Article VIII.—A Few Thoughts on the Botanical Geography of Canada.—*By S. Sturton, Esq., Associate Member.*

(Read before the Society, January 2nd, 1863.)

The mapping of the world into Botanical Provinces is a beautiful idea, and enables the student of nature to print on his memory the distribution of plants on the face of the earth, with an accuracy and permanency which would otherwise be unattainable. This has been so well done by Schow, and so admirably mapped by Johnston, in his large Physical Atlas, that it is unnecessary to do otherwise than refer to those excellent authorities.

Canada and the northern part of the United States is the province of the solidagos and the asters, and certainly no one who has passed the months of August and September in Canada can question the propriety of this, for every rock, bank, and waste place is enlivened with the bright yellow of the golden rod (Solidago) and the varying hues of the Michaelmas-daisy (Aster).

Yet it would be a mistake to suppose that these alone characterize the flora of Canada. As soon as the snow begins to melt, the earth is gay with hepaticas and bloodroots, and throughout May and June, rocks, which otherwise would be barren, are beautiful with nodding columbines, and the bogs with Rhodoras, Kalmias, Ledums, Andromedas &c., the woods and hedge-rows with Trilliums of different colors, river sides and wet places are one mass of blue from the flowers of the Iris. Everywhere Orchidaceous

plants of most beautiful and often grotesque forms abound, our lakes are adorned with the graceful water lily, and their shores with forget-me-nots, bladderworts and primroses. In short, in addition to the solidagos and asters which give name to the botanical provinces, our flora is abundantly enriched with flowers of every hue, rich perfumes and most beauteous forms.

Many of our flowers are identical with, some are allied to, and others are totally distinct from those of the other hemisphere. Those which are altogether different we regard as having been created on this continent. Those species which are alike we consider to have migrated from one continent to another. And the laws which have governed these migrations, the helps which have assisted and the barriers which have arrested their diffusion, are some of the most interesting studies in botany.

Before being able to determine which flowers are identical and which are different, it is necessary that we should first endeavour to obtain a clear idea of what a species is, and the attempt is no sooner made than we experience unlooked for difficulties. Jussieu's definition is the best, "*nunc rectius definetur perennis individuorum similium successio continuata generatione renascentium*" or "like engenders like," and yet species continually sport into varieties, and varieties have a tendency to become hereditary and thus to form races.

If we could ascertain the first creation of the vegetable world, we should probably find that such species cannot be transmuted one into another; but such knowledge has not been revealed nor are we likely to arrive at it by inductive reasoning, so that all we can do is to work with such materials as we have, and accept such truths as the facts lead to by induction.

Attaching my own meaning to the word "similium" in

Jussieu's excellent definition, I may be allowed to question if there be as many species in nature as naturalists have made, and whether most of our species are not only varieties derived from one common parent.

It is stated as a law of nature that species cannot be confounded by hibridization; that if by artificial means such hybrids are obtained they cannot reproduce themselves, and therefore every sterile mule is regarded as the offspring of parents belonging to distinct species. If such a law existed it could not be broken in the first generation for the laws of nature are immutable. Therefore I believe that mules are not hybrids of distinct species but of two varieties of one common species.

On the subject of the unnecessary multiplication of species allow me to quote the remarkable words of Dr. Joseph Hooker in his preface to the Flora Indica: "The prevailing tendency on the part of all students of all "branches of Natural History, to exaggerate the number "of species, and to separate accidental forms by trifling "circumstances, is we think clearly traceable to the want "of early training in accurate observation. As a conse- "quence the study of systematic Botany is gradually tak- "ing a lower place in our schools, and, being abandoned "by many who are best qualified to do it justice, it falls "into the hands of a class of naturalists whose ideas "seldom rise above species; and who by what has been "well termed 'hair splitting' tend to bring the study of "them into disrepute." Again Hooker says, "the stu- "dent who is taught that species are definite creations, "and unchangeable, without being cautioned as to their "powers of variation within certain limits, finds when he "begins to observe for himself, that he has constant diffi- "culty in determining their limit, and that abler judges than "himself are equally at fault. The more books he con- "sults the greater are the difficulties he meets with; if he

" travels he meets with a change of form under every cli-
" mate; till at last perplexed and mortified, he gives up
" the study of specific botany, and becomes a convert to
" the belief that species are the arbitary creations of
" systematists."

Thus the conviction is spreading that the number of species must be reduced, and that the greater number of so called species are only varieties, and the only open question is how far is this reduction of species to be carried.

Most of our plants which are common to both Hemispheres are of northern species, and are generally termed Alpine plants; these occur from Canada to the Arctic Ocean, and in the mountains of Scotland, and after disappearing in the warmer climes of England and France re-appear in the Alps of Switzerland. Now as the plants cannot possibly pass over the intervening plains in their present climatic state, it becomes a very interesting question to know how did they get there. I was well aware of the fact that they did grow in the Alps, but when I first came into possession of the Herbarium now exhibited, and saw Swiss specimens of our Quebec flowers, my joy was unbounded, for here we have Pyrola, Oxytropis, Astragalus, Primula Farimosa, Epilobium Alpinum, Circœa Alpina, Barbarea Vulgaris, &c., besides several others of which I have not yet dried specimens.

The Andromedas, Ledums, Pyrolas, Epilobium, Buchbeans, Buttercups, Anemones, &c., &c., are common to all the northern parts of America, Europe, and Asia, and all these are capable of bearing the cold of the extreme north, where the land of the two continents approximate.

The Magnolias, Robinia, Kalmia, Rhodora, Rudbeckias, &c., which cannot bear the cold of the latitudes where the land approximates, are confined to this continent. And the Ivy, Wallflower, Dead Nettle, &c., of England, which cannot bear intense cold, are confined to the old world.

These facts point to the conclusion that plants have easily migrated round the world at the North, while between the United States and more Southern Europe a barrier has long existed sufficient to separate the present flora of the two countries—that barrier being the Atlantic Ocean.

We will now consider how the passage of these plants may have been effected, which are common to both continents, and also what barriers are sufficient to prevent the migration of plants from one station to another.

The winds are very effectual for wafting the seeds of the Cryptogami and such as have feathery appendages; but heavier seed whether large or small cannot be thus conveyed, for instance the Germander Speedwell, which has been plentiful at Point Levi for some years past (doubtless introduced from Europe as a garden flower) has not yet had its seeds conveyed to the north shore by the winds.

Birds can be of little avail in transporting plants by seeds adhering to their feathers &c., for if so the seeds of this Germander Speedwell must ere this have been conveyed by them across the St. Lawrence. That birds which frequent water convey seeds, is most probable, for the mud of lakes is full of seeds, and this mud adhering to their legs must frequently be taken from lake to lake. I think I have observed that plants which grow among wet mud are more universally spread than those which grow in dry places, which I am inclied to attribute to this cause, though I am aware their seeds are more liable to be conveyed by currents, and better able to resist the evil effects of being soaked in water.

Seeds which are eaten by birds are often passed undigested through their alimentary canal, and gooseberries, currants, and raspberries may often be seen springing up from their dropping on the decayed head of a pollard willow. In Europe birds are purposely fed upon the fruit of the olive and hawthorn that their seeds may germinate in one year instead of two, which they would otherwise

require; but this agency is limited to such seeds as birds eat and such distances of sea as these birds are able to fly over.

That animals convey seeds from place to place is certain, for every one who has examined the fleece of a sheep in autumn must have seen a large number of seeds entangled in the wool.—And it is not possible for any fur bearing animal to force its way through bushes in seed without the seeds adhering to the fur, and these seeds are conveyed from place to place wherever the animal roams, and when the seeds fall into good soil they blossom and bear fruit.

The waves and the currents of the ocean are another means of the transportation of seeds; and when an island is separated from the main land by a narrow strait, seeds which fall upon the water may be wafted over by the winds before there has been time for them to be killed by the salt water. Unless such transportation as this be allowed we must connect island to island, and island to continent in such a manner as would draw upon recent geological changes to an inconceiveable extent, and we have no right to invoke such causes to account for effects which can be otherwise explained. Cocoa nuts, which are well protected from the action of water float from land to land and on whatever rock they are stranded find a suitable station for their growth. Other seeds which are similarly protected, or that bear immersion in water well, are thus distributed, and such seeds have been conveyed by the equatorial current from Africa to South America. In this manner the Germander Speedwell may hereafter cross the St. Lawrence. Its seeds must continually be carried down by a stream (on the declivities of whose banks it grows) to the St. Lawrence and these seeds may be deposited on some of the islands in the river and also on the opposite shore.

Icebergs are suggested as a means by which our Arctic flora has travelled from one continent to another. This

theory requires that the plants should grow near the forming icebergs, which I believe is not usually the case, for they are found near where the ice dissolves. And if seeds were carried by icebergs they must be moistened with water and frozen into the compact mass of ice. That this process should go on for years, that then the glacier should be detached as an iceberg, float in the ocean and after some time strand n ear a shore, that then the seeds should be dissolved out of their icy prison and soaked in salt water, and after all this find a suitable station on the shore they are washed upon—these requirements are to me so unlikely that I reject the theory altogether. It is true I cannot prove the iceberg theory impossible, nor have it's advocates yet proved it probable.

I consider the only way in which the majority of our plants can have migrated to be by land or islands lying very closely together as the Kurile Islands.

The theory of land transport is well sustained by the fact that our Canadian plants, which are found in the Southern Hemisphere, are also found in the Andes, such as Erigeron Limosella, Cardamina Hirsuta &c., so that here we have the very mountain ridge by which these plants have passed from north to south. I would also here remark that our cardamina hirsuta, which hitherto I have found in the neighbourhood of Quebec only at Ste. Anne, is so plentiful in its southern home that the sailors use it as a salad, and it is very beneficial as a preventive against scurvy, &c.

The agency of man, whether accidentally or purposely exerted, is of little effect. One very remarkable instance I have witnessed, the introduction of our Anacharis Alsinatorum into the fens of Cambridgeshire. In 1842 it was first found in the loch of Dunse Castle ; in 1851 it appeared in the Isle of Ely. The plant is dicœcious, but in England all the plants found up to 1856 were females, and it was

impossible for the plant to propogate itself by seed. The fact of all the immense mass being of one sex is fair presumptive evidence that *one single* seed was enough to increase and multiply and fill all Britain in twelve years! It was sent from the north to the Botanical Gardens at Cambridge and placed in a basin of water, which it soon filled. It was then thrown into a pond, that pond communicated with the river Cam and through this channel it soon spread throughout the whole Isle of Ely, and so seriously injured the navigation of the rivers by its immense masses that an action would have been brought against the curator of the Botanical Gardens for damages, if he had not been removed by death from the possibility of being reached by human law.

I will not here speculate on Geology, but there are certain facts which geologists admit, and such facts I may be allowed to make use of.

There have been great changes in the land to the north; there was less land when the climate was warmer, more land when the climate was more severe. If you look at a globe or map of the circumpolar regions you will see that Europe, and Asia, as far east as the Gulf of Obi, only extend, on an average, to 70° north; our own continent directly north of us extends to 80° north, which accounts for the extreme rigour of our climate. As you travel westward the climate becomes milder because the land to the north is decreased. We may therefore safely infer that during the glacial period the cold of Europe was occasioned by more land to the north, perhaps connecting Spitzbergen, Norway, Iceland, and Greenland. This is scarcely a theory, for we know that Europe had that glacial period which would certainly be occasioned by such a tract of land to the north as I am pleading for.

Alpine plants will bear any degree of winter cold if they have enough summer heat to bring them into flower

and mature their seeds. And during this glacial period we are not to consider our country was a land of perpetual ice and snow. The sun had the same altitude at midsummer then as now, and beneath those burning rays plants would spring up and flower even as they do now. And further, to prove that the glacial period of Canada was much the same as now, we have only to consider that at the present time icebergs are scoring the rocks and depositing boulders in true "glacial period" fashion in a part of the Atlantic, where the cold is not so extreme as at Quebec. So that the cold of the glacial period would not prevent the passage of our northern plants in high latitudes.

But we will pass from theories to certainties. Now in both hemispheres we find the remains of the mammoth, and I believe that animals and plants have migrated from one continent to the other by the same means, and that the bridge of passage for one has also been the bridge of passage for the other. And not only do we find the mammoths on both continents, but we also find them frozen in the cliffs on the American side of Behring's Straits; thus placing beyond doubt one point of passage for these animals, and wherever these animals roamed there must have existed for their support a flora equal to that northern flora of our country, the northern passage of which by land we contend for.

During the latter ages of the Tertiary period, when the Fauna and Flora began to assume their present appearance, the main features of the land were much the same as now. Europe and Asia were then separated by the broad Atlantic, and the gulf-stream then issued from the gulf; for the different fauna in the opposite Pacific shows there the gulf-stream did not flow through the Isthmus, into the ocean beyond; and also the fact of the megatherium having wandered from Brazil to the United States, shows that there was a land communication between

North and South America for him to pass over. And the fossil remains of Australia show that the zoological provinces were much the same then as now.

It is considered and with evident truth that during the Tertiary period the climate oscillated, and that several cold waves of great length of time, at different periods, passed over these northern parts. Now we will suppose that the mammoth and these plants crossed via Behring's Straits or Greenland while the climate there was a little warmer (perhaps, as warm as Canada is now,) that a cold wave came slowly on from the north, bearing animals and plants southward before it, and located them for some time, in comparatively southern regions; that at length the cold wave retreated and the plains becoming too warm for the arctic plants, they followed the retreating wave or ascended mountain tops in search of those cool retreats denied to them in the plains beneath. This theory will also account for Spanish flowers being found in the British Isles, without calling to our aid an imaginary continent stretching from Spain to Scandinavia.

During these changes the Isle of Java had once so low a temperature that its trees were the dicotyledonous trees of the temperate zones, and not the monocotolydonous trees which now grow there. During that period the plains of Java were inhabited by an animal which like our alpine plants, has retreated to the mountain tops to escape from the heat below.

I will now call your attention to the alpine specimens again. The Geum rivale, Streptopus, Barbarea, Linnœa, Primula, Impatiens, Astragalus, Oxytropis, Epilobium, Circæa, Ranunculus, Anemone, Drosera, Pyrola, Arbutus Uva ursi, Virburnun opulus, Myosotis palustris, Parnassia, &c., all of which are found in Scotland, Norway, Canada, and the Alps. The Barbarea vulgaris is sold in our markets for watercress, which they are not, but being equally

beneficial, the substitution is harmless; the true water-cress has white flowers, this has yellow.

I will now go one step further and attempt to prove that arctic and other species of our common flowers are only varieties sprung from one common parent stock. Show any person a Pyrola, he will recognize all others as pyrolas immediately; the same with many other of our species, and he will not notice the difference till pointed out in a scientific manner. We have near Quebec the Hepatica triloba and H. acutifolia. I have found the change pass by imperceptible gradations from the *three* round lobed leaves of the former to the *four* and *five* acute lobes of the latter, and though the two species are very well separated in books it is impossible to separate them in nature, therefore I class them as varieties.

The main objection against species being varieties rests upon the difficulty of crossing and obtaining fertile hybrids. This is what I should have expected a priori, for the delicate organs of reproduction participate in the change and unfit them for mutual fertilization. But many bybrids are fertile, and nature does not refuse to continue a hybrid plant by cuttings. Besides it is a necessary law of nature that a hardy alpine variety should not lose it hardiness, by continually crossing with its relatives in the warmer plains below.

That plants from England, cultivated in the plains of Bengal, should not by that great change of climate be forced to become new species is again no more than I should expect a priori, for if an English plant can grow and thrive in Bengal, what is there to force that plant to make changes in itself? If the climate already suits the plant no further change is required to suit the plant, to the climate. If climate does effect change in plants, it is when, after successive struggles for ages, they adapt themselves to new circumstances which would be fatal to the life of the unadapted plant.

If the Epilobium angustifolium were to attempt to ascend mountains or higher latitudes it would be arrested by unsuitability of temperature, and if it succeeds ultimately in any of these attempts it must adapt itself to altered circumstances and become a similar, more hardy, alpine variety exactly as we find it, and of which I have here specimens collected in the Alps and at Quebec. Professor Dawson in his ascent of Mount Washington gives a most graphic account of how the plants struggle to ascend, and are we to consider that this struggle would continue for ages and none of the strugglers succeed in reaching the mountain top in an altered form?

I consider we have many direct proofs of these transmutations. I will particularly instance the water crowfoot of England, and Ranunculus Purshii of this country. The leaves which are submerged are all dissected into threads, if partly emerged the leaves above the water are ordinary leaves, if entirely out of the water all the leaves are ordinary leaves, and yet notwithstanding this great difference of leaves every Botanist is obliged by the force of facts to make it one species. Then look at these two species of Geum, they can be most readily distinguished by their radical leaves, and yet these leaves do not differ so much as do the leaves of the same Ranunculus in and out of the water, and if we have to abandon leaves as distinguishing species much less can we take the color and size of the petals which every florist knows to be most variable. I think you will therefore grant me that these may be only two varieties of one common species—if so you must go one step further and grant me that as these two varieties grow side by side and do not hybridize naturally, therefore when plants are altered by change of station their delicate organs of reproduction are so altered as to be usually incapable of fertilizing one another.

If these plants and others which might be mentioned

afford us instances of alterations taking place under our eyes, the science of Botany reveals far greater changes as taking place now or that have been arrested in the state of changes, and suffered to go no further.

In a symmetrical flower the sepals, petals and stamens are all on the same numerical plan, and where the stamens are in excess of the normal number they are found to be multiples of that number, and placed in successive circles in alternate order. Some flowers are evidently intended for symmetrical but have undergone a change. Our chelone and Penstemon are good examples; the plan of each flower is evidently five and yet there are only four stamens, the fifth being sterile. Our common mustard is another evident deviation from a regular plan; it has four sepals, four petals and six stamens, whereas it should have four or eight stamens. In this case it is explained by the theory of reduplication or chorisis; that is, that two of the stamens are split into four, so that in reality we have only the four stamens which the plan requires. Again the Ledum is on the plan of five, and yet we find two species one with five and another with ten stamens, and sometimes intermediate forms with six or seven stamens; these latter being the transitional state from five to ten. If these changes are allowed then most of our species are only varieties. The Pyralas are so much alike, that if they are arranged in a gradual scale of deviation we at once see that even the extreme links of the chain are with the intermediate united together as one common species. Our numerous Asters and Solidagos do not hybridize naturally, and yet florists in England make them cross by tying their heads together, and I believe these hybrids are fertile.

I would also call attention to the fact that almost all animals which are common to both worlds have polar re-

presentatives, as the Bear, Buffalo, Deer, Fox, Lynx ; while Lions, Tigers, Sloths, &c., which cannot bear extreme cold and have no polar representatives, are confined to one continent.

So that from zoology as well as from botany I draw the same inference, that almost all plants and animals which are common to both continents are those which in their present or arctic varieties are capable of bearing great cold, and therefore migrated in the north, (either east or west) where the land approximated.

I have stated my belief that alpine plants are dwarfed specimens of the same plants growing in the warmer plains. We may follow the willow to the extreme north, gradually growing less and less till it becomes the exquisitely small polar willow. If these dwarfed specimens in their struggle to descend into warmer plains succeeded, they would assimilate more food, lose the alpine character and become large plants; but instead of returning to their original state they would develope into new varieties ; thus after a species passed at Behring's Straits it would descend south and give rise to several varieties. It is thus that I account for many of our trees, shrubs, &c., which belong to European genera, being of different species, and for these changes must be allowed a length of time which geology will truly grant.

I therefore conclude that plants (and animals) have migrated by land, or at most, only crossed narrow seas from island to island ; that they certainly have passed by Behring's Straits and probably by northern land, between Europe and America, which does not now exist; and that most of our species are only varieties of that variety which crossed at the north.

List of some of the more conspicuous Plants found near Quebec, arranged in the order of time of flowering.

MAY.

Botanical Names.	English Names.	Localities.
Symplocarpus fœtidus—	Skunk Cabbage.....	
Epigœa repens—	May flower.....	
Hepatica triloba (varying to *acutifolia*)–	Hepatica.	
Claytonia Virginica—	Spring Beauty.....	Island of Orleans.
Erythronium Americanum—	Dog-tooth-violet....	
Shepherdia Canadensis		
Trillium erectum—	Purple Trillium.....	
Trillium pictum—	Painted Trillium.....	
Cassandra calyculata.....		Swamps.
Uvularia grandiflora—	Bellwort.....	
" *sessilifolia*.....		
Sanguinaria Canadensis—	Blood-root.....	
Caulophyllum thalictroides—	Blue Cohosh....	[where.
Actæa alba.....		Thickets every-
" *rubra*.....		" "
Dirca palustris.....		Isle of Orleans.
Caltha palustris.....	Marsh Marygold.....	
Coptis trifolia.....	Gold Thread.....	
Leontodon Taraxacum,—	Dandelion	
Capsella Bursa pastoris—	Shepherd's purse...	
Primula Mistassinica—	Fairy Primrose.....	Isle of Orleans.
Asarum Canadense—	Wild Ginger.....	do
Thalictrum dioicum—	Early Meadow Rue.....	
Andromeda polifolia.....		Swamps.
Lamium purpureum—	Red Dead Nettle.....	Cornfields.
Viola pubescens.....		
" *cucullata*.....		
" *Canadensis*.....		Orleans.

Botanical Names.	English Names.	Localities.
Viola blanda.....		
Fragaria vesca—Strawberry.....		
Aquilegia Canadensis—Columbine.....		
Xylosteon ciliatum—Fly Honeysuckle.....		
Mitella diphylla.—Mitre-wort.....		Wood banks.
" *nuda*.....		
Tiarella cordifolia—False-mitre-wort.....		do.
Arum triphyllum—Indian Turnip or Jack in the box.		
Aralia trifolia—Dwarf Ginseng,.....		Woods.
Smilacina bifolia.—Wood Smilacina.....		do.
" *stellata*.....		Wet places.
Menyanthes trifolia—Buckbean or Bog-bean.....		do
Trientalis Americana—Star flower.....		Woods.
Cornus Canadensis—Bunch berry or Pigeon berry.		
Calla palustris.....		Ponds.
Anemone nemorosa—Wood Anemone.....		Point Levi.
Saxifraga virginica.....		Chaudiere &c.
" *Pennsylvanica*.....		

JUNE.

Dentaria diphylla...		
Dicentra cucullaria.....		
Streptopus roseus—Twisted stalk.....		Woods.
Viburnum lantanoide—Hobble-bush.....		
Rhodora Canadensis.....		Border of swamp.
Kalmia angustifolia.....		Swamp.
Clintonia borealis.....		Woods.
Pedicularis Canadenis.....		
" *palustris*.....		
Veronica serpyllifolia.....		
Chelidonium major—Greater Celandine.....		St. Foy.
Potentilla anserina—Silver leaf.....		

Botanical Names.	English Names.	Localities.
Amelanchier Canadensis—	Shad Bush	
Prunus Virginiana--	Choke Cherry.....	
Veronica Beccabunga—	Brookline Speedwell....	
Geum—	(Several varieties).....	
Cypripedium acaule..	Mocassin flower.....	Swamp.
" *parviflorum*.....		Woods.
Ledum latifolium—	Labrador tea.....	Swamp.
Corydalis glauca.....		
Oxalis stricta.....		Fields.
Hydrophyllun Virginicum—	Water-leaf.....	
Linnæa borealis—	Twin Flower.....	
Aralia nudicaulis—	Wild Sarsaparilla.....	Woods.
Viburnum Opulus—	High-bush Cranberry.....	
Iris versicolor.....		
Cynoglossum officinale—	Hound's-tongue.....	
Senecio aurea—	Ragwort.....	Wet Places.
Smilacina trifolia—	Bog Smilacina...	Bogs.
Anemone Pennsylvanica.....		
Scrophularia nodosa—	Fig-wort.....	
Smilacina racemosa.....		
Sarracena purpurea—	Pitcher-plant.....	Bogs.
Astragalus alpinus.....		Isle of Orleans.
Oxytropis Lamberti.....		do. [Lawrence.
Veronica Chamædrys.....		South shore of St.
Myosotis palustris—	Forget-me-not.....	Borders of Lakes.
Veratrum viride—	Green Hellebore.....	
Rosa blanda.....		
Œnothera pumila—	(and others).....	
Pyrola rotundifolia.....		
Anemone Virginica.....		
Mellilotus officinalis.....		
Rhinanthus crista galli—	Yellow-rattle.....	
Hypericum perforatum—	St. John's wort.....	

Botanical Names.	English Names.	Localities.
Campanula rotundifolia—	Hare-bell.....	
Spiræa opulifolia.....		
Moneses uniflora—	One-flowered Pyrola.....	St. Ann's.

JULY.

Linaria vulgaris—	Common-toad-flax.....	
Rubus odora—	Flowering-raspberry.....	
Platanthera bracteata.....		
" *blephariglottis*.....		
" *fimbriata*.....		
Potentilla tridentata.....		Cove Field.
Lathyrus palustris.....		Wet Places.
Kalmia glauca.....		Bogs.
Pogonia ophioglossoides.....		In swamps.
Calopogon pulchellum.....		
Epilobium, (several species)—	Willow herb.....	
Apocynum androsæmifolium—	Dog's-bane	
Vaccinium Oxycoccus—	Cranberry	Swamps.
Spiræa salicifolia.....		
Dalibarda repens.....		
Mitchella repens—	Partridge berry.....	
Lilium Canadense—	Canadian-lily	Wet meadows.
Œnothera biennis—	Evening-primrose.....	
Verbascum Thapsus—	Mullein.....	
Monotropa uniflora—	Indian-pipe.....	Woods.
Tofieldia glutinosa.....		Isle of Orleans.
Asclepias Cornuti.....		
Lysimachia stricta—	Strict-Loosestrife.....	Wet places.
Sagittaria variabilis—	Arrow-head.....	Ponds &c.
Smilax hispida.....		
Linaria Canadensis—	Canadian-toad-flax.....	Orleans.
Sanguisorba Canadensis—	Great Burnet.....	
Mimulus ringens.....		
Rudbeckia laciniata.....		
Erigeron—	(several varieties).....	

Botanical Names.	English Names.	Localities.
Circæa Lutetiana.....		
Clematis Virginiana.....		
Nymphæa odora—	White Water-lily.....	Lakes.
Nuphar—	(two species) Yellow do do.....	do.
Eupatorium—	(several species).....	
Drosera rotundifolia—	Sun-dew.....	Swamp.
Chelone glabra—	Snake's-head.....	
Spiræa tomentosa—	Steeple-bush.....	
Lobelia inflata—	Indian-tobacco.....	
Aster—	(several species)	
Solidago—	(several species).....	
Gentiana crinita—	Fringed Gentian.....	Isle of Orleans.
Impatiens pallida.....		Ditches &c.
" *fulva*.....		
Verbena hastata.....		
Nabalus albus.....		
" *altissimus*.....		
Parnassia Caroliniana—	Grass of Parnassus..	Isle of Orleans
Aralia racemosa.....		
Calystegia sepium—	Bracted-bird-weed.....	
Convolvulus arvensis.....		

The above list is far from pretending to be a catalogue of all Quebec flowers or even of flowers collected by the writer; it is only intended as an assistance to the young and amateur collector, that he may know about the time to look for such as he will take most interest in. Such lists published in the Canadian Naturalist have been found very useful.