

This article is meant to describe the species of *Vaccinium* and some of the variations in those species that occur in Ottawa and surrounding regions. Basic terms are used to describe the species and their variations, and I avoid descriptions of features that are difficult to observe or of genetic details. The area encompassed includes Ontario to Newfoundland from northern New England and New York to the Arctic.

The *Vaccinium* genus includes the blueberries, bilberries, cranberries, mountain cranberries, deerberries and bog bilberries in northeastern North America. All are small to large shrubs that grow in acidic, nutrient poor soils and produce berries, most of which would be considered edible. Five species of *Vaccinium* are common in the Ottawa area while two others can be found within southern and eastern Ontario. Within Ottawa, three common species are blueberries (Subgenus *Vaccinium*, *Cyanococcus* section) and two are cranberries (Subgenus *Oxycoccus*). One species of blueberry, *Vaccinium pallidum*, is possibly present in Ottawa. Six additional species of *Vaccinium* can be found in the larger region under discussion. Table 1 (page 15) shows how these northeastern species have been assigned to various sections within the *Vaccinium* genus. This taxonomic grouping predates any recent changes to *Vaccinium* taxonomy based on molecular (DNA) studies.

Because of the variability of the blueberry species within the *Cyanococcus* section of *Vaccinium*, it is not always possible to definitively assign a specific plant to a species. Technical descriptions of *Cyanococcus* section species mostly describe features whose ranges overlap with one another. These species have also been split and recombined at various times as experts tried to differentiate between various forms. S.P. Vander Kloet states that "Whereas most species of *Vaccinium* can be neatly separated by one, two, or three morphological characters, some can be distinguished only by a generalized 'family resemblance' – that is, on the basis of a suite of characters none of which alone is sufficient to differentiate them" (Vander Kloet 1988). Table 2 (page 43) summarises some of the basic features that can aid in identifying the various species.

In eastern North America, some *Vaccinium* species are widespread while others occur in widely separated locations. *Vaccinium membranaceum* occurs along the shore of Lake Superior. *Vaccinium ovalifolium* occurs in scattered locations in Newfoundland, Nova Scotia, north of Quebec City and along the shore of Lake Superior. *Vaccinium cespitosum* is found in widely scattered pockets in the mountains and along cool streams. *Vaccinium vitis-idaea* ssp. *minus* occurs in alpine areas, along cool coastlines and in the north. *Vaccinium boreale* is found on the top of some of the higher mountains and in scattered locations at lower levels. The species found in the Ottawa area are those that have a widespread distribution.

Photos of *Vaccinium* species found in Ontario and neighbouring regions are presented here showing some of their characteristic features and variations in those features. Photos are mine except where noted. They are grouped together in their respective sections of the *Vaccinium* genus. The *Cyanococcus* section species are primarily eastern species while *Myrtillus* section species are most abundant in western North America. You might notice how a number of the species, especially in the *Cyanococcus* section, appear very similar to each other. The descriptions are based on my personal observations and general literature review except where noted.

Photo on title page: Vaccinium pallidum-like blueberry from the Carp Hills, May 2018.

Table 1. Vaccinium Distribution in Northeastern Canada and the U.S.

Species	Ottawa Region	Ontario	Quebec	New England/ New York and/or Eastern Canada		
1. Subgenus Vaccinium						
1.1 Section Cyanococcus (blueberries) page 16						
V. angustifolium (Lowbush Blueberry)	common	common	common	common		
V. myrtilloides (Velvetleaf Blueberry)	common	common	common	common		
V. pallidum (Blue Ridge Blueberry)	rare	mostly in SW Ontario/ St. Lawrence regions	not present	New York and Southern New England		
V. boreale (Northern Blueberry)	not present	not present?	present	present locally		
V. corymbosum (Highbush Blueberry)	locally common	locally common	local, uncommon	locally common to rare		
1.2 Section Vaccinium page 33						
V. uliginosum (Bog "Bilberry")	not present	North	locally common	locally common		
1.3 Section Polycodium page 34						
V. stamineum (Deerberry)	not present	St. Lawrence/ Niagara	not present	Southern New England/New York		
1.4 Section Myrtilli	1.4 Section Myrtillus (bilberries) page 35					
V. cespitosum (Dwarf Bilberry)	not present?	Lake Superior	present	present locally		
V. ovalifolium (Oval-leaved Blueberry)	not present	Lake Superior	local, uncommon	present locally		
V. membranaceum (Mountain Bilberry or "Huckleberry")	not present	Lake Superior	not present	not present		
1.5 Section Vitis-ide	1.5 Section Vitis-idaea page 39					
V. vitis-idaea (Mountain Cranberry)	not present	Lake Superior/north	locally common	locally common		
2. Subgenus Oxyco	2. Subgenus Oxycoccus (cranberries) page 40					
V. macrocarpon (Large Cranberry)	locally common	common	common	common		
V. oxycoccos (Small Cranberry)	locally common	common	common	common		

## 1.1 Section Cyanococcus (blueberries)

## 1.1.1 Vaccinium angustifolium (Lowbush Blueberry)

Vaccinium angustifolium (Lowbush Blueberry) is a common species in the Ottawa area and is often found alongside V. myrtilloides (Velvetleaf Blueberry). It is characterized by toothed leaves though the teeth may be very small or, in some cases, lacking. They are either hairless or only have hairs along the leaf veins or leaf edges and/or fine lines of hairs running down the stem. Leaf shape and size is also variable though leaf size is generally smaller than that of V. corymbosum. Populations often separate out into two distinct colour forms — a light green and a dark green. Fruit colour of blue with the light green form and black with the dark green (blue-green) form is also usual. Flowers are usually white or sometimes marked with pink. The plants often have a second flowering in the fall at which time the flowers are often tinged with pink. Vaccinium angustifolium and other Cyanococcus members have flower buds separate from the leaf buds and have multiple flowers per flower bud. Variants of the species are shown here.



Figure 1. Vaccinium angustifolium in Torbolton Forest, Ottawa, Ontario. Typical flower form though there are usually more flowers per bud. Late May.



Figure 2. Vaccinium angustifolium in Torbolton Forest, Ottawa, Ontario. Late May. Note lack of teeth but presence of fine hairs along leaf edge.



Figure 3. Vaccinium angustifolium along the Wolf Trail in Gatineau Park, Gatineau, Quebec. Mid-July.



Figure 5. Two colour phases of Vaccinium angustifolium in Torbolton Forest, Ottawa, Ontario. Mid-June.

A PDF of this article is available at OFNC.ca > Publications > Trail & Landscape, under "Online Access". This will allow you to zoom in on the pictures and see more details.



Figure 4. Vaccinium angustifolium in Barron Canyon area of Algonquin Park, Ontario.

Mid-August. Note definite toothed leaves.



Figure 6. Vaccinium angustifolium at Barron Canyon, Algonquin Provincial Park, Ontario. Heavily toothed, reverse. Mid-August.



Figure 7. Vaccinium angustifolium at Nairn Centre, Ontario. Mid-June.



Figure 8. Vaccinium angustifolium at Saguenay Park, Quebec. Mid-August.



Figure 9. Vaccinium angustifolium on the Acadian Peninsula, New Brunswick. Mid-July.



Figure 10. Vaccinium angustifolium on the Acadian Peninsula, New Brunswick. Mid-July



Figure 11. Vaccinium angustifolium typical dormant buds: large fruit buds and separate small leaf buds. Carp Hills, Ottawa. Early January.

Many or most botanical keys use the feature of toothed leaves to separate *V. angustifolium* from *V. myrtilloides*. However, there are some populations of blueberries with toothless leaves that otherwise could only be assigned to *V. angustifolium*. That is, they are not hairy enough to be considered *V. myrtilloides* and they do not have characteristics of *V. pallidum* or *V. corymbosum*. The alternative to including these specimens in that species would be to assign a new species name to what is obviously a highly variable group. I would consider doing so as unwarranted.

- 1. Subgenus Vaccinium
- 1.1 Section Cyanococcus (blueberries)
- 1.1.2 *Vaccinium myrtilloides* (Velvetleaf Blueberry)

Vaccinium myrtilloides (Velvetleaf Blueberry) is common in the Ottawa area and often found alongside V. angustifolium. It is characterized by generally very hairy stems and leaves, especially on leaf undersides and new twig growth. The leaves do not have teeth but sometimes have wavy edges with projecting hairs that can approximate the look of teeth in photos. One definitive form has thin leaves with rounded tips and are somewhat curled along the edges and tend to droop. Other forms have flat leaves with more pointed tips. The flowers are greenish or yellowish white or sometimes white and can be shorter than those of V. angustifolium. It tends to occur in somewhat wetter locations than V. angustifolium but is not restricted to wetter areas. The combination of toothless leaves and hairy stems and leaves is what sets this species apart from V. angustifolium.



Figure 12. Vaccinium myrtilloides along the Wolf Trail in Gatineau Park, Gatineau, Quebec. Mid-July.



Figure 13. Vaccinium myrtilloides in Saguenay Park, Quebec. Mid-August.





Figure 15. Vaccinium myrtilloides along a west end Greenbelt Trail in Ottawa, Ontario. Early July.



Figure 16. Vaccinium myrtilloides *new* growth at Nairn Centre, Ontario. Mid-June.



Figure 17. Vaccinium myrtilloides in north interior New Brunswick. Early July.



Figure 18. Vaccinium myrtilloides typical flowers, Carp Hills, Ottawa. Mid-May.



Figure 19. *Unusually large-leaved* Vaccinium myrtilloides *plant from the Carp Hills, Ottawa. Late June* 2021.



Figure 20. *Unusually small-leaved* Vaccinium myrtilloides *plant from the Carp Hills, Ottawa. Late June 2021*.

- 1. Subgenus Vaccinium
- 1.1 Section *Cyanococcus* (blueberries)
- 1.1.3 Vaccinium pallidum (Blue Ridge Blueberry)

*Vaccinium pallidum* (Blue Ridge Blueberry) is possibly present in the Ottawa area. It is present on islands in the St. Lawrence River to the south.

I find that the descriptions of it in botanical texts vary considerably. *V. pallidum*, according to technical manuals, is morphologically variable. Gleason and Cronquist describe it as morphologically intermediate between *V. angustifolium* and *V. myrtilloides* "but apparently distinctive" (Gleason and Cronquist 1991). Major characters that seem to be common to most descriptions are that the leaves tend toward being oval (wider than *V. angustifolium*) and are entire or minutely or partially toothed. It is sometimes described as stiffly branched and upright with heights ranging from 8 to 100 centimeters. Flower colour is greenish, greenish with pink striping, yellowish, creamy or white and sometimes mixed with pink.

The more northern form of *V. pallidum* was described as a separate species (*V. vacillans*) in the past. A review of the literature seems to indicate that the leaves of the northern form tend to be relatively oval and either entire or finely serrulate. The more southern forms seem to be generally a bit taller with more consistent finely serrulate, somewhat leathery leaves. These forms are now considered to be of the same species. The first three photos below are plants identified as *V. pallidum* on the iNaturalist website and are from southwest Ontario and Michigan.



Figure 21. Vaccinium pallidum at Mississauga, Ontario. November 3, 2019. © Carl-Adam Wegenschimmel, some rights reserved (CC-BY-NC). (iNaturalist 2020)



Figure 22. Vaccinium pallidum at Turkey Point, Ontario. September 2, 2018. © Samuel Brinker, some rights reserved (CC-BY-NC). (iNaturalist 2020)



Figure 23. Vaccinium pallidum, *Bridgman, Michigan. May 29, 2019.* © *Mark Kluge, some rights reserved (CC-BY-NC-ND). (iNaturalist 2020)* 

A number of species of blueberry are capable of interbreeding and there is a fair bit of morphological variation in those species which sometimes makes assignment to species difficult. This seems to be especially the case for the Cvanococcos Section species: V. angustifolium, V. myrtilloides, V. boreale, V. corymbosum and V. pallidum. There are some forms of blueberry in the Ottawa and Manitoulin regions I approach the look of or could be considered as V. pallidum. Some may consider these as unusual forms of *V. angustifolium*.

The next pages depict forms of blueberry that might possibly be considered as *V. pallidum* that are outside their currently accepted range. Perhaps they are intermediate (hybrid) forms between *V. angustifolium* and *V. pallidum*.



Figure 24. Oval leaves of possible Vaccinium pallidum from the Carp Hills, Ottawa. Early June 2021.

A couple small groupings of what appear to be *Vaccinium pallidum* was found recently in the Carp Hills in Ottawa. They easily stood out as different from the many *V. angustifolium* and *V. myrtilloides* plants in the area. They have oval to nearly round leaves and are very finely toothed. They tend to have a tiered appearance with the leaves held more horizontally than the other blueberry species in the area. The leaves also appear to me to be a distinctive shade of green. A sample of the plant was taken to determine the chromosome ploidy level. It was found to be a tetraploid plant (Smith, August 20, 2021). *Vaccinium pallidum* plants are usually diploid while *V. angustifolium* plants are normally tetraploid. This doesn't completely rule out that these specimens could be considered *V. pallidum* as they can be, rarely, tetraploid (Vander Kloet 1988). I personally see these plants as so different from any *V. angustifolium* plant I have seen, realizing the wide variation in phenotypes, that I would have a hard time considering these as *V. angustifolium*.



Figure 25. Possible Vaccinium pallidum from the Carp Hills, Ottawa. Part of a single small grouping of plants. Early June 2021.



Figure 26. *Underside of possible* Vaccinium pallidum *leaves from the Carp Hills, Ottawa. Early June 2021.* 



Figure 27. Possible Vaccinium pallidum on Manitoulin Island, Ontario. Mid-June.



Figure 28. *Possible* Vaccinium pallidum *on Manitoulin Island*, *Ontario. Mid-June*.

This form from the Carp hills has oval-ish leaves and unusual short urn-shaped flowers. Though showing some unusual characteristics for *V. angustifolium*, it might be considered as such. It was found as a single specimen. A cutting of this small plant was taken and cultivated. It has distinctive features of very finely toothed oval-ish leaves with long spreading branches. It seems somewhat less hardy than the other blueberry species it is set among.



Figures 29, above, and 30, right. Vaccinium pallidum-like blueberry from the Carp Hills, Ottawa, Ontario. Late August.





Figure 31. Vaccinium pallidum-like blueberry from the Carp Hills, Ottawa, Ontario. Mid-May.

One location in the Torbolton Forest in Ottawa has plants that appear to be distinctly different from that of the other blueberries (mainly *V. angustifolium*) in that forest. The leaves are distinctly more oval and the plants have a bit more of an upright form, taller than the Carp Hills' *V. pallidum*-like forms. The leaves seem to thicken and become leathery later in the season. A gradation of characteristics seems to exist between those pictured here and the surrounding *Vaccinium angustifolium*.



Figure 32.
Possible
Vaccinium
pallidum
or hybrid
from the
Torbolton
Forest,
Ottawa,
Ontario.
Early
September:



† Figure 33. Flowers of possible Vaccinium pallidum or hybrid from the Torbolton Forest, Ottawa, Ontario. Mid-May.

Figure 34. Possible Vaccinium pallidum or hybrid from the Torbolton Forest, Ottawa, Ontario. Late May. →



These specimens from the Torbolton Forest are somewhat different from the previous Torbolton specimens. A number of examples of this type are scattered through a portion of the northern section of the forest. The leaves are somewhat larger than other blueberries in the forest.



Figure 35. Possible larger-leaved Vaccinium pallidum or hybrid from the Torbolton Forest, Ottawa, Ontario. September 26, 2020.



Figure 36. Possible larger-leaved Vaccinium pallidum or hybrid from the Torbolton Forest, Ottawa, Ontario. September 26, 2020. Showing underside of leaf.

These specimens from near the St. Lawrence River south of Ottawa have somewhat more oval leaves and features that could suggest either *V. angustifolium or V. pallidum*.





Figures 37 and 38, left. Vaccinium pallidum-like blueberry from Thousand Islands National Park, Ontario. Late July.

#### 1.1 Section Cyanococcus (blueberries)

#### 1.1.4 *Vaccinium boreale* (Northern Blueberry)

Vaccinium boreale (Northern Blueberry) is not found in the immediate Ottawa area but does occur in scattered locations in New England and Newfoundland. It is sometimes considered as a form of *V. angustifolium*. It has relatively small narrow leaves with fine teeth and is short in stature. One form I have seen from Newfoundland is distinct in having trailing and thickly intertwining stems as well as very small berries. This might be considered the true *V. boreale* form; Vander Kloet describes the twigs as delicate and intricately branched (Vander Kloet 1988). However, other forms seemingly closer to *V. angustifolim* fit the definition of *V. boreale* in some botanical texts. It may be difficult to distinguish a *V. angustifolium* plant dwarfed by environmental conditions from *V. boreale*. I have grown *V. boreale* (of the delicate, intricately branched type) from seed from a Newfoundland plant and found that it keeps its characteristics when grown under southern Ontario conditions.



† Figure 39. Vaccinium boreale from Newfoundland. July 7, 2018. © John Brew, some rights reserved (CC-BY-4.0). (iNaturalist 2021)



 ↓ Figure 40. Vaccinium boreale, Newfoundland. August 20, 2019. © Samuel Brinker, some rights reserved (CC-BY-NC). (iNaturalist 2020).
 V. uligonosum leaves in foreground and Crowberry in background.



← Figure 41. Vaccinium boreale (unconfirmed) on Mt. Lafayette, New Hampshire. Mid-September. This could be V. angstifolium dwarfed by environmental factors of exposure at high altitude.

## 1.1 Section Cyanococcus (blueberries)

### 1.1.5 Vaccinium corymbosum (Highbush Blueberry)

Vaccinium corymbosum (Highbush Blueberry) is present in the Ottawa area in scattered locations, usually along the edges of bogs, marshes or lakes. It is variable in form but is distinguished by its taller, more upright growth form and generally larger leaves. Local plants are generally one to two meters tall while the previously described species are generally less than one meter tall. The plant can be hairy or not and can have either toothed or entire leaves. Flower form and colour is similar to V. angustifolium. A second species, Black Highbush Blueberry (Vaccinium fuscatum), is recognized by some as being present in northeastern North America but is considered a form of V. corymbosum by others. It is characterized by pubescent stems and leaf undersides, dark fruit and earlier bloom time.





Figures 42 and 43. Vaccinium corymbosum at Alfred Bog, eastern Ontario. Early June.



Figures 44 and 45. Vaccinium corymbosum at Mer Bleue, Ottawa, Ontario. Mid-June.



Figure 46. Vaccinium corymbosum *at Mer Bleue, Ottawa, Ontario. Mid-June.* 



Figure 47. Vaccinium corymbosum near Limoges, Ontario. Mid-June.



Figure 48. Vaccinium corymbosum at the Saco Heath, Saco, Maine. Mid-August.



Figures 49, above, and 50, below. Vaccinium angustifolium *or* corymbosum? *Grand Manan Island, New Brunswick. Mid-July.* 



This specimen from Grand Manan is unusual in that it has characteristics of *V. angustifolium* and *V. corymbosum*. It has a more upright form than most *V. angustifolium* but is a denser and shorter bush than usual for *V. corymbosum*. The leaf characteristics of colour, shape and glossiness also seem distinctively different than most specimens of either species. It is probably best classified as *V. angustifolium*.

#### 1.2 Section Vaccinium

### 1.2.1 Vaccinium uliginosum (Bog "Bilberry")

*Vaccinium uliginosum* (Bog "Bilberry"). Though called a bilberry, it is not a member of the *Myrtillus* section, and seems to be more closely related to the *Cyanococcus* members.

Vaccinium uliginosum does not occur in the immediate Ottawa area. It is found at higher elevations in the mountains of the eastern U.S. and Canada, as well as in arctic and coastal environments. The species has a fairly distinctive blue-green leaf colour and leaf veins in a netted pattern. It is not likely to be confused with other Vaccinium. Forms of V. uligonosum have been considered as different species by some. One of these, Vaccinium gaultherioides, is noted as being in northern Quebec (Payette 2018) as well as in parts of Europe based on chromosome ploidy level and habitat. However, this division does not seem to be accepted by all.





† Figure 53. Vaccinium uligonosum in Charlevoix, Quebec. June 30, 2019. © Étienne Lacroix-Carignan, some rights reserved (CC-BY-NC). (iNaturalist 2020)

Figures 51, above, and 52, right. Vaccinium uligonosum on Tumbledown Mountain, Maine. Mid-August.



## 1.3 Section Polycodium

## 1.3.1 Vaccinium stamineum (Deerberry)

*Vaccinium stamineum* (Deerberry) occurs rarely in Ontario. It is found here only in the Niagara Gorge and along the St. Lawrence River south of Ottawa. Though the leaves are similar to *Vaccinium corymbosum*, the flowers are distinctive. The fruit is yellowish green to bluish/purple.





Figures 54 and 55, left. Vaccinium stamineum from planting at Thousand Islands National Park, Ontario. Late July.



Figure 56. Vaccinium stamineum natural occurrence in a region in or near Thousand Islands National Park, Ontario. June 11, 2019.
© Don Sutherland, some rights reserved (CC-BY-NC). (iNaturalist 2020)



Figure 57. Vaccinium stamineum. Onondaga County, New York. June 2, 2012. © mhough, some rights reserved (CC-BY-NC). (iNaturalist 2020)

# 1.4 Section Myrtillus (bilberries)

### 1.4.1 Vaccinium cespitosum (Dwarf Bilberry)

Vaccinium cespitosum (Dwarf Bilberry) does not seem to be present in the immediate Ottawa area but is reported to be present in the Laurentians (Marie-Victorin 1935). It is also present in the mountains of New England as well as at lower altitudes such as along streams or seacoast. In eastern Canada and the northeastern U.S. states, it occurs in scattered locations and is not, generally, common in eastern North America. It is a very low shrub in the Myrtillus, or bilberry, group. Members of this group usually have only one flower/fruit per bud in contrast to the many-fruited separate flower buds in the Cyanococcus group. The flowers are borne in the axils of the lower leaves of new growth. The berry shape/colour of this group is also somewhat distinct from the blueberries proper. The berries generally do not keep the persistent calyx that is found on members of the Cyanococcos section. Flowers of V. cespitosum are white to pink. Usually, at least some of the leaves are wedge-shaped at their base.







Figures 58, 59, 60. Vaccinium cespitosum on Mt. Lafayette, New Hampshire. Mid-September.



Figure 61. Vaccinium cespitosum. Typical dormant fruit/flower buds that are more elongate than those of the Cyanococcus group. From personal collection. Original source is Newfoundland. Early January.



Figure 63. Vaccinium cespitosum typical flower arrangement. From personal collection. Original source is Newfoundland. Late May.



Figure 62. Vaccinium cespitosum typical buds in September. From personal collection. Original source is Newfoundland.



Figure 64. Vaccinium cespitosum from White River, Ontario. June 14, 2011. © Rob Foster, some rights reserved (CC-BY). (iNaturalist 2020)

## 1.4 Section Myrtillus (bilberries)

## 1.4.2 Vaccinium ovalifolium (Oval-leaved Blueberry)

Vaccinium ovalifolium (Oval-leaved Blueberry) does not occur in the Ottawa area but can be found sparingly but widely at scattered locations in eastern Canada (Newfoundland, Gaspé, Saguenay and Lake Superior). It is a medium sized shrub growing up to about 1.5 meters high with thin oval leaves and pinkish flowers. It is another member of the Myrtillus section. A hybrid of V. ovalifolium and V. cespitosum has been described from Newfoundland and Quebec as Vaccinium X nubigenum (USDA NRCS 2020).



Figure 65. Vaccinium ovalifolium in Saguenay Park, Quebec. Mid-August.



Figure 66. Flower of Vaccinium ovalifolium. Greater Vancouver, B.C. May 19, 2019. © bobkennedy, some rights reserved (CC-BY-SA). (iNaturalist 2020)



Figure 67. Fruit of Vaccinium ovalifolium at Algoma, Ontario. July 13, 2011. © Rob Routledge, some rights reserved (CC-BY-NC). (iNaturalist 2020)

### 1.4 Section Myrtillus (bilberries)

## 1.4.3 Vaccinium membranaceum (Mountain Bilberry or "Huckleberry")

Vaccinium membranaceum (Mountain or Thinleaf Bilberry) does not occur in the Ottawa region but does occur in Ontario in the Lake Superior region. It has been reported as present on the Bruce peninsula (Gleason and Cronquist 1991) but this has been disputed and I have seen no other recorded evidence of its presence there. It is mainly a western species of the Myrtillus (bilberry) group of Vaccinium, but is often called by the common name huckleberry. Botanically, huckleberries are not a Vaccinium but are placed in another closely related group, Gaylussacia. Among other distinctions, members of Gaylussacia have about 10 noticeable seeds per fruit while blueberries and bilberries have numerous barely noticeable seeds. "True" huckleberries (Gaylusaccia baccata) are present in the Ottawa area and can easily be mistaken for blueberries (see page 42). V. membranaceum can reach a height of about 1.5 meters. Larger, thin, toothed leaves distinguish the species.



Figure 68, left. Vaccinium membranaceum in Michigan. July 31, 2019. © Robert Kahl (CC BY-NC). (iNaturalist 2020)





Figure 69, above. Vaccinium membranaceum in Michigan. July 13, 2018. © Andrew Lane Gibson (CC-BY-NC). (iNaturalist 2020)

Figure 70, left. Vaccinium membranaceum. Chelan County, Washington. May 25, 2016. © Mike Fitz, some rights reserved (CC-BY-NC). (iNaturalist 2020)

#### 1.5 Section Vitis-idaea

#### 1.5.1 Vaccinium vitis-idaea (Mountain Cranberry)

Vaccinium vitis-idaea (Mountain Cranberry) is also not likely to be confused with other Vaccinium species. It is in its own section, also called Vitis-idaea. Most specimens in North America are generally considered to be of the subspecies minus. The leaves are evergreen and the fruit is red. It occurs in cool coastal or alpine environments and in the north. It is also known as Partridgeberry (in Newfoundland) and Dry-land Cranberry. The European lingon ("lingonberry") is V. vitis-idaea but the plants are usually larger and more variable than the North American form. Vaccinium vitis-idaea ssp. minus, while not present in the immediate Ottawa area, can be found in the nearby mountains of New England and New York or north and east of Quebec City, or along the shore of Lake Superior.

Another plant that is sometimes confused with this species is *Mitchella repens* which grows locally. It also goes by the common name of Partridgeberry and has red berries.



Figure 71. Vaccinium vitis-idaea ssp. minus on Tumbledown Mountain, Maine. Mid-August.



Figure 72. Vaccinium vitis-idaea ssp. minus on Tumbledown Mountain, Maine. Mid-August.



Figure 73. Vaccinium vitis-idaea ssp. minus. Northern Quebec. June 26, 2019. © Daniel P.-L., some rights reserved (CC-BY-NC). (iNaturalist 2020)

- 2. Subgenus Oxycoccus (cranberries)
- 2.1 Vaccinium macrocarpon (Large Cranberry) and
- 2.2 Vaccinium oxycoccos (Small Cranberry)

Vaccinium macrocarpon (Large Cranberry) and Vaccinium oxycoccos (Small Cranberry) are two species that can be found in marshes and bogs in the Ottawa region. The most obvious difference between the two species is the size of the fruit. Leaf characteristics and growth pattern also differ somewhat. V. oxycoccos leaves tend to be more pointed and rolled-in along the edges. Vaccinium macrocarpon produce fruit partway along the vine while V. oxycoccos usually fruit at the ends of the vines.



Figure 74. Vaccinium oxycoccos at Alfred, Ontario. June 9, 2019. © owenclarkin, some rights reserved (CC-BY-NC). (iNaturalist 2020)



Figure 75. Vaccinium oxycoccos in Nova Scotia. July 11, 2018. © Colin Chapman, some rights reserved (CC-BY-NC). (iNaturalist 2020)



Figure 76. Vaccinium oxycoccos in Nova Scotia, July 17, 2018. © wyldewastelander, some rights reserved (CC-BY-NC). (iNaturalist 2020)



Figure 78. Vaccinium macrocarpon in Lennox and Addington County, Ontario. September 22, 2006. © Todd Norris, some rights reserved (CC-BY-NC). (iNaturalist 2020)

A third species of cranberry is reported from some localities (Newfoundland and Quebec) as *Vaccinium microcarpum*. It resembles *V. oxycoccus* but has features generally smaller than *V. oxycoccus*. The species designation is not accepted by all authorities.



Figure 77. Vaccinium oxycoccos in Nova Scotia. September 10, 2017. © Ben Armstrong, some rights reserved (CC-BY). (iNaturalist 2020)



Figure 79. Vaccinium macrocarpon at St. John NB. July 26, 2018. © Theresa Johnston, some rights reserved (CC-BY-NC). (iNaturalist 2020)

#### A Common Vaccinium look-alike: Black Huckleberry (Gaylusaccia baccata)

Black Huckleberry is common in the Ottawa region and can easily be mistaken for a blueberry species. This shrub can grow to a meter or more high and often forms thickets. Characteristics that separate it from local *Vaccinium* are the red blossoms in spring, the resinous glands on the reverse of the leaves, and the larger seeds (usually about 10) in the fruit. The twigs are also usually less green and tender (so more woody) toward their tips. However, the leaf size and shape and the appearance of the fruit are very similar to blueberries, though the fruit usually also has glands scattered on the surface. The fruit is edible and the taste is similar to most blueberries.



Figure 80. Gaylussacia baccata blossoms, west end Greenbelt, Ottawa. June 9, 2018.



Figure 81. Gaylussacia baccata leaf underside showing resinous glands.

Murphy's Point Provincial Park, Ontario,
June 16, 2020.



Figure 82. Gaylussacia baccata fruit and twig. Torbolton Forest, Ottawa. August 11, 2018.



Figure 83. Gaylussacia baccata fruit. Note the larger seeds. Torbolton Forest, Ottawa. August 11, 2018.

Table 2. Basic Features of Species

Species	Form	Habitat				
1. Subgenus Vaccinium						
1.1 Section Cyanococcus (blueberries) page 16						
V. angustifolium (Lowbush Blueberry)	50 cm tall or less. Usually toothed leaves, minimal hairs	Damp or dry well-drained acidic soils. Rocky exposures.				
V. myrtilloides (Velvetleaf Blueberry)	60 cm tall or less, entire leaves, hairy leaves and stem.	Damp or dry well-drained acidic soils, Rocky exposures, bogs.  More common than <i>V.</i> angustifolium in wetter areas.				
V. pallidum (Blue Ridge Blueberry)	One meter tall or less, leaves usually relatively wide. Leaves usually entire or minimally toothed.	Dry or damp open woods.				
V. boreale (Northern Blueberry)	Very low-growing. Toothed very small leaves, minimal hairs. Flower length about the width of leaves.	In alpine or exposed rocky areas, or areas with coastal climate				
V. corymbosum (Highbush Blueberry)	Tall (generally 2 to 3 meters), larger leaves than others in this section. Upright growth.	In acidic swamps or bogs or along edges of lakeshores.				
1.2 Section Vaccinium page 33						
V. uliginosum (Bog "Bilberry")	Usually less than 60 cm tall. Heavily branched. Oval leaves dark green to bluish green. Veins on leaves forming obvious netted pattern.	Bogs, muskeg, alpine.				
1.3 Section Polycodium page 34						
V. stamineum (Deerberry)	One meter or less tall. Toothless leaves thin and whitened beneath.	Dry woods, clearings.				
1.4 Section Myrtillus (bilberries) page 35						
V. cespitosum (Dwarf Bilberry)	Very low shrub less than 30 cm high. Leaves toothed and often wedge-shaped.	Various acidic sites: alpine, edges of streams, meadows.				
V. ovalifolium (Oval-leaved Blueberry)	1.5 meters tall or less. Straggling shrub. Leaves generally oval.	Moist woods				
V. membranaceum (Mountain Bilberry or "Huckleberry")	1.5 meters tall or less. Larger, thin, toothed leaves. Upright form.	Moist woods.				

Table 2. Basic Features of Species - continued

Species	Form	Habitat				
1. Subgenus Vaccinium, continued						
1.5 Section Vitis-idaea page 39						
V. vitis-idaea (Mountain Cranberry)	Less than 15 cm high. Leathery evergreen leaves. Mat-forming.	Exposed alpine and cool coastal areas and tundra, on rocks and in bogs or in cool forests				
2. Subgenus Oxycoccus (cranberries) page 40						
V. macrocarpon (Large Cranberry)	Low, trailing evergreen vine. Flowers/berries usually held partway along vine. Tip of leaf blunt. Leaves pale beneath and somewhat curled down along edges.	Swamps, bogs, wet shores.				
V. oxycoccos (Small Cranberry)	Low, trailing evergreen vine. Flowers/berries usually held at end of vine. Leaf edges strongly curled down. Back of leaf very whitened.	Swamps, bogs, wet shores, tundra.				

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#### About the author

I grew up in Maine where I became interested in the local species of blueberry (lowbush, velvetleaf, highbush and bog bilberry) and their variations. While living in British Columbia I became interested in the bilberry species there. I studied biology in university and eventually my wife and I started a blueberry farm where I grew a number of blueberry varieties and species. I experimented on a small scale with lowbush and highbush blueberry by planting from wild-collected seed and discovered for myself how the plants don't breed true to phenotype. Seed collected from one highbush plant from one location where highbush blueberries were not common didn't produce highbush plants but produced a variety of "half-high" plants as well as some that approached the look of lowbush blueberry. Seed from another location where highbush plants were common produced highbush progeny but with a variety of phenotypes. Seed from a single lowbush plant produced a wide variety of lowbush phenotypes and separated out into the two leaf and berry colours occasionally seen in the wild. I now live in Ottawa and have been investigating variations in the local species. We now have a front yard on a lot in the city mostly devoted to growing blueberries for consumption as well as growing out local variants of blueberries.

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Bumblebee pollinating Highbush Blueberry cultivar.