclimates. Changes in the soil moisture regime and exposure result in the replacement of one species complex by another.

The Canada Land Inventory (1966-69) estimated fifty percent of the maple forest on Mont Rigaud is in class five, that is, restricted by soil moisture deficiency and prevention of rooting by bedrock. The remaining

forty percent is class three, moderately limited by soil moisture deficiency; whereas ten percent, in class one, is favourable for commercial growth of red pine. No commercial stands of red pine exist in these areas today. The species is scarce on the mountain.

On the rockier, steeper and drier land and in general on the entire north face of the mountain, the coniferous ratio is higher than elsewhere. Figure 7 shows a rough estimate of these areas. The floristic composition of the forest reflects the geographical location of Mont Rigaud in the transition zone of the Northern Conifer Hardwood forests. There is consequently a good representation of many southern species here close to the northeastern limit of their range: Carya cordiformis, Carya ovata, Quercus macrocarpa, Celtis occidentalis. The boreal forest representatives are Abies balsamea, Picea glauca and Picea mariana.

The effects of logging have complicated a simple classification of forests for Mont Rigaud by producing a variety of degraded versions of the climax forest. The characterization of the climax forest for this area is debated by different authors, but, on Mont Rigaud, both the purely deciduous Laurentian maple (Dansereau, 1959) and the mixed Sugar maple-Hemlock forests (Grandtner, 1966a) occur abundantly (Table II). The major forest types found on Mont Rigaud have been described in detail by Dansereau (1943, 1946, 1959), Grandtner (1966a), Op de Beeck (1972) and Filion and Blouin (1977). Their descriptions correspond with my observations of the forests on Mont Rigaud so exactly that it is of no value to repeat them in this section. To augment the brief summary given here, the reader is referred to Appendix A and to Table II. Op de Beeck's description was not included

in Table II because he made an ordination rather than a classification of the forest complexes for his study area.

Three of the four main types of forests on Mont Rigaud belong to the Sugar maple complex: Laurentian maple, Maple-Hickory and Maple-Red oak. The fourth forest type is dominated by Red oak and found primarily on the steepest slopes of the northwest and southeast sectors (Fig. 4). The largest area of the mountain is covered by deciduous dominated Sugar maple forest (Fig. 7).

Laurentian maple forests, in which sugar maple, beech, and basswood dominate, occupy the mesic slopes of the mountain. Hemlock and yellow birch tend to replace the basswood where conditions are wetter and cooler. These two species are dominant over the sugar maple in the extremely cool and wet sites. The wetter and warmer slopes favour the growth of the Maple-Hickory forests which include many more southern species. The Maple-Hickory forest differs from the Laurentian maple by the presence of Carya ovata, Carya cordiformis and Carpinus caroliniana which, however, are never abundant. Maple-Red oak forests replace the above two forest types on the higher slopes where the soil is shallower and drier. Sugar maple co-dominates with the red oak and is accompanied by ironwood and red maple in this forest type. It is the driest sub-association of the Maple forest complex and occupies large areas on Mont Rigaud.

Extremely dry, warm and sunny sites, such as the summits, the steep slopes (especially south facing), and rough rocky land, support the growth of Red oak forests. The trees tend to be small and scrubby and the formation open with frequent interruptions by bare patches of rocky outcrop.

The above four kinds of forests are the most characteristic of Mont

Rigaud, covering most of the mountain. In addition, steep slopes of dry rocky land support coniferous dominated forests such as the Pine-Hemlock-Spruce stands forming the margins of the rocky outcrops and the boulder bed. Hemlock dominated stands are found on the talus slopes below the northwest cliffs as well as along the rocky northeast ravine (Fig. 3). The first area is a dry habitat, whereas the second one is a wet habitat in which the fern understorey harbours plentiful Marchantia and mosses. In the wettest sites such as closed low-lying depressions, Elm-Ash associations flourish with an understorey of hydrophilic species. The most water-saturated sites tend to be populated by Cedar-Larch.

Distinctive Habitats

The minor communities are limited in area compared to the major forests, but they contribute the largest number of species to the floral list. The disturbed communities, previously mentioned, are common everywhere and typical of the southwest of Quebec. Wet shrub communities of Alnus-Salix are found following the shady streams and moist ditches. Temporary ponds, frequent in the forest and in the open, have a variable flora with grasses and sedges and often Typha latifolia. One pond is dominated by Cephalanthus occidentalis and Carex vesicaria.

As little attention has been paid in the literature to the minor communities, six botanically interesting habitats with distinctive vegetation were chosen for intensive study. One is the Rocky Outcrop vegetation not found on the plains surrounding Mont Rigaud and another the Northwest Cliffs supporting the Dryopteris fragrans. The geologically unique Boulder Bed is described and the small Cedar-Orchid Swamp containing the Cypripedium reginae.

The southwest Marsh and Swamp and the major Ponds were studied because they contribute aquatic vegetation unique on the mountain.

1) The Rocky Outcrops

Bedrock outcrops are found on summits (Fig. 3, Nos. 1 & 2), on steep slopes (Fig. 3, No. 3) and as frequent small patches over the entire mountain (Fig. 3, No. 4). This community portrays a continuum of strata ranging from the moss and lichen layer colonizing bare rock to the scrubby Red oak forest found in the pockets of deeper soil (Fig. 11). Large moss and lichen patches, characteristically Cladonia cristatella, C. mitis, C. pleurota, C. rangiferina, Polytrichum juniperinum and P. piliferum often associated with Rumex acetosella, are shown creeping over the bare rock in Figure 12. Where soil has accumulated, herb associations consist of abundant Danthonia spicata, Carex pensylvanica, Maianthemum canadense and Gaultheria procumbens and other species as scattered individuals (Table IV). On some outcrops, Cypripedium acaule grows in small colonies under shrubs. Figure 13 shows the low shrub layer less than 1 m tall developing on the deeper soils. The dominant species here is Vaccinium myrtilloides, often accompanied by Diervilla lonicera and other shrubs (Table IV). The dwarf Quercus borealis (red oak) grows in the deepest soil of this habitat and is most frequently associated with Prunus pensylvanica, Rhus typhina, Acer rubrum, Amelanchier and other tall shrubs and trees (Table IV). The typical red oak is shrub-like, 3 to 4 m tall, with a diameter at breast height (d.b.h.) of 5 to 8 cm, but they grow much larger where the soil is plentiful. All of these overstory layers are patchy and open.

Occasionally, poorly drained depressions from 15 cm to one-and-a-half

Figure 11. Diagram of the Rocky Outcrop Habitat.

Abbreviations:

A = rock pavement; B = soil accumulation

Characteristic species are:

a = Diervilla lonicera, b = Quercus borealis, c = Vaccinium myrtilloides, d = Prunus pensylvanica, e = Rumex acetosella associated with lichens and mosses, f = lichen and moss layer, g = Danthonia spicata and Carex pensylvanica, h = Maianthemum canadense.

Figure 12. The Rocky Outcrop Habitat showing moss and lichen layer.

Figure 13. The Rocky Outcrop Habitat showing shrub and tree layers.

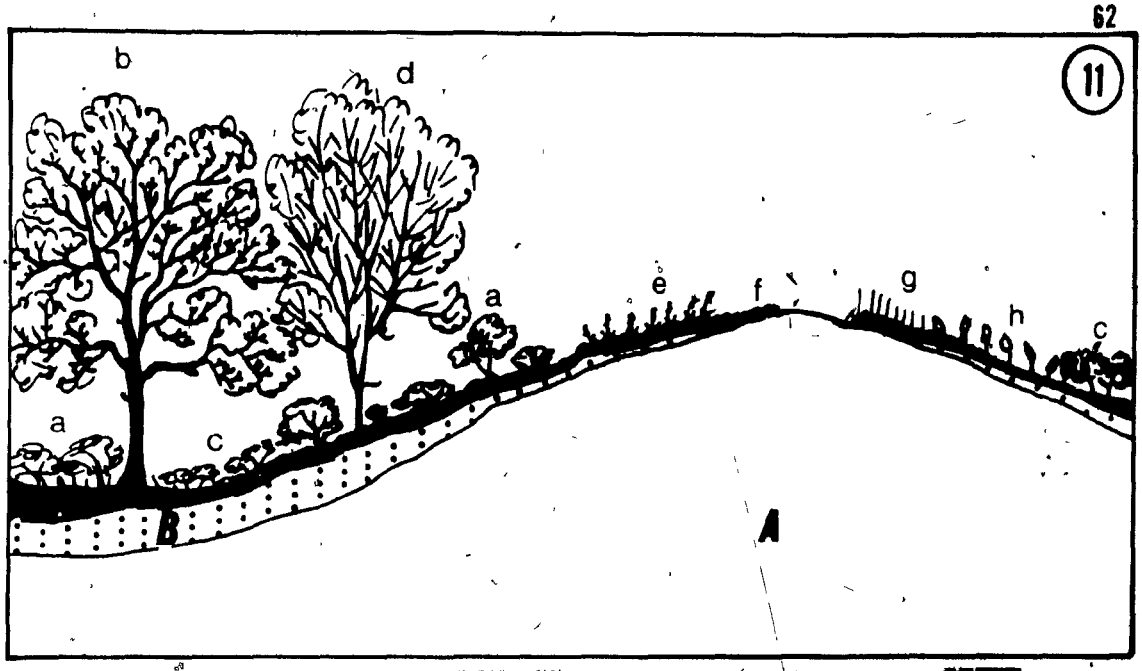


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Table IV. Alphabetical list of taxa for the Rocky Outcrop Habitat on Mont Rigaud.

Moss and Lichen Layer

*Cladonia cristatella*
*Cladonia mitis*
*Cladonia pleurota*
*Cladonia rangiferina*
*Polytrichium juniperinum*
*Polytrichium piliferum*

Herb Layer

*Antennaria neglecta* var. *neglecta*
*Antennaria neglecta* var. *randii*
*Aralia hispida*
*Aralia nudicaulis*
*Carex aenea*
*Carex communis*
*Carex pensylvanica*
*Corydalis sempervirens*
*Danthonia spicata*
*Dryopteris intermedia*
*Dryopteris marginalis*
*Dryopteris spinulosa*
*Fragaria virginiana*
*Gaultheria procumbens*
*Geranium bicknellii*
*Hieracium florentinum*
*Hypericum perforatum*
*Maianthemum canadense*
*Melampyrum lineare*
*Mentha canadensis*
*Oryzopsis asperifolia*
*Panicum linearifolium* var. *linearifolium*
*Poa compressa*
*Polygonum pensylvanicum*
*Polypodium virginianum*
*Potentilla argentea*
*Pteridium aquilinum*
*Rumex acetosella*
*Verbascum thapsus*

Shrub Layer

*Aronia melanocarpa*
*Apocynum androsaemifolium*
*Diervilla lonicera*
*Gaylussacia baccata*
*Rubus idaeus*
*Spiraea latifolia*
*Spiraea tomentosa*
*Vaccinium myrtilloides*

Tree Layer

*Acer pensylvanicum*
*Acer rubrum*
*Acer spicatum*
*Amelanchier arborea* var. *arborea*
*Amelanchier arborea* var. *cordifolia*
*Amelanchier sanguinea*
*Betula lutea*
*Betula papyrifera*
*Ostrya virginiana*
*Populus grandidentata*
*Populus tremuloides*
*Prunus pensylvanica*
*Prunus virginiana*
*Quercus borealis*
*Rhus typhina*
*Sorbus americana*
*Viburnum cassinoides*

meters deep produce wet microhabitats supporting such hydrophilic species as Carex gynandra, C. trisperma, Scripus atrocinctus and Salix petiolaris, to name only some examples. The perimeter of the open Red-oak communities often contain a high proportion of coniferous trees such as Picea glauca, Pinus strobus, Abies balsamea and Tsuga canadensis. These form a transition zone to the Red oak and the Maple-Red oak forests mentioned above. These forest types are encountered as the soil mantle deepens with the descent of the slopes.

2) The Northwest Cliffs

Precipitous cliffs, 3 to 20 m high, composed of rough jointed blocks of feldspar porphyry are located on the northwest extremity of the mountain (Fig. 3, No. 2). Two cliff sites were studied, a lower cliff located immediately beside the ski-run (Fig. 14) and an upper one, situated on the first ridge just northwest of the peak with the iron cross. Mosses and lichens are abundant on the cliff faces, some in dry microhabitats and others in wet seepage areas where intermittent springs trickle over the rocks (Table V).

These cliffs, facing northwest, are well shaded and cool and ideal for the growth of ferns. Such cliffs may provide sites for rare and endemic plants according to Dansereau (1959), whose statement was supported when some scattered clumps of Dryopteris fragrans var. remotiuscula (Fig. 15) and Woodsia ilvensis were found. The lower cliffs support D. fragrans but no Woodsia ilvensis. The upper cliffs are the site of about 12 clumps of D. fragrans and about 20 clumps of W. ilvensis; both ferns at times only 35 cm apart are growing out of the crevices on the vertical

Figure 14. The Northwest Cliff Habitat.

Figure 15. *Dryopteris fragrans* var. *remotiuscula*.

Figure 16. Distribution map of *Dryopteris fragrans* var. *remotiuscula* for the area 160 km east and west of Rigaud based on specimens at CAN, DAO, MT and MTMG.

Figure 17. Diagram of the vegetation of the Northwest Cliff Habitat.

Characteristic species are:

a = *Vaccinium myrtilloides*, b = *Pinus resinosa*, c = *Gaultheria procumbens*, d = *Betula papyrifera*, e = *Woodsia ilvensis*, f = *Dryopteris fragrans* var. *remotiuscula*, g = *Polypodium virginianum*, h = *Aralia hispida*, i = *Corydalis sempervirens*, j = *Prunus pensylvanica*, k = *Tsuga canadensis*.

14

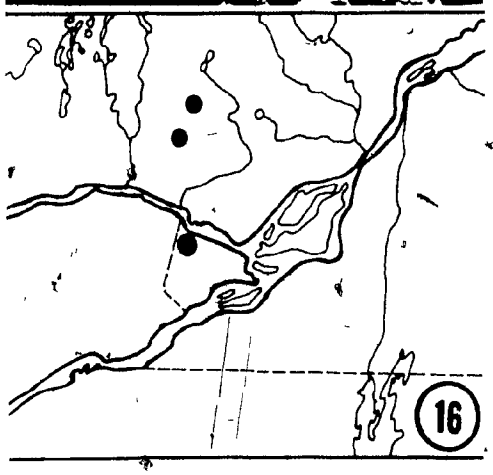

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Table V. Alphabetical list of taxa for the Northwest Cliff Habitat on Mont Rigaud.

Mosses in Dry Microhabitat

*Andreaea rupestris*
*Amphidium lapponicum*
*Bryum capillare*
*Cynodontium* sp.
*Grimmia* sp.
*Hedwigia ciliata*
*Polytrichum ohioense*
*Polytrichum piliferum*
*Ptilidium ciliare*
*Tortella tortuosa*

Lichens in Dry Microhabitat

*Cladonia pyxidata*
*Lepraria finkii*
*Parmelia cumberlandia*
*Parmelia sorediosa*
*Ramalina intermedia*
*Umbilicaria vellea*

Mosses in Wet Microhabitat

*Bartramia pomiformis*
*Hylocomium splendens*
*Isopterygium elegans*
*Pohlia nutans*
*Polytrichum juniperinum*
*Polytrichum ohioense*
*Ptilidium ciliare*
*Scapania nemorosa*
*Tritomaria quinquedentata*

Lichens in Wet Microhabitat

*Cladonia* sp.
*Umbilicaria mammulata*
*Umbilicaria vellea*

Plants on Ledges and in Crevices of Cliffs

*Aralia hispida*
*Betula papyrifera*
*Corydalis sempervirens*
*Diervilla lonicera*
*Dryopteris fragrans* var. *remotiuscula*
*Dryopteris marginalis*
*Polypodium virginianum*
*Woodsia ilvensis*

Herbs on Talus

*Aralia hispida*
*Carex aenea*
*Maianthemum canadense*
*Polygonum cilinode*
*Polypodium virginianum*

Shrubs on Talus

*Acer spicatum*
*Amelanchier arborea* var. *cordifolia*
*Cornus rugosa*
*Gaylussacia baccata*
*Rhus typhina*
*Vaccinium angustifolium*
*Vaccinium myrtilloides*

Table V. (cont'd.)

| Trees on Talus | |
|---|---|
| Betula papyrifera | Populus tremuloides |
| Pinus resinosa | Quercus borealis |
| Pinus strobus | Tsuga canadensis |
| Prunus pensylvanica | |

face of the cliffs and on small ledges. They share the same rock substrate, feldspar porphyry, with no trace of calcium, according to a 10% HCl test. The pH values for the accumulation of humified mineral soil under three W. ilvensis were 5.5, 5.6 and 6.0 and one D. fragrans was 6.1, indicating that the two ferns are adapted to the same environment. Additional soil samples could not be obtained for the D. fragrans without destroying the plant.

Dryopteris fragrans is rare for the area within 160 km of Rigaud (Fig. 16) and extremely uncommon in southwest Quebec (Rousseau, 1974). It is more common along the north shores of the Great Lakes (Britton, 1966) and extends into the United States (Wagner, personal communication). The northern variety fragrans is a circumpolar arctic alpine species, always growing on non-calcareous rocks (Porsild, 1964). It is found in the high arctic as far as Ellesmere Island. However, there is a gap in its distribution as it is nearly missing in the sub-arctic zone in Quebec and is replaced in the lower latitudes by variety remotiuscula where it grows in calcareous habitats (Rousseau, 1974). Britton (personal communication) noted that variety remotiuscula prefers a neutral or slightly alkaline substrate in Frontenac Park near Kingston, Ontario. On Mont Rigaud, this southern variety shares an acidic substrate with W. ivensis. As the D. fragrans specimens do not have the taxonomic characters of the acid-loving arctic variety fragrans, then D. fragrans var. remotiuscula must have wide ecological adaptation. Some taxonomists would reduce the status of these varieties to environmental forms because the taxonomic characters used to separate them are considered to result from the growth of a fern in an exposed (northern variety) versus a protected (southern variety) habitat (Boivin, 1967;

Wagner, personal communication).

Although Marie-Victorin (1964) indicated it is not a common fern in the province by his comment "General dans son habitat, mais assez rare", W. ilvensis is shown on Rousseau's distribution maps (1974) to be of more frequent occurrence than D. fragrans in Quebec. Roland and Smith (1969) listed the species as "local" in Nova Scotia but they add, "It is often abundant where found." Woodsia ilvensis is a circumpolar, wide-ranging species, but low arctic, reaching the Arctic Circle on Baffin Island and along the Beaufort Sea, usually on precambrian or acid rocks (Porsild, 1964). It is never a calcicole (Britton, personal communication) although there is some contradiction in the literature (Scoggan, 1950).

In crevices of the cliff faces and on ledges, Polypodium virginianum and Dryopteris marginalis are much more abundant than the above two ferns. As well as these four pteridophytes, the spermatophytes, Corydalis sempervirens, Aralia hispida, Diervilla lonicera and Betula papyrifera grow occasionally on small shelves on the sheer faces of the cliffs.

At the base and on the sides of the cliffs are talus slopes or masses of huge boulders sometimes as large as 1 to 4 m in diameter. The vegetation among them is scrubby and scattered, but increasing in density on the lower gentler part of the slopes (Fig. 17). In these areas, mats of Polypodium virginianum often cover entire boulders and patches of Carex aenea, Maianthemum canadensis, Polygonum cilinode and Aralia hispida occur wherever there is enough sunlight. The scattered shrub layer includes Ribes glandulosum, Amelanchier arborea var.

cordifolia, Rhus typhina, Acer spicatum, Cornus rugosa, Gaylussacia baccata, Vaccinium angustifolium and Vaccinium myrtilloides. The trees found on the slopes above and below the cliffs are mainly Pinus strobus, Pinus resinosa, Betula papyrifera and Tsuga canadensis, but also include Populus tremuloides, Prunus pensylvanica and Quercus borealis.

3) The Boulder Beds

The 20 hectares of boulder beds are located immediately southwest of the shrine (Fig. 3, No. 6). They include three hectares in three patches devoid of vegetation except for crustose lichens; another hectare is invaded by pioneer successional species and the remaining sixteen hectares are covered by dry conifer-hardwood forest (Fig. 18). In the largest barren field closest to the shrine, popularly known as the Devil's Garden, the boulders represent the legendary transformed potatoes of a farmer who dared defy God by plowing his fields on the Sabbath (Anon., 1974).

The lack of vegetation in the barren sections is broken only by the crustose lichens found concentrated on the margins of these areas under the trees where more moisture and nitrogen are available (Fig. 19). The absence of lichens in the centre of the bare fields indicates some disturbance prevents colonization. In the spring, streams can be heard running under some of the barren sections. The maintenance of these sterile areas is difficult to explain and merits further investigation. No soil accumulation to a depth of 6 m can be observed in one

Figure 18. Diagram of the vegetation of the Boulder Bed Habitat.

Abbreviations:

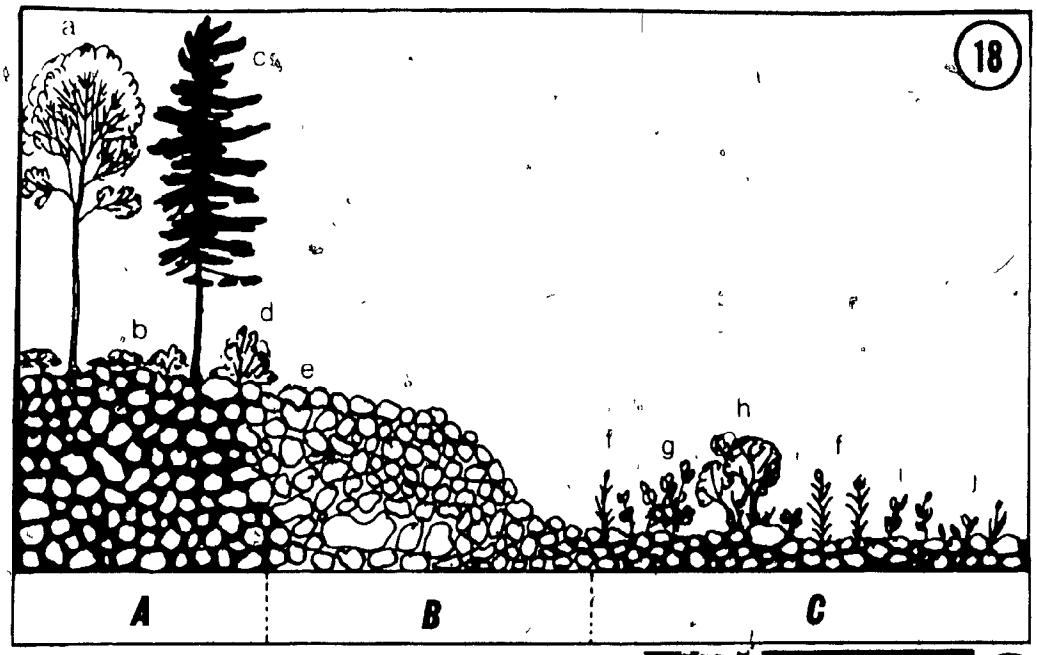
A = dry Conifer-Hardwood forest; B = barren field with no soil accumulation; C = disturbed area with invading pioneer species.

Characteristic species are:

a = Betula papyrifera, b = Vaccinium myrtilloides, c = Pinus strobus, d = Diervilla lonicera, e = crustose lichens, f = Solidago canadensis, g = Rubus idaeus, h = Populus grandidentata, i = Epilobium angustifolium, j = Erigeron strigosus.

Figure 19. The Boulder Bed Habitat showing barren fields.

Figure 20. The Boulder Bed Habitat showing successional seres.


18
a
c
b
d
e
h
f
g
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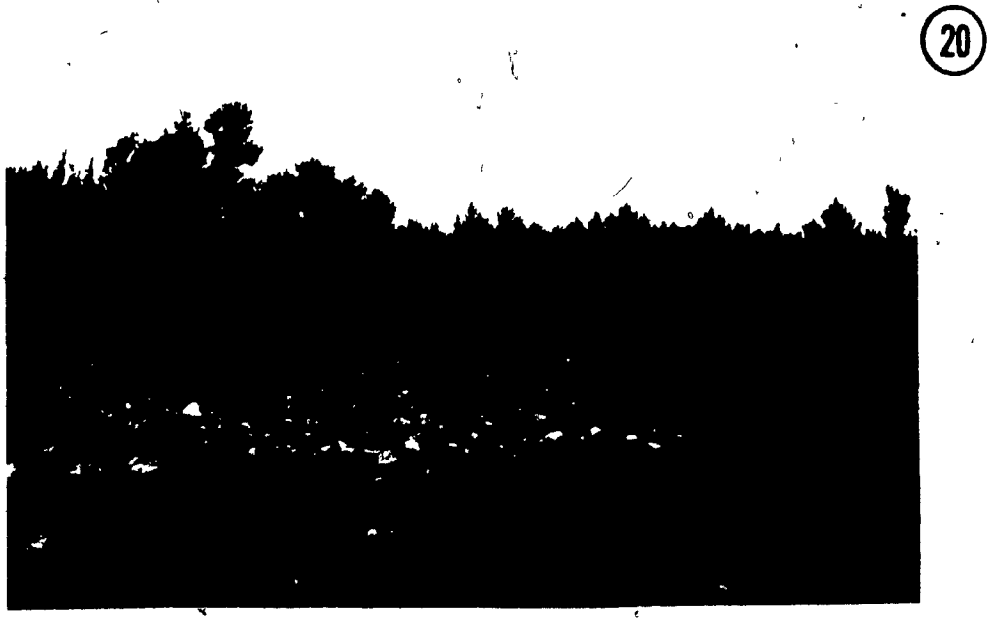
i
j
A
B
C


19


20

of the conical pits excavated before 1901 (LeRoy, 1901), although two Betula papyrifera and a small Tsuga canadensis at the bottom of the pit indicate some humus has accumulated there, probably blown in by the wind.

In the Devil's Garden there is a one hectare area with soil accumulation supporting early successional vegetation shown in Figure 20. This invaded section does not represent natural primary succession gradually encroaching on the boulder bed, but rather the impact of man's recent disturbance. In 1930, a commercial rock crushing enterprise removed a layer of rocks, decreasing the depth of the boulders to the soil level, consequently allowing the invasion of pioneer species.

Here, mosses are found in the poorly drained shallow depressions (Table VI). Members of the Compositae dominate the varied and extensive herb layer (Table VI). There are isolated groups of shrubs such as Rubus odoratus, Rubus idaeus, Aronia melanocarpa, Spiraea tomentosa, Rhus typhina, Apocynum androsaemifolium, Diervilla lonicera and Sambucus pubens, and a few very small seedlings of Pinus strobus, Tsuga canadensis , Picea glauca, Thuja occidentalis, Populus balsamifera and Fraxinus americana. A taller layer, less than 1 m, is composed of scattered tree seedlings and sucker shoots from the previously severed stems of Populus grandidentata, Populus tremuloides, Salix humilis, Salix bebbiana, Betula papyrifera, Quercus borealis, Acer rubrum and Prunus pensylvanica. The vegetation has not advanced past the first stage of succession because the saplings are continually cut down and strewn about the field by the local clerics of St. Viateur from the

Table VI. Alphabetical list of taxa for the Pioneer Successional Area of the Boulder Bed Habitat on Mont Rigaud.

Mosses in Wet Depression

*Dicranum ontariense*
*Dicranum spurium*
*Pohlia nutans*
*Polytrichum juniperinum*
*Polytrichum piliferum*
*Sphagnum russowii*

Lichens on Rocks

*Cladonia* cfr. *cristatella*
*Cladonia deformis*
*Cladonia pyxidata*
*Cladonia uncialis*
*Stereocaulon saxatile*
*Lecidea* sp.
*Rhizocarpon geographicum*

Herb Layer

*Agrostis scabra*
*Anaphalis margaritaceae*
*Antennaria neglecta* var. *neglecta*
*Aralia hispida*
*Asclepias syriaca*
*Aster* spp.
*Carex aenea*
*Carex arctata*
*Danthonia spicata*
*Dryopteris marginalis*
*Epilobium angustifolium*
*Erigeron strigosus*
*Fragaria virginiana*
*Hieracium florentinum*
*Hypericum perforatum*
*Linaria vulgaris*
*Malaxis unifolia*
*Medicago lupulina*
*Poa compressa*
*Polygonum cilinode*
*Potentilla argentea*
*Potentilla recta*
*Rumex acetosella*
*Silene cucubalis*
*Solidago* spp.
*Spiranthes lacera*
*Thelypteris palustris*
*Toxicodendron rydbergii*
*Vaccinium myrtilloides*

Shrubs and Seedlings Layer

*Acer rubrum*
*Apocynum androsaemifolium*
*Aronia melanocarpa*
*Betula papyrifera*
*Dervilla lonicera*
*Fraxinus americana*
*Picea glauca*
*Pinus strobus*
*Populus balsamifera*
*Populus grandidentata*
*Populus tremuloides*
*Prunus pensylvanica*
*Quercus borealis*
*Rhus typhina*
*Rubus idaeus*
*Rubus odoratus*
*Salix bebbiana*
*Salix humilis*
*Sambucus pubens*
*Spiraea tomentosa*
*Thuja occidentalis*
*Tsuga canadensis*

sanctuary. The priests wish to preserve the original barren appearance of the Devil's Garden in order that it may conform to the legend.

The dry conifer-hardwood forest covering the remaining 16 hectares of the boulder bed is similar in appearance to the dry acidic forests of the Laurentians. Paths worn through the woods expose a surface of rounded stones measuring under 30 cm in diameter. A 2 to 3 m pit dug in this woods has an accumulation at the bottom of leaf litter estimated to be two years old, with a pH of 6.0. The soil between the stones nourishing the trees is a leached layer of podsol with a pH of 6.4. Some of the stones towards the bottom of the pit are larger than half a meter in diameter.

Under the trees, Dicranum polysetum and Leucobryum glaucum are found in the moss layer and Maianthemum canadense , Clintonia borealis, Trientalis borealis and Gaultheria procumbens dominate the herb layer. The shrubs are most frequently Ribes glandulosum, Aronia melanocarpa, Gaylussacia baccata and Vaccinium myrtilloides, and the trees, mainly Pinus strobus, Betula papyrifera, accompanied by Picea glauca, Picea mariana, Populus tremuloides, Quercus rubra and Acer pensylvanicum.

4) The Cedar-Orchid Swamp

This habitat is on the north side of St. Georges Road, opposite the old gravel pit at the west end of the mountain (Fig. 3, No. 4). It is drained on the southeast corner by a small stream and bordered on the south by a Salix-Alnus fringe, following the roadside ditch. An old quarry and dump are to the west. To the north and east, this habitat merges into a mixed Maple-Hemlock forest.

In the southern portion of the swamp, a Cypripedium reginae

population of over 180 plants is concentrated in the two semi-shaded openings mapped in Figure 21. They also occur less frequently and more scattered in more shaded areas throughout the swamp and beside the stream on the opposite side of St. Georges Road to the south. Cypripedium reginae (Fig. 22) is known to deteriorate to a spindly non-flowering condition under deep shade (Frederick, 1964). Although little change was noted in the colonies since it was observed in 1966 by D. E. Swales, there is no doubt the trees will encroach gradually, producing more shade, unless prevented by heavy deer browsing or by interference from man. The stations of C. reginae are rare for the area within 160 km of Rigaud (Fig. 23) and are not numerous for Quebec (Rousseau, 1974). Therefore, it is an important plant to protect.

The soil of the swamp consists of water-soaked humus. Immediately under the Cypripedium, the soil has a pH of 6.8, lending support to the recorded preference of these orchids for a neutral, or often limestone, soil (Rousseau, 1974). There is some Sphagnum moss in the swamp, mainly on raised hummocks or at the base of the trees, but Cornell (1950) says that, although it may occur among Sphagnum, the roots penetrate so deeply they reach less acid soil. Associated with the orchids are the mosses Drepanocladus aduncus and Calliergonella cuspidata, and the vascular plants Equisetum arvense, Prunella vulgaris, Geum rivale, Fragaria virginiana, Galium labradoricum and Solidago rugosa.

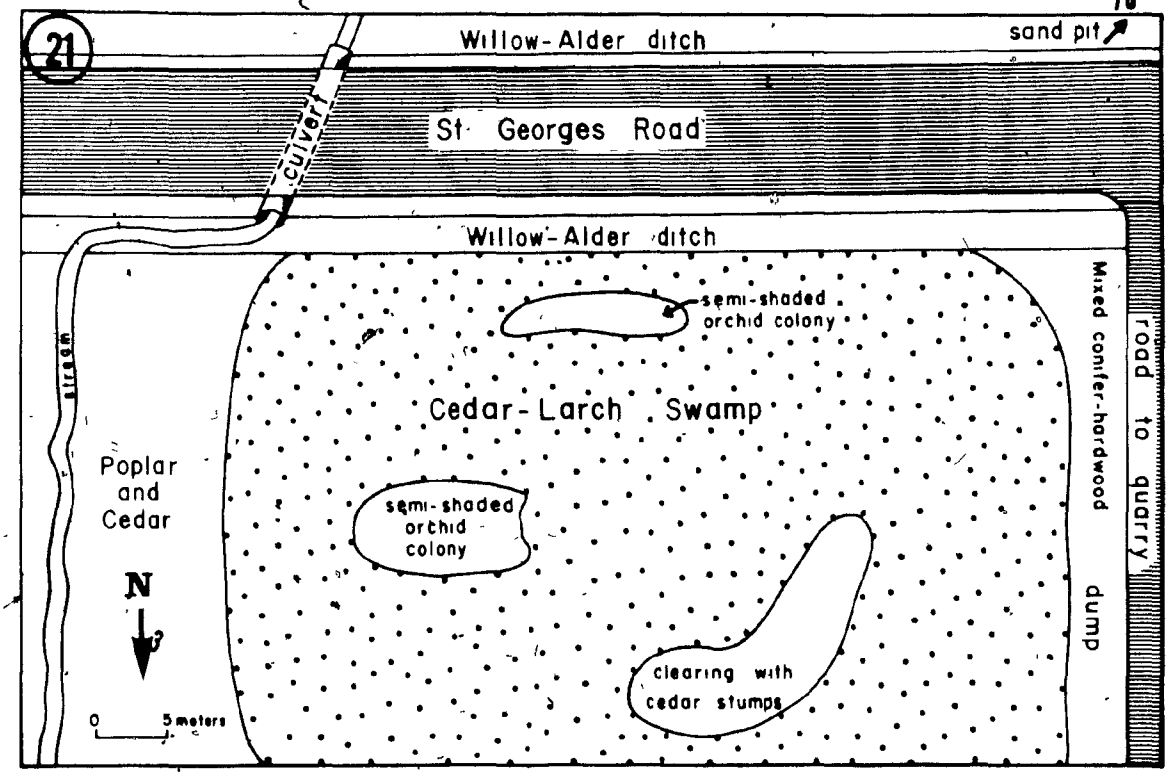
The bryophyte ground cover in the shaded area under the trees (Fig. 24) consists of the liverwort, Marchantia polymorpha, and the mosses Rhizomnium appalachianum, Plagiomnium ciliare, Thuidium delicatulum, Oratoneuron filicinum, Fissidens adiantoides, Sphagnum squarrosum and

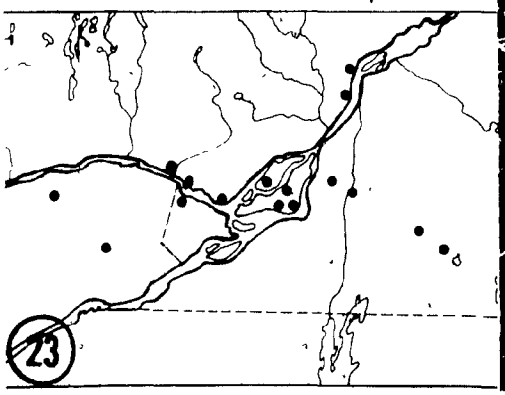
Figure 21. Map of the southern portion of the Cedar-Orchid Swamp Habitat showing location of semi-shaded orchid colonies.

Figure 22. Cypripedium reginae.

Figure 23. Map of the distribution of Cypripedium reginae for the area 160 km east and west of Rigaud based on specimens at CAN, DAO, MT and MTMG.

Figure 24. The Cedar-Orchid Swamp Habitat showing mature cedar trees.


21
Willow-Alder ditch
sand pit
culvert
St. Georges Road
Willow-Alder ditch
stream
semi-shaded orchid colony
Cedar-Larch Swamp
Mixed conifer-hardwood
road to quarry
dump
Poplar and Cedar
semi-shaded orchid colony
N
clearing with cedar stumps
0 5 meters


23

Sphagnum quinquefolium. The herbaceous layer here is dominated by Equisetum arvense, Osmunda regalis and Fragaria virginiana. Many other vascular plants occur with less abundance (Table VII).

Numerous seedlings of the dominant trees, Thuja occidentalis and Larix laricina are scattered throughout the swamp. The mature T. occidentalis reach a height of 6 m and d.b.h. of 20 cm and are spaced about two meters apart. The L. laricina grow to 15 m with a 30 cm d.b.h. Other trees found only occasionally are Pinus strobus, Abies balsamea, Betula lutea and Populus tremuloides. In the northeast corner of the study area, a clearing, created by the logging of 28 cedar trees, supports a few orchids. Mainly successional species are here such as Typha latifolia, Solidago and Aster as well as the herbs previously mentioned (Table VII).

5) The Southwest Marsh and Swamp

One hundred years ago, a man-made dam across the stream draining the large depression in the southwest sector (Fig. 3, No. 8) created a 400 to 800 m lake, 3 m deep, for a grain mill on Mont Rigaud. Today, the dam is abandoned, but the beavers have recently built a 15 m dam near it, creating a large marsh. Parts of the vegetation map produced by Filion and Blouin (1977) have been incorporated into Figure 25 showing the location and arrangement of the marsh and the associated swamp. A five hectare prairie of Calamagrostis canadensis is skirted on the west by four hectares of freshly inundated Red maple forest (Fig. 26) and on the east side by five hectares of Cedar-Larch swamp (Fig. 27). The marsh and swamp, only, are described here.

Table VII. Alphabetical list of taxa for the Cedar-Orchid Habitat on Mont-Rigaud.

Bryophyte Layer

*Calliergonella cuspidata*
*Cratoneuron filicinum*
*Drepanocladus aduncus*
*Fissidens adiantoides*
*Marchantia polymorpha*
*Plagiomnium ciliare*
*Rhizomnium appalachianum*
*Sphagnum quinquefolium*
*Sphagnum squarrosum*
*Thuidium delicatulium*

Herb Layer

*Achillea millefolium*
*Aster puniceus*
*Athyrium filix-femina*
*Bidens frondosa* var. *frondosa*
*Botrychium virginanum*
*Bromus ciliatus*
*Carex aurea*
*Carex hystericina*
*Carex interior*
*Carex leptalea*
*Chelone glabra*
*Chrysosplenium americanum*
*Dentaria diphylla*
*Dryopteris cristata*
*Dryopteris disjuncta*
*Elymus hystrix*
*Equisteum arvense*
*Equisetum fluviatile*
*Equisetum sylvaticum*
*Fragaria virginiana*
*Galium labradoricum*
*Galium triflorum*
*Geum rivale*
*Hydrocotyle americana*
*Lycopus uniflorus*
*Mitchella repens*
*Muhlenbergia glomerata*
*Muhlenbergia mexicana* var. *mexicana*
*Onoclea sensibilis*
*Osmunda cinnamomea*
*Osmunda regalis*
*Prenanthes* sp.
*Prunella vulgaris*
*Pyrola elliptica*
*Sanicula marilandica*
*Scutellaria epiilobifolia*
*Solidago rugosa*
*Tiarella cordifolia*
*Typha latifolia*
*Viola* sp.

Tree Layer

*Abies balsamea*
*Betula lutea*
*Larix laricina*
*Pinus strobus*
*Populus tremuloides*
*Thuja occidentalis*

Figure 25. Map of the Southwest Marsh and Swamp Habitat and surrounding vegetation (after Filion and Blouin, 1977).

Figure 26. The Southwest Marsh and the Inundated Red maple forest.

Figure 27. The Southwest Marsh and the Cedar-Larch Swamp.

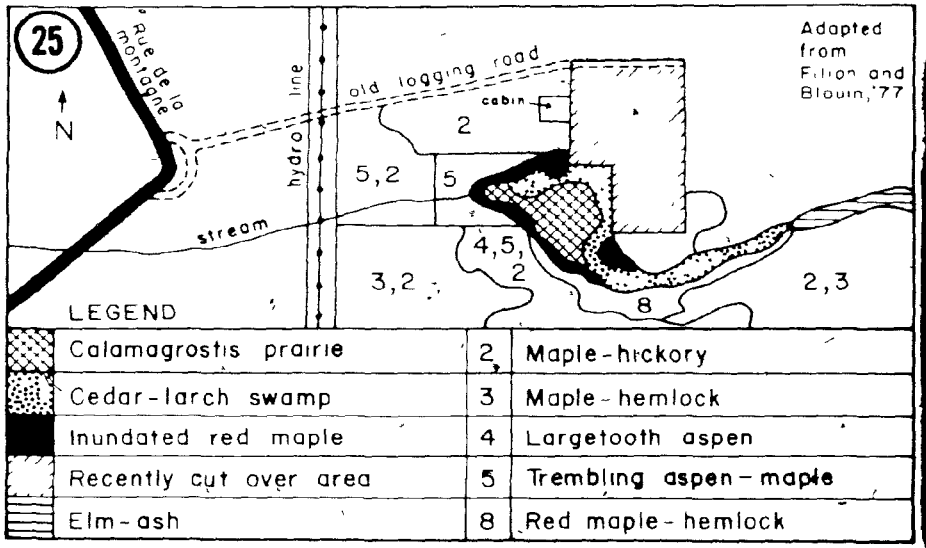
Figure 28. Diagram of the vegetation in the Southwest Marsh and Swamp Habitat.

Abbreviations:

A = the Inundated Red Maple; B = the Marsh; C = the Swamp.

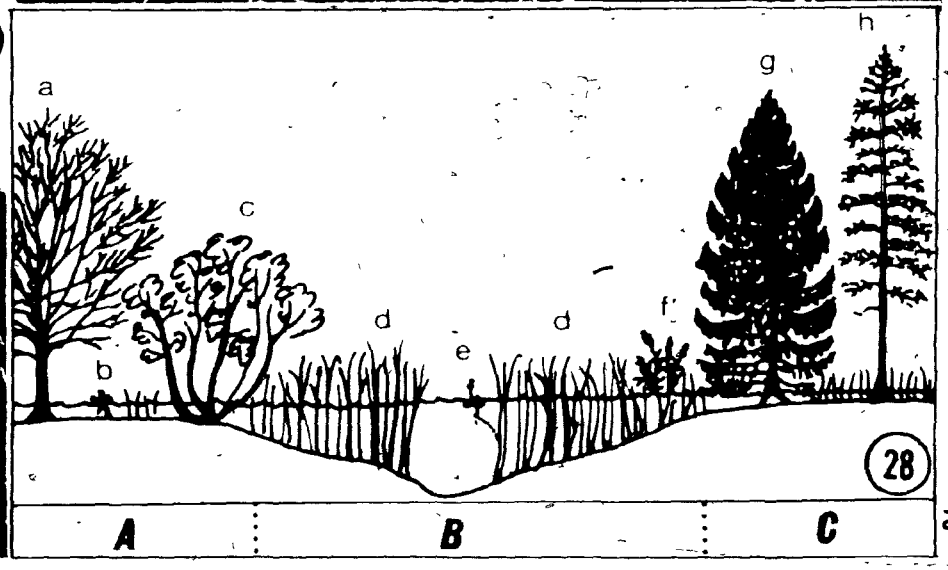
Characteristic species are:

a = dead Acer rubrum, b = Polygonum natans, c = Alnus rugosa,
d = Calamagrostis canadensis, e = Utricularia vulgaris,
f = Spiraea latifolia, g = Thuja occidentalis, h = Larix laricina.


25
N
rue de la montagne
hydro line
old logging road
cabin
stream
2
5,2
5
4,5,2
3,2
8
2,3
Adapted from Filion and Blouin, '77
LEGEND
Calamagrostis prairie
Cedar-larch swamp
Inundated red maple
Recently cut over area
Elm-ash
2 Maple-hickory
3 Maple-hemlock
4 Largetooth aspen
5 Trembling aspen-maple
8 Red maple-hemlock


26


27


a
b
c
d
d
e
f
g
h
28
A
B
C

The depth of the water in the marsh ranges from about 30 cm to over 2 m. Small open patches of water occur in the deepest regions, but mostly the marsh has continuous homogeneous coverage by Calamagrostis canadensis (Fig. 28). The most common species in the center of the marsh are Carex aquatilis, Dulichium arundinaceum, Lemna minor, Potamogeton pusillus, Polygonum natans and Utricularia vulgaris. As the water becomes more shallow towards the east and south margins, an increasing diversity of species occurs (Table VIII). On the southeast corner of the marsh is a small area dominated by Carex lacustris accompanied by Scirpus cyperinus, S. atrovirens var. georgianus, Juncus effusus, Epilobium coloratum and Aster junciformis. The Aster junciformis (Newstrom, 1202, MTMG) is considered by A. Cronquist to be an unusually robust and broadleaved form of this species. Also in the marginal area, unusual specimens of Carex have been found. Two collections were identified by A. A. Reznicek as similar to Carex flava, or possibly a cross between C. flava and C. cryptolepis, or perhaps C. viridula (Newstrom, 1189, 1009, MTMG). Either the fluctuating level of water on the margin has contributed to the growth of morphologically abnormal species, or hybridization is occuring; further investigation should be made.

The transition zone between the marsh and swamp has the same herb layer as the margin of the marsh and is an open formation of Salix, Alnus and Spiraea, as well as other shrubs and small trees (Table VIII). In this area, Scirpus hudsonianus, an uncommon species for southwest Quebec, is found in scattered clumps. It is a circumboreal alpine plant, found throughout Quebec though rare and occasionally local,

Table VIII. Alphabetical list of taxa for the Southwest Marsh and Swamp Habitat on Mont Rigaud.

Herbs in Center of Marsh

Calamagostis canadensis
Carex aquatilis
Dulichium arundinaceum
Lemna minor
Polygonum natans
Potamogeton pusillus
Utricularia vulgaris

Herbs in Margin of Marsh

Aster junciformis
Aster puniceus
Carex flava
Carex lacustris
Carex lasiocarpa
Cladium mariscoides
Chelone glabra
Epilobium coloratum
Eriophorum virginicum
Glyceria canadensis
Hypericum virginicum
Iris versicolor
Juncus canadensis
Juncus effusus
Liparis loeselii
Scirpus atrovirens
var. georgianus
Scirpus cyperinus
Scirpus hudsonianus
Scirpus validus
Solidago uliginosa
Typha latifolia

Herbs in Swamp

Aster cordifolius
Aster novi-belgii
Aster puniceus
Aster umbellatus
Athyrium felix-femina
Athyrium thelypteroides
Carex cristatella
Chelone glabra
Cirsium muticum
Dryopteris marginalis
Equisetum arvense
Eupatorium perfoliatum
Galium labradoricum
Habenaria psycodes
Impatiens capensis
Lycopus americanus
Lycopus uniflorus
Matteuccia struthiopteris
Mentha canadensis
Onoclea sensibilis
Osmunda regalis
Rubus vermontanus
Satureja vulgaris
Scirpus atrovirens
Scirpus cyperinus
Scutellaria epilobiifolia
Solidago canadensis
Solidago rugosa
Solidago uliginosa
Spiranthes cernua
Thelypteris marginalis
Viola cucullata

Shrubs Found in Transition Zone

Alnus rugosa
Cornus amomum
Cornus stolonifera
Fraxinus americana
Ilex verticillata
Salix bebbiana
Salix discolor
Salix lucida
Salix petiolaris
Spiraea alba
Spiraea latifolia
Spiraea tomentosa
Ulmus americana

Table VIII. (cont'd.)

| Trees Found in Swamp | |
|---|---|
| Abies balsamea | Betula populifolia |
| Acer rubrum | Larix laricina |
| Alnus rugosa | Pinus strobus |
| Betula lutea | Populus tremuloides |
| Betula papyrifera | Thuja occidentalis |

(Marie-Victorin, 1964).

In parts of the swamp, especially under the densest trees, water flows through the black and oozy soil in a network of small canals, 10 to 60 cm deep and up to 1 m wide. Several patches of Sphagnum occur but there is never a continuous mat formed. A variety of hydrophilic herbs grow in the swamp, some occurring only on raised hummocks, some on the seasonally saturated margins, and others are in water all year round (Table VIII). The dominant herbs in the swamp are Osmunda regalis and Equisetem arvense in the shade; and grasses and sedges (Table VIII) in the sunny openings. The dominant trees are Thuja occidentalis and Larix laricina associated with tall shrubs and small trees of Alnus rugosa and, less commonly, Pinus strobus, Abies balsamea Populus tremuloides, Betula papyrifera, Betula populifolia, Betula lutea and Acer rubrum.

On the northeast border of the swamp a cut-over scrubby area is dominated by Rubus and Typha latifolia. Associated with these are the same marsh plants as above (Table VIII) and several waste land species such as Clematis virginiana and Fragaria virginiana.

6) The Ponds

Nearly ten colonies of beavers inhabit the major streams on Mont Rigaud, where the successional forests of trembling aspen, their favorite food (Hall, 1972) has encouraged the proliferation of the beaver populations since 1940. The beavers move after exhausting the food around a dam, building new ones and thereby inundating fresh areas with water, causing the death of some species and the introduction of those

suited to the aquatic or semi-aquatic habitat. As a result, one can find, on Mont-Rigaud, a range of successional pond stages: new ponds with recently inundated maple forest; mature ponds in which the woodland species have been replaced by aquatics (Fig. 29), and, finally, old ponds filling in with silt supporting grass and sedge mats (Fig. 30). These habitats are further altered by the creation of small secondary dams downstream from the main dam and water canals used to transport the food supply.

The aquatic zonation and the floristic composition of each pond varies with the pond's age and physical environment as well as the chance arrival and survival of certain species. One man-made pond, Lac des Pins, on Rue de la Montagne (Fig. 3, No. 9) and three major beaver ponds on the southeastern stream (Fig. 3, Nos. 10, 11, 12) are described here. A general summary of the flora and vegetation is made for all the ponds but, in any given pond, certain zones may be larger or unrepresented and certain species may be present or absent (Fig. 31).

The ponds are hardly deep enough for limnetic zones and the littoral zones are not rich in species. The most abundant submerged aquatics are Najas flexilis, Potamogeton pusillus, P. zosteriformis Valisneria americana, Sagittaria cuneata and Sagittaria latifolia. A number of sterile grasses and sterile Sparganium were found in this zone along with the moss Leptodictyum riparium. Floating aquatics are infrequent but some Lemna minor occurs and Potamogeton natans was discovered in Pond 12. On several ponds large mats of Ludwigia palustris float in the water partially submerged and creep along the mud on the

Figure 29. A mature pond showing aquatic vegetation zones.

Figure 30. An old pond filling in with grass and sedge mats.

Figure 31. Diagram of the vegetation zones of the Pond Habitat.

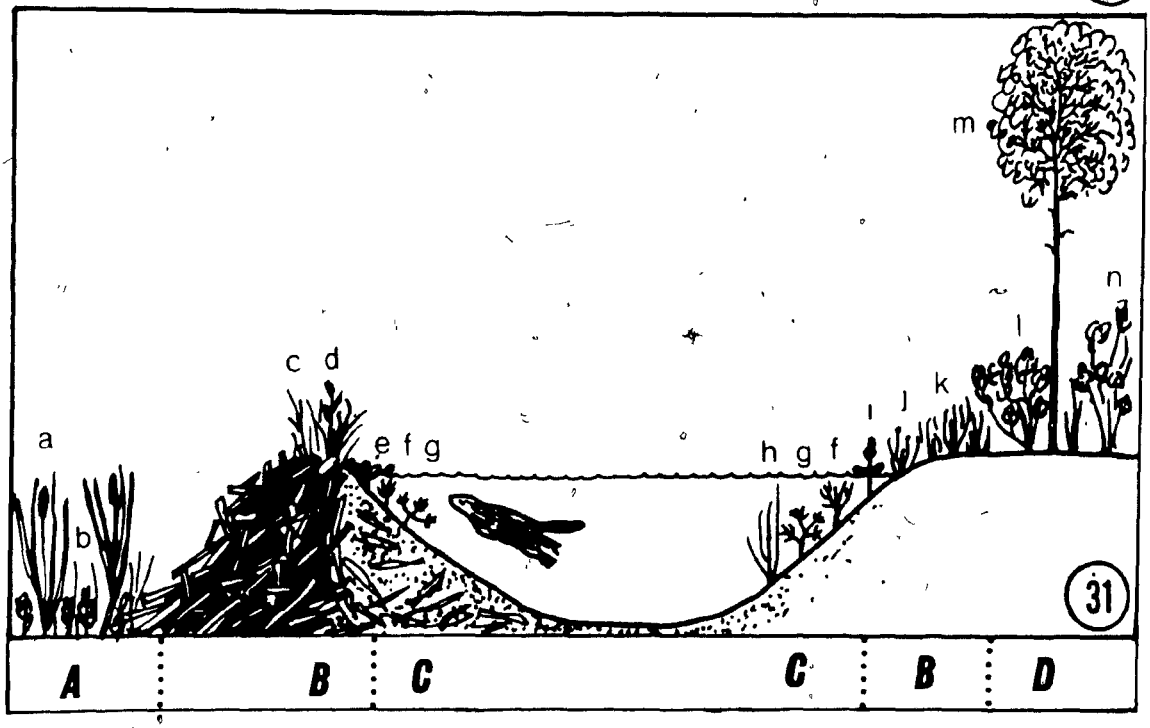
Abbreviations:

A = old filled in area; B = emergent aquatic zone; C = submerged aquatic zones, D = thicket of shrubs and trees.

Characteristic species are:

a = *Typha latifolia*, b = *Onoclea sensibilis*, c = *Glyceria canadensis*, d = *Verbena hastata*, e = *Ludwigia palustris*, f = *Potamogeton zosteriformis*, g = *Najas flexilis*, h = *Sparganium* sp., i = *Chelone glabra*, j = *Eleocharis ovata*, k = *Carex hystericina*, l = *Spiraea latifolia*, m = *Populus tremuloides*, n = *Alnus rugosa*.

29 30




31

shore. Callitriche heterophylla grows in a similar manner but is less abundant.

At the shoreline are abundant grasses and sedges, mainly Glyceria canadensis, Eleocharis ovata, Carex hystericina, C. gynandra and C. lurida. Associated with these are emergent aquatics (Table IX) representing the herbaceous vegetation both in the water and on the wet shore. Some of these plants are not dependent on saturated soil, but rather are tolerant of alternating wet-dry or new wet conditions. Since the level of water fluctuates over the season, it is difficult to separate, as aquatics, species typically growing in shallow water from those growing on the saturated shore (Fassett, 1940). Also, many species are environmentally bimodal, flourishing in either wet or dry sites.

Ranunculus pensylvanicus, an uncommon species, grows on the abandoned beaver dam of Pond 11. The wet sandy shores of Lac des Pins provide an unusual habitat for Drosera rotundifolia, a species more typically found in bogs (Marie-Victorin, 1964). It is associated with Lycopodium inundatum and both species are only found in this site on the mountain.

In some areas where almost complete filling in has taken place, Typha latifolia and Onoclea sensibilis dominate. Farther back from the shore and encircling the pond there may occur a thicket composed of shrubs and small trees dominated by Salix bebbiana, S. lucida, Populus tremuloides, Alnus rugosa, Betula populifolia, Spiraea latifolia and S. alba.

Table IX. Alphabetical list of taxa for the Pond Habitat on Mont Rigaud.

Submerged Zone

*Leptodictyum riparium*
*Najas flexilis*
*Potamogeton pusillus*
*Potamogeton zosteriformis*
*Sagittaria cuneata*
*Sagittaria latifolia*
*Sparganium* sp.
*Vallisneria americana*

Floating Zone

*Callitriche heterophylla*
*Lemna minor*
*Ludwigia palustris*
*Potamogeton natans*

Emergent Zone and Shoreline Plants

*Alisma triviale*
*Anaphalis margaritacea*
*Aster acuminatus*
*Aster novae-angliae*
*Aster puniceus*
*Aster simplex*
*Aster umbellatus*
*Athyrium felix-femina*
*Bidens cernua*
*Bidens frondosa* var. *frondosa*
*Bidens tripartita* f. *comosa*
*Calamagrostis canadensis*
*Cardamine pensylvanica*
*Carex bebbii*
*Carex crawfordii*
*Carex cryptolepis*
*Carex echinata*
*Carex flava*
*Carex gynandra*
*Carex hystericina*
*Carex interior*
*Carex intumescens*
*Carex lurida*
*Carex* cf. *projecta*
*Carex scoparia*
*Carex tribuloides*
*Cerastium vulgatum*
*Circaea lutetiana*
*Chelone glabra*
*Drosera rotundifolia*
*Eleocharis ovata*
*Eleocharis palustris*
*Epilobium glandulosum*
*Epilobium palustre*
*Equisetum arvense*
*Equisetum sylvaticum*
*Equisetum variegatum*
*Eriophorum viridi-carinatum*
*Eupatorium maculatum*
*Galium labradoricum*
*Galium triflorum*
*Glyceria canadensis*
*Glyceria grandis*
*Glyceria melicaria*
*Hydrocotyle americana*
*Hypericum ellipticum*
*Hypericum mutilum*
*Hypericum virginicum*
*Impatiens capensis*
*Juncus brevicaudatus*
*Juncus canadensis*
*Juncus dudleyi*
*Juncus effusus*
*Juncus effusus* var. *compactus*
*Juncus nodosus*
*Leersia oryzoides*
*Lindernia dubia*
*Lycopodium inundatum*
*Lycopus uniflorus*
*Matteuccia struthiopteris*
*Mimulus ringens*
*Muhlenbergia mexicana* var. *mexicana*
*Onoclea sensibilis*

Table IX. (cont'd.)

Emergent Zone and Shoreline Plants (cont'd.)

| | |
|---|---|
| Panicum capillare | Scirpus validus |
| Parthenocissus quinquefolius | Scutellaria epilobiifolia |
| Penthorum sedoides | Solanum dulcamara |
| Phalaris arundinacea | Solidago graminifolia |
| Polygonum ciliinode | Solidago rugosa |
| Polygonum hydropiper | Sparganium americanum |
| Polygonum sagittatum | Sparganium chlorocarpun |
| Ranunculus pensylvanicum | Spiranthes cernua |
| Scirpus atrocinctus | Thelypteris palustris |
| Scirpus atrovirens | Typha latifolia |
| Scirpus cyperinus | Verbena hastata |

# THE FLORA

## Numerical Summary, Hybrids and Abnormalities

The floral list includes all vascular plants known to occur on Mont Rigaud. Taxa collected by the author in 1976 and 1977 were added to those from the herbarium searches at MTMG, MT, and the Ecole Normale Saint-Viateur, Rigaud collection at DAO. Altogether, 93 families, 333 genera and 752 taxa are listed, but five families, 37 genera and 156 species are put in a separate category as potential species for the mountain because of incomplete location information. These potential species were collected in Rigaud but not necessarily on the mountain. Fifty three species have been excluded from the list of potential species for the reasons given in the Materials and Methods section. The total number of taxa on the mountain, after deducting the doubtful ones, is 88 families, 296 genera, 581 species with 12 varieties. These have been broken down into their major taxonomic categories and are presented in Table X.

The number of introduced species (103) comprise 19% of the angiosperm flora of Mont Rigaud. Rousseau (1969) reports 24% of the angiosperms of Quebec are introduced. The family represented by the largest number of taxa is the Cyperaceae with 65 taxa (11% of the total flora) of which 47 are Carex. This is followed by the Compositae with 60 taxa (10%), the Gramineae with 43 (7%) and the Rosaceae with 36 (6%).

Specialists have identified four hybrids for Mont Rigaud: Lycopodium complanatum x tristachyum, D. cristata x D. intermedia (= D. bootii), Carex flava x C. cryptolepis, (or C. viridula) and Salix alba x S. fragilis.

Table X. Synopsis of the taxonomic groupings comprising the flora of Mont Rigaud.

Actual Species Known to be on the Mountain

| | Families | Genera | Species | Varieties | Total Taxa |
|---|---|---|---|---|---|
| Pteridophyta | 5 | 18 | 47 | 0 | 47 |
| Spermatophyta | | | | | |
| Gymnospermae | 3 | 7 | 8 | 0 | 8 |
| Angiospermae | | | | | |
| Monocotyledoneae | 13 | 64 | 160 | 5 | 165 |
| Dicotyledoneae | 67 | 207 | 366 | 7 | 373 |
| TOTAL | 88 | 296 | 581 | 12 | 593 |

Potential Species that May be on the Mountain*

| | Additional Families | Additional Genera | Species | Varieties | Total Taxa |
|---|---|---|---|---|---|
| Pteridophyta | 0 | 1 | 9 | 0 | 9 |
| Spermatophyta | | | | | |
| Gymnospermae | 0 | 0 | 1 | 0 | 1 |
| Angiospermae | | | | | |
| Monocotyledoneae | 0 | 3 | 31 | 1 | 33 |
| Dicotyledoneae | 5 | 33 | 115 | 2 | 117 |
| TOTAL | 5 | 37 | 156 | 3 | 159 |

*Explanatory note: The location information on 158 species did not designate the mountain but merely stated Rigaud. These are considered potential species of the mountain.

Total of Actual and Potential Species

| | Total Families | Total Genera | Total Species | Total Varieties | Total Taxa |
|---|---|---|---|---|---|
| Pteridophyta | 5 | 19 | 56 | 0 | 56 |
| Spermatophyta | | | | | |
| Gymnospermae | 3 | 7 | 9 | 0 | 9 |
| Angiospermae | | | | | |
| Monocotyledoneae | 13 | 67 | 191 | 6 | 197 |
| Dicotyledoneae | 72 | 240 | 481 | 9 | 490 |
| TOTAL | 93 | 333 | 737 | 15 | 752 |

In 1936, Marie-Victorin and Rolland-Germain investigated a group of unusual Fraxinus americana on the summit of Mont Rigaud (Marie-Victorin and Rolland-Germain, 49317, 46793, 49665, MT). These trees produced leaves varying from simple to compound with 3-5 leaflets. There was visible insect damage on only one specimen examined from the Montreal Botanical Garden (No. 46793), but this probably did not account for the abnormalities in the other specimens. Early frost injury may have produced the temporary abnormalities, since the leaf forms had returned to normal when the station was revisited in 1940. Other abnormal specimens were collected by the author and identified as Carex flava (Newstrom 808a, 1189, MTMG) and Aster junciformis (Newstrom 1202, MTMG).

Rare Plants and Endangered Plants

The definition of a rare plant is based on a geographical area as a reference point, usually delimited by political rather than natural boundaries (Argus, 1976). A plant is rare because it either occupies a small region within the referred area or it is uncommon throughout the entire area. In general, the scarcity of a plant is due to the rarity of its habitat, the limit of its range, or a combination of these factors. The following discussion on the rarity and distribution of the plants from the Rigaud area* is based on the personal experience of E. Rouleau, D. E. Swales and the work of Marie-Victorin (1964), Raymond (1950) and Rousseau's (1974) distribution maps for the plants of Quebec.

At times, however, distribution maps may be misleading. Rare plants

*Species not known to be on the mountain but which were found in the general Rigaud area that are "Potential Species" for the Flora of Mont Rigaud are followed by an asterisk.

tend to be overcollected, for example, Panax quinquefolius, an American deciduous forest element from central U.S. and the Appalachians, is shown in many collection sites in Quebec, but is known to be very rare in the province. Secondly, a threatened species, once abundant, may be shown on a distribution map in many stations from which it has now disappeared. Cypripedium calceolus, a southern species with circumboreal distribution, is one such endangered species (Smith, 1976).

The St. Lawrence and associated river systems have been of great importance as migration routes for plants since the retreat of the last glaciers. Raymond (1950) has theorized that the plants of the Ottawa Valley appear to come from two different sources; first, from the west through the ancient Algonquin Lake connected with the Great Lakes, and, second, from the east and south by the old Champlain Sea associated with the Appalachian mountains and the United States. In the latter case, species representing these southern floras are confined to the valleys of the Southwest of Quebec and are rare for the province.

Midwest American elements, found only in the warmest parts of the province, are Physalis heterophylla, Carya ovata*, Celtis occidentalis, Ulmus thomasii* and Hackelia virginiana. Gratiola aurea*, very rare for Quebec, is more common on the coastal plains of America. The rare Carex typhina* has not changed in its distribution, confined to the Ottawa and Richelieu Valleys, for the last 25 years. The rarer Carex platyphylla, also confined to the Ottawa and Richelieu Valleys, has new more easterly stations reported by Rousseau (1974) since Raymond (1950) stated its limit

to be Montreal. Both these Carices are elements of the American deciduous forest. Stations of Hieracium paniculatum*, confined to southwestern Quebec and the Monteregians, are scarce in the rest of Quebec.

Appalachian elements, rare for Quebec, are Ranunculus flabellaris*, Ophioglossum vulgatum var. pseudopodum*, Orobanche uniflora and Cypripedium reginae. The latter species is featured in the section on the Cedar-Orchid Swamp Habitat. Other plants, not included in C. Rousseau (1974) but regarded as characteristic of the Ottawa Valley by Marie-Victorin (1964) and Raymond (1950), are Salix amygdaloides, Zanthoxylum americanum*, Sysyrinchium angustifolium and Galium lanceolatum*.

Some plants rare for the southwest of Quebec, Dryopteris fragrans, Scirpus hudsonianus and Petasites palmatus* are more abundant in the cold regions of the north and east. Dryopteris fragrans and Petasites palmatus are important and unusual species for the Mont Rigaud area according to Raymond (1950). D. fragrans is discussed in the Northwest Cliff Habitat section and S. hudsonianus in the Southwest Marsh and Swamp Habitat section.

On a local level, several plants are rare for the mountain itself, but are more common in the surrounding geographic area. Woodsia ilvensis, Monotropa hypopithys, Ranunculus pensylvanicus and Senecio paupercula are examples of species occurring in only one site on the mountain. Also, some introduced species are sporadic in their distribution in Quebec, such as Monarda didyma and Lychnis chalcedonica and occur in only one site on the mountain.

Finally, the Botrychium ternatum* is at its most northeastern record at Rigaud, according to W. Wagner of Michigan State University.

# SUMMARY AND CONCLUSIONS

During the last 111 years, over 45 amateur and professional botanists have collected more than 2000 specimens of vascular plants on Mont Rigaud. These specimens were deposited at the Herbier Marie-Victorin, the McGill University Herbarium and the Ecole Normale Saint-Viateur Herbarium at Rigaud. French Canadian pioneer natural scientists collected on Mont Rigaud at the turn of the century. Most of the collecting occurred, however, during the 1930's when the "Cercle Pasteur" (of the Cercle des Jeunes Naturalistes) was formed by the Clercs de Saint-Vaiteur in Rigaud.

The addition of 1363 collections of plants by the author to those found in the herbarium searches provided a checklist of vascular plants totalling 93 families, 333 genera, 739 species and 15 varieties. This list was separated into two categories: the actual species and the potential species. The potential species are those with labels specifying only "Rigaud" as the collection site and not Mont Rigaud itself. Once these are subtracted from the checklist, the totals are 88 families, 296 genera, 581 species, with 12 varieties known to be found on the mountain.

Several rare plants and many plants at or near the limits of their ranges were found on Mont Rigaud. The presence of Midwest American, Appalachian and American Coastal Plains elements in the flora of Mont Rigaud lends support to the theories of migration along the ancient Algonquin Lake and the Champlain Sea proposed by Raymond (1950). In addition, the rocky, mountainous terrain on Mont Rigaud provides habitats for several species from the north and east of Quebec.

The top 24 m of Mont Rigaud was left uncovered during the Champlain Sea

submergence. This allowed the mountain to serve as a link in the chain of islands providing ecological niches for the early invasion of plants at that time. There may be several species on Mont Rigaud that represent these early invaders.

The rich flora of Mont Rigaud is integrated into a number of diverse vegetation types. The major forests are the Laurentian maple, Maple-Hickory, Maple-Red oak and the Red oak. Coniferous dominated forests of white pine and hemlock form pockets of lesser extent. Many successional communities are present containing Salix, Rubus, Crataegus, Populus and Betula as well as the ruderal herbaceous communities. Three distinctive rupicolous and three hydrophytic habitats were studied in detail because they added the greatest number of taxa to the list. These were the rocky outcrops; the cliffs, which support the rare Dryopteris fragrans var. remotiuscula; the boulder beds; the cedar-orchid swamp, which supports the rare Cypripedium reginae; the marsh and swamp; and the beaver ponds. Further field work in conjunction with the topography, geology, soil and preliminary vegetation maps would provide a vegetation map of Mont Rigaud and an interpretation of the flora in terms of biophysiographic units.

A few hectares of the 8 m deep boulder beds are devoid of interboulder soil and higher vegetation and support only crustose lichens on their margins. The ecological explanation of this is unclear and requires further study. The marsh supports several species (Aster junciformis, Carex viridula?) with unusual morphology due to either hybridization or fluctuating water level and should be investigated further.

Finally, the mammals, birds and plants of Mont Rigaud are endangered. The rapid destruction of the environment for real estate development must

be stopped before it is too late. The Maple-Hickory forest is one of the last remaining remnants of its type in Quebec (Lemieux, 1976b). Many rare plants, other than Dryopteris fragrans var. remotiuscula and Cypripedium reginae, may exist on the mountain as indicated by the potential species list. These should be located and protected. The deer and the rare birds, as mentioned in Appendix A, need protection of their habitats on Mont Rigaud if they are to survive. It is hoped that once the valuable and important natural flora and fauna of Mont Rigaud is publicized there will be no delay in government and citizen action to prevent its destruction.

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# APPENDIX A

## THE ECOLOGICAL RESERVE PROPOSAL

One of the few remaining natural areas in Southwest Quebec is Mont Rigaud. It is within commuting distance of Montreal, Canada's largest metropolis, and is prime residential land. The entire mountain is privately owned, zoned for intensive residential development, with much of it in the hands of promoters. An attempt to save 240 hectares (one-square mile) representing the diversity of vegetation on the mountain (Fig. 3), was begun in 1975. Mont Rigaud was, at that time, one of the 85 sites recommended as a possible provincial ecological reserve. It represents an important biome and has high biological diversity containing:

> "rich Acer saccharum, Carya cordiformis, Carya ovata and Tilia americana stands, plus a rich fen that contains Cypripedium reginae." Lemieux, 1976b.

Two factors led to the defeat of this ecological proposal. First, the government action in Quebec respecting Bill 57 on Ecological Reserves has not been as successful as it could be. Lemieux (1976a) offered an explanation for this and compared the attitude of conservation in Quebec to that in British Columbia which has had a more successful ecological reserve program (Krajina, 1976). Secondly, Mont Rigaud was too expensive for the government to buy because it is privately owned and its accessibility to the public presents practical problems for an ecological reserve under the constraints of Bill 57.

After evaluating Mont Rigaud, along with the other sites recommended for Quebec ecological reserves, Filion and Blouin (1977) stated that, although the biophysical characteristics warrant preservation, the practical problems on Mont Rigaud force them to prefer other projects such as the

mountains of the Kinonge River and the hills of Saint Armand and Mont Sainte-Hilaire.

This decision has left the fate of Mont Rigaud in the hands of the Mont Rigaud citizens and the local municipal government. Fortunately, the municipality of Rigaud has set up a commission in January 1978 to study the problem. The commission will make recommendations to the government for an ecologically sound development of the mountain. The competition for use of the land by real estate developers will continue to present a threat unless laws are passed to protect the valuable and fragile natural areas that remain on the mountain.

Mont Rigaud is one of the few remaining mature hardwoods available as a habitat for mammals and birds. Jean Quesnel, game warden for over 20 years for the area, reported that there are several animals rare for Vaudreuil County such as the porcupine, the grey fox and the martin. The cougar and the lynx, which were rare, are now extinct due to the hydrophobia disease in 1963. Wolves no longer inhabit the mountain but may occasionally be seen passing through the woods. A partial list of mammals seen by J. Quesnel on the mountain are listed in Appendix G.

A list of rare birds found to nest on Mont Rigaud has been contributed by D. E. Swales in Appendix H. The migrating birds are not listed but they also use the mature hardwood forests on Mont Rigaud and there are few such stations left to them in southwest Quebec.

The deer yard on Mont Rigaud is the only one left between Montreal and Ottawa. The deer yard (Fig. 3), a 2 square mile area, is fifty percent dense overmature cedar supporting about a hundred deer during the winter. Massé (1973) studied the number of deer and their use of the vegetation in the deer yard. He recommended that the unplanned development of the Rigaud

area be stopped immediately if the deer population was to survive at all. He stated that Provincial Government protection should be instituted before 1980. In the year of his study, 1972, Hydro Quebec cleared a 100-foot wide line through the middle of the deer yard. Morrison (1976), and Doucet, Stewart and Morrison (1978) have studied the impact of the hydroline on the deer, concluding that higher levels of snow under the line impede the movement of the deer across the right of way and could isolate parts of the yard. The use of the right of way by snowmobilers also disturbs the deer.

In 1975, Hydro Quebec intended to build a second line five times as wide through the deer yard but a group of 150 irate citizens, named the Rigaud Green Spaces Association, fought the proposal. The proposed route of the line was shifted slightly, but still goes through the deer yard (Gerols, personal communication).

The protection of the rare plant communities such as the Maple-Hickory forest, rare plants such as Dryopteris fragrans var. remotiuscula and Cypripedium reginae, rare animals such as the deer and the several rare birds can best be affected by the preservation of the entire habitat (Smith, 1976). Natural areas can be protected in a variety of ways — as campgrounds or absolute ecological reserves. The type of protection depends on the "carrying capacity of the environment" being saved (Bouchard, 1974). Financial and other aid for setting aside areas can be obtained from a number of national and international organizations as listed by Smith (1976). The initial impetus and the energy required to carry through protection of the habitats, however, rests with the local residents on Mont Rigaud and concerned conservationists. Real estate development is a permanent destruction of the environment, any resulting gene pool loss is irreversible. Considering the rate of development on the mountain today,

there is very little time left to save what little remaining natural areas exist on Mont Rigaud.

In conclusion, over-development of the mountain obviously results in serious ecological problems. One must also consider that the aquafers used for drinking water by farms and communities to the south of the mountain may become contaminated if development proceeds uncontrolled.

# APPENDIX B

## PLANT COMMUNITIES REPORTED BY FILION AND BLOUIN (1977)

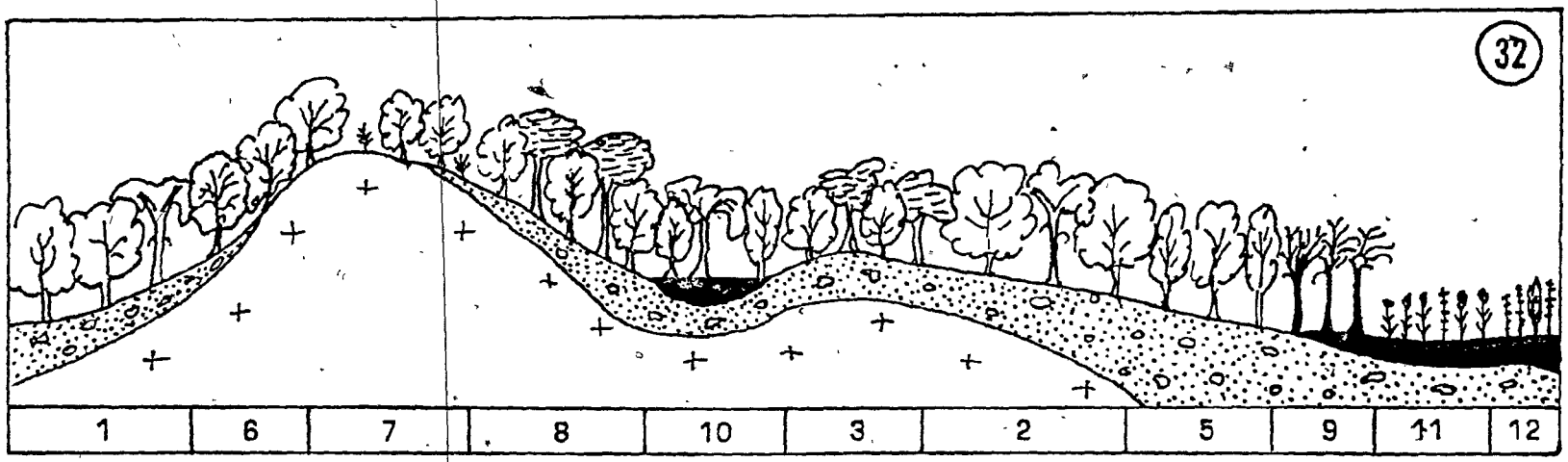
| Station No. | Groupement Vegetal et Composition Floristique | Depot | Drainage | Sol |
|---|---|---|---|---|
| 1 | ERABLIERE LAURENTIENNE (dégradée) | | | |
| | *Acer saccharum, Fagus grandifolia, Ulmus americana, Prunus serotina, Ostrya virginiana, Cornus alternifolia, Tilia americana, Prunus virginiana, Acer pensylvanicum, Fraxinus americana, Viburnum alnifolium, Prunus pensylvanica, Aralia racemosa, Viola sp., Caulophyllum thalictroides, Polygonatum pubescens, Trillium erectum, Laportea canadensis, Asarum canadense, Prenanthes sp., Dryopteris marginalis, Aster acuminatus, Parthenocissus quinquefolia, Dryopteris spinulosa, Streptopus roseus, Ribes sp., Medeola virginiana, Sambucus canadensis, Convolvulus sepium, Carex sp., Arisaema atrorubens, Epifagus virginiana* | Till mince | 2 | Régosol lithique |
| 2 | ERABLIERE A CARYER | | | |
| | *Acer saccharum, Ulmus americana, Fraxinus americana, Carya ovata, Ostrya virginiana, Populus tremuloides, Pinus strobus, Carya cordiformis, Betula alleghaniensis, Prunus virginiana, Juglans cinerea, Tilia americana, Prunus serotina, Betuba papyrifera, Acer rubrum, Amelanchier sp., Quercus rubra, Cornus stolonifera, Fagus qrandifolia, Tsuga canadensis, Oxalis europaea, Galium triflorum, Parthenocissus quinquefolia, Sanicula sp., Asarum canadense, Tiarella cordifolia, Uvularia grandiflora, Polygonatum* | Till | 3 | Brunisol sombrique |

| Station No. | Groupement Vegetal et Composition Floristique | Depot | Drainage | Sol |
|---|---|---|---|---|
| | *pubescens, Rubus sp., Epipactis Helleborine, Smilacina racemosa, Circaea lutetiana, Cornus alternifolia, Actaea sp., Adiantum pedatum, Carpinus caroliniana, Mitchella repens, Lycopodium complanatum, Botrychium sp., Osmorhiza Claytoni, Agrimonia gryposepala, Vitis riparia, Geum miarophyllum, Hystrix patula, Caulophyllum thalictroides, Polystichum acrostichoides, Carex arcta, Laparaea canadensis, Actaea pachypoda, Eupatorium rugosum, Hepatica acutiloba* | | | |
| 3 | ERABLIERE A PRUCHE | Till | 2 | Podzol minimal |
| 4 | PEUPLERAIE A PEUPLIER A GRANDES DENTS | | | |
| | *Populus grandidentata, Quercus rubra, Acer saccharum, Betula papyrifera, Betula alleghe-niensis, Acer rubrum, Fagus grandifolia, Acer pensylvani-cum, Tilla americana, Abies balsamea, Prunus virginiana, Cornus alternifolia, Fraxinus americana, Ostrya virginiana, Juglans cinerea, Corylus cornuta, Thuja occidentalis, Amelanchier sp., Pteridium aquilinum, Lycopodium complanatum, Lycopodium lucidulum, Actaea pachypoda, Maianthemum canadense, Medeola virginiana, Carex arctata, Lycopodium annotinum, Strepto-pus roseus, Galeopsis Tetrahit, Polygonatum pubescens, Prenanthes sp., Botrychium virginianum, Clintonia borea-lis, Eupatorium rugosum, Viola sp., Sanicula marilandida, Aralia nudicaulis, Mitchella repens, Solidago sp., Aster acuminatus, Galium triflorum, Osmunda cinnamomea* | Till | 2 | Podzol minimal |

| Station No. | Groupement Vegetal et Composition Floristique | Depot | Drainage | Sol |
|---|---|---|---|---|
| 5 | TREMBLAIE A ERABLE A SUCRE | | | |
| | Semblable à la station 3 avec *Betula papyrifera* et *Populus tremuloides* en plus grande quantité | Till mince | 3 | Podzol minimal |
| 6 | ERABLIERE A CHENE ROUGE | | | |
| | *Quercus rubra, Ostrya virginiana, Acer rubrum, Acer pensylvanicum, Prunus pensylvanica, Prunus serotina, Tsuga canadensis, Acer saccharum, Pteridium aquilinum Convolvulus sepium, Mitchella repens, Maianthemum canadense, Aralia nudicaulis, Dryopteris marginalis, Dryopteris spinulosa, Parthenocissus quinquefolia, Polygonatum pubescens, Polytrichum juniperinum, Corydalis sempervirens, Lycopodium obscurum* | Till mince | 1-2 | Régosol orthique |
| 7 | CHENAIE ROUGE OUVERTE | | | |
| | *Quercus rubra, Acer rubrum, Prunus pensylvanica, Amelanchier sp., Fraxinus americana, Populus tremuloides, Betula populifolia, Tsuga canadensis, Sorbus americanus, Acer pensylvanicum, Aronia melanocarpa, Danthonia spicata, Polytricium juniperum, Cladonia metis, Cladonia cristatella, Polytrichum piliferum, Rhus typhina, Diervilla Lonicera, Vaccinium myrtilloides, Maianthemum canadense, Dryopteris marginalis, Hypericum perforatum, Polypodium virginianum, Cladonia rangiferina, Scirpus cyperinus, Sphagnum sp., Rumex acetosella* | Roc et till très mince | 1 | Lithosol et régosol lithique |
| 8 | ERABLIERE ROUGE A PRUCHE | Till | - | --- |
| 9 | ERABLIERE ROUGE INONDEE | Organique | | |

| Station No. | Groupement Végétal et Composition Floristique | Depot | Drainage | Sol |
|---|---|---|---|---|
| 10 | ORMAIE - FRENAIE | | | |
| | *Ulmus americana, Fraxinus pensylvanica, Tilia americana, Betula allegheniensis, Acer spicatum, Thuja occidentalis, Vitis riparia, Arisaema atrorubens, Laportea canadensis, Onoclea sensibilis, Arnica alpina, Impatiens capensis, Athyrium Filix-femina, Dryopteris cristata, Rhus radicans, Prenanthes sp., Aster acuminatus, Lycopus americanus, Rubus sp., Maianthemum canadense, Aralia racemosa, Galium triflorum, Medeola virginiana, Mnium sp., Galium palustre, Osmunda regalis, Viola sp., Matteuccia Struthiopteris, Carex sp.* | Aluvions et colluvions | 4-5 | Gleysol |
| 11 | PRAIRIE A *CALAMAGROSTIS CANADENSIS* | | | |
| | *Thuja occidentalis, Larix laricina, Acer rubrum, Alnus rugosa, Populus tremuloides, Ulmus americana, Salix sp., Pinus strobus, Cornus stolonifera, Spiraea latifolia, Calamagrostis canadensis, Solidago sp., Eupatorium perfoliatum, Eupatorium maculatum, Osmunda regalis, Chelone glabra, Solidago canadensis, Dryopteris Thelypteris, Iris versicolor, Aster puniceus, Hypericum sp., Scutellaria epilobiifolia, Lycopus americanus, Sphagnum sp.* | Organique | 6 | Fibrisol |
| 12 | MELEZIN A THUYA | | | |
| | *Larix laricina, Thuja occidentalis* ainsi la station No. 11 | Organique | 6 | Fibrisol |

Figure 32. Sère physiographic characteristique de la Reserve du Mont Rigaud.



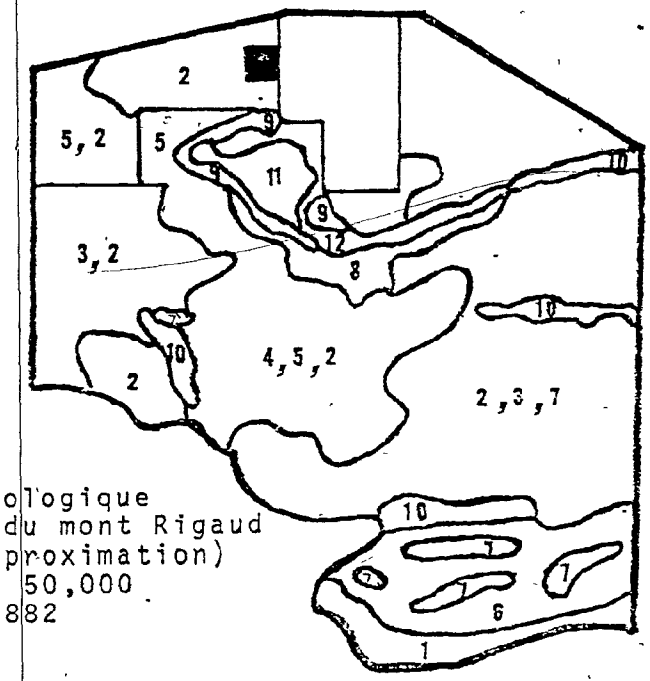

GROUPEMENT VEGETAL

1 ERABLIERE LAURENTIENNE
2 ERABLIERE A CARYER
3 ERABLIERE A PRUCHE
4 PEUPLERAIE A PEUPLIERS A GRANDES DENTS
5 TREMBLAIE A ERABLE SUCRE
6 ERABLIERE A CHENE ROUGE
7 CHENAIE ROUGE OUVERTE
8 ERABLIERE ROUGE A PRUCHE
9 ERABLIERE ROUGE INONDEE
10 ORMAIE FRENAIE
11 PRAIRIE A *Calamagrostis*
12 MELEZIN A THUYA

Figure 33. Carte écologique. Reserve du Mont Rigaud (1ère approximation) 1:15000; Q75882.

Groupement Vegetal

1. Erablière laurentienne
2. Erablière à caryer
3. Erablière à pruche
4. Peupleraie à peupliers à grandes dents
5. Tremblaie à érable à sucre
6. Erablière à chêne rouge
7. Chênaie rouge ouverte
8. Erablière rouge à pruche
9. Erablière rouge inondée
10. Ormaie - frênaie
11. Prairie à *Calamagrostis*
12. Mélèzin à thuya




Carte écologique
Réserve du mont Rigaud
(1ère approximation)
1 : 50,000
Q75882

33

# APPENDIX C

## BRYOPHYTES CITED IN HABITAT DESCRIPTIONS

### Mosses Identified by R. R. Ireland

Abietinella abietina (Hedw.) Fleisch. -- beaver pond on saturated shore -- Newstrom 1292, 1977 (MTMG).

Amphidium lapponicum (Hedw.) Schimp.? -- face of cliff, shaded and moist -- Newstrom 1386, 1978 (CANM).

Andreaea rupestris Hedw. -- face of cliff, dry -- Newstrom 1403, 1978 (CANM).

Bartramia pomiformis Hedw. -- face of cliff, moist and shady -- Newstrom 1396, 1978 (CANM).

Bryum capillare Hedw. -- face of cliff, sunny and dry -- Newstrom 1406, 1978 (CANM).

Calliergonella cuspidata (Hedw.) Loeske. -- cedar-orchid swamp -- Newstrom 1314a, 1977 (MTMG).

Conocephalum conicum (L.) Lindb. -- orchid-cedar swamp -- Newstrom 1373, 1978 (CANM).

Cratoneuron filicinum (Hedw.) Spruce -- cedar-orchid swamp -- Swales 926, 1966 (MTMG, det. K. Holmen); Newstrom 1312, 1977 (MTMG).

Cynodontium sp. -- face of cliff, shaded -- Newstrom 1391, 1978 (CANM).

Dicranum ontariense Peterson -- in boulder bed, dry and sunny -- Newstrom 1418, 1978 (CANM).

Dicranum polysetum Sw. -- dry conifer-hardwood forest on boulder bed -- Newstrom 1413, 1978 (CANM).

Dicranum scoparium Hedw. -- face of cliff, dry and sunny -- Newstrom 1376, 1378, 1978 (CANM).

Dicranum spurium Hedw. -- in boulder bed, dry and sunny -- Newstrom 1416, 1978 (CANM).

Drepanocladus aduncus (Hedw.) Warnst. -- cedar-orchid swamp -- Swales 3558, 1970 (MTMG); Newstrom 1314b, 1977 (MTMG).

Fissidens adiantoides Hedw. -- cedar-orchid swamp -- Newstrom 1317, 1977 (MTMG).

Fontinalis novae-angliae Sull. -- in stream on rock, submerged -- Newstrom 1348, 1977 (MTMG).

Grimmia sp. -- face of cliff, dry -- Newstrom 1403, 1978 (CANM).

Hedwigia ciliata (Hedw.) P. Beauv. -- face of cliffs, dry and moist -- Newstrom 1384, 1390, 1407, 1978 (CANM).

Hylocomium splendens (Hedw.) B.S.G. -- face of cliff, moist and shaded -- Newstrom 1392, 1978 (CANM).

Isopterygium elegans (Brid.) Lindb. -- face of cliff, moist and shady -- Newstrom 1397, 1398, 1978 (CANM).

Leptodictyum riparium (Hedw.) Warnst. -- submerged in beaver pond -- Newstrom 1304, 1977 (MTMG).

Leucobryum glaucum (Hedw.) Angstr. ex Fr. -- dry conifer-hardwood forest on boulder bed -- Newstrom 1414, 1978 (CANM).

Plagiomnium ciliare (C. Müll.) Kop. -- cedar-orchid swamp -- Newstrom 1316, 1977 (MTMG).

Polytrichum juniperinum Hedw. -- face of cliff, boulder bed and rock outcrop -- Newstrom 707, 1977; 1402a, 1416, 1978 (CANM).

Polytrichum ohioense Ren. and Card. -- face of cliff in moist shade -- Newstrom 1383, 1395, 1978 (CANM).

Polytrichum piliferum Hedw. -- cliffs, rock outcrop, boulder bed, dry and sunny -- Newstrom 705, 1378, 1412, 1978 (CANM).

Pohlia nutans (Hedw.) Lindb. -- face of cliff, boulder bed -- Newstrom 1399, 1415, 1978 (CANM).

Rhizomnium appalachianum Kop. -- cedar-orchid swamp -- Newstrom 1315, 1977 (MTMG).

Scapania nemorosa (L.) Dumort. -- face of cliff, moist and shady -- Newstrom 1401, 1978 (CANM).

Sphagnum quinquefolium (Lindb.) Warnst. -- cedar-orchid swamp -- Swales 722, 1966 (MTMG).

Sphagnum russowii Warnst. -- in boulder bed, dry and sunny -- Newstrom 1418, 1978 (CANM).

Sphagnum squarrosum Crome -- cedar-orchid swamp -- Swales 724, 1966 (MTMG, det. K. Holmen); Newstrom 1313, 1977 (MTMG).

Sphagnum subsecundum var. inundatum (Russ.) C. Jens -- in marsh in two feet of water -- Newstrom 601, 1977 (MTMG, det. H. Crum).

Thuidium delicatulum (Hedw.) B.S.G. -- cedar-orchid swamp -- Swales 721, 1966 (MTMG, det. K. Holmen).

Tritomaria quinquedentata (Huds.) Buch. -- face of cliff, dry and sunny -- Newstrom 1393, 1978 (CANM).

Tortella tortuosa (Hedw.) Limpr. -- face of cliff in cool, moist shade -- Newstrom 1382, 1383, 1388, 1978 (CANM).

Lichens Identified by P. Y. Wong

Cladonia cristatella Tuck. -- in soil among rocks in boulder bed -- Newstrom 1411, 1978 (MTMG).

Cladonia deformis (L.) Hoffm. -- in soil among rocks in boulder bed -- Newstrom 1410, 1978 (MTMG).

Cladonia mitis Sandst. -- rock outcrop -- reported by Filion and Blouin, 1977.

Cladonia pleurota (Flörke) Schaer. -- rock outcrop, dry and sunny -- Newstrom 706, 1977 (MTMG, det. I. Brodo).

Cladonia pyxidata (L.) Hoffm. -- face of cliff, dry and sunny; in soil among rocks in boulder bed -- Newstrom 1375, 1410, 1978 (MTMG).

Cladonia rangiferina (L.) Web. -- rock outcrop -- reported by Filion and Blouin, 1977.

Cladonia uncialis (L.) Wigg. -- in soil among rocks in boulder bed -- Newstrom 1410, 1978 (MTMG).

Lecidea sp. -- in boulder bed, dry and sunny -- Newstrom 1408, 1978 (MTMG).

Lepraria finkii (B. de Lesd.) Harris -- face of cliff, moist and shaded -- Newstrom 1385, 1978 (MTMG).

Parmelia cumberlandia (Gyeln.) Hale -- face of cliff, dry and sunny -- Newstrom 1374, 1375, 1978 (MTMG).

Parmelia sorediosa Almb. -- face of cliff, dry and sunny -- Newstrom 1374, 1978 (MTMG).

Ramalina intermedia (Del. ex Nyl.) Nyl. -- face of cliff, dry and shaded -- Newstrom 1389, 1978 (MTMG).

Rhizocarpon geographicum (L.) DC. -- boulder bed, dry and sunny -- Newstrom 1408, 1978 (MTMG).

Stereocaulon saxatile Magn. -- boulder bed, dry and sunny -- Newstrom 1409, 1978 (MTMG).

Umbilicaria mammulata (Ach.) Tuck. -- face of cliff, moist and shaded -- Newstrom 1394, 1978 (MTMG).

Umbilicaria vellea (L.) Ach. -- face of cliff, dry and shady -- Newstrom 1387, 1404, 1405, 1978 (MTMG).

Hepatic Identified by R. R. Ireland

Ptilidium ciliare (L.) Hampe -- face of cliff, wet and dry, shade and sun; margin of stream -- Newstrom 1372, 1377, 1393, 1402b, 1978 (MTMG).

# APPENDIX D

## ANNOTATED CATALOGUE OF THE VASCULAR FLORA OF MONT RIGAUD*

### List of Taxa Known to be Found on the Mountain

### PTERIDOPHYTA

#### LYCOPODIACEAE

Lycopodium annotinum L. -- mixed dry woods -- common -- numerous coll., Roy 1924-35 (MT); Newstrom 1976-77 (MTMG).

Lycopodium clavatum L. -- mixed woods, successional woods, on rocky land -- Roy 3475, 1934 (MT); Parnis 941, 1974 (MTMG); Newstrom 430, 457, 1976 (MTMG).

Lycopodium complanatum L. X tristachyum Pursh -- mixed woods on rocky land -- Newstrom 458, 1976 (MTMG, det. Wag. and Beit.).

Lycopodium dendroideum Michx. -- mixed woods, successional woods, dry rocky land -- common -- Newstrom 429, 1976; 743, 962, 1977 (MTMG, det. Wag. and Beit.).

Lycopodium flabelliforme (Fern.) Blanch. = L. complanatum L. var. flabelliforme -- mixed woods, early successional woods, margin of streams -- common -- numerous coll., Roy, s.n., 1923 (MT); Charbonneau, s.n., 1937 (DAO); Parnis 1973-74 (MTMG); Newstrom 1976-77 (MTMG).

Lycopodium inundatum L. -- sandy shore of Lac des Pins -- rare -- Ducharme, s.n., 1920 (DAO); Parnis 1145, 1975 (MTMG); Newstrom 271, 1976 (MTMG).

Lycopodium lucidulum Michx. -- moist deciduous woods -- common -- Ducharme, s.n., 1899 (DAO); Roy 3289, 1934 (MT); Pokorny, s.n., 1963 (MTMG); Swales and Bell 3510, 1970 (MTMG); Parnis 832, 1974 (MTMG); Newstrom 291, 1976 (MTMG).

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*Abbreviations used: Anon. = no collector's name; s.n. = no collector's number; s.d. = no collection date; numerous coll. = numerous collections; Arg. = G. Argus; Bark. = M. Barkworth; Boiv. = B. Boivin; Bouch. = A. Bouchard; Cronq. = A. Cronquist; Gauth. = R. Gauthier; Jon. = A.R.C. Jones; Reznk. = A.A. Reznicek; Roul. = E. Rouleau; Stuck. = R.L. Stuckey; Wag. = W. Wagner; Beit. = J.M. Beitel; Wood. = Woodland; det. = determined by.

Herbaria abbreviations follow Holmgren and Keuken (1974).

Lycopodium obscurum L. -- mixed woods -- common -- Anon., s.n., 1899 (DAO); Ducharme, s.n., 1899 (DAO); Roy 3473, 1934; 3926, 1935 (MT); Pokorny, s.n., 1963 (MTMG); Holt 18, 1972 (MTMG); Parnis 834, 942, 1974 (MTMG); Newstrom 943, 1977 (MTMG).

Lycopodium tristachyum Pursh -- no habitat recorded -- Ducharme, s.n., 1899 (DAO); Roy 1171, 1934; 3946, 1935 (MT, det. Joan H. Wilce); Parnis 939, 1974 (MTMG).

EQUISETACEAE

Equisetum arvense L. -- moist and dry, sunny and shaded habitats -- common -- numerous coll., Roy, s.n., 1925 (MT); Parnis 1973 (MTMG); Newstrom 1976-77 (MTMG).

Equisetum fluviatile L. = E. limosum L. -- cedar swamp, wet depressions -- scattered -- numerous coll., Ducharme, s.n., 1908 (DAO); Roy 1934-35 (MT); Parnis 1973-74 (MTMG); Newstrom 1977 (MTMG).

Equisetum hyemale L. -- margin of stream and wet depressions in sand pit -- common -- Ducharme, s.n., 1900 (DAO); Roy 3381, 3500, 1934 (MT); Caron, s.n., 1938 (DAO); Swales 3925, 1972; 5047, 1973 (MTMG); Parnis 305, 443, 485, 1973 (MTMG); Newstrom 341, 1976 (MTMG).

Equisetum palustre L. -- sandy bank beside cedar-orchid swamp -- scattered -- Ducharme, s.n., 1900 (DAO); Parnis 331, 1973 (MTMG).

Equisetum pratense Ehrh. -- mixed woods and successional woods -- Newstrom 687, 1977 (MTMG); Newstrom and Pryer 928, 1977 (MTMG).

Equisetum scirpoides Michx. -- mixed woods, moist and shady -- common -- Ducharme, s.n., 1920 (DAO); Bahr, s.n., 1963 (MTMG); Parnis 812, 1974 (MTMG); Newstrom 686, 1977 (MTMG).

Equisetum sylvaticum L. -- sandy stream bank, cedar-orchid swamp -- common -- numerous coll., Ducharme, s.n., 1899 (DAO); Parnis 1973 (MTMG); Newstrom 1976 (MTMG).

Equisetum variegatum Schleich. -- sandy shore Lac des Pins, wet depression in sand pit, sandy stream bank -- Parnis 700, 1974 (MTMG); Newstrom 277, 340, 1976; 812, 1977 (MTMG).

OPHIOGLOSSACEAE

Botrychium dissectum Spreng. var. dissectum -- moist deciduous woods -- Robert 1286, 1934 (MT, det. Wag.); Roy 1448, 3416, 1934 (MT); Parnis 309, 471, 1973; 761, 1974 (MTMG).

Botrychium multifidum (Gmel.) Rupr. -- trail in woods, scrub -- numerous coll., Ducharme, s.n., 1920 (DAO); Robert 1286, 1934 (MT); Roy 1934-35 (MT); Marie-Victorin, Rolland-Germain, Dominique 46794, 1936 (MT); Cinq-Mars and Gagnon, s.n., 1945 (CAN); Parnis 949, 1974 (MTMG); Newstrom 574, 1976 (MTMG, det. Wag.).

Botrychium virginianum (L.) Sw. -- deciduous woods -- common -- Ducharme, s.n., 1921 (DAO); Roy 3243, 1934 (MT); Pokorny, s.n., 1963 (MTMG); Swales and Bell 3511, 1970 (MTMG), Woodland and Pochereva 1779, 1972 (MTMG); Parnis 481, 1973; 739, 795, 1974 (MTMG); Newstrom 259, 1976; 1318, 1977 (MTMG).

OSMUNDACEAE

Osmunda cinnamomea L. -- deciduous woods, wet depressions, stream bank -- common -- Ducharme, s.n., 1920 (DAO); Caron, s.n., 1936 (DAO); Pokorny, s.n., 1963 (MTMG); Parnis 356, 1973 (MTMG); Newstrom 260, 1976 (MTMG).

Osmunda claytoniana L. -- margin cedar swamp, wet roadside ditch, wet depression in mixed woods -- common -- Roy 3185, 1934 (MT); Parnis 474, 1973 (MTMG); Newstrom 186, 1976; 684, 1977 (MTMG).

Osmunda regalis L. -- margin cedar swamps, moist depressions in sand pit and in woods -- common -- Roy 2036, 1931; 3270, 1934 (MT); Parnis 444, 472, 1973 (MTMG); Newstrom 180, 205, 1976 (MTMG).

POLYPODIACEAE

Adiantum pedatum L. -- moist mixed woods in shade -- scattered -- Roy 3255, 1934 (MT); Baldwin 1962 (MTMG); Pokorny, s.n., 1963 (MTMG); Parnis 771, 1974 (MTMG); Newstrom 410, 1976 (MTMG).

Athyrium filix-femina (L.) Röth -- moist woods, wet depressions, meadows -- common -- numerous coll., Pokorny, s.n., 1963 (MTMG); Parnis 1973-74 (MTMG); Newstrom 1976-77 (MTMG); Newstrom and Pryer 923, 1977 (MTMG).

Athyrium thelypteroides (Michx.) Desv. -- moist woods -- common -- Ducharme, s.n., 1902 (DAO); Roy 3240, 3350, 3508, 1934 (MT); Pokorny, s.n., 1963 (MTMG); Op de Beeck, s.n., 1969 (MTMG); Sutherland 1, 1973 (MTMG); Newstrom 411, 456, 1976 (MTMG).

Athyrium pycnocarpon (Spreng.) Tidest. -- margin of woods -- scattered -- Roy 3349, 3449, 3510, 1934 (MT); Mitchell 50, 1973 (MTMG).

Cystopteris bulbifera (L.) Bernh. -- moist woods near cedar-orchid swamp -- Ducharme, s.n., 1916 (DAO); Roy 3194, 3331, 1934 (MT); Parnis 480, 1973 (MTMG).

Cystopteris fragilis (L.) Bernh. -- mixed woods in wet depression on rock outcrop, stream bank in cedar-orchid swamp -- Ducharme, s.n., 1920 (DAO); Robert, s.n., 1935 (DAO); Parnis 358, 1973; 643, 1974 (MTMG).

Dennstaedtia punctilobula (Michx.) Moore -- edge of mixed woods, dry slope by beaver pond -- common -- Ducharme, s.n., 1903 (DAO); Adrien 1402, 1926 (MT); Roy 3413, 1934 (MT); Parnis 694, 957, 1974 (MTMG); Newstrom 960, 961b, 1267, 1977 (MTMG).

Dryopteris X Boottii (Tuckerm.) Und. = D. cristata X. D. intermedia -- mixed woods on bank beside beaver pond -- Parnis 959, 1974 (MTMG, det. Wag.).

Dryopteris cristata (L.) Gray = Thelypteris cristata (L.) Nieuwl. -- mixed moist woods, margin of cedar-orchid swamp -- Robert 1383, 1934 (MT); Roy 3509, 1934 (MT); Charbonneau, s.n., 1936 (DAO); Ducharme, s.n., 1939 (DAO); Pokorny, s.n., 1963 (MTMG); Parnis 473, 1973; 956, 1974 (MTMG); Newstrom 1056, 1977 (MTMG).

Dryopteris fragrans (L.) Schott var. remotiuscula Komarov. -- northwest cliffs in shade -- rare -- Louis Marie, s.n., s.d. (MT); Valiquette, s.n., 1935 (DAO); Quesnel, s.n., 1941 (MT); Newstrom 580, 1976 (MTMG).

Dryopteris intermedia Gray -- deciduous woods on rocky land -- common -- Newstrom 412, 417, 431, 1976; 659, 1977 (MTMG, det. Wag.).

Dryopteris marginalis (L.) Gray -- cliffs, rocky outcrops, coniferous and deciduous woods -- common -- numerous coll., Roy 1934-35 (MT); Ducharme, s.n., 1940 (DAO); Pokorny, s.n., 1963 (MTMG); Op de Beeck and Gohier, s.n., 1969 (MTMG); Newstrom 1976-77 (MTMG); Newstrom and Pryer 830, 1977 (MTMG).

Dryopteris spinulosa (O.F. Muell.) Watt. -- mixed woods -- Roy s.n., 1924; 3191, 3280, 1934 (MT): Pokorny, s.n., 1963 (MTMG); Op de Beeck and Gohier, s.n., 1969 (MTMG).

Gymnocarpium dryopteris (L.) Newm. = Dryopteris disjuncta (Ledeb.) Morton -- cool, moist mixed woods, and below cliffs -- scattered -- Pokorny, s.n., 1963 (MTMG); Newstrom 581, 1976; 668, 1977 (MTMG).

Matteuccia struthiopteris (L.) Todaro. -- moist woods -- common -- Roy 3339, 1934 (MT); Newstrom 1421, 1978 (MTMG).

Onoclea sensibilis L. -- wet depressions in woods, stream banks, meadows -- common -- Pokorny, s.n., 1963 (MTMG); Othman 10, 1963 (MTMG); Parnis 349, 1973 (MTMG); Newstrom 548, 1976 (MTMG).

Phegopteris connectilis Watt. = Dryopteris phegopteris (L.) C.Chr. -- moist coniferous dominated woods -- Parnis 756, 1974 (MTMG); Newstrom 721, 1977 (MTMG).

Polypodium virginianum L. -- rocky outcrops, talus slope, dry conifer-hardwoods -- Roy, s.n., 1923; 3292, 1934 (MT); Bahr, s.n., 1962 (MTMG); Op de Beeck and Gohier, s.n., 1969 (MTMG); Parnis 610, 1108, 1974 (MTMG); Newstrom 489, 1976 (MTMG).

Polystichum acrostichoides (Michx.) Schott -- deciduous woods -- Roy 3281, 3192, 1934 (MT); Pokorny, s.n., 1963 (MTMG); Parnis 754, 1974 (MTMG); Newstrom 646, 1977 (MTMG).

Pteridium aquilinum (L.) Kuhn. -- rocky outcrops and dry woods, cut-over areas -- common -- Roy 3283, 1934 (MT); Newstrom 487, 1092, 1977 (MTMG).

Thelypteris noveboracensis (L.) Nieuwland = Dryopteris noveboracensis (L.) A. Gray -- mixed woods, cedar woods, saturated soil by beaver pond -- common -- Roy 3498, 1934 (MT); Parnis 961, 1974 (MTMG); Newstrom, 452, 1976; 694, 1345, 1977 (MTMG).

Thelypteris palustris Schott = Dryopteris thelypteris (L.) A Gray -- marsh, temporary ponds -- numerous coll., Ducharme, s.n., 1902 (DAO); Adrien 1401, 1926 (MT); Roy 1934 (MT); Parnis 509, 1973 (MTMG); Newstrom 1976-77 (MTMG).

Woodsia ilvensis (L.) R. Br. -- northwest cliffs -- rare -- Auger 89, 1939 (MT); Newstrom 657, 1977 (MTMG).

## SPERMATOPHYTA

## GYMNOSPERMAE

### TAXACEAE

Taxus canadensis Marsh. -- mixed woods -- common -- Roy, s.n., 1924; 3257, 1934 (MT); Parnis 944, 1974 (MTMG); Newstrom 237, 577b, 1977 (MTMG).

### PINACEAE

Abies balsamea (L.) Mill. -- swamps, moist woods -- common -- Roy, s.n., 1924 (MT); Parnis 357, 1973 (MTMG); Newstrom 1024, 1977 (MTMG).

Larix laricina (DuRoi) Koch -- swamps, moist woods -- Roy 3299, 1934 (MT); Caron, s.n., 1937 (DAO); Parnis 339, 1973 (MTMG); Newstrom 464, 1976 (MTMG).

Picea mariana (Mill.) BSP. -- margin of boulder bed and on steep rocky land -- Roy, s.n., 1924 (MT); Caron, s.n., 1937 (DAO); Newstrom 1420, 1978 (MTMG).

Pinus resinosa Ait. -- dry conifer hardwoods, rocky land, top of cliffs -- scattered -- Adrien 1400, 1926 (MT); Roy 3235, 1934; 3776, 1935 (MT); Op de Beeck and Gohier, s.n., 1969 (MTMG); Parnis 647, 1974 (MTMG); Newstrom 656, 1977 (MTMG).

Pinus Strobus L. -- margin of rocky outcrops, dry sandy woods -- common -- Roy 1924 (MT); Parnis 612, 1974 (MTMG); Newstrom 584, 1977 (MTMG).

Tsuga canadensis (L.) Carr. -- margin rocky outcrops, on talus slopes, in steep ravine -- scattered -- Roy 3182, 1934 (MT); Caron, s.n., 1936 (DAO); Bahr, s.n., 1962 (MTMG); Op de Beeck and Gohier, s.n., 1969 (MTMG); Parnis 611, 1974 (MTMG).

CUPRESSACEAE

Thuja occidentalis L. -- swamps, old pastures -- common -- Charbonneau, s.n., s.d. (DAO); Parnis 340, 1973 (MTMG); Newstrom 976, 1977 (MTMG).

## ANGIOSPERMAE

## MONOCOTYLEDONEAE

TYPHACEAE

Typha angustifolia L. -- marsh, wet roadside ditches, ponds -- Roy 3297, 1934; 3717, 1935 (MT); Charbonneau, s.n., 1937 (DAO); Parnis 343, 1973; 730, 1974 (MTMG).

Typha latifolia L. -- marsh, wet roadside ditch, pond -- common -- Roy 3869, 1935 (MT); Parnis 456, 1973 (MTMG); Newstrom 441, 1976 (MTMG).

SPARGANIACEAE

Sparganium americanum Nutt. -- margin of beaver pond -- Newstrom 1038, 1134, 1977 (MTMG).

Sparganium chlorocarpum Rydb. -- marbin of beaver pond -- Gardner 83, 1971 (MTMG); Swales 5311, 1974 (MTMG); Parnis 905, 1974 (MTMG); Newstrom 1101, 1130, 1223, 1232, 1977 (MTMG).

NAJADACEAE

Najas flexilis (Willd.) Rostk. and Schmidt -- submerged aquatic in ponds -- common in its habitat -- Anon., s.n., 1923 (DAO); Valiquette, s.n., 1935 (DAO); Roy 4012, 1935 (MT); Parnis 911, 1974 (MTMG); Newstrom 1105, 1145, 1306, 1977 (MTMG).

Potamogeton natans L. -- floating leaf aquatic in beaver pond -- rare -- Swales 3566, 1970 (MTMG); Newstrom and Pryer 1300, 1977 (MTMG, det. Gauth.).

Potamogeton pusillus L. -- submerged aquatic in beaver ponds and marsh -- Swales 3580, 1970 (MTMG); Newstrom 1007a, 1128, 1284a, 1977 (MTMG); Newstrom and Pryer 1142, 1977 (MTMG, det. Stuck.).

Potamogeton zosteriformis Fern. -- submerged aquatic in beaver ponds -- Newstrom 1238, 1977 (MTMG); Newstrom and Pryer 1293, 1977 (MTMG, det. Stuck.).

ALISMATACEAE

Alisma plantago-aquatica L. = Alisma triviale Pursh -- margin of ponds, sandy stream bank -- Ducharme, s.n., 1899 (DAO); Roy 3307, 1934 (MT); Parnis 798, 1974 (MTMG); Newstrom 272, 304, 1976 (MTMG).

Sagittaria cuneata Sheldon -- submerged aquatic in beaver pond -- Newstrom and Pryer 1303, 1977 (MTMG, det. Stuck.).

Sagittaria latifolia Willd. -- beaver pond -- rare -- Swales 3581, 1970 (MTMG).

HYDROCHARITACEAE

Vallisneria americana Michx. -- submerged aquatic in Lac des Pins -- Roy 3516, 1934; 4016, 1935 (MT); Valiquette, s.n., 1935 (DAO); Newstrom 270, 1976 (MTMG).

GRAMINEAE

Agropyron repens (L.) Beauv. -- dry roadside ditch, open fields -- Newstrom 353, 376, 1976 (MTMG, det. Bark.); Newstrom and Pryer 884, 1336a, 1977 (MTMG, det. Bark.).

Agrostis gigantea Roth -- dry roadside ditch and sand pit -- Parnis 418, 491, 568, 1973; 918, 1974 (MTMG, det. Bark.); Newstrom 481, 1976 (MTMG, det. Bark.).

Agrostis gigantea Roth var. dispar (Michx.) Philipson -- dry roadside ditch and sand pit -- Parnis 546, 1973 (MTMG); Newstrom 476, 1976; 947, 1977 (MTMG, det. Bark.).

Agrostis perennans (Walt.) Tuckerm. -- margin of Lac des Pins, shaded stream bank -- Swales 5314, 1974 (MTMG); Parnis 919, 1974 (MTMG); Newstrom 1032, 1040, 1977 (MTMG, det. Bark.).

Agrostis scabra Willd. = A. hyemalis (Walt.) BSP. var. tenuis (Tuckerm.) Gl. -- boulder bed, rocky outcrops, dry roadside ditches -- Roy 3770, 1935 (MT); Newstrom 378, 1976; 761, 1248a, 1977 (MTMG, det. Bark.); Newstrom and Pryer 832, 1977 (MTMG, det. Bark.).

Agrostis stolonifera L. = A. alba L. -- dry roadside ditch and pastures -- Newstrom 719, 789, 806, 1977 (MTMG, det. Bark.).

Brachyelytrum erectum (Schreb.) Beauv. -- mixed woods -- common -- numerous coll., Roy 1934-35 (MT); Newstrom 1976-77 (MTMG).

Bromus ciliatus L. -- margin of cedar swamp, sandy shore of Lac des Pins, scrub -- Roy 3411, 1934; 3977, 1935 (MT); Parnis 489, 1973 (MTMG); Newstrom 583, 1976; 1275, 1311, 1977 (MTMG).

Bromus inermis Leyss. -- dry roadside ditch -- common -- Newstrom 275, 1976 (MTMG).

Calamagrostis canadensis (Michx.) Beauv. -- marsh and beaver pond margins -- common in its habitat -- Roy 3920, 1935 (MT); Newstrom 241, 1976; 1010, 1141, 1214, 1977 (MTMG).

Cinna latifolia (Trev.) Griseb. -- moist woods and sandy stream bank -- Newstrom 936, 1030, 1977 (MTMG, det. Bark.).

Dactylis glomerata L. -- dry roadside ditch, old meadows -- Parnis 648, 1974 (MTMG); Newstrom 215, 328, 1976 (MTMG).

Danthonia spicata (L.) Beauv. -- rocky outcrops, boulder bed, meadows and gravel pits -- common -- numerous coll., Parnis 776, 1974 (MTMG); Newstrom 1976-77 (MTMG); Newstrom and Pryer 1977 (MTMG).

Digitaria sanguinalis (L.) Scop. -- cultivated land -- Valiquette, s.n., 1935 (DAO); Newstrom 1347, 1977 (MTMG).

Echinochloa crusgalli (L.) Beauv. -- dry roadside ditch, fields and sandy stream bank -- Roy 3877, 1935 (MT); Parnis 827, 1974 (MTMG); Newstrom 1053, 1178, 1977 (MTMG, det. Bark.); Newstrom and Pryer 897, 1336a, 1977 (MTMG, det. Bark.).

Echinochloa microstachya (Wieg.) Rydb. -- margin of stream -- Newstrom 1178, 1977 (MTMG, det. M. Bark.).

Echinochloa muricata (Beauv.) Fern. = E. pungens (Poir.) Rydb. -- roadside ditch -- Newstrom and Pryer 897, 1977 (MTMG, det. Bark.).

Echinochloa wiegandii (Fassett) McNeill & Dore -- roadside, wet depression in woods -- Newstrom 529, 1976 (MTMG, det. Bark.); Newstrom and Pryer 1336b, 1977 (MTMG, det. Bark.).

Elymus hystrix L. f. hystrix = Hystrix patula Moench -- trail in woods, margin of stream -- scattered -- Roy 3273, 1934; 4090, 1935 (MT); Valiquette, s.n., 1935 (DAO); Parnis 698, 1974 (MTMG); Newstrom 445, 1976 (MTMG); Newstrom and Pryer 1331, 1977 (MTMG).

Elymus virginicus L. -- sandy stream bank -- Roy 3357, 1934; 3934, 3980, 1935 (MT); Newstrom 1042, 1977 (MTMG, det. Bark.).

Festuca arundinacea Schreb. -- gravel pit -- Swales 5044, 5044a, 1973 (MTMG, det. Dore).

Glyceria canadensis (Michx.) Trin. -- margin of ponds and marsh -- common in its habitat -- numerous coll., Parnis 860, 1974 (MTMG); Newstrom 1977 (MTMG).

Glyceria grandis S. Wats. -- margin of streams -- Roy 3793, 1935 (MT); Parnis 447, 1973 (MTMG); Newstrom 790, 1176, 1237, 1977 (MTMG).

Glyceria melicaria (Michx.) Hubbard -- margin of beaver ponds and streams, wet depressions in woods -- common -- numberous coll., Newstrom 1977 (MTMG, det. Bark.).

Glyceria striata (Lam.) Hitchc. var. striata (Scribn.) Fern. -- trails in woods, and moist roadside ditches -- numerous coll., Newstrom 1976-77 (MTMG, det. Bark.).

Glyceria striata var. stricta (Scribner) Fernald. -- meadow beside Lac des Pins -- Newstrom 274, 1976 (MTMG).

Hordeum jubatum L. -- sand pit and open fields -- Roy 3812, 1935 (MT); Swales 3939, 1972 (MTMG); Newstrom 368, 1976; 805, 1977 (MTMG).

Hordeum vulgare L. -- dry roadside ditch -- Newstrom 528, 1976 (MTMG).

Leersia oryzoides (L.) Sw. -- margin ponds and streams -- Roy 3444, 1934; 3973, 1935 (MT); Parnis 908, 1974 (MTMG); Newstrom 1179, 1302, 1977 (MTMG).

Muhlenbergia glomerata (Willd.) Trin. = M. racemosa (Michx.) BSP. -- cedar-orchid swamp - Roy 4065, 1935 (MT); Newstrom and Pryer 1328, 1977 (MTMG).

Muhlenbergia mexicana (L.) Trin. var. mexicana -- in mixed woods, margin of swamp and ponds -- common -- numerous coll., Ducharme, s.n., 1901 (DAO); Parnis 917, 1974 (MTMG); Newstrom 1976-77 (MTMG); Newstrom and Pryer 1977 (MTMG).

Oryzopsis asperifolia Michx. -- maple-oak woods - common -- Ducharme, s.n., 1900 (DAO); Newstrom 423, 1976; 655, 1977 (MTMG).

Oryzopsis racemosa (J.E. Smith) Ricker -- trail in woods -- scattered -- Roy 3768, 4100, 1935 (MT); Thompson 31, 1973 (MTMG); Newstrom 615, 1976 (MTMG); Newstrom and Pryer 901, 1977 (MTMG).

Panicum capillare L. -- dry roadside ditch, gravel pit, wet margin of beaver pond -- Ducharme, s.n., 1941 (DAO); Newstrom 988, 1097, 1164, 1977 (MTMG, det. Bark.); Newstrom and Pryer 916, 1977 (MTMG, det. Bark.).

Panicum lanuginosum Ell. -- no habitat recorded -- Roy 3759, 1935 (MT).

Panicum lanuginosum var. fasciculatum (Torrey) Fernald -- mixed woods -- Newstrom 9396, 1977 (MTMG, det. Bark.).

Panicum lanuginosum var. implicatum (Scribner) Fern. -- in shaded woods, open meadow and gravel pit -- Newstrom 232, 371, 1976; 1086, 1977 (MTMG, det. Bark.).

Panicum lanuginosum var. septentrionale (Fern.) Fern. -- trail in woods -- Newstrom 1357, 1975 (MTMG, det. Bark.).

Panicum linearifolium Scribn. -- no habitat recorded -- Valiquette, s.n., 1935 (DAO).

Panicum linearifolium Scribner var. linearifolium -- rocky outcrop -- Newstrom and Pryer 863, 867, 1977 (MTMG, det. Bark.).

Panicum linearifolium var. werneri (Scribner) Fern. -- gravel pit -- Newstrom 370, 1976 (MTMG , det. Bark.).

Phalaris arundinaceae L. -- moist roadside ditch, marsh, beaver ponds -- numerous coll., Roy 1934-35 (MT); Newstrom 1976-77 (MTMG).

Phleum pratense L. -- sand pit, sandy stream bank, meadows, roadsides -- common -- Ducharme, s.n., 1899 (DAO); Parnis 560, 1973 (MTMG); Newstrom 257, 1976 (MTMG).

Phragmites communis Trin. -- wet roadside ditches -- common -- Roy 3918, 1935 (MT); Parnis 836, 1974 (MTMG); Newstrom 258, 320, 1976 (MTMG).

Poa annua L. -- sand pit -- Parnis 572, 1973 (MTMG, det. Bark.).

Poa compressa L. -- rocky outcrops, boulder bed, dry roadside ditches, sand pit -- common -- numerous coll., Roy 3853, 1935 (MT); Swales 5053, 1973 (MTMG); Parnis 1973 (MTMG); Newstrom 1976-77 (MTMG, det. Bark.); Newstrom and Pryer 1977 (MTMG, det. Bark.).

Poa glaucantha Gaudin -- rocky outcrop in woods -- rare -- Newstrom 418, 1976 (MTMG, det. Bark.).

Poa pratensis L. -- roadside ditches, meadows, gravel pit -- Parnis 342, 1973; 649, 1974 (MTMG); Newstrom 203, 235, 338, 1976 (MTMG, det. Bark.).

Schizachne purpurascens (Torr.) Swallen -- dry woods -- Newstrom 779, 910, 1977 (MTMG, det. Bark.).

Setaria glauca (L.) Beauv. -- dry roadside ditch -- Anon., s.n., 1884 (DAO); Newstrom 1077, 1977 (MTMG, det. Bark.).

Setaria viridis (L.) Beauv. -- dry roadside ditch -- Roy 3252, 3453, 1934 (MT); Newstrom 1248b, 1977 (MTMG).

Spartina pectinata Link -- dry roadside ditch -- scattered -- numerous coll., Roy 1923-35 (MT); Newstrom 475, 1976 (MTMG).

CYPERACEAE

Carex aenea Fern. -- rocky outcrops, boulder bed, talus slopes -- Newstrom and Pryer 799, 826, 871, 1977 (MTMG, det. Reznk.).

Carex angustior Mack. = C. muricata L. var. angustata Carey -- sand pit -- Parnis 365, 1973 (MTMG).

Carex aquatilis Wahl. -- marsh -- Newstrom 1005, 1977 (MTMG, det. Reznk.).

Carex arctata Boott -- deciduous woods, boulder bed -- Newstrom 204, 1976; 640, 1977 (MTMG, det. Reznk.); Newstrom and Pryer 839, 909a, 1977 (MTMG, det. Reznk.).

Carex aurea Nutt. -- sand pit -- Parnis 363, 1973; 701, 731a, 1974 (MTMG); Newstrom 489b, 1976 (MTMG, det. Reznk.).

Carex bebbii (Bailey) Fern. -- dry roadside ditch, temporary pond, margin beaver pond -- Newstrom and Pryer 808a, 1977 (MTMG, det. Reznk.); Newstrom 937, 948, 1095a, 1977 (MTMG, det. Reznk.).

Carex bromoides Willd. -- fields, margin of stream -- Newstrom 665, 667, 1977 (MTMG, det. Reznk.).

Carex brunnescens (Pers.) Poir. -- moist depression in meadow -- Newstrom 236, 1976 (MTMG, det. Reznk.).

Carex communis Bailey -- trail in woods, dry roadside ditches, rocky outcrops -- numerous coll., Ducharme, s.n., 1906 (DAO); Parnis 637, 1974 (MTMG); Newstrom 1977 (MTMG, det. Reznk.).

Carex convoluta Mack. = C. rosea Schk. -- maple beech woods -- Newstrom and Pryer 908, 1977 (MTMG, det. Reznk.).

Carex crawfordii Fern. -- margin of ponds, temporary ponds -- Parnis 654, 696, 969, 1974 (MTMG, det. Reznk.); Newstrom 771, 808b, 1095b, 1977 (MTMG, det. Reznk.).

Carex crinita Lam. -- trail in woods, cedar swamp -- Ducharme, s.n., 1932 (DAO); Roy 3351, 1934 (MT); Parnis 451, 1973; 758, 1974 (MTMG, det. Reznk.).

Carex cristatella Britt. -- marsh -- Newstrom 881, 1977 (MTMG, det. Reznk.).

Carex cryptolepsis Mack. -- margin Lac des Pins -- Newstrom and Pryer 891, 1282a, 1977 (MTMG, det. Reznk.).

Carex deweyana Schw. -- dry roadside ditch -- Newstrom 704b, 1977 (MTMG, det. Reznk.).

Carex echinata Murr. = C. pairaei Schultz. -- trail in woods, margin Lac des Pins -- Newstrom 645, 1977 (MTMG, det. Reznk.); Newstrom and Pryer 890, 1977 (MTMG, det. Reznk.).

Carex flava L. -- marsh, stream bank, margin of pond, trail in woods -- Swales 5046, 1973 (MTMG); Parnis 439, 1973; 702c, 1974 (MTMG, det. Reznk.); Newstrom 278, 1973; 1012b, 1189?, 1977 (MTMG, det. Reznk.).

Carex flava L. X cryptolepis Mack.? or Carex viridula Michx.? -- marsh -- Newstrom 1009, 1977 (MTMG, det. Reznk.).

Carex gracillima Schw. -- maple woods -- Newstrom 1356, 1975 (MTMG, det. Reznk.); Newstrom and Pryer 909b, 1977 (MTMG, det. Reznk.).

Carex granularis Willd. -- sand pit, wet depressions, trail in woods -- Parnis 362, 1973; 702b, 731b, 1974 (MTMG, det. Reznk.); Newstrom 233, 1976 (MTMG, det. Reznk.).

Carex gynandra Schw. = C. crinita Lam. var. gynandra (Schw.) Schw. + Torr. -- successional woods, wet depressions, margins of streams and ponds -- Newstrom 199, 1976; 926, 1264, 1350, 1354, 1977 (MTMG, det. Reznk.); Newstrom and Pryer 1277b, 1977 (MTMG, det. Reznk.).

Carex hystericina Willd. -- margin of streams and ponds, cedar-orchid swamp, wet depressions -- numerous coll., Roy 3845, 3859, 1935 (MT); Swales 3925, 1972 (MTMG); Parnis 1974 (MTMG, det. Reznk.); Newstrom 1976-77 (MTMG, det. Reznk.); Newstrom and Pryer 1977 (MTMG, det. Reznk.).

Carex interior Bailey -- sand pit, margin Lac des Pins, cedar-orchid swamp -- Parnis 367, 1973 (MTMG, det. Reznk.); Newstrom 280, 1976; 636b, 1977 (MTMG, det. Reznk.).

Carex intumescens Rudge -- margin of pond, moist depression in meadow -- Ducharme, s.n., (DAO); Roy 3754, 1935 (MT); Newstrom 206, 1976; 1244, 1977 (MTMG, det. Reznk.).

Carex lacustris Willd. -- marsh, roadside ditch -- Parnis 370, 1973 (MTMG, det. Reznk.); Newstrom 1198, 1977 (MTMG, det. Reznk.).

Carex lasiocarpa Ehrh. -- marsh -- Newstrom 1012, 1190, 1977 (MTMG, det. Reznk.).

Carex leptalea Wahl. -- cedar-orchid swamp -- Newstrom 636a, 1977 (MTMG, det. Reznk.).

Carex lurida Wahl. -- margins of streams and ponds -- numerous coll., Roy 4044, 1935 (MT); Parnis 452, 1973 (MTMG, det. Reznk.); Newstrom 1976-77 (MTMG, det. Reznk.).

Carex ormostachya Wieg. = C. laxiflora Lam. var. ormostachya (Wieg.) Gleason -- moist depression in meadow -- Newstrom 208, 1976 (MTMG, det. Reznk.).

Carex pedunculata Mühl. -- maple beech woods -- Bahr, s.n., 1963 (MTMG); Newstrom 66a, 1976 (MTMG, det. Reznk.).

Carex pensylvanica Lam. -- rocky outcrops and talus slopes -- common -- Roy, s.n., 1927 (MT); Newstrom 653, 658, 1977 (MTMG, det. Reznk.).

Carex plantaginea Lam. -- maple-beech woods -- Bahr, s.n., 1963 (MTMG); Parnis 790, 1974 (MTMG, det. Reznk.); Newstrom 77, 1976 (MTMG, det. Reznk.).

Carex platyphylla Carey -- no habitat recorded -- Ducharme, s.n., 1901 (DAO).

Carex cf. projecta Mack.? -- margin of streams and ponds -- Newstrom 664, 746, 1977 (MTMG, det. Reznk.).

Carex radiata (Wahl.) Small? = C. rosea Schk. -- pasture -- Newstrom 756, 1977 (MTMG, det. Reznk.).

Carex retrorsa Schw. -- trail in woods - Newstrom 770, 1977 (MTMG, det. Reznk.).

Carex scabrata Schw. -- margin of pond -- Ducharme, s.n., 1901 (DAO); Roy 3903, 1935 (MT); Newstrom 696, 1977 (MTMG, det. Reznk.).

Carex scoparia Willd. -- meadows -- Roy, s.n., 1927; 4032, 1935 (MT); Newstrom 1243, 1977 (MTMG, det. Reznk.); Newstrom and Pryer 794, 1977 (MTMG, det. Reznk.).

Carex stipata Willd. -- margin of stream -- Newstrom 252, 1976; 663, 1977 (MTMG, det. Reznk.).

Carex straminea Willd. var. invisa W. Boott -- no habitat recorded -- Anon., s.n., 1901 (DAO).

Carex torta Boott -- humid places -- Ouellet, s.n., 1901 (DAO).

Carex tribuloides Wahl. -- meadow -- Roy 3347, 1934 (MT); Newstrom 1240, 1977 (MTMG, det. Reznk.).

Carex trisperma Dewey -- trail in woods, wet depressions -- Newstrom 733, 777, 1977 (MTMG, det. Reznk.).

Carex vaginata Tausch -- no habitat recorded -- Ducharme, s.n., 1899 (DAO).

Carex versicaria L. -- temporary ponds -- Roy 3346, 3425, 1934 (MT); Newstrom 774, 1977 (MTMG, det. Reznk.).

Carex vulpinoidea Michx. -- gravel pit, roadside, stream banks -- Parnis 566, 1973 (MTMG, det. Reznk.); Newstrom 311, 1976; 681a, 951, 1977 (MTMG, det. Reznk.); Newstrom and Pryer 809, 819, 1977 (MTMG, det. Reznk.).

Cladium mariscoides (Muhl) Torr. -- marsh -- Roy 3487, 1934; 4068, 1935 (MT); Lorenzo 7, 1939 (MTMG); Newstrom 994, 1015, 1191, 1977 (MTMG).

Cyperus diandrus Torr. -- margin of stream -- Roy 3406, 1934; 3964, 1935 (MT); Parnis 559, 1973 (MTMG); Newstrom 502, 1976 (MTMG).

Cyperus strigosus L. -- margin of stream -- numerous coll., Roy 1934-35 (MT); Newstrom 1976-77 (MTMG).

Dulichium arundinaceum (L.) Britt. -- marsh -- rare -- Roy 4088, 1935 (MT); Newstrom 1020, 1977 (MTMG).

Eleocharis erythropoda Steud. = E. calva Torr. -- temporary pond in gravel pit -- Ducharme, s.n., 1902 (DAO); Newstrom 784, 1977 (MTMG).

Eleocharis intermedia (Muhl.) Schultes -- margin of pond -- Parnis 915, 1974 (MTMG).

Eleocharis ovata (Roth ) R.+S. = E. obtusa (Willd.) Schultes -- margin of ponds -- numerous coll., Ducharme, s.n., 1899 (DAO); Roy 3264, 1934 (MT); Newstrom 1976-77 (MTMG).

Eleocharis palustris (L.) R.+S. = E. smallii Britton. -- margin Lac des Pins, temporary ponds -- Ducharme, s.n., 1903 (DAO); Newstrom and Pryer 820, 893, 1977 (MTMG).

Eriophorum virginicum L. -- marsh -- Roy 3323, 3491, 1934; 3950, 1935 (MT); Newstrom 993, 1188, 1977 (MTMG).

Eriophorum viridi-carinatum (Engelm.) Fern. -- wet depression in meadow -- Roy 3724, 1935 (MT); Newstrom 261, 1976 (MTMG).

Scirpus atrocinctus Fern. -- margin Lac des Pins - common -- Roy 4111, 1935 (MT); Newstrom 276, 1976; 734, 1977 (MTMG); Newstrom and Pryer 889, 1977 (MTMG).

Scirpus atrovirens Willd. -- marsh, stream banks -- Parnis 490, 1973; 828, 843, 1974 (MTMG); Newstrom 205, 217, 510, 1976 (MTMG).

Scirpus atrovirens var. georgianus (Harper) Fern. -- meadow and temporary pond in gravel pit -- Newstrom and Pryer 795, 807, 1977 (MTMG).

Scirpus cyperinus (L.) Kunth -- marsh, margin of ponds, wet roadside ditch -- Robert 1160, 1934 (MT); Roy 3282a, 1934; 3919, 4111, 1935 (MT); Valiquette, s.n., 1935 (DAO); Newstrom 509, 1976; 1049, 1089, 1200, 1977 (MTMG); Newstrom and Pryer 1289, 1977 (MTMG).

Scirpus hudsonianus (Michx.) Fern. -- marsh, sand pit beside stream -- rare -- Parnis 703, 733, 1974 (MTMG); Newstrom 1422, 1978 (MTMG).

Scirpus rubrotinctus Fern. -- dry roadside ditch -- Ducharme, s.n., 1899 (DAO); Newstrom 218, 1976 (MTMG).

Scirpus validus Vahl -- margin of stream and temporary pond -- Roy 3188, 3310, 1934 (MT); Newstrom 786, 1180, 1977 (MTMG).

ARACEAE

Arisaema triphyllum (L.) Schott var. triphyllum = A. atrorubens (Ait.) Blume -- cedar orchid swamp -- Roy 3353, 1934 (MT); Ducharme, s.n., 1940 (DAO); Parnis 662, 689, 1974 (MTMG); Newstrom 126, 1976 (MTMG).

LEMNACEAE

Lemna minor L. -- floating aquatic in pond -- Charbonneau, s.n., 1935 (DAO); Swales 3559, 1970 (MTMG); Newstrom 738, 1977 (MTMG).

JUNCACEAE

Juncus brevicaudatus (Engelm.) Fern. -- margin of ponds -- Newstrom 892, 1113, 1144, 1977 (MTMG).

Juncus bufonius L. -- meadows -- Ducharme, s.n., 1902 (DAO); Parnis 831, 1974 (MTMG); Newstrom 651, 1977 (MTMG); Newstrom and Pryer 804, 1977 (MTMG).

Juncus canadensis J. Gay -- margin of streams and ponds -- Parnis 453, 534, 565, 1973 (MTMG); Newstrom 1149, 1977 (MTMG); Newstrom and Pryer 1285, 1977 (MTMG).

Juncus dudleyi Wiegand -- margin of ponds -- Newstrom and Pryer 810, 1278, 1977 (MTMG).

Juncus effusus L. -- marsh and margin of ponds -- common -- numerous coll., Ducharme, s.n., 1935 (DAO); Roy, s.n., 1921; 3190, 1934 (MT); Parnis 454, 1973 (MTMG); Newstrom 1976-77 (MTMG); Newstrom and Pryer 1299, 1977 (MTMG).

Juncus effusus L. var. compactus Lej. + Court. -- meadow -- Newstrom 1233, 1977 (MTMG).

Juncus nodosus L. -- margin of ponds -- Roy 3419, 1934 (MT); Parnis 846, 1974 (MTMG); Newstrom 339, 1976 ; 785, 1977 (MTMG); Newstrom and Pryer 895, 1977 (MTMG).

Juncus tenuis Willd. -- meadows, roadsides, gravel pits -- common -- numerous coll., Anon., s.n., 1923 (DAO); Ducharme, s.n., 1923 (DAO); Swales 5043, 1973 (MTMG); Parnis 431, 1973 (MTMG); Newstrom 1976-77 (MTMG).

LILIACEAE

Allium tricoccum Ait. -- maple-beech woods -- Ducharme, s.n., 1935 (DAO); Charbonneau, s.n., 1936 (DAO); Bahr, s.n., 1963 (MTMG); Newstrom 75, 1976 (MTMG).

Asparagus officinalis L. -- roadside -- Ducharme, s.n., 1918 (DAO); Newstrom 332, 1976 (MTMG).

Clintonia borealis (Ait.) Raf. -- maple woods -- Ducharme, s.n., 1899 (DAO); Cloutier, s.n., 1934 (DAO); Parnis 777, 1974 (MTMG); Newstrom 133, 1976; 628, 1977 (MTMG).

Erythronium americanum Ker-gawl. -- maple woods -- Ducharme, s.n., 1935 (DAO); D'ostie, s.n., 1935 (DAO); Charbonneau, s.n., 1941 (DAO); Parnis 616, 1974 (MTMG); Newstrom 101, 1976 (MTMG).

Hemerocallis fulva L. -- roadside and scrub -- Ducharme, s.n., 1935 (DAO); Newstrom 442, 1976 (MTMG); Newstrom and Pryer 821, 1977 (MTMG).

Maianthemum canadense Desf. -- rocky outcrops, woods -- Roy, s.n., 1923 (MT); Valiquette, s.n., 1935 (DAO); Op de Beeck and Gohier, s.n., 1969 (MTMG); Parnis 773, 1974 (MTMG); Newstrom 135, 1976 (MTMG).

Medeola virginiana L. -- maple woods -- Roy 3256, 1934 (MT); Valiquette, s.n., 1935 (DAO); Pokorny, s.n., 1963 (MTMG); Parnis 778, 1974 (MTMG); Newstrom 153, 1976 (MTMG).

Polygonatum pubescens (Willd.) Pursh -- maple woods -- Ducharme, s.n., 1925 (DAO); Charbonneau, s.n., 1935 (DAO); Bahr, s.n., 1962 (MTMG); Parnis 781, 1974 (MTMG); Newstrom 109, 1976 (MTMG).

Smilacina racemosa (L.) Desf. -- maple woods -- Parnis 780, 1974 (MTMG); Newstrom 110, 1976 (MTMG).

Streptopus roseus Michx. -- maple woods -- Valiquette, s.n., 1935 (DAO); Parnis 781, 1974 (MTMG); Newstrom 175, 1976 (MTMG).

Trillium erectum L. -- maple woods -- Valiquette, s.n., 1935 (DAO); Ducharme, s.n., 1936 (DAO); Caron, s.n., 1938 (DAO); Bahr, s.n., 1963 (MTMG); Parnis 617, 1974 (MTMG); Newstrom 62, 1[illegible], 1976 (MTMG).

Trillium grandiflorum (Michx.) Salisb. -- maple woods -- Jolicoeur, s.n., 1935 (DAO); Parnis 621, 1974 (MTMG); Newstrom 115, 100, 1976 (MTMG).

Trillium undulatum Willd. -- maple woods -- Ducharme, s.n., 1899 (DAO); Charbonneau, s.n., 1937 (MTMG); Parnis 641, 1974 (MTMG); Newstrom 627, 1977 (MTMG).

Uvularia grandiflora J.E. Smith -- maple woods -- Ducharme, s.n., 1902; s.n., 1905 (DAO); Roy, s.n., 1924 (MT); Jolicoeur, s.n., 1935 (DAO); Bahr, s.n., 1972 (MTMG); Parnis 632, 794, 1974 (MTMG); Newstrom 71, 111, 114, 1976 (MTMG).

IRIDACEAE

Iris versicolor L. -- marsh, ponds and stream banks -- Ducharme, s.n., s.d. (DAO); Roy, s.n., 1920 (MT); Charbonneau, s.n., 1936 (DAO); Parnis 658, 906, 1974 (MTMG); Newstrom 255, 596, 1976, 1010, 1977 (MTMG).

Sisyrinchium angustifolium Mill. -- Robert 1307, 1934 (MT); Roy, s.n., 1927; 3424, 1934; 3762, 1935 (MT); Jolicoeur 1935 (DAO); Parnis 551, 1973 (MTMG); Newstrom 148, 1976 (MTMG).

ORCHIDACEAE

Corallorhiza maculata Raf. -- trail in maple woods -- rare -- Ducharme, s.n., 1900 (DAO); Newstrom 750, 1977 (MTMG).

Cypripedium acaule Ait. -- rocky outcrops and dry conifer-hardwoods -- Ouellet, s.n., 1893 (DAO); Ducharme, s.n., 1899 (DAO); Roy, s.n., 1927 (MT); Op de Beeck and Gohier, s.n., 1969 (MTMG); Parnis 775, 1974 (MTMG); Newstrom 133, 1976 (MTMG).

Cypripedium calceolus L. -- moist woods -- rare -- Cambell, s.n., 1886-1911 (MTMG); Van Horne, s.n., 1898 (MTMG); Ducharme, s.n., 1899; s.n., 1910 (DAO); Roy 3285, 1934; 4235, 1936 (DAO); Charbonneau, s.n., 1937 (DAO).

Cypripedium reginae Walt. -- cedar swamp in semishade -- Ducharme, s.n., 1935 (DAO); Roy 3705, 1937 (MT); Swales, s.n., 1966; 950, 1967 (MTMG); Parnis 661, 1974 (MTMG).

Epipactis helleborine (L.) Crantz -- maple woods -- Op de Beeck, s.n., 1969 (MTMG); Parnis 495, 813, 1973 (MTMG); Newstrom 409, 1977 (MTMG); Newstrom and Pryer 849, 1977 (MTMG).

Goodyera pubescens (Willd.) R.Br. -- clearing in woods -- rare -- Ducharme, s.n., 1901 (DAO, det. Boiv.); Parnis 950, 1974 (MTMG, det. Boiv.).

Habenaria hyperborea (L.) R.Br. -- cedar-orchid bog -- Robert 1090, 1418, 1934 (MT); Roy 3506, 1934 (MT); Ducharme, s.n., 1935 (DAO); Swales 728, 1966 (MTMG); Parnis 690, 727, 1974 (MTMG).

Habenaria lacera (Michx.) Lodd. -- meadow -- Newstrom 403, 1976 (MTMG).

Habenaria psycodes (L.) Spreng. = H. fimbriata (Ait.) R.Br. -- marsh and cedar swamps -- numerous coll., Roy 1934-35 (MT); Parnis 433, 478, 1973 (MTMG); Newstrom 460, 882, 1977 (MTMG).

Liparis loeselii (L.) Rich. -- marsh, wet depression in sand pit -- Roy 3330, 1934; 3738, 3901, 1935 (MT); Valiquette 1935 (DAO); Ducharme, s.n., 1940 (DAO); Parnis 728, 1974 (MTMG); Newstrom 1021, 1977 (MTMG).

Malaxis unifolia Michx. -- maple beech woods, meadow, boulder bed -- Roy 2366, 1934; 3784, 1935 (MT); Newstrom 741, 760, 1977 (MTMG); Newstrom and Pryer 829, 1977 (MTMG).

Spiranthes cernua (L.) Rich. -- sandpit, margin Lac des Pins -- Ducharme, s.n., 1920 (DAO); Parnis 900, 1974 (MTMG); Newstrom 297, 570, 1976; 1211, 1977 (MTMG); Newstrom and Pryer 1276, 1977 (MTMG).

## DICOTYLEDONEAE

### SALICACEAE

Populus alba L. -- roadside -- rare -- Roy 3224, 1934; 3865, 1935 (MT); Valiquette, s.n., 1935 (DAO); Newstrom 711, 1977 (MTMG).

Populus balsamifera L. -- gravel pit, wet woods -- scattered -- Ducharme, s.n., 1906 (DAO); Caron, s.n., 1937 (DAO); Parnis 335, 1973 (MTMG); Newstrom 345, 1976 (MTMG).

Populus grandidentata Michx. -- successional woods -- common -- Ducharme, s.n., 1903 (DAO); Woodland and Pochereva 1780, 1972 (MTMG); Parnis 536, 1973; 683, 1974 (MTMG); Newstrom 585, 1976; 747, 985, 1977 (MTMG).

Populus tremuloides Michx. -- successional woods -- common -- Ducharme, s.n., 1903 (DAO); Caron, s.n., 1935 (DAO); Parnis 682, 1974 (MTMG); Newstrom 93, 1976; 674, 1977 (MTMG).

Salix alba L. X S. fragilis L. -- roadside -- rare -- Newstrom 470, 1976 (MTMG , det. Arg.).

Salix amygdaloides Anderss. -- wet depression in gravel pit -- rare -- Newstrom and Pryer 807, 1977 (MTMG, det. Arg.).

Salix bebbiana Sarg.-- wet depressions, margin of ponds and swamps -- common -- numerous coll., Parnis 1973-74 (MTMG, det. Arg.); Swales 5312, 1974 (MTMG); Newstrom 1976-77 (MTMG, det. Arg.).

Salix discolor Mühl. -- wet depressions, pond and stream margins -- common -- numerous coll., Parnis 629, 1974 (MTMG, det. Arg.); Newstrom 1976-77 (MTMG, det. Arg.).

Salix humilis Marsh. -- rocky outcrop and boulder bed -- scattered -- Newstrom 289a, 1976; 83, 1977 (MTMG, det. Arg.); Newstrom and Pryer 835, 1977 (MTMG , det. Arg.).

Salix interior Rowlee -- wet depressions and gravel pits -- Swales 3928, 1972 (MTMG); Parnis 527, 1973; 735, 1974 (MTMG, det. Arg.); Newstrom 632a, 1977 (MTMG, det. Arg.); Newstrom and Pryer 818, 1977 (MTMG, det. Arg.).

Salix lucida Mühl. -- wet depressions, margin of ponds and swamps -- common -- numerous coll., Roy, s.n., 1936 (MT); Parnis 1973-74 (MTMG, det. Arg.); Newstrom 1976-77 (MTMG, det. Arg.); Newstrom and Pryer 817, 1297, 1977 (MTMG, det. Arg.).

Salix petiolaris Sm. -- wet depressions, margin of ponds and swamps -- common -- Swales 5313, 1974 (MTMG); Parnis 904, 1974 (MTMG, det. Arg.); Newstrom 776, 1183, 1977 (MTMG, det. Arg.), Newstrom and Pryer 815, 870 (MTMG, det. Arg.).

Salix rigida Mühl. -- wet roadside ditch -- scattered -- Roy 3377, 1934; s.n., 1936 (MT); Charbonneau, s.n., 1937 (DAO); Parnis 800, 1974 (MTMG, det. Arg.).

JUGLANDACEAE

Carya cordiformis (Wang.) K. Koch -- maple woods -- scattered -- numerous coll., Valiquette, s.n., 1935 (DAO); Roy 1924-25 (MT).

Carya ovata (Mill.) K. Koch -- maple woods -- rare -- Charbonneau, s.n., 1936 (DAO).

Juglans cinerea L. -- maple woods -- scattered -- Newstrom 544, 1976 (MTMG).

BETULACEAE

Alnus rugosa (Du Roi) Spreng. -- margin of streams, ponds, swamps -- common -- Roy 3519, 3375, 1934 (MT); Caron, s.n., 1937 (DAO); Parnis 676, 1974 (MTMG); Newstrom 266, 465, 1976 (MTMG).

Betula lutea Michx. f. -- maple woods -- common -- Ducharme, s.n., 1901 (DAO); Caron, s.n., 1935 (DAO); Roy, s.n., 1924 (MT); Newstrom 647, 1977 (MTMG); Newstrom and Pryer 880, 1977 (MTMG).

Betula papyrifera Marsh. -- dry woods and successional woods -- common -- Ducharme, s.n., 1899 (DAO); Roy 42, 1923 (MT); Rolland-Germain 7142, 1956 (MT); Parnis 336, 1973 (MTMG); Newstrom 283, 582, 588, 1976 (MTMG); Newstrom and Pryer 798, 836, 1977 (MTMG).

Betula populifolia Marsh. -- successional woods, sand pit -- common -- Ducharme, s.n., 1911 (DAO); Parnis 542, 543, 1973; 675, 1974 (MTMG); Newstrom 675, 1977 (MTMG).

Carpinus caroliniana Walt. -- maple woods -- scattered -- Ducharme 118, 1906 (DAO); Roy 3370, 1934; 3961, 1935 (MT).

Corylus cornuta Marsh. -- mixed woods -- scattered -- Bahr, s.n., 1963 (MTMG); Parnis 666, 1974 (MTMG); Newstrom 723, 1977 (MTMG).

Ostrya virginiana (Mill.) K. Koch -- maple woods - common -- numerous coll., Roy 1925-34 (MT); Swales 3941, 1972 (MTMG); Newstrom 1977 (MTMG); Newstrom and Pryer 1977 (MTMG).

FAGACEAE

Fagus grandifolia Ehrh. -- maple woods -- common -- Ducharme, s.n., 1899 (DAO); Charbonneau, s.n., 1936 (DAO); Marie-Victorin, Rolland-Germain, Rouleau and Boivin 4344, 1940 (MT); Parnis 678, 1974 (MTMG); Newstrom 592, 593, 1976 (MTMG).

Quercus alba L. -- humid woods -- Anon., s.n., s.d. (DAO, det. Malte); Ducharme, s.n., 1899 (DAO); Roy 4084, 4096, 1935 (MT); Valiquette, s.n., 1935 (DAO); Charbonneau, s.n., 1937 (DAO).

Quercus borealis Michx. f. -- maple woods -- common -- Ducharme, s.n., 1899 (DAO); Roy 4238, 1936 (MT); Newstrom 488, 1977 (MTMG).

Quercus macrocarpa Michx. -- maple woods and elm-ash woods -- common -- numerous coll., Roy 1934-35 (MT); Caron, s.n., 1937 (DAO); Parnis 1974 (MTMG); Newstrom 1977 (MTMG).

ULMACEAE

Celtis occidentalis L. -- maple woods -- rare -- Ducharme, s.n., 1899 (DAO).

Ulmus americana L. -- maple woods, elm-ash woods -- common -- Parnis 685, 1974 (MTMG); Newstrom 669, 1977 (MTMG, det. Jon.).

Ulmus rubra Mühl. -- maple woods -- common -- numerous coll., Parnis 684, 1974 (MTMG); Newstrom 1976-77 (MTMG, det. Jon.).

URTICACEAE

Laportea canadensis (L.) Wedd. -- maple woods -- scattered -- numerous coll., Anon., s.n., 1923 (DAO, det. Malte); Roy 3241, 1934 (MT); Parnis 741, 770, 1974 (MTMG); Newstrom 1976-77 (MTMG, det. Wood.).

Pilea pumila (L.) A. Gray -- trail in woods -- scattered -- numerous coll., Ducharme, s.n., 1899 (DAO); Roy 1934-35 (MT); Newstrom 1976-77 (MTMG, det. Wood.).

Urtica dioica L. subsp. gracilis (Ait.) Selander -- roadside -- common -- Ducharme, s.n., 1899 (DAO); Roy 3314, 1934 (MT); Valiquette, s.n., 1935 (DAO); Newstrom 364, 453, 1976; 1147, 1977 (MTMG, det. Wood.).

ARISTOLOCHIACEAE

Asarum canadense L. -- maple woods -- common -- Roy 4101, 1935 (MT); Ducharme, s.n., 1941 (DAO); Parnis 630, 1974 (MTMG); Newstrom 76, 1976 (MTMG).

POLYGONACEAE

Polygonum achoreum Blake -- roadside -- rare -- Newstrom 1081, 1977 (MTMG).

Polygonum aviculare L. -- roadside -- scattered -- Newstrom and Pryer 895b, 1977 (MTMG).

Polygonum cilinode Michx. -- trail in woods, roadside and meadows -- common -- numerous coll., Roy, s.n., 1927 (MT); Valiquette, s.n., 1935 (DAO); Marie-Victorin, Rolland-Germain, Roulleau and Boivin 4345, 1940 (MT); Parnis 671, 1974 (MTMG); Newstrom 1976-77 (MTMG).

Polygonum convolvulus L. -- roadside -- scattered -- Newstrom 703, 1977 (MTMG).

Polygonum hydropiper L. -- margin of pond, sand pit, moist ditch roadside -- common -- numerous coll., Ducharme, s.n., 1908 (DAO); Parnis 606, 1973 (MTMG); Newstrom 1976-77 (MTMG).

Polygonum hydropiperoides Michx. -- trail in woods -- rare -- Ducharme, s.n., 1923 (DAO); Newstrom 996b, 1977 (MTMG).

Polygonum lapathifolium L. -- roadside and sand pit -- Charbonneau, s.n., 1938 (DAO); Parnis 562, 1973 (MTMG); Newstrom 1213, 1977 (MTMG).

Polygonum natans Eat. = Polygonum amphibium L. -- marsh -- scattered in its habitat -- Newstrom 461, 1976; 995, 1977 (MTMG).

Polygonum pensylvanicum L. -- fields and roadside -- common -- numerous coll., Ducharme, s.n., 1930 (DAO); Roy 4087, 1935 (MT); Parnis 824, 1974 (MTMG); Newstrom 1976-77 (MTMG).

Polygonum sagittatum L. -- margin of stream and ponds, roadside -- scattered -- Roy 3463, 1934; 4046, 1935 (MT); Parnis 520, 1973 (MTMG); Newstrom 618, 1976; 752, 1977 (MTMG).

Rumex acetosella L. -- rocky outcrops, boulder bed, fields -- common -- Ducharme, s.n., 1900; s.n., 1935 (DAO); Parnis 657, 1974 (MTMG); Newstrom 197, 288, 1976; 644, 1977 (MTMG).

Rumex crispus L. -- roadside and fields -- scattered -- Parnis 672, 1974 (MTMG); Newstrom 191, 377, 1976; 1250, 1977 (MTMG).

Rumex obtusifolius L. -- trail in woods -- Ducharme, s.n., 1906 (DAO); Newstrom 308, 446, 1976 (MTMG).

Rumex persicarioides L. -- margin of stream -- Newstrom 1174, 1977 (MTMG).

CHENOPODIACEAE

Chenopodium album L. -- roadside -- common -- numerous coll., Parnis 563, 564, 1973 (MTMG); Newstrom 1976-77 (MTMG).

Chenopodium hybridum L. -- roadside -- rare -- Roy, s.n., 1933 (MT); Newstrom 1062, 1977 (MTMG).

AMARANTHACEAE

Amaranthus retroflexus L. -- roadside -- common -- Ducharme, s.n., 1940 (DAO); Roy 3959, 1935 (MT).

PORTULACACEAE

Claytonia caroliniana Michx. -- maple woods -- common -- Bahr, s.n., 1963 (MTMG); Swales and Bell 3507, 1970 (MTMG); Woodland and Grant 1816, 1973 (MTMG); Parnis 615, 633, 1974 (MTMG); Newstrom 61, 1976 (MTMG).

CARYOPHYLLACEAE

Cerastium arvense L. -- pasture -- Newstrom 717, 1977 (MTMG).

Cerastium vulgatum L. -- pasture and roadside -- common -- Parnis 673, 1974 (MTMG); Newstrom 169, 262, 1976; 717, 1977 (MTMG).

Lychnis chalcedonica L. -- margin of stream -- rare -- Newstrom 753, 1977 (MTMG).

Saponaria officinalis L. -- roadside -- common -- Ducharme, s.n., 1920 (DAO); Roy 3410, 1934; 3975, 1935 (MT); Parnis 837, 1974 (MTMG); Newstrom 438, 541, 1976; 952, 1977 (MTMG).

Silene cucubalis Wibel -- roadside, sand pit -- common -- Parnis 499, 553, 1973; 669, 1974 (MTMG); Newstrom 202, 1976 (MTMG).

Silene noctiflora L. -- roadside -- scattered -- Newstrom 361, 1976 (MTMG).

Stellaria graminea L. -- roadside, pastures -- common -- Parnis 668, 1974 (MTMG); Newstrom 185, 310, 1976; 972, 1977 (MTMG).

RANUNCULACEAE

Actaea alba (L.) Miller. = A. pachypoda Ell. -- maple woods -- common -- Charbonneau, s.n., 1935 (DAO); Swales 3932, 1972 (MTMG); Parnis 783, 1974 (MTMG); Newstrom 149, 1976 (MTMG).

Actaea rubra (Ait.) Willd. -- maple woods -- common -- Ducharme, s.n., s.d. (DAO); Parnis 743, 1974 (MTMG); Newstrom b19, 1976 (MTMG).

Anemone canadensis L. -- roadside, trail in woods -- common -- Parnis 645, 1974 (MTMG); Newstrom 196, 1976; 781, 1977 (MTMG).

Anemone cylindrica Gray -- trail in woods -- scattered -- Roy 3740, 1935 (MT); Parnis 692, 1974 (MTMG); Newstrom 1369, 1975 (MTMG).

Anemone virginiana L. -- trail in woods -- Roy 3184, 1934 (MT); Ducharme, s.n., 1935 (DAO); Pokorny, s.n., 1963 (MTMG); Newstrom 1368, 1975 (MTMG).

Aquilegia canadensis L. -- roadside, trail in woods -- common -- Roy 3741, 1935 (MT); Ducharme, s.n., 1935 (DAO); Parnis 329, 1973 (MTMG); Newstrom 69, 138, 1976 (MTMG).

Aquilegia vulgaris L. -- roadside -- rare -- Parnis 687, 1974 (MTMG); Newstrom 192, 1976 (MTMG).

Caltha palustris L. -- margin of stream -- rare -- Ducharme, s.n., 1935 (DAO); Newstrom 108, 1976 (MTMG).

Clematis virginiana L. -- roadside, fields -- common -- Roy 3368, 1934 (MT); Swales 5048, 1973 (MTMG); Parnis 434, 1973; 810, 1974 (MTMG); Newstrom 463, 468, 567, 1976 (MTMG).

Coptis trifolia (L.) Salisb. var. groenlandica (Oeder) Fassett = C. groenlandica (Oeder) Fern. -- mixed woods -- scattered -- Parnis 938, 1974 (MTMG); Newstrom 129, 685, 1976 (MTMG).

Hepatica acutiloba DC. -- maple woods -- common -- Roy, s.n., 1929 (MT); Ducharme, s.n., 1935 (DAO); Bahr, s.n., 1963 (MTMG); Newstrom 59, 1976 (MTMG).

Ranunculus acris L. -- roadside -- common -- Ducharme, s.n., 1935 (DAO); Parnis 646, 1974 (MTMG); Newstrom 172, 1976; 1167a, 1977 (MTMG).

Ranunculus abortivus L. -- roadside, maple woods -- common -- Newstrom 113, 1976; 762, 1977 (MTMG); Newstrom and Pryer 900, 1977 (MTMG).

Ranunculus pensylvanicus L.f. -- margin of pond -- rare -- Newstrom 1098, 1977 (MTMG).

Thalictrum dioicum L. -- margin of swamp, sand pit -- Parnis 428, 429, 1973 (MTMG).

Thalictrum polygamum Muhl. = T. pubescens Pursh -- roadside and woods -- common -- Roy, s.n., 1923 (MT); Parnis 826, 1974 (MTMG); Newstrom 251, 1976 (MTMG).

BERBERIDACEAE

Caulophyllum thalictroides (L.) Michx. -- maple woods -- common -- Bahr, s.n., 1963 (MTMG); Parnis 622, 1974 (MTMG); Newstrom 66b, 1976 (MTMG).

PAPAVERACEAE

Chelidonium majus L. -- roadside -- common -- Newstrom 146, 1976 (MTMG).

Sanguinaria canadensis L. -- maple woods -- scattered -- Newstrom and Pryer 846, 1977 (MTMG).

FUMARIACEAE

Corydalis sempervirens (L.) Pers. -- rocky outcrops -- scattered -- Harrington, s.n., 1867 (MTMG); Roy 3180, 1934 (MT); Ducharme, s.n., 1936 (DAO); Parnis and Hawker 699, 1974 (MTMG); Newstrom 293, 1976 (MTMG).

Dicentra canadensis (Goldie) Walp. -- maple woods -- common -- Bahr, s.n., 1963 (MTMG); Parnis 640, 1974 (MTMG); Newstrom 64, 1976 (MTMG).

Dicentra cucullaria (L.) Bernh. -- maple woods -- common -- Bahr, s.n., 1963 (MTMG); Parnis 618, 1974 (MTMG); Newstrom 65, 1976 (MTMG).

CRUCIFERAE

Arabis divaricarpa A. Nels. -- trail in successional woods -- Ducharme, s.n.; 1935 (DAO); Newstrom 989, 1977 (MTMG).

Arabis glabra (L.) Bernh. -- meadows and roadside -- common -- Roy 3723, 1935 (MT); Newstrom 221, 357, 1976 (MTMG).

Barbarea vulgaris R.Br. -- roadside -- common -- Cloutier, s.n., 1934 (DAO); Ducharme, s.n., 1936 (DAO); Newstrom 161, 1976 (MTMG).

Brassica campestris L. -- roadside -- Newstrom 678, 1977 (MTMG).

Brassica kaber (DC.) L. Wheeler -- roadside -- common -- Newstrom 331, 1976; 701, 913, 1977 (MTMG).

Capsella bursa-pastoris (L.) Medic. -- roadside -- common -- Newstrom 162, 1976 (MTMG).

Cardamine pensylvanica Mühl. -- margin of streams and ponds -- scattered -- Ducharme, s.n., 1936 (DAO); Newstrom 243, 1976; 1131, 1351, 1977 (MTMG).

Dentaria diphylla Michx. -- maple woods, margin swamp -- scattered -- Parnis 636, 1974 (MTMG); Newstrom 124, 1976 (MTMG).

Erysimum cheiranthoides L. -- roadside -- common -- numerous coll., Ducharme, s.n., 1900 (DAO); Newstrom 1976-77 (MTMG).

Lepidium campestre (L.) R. Br. -- roadside -- scattered -- Newstrom 173, 1976 (MTMG).

Lepidium densiflorum Schrad. -- roadside -- scattered -- Newstrom 854, 1976 (MTMG).

Myagrum perfoliatum L. -- no habitat recorded -- Ducharme, s.n., s.d. (MT, det. Roul.).

Rorippa islandica (Oeder) Borbas -- no habitat recorded -- Ducharme, s.n., s.d. (DAO); Charbonneau, s.n., 1936 (DAO); Roy 3197, 1934; 3780, 1935 (MT).

Rorippa islandica (Oeder) Borbas. var. fernaldiana Butters and Abbe. -- wet roadside ditch -- Newstrom 384, 1976 (MTMG).

Thlaspi arvense L. -- field -- scattered -- Newstrom 793, 1977 (MTMG).

DROSERACEAE

Drosera rotundifolia L. -- sandy margin of Lac des Pins -- rare -- Parnis 841, 1974 (MTMG); Newstrom 273, 1976 (MTMG); Newstrom and Pryer 888, 1977 (MTMG).

CRASSULACEAE

Penthorum sedoides L. -- margin of streams and ponds -- scattered -- Ducharme, s.n., 1904 (DAO); Roy 3321, 3390, 1934; 3302, 1935 (MT); Pokorny, s.n., 1963 (MTMG); Newstrom 491, 1976; 1258, 1977 (MTMG).

Sedum acre L. -- rocky outcrop -- rare -- Newstrom 363, 1976 (MTMG).

Sedum telephium L. = S. purpureum (L.) Link -- roadside -- common -- Newstrom 86, 542, 1976 (MTMG).

SAXIFRAGACEAE

Chrysosplenium americanum Schw. -- wet depressions in woods -- scattered -- Anon., s.n., 1918 (DAO); Robert 1425, 1934 (MT); Newstrom 130, 1976; 713, 1977 (MTMG).

Mitella diphylla L. -- maple woods -- common -- Parnis 785, 1974 (MTMG); Newstrom 104, 1976 (MTMG).

Ribes cynosbati L. -- trail in maple woods -- scattered -- Ducharme, s.n., 1899 (DAO); Newstrom 230, 292, 1976 (MTMG).

Ribes glandulosum Grauer. -- mixed woods, rocky outcrop -- common -- numerous coll., Roy, s.n., 1924; 3885, 1935 (MT); Louis-Marie 28008, 1927 (MT); Parnis 642, 1974 (MTMG); Newstrom 1976-77 (MTMG).

Tiarella cordifolia L. -- maple woods -- common -- Ducharme, s.n., s.d. (DAO); Gibbs, s.n. (MTMG); Swales and Bell 3512, 1970 (MTMG); Parnis 660, 1974 (MTMG); Newstrom 80, 103, 1976; 641, 1977 (MTMG).

ROSACEAE

Agrimonia gryposepala Wallr. -- trail in woods -- common -- Anon, s.n., 1908 (DAO); Valiquette, s.n., 1935 (DAO); Parnis 493, 1973; 763, 1974 (MTMG); Newstrom 437, 451, 1976 (MTMG).

Amelanchier arborea (Michx. f.) Fern. var. arborea -- rocky outcrop -- numerous coll., Parnis 815, 1974 (MTMG); Newstrom 1976-77 (MTMG, det Boiv.).

Amelanchier arborea (Michx. f.) Fern. var. cordifolia (Ashe) Boivin = A. laevis Wieg. -- rocky outcrop -- Parnis 624, 1974 (MTMG, det. Boiv.); Newstrom 286, 1976; 735, 801, 1977 (MTMG, det. Boiv.).

Amelanchier sanguinea (Pursh ) DC. var. sanguinea = A. humilis Wieg. rocky outcrop -- Anon., s.n., 1901 (DAO); Roy, s.n., 1927 (MT); Caron 1572, 1937 (MT); Parnis 623, 1974 (MTMG, det. Boiv.); Newstrom and Pryer 856, 857, 1977 (MTMG, det. Boiv.).

Amelanchier spicata (Lam.) K. Koch = A. stolonifera Wieg. -- trail in woods -- Ducharme, s.n., 1924 (DAO); Newstrom 122, 1976 (MTMG, det. Boiv.).

Aronia melanocarpa (Michx.) Ell. -- rocky outcrop, mixed woods -- common -- Roy, s.n., 1927 (MT); Valiquette, s.n., 1935 (DAO); Marie-Victorin and Rolland-Germain 49316, 1936 (MT); Bahr, s.n., 1962 (MTMG); Op de Beeck and Gohier, s.n., 1969 (MTMG); Parnis 750, 1974 (MTMG); Newstrom 137, 587, 1976 (MTMG); Newstrom and Pryer 840, 858, 1977 (MTMG).

Crataegus coccinea L. -- open scrubby woods -- Ducharme, s.n., 1900, as C. pedicullata (DAO); Newstrom 550, 1976 (MTMG, det. Boiv.).

Crataegus flabellata (Spach) Kirchner -- open scrubby woods -- Newstrom 545, 563, 564, 1976 (MTMG, det. Boiv.).

Crataegus rotundifolia Moench -- open scrubby woods -- Newstrom 120, 155, 561, 569, 1976 (MTMG, det. Boiv.).

Crataegus submollis Sarg. -- open scrubby woods -- numerous coll., Newstrom 1976 (MTMG, det. Boiv.).

Fragaria vesca L. var. americana Porter = F. americana (Porter) Britton -- mixed woods, sand pit -- Parnis 555, 1973 (MTMG); Newstrom 98, 167, 1976 (MTMG); Newstrom and Pryer 852, 1977 (MTMG).

Fragaria virginiana Duchesne -- roadside, fields -- common -- Ducharme, s.n., 1940 (DAO); Parnis 337, 341, 369, 1973 (MTMG); Newstrom 74, 1976 (MTMG).

Geum aleppicum Jacq. -- trail in woods -- Charbonneau, s.n., 1937 (DAO); Pokorny, s.n., 1963 (MTMG); Parnis 767, 1974 (MTMG); Newstrom 400, 1976 (MTMG).

Geum canadense Jacq. -- trail in woods, meadows -- Dion, s.n., 1935 (DAO); Parnis 766, 1974 (MTMG); Newstrom 1365, 1975; 248, 1976 (MTMG).

Geum rivale L. -- cedar-orchid swamp -- Anon., s.n., 1934 (DAO); Swales 731, 1966; 3931, 1972 (MTMG); Parnis 659, 1974 (MTMG); Newstrom 660, 1977 (MTMG).

Physocarpus opulifolius (L.) Maxim. -- roadside -- scattered -- Ducharme, s.n., 1908 (DAO); Valiquette, s.n., 1935 (DAO); Newstrom 680, 1977 (MTMG).

Potentilla anserina L. -- roadside -- scattered -- Newstrom 171, 1976 (MTMG).

Potentilla argentea L. -- rocky outcrop, meadows -- common -- numerous coll., Roy 3815, 1935 (MT); Bahr, s.n., 1962 (MTMG); Parnis 1973-74 (MTMG); Newstrom 1976-77 (MTMG).

Potentilla norvegica L. -- rocky outcrop, fields and roadside -- common -- numerous coll., Newstrom 1976-77 (MTMG).

Potentilla recta L. -- roadside, meadows -- common -- numerous coll., Parnis 749, 1974 (MTMG); Newstrom 1976-77 (MTMG).

Prunus nigra Ait. -- roadside, elm-ash woods -- scattered -- numerous coll., Ducharme, s.n., 1935 (DAO); Parnis 625, 686, 1974 (MTMG); Newstrom 1976-77 (MTMG).

Prunus pensylvanica L.f. -- dry open woods, rocky outcrop -- common -- Parnis 535, 1973; 628, 1974 (MTMG); Newstrom 118, 1976; 744, 1977 (MTMG).

Prunus serotina Ehrh. -- maple woods -- scattered -- Newstrom 907, 1977 (MTMG).

Prunus virginiana L. -- edge of woods -- Ducharme, s.n., 1901 (DAO); Newstrom 1373, 1976 (MTMG).

Pyrus malus L. = Malus pumila Mill. -- abandoned orchards -- scattered -- Ducharme, s.n., 1935 (DAO); Newstrom 159, 1976 (MTMG).

Rosa blanda Ait. -- roadside -- scattered -- Ducharme, s.n., 1886 (DAO); Newstrom 213, 1976; 708, 1977 (MTMG).

Rubus allegheniensis Porter -- fields, roadside -- common -- numerous coll., Parnis 1973-74 (MTMG, det. Boiv.); Newstrom 1976-77 (MTMG, det. Boiv.).

Rubus idaeus L. -- rocky outcrop, roadside -- common -- Newstrom 168, 575, 1976; 726a, 1977 (MTMG, det. Boiv.); Newstrom and Pryer 861, 1977 (MTMG, det. Boiv.).

Rubus idaeus L. var. aculeatissimus Regel + Tiling -- sand pit -- Parnis 348, 1973 (MTMG, det. Boiv.).

Rubus idaeus var. strigosus (Michx.) Maxim. -- no habitat recorded -- Roy, s.n., 1927 (MT); Ducharme, s.n., 1935 (DAO).

Rubus occidentalis L. -- roadside and fields -- common -- Roy, s.n., 1927 (MT); Newstrom and Pryer 887, 1977 (MTMG, det. Boiv.).

Rubus odoratus L. -- roadside and fields -- common -- Parnis 496, 545, 1973; 784, 1974 (MTMG); Newstrom 247, 408, 1976 (MTMG).

Rubus pubescens Raf. -- maple woods -- Charbonneau, s.n., 1938 (DAO); Newstrom 127, 1976 (MTMG, det. Boiv.).

Rubus vermontanus Blanchard -- margin of swamp -- Newstrom 1193, 1977 (MTMG, det. Boiv.).

Sorbaria sorbifolia (L.) A.Br. -- trail in woods -- Roy 3263, 1934; 3789, 1935 (MT); Ducharme, s.n., 1935 (DAO); Newstrom 1370, 1977 (MTMG).

Sorbus americana Marsh. -- roadside, rocky outcrops -- common -- Charbonneau, s.n., 1938 (DAO); Newstrom 543, 1976; 736, 977, 1977 (MTMG).

Sorbus decora (Sarg.) Schneid. = Pyrus decora (Sarg.) Hyland -- dry conifer-hardwood forest -- Op de Beeck and Gohier, s.n., 1969, as P. decora (MTMG).

Spiraea alba DuRoi -- margin of swamp -- scattered -- Newstrom 992, 1977 (MTMG).

Spiraea latifolia (Ait.) Borkh. -- roadside, rocky outcrop, margin of swamp and ponds -- common -- numerous coll., Roy 1934-35 (MT); Ducharme 617, 1935 (DAO); Swales 3933, 1972 (MTMG); Parnis 1973-74 (MTMG); Newstrom 1976-77 (MTMG); Newstrom and Pryer 1977 (MTMG).

Spiraea tomentosa L. -- roadside, margin of ponds and streams, gravel pit -- common -- numerous coll., Roy 1925-35 (MT); Pokorny, s.n., 1963 (MTMG); Parnis 1973-74 (MTMG); Newstrom 1977 (MTMG).

FABACEAE

Amphicarpa bracteata (L.) Fern. -- roadside, mixed woods -- common -- Roy 4042, 1935 (MT); Parnis 804, 1974 (MTMG); Newstrom 537, 1976; 1045, 1977 (MTMG); Newstrom and Pryer 925, 1343, 1977 (MTMG).

Desmodium canadense (L.) Dc. -- maple woods -- numerous coll., Ducharme, s.n., 1901 (DAO); Roy 1934-35 (MT); Charbonneau, s.n., 1935 (DAO); Parnis 819, 1974 (MTMG).

Desmodium glutinosum (Muhl.) Wood. -- trail in woods -- Roy 3729, 1935; 3814, 1935, as D. grandiflorum (L.) Dc. (MT); Newstrom 1366, 1975 (MTMG).

Lotus corniculatus L. -- roadside and fields -- common -- Newstrom 319, 1976 (MTMG).

Medicago lupulina L. -- roadside, sand pit -- common -- Parnis 512, 1973 (MTMG); Newstrom 254, 1976 (MTMG).

Medicago sativa L. -- fields -- Valiquette, s.n., 1935 (DAO); Newstrom 315, 1976 (MTMG).

Melilotus alba Desr. -- roadside and fields -- common -- Roy 3721, 1935 (MT); Parnis 425, 554, 1973; 708, 1974 (MTMG); Newstrom 323, 1976 (MTMG).

Melilotus officinalis (L.) Desr. -- roadside and fields -- common -- Newstrom 314, 428, 1976 (MTMG).

Trifolium agrarium L. -- fields -- common -- Roy 3828, 1935 (MT); Newstrom 228, 1976 (MTMG).

Trifolium pratense L. -- roadside, fields, sand pit -- common -- Parnis 522, 1973 (MTMG); Newstrom 214, 1976 (MTMG).

Vicia cracca L. -- roadside, fields -- common -- Ducharme, s.n., 1906; s.n., 1935 (DAO); Roy, s.n., 1927; 3217, 1934; 3700, 1935 (MT); Charbonneau, s.n., 1937 (DAO); Parnis 423, 1973 (MTMG); Newstrom 245, 1976 (MTMG).

OXALIDACEAE

Oxalis stricta L. -- fields -- common -- Roy 3755, 1935 (MT); Parnis 737, 1974 (MTMG); Newstrom 201, 1976 (MTMG).

GERANIACEAE

Geranium bicknellii Britt. -- rocky outcrop -- scattered -- Roy 4031, 1935 (MT); Charbonneau, s.n., 1935 (DAO); Newstrom 177, 1976 (MTMG).

Geranium robertianum L. -- roadside, maple-oak woods -- scattered -- numerous coll.; Ducharme, s.n., 1901 (DAO); Roy 1934-35 (MT); Parnis 693, 1974 (MTMG); Newstrom 1976 (MTMG).

EUPHORBIACEAE

Euphorbia vermiculata Raf. -- roadside -- Ducharme, s.n., 1940 (DAO); Newstrom and Pryer 894, 1977 (MTMG).

CALLITRICHACEAE

Callitriche heterophylla Pursh -- submerged and floating aquatic in ponds and streams -- numerous coll., Anon., s.n., 1938 (DAO, det. Malte); Newstrom 1976-77 (MTMG).

Callitriche verna L. = C. palustris L. -- submerged aquatic in beaver pond -- Ducharme, s.n., 1907 (DAO); Robert 1149, 1934 (MT); Swales 3578, 1970 (MTMG).

ANACARDIACEAE

Rhus typhina L. -- roadside and rocky outcrop -- common -- Ducharme, s.n., 1899 (DAO); Anon., s.n., 1923 (DAO, det. Malte); Roy 527, 1923; s.n., 1934; 3731, 1935 (MT); Parnis 537, 1973; 740, 1974 (MTMG); Newstrom 329, 1976 (MTMG).

Toxicodendron rydbergii (Small ex Rydberg) Greene. = R. radicans L. -- roadside, boulder bed -- common -- Ducharme, s.n., 1906 (DAO); Newstrom 299, 397, 1976 (MTMG).

AQUIFOLIACEAE

Ilex verticillata (L.) Gray -- margin of marsh -- rare -- Newstrom 1023, 1977 (MTMG).

ACERACEAE

Acer negundo L. -- moist woods -- scattered -- Roy 3458, 1934; 3968, 1935 (MT); Charbonneau, s.n., 1941 (DAO); Parnis 706, 1974 (MTMG); Newstrom 576b, 677 (MTMG).

Acer pensylvanicum L. -- moist woods -- common -- Anon., s.n., 1892 (MT); Cloutier, s.n., (DAO); Roy 3177, 1934; 4024, 1935 (MT); Valiquette, s.n., 1936 (MT); Bahr, s.n., 1962 (MTMG); Newstrom 132, 1976 (MTMG).

Acer rubrum L. -- successional and moist woods -- common -- Roy 3178, 1934 (MT); Charbonneau, s.n., 1937; s.n., 1941 (DAO); Parnis 350, 538, 1973 (MTMG); Newstrom 281, 586, 1976; 670, 1977 (MTMG).

Acer saccharinum L. -- on slope by stream -- rare -- Roy 3457, 1934 (MT); Charbonneau, s.n., 1937 (DAO); Newstrom 763, 1977 (MTMG).

Acer saccharum Marsh. -- rich woods -- common -- Roy 3172, 3527, 1934; 3733, 1935 (MT); Valiquette, s.n., 1935 (DAO); Parnis 681, 1974 (MTMG); Newstrom 590, 1976; 671, 1977 (MTMG).

Acer spicatum Lam. -- dry open woods -- common -- Harrington, s.n., 1867 (MTMG); Adrien 1410, 1926 (MT); Roy, s.n., 1927; 3176, 1934; 3910, 1935 (MT); Parnis 667, 1974 (MTMG); Newstrom 284, 425, 1976 (MTMG).

BALSAMINACEAE

Impatiens capensis Meerb. = I. biflora Walt. -- margin of stream -- scattered -- Parnis 519, 1973; 802, 1974 (MTMG); Newstrom 434, 1976 (MTMG).

Impatiens pallida Nutt. -- roadside -- scattered -- Newstrom 578a, 1976 (MTMG).

RHAMNACEAE

Rhamnus catharticus L. -- edge of woods -- scattered -- Newstrom 546, 1976 (MTMG).

VITACEAE

Parthenocissus quinquefolia (L.) Planch. -- fields and roadside -- common -- Newstrom 183, 1976 (MTMG).

Vitis riparia Michx. -- roadsides -- common -- Parnis 688, 1974 (MTMG); Newstrom 264, 396, 1976 (MTMG).

TILIACEAE

Tilia americana L. -- moist woods -- common -- Ducharme, s.n., s.d., as T. neglecta Spach ; s.n., 1921, as T. glabra Vent. (DAO); Roy 3205, 1934 (MT); Parnis 679, 1974 (MTMG); Newstrom 1080, 1977 (MTMG).

MALVACEAE

Malva moschata L. -- roadside -- scattered -- Roy 3304, 1934; 3858, 1935 (MT); Valiquette, s.n., 1935 (DAO); Newstrom 366, 1976 (MTMG); Newstrom and Pryer 823, 1977 (MTMG).

HYPERICACEAE

Hypericum ellipticum Hook. -- roadside and fields -- Roy, s.n., 1923; 3380, 1934; 3761, 1935 (MT); Parnis 835, 1974 (MTMG); Newstrom 381, 1976; 973, 1977 (MTMG).

Hypericum mutilum L. -- margin of pond -- scattered -- Parnis 850, 1974 (MTMG); Newstrom 1100, 1977 (MTMG).

Hypericum perforatum L. -- roadside, rocky outcrop, fields -- common -- numerous coll., Roy 1934 (MT); Swales 3930, 1972 (MTMG); Parnis 1973-74 (MTMG); Newstrom 1976-77 (MTMG); Newstrom and Pryer 868, 1977 (MTMG).

Hypericum punctatum Lam. -- roadside, sand pit -- common -- Ducharme, s.n., 1922 (DAO); Parnis 515, 1973 (MTMG); Newstrom 473, 576a, 1976; 934, 971, 1977 (MTMG).

Triadenum virginicum (L.) Raf. = Hypericum virginicum L. -- marsh and margin of ponds -- scattered -- numerous coll., Newstrom 1977 (MTMG).

VIOLACEAE

Viola adunca Sm. var. minor (Hook.) Fern. -- wet depression, trail in woods -- Newstrom 70, 165, 1976 (MTMG, det. Swales).

Viola canadensis L. -- maple woods -- common -- Ducharme, s.n., 1939 (DAO); Parnis 631, 1974 (MTMG); Newstrom 73, 178, 1976 (MTMG).

Viola conspersa Reichenb. -- margin of stream -- Newstrom 99, 1976 (MTMG).

Viola cucullata Ait. -- cedar-orchid swamp -- Roy, s.n., 1924 (MT); Terrill 5223, 1948 (MTMG); Parnis 353, 368, 1973 (MTMG); Newstrom 141, 142, 143, 599, 1976 (MTMG, det. Roul.).

Viola pallens (Banks) Brainerd -- maple woods -- Ducharme, s.n., 1939 (DAO); Parnis 644, 1974 (MTMG); Newstrom 78, 81, 140, 1976 (MTMG).

Viola papilionacea Pursh -- maple woods -- Newstrom 60, 1976 (MTMG, det. Swales).

Viola pubescens Ait. = V. pensylvanica Michx. -- maple woods -- common -- Ducharme, s.n., 1939 (DAO); Parnis 635, 638, 1974 (MTMG); Newstrom 72, 97 (MTMG).

Viola sororia Willd. -- trail in woods, wet depression -- Newstrom 141, 1976 (MTMG).

THYMELAEACEAE

Dirca palustris L. -- mixed woods -- rare -- Ducharme, s.n., 1935 (DAO); Newstrom and Pryer 634, 1977 (MTMG).

LYTHRACEAE

Lythrum salicaria L. -- roadside -- common -- numerous coll., Roy 1934-35 (MT); Valiquette, s.n., 1935 (DAO); Parnis 891, 1974 (MTMG); Newstrom 398, 447, 1976 (MTMG).

ONAGRACEAE

Circaea alpina L. -- mixed woods -- rare -- Robert 656, 1931 (MT, det. Raven); Pokorny, s.n., 1963 (MTMG); Newstrom 722b, 1977 (MTMG).

Circaea quadrisulcata (Maxim.) Franch. + Sav. = C. lutetiana L. -- edge of woods -- common -- Roy 3245, 1934; 3907, 1935 (MT, det. Raven); Ducharme, s.n., 1935, as C. canadensis (DAO); Charbonneau, s.n., 1935 (DAO); Parnis 738, 782, 1974 (MTMG); Newstrom 402, 1976 (MTMG).

Epilobium angustifolium L. -- roadside, sand pit -- common -- Parnis 449, 1973 (MTMG); Newstrom 355, 1976 (MTMG).

Epilobium coloratum Biehler -- margin of streams and marsh -- Parnis 820, 1974 (MTMG); Newstrom 499, 1976; 1203, 1977 (MTMG).

Epilobium glandulosum Lehm. -- margin of beaver ponds -- common in its habitat -- numerous coll., Roy 1934-35 (MT); Parnis 1973 (MTMG); Newstrom 1977 (MTMG).

Epilobium hirsutum L. -- roadside -- Newstrom 524, 1976 (MTMG).

Epilobium palustre L. -- margin beaver ponds -- Newstrom 955a, 1215, 1977 (MTMG).

Ludwigia palustris (L.) Ell. -- floating margin beaver ponds -- common in its habitat -- numerous coll., Ducharme, s.n., 1899 (DAO); Robert 1433, 1934 (MT); Roy 4020, 1935 (MT); Valiquette, s.n., 1935 (DAO); Newstrom 1977 (MTMG).

Oenothera biennis L. var. hirsutissima Gray -- sand pit, roadside -- Parnis 501, 1973 (MTMG); Newstrom and Pryer 917, 1977 (MTMG).

Oenothera biennis L. = O. victorinii Gates and Catchside -- roadside, margin of woods -- common -- numerous coll., Ducharme, s.n., 1929 (DAO); Roy 3905, 1935 (MT); Parnis 1973 (MTMG); Newstrom 1976-77 (MTMG); Newstrom and Pryer 1977 (MTMG).

Oenothera perennis L. -- meadows -- scattered -- Roy, s.n., 1927; 3169, 1934 (MT); Parnis 729, 825, 1974 (MTMG); Newstrom 1361, 1975; 220, 1976; 715, 1977 (MTMG).

ARALIACEAE

Aralia hispida Vent. -- sand pit, talus slopes, boulder bed -- scattered -- Louis-Marie 27984, 1927 (MT); Roy 3288, 1934 (MT); Valiquette, s.n., 1935 (DAO); Pokorny, s.n., 1963 (MTMG); Parnis 549, 1973 (MTMG); Newstrom 369, 557, 1976 (MTMG).

Aralia nudicaulis L. -- mixed woods -- Newstrom 282, 1976 (MTMG).

Aralia racemosa L. -- trail in woods -- Parnis 742, 1974 (MTMG); Newstrom 535, 1976 (MTMG).

Panax quinquefolium L. -- maple woods -- very rare -- Cloutier, s.n., 1934 (DAO); Roy, s.n., 1934 (DAO); Ducharme, s.n., 1935 (DAO).

Panax trifolium L. -- maple woods -- scattered -- Newstrom 128, 1976 (MTMG).

UMBELLIFERAE

Cicuta maculata L. -- roadside -- common -- Roy 3308, 1934 (MT); Parnis 424, 1973; 801, 818, 1974 (MTMG); Newstrom 1362, 1975; 163, 349, 1976 (MTMG).

Cryptotaenia canadensis (L.) DC. -- fields, roadside, trail in woods -- Ducharme, s.n., 1902 (DAO); Charbonneau, s.n., 1937 (DAO); Parnis 674, 1974 (MTMG); Newstrom 250, 1976; 874, 1977 (MTMG).

Daucus carota L. -- roadside -- common -- Parnis 807, 1974 (MTMG); Newstrom 523, 1976 (MTMG).

Hydrocotyle americana L. -- margin of streams and ponds -- wet depressions -- scattered -- Newstrom 690, 714, 1977 (MTMG).

Osmorhiza claytoni (Michx.) Clarke -- trail in woods -- common -- Pokorny, s.n., 1963 (MTMG); Parnis 793, 1974 (MTMG); Newstrom 152, 1976 (MTMG).

Pastinaca sativa L. -- roadside -- common -- Parnis 426, 1973; 791, 1974 (MTMG); Newstrom 395, 1976 (MTMG).

Sanicula marilandica L. -- trail in woods, mixed woods -- common -- Ducharme, s.n., 1921 (DAO); Roy, s.n., 1927 (MT); Parnis 663, 1974 (MTMG); Newstrom 216, 1976; 1057, 1977 (MTMG); Newstrom and Pryer 885, 1977 (MTMG).

CORNACEAE

Cornus alternifolia L.f. -- trail in woods -- Ducharme, s.n., 1906 (DAO); Roy, s.n., 1927 (MT); Parnis 808, 1974 (MTMG); Newstrom 673, 688, 1977 (MTMG).

Cornus amomum Mill. = C. obliqua Raf. -- marsh -- rare -- Robert 1409, 1934 (MT); Newstrom 1019, 1977 (MTMG).

Cornus canadensis L. -- mixed woods -- scattered -- Valiquette, s.n., 1935 (DAO); Parnis 945, 1974 (MTMG); Newstrom 666, 1977 (MTMG).

Cornus rugosa Lam. -- dry rocky woods -- scattered -- numerous coll., Roy 1927-34 (MT); Charbonneau, s.n., 1937 (DAO); Beaudoin, s.n., 1939 (DAO); Newstrom and Pryer 797, 1977 (MTMG).

Cornus stolonifera Michx. -- woods, marsh and stream banks, moist roadside ditches -- common -- numerous coll., Ducharme, s.n., 1902 (DAO); Roy 1923-24 (DAO, MT); Charbonneau, s.n., 1937 (DAO); Pokorny, s.n., 1963 (MTMG); Parnis 1973-74 (MTMG); Newstrom 1976-77 (MTMG).

ERICACEAE

Chimaphila umbellata (L.) Bart. -- mixed woods -- common -- Ducharme, s.n., 1935 (DAO); Roy 3945, 1935 (MT); Newstrom and Pryer 633, 1977 (MTMG).

Gaultheria hispidula (L.) Muhl. = Chiogenes hispidula (L.) T. + G. -- trail in woods -- scattered -- Newstrom 778, 1977 (MTMG).

Gaultheria procumbens L. -- rocky outcrops -- common -- Parnis 613, 751, 757, 1974 (MTMG); Newstrom 485, 1976 (MTMG).

Gaylussacia baccata (Wang.) K. Koch -- dry woods -- rocky outcrop -- common -- numerous coll., Ducharme, s.n., s.d. (DAO); Roy 1927-35 (MT); Newstrom and Pryer 800, 1977 (MTMG).

Monotropa hypopithys L. -- mixed woods -- rare -- Newstrom 1026, 1977 (MTMG).

Monotropa uniflora L. -- maple woods -- scattered -- numerous coll., Roy 1933-35 (MT); Parnis 736, 1974 (MTMG); Newstrom 416, 579, 1976 (MTMG).

Pyrola elliptica Nutt. -- maple woods, bank of beaver pond -- common -- Swales 3937, 1972 (MTMG); Parnis 936, 1974 (MTMG); Newstrom 693, 716, 1977 (MTMG); Newstrom and Pryer 898, 1977 (MTMG).

Vaccinium angustifolium Ait. -- rocky outcrops -- common -- numerous coll., Ducharme, s.n., 1907 (DAO); Parnis 1974 (MTMG); Newstrom 1976-77 (MTMG); Newstrom and Pryer 803, 869, 1977 (MTMG).

Vaccinium angustifolium Ait. var. nigrum (Wood) Dole -- rocky outcrop -- rare -- Parnis 789, 1974 (MTMG).

Vaccinium myrtilloides Michx. -- rocky outcrops -- common -- Ducharme, s.n., 1904, as V. canadense (DAO); Roy, s.n., 1927 (MT); Charbonneau, s.n., 1936, as V. canadense (DAO); Bahr, s.n., 1962 (MTMG); Parnis 788, 1974 (MTMG); Newstrom 116, 1976 (MTMG); Newstrom and Pryer 904, 1977 (MTMG).

PRIMULACEAE

Lysimachia ciliata L. = Steironema ciliatum (L.) Raf. -- marsh, stream-bank, fields -- common -- Roy 3808, 1935 (MT); Parnis 430, 1973 (MTMG); Newstrom 302, 1976; 973, 1977 (MTMG).

Lysimachia terrestris (L.) BSP. -- roadside ditch -- common -- Newstrom 350, 382, 1976 (MTMG).

Trientalis borealis Raf. -- mixed woods, cedar-orchid swamp -- common -- Roy, s.n., 1924 (MT); Ducharme, s.n., 1925 (DAO); Gibbs, s.n., 1968 (MTMG); Newstrom 134, 1967 (MTMG).

OLEACEAE

Fraxinus americana L. -- maple woods, successional woods -- common -- numerous coll., Ducharme, s.n., s.d. (DAO); Charbonneau, s.n., 1936 (DAO); Marie-Victorin and Rolland-Germain, 49665, 49317, 1936 (MT); Marie-Victorin, Rolland-Germain and Dominique 46793, 1936 (MT); Newstrom 1976-77 (MTMG).

Fraxinus nigra Marsh. -- wet stream bank -- scattered -- Roy, s.n., 1934 (MT); Roy and Heroux, s.n., 1934 (MT); Parnis 354, 1973 (MTMG); Newstrom and Pryer 1294, 1977 (MTMG).

Fraxinus pensylvanica Marsh. -- moist woods -- scattered -- Roy 3785, 1935 (MT); Parnis 680, 1974 (MTMG); Newstrom and Pryer 845, 1977 (MTMG).

GENTIANACEAE

Gentiana andrewsii Griseb. -- trail in woods -- rare -- Roy 3469, 3479, 1934 (MT); Newstrom 540, 1976 (MTMG).

APOCYNACEAE

Apocynum androsaemifolium L. -- rocky outcrops, roadside -- common -- Charbonneau, s.n., 1935 (DAO); Roy 3855, 1935 (MT); Bahr, s.n., 1962 (MTMG); Parnis 752, 804, 1974 (MTMG); Newstrom 265, 1976; 728, 1977 (MTMG).

ASCLEPIADACEAE

Asclepias syriaca L. -- roadside and meadows -- common -- Ducharme, s.n., s.d.; s.n., 1901 (DAO); Roy, s.n., 1923 (MT); Parnis 707, 1974 (MTMG); Newstrom 318, 1976 (MTMG).

CONVOLVULACEAE

Convolvulus sepium L. -- roadside -- common -- Ducharme, s.n., 1899 (DAO); Newstrom 246, 1976 (MTMG).

POLEMONIACEAE

Phlox paniculata L. -- trail in woods, roadside -- scattered -- Newstrom 945, 953, 1977 (MTMG).

HYDROPHYLLACEAE

Hydrophyllum virginianum L. -- maple woods -- common -- Gaboriault, s.n., 1941 (DAO); Newstrom 190, 1976 (MTMG).

BORAGINACEAE

Echium vulgare L. -- roadside, fields -- common -- Roy 528, 1925; 3232, 1934; 3727, 1935 (MT); Swales 3929, 1972 (MTMG); Parnis 450, 516, 1973 (MTMG); Newstrom 330, 1976 (MTMG).

Hackelia deflexa (Wahlenb.) Opiz = H. americana (Gray) Fern. & Johnst. -- no habitat recorded -- Valiquette, s.n., 1935 (DAO); Roy 3260, 1934 (MT).

Hackelia virginiana (L.) Johnst. -- no habitat recorded -- Valiquette, s.n., 1936 (DAO); Roy 3260, 1934; 3948, 4097, 1935 (MT).

Lappula echinata Gilib. = L. myosotis Moench -- field -- Ducharme, s.n., 1927 (DAO); Roy 3181, 1934 (MT); Newstrom 224, 1976 (MTMG).

Lithospermum officinale L. -- roadside, fields -- common -- Ducharme, s.n., 1899 (DAO); Charbonneau, s.n., 1941 (DAO); Pokorny, s.n., 1963 (MTMG); Newstrom 212, 526, 1976 (MTMG).

Lycopsis arvensis L. -- no habitat recorded -- Ducharme, s.n., 1921 (DAO).

Myosotis stricta Link = M. micrantha Pall. -- trail in woods -- scattered -- Newstrom 638, 1976 (MTMG).

VERBENACEAE

Verbena hastata L. -- moist fields, margin of pond and streams -- common -- numerous coll., Roy 1934-35 (MT); Valiquette, s.n., 1935 (DAO); Parnis 797, 1974 (MTMG); Newstrom 374, 1976; 1116, 1977 (MTMG).

Verbena urticifolia L. -- trail in woods -- scattered -- Roy 3334, 1934; 3870, 1935 (MT); Valiquette, s.n., 1935 (DAO); Newstrom 997, 1977 (MTMG).

LABIATAE

Galeopsis tetrahit L. -- roadside, fields -- common -- Roy 3953, 1935 (MT); Parnis 816, 1974 (MTMG); Newstrom 472, 1061, 1977 (MTMG); Newstrom and Pryer 906, 1977 (MTMG).

Glecoma hederacea L. -- roadside -- common -- Ducharme, s.n., 1922 (DAO); Cloutier, s.n., 1935 (DAO); Newstrom 87, 1976 (MTMG).

Lamium maculatum L. -- field -- rare -- Newstrom and Pryer 822, 1977 (MTMG).

Leonurus cardiaca L. -- roadside, fields -- common -- Roy 3221, 1934 (MT); Valiquette, s.n., 1935 (DAO); Newstrom 226, 360, 1976 (MTMG).

Lycopus americanus Mühl. -- trail in woods -- common -- Anon., s.n., s.d. (DAO); Ducharme, s.n., 1921 (DAO); Parnis 441, 550, 1973 (MTMG); Newstrom 1068, 1977 (MTMG).

Lycopus uniflorus Michx. -- margin streams and ponds, marsh, roadsides -- common -- numerous coll., Ducharme, s.n., s.d. (DAO); Charbonneau, s.n., 1936 (DAO); Parnis 1973-74 (MTMG); Newstrom 1976-77 (MTMG); Newstrom and Pryer 1291, 1977 (MTMG).

Mentha arvensis L. = M. canadensis L. -- roadside, marsh, trail in woods -- common -- Ducharme, s.n., 1902 (DAO); Valiquette, s.n., 1935 (DAO); Roy 3802, 3824, 1935 (MT); Parnis 497, 1973; 859, 1974 (MTMG); Newstrom 459, 1976; 966, 979, 1977 (MTMG).

Monarda didyma L. -- moist roadside ditch in shade -- rare -- Newstrom 449, 1976 (MTMG).

Nepeta cataria L. -- roadside -- scattered -- Ducharme, s.n., s.d. (DAO); Roy 3220, 1934; 3866, 1935 (MT); Newstrom 360, 1975; 1052, 1976 (MTMG).

Origanum vulgare L. -- trail in woods -- Ducharme, s.n., 1935 (DAO); Bahr, s.n., 1962 (MTMG); Sheppard, s.n., 1973 (MTMG); Parnis 458, 1973 (MTMG).

Prunella vulgaris L. -- roadside and fields, trail in woods -- common -- Roy 3829, 1935 (MT); Parnis 440, 488, 1973; 762, 1974 (MTMG); Newstrom 375, 1976 (MTMG).

Satureja vulgaris (L.) Fritsch -- roadside, fields -- common -- numerous coll., Ducharme, s.n., 1908 (DAO); Valiquette, s.n., 1934 (DAO); Roy 1934-35 (MT); Parnis 765, 1974 (MTMG); Newstrom 1976-77 (MTMG); Newstrom and Pryer 877, 1977 (MTMG).

Scutellaria galericulata L. = S. epilobiifolia A. Ham. -- marsh -- Ducharme, s.n., s.d. (DAO); Roy 3272, 1934 (MT); Newstrom 466, 1976 (MTMG).

Scutellaria lateriflora L. -- margin of streams and ponds -- scattered -- Roy 3803, 1935 (MT); Parnis 858, 1974 (MTMG); Newstrom 498, 1976; 1046, 1103, 1977 (MTMG).

SOLANACEAE

Physalis heterophylla Nees -- gravel pit, fields -- scattered -- Newstrom 783, 1977 (MTMG).

Solanum dulcamara L. -- roadside -- scattered -- Anon., s.n., 1943 (DAO); Roy 3751, 1935 (MT); Newstrom 249, 1976 (MTMG).

SCROPHULARIACEAE

Chaenorrhinum minus (L.) Lange -- sand pit -- rare -- Ducharme, s.n., 1930 (DAO); Valiquette, s.n., 1935 (DAO); Roy 3821, 3970, 1935 (MT); Parnis 575, 1973 (MTMG).

Chelone glabra L. -- marsh, margin of ponds -- scattered -- Charbonneau, s.n., 1935 (DAO); Roy 3471, 1934; 4040, 1935 (MT); Swales 6049, 1973 (MTMG); Parnis 484, 1973 (MTMG); Newstrom 511, 1976; 958, 1187, 1977 (MTMG).

Gerardia purpurea L. var. parviflora Benth. = G. paupercula (Gray) Britton -- roadside and fields -- common -- numerous coll., Parnis 510, 577, 1973 (MTMG); Newstrom 1976-77 (MTMG).

Gerardia tenuifolia Vahl -- sandy shore Lac des Pins -- Parnis 898, 1974.

Linaria vulgaris Hill -- roadside -- common -- Ducharme, s.n., 1903 (DAO); Valiquette, s.n., 1935 (DAO); Roy 3430, 1934; 3797, 4019, 1935 (MT); Newstrom 351, 1976 (MTMG).

Lindernia dubia (L.) Pennell -- margin of ponds and streams -- scattered -- numerous coll., Roy 1934-35, as Ilysanthes dubia (L.) Barnh. (MT); Charbonneau, s.n., 1935 (DAO); Newstrom 301, 1976; 957, 1977 (MTMG).

Melampyrum lineare Desr. -- rocky outcrop -- scattered -- Roy 544, 1927; 3290, 1934; 3956, 1935 (MT); Valiquette 480, 1935 (DAO); Parnis 746, 1974 (MTMG); Newstrom 486, 1976 (MTMG); Newstrom and Pryer 827, 1977 (MTMG).

Mimulus ringens L. -- wet depressions, fields -- scattered -- Roy 3310, 1934; 3848, 1935 (MT); Valiquette, s.n., 1935 (DAO); Pokorny, s.n., 1963 (MTMG); Swales 3577, 1970 (MTMG); Parnis 796, 1974 (MTMG); Newstrom 347, 467, 478, 1976 (MTMG).

Verbascum thapsus L. -- roadside and fields -- common -- Ducharme, s.n., 1901 (DAO); Roy 3196, 1934 (MT); Parnis 442, 1973 (MTMG); Newstrom 176, 1976 (MTMG).

Veronica longifolia L. -- roadside -- scattered -- Newstrom 521, 603, 1976 (MTMG).

Veronica persica Poir. -- trail in woods -- Parnis 814, 1974 (MTMG).

Veronica scutellata L. -- margin of pond -- Roy 3202, 3338, 1934 (MT); Valiquette, s.n., 1935 (DAO); Parnis 833, 1974 (MTMG); Newstrom 1102, 1977 (MTMG).

Veronica serpyllifolia L. -- roadside and fields -- common -- numerous coll., Ducharme, s.n., 1908 (DAO); Valiquette, s.n., 1935 (DAO); Pokorny, s.n., 1963 (MTMG); Newstrom 1976-77 (MTMG).

OROBANCHACEAE

Epifagus virginiana (L.) Bart. -- maple woods -- common -- Ducharme, s.n., s.d. (DAO); Roy 3504, 1934; 4089, 1935 (MT); Parnis 792, 953, 1974 (MTMG); Newstrom 556, 1976; 1155, 1977 (MTMG).

Orobanche uniflora L. -- meadow -- rare -- Newstrom 1361, 1975; 244, 1976 (MTMG).

LENTIBULARIACEAE

Utricularia vulgaris L. -- in water in marsh -- scattered in its habitat -- Ducharme, s.n., 1901 (DAO); Newstrom 600, 1976; 1006, 1977 (MTMG).

PHRYMACEAE

Phyrma leptostachya L. -- trail in woods -- common -- Roy, s.n., 3226, 1934; 3730, 1935 (MT); Parnis 764, 1974 (MTMG); Newstrom 443, 1976 (MTMG).

PLANTAGINACEAE

Plantago lanceolata L. -- roadside -- rare -- Roy 3237, 1934; 3826, 1935 (MT); Valiquette, s.n., 1935 (DAO); Newstrom 333, 1976 (MTMG).

Plantago major L. -- roadside -- common -- Ducharme, s.n., 1905 (DAO); Charbonneau, s.n., 1935 (DAO); Parnis 513, 1973 (MTMG); Newstrom 365, 1976 (MTMG).

RUBIACEAE

Cephalanthus occidentalis L. -- wet depression -- rare -- numerous coll., Ducharme, s.n., 1935 (DAO); Ducharme and Roy 341, 1923 (MT); Roy 1933-35 (MT); Newstrom 773, 1977 (MTMG).

Galium aparine L. -- fields and trail in woods -- scattered -- Newstrom 187, 231, 1976 (MTMG); Newstrom and Pryer 796, 1977 (MTMG).

Galium asprellum Michx. -- no habitat recorded -- Ducharme, s.n., 1932 (DAO); Valiquette, s.n., 1935 (DAO, det. Boiv.).

Galium labradoricum (Wieg.) Wieg. -- marsh and margin of beaver pond -- scattered -- Swales, s.n., 1966 (MTMG); Newstrom 1099, 1229, 1977 (MTMG); Newstrom and Pryer 878, 1977 (MTMG).

Galium obtusum Bigel. -- margin stream -- Newstrom 662, 1977 (MTMG).

Galium palustre L. -- margin of stream -- Ducharme, s.n., 1920 (DAO); Roy, s.n., 1927 (DAO); Newstrom 263, 303, 1976 (MTMG).

Galium trifidum L. var. tinctorium (L.) T. + G. -- roadside -- Newstrom 383, 1976 (MTMG).

Galium triflorum Michx. -- mixed woods, swamp and margin of pond -- common -- numerous coll., Roy, s.n., 1927 (MT); Parnis 786, 1974 (MTMG); Newstrom 1976-77 (MTMG); Newstrom and Pryer 842, 924, 1977 (MTMG).

Mitchella repens L. -- maple woods -- common -- Gareau, s.n., 1895 (DAO); Cloutier, s.n., 1934 (DAO); Roy 3737, 1935 (MT); Pokorny, s.n., 1963 (MTMG); Parnis 760, 1974 (MTMG); Newstrom 758, 1977 (MTMG).

CAPRIFOLIACEAE

Diervilla lonicera Mill. -- rocky outcrops, roadside -- common -- Valiquette, s.n., 1935 (DAO); Swales 725, 1966 (MTMG); Op de Beeck and Gohier, s.n., 1969 (MTMG); Parnis 747, 1974 (MTMG); Newstrom 193, 316, 420, 1976 (MTMG).

Lonicera canadensis Marsh. -- mixed woods -- scattered -- Ducharme, s.n., 1895 (DAO); Roy, s.n., 1924 (MT); Charbonneau, s.n., 1938 (DAO); Parnis 1146, 1975 (MTMG); Newstrom 941, 1976 (MTMG).

Lonicera dioica L. -- meadow -- rare -- Charbonneau, s.n., 1937 (DAO); Newstrom 158, 1976 (MTMG).

Lonicera tartarica L. -- meadow -- rare -- Charbonneau, s.n., 1935 (DAO); Newstrom 179, 1976 (MTMG).

Sambucus canadensis L. -- roadside, woods -- common -- Roy 3211, 1934; 3710, 1935 (MT); Charbonneau, s.n., 1936 (DAO); Parnis 951, 1974 (MTMG); Newstrom 362, 1976 (MTMG).

Sambucus pubens Michx. -- roadside, woods -- common -- numerous coll., Charbonneau, s.n., 1937 (DAO); Newstrom 1976-77 (MTMG); Newstrom and Pryer 911, 1977 (MTMG).

Viburnum alnifolium Marsh. -- roadside, trail in woods -- common -- Ducharme, s.n., 1902 (DAO); Roy, s.n., 1924, as V. lantanoides Michx. (MT); Caron 1600, 1937, as V. lantanoides (MT); Charbonneau, s.n., 1938 (DAO); Bahr, s.n., 1962 (MTMG); Parnis 639, 1974 (MTMG); Newstrom 88, 131, 621, 1976 (MTMG).

Viburnum cassinoides L. -- rocky outcrop -- common -- Newstrom 534, 589, 1976; 731, 1977 (MTMG).

Viburnum opulus L. var. americanum Ait. = V. trilobum Marsh. -- marsh -- scattered -- Ducharme, s.n., 1900 (DAO); Newstrom 1206, 1977 (MTMG).

VALERIANACEAE

Valeriana officinalis L. -- roadside -- scattered -- Newstrom 399, 1976; 841, 1977 (MTMG).

CUCURBITACEAE

Echinocystis lobata (Michx.) T. + G. -- roadside -- scattered -- Parnis 817, 1974 (MTMG); Newstrom 512, 1976 (MTMG).

CAMPANULACEAE

Campanula rapunculoides L. -- roadside -- scattered -- Ducharme, s.n., 1899 (DAO); Newstrom 450, 1976 (MTMG).

LOBELIACEAE

Lobelia inflata L. -- roadside, fields -- common -- numerous coll., Ducharme, s.n., 1886 (DAO); Roy 1934-35 (MT); Valiquette, s.n., 1935 (DAO); Bahr, s.n., 1972 (MTMG); Parnis 521, 540, 1973; 822, 1974 (MTMG); Newstrom 433, 471, 1976; 766, 1977 (MTMG).

COMPOSITAE

Achillea millefolium L. -- roadside, meadows -- common -- Ducharme, s.n., 1900 (DAO); Roy 3223, 1934 (MT); Parnis 418, 486, 1973 (MTMG); Newstrom 352, 385, 1976; 1146, 1977 (MTMG).

Ambrosia artemisiifolia L. -- roadside, trail in woods -- common -- Caron, s.n., 1935 (DAO); Parnis 514, 539, 1973; 803, 1974 (MTMG); Newstrom 1066, 1074, 1163, 1977 (MTMG).

Anaphalis margaritacea (L.) Benth. + Hook. -- roadside, margin of pond, fields -- common -- numerous coll., Roy 1934-35 (MT); Parnis 1973-74 (MTMG); Newstrom 1976-77 (MTMG).

Antennaria neglecta Greene var. attenuata (Fern.) Cronq. = A. neodioica Greene -- rocky outcrop -- scattered -- Roy 3771, 1935 (MT); Newstrom 759, 1977 (MTMG, det. Cronq.).

Antennaria neglecta Greene var. neglecta = A. petaloidea Fern. -- boulder bed, rocky outcrop -- Anon., s.n., 1935 (DAO); Charbonneau, s.n., 1935 (DAO); Newstrom 287, 1976; 864, 1977 (MTMG, det. Cronq.).

Antennaria neglecta (Greene) var. Randii (Fern.) Cronq. = A. canadensis Greene -- rocky outcrop, fields -- scattered -- Ducharme, s.n., s.d. (DAO); Anon., s.n., 1907 (DAO, det. Malte); Newstrom 95, 117, 296, 1976 (MTMG, det. Cronq.).

Arctium minus (Hill) Bernh. -- roadside, gravel pit -- common -- Roy, s.n., 1934 (MT); Parnis 502, 1973 (MTMG); Newstrom 358, 1976; 1122, 1977 (MTMG).

Artemisia vulgaris L. -- roadside -- common -- numerous coll., Newstrom 1976-77 (MTMG).

Aster acuminatus Michx. -- roadside, trail in woods -- common -- numerous coll., Ducharme, s.n., 1907 (DAO); Roy 1934-35 (MT); Valiquette, s.n., 1935 (DAO); Bahr, s.n., 1962 (MTMG); Parnis 948, 1974 (MTMG); Newstrom 1976-77 (MTMG).

Aster cordifolius L. -- roadside, trail in woods -- common -- numerous coll., Parnis 518, 1973 (MTMG); Newstrom 1976-77 (MTMG).

Aster junciformis Rydb. -- marsh -- rare -- Newstrom 1202, 1977 (MTMG, det. Cronq.).

Aster lateriflorus (L.) Britton -- edge of woods -- rare -- Newstrom 1027, 1152, 1977 (MTMG, det. Cronq.); Newstrom and Pryer 1338, 1977 (MTMG).

Aster novae-angliae L. -- roadside, fields -- common -- Caron, s.n., 1932 (DAO); Newstrom 522, 1976; 1251, 1977 (MTMG).

Aster novi-belgii L. -- marsh -- rare -- Newstrom 594, 1976; 1196, 1977 (MTMG, det. Cronq.).

Aster puniceus L. -- marsh, cedar-orchid swamp, margin of ponds -- common numerous coll., Ducharme, s.n., 1903 (DAO); Swales, s.n., 1966 (MTMG); Parnis 1973-74 (MTMG); Newstrom 1976-77 (MTMG); Newstrom 1210, 1207, 1977 (MTMG, det. Cronq.).

Aster simplex Willd. -- maple woods, margin of streams and ponds -- common -- numerous coll., Valiquette, s.n., 1935, as A. paniculatis Lam. (DAO); Parnis 1973-74 (MTMG); Newstrom 1976-77 (MTMG).

Aster umbellatus Mill. -- marsh, cedar-orchid swamp, sand pit -- common -- numerous coll., Ducharme, s.n., 1922 (DAO); Valiquette, s.n., 1935 (DAO); Swales, s.n., 1966 (MTMG); Parnis 468, 524, 1973 (MTMG); Newstrom 1976-77 (MTMG).

Bidens cernua L. -- margin of streams and ponds -- common -- Charbonneau, s.n., 1937 (DAO); Swales 9278, 1966 (MTMG); Parnis 943, 1975 (MTMG); Newstrom 1976-77 (MTMG, det. Boiv.); Newstrom and Pryer 1280, 1977 (MTMG , det. Boiv.).

Bidens frondosa L. var. frondosa -- cedar-orchid bog, margin streams and ponds -- Caron, s.n., 1935 (DAO); Roy 3384, 1934 (MT); Parnis 576, 1973 (MTMG); Newstrom 1217, 1262, 1321, 1977 (MTMG, det. Boiv.); Newstrom and Pryer 1342, 1977 (MTMG, det. Boiv.).

Bidens frondosa var. puberla Wieg. -- roadside, trail in woods -- numerous coll., Newstrom 1976-77 (MTMG, det. Boiv.).

Bidens tripartita L. f. comosa = B. comosa (A. Gray) Wiegand = B. connata Mühl. -- margin of pond -- Newstrom 1112, 1239, 1977 (MTMG, det. Boiv.).

Carduus acanthoides L. -- roadside -- rare -- Newstrom 386, 1976 (MTMG).

Chrysanthemum leucanthemum L. -- fields and roadside -- common -- Ducharme, s.n., 1899 (DAO); Parnis 655, 1974 (MTMG); Newstrom 195, 1976 (MTMG).

Cichorium intybus L. -- roadsides -- common -- Roy 3383, 1934 (MT); Parnis 420, 1973 (MTMG); Newstrom 321, 1976 (MTMG).

Cirsium arvense (L.) Scop. -- roadsides and fields -- Ducharme, s.n., s.d. (DAO); Parnis 806, 1974 (MTMG); Newstrom 373, 1976; 959, 1334, 1977 (MTMG).

Cirsium discolor (Mühl.) Spreng. -- trail in woods, margin of pond, sand pit -- common -- Parnis 511, 1973; 851, 914, 1974 (MTMG); Newstrom 568, 1976; 1353, 1977 (MTMG).

Cirsium muticum Michx. -- marsh, margin of pond -- scattered -- Newstrom 963, 1977 (MTMG); Newstrom and Pryer 875, 1977 (MTMG).

Cirsium vulgare (Savi ) Tenore. -- roadside and fields -- common -- Newstrom 389, 531, 1976; 1261, 1977 (MTMG).

Erechtites hieracifolia (L.) Raf. -- no habitat recorded -- Valiquette, s.n., 1936 (DAO); Roy 3929, 4023, 4086, 1935 (MT).

Erigeron annuus (L.) Pers. -- roadsides, trail in woods -- Ducharme, s.n., 1935 (DAO); Roy 3888, 1935 (MT); Newstrom 1071, 1977 (MTMG).

Conyza canadensis (L.) Cronq. = Erigeron canadensis L. -- trail in woods, sand pit -- Ducharme, s.n., 1906 (DAO); Valiquette, s.n., 1935 (DAO); Parnis 579, 1973 (MTMG); Newstrom 915, 1977 (MTMG).

Erigeron philadelphicus L. -- roadside and fields -- Ducharme, s.n., 1935 (DAO); Parnis 670, 1974 (MTMG); Newstrom 181, 1976 (MTMG).

Erigeron strigosus Mühl. -- roadside, boulder bed, fields -- common -- numerous coll., Roy 3744, 1935 (MT); Swales 3938, 1972 (MTMG); Parnis 422a, 1973 (MTMG); Newstrom 1976-77 (MTMG).

Eupatorium maculatum L. -- marsh, stream banks -- common -- Ducharme, s.n., s.d.; s.n., 1900 (DAO); Valiquette, s.n., 1935 (DAO); Roy 3362, 1934 (MT); Prescott 9, 1971 (MTMG); Swales 5050, 1973 (MTMG); Parnis 422, 1973 (MTMG); Newstrom 493, 1976 (MTMG).

Eupatorium perfoliatum L. -- fields and roadside -- common -- Ducharme, s.n., 1908 (DAO); Roy 3385, 1934; 3930, 1935 (MT); Parnis 492, 578, 1973 (MTMG); Newstrom 497, 1976 (MTMG).

Eupatorium rugosum Houtt. -- maple woods -- common -- Anon., s.n., 1908 (DAO); Roy 3484, 1934; 4092, 1935 (MT); Valiquette, s.n., 1935 (DAO); Newstrom 504, 1976 (MTMG).

Galinsoga ciliata (Raf.) Blake -- cultivated land -- scattered -- Ducharme, s.n., 1940 (DAO); Newstrom 1028, 1977 (MTMG).

Gnaphalium uliginosum L. -- roadside -- scattered -- Ducharme, s.n., 1919 (DAO); Valiquette, s.n., 1935 (DAO); Roy 535, 1923: 3268, 1934 (MT); Newstrom 1148, 1977 (MTMG).

Helianthus annuus L. -- stream bank -- rare -- Newstrom 474, 1976 (MTMG).

Hieracium aurantiacum L. -- trail in woods, field -- Ducharme, s.n., 1922 (DAO); Charbonneau, s.n., 1935 (DAO); Roy 3275, 1934 (MT); Newstrom 298, 1976 (MTMG).

Hieracium canadense Michx. = H. kalmii L. -- trail in woods -- rare -- Ducharme, s.n., 1935 (DAO); Valiquette, s.n., 1935 (DAO); Roy, 3851, 1935 (MT); Newstrom 964, 1977 (MTMG); Newstrom and Pryer, 964, 1977 (MTMG).

Hieracium florentinum All. -- rocky outcrop, trail in woods, fields -- common -- Roy 3276, 3513, 1934 (MT); Valiquette, s.n., 1935 (DAO); Parnis 528, 1973; 734, 1974 (MTMG); Newstrom 196, 1976; 642, 1253, 1977 (MTMG).

Hieracium scabrum Michx. -- trail in woods -- scattered -- Valiquette, s.n., 1935 (DAO); Newstrom 513, 1976; 1064, 1065, 1977 (MTMG).

Inula helenium L. -- roadside -- scattered -- numerous coll., Anon., s.n., 1923 (DAO); Ducharme, s.n., 1935 (DAO); Charbonneau, s.n., 1935 (DAO); Roy 1934-35 (MT); Newstrom 539, 1976 (MTMG); Newstrom and Pryer 872, 1977 (MTMG).

Lactuca biennis (Moench ) Fern. -- roadside -- scattered -- Ducharme, s.n., 1935 (DAO); Newstrom 987, 1977 (MTMG).

Lactuca canadensis L. -- roadside -- scattered -- Roy 3251, 1934 (MT); Parnis 448, 1973 (MTMG); Newstrom 986, 1977 (MTMG).

Matricaria matricarioides (Less.) Porter -- roadside -- common -- Roy 3228, 1934 (MT); Valiquette, s.n., 1935 (DAO); Parnis 526, 1973 (MTMG); Newstrom 322, 1976 (MTMG).

Rudbeckia hirta L. -- roadside, fields -- common -- Roy, s.n., 1923; 3247, 1934 (MT); Charbonneau, s.n., 1935 (DAO); Parnis 811, 1974 (MTMG); Newstrom 222, 1976 (MTMG).

Senecio pauperculus Michx. -- field -- rare -- Roy 3244, 1934 (MT); Newstrom and Pryer 635, 1977 (MTMG).

Solidago altissima L. -- fields and roadside -- common -- Parnis 530, 531, 556, 1973 (MTMG); Newstrom 577b, 1976 (MTMG); Newstrom and Pryer 1333, 1977 (MTMG).

Solidago caesia L. -- in maple woods -- common -- Ducharme, s.n., s.d. (DAO); Charbonneau, s.n., 1935 (DAO); Roy 4094, 1935 (MT); Op de Beeck, s.n., 1969 (MTMG); Parnis 947, 1974 (MTMG); Newstrom 1154, 1166, 1246a, 1977 (MTMG); Newstrom and Pryer 1344, 1977 (MTMG).

Solidago canadensis L. -- roadside and fields -- common -- numerous coll., Ducharme, s.n., 1908 (DAO); Parnis 1973 (MTMG); Newstrom 492, 1976 (MTMG); Newstrom and Pryer 1346, 1977 (MTMG).

Solidago flexicaulis L. -- maple woods -- common -- Ducharme, s.n., 1908 (DAO); Valiquette, s.n., 1936 (DAO); Roy 4099, 1935 (MT); Newstrom 506, 606, 1976; 950, 1977 (MTMG); Newstrom and Pryer 1330, 1977 (MTMG).

Solidago gigantea Ait. -- margin of Lac des Pins -- Parnis 856, 1974 (MTMG).

Solidago graminifolia (L.) Salisb. -- roadside -- common -- numerous coll., Caron, s.n., 1937 (DAO); Parnis 1973 (MTMG); Newstrom 482, 1976 (MTMG); Newstrom and Pryer 1279, 1326, 1977 (MTMG).

Solidago nemoralis Ait. -- fields -- common -- numerous coll., Ducharme, s.n., 1907 (DAO); Valiquette, s.n., 1935 (DAO); Swales, s.n., 1966 (MTMG); Parnis 529, 1973; 857, 1974 (MTMG); Newstrom 1976-77 (MTMG).

Solidago rugosa Mill. -- roadside, meadow, margin of marsh and swamp -- common -- numerous coll., Parnis 855, 1974 (MTMG); Newstrom 1976-77 (MTMG).

Solidago uliginosa Nutt. -- marsh -- scattered -- numerous coll., Roy 1923-35 (MT); Valiquette, s.n., 1934 (DAO); Newstrom 595, 1976; 1185, 1977 (MTMG).

Sonchus arvensis L. -- roadside -- scattered -- Roy 3876, 1935 (MT); Newstrom 1156, 1977 (MTMG).

Tanacetum vulgare L. -- roadside -- scattered -- numerous coll., Roy 1933-35 (MT); Valiquette, s.n., 1935 (DAO); Newstrom 1371, 1975; 520, 1976 (MTMG).

Taraxacum officinale Weber -- meadow and roadside -- common -- Newstrom 1182, 1977 (MTMG).

Tragopogon pratensis L. -- roadside -- scattered -- Newstrom 200, 1976 (MTMG).

Tussilago farfara L. -- margin of stream -- rare -- Roy 3861, 1935 (MT); Newstrom 67, 1976 (MTMG).

Xanthium chinense Mill. -- roadside -- common -- Newstrom 619, 1976; 1123, 1977 (MTMG).

## List of Taxa That May Be Found on the Mountain -- The Potential Species

### PTERIDOPHYTA

#### LYCOPODIACEAE

Lycopodium X harbereri > flabelliforme -- no habitat recorded -- Roy 3477, 1934 (MT, det. Joan H. Wilce).

#### OPHIOGLOSSACEAE

Botrychium dissectum Spreng. var. obliquum (Mühl.) Clute. = B. obliquum Mühl. -- no habitat recorded -- Robert 1447, 1934 (MT).

Botrychium matricariifolium A. Br. -- sandy terrace -- Roy 3414, 1934 (MT); Raymond 144, 1937 (MT).

Botrychium oneidense (Gilbert) House -- no habitat recorded -- Robert 1286, 1934 (MT, det. Wag.).

Botrychium ternatum Swartz -- no habitat recorded -- Robert 1375, 1934 (DAO, det. Wag.); Roy 3495, 3496, 1935 (DAO, det. Wag.).

Ophioglossum vulgatum L. var. pseudopodum -- no habitat recorded -- Robert, s.n., 1938 (DAO).

#### POLYPODIACEAE

Dryopteris clintoniana Dowell -- no habitat recorded -- Ducharme, s.n., 1939; s.n., 1940 (DAO).

Dryopteris goldiana (Hooker) Gray -- no habitat recorded -- Robert 1373, 1934 (MT).

Polystichum braunii (Spenner) Fée -- no habitat recorded -- Ducharme, s.n., 1903 (DAO).

### SPERMATOPHYTA

#### GYMNOSPERMAE

PINACEAE

Pinus sylvestris L. -- planted on the mountain -- Adrien 1404, 1405, 1926 (MT); Robert 1211, 1934 (MT); Roy 3236, 1934; 3873, 3874, 1935 (MT); Caron, s.n., 1936 (DAO); Marie-Victorin, Rolland-Germain, Rouleau and Boivin 4342, 4343, 1940 (MT).

ANGIOSPERMAE

MONOCOTYLEDONEAE

NAJADACEAE

Potamogeton gramineus L. -- no habitat recorded -- Roy 4000, 4010, 1935 (MT, det. Bouch. and Gauth.).

Potamogeton perfoliatus L. var. perfoliatus -- no habitat recorded -- Roy 4014, 1935 (MT, det. Bouch. and Gauth.).

Potamogeton perfoliatus L. var. richardsonii Benn. -- no habitat recorded -- Roy 3522, 1934; 3749, 3997, 1935 (MT, det. Bouch. and Gauth.).

Potamogeton richardsonii (Benn.) Rydb. -- no habitat recorded -- Charbonneau, s.n., 1937 (DAO).

Potamogeton robbinsii Oakes -- no habitat recorded -- Roy 1677, 1930 (MT, det. Bouch. and Gauth.).

Potamogeton spirillus Tuckerm. -- no habitat recorded -- Roy 3796, 4115, 1935 (MT).

GRAMINEAE

Agropyron trachycaulum (Link ) Malte -- no habitat recorded -- Roy 3769, 1935 (MT).

Digitaria ischaemum (Schreb.) Mühl. -- no habitat recorded -- Roy 3453, 1934; 3896, 4035, 1935 (MT).

Elymus wiegandii Fern. -- no habitat recorded -- numerous coll., Roy 1934-35, as E. canadensis L. (MT); Valiquette, s.n., 1935 (DAO).

Muhlenbergia frondosa (Poir.) Fern. -- no habitat recorded -- Roy 4081, 1935 (MT).

Panicum philadelphicum Bernh. -- no habitat recorded -- Roy 3452, 1934 (MT).

Poa palustris L. -- no habitat recorded -- Roy 3772, 1935 (MT).

Poa saltuensis (Fern.) Wieg. -- woody and rocky hills -- Ducharme, s.n., 1901 (DAO, det. Bark.).

CYPERACEAE

Carex disperma Dewey -- no habitat recorded -- Ducharme, s.n., 1901 (DAO).

Carex lenticularis Michx. -- no habitat recorded -- Dion, s.n., 1935 (DAO).

Carex pallescens L. -- no habitat recorded -- Roy, s.n., 1927 (MT).

Carex pseudo-cyperus L. -- no habitat recorded -- Ducharme, s.n., 1901 (DAO); Roy 3326, 1934; 3860, 1935 (MT).

Carex tincta Fern. -- no habitat recorded -- Ducharme, s.n., 1901 (DAO).

Carex tuckermanii Dewey -- no habitat recorded -- Roy 4110, 1935 (MT).

Carex typhina Michx. -- no habitat recorded -- Roy 3524, 1934; 3753, 1935 (MT).

Cyperus esculentus L. -- no habitat recorded -- Ducharme, s.n., 1920 (DAO).

Rhynchospora capitellata (Michx.) Vahl -- no habitat recorded -- Ducharme, s.n., 1940 (DAO).

Scirpus pedicellatus Fern. -- no habitat recorded -- Roy 3550, 3282b, 1934 (MT).

LILIACEAE

Smilax herbacea L. -- no habitat recorded -- Ducharme, s.n., 1920 (DAO).

Streptopus amplexifolius (L.) DC. -- no habitat recorded -- Ducharme, s.n., 1899 (DAO).

Uvularia sessilifolia L. -- no habitat recorded -- Ducharme, s.n., 1899 (DAO); Valiquette, s.n., 1935 (DAO); Robert 1420, 1934 (MT).

ORCHIDACEAE

Corallorhiza trifida Chat. -- no habitat recorded -- Ducharme, s.n., 1935 (DAO).

Goodyera repens (L.) Brown var. tesselata (Lodd.) Boivin -- Ducharme, s.n., 1922 (DAO, det. Boiv.).

Habenaria dilatata (Pursh ) Hook. -- no habitat recorded -- Roy 3916, 1934 (MT); Ducharme, s.n., 1935 (DAO).

Habenaria hookeri Torr. -- no habitat recorded -- Ducharme, s.n., 1935 (DAO).

Habenaria viridis (L.) R.Br. = H. bracteata (Muhl.) R.Br. -- no habitat recorded -- numerous coll., Campbell, s.n., 1886-1911 (MTMG); Roy 1934-35 (MT); Ducharme, s.n.. (DAO).

Orchis spectabilis L. -- no habitat recorded -- Ducharme, s.n., 1899 (DAO).

DICOTYLEDONEAE

SALICACEAE

Populus deltoides Marsh. -- no habitat recorded -- Caron, s.n., 1937 (DAO).

Populus nigra L. -- no habitat recorded -- Caron, s.n., 1938, as P. nigra var. italica (DAO).

ULMACEAE

Ulmus thomasi Sarg. -- no habitat recorded -- Ducharme, s.n., s.d. (DAO).

URTICACEAE

Boehmeria cylindrica (L.) Sw. -- no habitat recorded -- Anon, s.n., 1923 (DAO, det. Malte).

SANTALACEAE

Comandra umbellata (L.) Nutt. -- no habitat recorded -- Roy, s.n., 1923 (MT).

POLYGONACEAE

Rumex verticillatus L. -- no habitat recorded -- numerous coll., Roy 1934-35 (MT).

CHENOPODIACEAE

Atriplex patula L. -- no habitat recorded -- Ducharme, s.n., 1939; s.n., 1940 (DAO); Roy 3978, 1935 (MT).

Atriplex patula L. var. hastata (L.) Gray -- no habitat recorded -- Roy 3799, 1935, as A. hastata L. (MT).

Chenopodium glaucum L. -- no habitat recorded -- Roy 3820, 1935 (MT).

AMARANTHACEAE

Amaranthus graecizans L. -- no habitat recorded -- numerous coll., Ducharme, s.n., 1940 (DAO); Roy 1935 (MT).

PORTULACACEAE

Portulaca oleracea L. -- no habitat recorded -- Roy 3879, 1935 (MT).

CARYOPHYLLACEAE

Lychnis alba Mill. -- no habitat recorded -- Ducharme, s.n., 1923 (DAO); Roy 3975, 1935 (MT).

Spergula arvensis L. -- no habitat recorded -- Roy 3274, 1934 (MT).

Stellaria longifolia Mühl. -- no habitat recorded -- Ducharme, s.n., 1900 (DAO).

RANUNCULACEAE

Ranunculus flabellaris Raf. -- no habitat recorded -- rare -- Robert 1256, 1934 (MT); Roy 3344, 1934; 3767, 1935 (MT).

Ranunculus recurvatus Poir. -- no habitat recorded -- Ducharme, s.n., 1922 (DAO).

Ranunculus repens L. -- no habitat recorded -- Ducharme, s.n., 1903 (DAO); Roy 3713, 1935 (MT).

BERBERIDACEAE

Berberis vulgaris L. -- no habitat recorded -- Charbonneau, s.n., 1937 (DAO).

FUMARIACLAE

Fumaria officinalis L. -- no habitat recorded -- Roy 3777, 1935 (MT).

CRUCIFEREAE

Descurainia pinnata (Walt.) Britt. -- no habitat recorded -- Anon., s.n., 1940 (DAO, det. Malte).

Lepidium virginicum L. -- no habitat recorded -- Anon., s.n., 1940 (DAO, det. Malte).

Nasturtium officinale R.Br. -- no habitat recorded -- Ducharme, s.n., 1901 (DAO).

Rorippa islandica (Oeder ) Borbas var. hispida (Desv.) Butters and Abbe -- no habitat recorded -- Ducharme, s.n., 1935 (DAO).

SAXIFRAGACEAE

Mitella nuda L. -- no habitat recorded -- Ducharme, s.n., 1935 (DAO); Charbonneau, s.n., 1935 (DAO).

Ribes americanum Mill. -- no habitat recorded -- Ducharme, s.n., s.d.(DAO).

Ribes hirtellum Michx. -- no habitat recorded -- Ducharme, s.n., 1935 (DAO).

Ribes lacustre (Pers.) Poir. -- no habitat recorded -- Roy 3911, 1935 (MT); Charbonneau, s.n., 1936 (DAO).

Ribes odoratum Wendl. -- no habitat recorded -- Ducharme, s.n., 1899; s.n., 1922 (DAO).

Ribes triste Pallas -- no habitat recorded -- Roy 3909, 1935 (MT).

ROSACEAE

Amelanchier canadensis (L.) Medic. -- no habitat recorded -- numerous coll., Ducharme, s.n., s.d.; s.n., 1908 (DAO); Roy 1924-27 (MT).

Amelanchier sanguinea (Pursh ) DC. var. grandiflora (Wieg.) Rehder = A. amabalis -- no habitat recorded -- Caron 1568, 1937, as A. grandiflora (Rehd.) Weig. (MT).

Crataegus punctata Jacq. -- no habitat recorded -- Charbonneau; s.n., 1938, as. C. suborbiculatus (DAO).

Potentilla intermedia L. -- no habitat recorded -- Anon., s.n., 1923 (DAO).

Potentilla simplex Michx. -- no habitat recorded -- Ducharme, s.n., 1935 (DAO).

Rosa cinnamomea L. -- no habitat recorded -- Dion, s.n., 1935 (DAO).

Rubus hispidus L. -- no habitat recorded -- Ducharme, s.n., s.d. (DAO).

FABACEAE

Apios americana Medic. -- no habitat recorded -- Roy 547, 1925, as A. tuberosa Moench; 3459, 1934; 3955, 4085, 1935 (MT).

Robinia pseudoacacia L. -- no habitat recorded -- Roy, s.n., 1927; s.n., 1932 (MT); Charbonneau, s.n., 1935 (DAO).

Trifolium hybridum L. -- no habitat recorded -- Ducharme, s.n., 1886 (DAO).

Trifolium procumbens L. -- no habitat recorded -- Charbonneau, s.n., 1936 (DAO).

LINACEAE

Linum usitatissimum L. -- no habitat recorded -- Charbonneau, s.n., 1941 (DAO).

RUTACEAE

Zanthoxylum americanum Mill. -- no habitat recorded -- Ducharme, s.n., s.d. (DAO).

POLYGALACEAE

Polygala sanguinea L. -- no habitat recorded -- Roy, s.n., 1934 (MT); Valiquette, s.n., 1935 (DAO); Ducharme, s.n., 1939 (DAO).

EUPHORBIACEAE

Acalypha virginica L. -- no habitat recorded -- Roy 3981, 1935 (MT); Ducharme, s.n., 1940 (DAO, det. Boiv.).

Euphorbia helioscopia L. -- no habitat recorded -- Roy 3301, 1934; 4049, 1935 (MT); Valiquette, s.n., 1935 (DAO); Ducharme, s.n., 1940 (DAO).

AQUIFOLIACEAE

Nemopanthus mucronatus (L.) Trel. -- no habitat recorded -- Ducharme, s.n., 1907 (DAO).

CELASTRACEAE

Celastrus scandens L. -- no habitat recorded -- Ducharme, s.n., 1902 (DAO); Charbonneau, s.n., 1941 (DAO).

MALVACEAE

Malva neglecta Wallr. -- no habitat recorded -- Roy 3229, 1934; 3825, 1935 (MT).

VIOLACEAE

Viola affinis Le Conte -- marsh -- Anon., s.n., 1907 (DAO, det. Malte).

Viola blanda Willd. -- no habitat recorded -- Ducharme, s.n., 1939 (DAO).

Viola incognita Brainerd -- no habitat recorded -- Roy, s.n., 1924 (MT, det. Cinq-Mars).

Viola selkirkii Pursh -- no habitat recorded -- Ducharme, s.n., 1939 (DAO).

ONAGRACEAE

Epilobium strictum Mühl. -- no habitat recorded -- Ducharme, s.n., s.d. (DAO); Roy 4043, 1935 (MT).

UMBELLIFERAE

Carum carvi L. -- no habitat recorded -- Roy 3216, 1934 (MT).

Sanicula gregaria Bickn. -- no habitat recorded -- Charbonneau, s.n., 1937 (DAO).

Sanicula trifoliata Bickn. -- no habitat recorded -- Ducharme, s.n., 1935 (DAO); Roy 3743, 1935 (MT).

Sium suave Walt. -- no habitat recorded -- Roy 3358, 1934 (MT).

ERICACEAE

Pyrola asarifolia Michx. -- no habitat recorded -- Ducharme, s.n., 1935 (DAO); Valiquette, s.n., 1935 (DAO).

Pyrola rotundifolia L. -- rocky woods, open and sandy -- Ouellet, s.n., 1901 (DAO); Ducharme, s.n., 1927 (DAO).

Pyrola secunda L. -- no habitat recorded -- Roy 3238, 3791, 1935 (MT).

Pyrola virens Schweigg. -- no habitat recorded -- Ducharme, s.n., 1935 (DAO).

PRIMULACEAE

Lysimachia nummularia L. -- no habitat recorded -- Roy 3208, 1934 (MT).

Lysimachia thyrsiflora L. -- no habitat recorded -- Roy 3198, 1934 (MT).

APOCYNACEAE

Apocynum cannabinum L. -- no habitat recorded -- Roy 3210, 1934; 3816, 1935 (MT); Ducharme, s.n., 1935 (DAO).

ASCLEPIADACEAE

Asclepias incarnata L. -- marsh -- numerous coll., Ducharme, s.n., 1908 (DAO); Valiquette, s.n., s.d., 1935 (DAO); Roy 1934-35 (MT).

CONVOLVULACEAE

Convolvulus arvensis L. -- no habitat recorded -- Ducharme, s.n., 1900 (DAO).

Cuscuta gronovii Willd. -- no habitat recorded -- Ducharme, s.n., 1902 (DAO).

BORAGINACEAE

Cynoglossum officinale L. -- no habitat recorded -- Ducharme, s.n., 1902 (DAO); Roy, s.n., 1927 (MT); Charbonneau, s.n., 1937 (DAO).

Lithospermum latifolium Michx. -- no habitat recorded -- Ducharme, s.n., 1939 (DAO).

Lycopsis arvensis L. -- no habitat recorded -- Valiquette, s.n., 1935 (DAO); Roy 3878, 3979, 3983 (MT).

Myosotis laxa Lehm. -- no habitat recorded -- Ducharme, s.n., 1935 (DAO).

LABIATAE

Mentha gentilis L. -- no habitat recorded -- Roy 3361, 1934 (MT).

Mentha piperita L. -- no habitat recorded -- Roy 3461, 1934; 4104, 1935 (MT); Valiquette, s.n., 1935 (DAO).

Mentha spicata L. -- no habitat recorded -- numerous coll., Ducharme, s.n., 1920 (DAO); Roy 1934-35 (MT).

Physostegia virginiana (L.) Benth. -- no habitat recorded -- Roy, s.n., 1926 (MT).

Scutellaria parvula Michx. -- no habitat recorded -- Anon., s.n., 1906 (DAO).

Stachys aspera Michx. -- no habitat recorded -- Anon., s.n., 1923, as S. hyssopifolia Michx. var. ambigua (DAO).

Stachys palustris L. -- no habitat recorded -- Charbonneau, s.n., 1935 (DAO).

Stachys palustris L. var. nipigonensis Jennings -- no habitat recorded -- Roy 3300, 1934; 3718, 3764, 1935 (MT).

Stachys tenuifolia Willd.? -- no habitat recorded -- Ducharme, s.n., 1923 (DAO).

Teucrium canadense L. -- no habitat recorded -- Roy 3990, 4048, 4076, 1935 (MT).

SOLANACEAE

Solanum nigrum L. -- no habitat recorded -- Valiquette, s.n., 1935 (DAO); Roy 3841, 1935 (MT).

SCROPHULARIACEAE

Gratiola neglecta Torr. -- no habitat recorded -- numerous coll., Ducharme, s.n., s.d., s.n., 1906 (DAO); Charbonneau, s.n., 1935 (DAO); Roy 1934-35 (MT).

Pedicularis canadensis L. -- no habitat recorded -- Caron, s.n., 1936 (DAO).

Veronica agrestis L. -- no habitat recorded -- Gaboriault, s.n., 1941 (DAO).

Veronica americana (Raf.) Schw. -- Ducharme, s.n., 1921 (DAO); Roy 3327, 1934; 3835, 1935 (MT); Valiquette, s.n., 1935 (DAO).

Veronica officinalis L. -- no habitat recorded -- Ducharme, s.n., 1940 (DAO).

PLANTAGINACEAE

Plantago rugellii Decne. -- no habitat recorded -- Ducharme, s.n., 1899 (DAO); Charbonneau, s.n., 1936 (DAO).

RUBIACEAE

Galium boreale L. -- no habitat recorded -- Ducharme, s.n., 1916 (DAO).

Galium lanceolatum Torr. -- no habitat recorded -- Roy 3782, 4098, 1935 (MT).

CAPRIFOLIACEAE

Linnaea borealis L. -- no habitat recorded -- Charbonneau, s.n., 1937 (DAO).

Lonicera oblongifolia (Goldie) Hook. -- no habitat recorded -- Roy 3478, 1934; 4069, 1935 (MT).

Symphoricarpos albus (L.) Blake -- no habitat recorded -- Ducharme, s.n., 1929 (DAO).

Viburnum lentago L. -- no habitat recorded -- Ducharme, s.n., 1923 (DAO); Roy 3525, 1934 (MT); Charbonneau, s.n., 1937 (DAO).

CUCURBITACEAE

Sicyos angulatus L. -- no habitat recorded -- Ducharme, s.n., 1904 (DAO).

CAMPANULACEAE

Campanula aparinoides Pursh var. grandiflora = C. uliginosa Rydb. -- no habitat recorded -- Roy 4166, 1935 (MT).

Campanula rotundifolia L. -- no habitat recorded -- Ducharme, s.n., 1901

LOBELIACEAE

Lobelia cardinalis L. -- no habitat recorded -- numerous coll., Ducharme, s.n., 1886 (DAO); Valiquette, s.n., 1935 (DAO); Roy 1934-35 (MT).

COMPOSITEAE

Ambrosia trifida L. -- no habitat recorded -- Roy 3867, 1935 (MT).

Antennaria plantaginifolia (L.) Richards. var. ambigens (Greene) Cronq. = A. fallax Greene -- no habitat recorded -- Charbonneau, s.n., 1935 (DAO).

Anthemis cotula L. -- no habitat recorded -- Ducharme, s.n., 1906 (DAO); Roy 3403, 1934; 3722, 1935 (MT).

Arctium lappa L. -- no habitat recorded -- numerous coll., Roy 1923-35 (MT); Roy and Héroux 3227, 1934 (MT); Ducharme, s.n., 1935 (DAO).

Artemisia absinthium L. -- no habitat recorded -- Ouellet, s.n., 1905 (DAO); Roy 3418, 1934; 3871, 4018, 1935 (MT); Valiquette, s.n., 1935 (DAO).

Artemisia biennis Willd. -- roadside -- Valiquette, s.n., 1935 (DAO).

Aster macrophyllus L. -- no habitat recorded -- Roy 4037, 1935 (MT); Valiquette, s.n., 1935 (DAO).

Centaurea nigra L. -- fields -- roadsides -- Ouellet, s.n., 1898 (DAO).

Gnaphalium obtusifolium L. -- no habitat recorded -- Roy and Heroux, s.n., 1934 (MT).

Helenium autumnale L. -- no habitat recorded -- numerous coll., Ducharme, s.n., 1901 (DAO); Roy 1932-35 (MT).

Hieracium paniculatum L. -- no habitat recorded -- Valiquette, s.n., s.d. (DAO); Roy 3994, 4079, 1935 (MT).

Hieracium vulgatum Fries -- no habitat recorded -- Roy, s.n., 1924 (MT).

Lactuca muralis (L.) Fresen. -- no habitat recorded -- Roy 3839, 1935 (MT).

Petasites frigidus (L.) Fries var. palmatus (Ait.) Cronq. = P. palmatus (Ait.) Gray -- no habitat recorded -- Roy 3476, 1934 (MT).

Rudbeckia laciniata L. -- no habitat recorded -- Roy, s.n., 1923; 3369, 1934 (MT).

Senecio viscosus L. -- no habitat recorded -- Charbonneau, s.n., 1935 (DAO).

Solidago bicolor L. -- no habitat recorded -- Roy 4082, 1935 (MT).

Solidago squarrosa Mühl. -- no habitat recorded -- Valiquette, s.n., 1935 (MT).

Sonchus asper (L.) Hill -- no habitat recorded -- numerous coll., Roy 1934-35 (MT).

# APPENDIX E

## EXCLUDED SPECIES

Acorus calamus L.
Allium schoenoprasum L.
Amaranthus tuberculatus (Moq.) Sauer.
Amelanchier sanguinea var. grandiflora (Wieg.) Rehder
Anacharis canadensis (Michx.) Rich.
Arenaria lateriflora L.
Bidens beckii Torr.
Brasenia schreberi Gmel.
Carex lupuliformis Sartw.
Carex lupulina Willd.
Cyperus haspan L.
Cyperus rivularis Kunth.
Elatine triandra Schk. var. americana (Pursh.) Fassett
Equisetum litorale Kühl.
Eragrostis hypnoides (Lam.) BSP.
Eriocaulon septangulare With.
Habenaria flava (L.) R. Br.
Hibiscus rosa-sinensis L.
Hibiscus trionum L.
Hypericum boreale (Britt.) Bickn.
Juncus alpinus Vill.
Lathyrus palustris L.
Lathyrus venosus Muhl.
Melissa officinalis L.
Myrica gale L.
Myriophyllum spicatum L. var. exalbescens (Fern.) Jeps.
Myriophyllum verticillatum L.
Nuphar advena (Ait.) Ait. f.
Nuphar microphyllum (Pers.) Fern.
Nuphar variegatum Engelm.
Nymphaea odorata Ait.
Nymphaea tuberosa Paine
Nymphoides cordata (Ell.) Fern.
Pinus rigida Mill.

Pontederia cordata L.
Potamogeton amplifolius Tuckerm.
Potamogeton crispus L.
Potamogeton epihydrus Raf.
Potamogeton gramineus L.
Potamogeton vaseyi Robbins
Potentilla palustris (L.) Scop.
Ranuncularis cymbalaria Pursh
Robinia viscosa Vent.
Scirpus acutus Muhl.
Scirpus americanus Pers.
Scirpus fluviatilis (Torr.) Gray
Triglochin maritima L.
Utricularia purpurea Walt.
Vaccinium vitis-idaea L.
Vicia sativa L.
Vicia tetrasperma (L.) Moench.
Zizania aquatica L.

# APPENDIX F

## ALPHABETICAL LIST OF THE VASCULAR FLORA

Abies balsamea (L.) Mill.

*Acalypha virginica L.

Acer negundo L.

Acer pensylvanicum L.

Acer rubrum L.

Acer saccharinum L.

Acer saccharum Marsh.

Acer spicatum Lam.

Achillea millefolium L.

Actaea alba (L.) Miller.
= A. pachypoda Ell.

Actaea rubra (Ait.) Willd.

Adiantum pedatum L.

Agrimonia gryposepala Wallr.

Agropyron repens (L.) Beauv.

*Agropyron trachycaulum (Link) Malte

Agrostis gigantea Roth

Agrostis gigantea Roth
var. dispar (Michx.) Philipson

Agrostis perennans (Walt.) Tuckerm.

Agrostis scabra Willd.

Agrostis stolonifera L.

Alisma plantago-aquatica L.
= Alisma triviale Pursh

Allium tricoccum Ait.

Alnus rugosa (DuRoi) Spreng.

*Amaranthus graecizans L.

Amaranthus retroflexus L.

Ambrosia artemisiifolia L.

Ambrosia trifida L.

Amelanchier arborea (Michx. f.) Fern.
var. arborea

*The location information on 158 species did not designate the mountain, but merely stated Rigaud. These are considered potential species of the mountain.

Amelanchier arborea (Michx. f.) Fern.
var. cordifolia (Ashe) Boivin
= A. laevis Wieg.

*Amelanchier canadensis (L.) Medic.

*Amelanchier sanguinea (Pursh) DC.
var. grandiflora (Wieg.) Rehder

Amelanchier sanguinea (Pursh) DC.
var. sanguinea
= A. humilis Wieg.

Amelanchier spicata (Lam.) K. Koch
= A. stolonifera Wieg.

Amphicarpa bracteata (L.) Fern.

Anaphalis margaritacea (L.) Benth. + Hook.

Anemone canadensis L.

Anemone cylindrica Gray

Anemone virginiana L.

Antennaria neglecta Greene
var. attenuata (Fern.) Cronq.
= A. neodioica Greene

Antennaria neglecta (Greene)
var. neglecta
= A. petaloidea Fern.

Antennaria neglecta (Greene)
var. Randii (Fern.) Cronq.
= A. canadensis Greene

*Antennaria plantaginifolia (L.) Richards.
var. ambigens (Greene) Cronq.
= A. fallax Greene

*Anthemis cotula L.

*Apios americana Medic.

Apocynum androsaemifolium L.

*Apocynum cannabinum L.

Aquilegia canadensis L.

Aquilegia vulgaris L.

Arabis divaricarpa A. Nels.

Arabis glabra (L.) Bernh.

Aralia hispida Vent.

Aralia nudicaulis L.

Aralia racemosa L.

Arctium lappa L.

Arctium minus (Hill) Bernh.

Arisaema triphyllum (L.) Schott
var. triphyllum
= A. atrorubens (Ait.) Blume.

Aronia melanocarpa (Michx.) Ell.

*Artemisia absinthium L.

Artemisia biennis Willd.

Artemisia vulgaris L.

Asarum canadense L.

*Asclepias incarnata L.

Asclepias syriaca L.

Asparagus officinalis L.

Aster acuminatus Michx.

Aster cordifolius L.

Aster junciformis Rydb.

Aster lateriflorus (L.) Britton

*Aster macrophyllus L.

Aster novae-angliae L.

Aster novi-belgii L.

Aster puniceus L.

Aster simplex Willd.

Aster umbellatus Mill.

Athyrium filix-femina (L.) Roth

Athyrium pycnocarpon (Spreng.) Tidest.

Athyrium thelypteroides (Michx.) Desv.

*Atriplex patula L.

*Atriplex patula L.
var. hastata (L.) Gray

Barbarea vulgaris R. Br.

*Berberis vulgaris L.

Betula lutea Michx. f.

Betula papyrifera Marsh.

Betula populifolia Marsh.

Bidens cernua L.

Bidens frondosa L.
var. frondosa

Bidens frondosa
var. puperla Wieg.

Bidens tripartita L. f. comosa
= B. comosa (A. Gray) Wiegand
= B. connata MÜhl

*Boehmeria cylindrica (L.) Sw.

Botrychium dissectum Spreng.
var. dissectum

*Botrychium dissectum Spreng.
var. obliquum (MÜhl.) Clute.
= B. obliquum MÜhl.

*Botrychium matricariifolium A. Br.

Botrychium multifidum (Gmel.) Rupr.

*Botrychium oneidense (Gilbert) House.

*Botrychium ternatum Swartz

Botrychium virginianum (L.) Sw.

Brachyelytrum erectum (Schreb.) Beauv.

Brassica campestris L.

Brassica kaber (DC.) L. Wheeler

Bromus ciliatus L.

Bromus inermis Leyss.

Calamagrostis canadensis (Michx.) Beauv.

Callitriche heterophylla Pursh

Callitriche verna L.
= C. palustris L.

Caltha palustris L.

*Campanula aparinoides Pursh
var. grandiflora
= C. uliginosa Rydb.

Campanula rapunculoides L.

*Campanula rotundifolia L.

Capsella bursa-pastoris (L.) Medic.

Cardamine pensylvanica MÜhl.

Carduus acanthoides L.

Carex aenea Fern.

Carex angustior Mack.
= C. muricata L.
var. angustata Carey

Carex aquatilis Wahl.

Carex arctata Boott

Carex aurea Nutt.

Carex bebbii (Bailey) Fern.

Carex bromoides Willd.

Carex brunnescens (Pers.) Poir.

Carex communis Bailey

Carex convoluta Mack.
= C. rosea Schk.

Carex crawfordii Fern.

Carex crinita Lam.

Carex cristatella Britt.

Carex cryptolepis Mack.

Carex deweyana Schw.

*Carex disperma Dewey

Carex echinata Murr.
= C. pairaei Schultz.

Carex flava L.

Carex flava L. X cryptolepis Mack.?
or Carex viridula Michx.?

Carex gracillima Schw.

Carex granularis Willd.

Carex gynandra Schw.
= C. crinita Lam.
var. gynandra (Schw.) Schw. + Torr.

Carex hystericina Willd.

Carex interior Bailey

Carex intumescens Rudge

Carex lacustris Willd.

Carex lasiocarpa Ehrh.

*Carex lenticularis Michx.

Carex leptalea Wahl.

*Carex lupuliformis Sartw.

*Carex lupulina Willd.

Carex lurida Wahl.

Carex ormostachya Wieg.
= C. laxiflora Lam.
var. ormostachya (Wieg.) Gleason.

*Carex pallescens L.

Carex pedunculata Mühl.

Carex pensylvanica Lam.

Carex plantaginea Lam.
Carex platyphylla Carey
Carex cf. projecta Mack.?
*Carex pseudo-cyperus L.
Carex radiata (Wahl) Small?
= C. rosea Schk.
Carex retrorsa Schw.
Carex scabrata Schw.
Carex scoparia Willd.
Carex stipata Willd.
Carex straminea Willd.
var. invisa W. Boott
*Carex tincta Fern.
Carex torta Boott
Carex tribuloides Wahl.
Carex trisperma Dewey
*Carex tuckermanii Dewey
*Carex typhina Michx.
Carex vaginata Tausch
Carex versicaria L.
Carex vulpinoidea Michx.
Carpinus caroliniana Walt.
*Carum carvi L.
Carya cordiformis (Wang.) K. Koch
Carya ovata (Mill.) K. Koch
Caulophyllum thalictroides (L.) Michx.
*Celastrus scandens L.
Celtis occidentalis L.
*Centaurea nigra L.
Cephalanthus occidentalis L.
Cerastium arvense L.
Cerastium vulgatum L.
Chaenorrhinum minus (L.) Lange
Chelidonium majus L.
Chelone glabra L.
Chenopodium album L.
*Chenopodium glaucum L.
Chenopodium hybridum L.

Chimaphila umbellata (L.) Bart.

Chrysanthemum leucanthemum L.

Chrysosplenium americanum Schw.

Cichorium intybus L.

Cicuta maculata L.

Cirsium arvense (L.) Scop.

Cirsium discolor (Muhl.) Spreng.

Cirsium muticum Michx.

Cirsium vulgare (Savi) Tenore.

Claytonia caroliniana Michx.

Clematis virginiana L.

Clintonia borealis (Ait.) Raf.

Cinna latifolia (Trev.) Griseb.

Circaea alpina L.

Circaea quadrisulcata (Maxim.) Franch. + Sav.
= C. lutetiana L.

Cladium mariscoides (Muhl.) Torr.

*Comandra umbellata (L.) Nutt.

*Convolvulus arvensis L.

Convolvulus sepium L.

Conyza canadensis (L.) Cronq.
= Erigeron canadensis L.

Coptis trifolia (L.) Salisb.
var. groenlandica (Oeder) Fassett.
= C. groenlandica (Oeder) Fern.

Corallorhiza maculata Raf.

*Corallorhiza trifida Chat.

Cornus alternifolia L. f.

Cornus amomum Mill.
= C. obliqua Raf.

Cornus canadensis L.

Cornus rugosa Lam.

Cornus stolonifera Michx.

Corydalis sempervirens (L.) Pers.

Corylus cornuta Marsh.

Crataegus coccinea L.

Crataegus flabellata (Spach) Kirchner

*Crataegus punctata Jacq.

Crataegus rotundifolia Moench
Crataegus submollis Sarg.
Cryptotaenia canadensis (L.) DC.
*Cuscuta gronovii Willd.
*Cynoglossum officinale L.
Cyperus diandrus Torr.
*Cyperus esculentus L.
Cyperus strigosus L.
Cypripedium acaule Ait.
Cypripedium calceolus L.
Cypripedium reginae Walt.
Cystopteris bulbifera (L.) Bernh.
Cystopteris fragilis (L.) Bernh.
Dactylis glomerata L.
Danthonia spicata (L.) Beauv.
Daucus carota L.
Dennstaedtia punctilobula (Michx.) Moore
Dentaria diphylla Michx.
*Descurainia pinnata (Walt.) Britt.
Desmodium canadense (L.) DC.
Desmodium glutinosum (Muhl.) Wood.
Dicentra canadensis (Goldie) Walp.
Dicentra cucullaria (L.) Bernh.
Diervilla lonicera Mill.
*Digitaria ischaemum (Schreb.) Muhl.
Digitaria sanguinalis (L.) Scop.
Dirca palustris L.
Drosera rotundifolia L.
Dryopteris X Bootii (Tuckerm.) Und.
= D. cristata X D. intermedia
*Dryopteris clintoniana Dowell
Dryopteris cristata (L.) Gray
= Thelypteris cristata (L.) Nieuwl.
Dryopteris fragrans (L.) Schott
var. remotiuscula Komarov.
*Dryopteris goldiana (Hooker) Gray
Dryopteris intermedia Gray

Dryopteris marginalis (L.) Gray

Dryopteris spinulosa (O. F. Muell.) Watt.

Dulichium arundinaceum (L.) Britt.

Echinochloa crusgalli (L.) Beauv.

Echinochloa microstachya (Wieg.)

Echinochloa muricata (Beauv.) Fern.
= E. pungens (Poir.) Rydb.

Echinochloa wiegandii (Fassett) McNeil + Dore

Echinocystis lobata (Michx.) T. + G.

Echium vulgare L.

Eleocharis erythropoda Steud.
= E. calva Torr.

Eleocharis intermedia (Mühl.) Schultes.

Eleocharis ovata (Roth) R. + S.
= E. obtusa (Willd.) Schultes.

Eleocharis palustris (L.) R. + S.
= E. smallii Britton.

Elymus hystrix L. f. hystrix
= Hystrix patula Moench

Elymus virginicus L.

*Elymus wiegandii Fern.

Epifagus virginiana (L.) Bart.

Epilobium angustifolium L.

Epilobium coloratum Biehler

Epilobium glandulosum Lehm.

Epilobium hirsutum L.

Epilobium palustre L.

*Epilobium strictum Mühl.

Epipactis helleborine (L.) Crantz

Equisetum arvense L.

Equisetum fluviatile L.
= E. limosum L.

Equisetum hyemale L.

Equisetum palustre L.

Equisetum pratense Ehrh.

Equisetum scirpoides Michx.

Equisetum sylvaticum L.

Equisetum variegatum Schleich.

Erechtites hieracifolia (L.) Raf.

Erigeron annuus (L.) Pers.
Erigeron philadelphicus L.
Erigeron strigosus Mühl
Eriophorum virginicum L.
Eriophorum viridi-carinatum (Engelm.) Fern.
Erysimum cheiranthoides L.
Erythronium americanum Ker-gawl.
Eupatorium maculatum L.
Eupatorium perfoliatum L.
Eupatorium rugosum Houtt.
*Euphorbia helioscopia L.
Euphorbia vermiculata Raf.
Fagus grandifolia Ehrh.
Festuca arundinacea Schreb.
Fragaria vesca L.
var. americana Porter
= F. americana (Porter) Britton.
Fragaria virginiana Duchesne
Fraxinus americana L.
Fraxinus nigra Marsh.
Fraxinus pensylvanica Marsh.
*Fumaria officinalis L.
Galeopsis tetrahit L.
Galinsoga ciliata (Raf.) Blake
Galium aparine L.
Galium asprellum Michx.
*Galium boreale L.
Galium labradoricum (Wieg.) Wieg.
*Galium lanceolatum Torr.
Galium obtusum Bigel.
Galium palustre L.
Galium trifidum L.
var. tinctorium (L.) T. + G.
Galium triflorum Michx.
Gaultheria hispidula (L.) Mühl.
= Chiogenes hispidula (L.) T. + G.
Gaultheria procumbens L.
Gaylussacia baccata (Wang.) K. Koch

Gentiana andrewsii Griseb.

Geranium bicknellii Britt.

Geranium robertianum L.

Gerardia purpurea L.
var. parviflora Benth.
= G. paupercula

Gerardia tenuifolia Vahl

Geum aleppicum Jacq.

Geum canadense Jacq.

Geum rivale L.

Glecoma hederacea L.

Glyceria canadensis (Michx.) Trin.

Glyceria grandis S. Wats.

Glyceria melicaria (Michx.) Hubbard

Glyceria striata (Lam.) Hitchc.
var. striata (Scribn.) Fern.

Glyceria striata
var. stricta (Scribner) Fernald.

*Gnaphalium obtusifolium L.

Gnaphalium uliginosum L.

Goodyera pubescens (Willd.) R. Br.

*Goodyera repens (L.) Brown
var. tesselata (Lodd.) Boivin

*Gratiola neglecta Torr.

Gymnocarpium dryopteris (L.) Newm.
= Dryopteris disjuncta (Ledeb.) Morton

*Habenaria dilatata (Pursh) Hook.

*Habenaria hookeri Torr.

Habenaria hyperborea (L.) R. Br.

Habenaria lacera (Michx.) Lodd.

Habenaria psycodes (L.) Spreng.
= H. fimbriata (Ait) R. Br.

*Habenaria viridis (L.) R. Br.
= H. bracteata (Muhl.) R. Br.

Hackelia deflexa (Wahlenb.) Opiz
= H. americana (Gray) Fern. + Johnst.

Hackelia virginiana (L.) Johnst.

*Helenium autumnale L.

Helianthus annuus L.

Hemerocallis fulva L.

Hepatica acutiloba DC.

Hieracium aurantiacum L.

Hieracium canadense Michx.
= H. kalmii L.

Hieracium florentinum All.

*Hieracium paniculatum L.

Hieracium scabrum Michx.

*Hieracium vulgatum Fries

Hordeum jubatum L.

Hordeum vulgare L.

Hydrocotyle americana L.

Hydrophyllum virginianum L.

Hypericum ellipticum Hook.

Hypericum mutilum L.

Hypericum perforatum L.

Hypericum punctatum Lam.

Ilex verticillata (L.) Gray.

Impatiens capensis Meerb.
= I. biflora Walt.

Impatiens pallida Nutt.

Inula helenium L.

Iris versicolor L.

Juglans cinerea L.

Juncus brevicaudatus (Engelm.) Fern.

Juncus bufonius L.

Juncus canadensis J. Gay.

Juncus dudleyi Wiegand

Juncus effusus L.

Juncus effusus L.
var. compactus Lej. + Court.

Juncus nodosus L.

Juncus tenuis Willd.

Lactuca biennis (Moench) Fern.

Lactuca canadensis L.

Lactuca muralis (L.) Fresen.

Lamium maculatum L.

Laportea canadensis (L.) Wedd.
Lappula echinata Gilib.
= L. myosotis Moench.
Larix laricina (DuRoi) Koch
Leersia oryzoides (L.) Sw.
Lemna minor L.
Leonurus cardiaca L.
Lepidium campestre (L.) R. Br.
Lepidium densiflorum Schrad.
*Lepidium virginicum L.
Linaria vulgaris Hill
Lindernia dubia (L.) Pennell.
*Linnaea borealis L.
*Linum usitatissimum L.
Liparis loeselii (L.) Rich.
*Lithospermum latifolium Michx.
Lithospermum officinale L.
*Lobelia cardinalis L.
Lobelia inflata L.
Lonicera canadensis Marsh.
Lonicera dioica L.
*Lonicera oblongifolia (Goldie) Hook.
Lonicera tatarica L.
Lotus corniculatus L.
Ludwigia palustris (L.) Ell.
*Lychnis alba Mill.
Lychnis chalcedonica L.
Lycopodium annotinum L.
Lycopodium clavatum L.
Lycopodium complanatum L. X tristachyum Pursh
Lycopodium dendroideum Michx.
Lycopodium flabelliforme (Fern.) Blanch.
= L. complanatum L.
var. flabelliforme
*Lycopodium X harbereri > flabelliforme
Lycopodium inundatum L.
Lycopodium lucidulum Michx.
Lycopodium obscurum L.

Lycopodium tristachyum Pursh
Lycopsis arvensis L.
*Lycopsis arvensis L.
Lycopus americanus Mühl.
Lycopus uniflorus Michx.
Lysimachia ciliata L.
= Steironema ciliatum (L.) Raf.
*Lysimachia nummularia L.
Lysimachia terrestris (L.) BSP.
*Lysimachia thyrsiflora L.
Lythrum salicaria L.
Maianthemum canadense Desf.
Malaxis unifolia Michx.
Malva moschata L.
*Malva neglecta Wallr.
Matricaria matricarioides (Less.) Porter
Matteuccia struthiopteris (L.)
Medeola virginiana L.
Medicago lupulina L.
Medicago sativa L.
Melampyrum lineare Desr.
Melilotus alba Desr.
Melilotus officinalis (L.) Desr.
Mentha arvensis L.
= M. canadensis L.
*Mentha gentilis L.
*Mentha piperita L.
*Mentha spicata L.
Mimulus ringens L.
Mitchella repens L.
Mitella diphylla L.
*Mitella nuda L.
Monarda didyma L.
Monotropa hypopithys L.
Monotropa uniflora L.

*Muhlenbergia frondosa (Poir.) Fern.

Muhlenbergia glomerata (Willd.) Trin.
= M. racemosa (Michx.) BSP.

Muhlenbergia mexicana (L.) Trin.
var. mexicana

Myagrum perfoliatum L.

*Myosotis laxa Lehm.

Myosotis stricta Link
= M. micrantha Pall.

Najas flexilis (Willd.) Rostk. and Schmidt

*Nasturtium officinale R. Br.

Nemopanthus mucronatus (L.) Trel.

Nepeta cataria L.

Oenothera biennis L.
= O. victorinii Gates and Catchside

Oenothera biennis L.
var. hirsutissima Gray.

Oenothera perennis L.

Onoclea sensibilis L.

*Ophioglossum vulgatum L.
var. pseudopodum

*Orchis spectabilis L.

Origanum vulgare L.

Orobanche uniflora L.

Oryzopsis asperifolia Michx.

Oryzopsis racemosa (J. E. Smith) Ricker

Osmorhiza claytoni (Michx.) Clarke

Osmunda cinnamomea L.

Osmunda claytoniana L.

Osmunda regalis L.

Ostrya virginiana (Mill) K. Koch

Oxalis stricta L.

Panax quinquefolium L.

Panax trifolium L.

Panicum capillare L.

Panicum lanuginosum Ell.

Panicum lanuginosum
var. fasciculatum (Torrey) Fernald

Panicum lanuginosum
var. implicatum (Scribner) Fern.

Panicum lanuginosum
var. septentrionale (Fern.) Fern.

Panicum linearifolium Scribn.

Panicum linearifolium Scribner
var. linearifolium

Panicum linearifolium
var. werneri (Scribner) Fern.

*Panicum philadelphicum Bernh.

Parthenocissus quinquefolia (L.) Planch.

Pastinaca sativa L.

*Pedicularis canadensis L.

Penthorum sedoides L.

*Petasites frigidus (L.) Fries

Phalaris arundinacea L.

Phleum pratense L.

Phlox paniculata L.

Phragmites communis Trin.

Phyrma leptostachya L.

Physalis heterophylla Nees

*Physostegia virginiana (L.) Benth.

Phegopteris connectilis Watt.
= Dryopteris phegopteris (L.) C. Chr.

Physocarpus opulifolius (L.) Maxim.

Picea mariana (Mill.) BSP.

Pilea pumila (L.) A. Gray

Pinus resinosa Ait.

Pinus strobus L.

*Pinus sylvestris L.

Plantago lanceolata L.

Plantago major L.

*Plantago rugellii Decne.

Poa annua L.

Poa compressa L.

Poa glaucantha Gaudin

*Poa palustris L.

Poa pratensis L.
*Poa saltuensis (Fern.( Wieg.)
*Polygala sanguinea L.
Polygonatum pubescens (Willd.) Pursh
Polygonum achoreum Blake
Polygonum aviculare L.
Polygonum cilinode Michx.
Polygonum convolvulus L.
Polygonum hydropiper L.
Polygonum hydropiperoides Michx.
Polygonum lapathifolium L.
Polygonum natans Eat
= Polygonum amphibium L.
Polygonum pensylvanicum L.
Polygonum sagittatum L.
Polypodium virginianum L.
Polystichum acrostichoides (Michx.) Schott
*Polystichum braunii (Spenner) Fée
Populus alba L.
Populus balsamifera L.
Populus deltoides Marsh.
Populus grandidentata Michx.
Populus nigra L.
Populus tremuloides Michx.
*Portulaca oleracea L.
*Potamogeton gramineus L.
Potamogeton natans L.
*Potamogeton perfoliatus L.
var. perfoliatus
*Potamogeton perfoliatus L.
var. richardsonii Benn.
Potamogeton pusillus L.
*Potamogeton richardsonii (Benn.)
*Potamogeton robbinsii Oakes
Potamogeton zosteriformis Fern.
*Potentilla intermedia L.

*Potentilla simplex Michx.
*Potamogeton spirillus Tuckerm.
Potentilla anserina L.
Potentilla argentea L.
Potentilla norvegica L.
Potentilla recta L.
Prunus nigra Ait.
Prunus pensylvanica L. f.
Prunus serotina Ehrh.
Prunus virginiana L.
Prunella vulgaris L.
Pteridium aquilinum (L.) Kuhn.
*Pyrola asarifolia Michx.
Pyrola elliptica Nutt.
*Pyrola rotundifolia L.
*Pyrola secunda L.
*Pyrola virens Schweigg.
Pyrus malus L.
= Malus pumila Mill.
Quercus alba L.
Quercus borealis Michx. f.
Quercus macrocarpa Michx.
Ranunculus abortivus L.
Ranunculus acris L.
*Ranunculus flabellaris Raf.
Ranunculus pensylvanicus L. f.
*Ranunculus recurvatus Poir.
*Ranunculus repens L.
Rhamnus catharticus L.
Rhus typhina L.
*Rhynchospora capitellata (Michx.) Vahl
*Ribes americanum Mill.
Ribes cynosbati L.
Ribes glandulosum Grauer.
*Ribes hirtellum Michx.
*Ribes lacustre (Pers.) Poir.
*Ribes odoratum Wendl.

*Ribes triste Pallas

*Robinia pseudoacacia L.

Rorippa islandica (Oeder) Borbas

Rorippa islandica (Oeder) Borbas
var. fernaldiana Butters and Abbe

*Rorippa islandica (Oeder) Borbas
var. hispida (Desv.)

Rosa blanda Ait.

*Rosa cinnamomea L.

Rubus allegheniensis Porter

*Rubus hispidus L.

Rubus idaeus L.

Rubus idaeus L.
var. aculeatissimus Regel + Tiling

Rubus idaeus
var. strigosus (Michx.) Maxim.

Rubus occidentalis L.

Rubus odoratus L.

Rubus pubescens Raf.

Rubus vermontanus Blanchard.

Rudbeckia hirta L.

*Rudbeckia laciniata L.

Rumex acetosella L.

Rumex crispus L.

Rumex obtusifolius L.

Rumex persicarioides L.

*Rumex verticillatus L.

Sagittaria cuneata Sheldon

Sagittaria latifolia Willd.

Salix alba L. X S. fragilis L.

Salix amygdaloides Anderss.

Salix bebbiana Sarg.

Salix discolor Mühl.

Salix humilis Marsh.

Salix interior Rowlee.

Salix lucida Mühl.

Salix petiolaris Sm.

Salix rigida Mühl.
Sambucus canadensis L.
Sambucus pubens Michx.
Sanguinaria canadensis L.
*Sanicula gregaria Bickn.
Sanicula marilandica L.
*Sanicula trifoliata Bickn.
Saponaria officinalis L.
Satureja vulgaris (L.) Fritsch
Schizachne purpurascens (Torr.) Swallen
Scirpus atrocinctus Fern.
Scirpus atrovirens Willd.
Scirpus atrovirens
var. georgianus (Harper) Fern.
Scirpus cyperinus (L.) Kunth
Scirpus hudsonianus (Michx.) Fern.
*Scirpus pedicellatus Fern.
Scirpus rubrotinctus Fern.
Scirpus validus Vahl
Scutellaria galericulata L.
= S. epilobiifolia S. Ham.
Scutellaria lateriflora L.
*Scutellaria parvula Michx.
Sedum acre L.
Sedum telephium L.
= S. purpureum (L.) Link
Senecio pauperculus Michx.
*Senecio viscosus L.
Setaria glauca (L.) Beauv.
Setaria viridis (L.) Beauv.
*Sicyos angulatus L.
Silene cucubalis Wibel
Silene noctiflora L.
Sisyrinchium angustifolium Mill.
*Sium suave Walt.
Smilacina racemosa (L.) Desf.
*Smilax herbacea L.
Solanum dulcamara L.

*Solanum nigrum L.
Solidago altissima L.
*Solidago bicolor L.
Solidago caesia L.
Solidago canadensis L.
Solidago flexicaulis L.
Solidago gigantea Ait.
Solidago graminifolia (L.) Salisb.
Solidago nemoralis Ait.
Solidago rugosa Mill.
*Solidago squarrosa Mühl.
Solidago uliginosa Nutt.
Sonchus arvensis L.
*Sonchus asper (L.) Hill
Sorbaria sorbifolia (L.) A. Br.
Sorbus americana Marsh.
Sorbus decora (Sarg.) Schneid.
= Pyrus decora (Sarg.) Hyland
Sparganium americanum Nutt.
Sparganium chlorocarpum Rydb.
Spartina pectinata Link
*Spergula arvensis L.
Spiraea alba Du Roi
Spiraea latifolia (Ait.) Borkh.
Spiraea tomentosa L.
Spiranthes cernua (L.) Rich.
*Stachys aspera Michx.
*Stachys palustris L.
*Stachys palustris L.
var. nipigonensis Jennings
*Stachys tenuifolia Willd.
Stellaria graminea L.
*Stellaria longifolia Mühl.
*Streptopus amplexifolius (L.) DC.
Streptopus roseus Michx.
*Symphoricarpos albus (L.) Blake

Tanacetum vulgare L.

Taraxacum officinale Weber

Taxus canadensis Marsh.

*Teucrium canadense L.

Thalictrum dioicum L.

Thalictrum polygamum Mühl.
= T. pubescens Pursh

Thelypteris noveboracensis (L.) Nieuwland
= Dryopteris noveboracensis (L.) A. Gray

Thelypteris palustris Schott
= Dryopteris thelypteris (L.) A. Gray

Thlaspi arvense L.

Thuja occidentalis L.

Tiarella cordifolia L.

Tilia americana L.

Toxicodendron rydbergii (Small ex Rydberg) Greene

Tragopogon pratensis L.

Triadenum virginicum (L.) Raf.
= Hypericum virginicum L.

Trientalis borealis Raf.

Trifolium agrarium L.

*Trifolium hybridum L.

Trifolium pratense L.

*Trifolium procumbens L.

Trillium erectum L.

Trillium grandiflorum (Michx.) Salisb.

Trillium undulatum Willd.

Tsuga canadensis (L.) Carr.

Tussilago farfara L.

Typha angustifolia L.

Typha latifolia L.

Ulmus americana L.

Ulmus rubra Mühl.

*Ulmus thomasi Sarg.

Urtica dioica L. subsp. gracilis (Ait.) Selander

Utricularia vulgaris L.

Uvularia grandiflora J. E. Smith

*Uvularia sessilifolia L.

Vaccinium angustifolium Ait.

Vaccinium angustifolium Ait.
var. nigrum (Wood) Dole

Vaccinium myrtilloides Michx.

Valeriana officinalis L.

Vallisneria americana Michx.

Verbascum thapsus L.

Verbena hastata L.

Verbena urticifolia L.

*Veronica agrestis L.

*Veronica americana (Raf.) Schw.

Veronica longifolia L.

*Veronica officinalis L.

Veronica persica Poir.

Veronica scutellata L.

Veronica serpyllifolia L.

Viburnum alnifolium Marsh.

Viburnum cassinoides L.

*Viburnum lentago L.

Viburnum opulus L.
var. americanum Ait.
= V. trilobum Marsh.

Vicia cracca L.

Viola adunca Sm.
var. minor (Hook.)

*Viola affinis Le Conte

*Viola blanda Willd.

Viola canadensis L.

Viola conspersa Reichenb.

Viola cucullata Ait.

*Viola incognita Brainerd

Viola pallens (Banks) Brainerd

Viola papilionacea Pursh

Viola pubescens Ait.
= V. pensylvanica Michx.

*Viola selkirkii Pursh

Viola sororia Willd.

Vitis riparia Michx.

Woodsia ilvensis (L.) R. Br.

Xanthium chinense Mill.

*Zanthoxylum americanum Mill.

# APPENDIX G

## PARTIAL LIST OF MAMMALS

by J. Quesnel

| | | |
|---|---|---|
| *Sorex cinereus* | Masked shrew | Musaraigne cendrée |
| *Sorex fumus* | Smokey shrew | Musaraigne fumée |
| *Microsorex hogi* | Pygmy shrew | Musaraigne pygmée |
| *Condylura cristata* | Star-nosed mole | Condylure étoilé |
| *Lepus americanus* | Snowshoe hare | Lièvre d'Amerique |
| *Tamias striatus* | Chipmunk, Eastern | Suisse |
| *Marmota monax* | Woodchuck (Groundhog) | Marmotte commune |
| *Sciurus carolinensis* | Gray squirrel | Ecureuil gris |
| *Tamiasciurus hudsonicus* | Red squirrel | Ecureuil roux |
| *Glaucomys sabrinus* | Flying Squirrel, Northern | Grand Polatouche |
| *Castor canadensis* | Beaver | Castor |
| *Peromyscus maniculatus* | Deer mouse | Souris sylvestre |
| *Peromyscus leucopuo* | White-footed mouse | Souris a pattes blanches |
| *Ondatra zibithicus* | Muskrat | Rat-musqué |
| *Microtus pennsylvanicus* | Meadow vole | Campagnol des champs |
| *Raltus norvigicus* | Norwegian rat | Rat de Norvège |
| *Mus musculus* | House mouse | Souris commune |
| *Napoeozapus insignis* | Woodland jumping mouse | Souris sauteuse des bois |
| *Erethizon dorsatum* | Porcupine | Porc-épic |
| *Canis latrans* | Coyote | Coyote |
| *Canis lupus* | Timber wolf | Loup |
| *Vulpes vulpes* | Red fox | Renard roux |
| *Urocyon cinereoargenteus* | Gray fox | Renard gris |
| *Procyon lotar* | Raccoon | Raton-laveur |
| *Martes americana* | Marten, American | Martre d'Amérique |
| *Mustela erminea* | Ermine (Short-tailed weasel) | Ermine |
| *Mustela frenata* | Long-tailed weasel | Belette a longue queue |
| *Mustela vison* | Mink | Vison |
| *Mephitis mephitis* | Skunk | Moufette rayée |
| *Lontra canadensis* | Otter, River | Loutre de rivière |

| | | |
|---|---|---|
| *Telis concolar* | Cougar, (Eastern Panther) | Couguar |
| *Lynx canadensis* | Lynx | Lynx |
| *Odocoileus virginianus* | White-tailed deer | Chevreuil |
| *Alces alces* | Moose | Orignal |

# APPENDIX H

## THE RARE AND THE NESTING BIRDS OF MONT RIGAUD

by D. E. Swales

The indirect object of this thesis is to provide up-to-date information on the present flora and fauna of Mont Rigaud in order to lend support to those who are interested in the movement to establish a nature reserve on part of the mountain. It is important to know what plants and resident mammals and birds are there now, and are worth protecting for the enjoyment of laymen, as well as naturalists and scientists of the nearby large population of Montreal and its environs.

The author did not study the bird species personally but obtained the necessary records through the courtesy of members of the Quebec Society for the Protection of Birds and qualified local residents, among them Mrs. Jo Wright, Mr. Guy Huot, Mr. Keith Pitcairn & Mrs. Mabel McIntosh. Particular emphasis was placed on records of birds rare in the Province of Quebec, but a list of all birds known to nest, through findings of the nests, or seeing the parents feeding young, is appendaged. Migrant birds which pass over are not included, as they are not confined to the mountain area. However, in the migrant category, it is worth noting that the mountain is a good place to watch spring and fall hawk migration, that turkey vultures, bald eagles, and golden eagles occasionally fly over, and that the rare yellow-billed cuckoo was seen, en passant, July 24, 1973.

A Hawk Owl, which breeds in the northern boreal forest, spent one winter near the cross, a whip-poor-will, usually nesting in the Laurentians, found a safe site to nest on the mountains in 1975, and delighted any within

range with its song of the wild. The lovely southern song-mimic, the Mocking Bird, raised its young more than once on the eastern slopes, in an orchard.

The Blue-grey Gnatcatcher, belonging to the Kinglet family, the Cerulean Warbler and the Yellow-breasted Chat (also a warbler) are birds of the warm belt of extreme southern Ontario, but they have wandered and found Mont Rigaud to their liking over such long summer stays they are thought to have nested, although the actual nests have not yet been found.

The Cardinal, so beloved in Toronto, and nearby towns, started to move east some years ago and one of the first records of the bird nesting in Quebec was on St. Redempteur Road, at the west end of Mont Rigaud. The Rufous-sided Towhee has made only casual appearances in Quebec, coming from Maine or Eastern Ontario, but the species nests and sings on the Pitcairn property.

The infrequent Field Sparrow is found on Mont Rigaud and, even more exciting, the rare Grasshopper Sparrow buzzes like an insect in a well-established colony on the open eastern slope.

All the above-mentioned species are rare finds both for the amateur and professional ornithologist, and every effort should be made to encourage and protect them.

The following list of nesting birds speaks for itself of the richness of bird life on Mont Rigaud:

| | |
|---|---|
| Great Blue Heron | Grand Héron |
| Green Heron | Héron Vert |
| Mallard | Canard malard |
| Black Duck | Canard Noir |
| Blue-winged Teal | Sarcelle à Ailes Bleues |
| Wood Duck | Canard Huppé |

| | |
|---|---|
| Goshawk | Autour |
| Red-shouldered Hawk | Buse àEpaulettes Rousses |
| Broad-winged Hawk | Petite Buse |
| Marsh Hawk | Busard des Marais |
| American Kestrel | Crécerelle d'Amerique |
| Ruffed Grouse | Gelinotte Huppée |
| Killdeer | Pluvier Kildir |
| American Woodcock | Becasse d'Amerique |
| Upland Sandpiper | Maubèche des Champs |
| Mourning Dove | Tourterelle Triste |
| Black-billed Cuckoo | Coulicou à Bec Noir |
| Screech Owl | Petit-Duc |
| Great-horned Owl | Grand Duc |
| Barred Owl | Chouette Rayée |
| Whip-poor-will | Engoulevent Bois-pourri |
| Ruby-throated Hummingbird | Colibri à Gorge Rubis |
| Belted Kingfisher | Martin-pêcheur d'Amerique |
| Common Flicker | Pic Flamboyant |
| Pileated Woodpecker | Grand Pic |
| Yellow-bellied Sapsucker | Pic Maculé |
| Hairy Woodpecker | Pic Chevelu |
| Downy Woodpecker | Pic Mineur |
| Eastern Kingbird | Tyran Tritri |
| Great Crested Flycatcher | Moucherolle Huppé |
| Eastern Phoebe | Moucherolle Phébi |
| Yellow-bellied Flycatcher | Moucherolle à Ventre Jaune |
| Alder Flycatcher | Moucherolle des Aulnes |
| Least Flycatcher | Moucherolle Tchébec |

| | |
|---|---|
| Eastern Wood Peewee | Pioui de l'Est |
| Tree Swallow | Hirondelle Bicolore |
| Bank Swallow | Hirondelle des Sables |
| Barn Swallow | Hirondelle des Granges |
| Cliff Swallow | Hirondelle à Front Blanc |
| Blue Jay | Geai Bleu |
| Common Crow | Corneille d'Amerique |
| Black-capped Chickadee | Mésange à Tête Noire |
| White-breasted Nuthátch | Sittelle à Poitrine Blanche |
| Red-breasted Nuthatch | Sitelle à Poitrine Rousse |
| Brown Creeper | Grimpereau Brun |
| Mockingbird | Moqueur Polyglotte |
| Gray Catbird | Moqueur Chat |
| Brown Thrasher | Moqueur Roux |
| American Robin | Merle d'Amerique |
| Wood Thrush | Grive des Bois |
| Hermit Thrush | Grive Solitaire |
| Veery | Grive Fauve |
| Cedar Waxwing | Jaseur des Cèdres |
| Starling | Etourneau Sansonnet |
| Yellow-throated Vireo | Viréo à Gorge Jaune |
| Red-eyed Vireo | Viréo aux Yeux Rouges |
| Philadelphia Vireo | Viréo de Philadelphia |
| Warbling Vireo | Viréo Mélodieux |
| Black and White Warbler | Fauvette Noir et Blanc |
| Nashville Warbler | Fauvette à Joues Grises |
| Yellow Warbler | Fauvette Jaune |
| Black-throated Blue | Fauvette Bleue à Gorge Noire |

| | |
|---|---|
| Black-throated Green Warbler | Fauvette Verte à Gorge Noire |
| Cerulean Warbler | Fauvette Azurée |
| Blackburnian Warbler | Fauvette à Gorge Orangée |
| Chestnut-sided Warbler | Fauvette à Flancs Marron |
| Pine Warbler | Fauvette des Pins |
| Ovenbird | Fauvette Couronnée |
| Mourning Warbler | Fauvette Triste |
| Common Yellowthroat | Fauvette Masquée |
| Canada Warbler | Fauvette du Canada |
| American Redstart | Fauvette Flamboyante |
| Bob-o-link | Goglu |
| Red-winged Blackbird | Carouge à Epaulettes |
| Northern Oriole | Oriole Orangé |
| Common Grackle | Mainate Bronzé |
| Brown-headed Cowbird | Vacher à Tête Brun |
| Scarlet Tanager | Tangara Ecarlate |
| Cardinal | Cardinal |
| Rose-breasted Grosbeak | Gros-bec à Poitrine Rose |
| Indigo Bunting | Bruant Indigo |
| ~~Purple Finch~~ | ~~Roselin Pourpré~~ |
| American Goldfinch | Chardonneret Jaune |
| Rufous-sided Towhee | Tohi aux Yeux Rouges |
| Savannah Sparrow | Pinson des Prés |
| Grasshopper Sparrow | Pinson Sauterelle |
| Vesper Sparrow | Pinson Vespérai |
| Dark-eyed Junco | Junco Ardoisé |
| Chipping Sparrow | Pinson Familier |
| Field Sparrow | Pinson des Champs |

| | |
|---|---|
| White-throated Sparrow | Pinson à Gorge Blanche |
| Swamp Sparrow | Pinson des Marais |
| Song Sparrow | Pinson Chanteur |