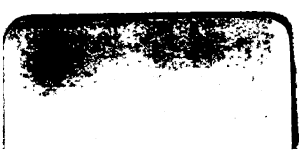

Walter Lucas.

BULLETIN

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OF

NEW BRUNSWICK.

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CONTENTS.

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ETHICS OF LAW.

[*Read 20th February*, 1885.]

A FEW WORDS to define what is meant by law, before entering upon my subject. The term law is understood to mean or infer a force which causes similar results under similar conditions. In calling it a law we, however, merely state a fact, we do not reach nor explain the source of the fact. This principle is manifested or acknowledged in the realm of matter, in organic life, in intellectual and moral phenomena.

Thus in matter we accept the fact that liquids ever tend to take a level position. Numerous observations establish the fact, and we regard it as one law of their condition. In calling it a law, however, we do not explain the source of that fact. Looking into it further, we find that owing to gravity, or, in other words, the attraction of a large mass of matter, the earth for instance, every molecule of a liquid is virtually acted upon equally and is forced to take its place until each molecule of the upper layer occupies the same distance from the attracting body. This is, however, a mere statement of a fact. So also it is with the law of gravity. Gravity is a term only, it signifies the result of observations upon matter. We are led by many observations to recognize the sense of weight, and this eventually drives us to the conclusion that the idea of weight arises from an unseen force which draws matter towards matter. Further observations lead us to conclude that attraction is in relative proportion to the masses and their distance. To call this gravity or attraction does not explain the why nor the wherefore;

it merely expresses a fact. The law, or rather laws, of optics are first learnt by a series of experiments or observations. And when the law is recognized, it is after all a term applied to similar results under similar conditions. The ultimate force or forces are beyond the ability of man to define or to comprehend. But whilst we are unable to know what the effective force may be, we yet are able to conclude that if any conditions are wanting, or other conditions are added, the sequence of events will be changed, or the working of that particular sequence will be interrupted.

IN THE ORGANIC WORLD

a similar grouping of facts occurs. In the growth of plants, and the conditions under which they are found, certain sequences are traced and become recognized as laws of growth or development. Also in the animal economy we are led to generalize—the varying families, the conditions of their existence, their modified organs of life, the circumstances which may be favorable or injurious in their action. We call these results of our investigations laws of being. They state facts as to sequence, but do not give the reason why they should be results. So also with the laws in the intellectual world. The law of association, in which one thought or sensation recalls another which was cotemporary with it. To call it a law does not explain why such should be. The frequent repetition which strengthens the power to recall is one of the laws of mental action, but to apply to it the term law merely expresses the fact—does not explain the cause. In the moral we are forced to admit certain results as the consequence of moral feelings in action. We speak of a law of love; we know that an emotion in one person excites a similar emotion in another. We may apply the term law to it, but that does not solve the difficulty.

I have spoken of the ETHICS of Law. By this I mean the manner in which results occur; the obligation which exists in the sequence of events; the obedience to a command. The term ethics is generally used to denote a moral relationship in conduct as in man to man. I claim its use in the other departments to the relations of matter and the organic laws as truly as it may be applied to the intellectual and must be to the moral faculties.

To know the ethics—that is, the manner, obligation and obedience—of the laws of matter, is to recognize the principles or

forces which ever tend to produce similar results. By applying this to matter, or seeking them in a uniformity of action, we enter upon the realm of natural philosophy in its various phases. To investigate the changes which this earth has undergone and the order in which they have occurred will constitute the work of a geologist. To scan the heavens and trace the connection of sun, moon, planets and stars will be the office of the astronomer. To analyse and combine the different elements contained in matter is the province of the chemist. In doing this the truth is demonstrated that physical laws ever tend towards the same results and are permanent as regards the action of matter on matter. Thus the most solid foundation is laid for the superstructure which is built by natural philosophers.

The ethics of the organic laws lead to or urge the true method to ascertain the forms and growth of *plants*, their properties, the conditions under which they thrive. The elements contained in the soil, those which enter into their composition—the heat, the cold and the moisture which conduce to their benefit. In this field of observation the botanist becomes the man of science, and the farmer will profit according to his knowledge. I know of no class of persons who should benefit by knowledge in this and general subjects more than those who till the soil. In the study of the functions of the organs in the animal economy, and their interrelationship, the physiologist arrives at his knowledge, whilst the observation of what interferes with their healthy play or adds to their freedom of action falls more especially to the lot of the physician and the hygienist.

WHEN WE ASCEND

to the realm of intellect the forms become more subtle, and the ethics or right action of the laws of the mind require a more profound analysis. The science of teaching is still in its infancy. The methods of individuals are prevalent; no general law to form the rules best adapted to train the intellectual powers, no concensus upon the proportion which memory should occupy—no decided agreement even upon the use of the classics as a study. In fact, confusion rather than order prevails. In our province method has been recognized and one step has been taken by requiring the teachers of our schools to learn in a head *training school* how to impart knowledge and what to impart. In the government of

the nations the politicians rule more by expediency than by any fixed laws. The experience of the past is but little used to guide the present—a common-sense view of justice and right has through many centuries built up a system of common law, and it is doubtful if statute law enacted by the wisest legislators has added much to its wealth. The laws of trade form a battle ground for party to fight against party, rather than an exhibition of concentrated wisdom. And though in our courts the law of evidence is tolerably understood, there is a vast field of indistinct knowledge that some day may come under the codifying ethics of the intellectual laws.

In the region of morals there are laws, as in all else. We cannot conceive that any department of philosophy can exist without them. And to this one especially is the term ethics truly applicable. Whilst by the exercise of our natural powers we can come to right conclusions in natural philosophy—in the organic world and in the working of the intellect, however abstruse and difficult the last may be, yet in the moral field our ability is very limited, and it is doubtful if the moral laws ever could be decided by the unaided intellect of man. I do not say that with advancing knowledge we may not rise to a rational perception of these rules, and feel their necessity and see their beauty in clear outlines. But when nation differs from nation in circumstances and characteristics, nay, when individual differs from individual, there is but little possibility of a oneness of conclusion in the moral rules which should govern our actions. If these rules are to be universal they must come from authority outside and above humanity.

THE MORAL PART OF MAN

connects him with something above him. It enables him to respond to demands from a higher source. It constitutes the border land where the seen and unseen blend; where the *spiritual* illumines the darkness, and renders certain and universal what otherwise would be uncertain and limited. It has been well for man that co-eval with the race a moral revelation has been promulgated, that it came from a higher source, that it opened out, as we rose in our power to receive it, until it culminated in a living example, THE DIVINE LOGOS.

The moral differs from the other departments of knowledge. In them the faculties of man are left to grapple with the world, and its phenomena; in the other we have the necessary proffered help.

The highest attainment in philosophy will be when all the departments of knowledge are studied in their due proportion by minds endowed with the greatest powers.

One man, indeed, may be an enthusiast in natural history, yet be ignorant of geology. Another may be deeply versed in botany, yet be a mere tyro in other directions. One may be profound in mathematics and mental phenomena, yet with no knowledge of the earth upon which he stands. Another may have plumbed the depths of all the sciences, yet given no time to drink in the realities connected with the moral world. There are some with large mental powers, like Newton, who, to vast acquisitions of knowledge of things in the heavens above and in the earth beneath, have added a childlike attitude to the teaching from above and attained to that wisdom which clothes humanity with its highest dignity.

PRELIMINARY LIST OF THE PLANTS OF NEW BRUNSWICK.

COMPILED BY REV. JAMES FOWLER, M.A.

With assistance of Members of N. B. Natural History Society.

HISTORICAL NOTE.

THE writer has been unable to obtain any published information on the Flora of New Brunswick of earlier date than 1862. The name of the Province occurs a few times in the works of Pursh, Hooker, Gray and others, but only in connexion with the distribution of some particular species of plant. During the above-mentioned year there appeared "A Description of the Forest and Ornamental Trees of New Brunswick, by D. R. Munro, St. John, N. B." As the author proves himself innocent to the last degree of all knowledge of Botany, his descriptions are simply amusing exhibitions of the power of imagination.[1] On February 12th, 1864, Prof. L. W. Bailey read an interesting paper entitled "Notes on the Geology and Botany of New Brunswick" before the Natural History Society, which was subsequently published in the *Canadian Naturalist* for April of the same year. The author describes the character of the country from the mouth of the Tobique to its source, and thence down the Nepisiquit to Bathurst, giving partial lists of the plants met with on the route. The reading of this paper gave an impulse to the Botanic talent of the Society, and at the following April meeting (April 8, 1864) Mr. Robert Matthew read a "List of the Plants of New Brunswick," but, unfortunately, it was never published. (See Bulletin Nat. Hist. Soc., I, p. 18.)

[1] He describes three species of Oak, two of Elm, three of Beech, and three of Ash as being abundant. His Bilberry (Vaccinium) grows into a tree thirty feet and upwards, and Dogwood (Cornus Florida) is abundant, attaining a height of thirty feet. He finds two species of Moose Wood—the Round-leaf and the Notch-leaf Moose Wood.

The next notice appeared in 1869, when Mr. G. F. Matthew published a valuable and thoughtful paper "On the Occurrence of Arctic and Western Plants in Continental Acadia." The paper was read before the Society, April 13, 1869, and published in the June number of *Canadian Naturalist.*

In 1876, Dr. L. W. Bailey and Edward Jack, Esq., prepared and published a "Descriptive Catalogue of the Woods and Minerals of New Brunswick," for use at the Centennial Exhibition at Philadelphia. It embodies a large amount of valuable information from an economic standpoint, and gives the most reliable account of the uses of our forest trees that has yet been presented to the public.

No further references to the subject occur till January, 1879, when the Provincial Agricultural Report for the previous year appeared with a "List of New Brunswick Plants" by the present writer. The List was subsequently published in the *Educational Circular.* It gives the names of 1,074 species, 743 of which are Phanerogams and the remainder Cryptogams. All of these the writer had himself collected or seen in the possession of others. The publication awakened the interest of the students of Botany, and specimens of rare or new plants were forwarded to him from different parts of the Province. His own residence in Fredericton in 1878–9 gave him an opportunity of securing some new material, and in the Report of the following year (1880) he published "Additions to the List of New Brunswick Plants," accompanied by an article on the "Advantages resulting from a Knowledge of the Flora of our Province."

In 1882 the New Brunswick Natural History Society published the first number of its Annual Bulletin, containing the Report of the Botanical Committee of the Society, and a List of the species discovered since the publication of the previous paper. The two succeeding Bulletins contain additional Lists bringing up the number of species discovered to the close of 1883. In Bulletin No. 2 appeared an interesting paper on the "Botany of the Upper St. John" by Mr. G. U. Hay, who has devoted considerable attention to an investigation of the plants of the St. John and its tributaries. Since his removal to Ontario (1880) the writer has received specimens of many new species from botanic friends, and by their kind aid has compiled the present Catalogue as a contribution to the advancement of Botanic Science in his native Province. His aim has been in the compilation to exclude every species of which he had not seen a

specimen. The few instances in which he has deviated from this rule are mentioned in their appropriate places. A few genera, such as Aster and Solidago, are in a very unsatisfactory condition, and it is exceedingly desirable that Botanists make special efforts to secure large collections of perfect specimens for future study, that the true character of our species may be ascertained.

It is unnecessary to say that the present List is imperfect owing to the fact that only a limited area of the Province has yet been visited by Botanists. Every year will add new species to the number already known, but the author trusts that the assistance he has rendered to the students of our Flora will secure for him the kind indulgence of the reader.

The order and names of Families and Genera are, with very few exceptions, those of Bentham & Hooker's *Genera Plantarum*. The specific names are from Watson's Index and Gray's Synoptical Flora as far as they go. The remainder are taken from the Manual.

The writer acknowledges, with warmest gratitude, the kind assistance he has received from such students of New Brunswick's Flora as G. F. Matthew, George U. Hay, J. Brittain, R. Chalmers, J. E. Wetmore, J. Vroom, J. Moser, and others, without whose aid this work would have been impossible.

JAMES FOWLER.

QUEEN'S COLLEGE, KINGSTON, ONT.

February 4, 1885.

A PRELIMINARY CATALOGUE

OF THE

PLANTS OF NEW BRUNSWICK.

PHANEROGAMIA.

CLASS I. — EXOGENOUS PLANTS.

SUB-CLASS I. — ANGIOSPERMÆ.

DIVISION A. — POLYPETALÆ.

I. RANUNCULACEÆ.

1. CLEMATIS, L. - - VIRGIN'S BOWER CLEMATIS.

1 C. verticillaris, DC. St. Stephen, *Vroom;* abundant on Nashwaaksis, *Moser;* Herb.[1]

2 C. Virginiana, L. Common throughout the province.

2. THALICTRUM, Tourn. - - - MEADOW-RUE.

3 T. dioicum, L. Fredericton, *Fowler;* Keswick Ridge, *Dr. Bailey,* Nashwaaksis, Douglas, *Vroom,* Herb.; Grand Lake, Woodstock, Eel River, St. Francis, Tobique, *Hay;* Bailey, Can. Nat., 1864, p. 83; Flat Lands, Restigouche. *Chalmers.*

4 T. Cornuti, L. Very common along wet banks of brooks. Herb.

3. ANEMONE, L. - - ANEMONE. WIND-FLOWER.

5 A. multifida, DC. St. John River above Fredericton, Grand Falls, *Moser;* from mouth of St. Francis to Tobique, *Hay.* Bulletin II. 27.

[1] *Herbarium of New Brunswick Natural History Society.*

6 A. cylindrica, Gray. St. Francis River, *Hay.*

7 A. Virginiana, L. Mouth of Upsalquitch, *Fowler;* Grand Falls, St. John River, *Moser;* Lower Kennebeccasis, Madawaska, St. Francis, *Hay,* Bulletin II. 25, 27; Andover and along St. John, *Wetmore.*

8 A. dichotoma, L., (A. Pennsylvanica, L.) Rather common throughout the province.

9 A. nemorosa, L. Rare in northern counties. Near mouth of N. W. Miramichi, *Fowler;* South Bay, *Mrs. Heustis;* Rothesay and Bloomfield, *Hay,* Herb.

10 A. Hepatica, L., (Hepatica triloba, Chaix.) Keswick Ridge, Herb. N. B. Univers., *Fowler;* in Herb., *Moser;* St. Stephen, *Vroom;* Petitcodiac, *William Price.*

4. RANUNCULUS, L. - BUTTERCUP. CROWFOOT.

11 R. aquatilis, L., var. trichophyllus, Gray. In sluggish brooks. Black River, Northumberland Co.; Bass River, Kent Co., *Fowler,* in Herb.; Tobique River, *Hay.*

12 R. multifidus, Pursh., (R. Purshii, Torrey). In ditches at Point de Bute and Belledune.

13 R. Flammula, L., var. reptans, Gray. Woodstock, *Fowler;* Fredericton, Herb.; common at Salmon River and Andover, *Wetmore;* along St. John River, *Hay.*

14 R. Cymbalaria, Pursh. Near brackish or salt water along the rivers Kouchibouguac, Richibucto, St. John, *Fowler;* Herb.

15 R. abortivus, L. Bass River, Kouchibouguac, *Fowler;* Lancaster, *Mrs. Heustis;* Hampton, *Hay,* Herb.

16 R. sceleratus, L. Shediac, River Charlo, *Fowler;* St. Stephen, *Vroom.*

17 R. recurvatus, Poir. Along a small shaded brook near Manse, Bass River, Fredericton, *Fowler;* Kennebeccasis and St. John, *Hay,* in Herb.; *Vroom;* Clifton and Andover, *Wetmore.*

18 R. Pennsylvanicus, L. Rather rare. Kouchibouguac, *Fowler;* Grand Lake and Keswick Ridge, *Hay,* Herb.

19 R. repens, L. We have two forms, one introduced and common about St. John, the other taller and smoother, native. The introduced form may be recognized by its hairy creeping runners and blotched leaves.

20 R. ACRIS, L. Abundant everywhere.

5. CALTHA, L. - - - MARSH MARIGOLD.

21 C. palustris, L. Common. Bass River, Coal Branch, Kent Co., *Fowler;* Indian Falls on Nepisiquit, *Dr. Bailey,* Can. Nat. 1864, p. 92; Madawaska County, *Hay.*

6. COPTIS, Salisb. - - - - - GOLDTHREAD.

22 C. trifolia, Salisb. Common. Bass River, Miramichi, *Fowler;* Carleton, Herb. *Mrs. Heustis; Hay*, Herb.

7. AQUILEGIA, Tourn. - - - COLUMBINE.

23 A. VULGARIS, L. Escaped from gardens near St. John, *Fowler;* Milkish and Aroostook Falls, *Hay*, Herb. Bulletin II. 29.

8. ACTÆA, L. - - - - - - BANEBERRY.

24 A. spicata, L., var. rubra, Michx. Bass River, *Fowler;* Campbellton, *Hay*, Herb.

25 A. alba, Bigel. Rather rare. Fredericton, *Fowler;* Campbellton, *Hay*, in Herb.; in rich woods along St. John, *Hay.*

II. BERBERIDACEÆ.

9. BERBERIS, L. - - - - - - BARBERRY.

26 B. VULGARIS, L. Occasionally found near garden fences.

10. CAULOPHYLLUM, Michx. - PAPPOOSE-ROOT.

27 C. thalictroides, Michx. Nashwaaksis, *Moser;* rich intervales of Upper St. John, St. Francis, Eel River, Andover, *Hay*, Herb., Bulletin II. 25, 30; Aroostook Junction on rich flats, *Wetmore.*

III. NYMPHÆACEÆ.

11. BRASENIA, Schreber. - - WATER-SHIELD.

28 B. peltata, Pursh. Near residence of W. S. Butler, Esq., Grand Lake. Near railway station, Fredericton, *Fowler;* Cox's Point, Grand Lake, *Hay*, Herb.; St. Stephen, *Vroom;* Clifton Lakes and Salmon River, *Wetmore.*

12. NUPHAR, Smith. - - YELLOW POND-LILY.

29 N. advena, Ait. Abundant in King's Co., Salmon River, Q. C., St. John Co., *Hay*, Herb.; Springfield and St. Croix River, *Fowler;* Nepisiquit Lakes, *Dr. Bailey*, Can. Nat. 1864, p. 90; abundant in lakes near Campbellton, *Chalmers.*

30 N. pumilum, Smith. Woodstock, *Fowler;* abundant at Salmon River, *Wetmore;* Petitcodiac and Nauwigewauk, *Brittain;* Nepisiquit Lakes, *Dr. Bailey*, Can. Nat. 1864, p. 90; Keswick, Nepisiquit Lakes, *Hay*, Herb. Bulletin II. 31.

13. NYMPHÆA, Tourn. - - - WATER-LILY.

31 N. odorata, Ait. Lakes in St. John Co., Grand Lake, *Fowler, Hay;* Gondola Point and other places in King's Co., *Hay,* Herb.; St. Croix River, *Vroom.*

IV. SARRACENIACEÆ.

14. SARRACENIA, Tourn. - SIDE-SADDLE FLOWER.

32 S. purpurea, L. Common in bogs. Point Escuminac, Fredericton, *Fowler;* St. John, *Hay,* Herb.

V. PAPAVERACEÆ.

15. PAPAVER, L. - - - - - - POPPY.

33 P. SOMNIFERUM, L. Spontaneous in gardens. Scarcely wild.

16. SANGUINARIA, Dill. - - - BLOODROOT.

34 S. Canadensis, L. Petitcodiac, *Brittain;* Nashwaaksis, *Vroom* in Herb.; Keswick Ridge, *Moser;* Metapedia, *Chalmers;* common at Aroostook Junction, *Wetmore;* abundant on St. Francis, low lands on Tobique, along Upper St. John, Eel River, *Hay.* Bulletin II. 25, 30.

17. CHELIDONIUM, L. - - - CELANDINE.

35 C. MAJUS, L. A garden weed in Fredericton, *Fowler;* Richmond, Carleton Co., *Vroom,* Herb.; apparently naturalized at Lower Woodstock, *Hay.*

VI. FUMARIACEÆ.

18. DICENTRA, Bork. - DUTCHMAN'S BREECHES.

36 D. Cucullaria, DC. Bass River, Salmon River, Kent County, *Fowler;* Dutch Valley, *Wetmore;* in Herb. *Mrs. Heustis;* Hampton and Norton, *Hay,* Herb.; common in rich woods at Andover, Salmon River, Waterford, *Wetmore.*

19. CORYDALIS, Vent. - - - CORYDALIS.

37 C. glauca, Pursh. Road from Weldford Station to Salmon River, Fredericton, *Fowler;* Douglas Mountain and Milkish, *Hay,* Herb.; Highland Park, Herb. *Mrs. Heustis;* Island in Nictau Lake, *Dr. Bailey,* Can. Nat. 1864, p. 88.

20. FUMARIA, L. - - - - - - FUMITORY.

38 F. OFFICINALIS, L. In a few places, Buctouche, St. John, *Fowler;* Woodstock, *Hay,* Herb.

VII. CRUCIFERÆ.

21. NASTURTIUM, R. Brown. - WATER-CRESS.

39 N. officinale, R. Brown. Hillsborough, *Brittain;* Carleton, *Hay*, Herb.

40 N. palustre, DC. Fredericton, *Fowler;* Kennebeccasis, *Matthew;* along St. John River, Grand Falls, *Hay.*

22. BARBAREA, R. Brown. - - WINTER CRESS.

41 B. VULGARIS, R. Brown. Weed in fields, Richibucto.

23. ARABIS, L. - - - - - - ROCK CRESS.

42 A. petræa, Lam. On cliffs of Minister's Face, *Wetmore.*

43 A. hirsuta, Scop. Eel River, Restigouche County, Portland, *Fowler*, Herb.; Grand Falls, Madawaska, *Hay.*

44 A. Drummondii, Gray. Sand beach at Eel River, Restigouche County, St. John, *Fowler*, Herb.

24. CARDAMINE, L. - - - BITTER CRESS.

45 C. pratensis, L. Fls. purple. St. Patrick, Charlotte County, *Vroom*, Herb.

46 C. hirsuta, L. Common. Bass River, Fredericton, Carleton, *Fowler;* Herb. *Mrs. Heustis;* Campbellton, Herb.

25. DENTARIA, L. - TOOTHWORT. PEPPER-ROOT.

47 D. diphylla, L. Bass River, Fredericton, *Fowler;* St. John and King's Co., Quispamsis, *Hay*, Herb.; Campbellton, *Chalmers.* Included in Cardamine by Bentham & Hooker, *Gen. Plant.* I. 70.

26. DRABA, L. - - - - - WHITLOW-GRASS.

48 D. incana, L., var. confusa, Poir. Nashwaaksis, *Moser*, Herb. "Cambridge, Sept. 14, 1881.—I have just received a specimen of Draba incana, L., collected by Mr. Charles Lindon of Buffalo, N. Y., in or near Bathurst, N. B.—*Sereno Watson.*"

27. SISYMBRIUM, L. - - HEDGE MUSTARD.

49 S. OFFICINALE, Scop. Streets of Fredericton, *Fowler;* spreading rapidly at St. Stephen, *Vroom.*

28. ERYSIMUM, L. - - - TREACLE MUSTARD.

50 E. cheiranthoides, L. Campbellton, *Chalmers.*

29. CAMELINA, Crantz. - - - FALSE FLAX.

51 C. SATIVA, Crantz. Among flax, Coal Branch, Kent Co.

30. BRASSICA, Tourn. - - - - MUSTARD.

52 B. SINAPISTRUM, Boissier. (Sinapis arvensis, L.) Troublesome weed, especially in southern counties.

53 B. ALBA, Gray. (Sinapis alba, L.) A rare scape from gardens.

54 B. NIGRA, Koch. (Sinapis nigra, L.) Escaped in a few places. Grand Manan, *Hay*, Herb.

31. CAPSELLA, Vent. - - SHEPHERD'S PURSE.

55 C. BURSA-PASTORIS, Moench. Common weed.

32. SENEBIERA, Poir. - WART-CRESS. SWINE-CRESS.

56 S. DIDYMA, Pers. Spreading from ballast, St. John, *Fowler; Hay*, Herb.

57 S. CORONOPUS, DC. Spreading from ballast, St. John, *Fowler; Hay*, Herb.

33. LEPIDIUM, L. - PEPPERGRASS. PEPPERWORT.

58 L. RUDERALE, L. Naturalized from ballast.

34. CAKILE, Tourn. - - - - SEA-ROCKET.

59 C. Americana, Nutt. Common on sea beaches. Kouchibouguac, *Fowler;* Sheldon's Point, *Hay*, Herb.

35. RAPHANUS, L. - - - - - RADISH.

60 R. RAPHANISTRUM, L. Troublesome weed in fields at F'ton.

VIII. CISTACEÆ.

36. HUDSONIA, L. - - - - HUDSONIA.

61 H. tomentosa, Nutt. Abundant on Kouchibouguac beach, *Fowler;* Bathurst, *Chalmers.*

37. LECHEA, L. - - - - - PINWEED.

62 L. minor, Lam. Kouchibouguac beach, Goat Island in Grand Lake, *Fowler; Hay*, Herb.; Hopewell, *Brittain.*

IX. VIOLACEÆ.

38. VIOLA, L. - - - VIOLET. HEART'S EASE.

63 V. lanceolata, L. On shore at Rothesay, *Fowler;* Gondola Point and Grand Lake, *Hay*, Herb., Bulletin II. 31; Milkish, *I. Allen Jack;* Lake Utopia, *Wetmore.*

64 V. primulæfolia, L. St. Andrews, *Vroom.*

65 V. blanda, Willd. Very common.

66 V. renifolia, Gray. This plant seems to be common, if the identification is correct. Douglas Road, near Portland, *Wetmore;* Petitcodiac, *Brittain;* St. John, St. Francis and Tobique Rivers, *Hay.*

67 V. Selkirkii, Pursh. Clifton, *Wetmore,* Herb.; near Half Moon Lake, St. John, and St. Francis River, *Hay.* Bulletin II. 25; Eel River, Woodstock, Fredericton, *W. T. L. Reed.*

68 V. cucullata, Ait. Abundant everywhere, and very variable. Fls. sometimes white.

69 V. canina L., var. sylvestris, Regel. Portland and Douglas Road, *Wetmore;* in Herb. *Mrs. Heustis;* St. Stephen, *Vroom;* St. Francis and all along St. John, Grand Manan, *Hay,* Herb.; Bathurst, *Chalmers.*

70 V. Canadensis, L. Near Woodstock, *Chalmers,* Herb.; Richmond, *Hay;* 6 miles below Woodstack, *W. T. L. Reed.*

71 V. pubescens, Ait. Fredericton, *Fowler;* Campbellton, *Hay,* Herb.; rather common on river flats, St. John River, Salmon River and Waterford, *Wetmore;* St. Francis, Eel, Tobique and Kennebeccasis Rivers, *Hay.*

72 V. TRICOLOR, L. Spontaneous in gardens; ballast, St. John, *Hay,* Herb.; escaped near Bathurst, *Chalmers;* spreading from a garden near Tobique Forks, *Hay.*

X. POLYGALACEÆ.

39. POLYGALA, Tourn. - - - MILKWORT.

73 P. Senega, L. Aroostook Falls and Tobique Narrows, *Hay* and *Wetmore,* Herb. Bulletin II. 22, 29.

74 P. paucifolia, Willd. A specimen in Dr. Bailey's Herb. is labelled "Rushiagonish, Capt. Moody." St. Stephen and Milltown, *Vroom,* Herb.; Fredericton Junction, *Dr. Bailey.*

XI. CARYOPHYLLACEÆ.

40. SAPONARIA, L. - - - - SOAPWORT.

75 S. OFFICINALIS, L. Queensbury Parsonage, *Dr. Bailey;* shore of Long Reach, *Hay.*

41. SILENE, L. - - - CATCHFLY. CAMPION.

76 S. INFLATA, Smith. Miramichi, Richibucto, *Fowler;* Restigouche, *Chalmers;* abundant along Upper St. John, *Hay,* Herb. Bulletin II. 28.

77 S. ARMERIA, L. Spontaneous in gardens.

78 S. NOCTIFLORA, L. Weed in cultivated grounds, Bass River, Carleton, *Fowler*, *Hay*, Herb.; common in meadows, Andover, *Wetmore;* spreading along St. John, Salmon and Tobique Rivers, *Hay.*

42. LYCHNIS, Tourn. - - - - LYCHNIS.

79 L. VESPERTINA, Sibth. St. Stephen, *Vroom*, Herb.

80 L. GITHAGO, Lam. In wheat fields, common.

81 L. FLOS-CUCULI, L. Probably escaped from gardens, Campbellton, *Chalmers.*

43. CERASTIUM, L. - MOUSE-EAR CHICKWEED.

82 C. VISCOSUM, L. Common. Bass River, *Fowler;* St. John, *Hay*, Herb.

83 C. arvense, L. Restigouche and St. John, *Fowler;* St. Francis, near St. Hilaire, *Hay*, Herb. Bulletin II. 28.

44. STELLARIA, L. - CHICKWEED. STARWORT.

84 S. MEDIA, Smith. Abundant everywhere.

85 S. longifolia, Muhl. Fredericton, *Fowler*, Herb.; common at Salmon River, *Wetmore.*

86 S. longipes, Goldie. Pollett River, *Brittain;* Norton, *Hay*, Herb; a reduced form on sand beach at Belledune, *Fowler.*

87 S. uliginosa, Murr. In rills from springs, Kouchibouguac, and Molus River, *Fowler*, Herb.

88 S. crassifolia, Ehrh. Shediac, *Brittain.*

89 S. borealis, Bigel. Rather rare. Bass River, *Fowler*; scarce at Salmon River, *Wetmore.*

90 S. humifusa, Rottboell. Rare. Harvey, York Co., *Fowler*; Shediac, *Brittain.*

45. ARENARIA, L. - - - - SANDWORT.

91 A. lateriflora, L. Common. Richibucto, Shediac, *Fowler*; St. John Co., *Hay*, Herb.

92 A. peploides, L. Rare. On sandy shore, Shediac, *Fowler*; Dalhousie, *Ross*; Restigouche, *Chalmers.*

46. SAGINA, L. - - - - - - PEARLWORT.

93 S. procumbens, L. Bass River, Kent. Co., *Fowler*; Carleton, *Hay*, Herb.

94 S. nodoza, Fenzl. Sent from Restigouche by *Chalmers*; Pea Point, Charlotte Co., *Hay*, Herb.

47. SPERGULA, L. - - - - - - SPURREY.

95 S. ARVENSIS, L. A pestilent weed in damp soil, Miramichi.

48. SPERGULARIA, Pers. - - SAND-SPURREY.

96 S. rubra, Presl. Fredericton, *Fowler*; Norton, *Hay*, Herb.; Campbellton, *Chalmers*.

97 S. salina, Presl. Sea shore of Kent.

98 S. media, Presl. Salt marshes and sands, Kouchibouguac, *Fowler*; Courtenay Bay, *Hay*, Herb.

XII. PORTULACACEÆ.

49. PORTULACA, Tourn. - - - PURSLANE.

99 P. OLERACEA, L. Troublesome garden weed. Fredericton, Grand Lake, *Fowler*; St. Stephen, *Vroom*; Salmon River, *Wetmore*.

50. CLAYTONIA, L. - - - SPRING-BEAUTY.

100 C. Caroliniana, Michx. Ox-bow, Salmon River, Blackville, *Fowler*, Herb.; Clifton, *Wetmore*; in Herb. *Mrs. Heustis*; Norton, *Hay*, Bulletin II. 32; Sheldon's Point, St. John, *Chalmers*.

101 C. Virginica, L. "Vicinity of Bathurst, N. B. (McGill Coll. Herb.)" Macoun Cat. Can. Plants, p. 82. Have not seen it.

51. MONTIA, L.

102 M. fontana, L. "Sepals 2, rarely 3, persistent, suborbicular. Petals 5, hypogynous, unguiculate, with the claws a little connate; 3 of them somewhat smaller. Stamens 3, inserted on the claws of the smaller petals, very rarely 4 or 5. Styles very short, almost separate, spreading. Capsule 3-valved, 3-seeded. Seeds turgid, minutely tuberculate, large. A very small glabrous procumbent rather fleshy herb, growing in water or wet places. Leaves opposite, spatulate. Raceme few-flowered, terminal." Torr. & Gr. Fl. I. 202. Shediac, *Brittain*.

XIII. HYPERICACEÆ.

52. HYPERICUM, L. - - - ST. JOHN'S-WORT.

103 H. PERFORATUM, L. Kouchibouguasis, Bass River, *Fowler*; St. John and King's Counties, *Hay*, Herb.

104 H. ellipticum. Kouchibouguac, Norton, *Fowler*, *Hay*, Herb.

105 H. mutilum, L. Kouchibouguac, *Fowler*; Norton, *Hay*, Herb.; Carleton, Herb. *Mrs. Heustis.*

106 H. Canadense, L. Richibucto, *Fowler*; Carleton, *Hay*, Herb. Var. major, Gray. Rare. Bass River.

53. ELODES, Adans. - MARSH ST. JOHN'S-WORT.

107 E. Virginica, Nutt. Kouchibouguac, St. John, *Fowler*; St. John County, *Hay*, Herb.

XIV. MALVACEÆ.

54. MALVA, L. - - - - - MALLOW.

108 M. ROTUNDIFOLIA, L. Bass River, Richibucto, *Fowler*; Carleton, *Hay*, Herb.

109 M. SYLVESTRIS, L. Escaped from gardens in a few places.

110 M. CRISPA, L. Beside dwellings, Bass River.

111 M. MOSCHATA, L. Spontaneous in gardens, Bass River, *Fowler;* Campbellton, Herb.

55. HIBISCUS, L. - - - - ROSE-MALLOW.

112 H. TRIONUM, L. A rare garden weed, Kingston, Kent Co.

XV. TILIACEÆ.

56. TILIA, L. - LINDEN. BASS-WOOD. LIME-TREE.

113 T. Americana, L. Woodstock and Grand Lake, *Fowler;* shore of Long Reach, Lower Nerepis, Carleton, *Hay*, Herb.

XVI. GERANIACEÆ.

57. GERANIUM, L. - - - - CRANESBILL.

114 G. PRATENSE, L. Near St. John. Probably a garden scape.

115 G. Carolinianum, L. Bass River, Salmon River, *Fowler;* Grand Lake, *Hay*, Herb.

116 G. Robertianum, L. Quaco Cliffs, University Herb.; Lower Norton, *Arthur I. Trueman*, Herb.; Sugar Loaf at Clifton and Minister's Face, *Wetmore*, *Hay*.

58. ERODIUM, L'Her. - - - STORKSBILL.

117 E. CICUTARIUM, L'Her. Ballast, Carleton, *Hay*, Herb.

59. OXALIS, L. - - - - - WOOD-SORREL.

118 O. Acetosella, L. Abundant everywhere in deep woods. A variety on Bald Mt., Tobique, with light purple flowers, *Hay.*

119 O. corniculata, L., var. stricta, Sav. Common. Coal Branch, Kent Co., *Fowler;* Quispamsis, *Hay*, Herb.; Carleton, Herb. *Mrs. Heustis.*

60. IMPATIENS, L. - BALSAM. JEWEL-WEED.

120 I. fulva, Nutt. Common. Kouchibouguac, Bass River, Miramichi, St. John, *Fowler;* Grand Lake, *Hay*, Herb.

121 I. pallida, Nutt. "Found by *Dr. Bailey* and *W. T. L. Reed* 1 mile below Andover, and on E. side of the river, near St. Leonard's, August 10, 1884," *Vroom in litt.;* Richmond, Carleton Co., Aug. 13th, 1884, *Hay.*

XVII. ILICINEÆ.

61. ILEX, L. - - - - - - - HOLLY.

122 I. verticillata, Gray. Kouchibouguac and St. John, *Fowler;* Brookville, *Hay*, Herb.

62. NEMOPANTHES, Raf. - MOUNTAIN HOLLY.

123 N. Canadensis, DC. Rather scarce. Kouchibouguac, Bass River, *Fowler;* Brookville and Norton, *Hay*, Herb.

XVIII. RHAMNACEÆ,

63. RHAMNUS, Tourn. - - - BUCKTHORN.

124 R. alnifolius, L'Her. Mouth of Eel River, Restigouche Co., near Green Head, St. John Co., *Fowler;* St. Francis River, *Hay*, Herb., Bulletin II. 24; Petitcodiac, *Brittain.*

XIX. VITACEÆ.

64. VITIS, Tourn. - - - - - - GRAPE.

125 V. riparia, Michx. Banks of St. John River near Fredericton and Grand Lake, *Fowler*, *Hay*, in Herb.

XX. SAPINDACEÆ.

65. ÆSCULUS, L. - - - HORSE-CHESTNUT.

126 Æ. HIPPOCASTANUM, L. Planted for ornament.

66. ACER, Tourn. - - - - - - MAPLE.

127 A. Pennsylvanicum, L. Bass River. Common in Kent.

128 A. spicatum, Lam. Common in damp woods.

129 A. saccharinum, Wang. Abundant in forests.

130 A. dasycarpum, Ehrh. Rather rare. Have not seen it in northern counties. Harris Cove, Kennebeccasis, Fredericton, Mouth of Nashwaaksis, Shore of Grand Lake, *Fowler;* Keswick, *Hay.*

131 A. rubrum, L. Common forest tree.

XXI. ANACARDIACEÆ.

67. RHUS, L. - - - - - - - - SUMACH.

132 R. typhina, L. Common. Bass River, Kouchibouguac, *Fowler;* Grand Manan, *Hay*, Herb.

133 R. Toxicodendron, L. Woodstock, Kouchibouguac, *Fowler;* common on St. John and tributaries, Jemseg, *Hay*, Herb.

XXII. LEGUMINOSÆ.

68. MEDICAGO, L. - - - - - - MEDICK.

134 M. LUPULINA, L. Naturalized in several places.

135 M. MACULATA, Willd. Introduced in ballast, Carleton, *Hay*, Herb.

136 M. DENTICULATA, Willd. Introduced, Buctouche, St. John.

69. MELILOTUS, Tourn. - - SWEET CLOVER.

137 M. OFFICINALIS, Willd. Escaped in a few places. Norton, *Hay*, Herb.

138 M. ALBA, Lam. Richibucto, *Fowler;* Woodstock, *Hay*, Herb.

70. TRIFOLIUM, L. - - CLOVER. TREFOIL.

139 T. ARVENSE, L. Richibucto, along the railway track, St. John, *Fowler;* Lever Settlement, Charlotte Co., *Vroom;* Lancaster and Torryburn, *Hay*, Herb.

140 T. PRATENSE, L. Extensively cultivated.

141 T. repens, L. *White Clover.* Everywhere.

142 T. agrarium, L. Queensbury, *Dr. Bailey;* Fredericton, *Vroom;* Carleton, *Mrs. Heustis;* Salmon River, *Wetmore;* abundant along N. B. Railway between St. John and Vanceboro, Sackville, *Hay*, Herb.

143 T. procumbens, L. Richibucto, *Fowler;* Petitcodiac, *Mrs. Heustis;* Grand Manan, St. Andrews, Prince William, Norton, *Hay*, Bulletin II. 31.

144 T. hybridum, L. St. Stephen, frequent, *Vroom;* Norton, *Hay*, Herb.

71. ROBINIA, L. - - - - - LOCUST-TREE.

145 R. PSEUDACACIA, L. Frequently planted.

146 R. VISCOSA, Vent. Frequently planted.

72. ASTRAGALUS, L. - - - MILK-VETCH.

147 A. alpinus, L. Nepisiquit River, *Fowler;* Petitcodiac, *Brittain;* abundant on Upper St. John, Madawaska, *Hay*, Herb., Bulletin II. 27; "Tobique Village, *Dr. Bailey;* Mouth of Aroostook," *Vroom in litt.*

73. OXYTROPIS, L.

148 O. campestris, DC. Islands of St. John River, *Dr. Bailey;* Edmundton and along banks of Upper St. John, Mouth of Tobique, *Hay*, Herb., Bulletin II. 27.

74. HEDYSARUM, Tourn.

149 H. boreale, Nutt. Near Pabineau Falls on Nepisiquit River, *Fowler;* Grand Falls of St. John, *Moser;* abundant on Upper St. John, rarer on Tobique, Eel and other tributaries, Edmundton, *Hay*, Herb.

75. DESMODIUM, DC. - - - TICK-TREFOIL.

150 D. Canadense, DC. Opposite Fredericton, *Fowler;* Queensbury, *Hay*, Herb.; along Hammond River, *Brittain.*

76. VICIA, L. - - - - - VETCH. TARE.

151 V. SATIVA, L., var. angustifolia, Gray. Occasionally found in fields or on roadsides. Richibucto, *Fowler;* New Mills, Herb.; Tobique River, *Hay.*

152 V. HIRSUTA, Koch. Along the I. C. R. near St. John.

153 V. Cracca, L. Restigouche, *Fowler;* Grand Lake, *Hay*, Herb.; abundant at Andover, *Wetmore.*

154 V. TETRASPERMA, L. Along I. C. R. near St. John, *Fowler*, *Hay*, Herb.; Petitcodiac, *Brittain.*

155 V. Americana, Muhl. Belledune, *Chalmers.*

77. LATHYRUS, L. - VETCHLING. EVERLASTING PEA.

156 L. maritimus, Bigelow. Sea coast, Richibucto, St. John, *Fowler;* Hopewell Cape, *Hay*, Herb.

157 L. palustris, L. St. John, *Hay*, Herb.
var. myrtifolius, Gray. Fredericton, Hampton, Kouchibouguac, *Fowler;* St. John, *Hay*, Herb.

78. AMPHICARPÆA, Ell. - - HOG PEA-NUT.

158 A. monoica, Nutt. St. John River near Fredericton, *Fowler;* Petitcodiac, *Brittain;* Upper St. Croix, *Vroom;* Andover, *Hay*, *Wetmore*, Bulletin II. 30; Harris Cove, *Fowler*.

79. APIOS, Boerhaave. - - - GROUND-NUT.

159 A. tuberosa, Moench. St. John River opposite Fredericton and Keswick Ridge, *Fowler;* Upper St. Croix and St. Stephen, *Vroom*, Herb.; Nashwaak, *Moser*.

XXIII. ROSACEÆ.

80. PRUNUS, Tourn. - - - PLUM. CHERRY.

160 P. pumila, L. Grand Lake, *Fowler*, *Hay;* St. John, Tobiqne and Kennebeccasis Rivers, Drury's Cove, *Hay*, Herb., Bulletin II. 28, 32; Restigouche River, University Herb.; Tobique River, *Wetmore*.

161 P. Pennsylvanica, L. Very common. St. John, *Hay*, Herb.

162 P. Virginiana, L. Common along rivers.

163 P. serotina, Ehrh. Oxbow, Salmon River, *Fowler;* Norton, *Hay*, Herb.

81. SPIRÆA, L. - - - - MEADOW-SWEET.

164 S. salicifolia, L. Common. Kouchibouguac, Richibucto, Miramichi, *Fowler;* Jemseg, *Hay*, Herb.; Indian Falls of Nepisiquit, *Dr. Bailey*, Can. Nat. 1864, p. 92.

165 S. tomentosa, L. Near Napan on Richibucto road, *Fowler;* Petitcodiac, Herb. *Mrs. Heustis;* St. John and King's Counties, *Hay*, Herb., Bulletin II. 32; White fls., Jackson Settlement, Charlotte County, *Vroom;* common at Salmon River, *Wetmore*,

82. RUBUS, Tourn. - - . . BRAMBLE.

166 R. odoratus, L. Old Gardens, Chamcook, Charlotte Co., *Hay*, Herb. Not known truly wild.

167 R. Dalibarda, L. (Dalibarda repens, L.) Not rare in dry woods in Kent Co., *Fowler;* Madawaska, Bocabec, *Hay*, Herb.

168 R. Chamæmorus L. Peat bogs, Kent Co., *Fowler;* St. John, *Matthew*; Point Lepreaux, *Hay*, Herb.; Herring Cove, Campobello, *Vroom*.

169 R. triflorus, Richardson. Common. Lancaster, *Mrs. Heustis;* Bass River, Kouchibouguac, *Fowler;* Norton, *Hay*, Herb.

170 R. strigosus, Michx. Abundant on burnt waste land everywhere.

171 R. occidentalis, L. Keswick, *Hay. Moser*, *Fowler*; said to occur in Westmoreland; Richmond, *Hay.*

172 R. villosus, Ait., var. frondosus, Torrey. Common. Kouchibouguac, *Fowler;* Nerepis, Herb. *Mrs. Heustis;* Grand Lake, *Hay*, Herb.

173 R. Canadensis, L. Bass River, *Fowler.*

174 R. hispidus, L. Near Weldford Station, Fredericton; Grand Lake, *Hay.*

83. GEUM, L. - - - - - - - - AVENS.

175 G. album, Gmelin. Not reported from Northern Counties. Woodstock, *Fowler;* Keswick Ridge, *Moser*; St. John and Kennebeccasis Rivers, *Hay*, Herb., near St. Hilaire, *Hay.* Bulletin II. 28. Eel River, York Co., *Hay.* Bulletin II. 30; common about Hampton, *Brittain;* Andover, *Wetmore.*

176 G. Virginicum, L. Hampton and Petitcodiac, *Brittain*, Herb.; Salmon River, *Wetmore*; Norton, *Hay.*

177 G. macrophyllum, Willd. Hudson's Brook, Kent Co.; Lily Lake St. John Co., *Fowler;* Salmon Creek, *Wetmore.*

178 G. strictum, Ait. Fredericton, *Fowler;* common about Andover, *Wetmore*; Sussex and Apohaqui, *Brittain.*

179 G. rivale, L. St. John and King's Counties, *Hay*, Herb.; Kouchibouguac, Richibucto River, *Fowler.*

84. WALDSTEINIA, Willd. BARREN STRAWBERRY.

180 W. fragarioides, Tratt. Eel River, Carleton Co., *Hay.*

85. FRAGARIA, Tourn. - - - STRAWBERRY.

181 F. Virginiana, Ehrh. Common everywhere.

182 F. vesca, L. Rare at Bass River, *Fowler*; St. John County, *Hay*, Herb. Bulletin II. 32; common at Andover, *Wetmore.*

86 POTENTILLA, L. CINQUE-FOIL, FIVE-FINGER.

183 P. Norvegica, L. Kouchibouguac, *Fowler;* Lancaster, *Hay*, Herb.

184 P. Canadensis, L., var. simplex, Torr & Gray. Rather common. Kouchibouguac, *Fowler*, Herb.; Nerepis, *Mrs. Heustis.*

185 P. argentea, L. Chamcook Mountain, Norton, *Hay.*

186 P. arguta, Pursh. Keswick Ridge, *Moser;* Indian Falls of Nepisiquit, *Dr. Bailey*, Can. Nat. 1864, p. 92; Grand Falls, l. c. p. 93.

187 P. Anserina, L. Common on brackish marshes and river banks.

188 P. fruticosa, L. Rothesay, *Fowler;* Madawaska and rare along Upper St. John, *Hay*, Herb.

189 P. tridentata, Ait. Buctouche, Carleton, *Fowler;* Sugar Loaf, Restigouche, *Chalmers;* Nerepis, Upper St. John, Head Waters of Tobique, Douglas Mountain, *Hay*, Herb., Bulletin II. 32.

190 P. palustris, Scop. Rather common, Lancaster, *Hay*, Herb.

87. AGRIMONIA, Tourn. - - - AGRIMONY.

191 A. Eupatoria, L. Canaan, Kent Co., *Fowler;* Campbellton, St. John River, *Hay*, Herb.

88. ROSA, Tourn. - - - - - - - ROSE.

192 R. Carolina, L. Common throughout the Province.

193 R. parviflora, Ehrh. (R. lucida, Gray, Manual, 158) Common. Bass River, Kouchibouguac, *Fowler;* Lancaster, *Hay*, Herb.

194 R. blanda, Ait. Petitcodiac, *Brittain*, Herb.; Tobique River, *Hay.*

195 R. RUBIGINOSA, L. Common about garden fences.

89. PYRUS, L. - - - - PEAR. APPLE.

196 P. arbutifolia, L., var. melanocarpa, Hook. Bass River, Kouchibouguac, Miramichi, *Fowler;* St. John, Herb. *Mrs. Heustis; Hay*, Herb.

197 P. Americana, DC. Common. Often planted.

90. CRATÆGUS, L. - HAWTHORNE, WHITE THORN.

198 C. OXYACANTHA, L. Frequently planted for hedges and beside fences.

199 C. tomentosa, L. Rather common. *Brittain* sends it from Pollet River with pink fls.
var. pyrifolia, Gray. Some fine specimens along the road at Government House, Fredericton.

91 AMELANCHIER, Media. JUNE-BERRY. SHAD-BUSH.

200 A. Canadensis, Torr & Gray. Abundant throughout the Province.

var. oblongifolia, Torr. & Gray. Rather rare. Bass River, Blackville, *Fowler*; Campbellton, *Hay*, Herb.; St. John, *Mrs. Heustis.*

var. oligocarpa, Gray. Common in damp woods. Bass River, *Fowler;* Carleton, *Mrs. Heustis; Hay*, Herb.

XXIV. SAXIFRAGACEÆ.

92 SAXIFRAGA, L. - - - - - SAXIFRAGE.

201 S. Aizoon, Jacq. On wet rocks opposite Rothesay, Herb. *Dr. Bailey;* near St. John, *Trueman*, Herb.; Narrows, St. John, and Minister's Face, *Wetmore*, *Hay.*

202 S. Virginiensis, Michx. York Co., Herb. *Dr. Bailey;* Mouth of Mactaquac, *Vroom.*

93. TIARELLA, L. - - - - FALSE MITRE-WORT.

203 T. cordifolia, L. Lewy's Island, St. Croix River. Com. about Fredericton, *Fowler;* Norton and Tobique, *Hay*, Herb.; Herb. *Mrs. Huestis;* Tobique, near Pokiok, *Dr. Bailey*, Can. Nat. 1864, p. 86.

94. MITELLA, Tourn. - MITRE-WORT. BISHOP'S-CAP.

204 M. nuda, L. Kouchibouguac, Miramichi, *Fowler;* St. John and King's, *Hay*, Herb.; Carleton, *Mrs. Huestis;* Cedar Brook on Tobique, *Dr. Bailey*, Can. Nat. 1864, p. 86.

95. CHRYSOSPLENIUM, Tourn. GOLDEN SAXIFRAGE.

205 C. Americanum, Schwein. Common. Bass River, St. John.

96. PARNASSIA, Tourn. - - GRASS OF PARNASSUS.

206 P. Caroliniana, Michx. York Co., *Dr. Bailey;* Tobique Narrows and Andover, *Wetmore;* near mouth St. John, *Hay*, Herb.; Flat Lands, Restigouche, *Chalmers*; Banks of St. John River, just above mouth of Aroostook, *Vroom.*

97. RIBES, L. - - CURRANT. GOOSEBERRY.

207 R. Cynosbati, L. Specimen from Rev. (now Dr.) J. P. Sheraton, Black Lake, St. John.

208 R. oxyacanthoides, L. (R. hirtellum, Michx.) Common.

209 R. lacustre, Poir. Rather common.

210 R. prostratum, L'Her. Common.

211 R. floridum, L. St. John.

212 R. rubrum, L. Kouchibouguac, *Fowler;* Norton, *Hay*, Herb.; Feldspar Mountain on Nepisiquit, *Dr. Bailey*, Can. Nat. 1864, p. 91.

XXV. CRASSULACEÆ.

98. SEDUM, Tourn. - - STONE-CROP. ORPINE.

213 S. ACRE, L. Escaped from gardens in a few places. Hampton, *Brittain*, Herb.; Norton, *Hay*.

214 S. TELEPHIUM, L. Becoming a troublesome weed in some parts of St. John and King's Co's.

215 S. Rhodiola, DC. On exposed sea cliffs, St. John Co., *Fowler;* Minister's Face, *Wetmore;* St. George, 5 miles from coast, *Vroom*, Bulletin II. 32.

99. PENTHORUM, L. - - DITCH STONE-CROP.

216 P. sedoides, L. Norton and Jemseg, *Hay;* Fredericton, University Herb.

XXVI. DROSERACEÆ.

100. DROSERA, L. - - - - - SUN-DEW.

217 D. rotundifolia, L. Common. Black River, Northumberland Co., Bass River, *Fowler;* Lily Lake, *Hay*, Herb.

218 D. intermedia, Drev & Hayne, var. Americana, DC. (D. longifolia, L.) Lake Elsie, near Richibucto, *Fowler;* St. John Co., *Hay;* Herb. *Mrs. Heustis.*

XXVII. HAMAMELACEÆ.

101. HAMAMELIS, L. - - - WITCH-HAZEL.

219. H. Virginiana, L. Bass River, *Fowler*, Herb.; shores of Kennebeccasis, Bulletin II. 32, Grand Lake, *Hay*, Herb.; Petitcodiac, *Brittain.*

XXVIII. HALORAGEÆ.

102. PROSERPINACA, L. - - MERMAID-WEED.

220 P. palustris, L. Rare. Digdeguash and St. Patrick, *Vroom*, Bulletin III. 33.

103. HIPPURIS, L. - - - - MARE'S-TAIL.

221 H. vulgaris, L. Rare. St. John, Shediac, Dorchester, *Fowler;* Digdeguash, *Vroom.*

104. MYRIOPHYLLUM, Vaill. - WATER-MILFOIL.

222 M. spicatum, L. Kouchibouguac, Bass River, Kennebeccasis, *Fowler;* Petitcodiac, *Brittain*; Tobique River, *Hay.*

223 M. tenellum, Bigelow. Have only seen it in Lake Elsie, near Richibucto.

105. CALLITRICHE, L.

224 C. verna, L. Common in stagnant water, ditches, etc. Kouchibouguac, Miramichi, Kent, *Fowler*; Spurr's Cove, Carleton Co., *Hay.*

225 C. autumnalis, L. In a pond at Rothesay Station.

XXIX. ONAGRACEÆ.

106. EPILOBIUM, L. - - - WILLOW-HERB.

226 E. spicatum, Lam. (E. angustifolium, L.) Abundant everywhere on recently burned land.

227 E. palustre, L., var. lineare, Gray. Rather common. Kouchibouguac, Richibucto, *Fowler*; Spurr's Cove, *Hay*, Herb.

228 E. coloratum, Muhl. Kouchibouguac, *Fowler*; St. John Co., *Hay*, Herb.

107. LUDWIGIA, L. - - FALSE LOOSESTRIFE.

229 L. palustris, Ell. Ditches, Fredericton, *Fowler*; St. Stephen, *Vroom*, Herb.; Petitcodiac, Nauwigewauk, Taborville, *Brittain*; Nashwaaksis, *Moser.*

108. ŒNOTHERA, L. - - EVENING PRIMROSE.

230 Œ. biennis, L. Common. Kouchibouguac, Richibucto, St. John, *Fowler*; Norton, *Hay,* Herb. The vars. have not been worked out.

231 Œ. pumila, L. Bass River, *Fowler;* near St. John, *Hay*, Herb.

109. CIRCÆA, Tourn. - ENCHANTER'S NIGHTSHADE.

232 C. Alpina L. Com. Richibucto, *Fowler*; Brookville, *Hay*, Herb.

233 C. Lutetiana, L. Queensbury, Herb., *Dr. Bailey*; Lower Norton, *Brittain*; Eel River, York Co., Richmond, Upper St. John, Keswick Ridge, *Hay*, Herb.; Andover, *Wetmore.*

XXX. CUCURBITACEÆ.

110. ECHINOCYSTIS, Torr. & Gray. WILD BALSAM-APPLE.

234 E. lobata, Torr. & Gr. Intervales and Islands at the mouth of the Keswick, *Moser*, *Hay*, Herb.

XXXI. FICOIDEÆ.

111. MOLLUGO, L. - - INDIAN CHICKWEED.

235 M. verticillata, L. Shore near residence of Walter S. Butler, Esq., Grand Lake. *Fowler*, *Hay*, Herb.

XXXII. UMBELLIFERÆ.

112. HYDROCOTYLE, Tourn. WATER PENNYWORT.

236 H. Americana, L. Common. Bass River, *Fowler*; Spurr's Cove, Tobique River, *Hay*, Herb.

113. SANICULA, Tourn. - BLACK SNAKEROOT.

237 S. Canadensis, L. Lower Norton and Sussex, *Brittain*, Herb.

238 S. Marilandica, L. Bass River, Woodstock, *Fowler*; Tobique, near Pokiok, *Dr. Bailey*, Can. Nat. 1864, p. 83; Campbellton, *Chalmers*, *Hay*, Herb.; Salmon River and Andover, *Wetmore;* abundant on Upper St. John and tributaries, *Hay*, Bulletin II. 25.

114. CICUTA, L. - - - WATER-HEMLOCK.

239 C. maculata, L. Abundant in Kent Co., *Fowler;* Campbellton and St. John Co., *Hay*, Herb. The root is a deadly poison.

240 C. bullifera, L. In wet places, Bass River.

115. SIUM, L. - - - - WATER-PARSNIP.

241 S. cicutæfolium, Gmelin. (S. lineare, Michx.) Common. Kouchibouguac, Weldford, *Fowler;* Norton, Long Reach, *Hay*, Herb.

116. CRYPTOTENIA, DC. - - - HONEWORT.

242 C. Canadensis, C. Woodstock, *Fowler;* Mouth of Tobique, *Hay*, *Wetmore;* Sussex, *Brittain.*

117. OSMORRHIZA, Raf. - - SWEET CICELY.

243 O. longistylis, DC. Woodstock, *Fowler;* Pollet River near Petitcodiac, *Brittain.*

244 O. brevistylis, DC. Coal Branch, Bass River, *Fowler;* Quispamsis, *Hay*, Herb.

118. ÆTHUSA, L. - - - FOOL'S-PARSLEY.

245 Æ. CYNAPIUM, L. A plant from Kingston in the Univers. Herb. bears this label. No other specimen has been reported.

119. LIGUSTICUM, L. - - - - - LOVAGE.

246 L. Scoticum, L. Near salt water on banks and rocks, Kent Co., *Fowler;* coast near St. John, *Hay.*

120. THASPIUM, Nutt. - - MEADOW-PARSNIP.

247 T. aureum, Nutt. Along the St. John River near Woodstock, *Fowler, Hay;* Rothesay, *Hay*, Herb.

121. SELINUM, L. - - - HEMLOCK-PARSLEY.

248 S. Canadense, Michx., (Conioselinum Canadense, Torr. & Gr.) Bass River, *Fowler;* Spurr's Cove, St. John, *Hay*, Herb.

122. ARCHANGELICA, Hoffm.

249 A. atropurpurea, Hoffm. Bartibog, Northumberland Co., *Fowler;* Harris Cove on the Kennebeccasis, *Matthew.*

250 A. Gmelini, DC. East side of Courtenay Bay, St. John, *Fowler, Hay*, Herb.

123. PASTINACA, Tourn. - - - PARSNIP.

251 P. SATIVA, L. Escaped from gardens in some places. This genus is included in Peucedanum by Benth. & Hooker.

XXXIII. ARALIACEÆ.

124. ARALIA, Tourn. - GINSENG. WILD SARSAPARILLA.

252 A. racemosa, L. Not common. Bass River, Molus River, *Fowler;* Upper St. John and branches, Norton, *Hay*, Herb., Bulletin II. 32.

253 A. hispida, Michx. Abundant in dry burnt woods in Kent, *Fowler;* Campbellton and St. John Co., *Hay*, Herb.

254 A. nudicaulis, L. Miramichi, Kouchibouguac, St. John, *Fowler, Hay*, Herb.; Carleton, Herb. *Mrs. Heustis;* Bald Mountain on Tobique, *Dr. Bailey*, Can. Nat. 1864, p. 87, between Pabineau and Grand Falls, l. c. p. 94.

255 A. trifolia, Gray. Hudson's Brook, Kent Co., *Fowler;* Nashwaaksis, *Vroom*, Herb.; Salmon Creek and Salmon River, *Wetmore.*

XXXIV. CORNACEÆ.

125. CORNUS, Tourn. - - CORNEL. DOGWOOD.

256 C. Canadensis, L. Abundant throughout the Province.

257 C. circinata, L'Her. Weldford, *Fowler;* Upper St. John, Andover, *Hay*, Herb.; Petitcodiac, *Brittain*, Bulletin II. 32.

258 C. sericea, L. Hudson's Brook, Kent Co.

259 C. stolonifera, Michx. Fredericton, *Fowler;* Fairville, *Hay*, Herb.; Mosquito Cove, Herb. *Mrs. Heustis;* Tobique near Pokiok, *Dr. Bailey*, Can. Nat, 1864, p. 83, Cedar Brook, p. 86.

260 C. alternifolia, L. Bass River, Molus River, Kent Co., Woodstock, Grand Lake.

DIVISION B.—GAMOPETALÆ.

XXXV. CAPRIFOLIACÆ.

126. SAMBUCUS, Tourn. - - - - ELDER.

261 S. racemosa, L. (S. pubens, Michx.) Rather common. Kouchibouguac, Bass River, *Fowler;* Norton, *Hay*, Herb.; Lancaster, Herb. *Mrs. Heustis;* Island in Nictau Lake, *Dr. Bailey*, Can. Nat. 1864, p. 88.

262 S. Canadensis, L. Rather common. Kouchibouguac, Fredericton, *Fowler;* Norton, *Hay*, Herb.

127. VIBURNUM, L. - - - ARROW-WOOD.

263 V. lantanoides, Michx. Very common in Kent, *Fowler;* St. John, *Hay*, Herb.; Green Head, Herb. *Mrs. Heustis.*

264 V. Opulus, L. On intervales, Bass River, *Fowler*, Herb.; Upper St. John and Madawaska, *Hay;* Westfield, Herb. *Mrs. Heustis;* Tobique near Pokiok, *Dr. Bailey*, Can. Nat. 1864, p. 83, Cedar Brook, l. c. p. 86.

265 V. pauciflorum, Pylaie. Tay's Mills, York Co., *Moser;* Tobique, *Hay.*

266 V. dentatum, L. Chiputneticook Falls and St. Stephen, *Vroom*, Herb.

267 V. cassinoides, L. (V. nudum, var. cassinoides, Torr. & Gr.) Common throughout the Province. Howe's Road, *Hay*, Herb.

268 V. Lentago, L. Chiputneticook Falls, Charlotte Co., *Vroom.*

128. SYMPHORICARPUS, Dill. - SNOWBERRY.

269 S. racemosus, Michx. Common in cultivation.

129. LINNÆA. Gronov. - LINNÆA. TWIN-FLOWER.

270 L. borealis, Gronov. Common. Kouchibouguac, Kent Co., *Fowler;* St. John, *Hay*, Herb.; Green Head, Herb. *Mrs. Heustis;* Cedar Brook on Tobique, *Dr. Bailey*, Can. Nat. 1864, p. 86, Feldspar Mountain on Nepisiquit, l. c. p. 91, between Pabineau and Grand Falls, l. c. p. 94.

130. LONICERA, L. - HONEYSUCKLE. WOODBINE.

271 L. cærulea, L. In swamps. Kouchibouguac, Weldford, Kent Co., Black River, Northumberland Co., *Fowler;* Salmon River, *Wetmore;* St. John, *Hay*, Herb.; Green Head, Herb. *Mrs. Heustis.*

272 L. ciliata, Muhl. Bass River, *Fowler;* Carleton, *Hay*, Herb.; Green Head, Herb. *Mrs. Heustis.*

273 L. involucrata, Banks. Campbellton, *Chalmers.*

131. DIERVILLA, Tourn. - BUSH-HONEYSUCKLE.

274 D. trifida, Moench. Rather common. Kouchibouguac, Hampton, *Fowler;* Lancaster, *Hay*, Herb.; Indian Falls, Nepisiquit, *Dr. Bailey*, Can. Nat. 1864, p. 92.

XXXVI. RUBIACEÆ.

132. CEPHALANTHUS, L. - - BUTTON-BUSH.

275 C. occidentalis, L. St. Stephen and St. James, *Vroom.*.

133. HOUSTONIA, L, - - - - BLUETS.

276 H. cœrulea, L. Very abundant in some parts of St. John Co.; have not noticed it farther north. Rothesay, *Fowler;* Kennebeccasis, *Hay*, Herb.; Herb. *Mrs. Heustis.*

134. MITCHELLA, L, - - PARTRIDGE-BERRY.

277 M. repens, L. Kouchibouguac, Bass River, Fredericton, *Fowler;* St. John and King's, *Hay*, Herb.

135. GALIUM, L. - - BEDSTRAW. CLEAVERS.

278. G. MOLLUGO, L. Spreading from ballast, Richibucto, *Fowler;* St. John, *Hay*, Herb.

279 G. APARINE. Introduced in ballast, Carleton, *Fowler;* St. John, *Hay*, Herb.; Petitcodiac, *Brittain.*

280 G. trifidum, L., var. pusillum, Gray. In sphagnous bogs, Richibucto, Lily Lake, *Fowler;* St. John, *Hay*, Herb.

var. latifolium, Torr. St. John, *Hay*, Herb.

281 G. asprellum, Michx. Common. Kouchibouguac, Bass River, *Fowler;* St. John Co., *Hay*, Herb.

282 G. triflorum, Michx. Kouchibouguac, *Fowler;* Norton, *Hay*, Herb.

XXXVII. VALERIANACEÆ.

136. VALERIANA, Tourn. - - - VALERIAN.

283 V. sylvatica, Banks. Richmond, Carleton Co., *Vroom;* Arthurette, *Wetmore;* Tobique, *Hay.*

XXXVIII. COMPOSITÆ.

137. EUPATORIUM, Tourn. - THOROUGHWORT.

284. E purpureum, L. Rather common along streams. Black River, Northumberland Co., *Fowler;* Norton, *Hay*, Herb.

285 E. perfoliatum, L. Common in Kent Co., *Fowler;* St John River and tributaries, *Hay*, Herb.

286 E. ageratoides, L. Banks of the Restigouche, *Fowler;* St. John River and Campbellton, *Hay*, Herb.; Andover, *Wetmore.*

138. SOLIDAGO, L. - - - - GOLDEN-ROD.

287 S. squarrosa, Muhl. Kouchibouguac, *Fowler;* Harris Cove, *Matthew;* abundant east side St. John River, between Grand Falls and Tobique, *Hay;* Andover, *Wetmore;* Restigouche, *Chalmers.*

288 S. latifolia, L. Kouchibouguac, Bass River, Point LeNim in Restigouche Co., Fredericton, *Fowler;* Lancaster, *Hay*, Herb.; Mouth of Aroostook, *Vroom.*

289 S. bicolor. L. Abundant in barrens along the Richibucto River, Kouchibouguac, *Fowler;* Norton and Tobique, *Hay*, Herb.
var. concolor, Torr. & Gr. Tattagouche River, *Chalmers*, Herb.

290 S. macrophylla, Pursh. (S. thyrsoidea, E. Meyer.) Bass River, *Fowler;* Petitcodiac, *Brittain;* Campbellton, *Chalmers.*

291 S. sempervirens, L. Salt marshes. Buctouche, *Fowler;* Courtenay Bay and Taylor's Island, *Hay*, Herb.

292 S. puberula, Nutt. Abundant in burnt barrens along the Richibucto River, *Fowler;* "A glabrate and ambiguous form," Gray. Syn. Fl.; abundant in St. John Co.; St. Stephen, *Vroom.*

293 S. uliginosa, Nutt. (S. stricta, Gray's Manual, p. 240.) In wet barrens along the Richibucto River, Kouchibouguac, *Fowler.*

294 S. speciosa, Nutt. St. Stephen, *Vroom.*

295 S. rugosa, Mill. (S. altissima, Torr. & Gr.) Abundant along fences and roadsides, Kent Co., *Fowler;* Norton, *Hay*, Herb.; St. John, Herb. *Mrs. Heustis.*

296 S. neglecta, Torr. & Gr. In swamps and bogs. St. John Co., *Hay.*

297 S. juncea, Ait. (S. arguta, Torr. & Gr.) Smithtown, K. C., *Brittain;* near St. John, *Hay;* St. Stephen, Woodstock, *Vroom*, Bulletin III. 33.

298 S. serotina, Ait. (S. gigantea, Gray's Manual, p. 245.) Restigouche, *Fowler;* St. John and King's Co.'s, *Hay*, Herb.; Fredericton, *Moser;* Digdeguash, *Hay.*

299 S. Canadensis, L. Abundant in Kent, King's and St. John Co.'s, *Fowler;* Norton, *Hay*, Herb.

300 S. nemoralis, Ait. The most abundant Solidago in western part of Charlotte Co., *Vroom*, Herb.

301 S. lanceolata, L. Very abundant in Kent Co., *Fowler;* Norton, *Hay*, Herb.

139. ASTER, Tourn. - - ASTER. STARWORT.

302 A. macrophyllus, L. Kouchibouguac, Bass River, St. John, *Fowler;* Torryburn, *Hay*, Herb.

303 A. radula, Ait. Kouchibouguac, Richibucto, Bass River, *Fowler;* St. John, *Hay*, Herb.

304 A. undulatus, L. Reported from Petitcodiac by *Brittain.* Have not seen it.

305 A. cordifolius, L. Bass River, *Fowler;* Petitcodiac, *Brittain;* Carleton, Herb. *Mrs. Heustis.*

306 A. sagittifolius, Willd. Petitcodiac, *Brittain.* Have not seen it.

307 A. Lindleyanus, Torr. & Gr. Petitcodiac, *Brittain.* An interesting discovery.

308 A. diffusis, Ait. (A. miser, Gray, Manual.) Abundant in Kent Co., *Fowler;* Norton, *Hay*, Herb.; Carleton, Herb. *Mrs. Heustis.*

309 A. paniculatus, Lam. (A. simplex, Torr. & Gr.) Shores of Kouchibouguasis River, *Fowler;* Norton, *Hay*, Herb.

310 A. tardiflorus, L. Richibucto, *Fowler.* Only a single specimen and therefore somewhat doubtful. A. longifolius partly of former list.

311 A. Novi-Belgii, L. (A. longifolius, Gray, Manual, 233.) Richibucto and Carleton, *Fowler;* St. John, *Hay.* This includes A. æstivus of former list.

312 A. puniceus, L. Very common in swamps and along brooks. var. lævicaulis, Gray, Syn. Fl. Carleton, *Fowler;* Salmon River, *Wetmore.*

313 A. umbellatus, Mill. (Diplopappus umbellatus, Torr. & Gr.) Common. Kouchibouguac, St. John, *Fowler;* Norton, *Hay*, Herb.

314 A. linariifolius, L. (Diplopappus linariifolius, Hook.) Pabineau Falls, on Nepisiquit River.

315 A. acuminatus, Michx. Common in Kent, St. John, *Fowler*, *Hay*, Herb.; Carleton, Herb. *Mrs. Heustis.*

316 A. nemoralis, Ait. St. John, *Rev.* (now *Dr.*) *J. P. Sheraton*, *Hay*, Herb.; Carleton, Herb. *Mrs. Heustis;* St. Stephen, *Vroom.*

140. ERIGERON, L. - - - - - FLEABANE.

317 E. hyssopifolius, Michx. (Aster graminifolius, Pursh.) Mouth of Aroostook, Tattagouche Falls, *Fowler;* Lower Kennebeccasis and Madawaska County, *Hay*, Herb., Bulletin II. 28, 32; Flat Lands, Restigouche, *Chalmers;* common about Andover, *Wetmore.*

318 E. Philadelphicus, L. Woodstock, *Fowler;* St. John River and Norton, *Hay*, Herb.

319 E. annuus, Pers. "Rather common about Hampton and Petitcodiac." *Brittain*, Herb.

320 E. strigosus, Muhl. Norton, *Hay*, Herb.; Carleton, Herb. *Mrs. Heustis;* Bass River, *Fowler.*

321 E. acris, L., var. Drœbachensis, Blytt. Shore at Belledune, Restigouche, *Fowler;* Grand Falls, St. John, and Tobique, *Hay;* New Mills, *Chalmers.*

322 E. Canadensis, L. Very common. Now spreading widely over the globe. Specimens received from Beirout.

141. ANTENNARIA, Gaertn. - - EVERLASTING.

323 A. plantaginifolia, Hook. Common on sterile knolls.

142. ANAPHALIS, DC. - - - EVERLASTING.

324 A. margaritacea, Benth. & Hooker. (Antennaria margaritacea, R. Br.) Abundant throughout.

143. GNAPHALIUM, L. - CUD-WEED. EVERLASTING.

325 G. polycephalum, Michx. Salmon River, *Wetmore.*

326 G. decurrens, Ives. Green Head near St. John, abundant along Salmon River and Grand Lake, *Fowler;* Petitcodiac and Hillsborough, *Brittain.*

327 G. uliginosum, L. Common in damp ground.

328 G. sylvaticum, L. Abundant at Campbellton, in woods at River Charlo, *Fowler;* Petitcodiac and Hopewell, *Brittain;* Campbellton, Herb. Certainly native.

144. INULA, L. - - - - - ELECAMPANE.

329 I. HELENIUM, L. Roadside at Norton, and at Newcastle, Grand Lake, *Fowler;* Hampton, *Hay.*

145. AMBROSIA, Tourn. - - - RAGWEED.

330 A. artemisiæfolia, L. Seems to be rare. Coal Branch in Kent Co., *Fowler;* Norton, *Hay,* Herb.

146. XANTHIUM, Tourn. - COCKLEBUR. CLOTBUR.

331 X. strumarium, L. Cape Bald, *Brittain.* Have not seen it.

147. HELIOPSIS, Pers. - - - - - OX-EYE.

332 H. scabra, Dunal. Sugar Island, St. John River, *Moser.* Have no specimen.

148. RUDBECKIA, L. - - - CONE-FLOWER.

333 R. hirta, L. Occasionally in grass fields, Restigouche, Kent, York, *Fowler;* Grand Falls, Grand Lake and Norton, *Hay,* Herb.

149. HELIANTHUS, L. - - - SUNFLOWER.

334 H. decapetalus, L. Eel River, Carleton Co., *Hay.*

335 H. ANNUUS, L. Common in gardens.

150. BIDENS, L. - - - - - BUR-MARIGOLD.

336 B. frondosa, L. Common about dwellings.

337 B. connata, Muhl. Petitcodiac, *Brittain,* Herb.; Chipman, *Wetmore.*

338 B. cernua, L. Kouchibouguac, Belledune, *Fowler;* Norton, *Hay,* Herb.; Chipman, *Wetmore.*

151. ACHILLEA, L. . - - - - YARROW.

339 A. Millefolium, L. Abundant everywhere.

340 A. Ptarmica, L. Looks like a native at River Charlo, Restigouche Co., and Kouchibouguac, Kent Co., *Fowler*, Herb.; Campbellton, *Chalmers.*

152. ANTHEMIS, L. - - - - - CHAMOMILE.

341 A. COTULA, L. (Maruta Cotula, DC.) Very common near dwellings.

342 A. ARVENSIS, L. Ballast, Buctouche.

153. CHRYSANTHEMUM, Tourn. { WHITE-WEED. / OX-EYE-DAISY.

343 C. Leucanthemum, L. (Leucanthemum vulgare, Lam.) A very troublesome weed everywhere.

154. TANACETUM, L. - - - - - TANSY.

344 T. VULGARE. L. Often the only memorial of the gardens of the early settlers.

345 T. Huronense, Nutt. Mouth of the Upsalquitch, St. John River, near Fredericton, *Fowler;* along the Upper St. John, but not on its tributaries, *Hay*, Bulletin II. 27.

155. ARTEMISIA, L. - - - - - WORMWOOD.

346 A. caudata, Michx. Goat Island, Grand Lake, *Fowler*, *Hay*, Herb.

347 A. ABSINTHIUM, L. Abundant on roadsides, Buctouche, *Fowler;* St. John, *Hay*, Herb.

348 A. BIENNIS, Willd. Introduced and spreading rapidly. Kouchibouguac, Fairville, *Fowler;* Eel River, Restigouche, Herb.

349 A. VULGARIS, L. Waste grounds near houses in some places.

156. TUSSILAGO, Tourn. - - - COLTSFOOT.

350 T. FARFARA, L. Spreading rapidly at St. John and Carleton. In St. John it sprang up rapidly and covered sites not built upon after the Great Fire. Bulletin II. 31.

157. PETASITES, Tourn. BUTLER-BUR. SWEET COLTSFOOT.

351 P. palmata, Gray. (Nardosmia palmata, Hook.) Black River, Northumberland Co., along Richibucto River and Kouchibouguac River, *Fowler;* Petitcodiac, *Brittain;* St. John, *Hay*, *Goold.*

158. ARNICA, L. - - - - - - ARNICA.

352 A. Chamissonis, Less. (A. mollis, Hook.) Grand Falls of Nepisiquit, *Fowler;* Tobique Narrows, *Hay*, Bulletin II. 30; Andover and Grand Falls of St. John, *Wetmore.*

159. ERECHTHITES, Rafin. - - FIREWEED.

353 E. hieracifolia, Raf. Very common on recently burnt land.

160. SENECIO, Tourn. - - - GROUNDSEL.

354 S. VULGARIS, L. A weed in gardens and waste grounds.

355 S. aureus, L. What I take for the typical form was sent from Restigouche by *Mr. Chalmers*, and from Florenceville by *Mr. Hay*.

var. Balsamite, Torr. & Gr. Grand Falls of St. John, *Fowler;* rocky shores of Kennebeccasis, *Hay;* a peculiar form of this (var. lanceolatus, Oakes) has been found at Lily Lake, *Fowler*, *Hay*, and at Hartland, Carleton Co., *Hay*.

161. ARCTIUM, L. - - - - - - BURDOCK.

356 A. LAPPA, L. Common near dwellings.

var. tomentosum, Gray. Abundant at Richmond and Morrison's Mill, Fredericton, *Vroom*.

162. CARDUUS, Tourn. - PLUMELESS THISTLE.

357 C. NUTANS, L. Spreading from ballast near Chatham.

163. CNICUS, Tourn. - - PLUMED THISTLE.

358 C. ARVENSIS, Hoffm. (Cirsium arvense, Scop.) Too abundant.

359 C. LANCEOLATUS, Hoffm. (Cirsium lanceolatum, Scop.) Common.

360 C. muticus, Pursh. Kouchibouguac, *Fowler;* St. John Co., Tobique River, *Hay*, Herb.

164. CENTAUREA, L. - - BLESSED THISTLE.

361 C. BENEDICTA, L. (Cnicus benedictus, L.) Escaped from gardens in a few places.

362 C. NIGRA, L. Abundant in some places in Restigouche and at Fredericton.

165. CICHORIUM, Tourn. - - - CICHORY.

363 C. INTYBUS, L. In a few places. Bathurst, *Fowler;* Grand Lake, *Hay*, Herb.

166. HIERACIUM, Tourn. - - HAWKWEED.

364 H. Canadense, Michx. Kouchibouguac, Bass River, *Fowler;* Campbellton, Herb.; Grand Lake, Tobique, *Hay;* King's Co., *Brittain*, Bulletin II. 32; Belledune, *Chalmers*.

365 H. scabrum, Michx. Kouchibouguac, Bass River, *Fowler;* Campbellton, *Hay.*

366 H. UMBELLATUM, L. Belledune, *Chalmers.* Identified by Prof. Macoun.

167. LEONTODON, L. - - - - HAWKBIT.

367 L. AUTUMNALIS, L. Kouchibouguac, Richibucto River, *Fowler;* Partridge Island, *Hay*, Herb.; St. Hilaire, *Hay*, Bulletin II. 28, 32.

168. TARAXACUM, Haller. - - DANDELION.

368 T. OFFICINALE, Weber, (T. Dens-leonis, Desf.) Abundant everywhere.

169. LACTUCA, Tourn. - - - - LETTUCE.

369 L. Canadensis, L. Common in Kent Co., *Fowler;* Welsford, *Hay*, Herb.; between Pabineau and Grand Falls, *Dr. Bailey*, Can. Nat. 1864, p. 94.

370 L. integrifolia, Bigel. (L. Canadensis, var. integrifolia, Gray, Manual.) Rare. Norton, *Hay*, Herb.

371 L. leucophæa, Gray. (Mulgedium leucophaeum, DC.) Common in Kent and Northumberland, *Fowler;* Campbellton, *Hay*, Herb.

170. PRENANTHES, Vaill. - RATTLESNAKE-ROOT.

372 P. racemosa, Michx. (Nabalus racemosus, Hook.) Mouth of Kennebeccasis, *Fowler*, *Hay*, Herb.; Campbellton, *Chalmers;* Grand Falls, *Wetmore*, Bulletin II. 32.

373 P. serpentaria, Pursh. Along the Richibucto River, *Fowler;* Quispamsis, *Hay*, Herb. (Nabalus albus of former list.)

374 P. altissima, L. Bass River, Kouchibouguac, *Fowler.*

375 P. Mainensis, Gray. "Shore of St. John River at St. Francis, *Pringle;* very common on the St. John River, *Goodale.*" Has not been reported by N. B. botanists. Gray, Syn. Flor.

171. SONCHUS, Tourn. - - - SOW-THISTLE.

376 S. OLERACEUS. L. Weed in gardens, St. John, St. Andrew's, St. Stephen, *Hay*, *Vroom*, Herb.

377 S. ASPER, Vill. Gardens and rich soil around dwellings.

378 S. ARVENSIS, L. Garden weed.

XXXIX. LOBELIACEÆ.

172. LOBELIA, L.

379 L. Cardinalis, L. St. Andrew's and St. Stephen, *Vroom;* Magaguadavic, St. Croix and tributaries, *Matthew* and *Vroom;* Eel River, Carleton Co., Digdeguash River, *Hay*, Herb.

380 L. Dortmanna, L. Rather rare. Lake Elsie near Richibucto, *Fowler;* foot Douglas Mountain, *Hay;* Clifton Lake, *Wetmore;* Grand Manan, *D. McL. Smith.*

381 L. spicata, Lam. Moncton, *Brittain.* Have not seen it.

382 L. Kalmii, L. Limestone hills, St. John, *Matthew;* shores of St. John and Restigouche Rivers, *Fowler;* St. John and King's Co.'s, *Hay*, Herb.

383 L. inflata, L. Very common throughout the Province.

Lobelia is included in Campanulaceæ by Benth. & Hooker.

XL. CAMPANULACEÆ.

173. CAMPANULA, Tourn. - Bell-flower. Hare-bell.

384 C. rapunculoides, L. St. John, Carleton, *Fowler*, *Hay*, Herb.; a roadside weed at Richmond Corner and St. Stephen, *Vroom.*

385 C. rotundifolia, L. Abundant near St. John, Grand Falls of Nepisiquit, Nigadoo, Blackville, *Fowler;* abundant everywhere in clefts of rocks on St. John and tributaries, *Hay*, Bulletin II. 28, 30; Herb. Have not seen it in Kent.

386 C. aparinoides, Pursh. St. George and St. Stephen, *Vroom*, Herb.; Grand Lake, Gondola Point, Westfield, King's Co., *Hay;* St. George, Chipman, Andover, *Wetmore.*

XLI. VACCINIACEÆ.

174. GAYLUSSACIA, H. B. K. - Huckleberry.

387 G. dumosa, Torr. & Gr. In a peat bog near Richibucto, *Fowler;* St. Stephen, *Vroom*, Herb.

388 G. resinosa, Torr. & Gr. Rather common in Kent and Northumberland Co.'s, Grand Lake, *Fowler.*

175. VACCINIUM, L. - Blueberry. Bilberry.

389 V. Pennsylvanicum, Lam. Abundant in barrens and swamps. var. nigrum, Wood., has black berries without a bloom.

390 V. Canadense, Kalm. Less abundant than the preceding, in burned barrens and swamps.

391 V. corymbosum, L. Apparently rare. Grand Lake, *Hay;* St. Stephen, *Vroom.*

var. atroceum, Gray. A single specimen found at Weldford on the Richibucto River seems to belong to this form.

392 V. caespitosum, Michx. St. Francis River and Upper St. John, *Hay*, Bulletin II. 25, 27.

176. OXYCOCCUS, Pers. - - - CRANBERRY.

393 O. palustris, Pers. Common in peat bogs everywhere and on marshes round the coast.

394 O. macrocarpus, Pursh. Peat bogs and marshes. Abundant.

177. CHIOGENES, Salisb. - - - SNOWBERRY.

395 C. hispidula, Torr. & Gr. Abundant in mossy damp woods.

XLII. ERICACEÆ.

178. ARCTOSTAPHYLUS, Adans. - BEARBERRY.

396 A. Uva-ursi, Spreng. Kennebeccasis Island, *Hay*, Herb.

179. GAULTHERIA, Kalm, L. - AROMATIC WINTERGREEN.

397 G. procumbens, L. Common in Northumberland and Kent, *Fowler*, and in St. John and King's, *Hay*, Herb. "I never found it north of Bathurst," *Chalmers.*

180. CASSANDRA, Don. - - LEATHER-LEAF.

398 C. calyculata, Don. Abundant in bogs throughout the Province, *Fowler;* St. John, *Hay*, Herb.; Bald Mountain on the Tobique, *Dr. Bailey*, Can. Nat. 1864, p. 87.

181. EPIGÆA, L. - - - - MAYFLOWER.

399 E. repens, L. Abundant in Kent and Northumberland, *Fowler;* St. John and King's, *Hay*, Herb. "I never found it north of Bathurst," *Chalmers.*

182. ANDROMEDA, L. - - - ANDROMEDA.

400 A. polifolia, L. Common in cold bogs. Kent Co., *Fowler;* St. John, *Hay*, Herb.

183. KALMIA, L. - - - AMERICAN LAUREL.

401 K. angustifolia, L. Abundant in dry barrens.

402 K. glauca, Ait. Common. Kouchibouguac, along Richibucto River, *Fowler;* St. John, Jemseg, *Hay*, Herb.

184. LEDUM, L. - - - - LABRADOR TEA.

403 L. latifolium, Ait. Common in wet barrens. Kouchibouguac, Bass River, *Fowler;* St. John Co., *Hay*, Herb.; Herb. *Mrs. Heustis;* Bald Mountain on the Tobique, *Dr. Bailey*, Can. Nat. 1864, p. 87, Nictau Lake, l. c. p. 88.

185. RHODODENDRON, L. - - ROSE-BAY.

404 R. Rhodora, Don. Covering extensive tracts of swampy ground in the northern counties, *Fowler;* St. John and King's, *Hay*, Herb.

186. PYROLA, Tourn. - WINTERGREEN. SHINLEAF.

405 P. minor, L. Hopewell, *Brittain.* Said to be found at Dalhousie.

406 P. secunda, L. Common in rich woods.

407 P. chlorantha, Swartz. Lily Lake, *Hay*, Herb.; between Woodstock and Houlton, *Vroom.* "A specimen of this plant presented to the Herbarium by I. Allan Jack, Esq., is dated Fredericton, 1844; Petitcodiac, *Brittain;* Richmond, *Vroom.*" Bulletin III. 34.

408 P. elliptica, Nutt. Very common. Norton, *Hay*, Herb.; Indian Falls of Nepisiquit, *Dr. Bailey*, Can. Nat. 1864, p. 92.

409 P. rotundifolia, L. Common. Bass River, *Fowler.*

var. incarnata, DC. Fredericton, *Dr. Bailey;* Edmundton, *Hay.*

var. asarifolia, Hook. Woodstock, *Fowler.*

var. uliginosa, Gray. Andover, *Hay*, Bulletin II. 30.

187. MONESES, Salisb. - ONE-FLOWERED PYROLA.

410 M. uniflora, Gray. Rather common. Kent and Northumberland Co., *Fowler;* St. John Co., *Hay*, Herb.; Salmon River, *Wetmore.*

188. CHIMAPHILA, Pursh. - - PIPSISSEWA.

411 C. umbellata, Nutt. Common. Bass River, Kouchibouguac, *Fowler;* Grand Lake, *Hay*, Herb.

XLIII. MONOTROPEÆ.

189. MONOTROPA, L. - INDIAN PIPE. PINE-SAP.

412 M. uniflora, L. Restigouche and Kent Co.'s, *Fowler;* St. John and King's, *Hay*, Herb.

190. HYPOPITYS, Scop. - - - PINE-SAP.

413 H. lanuginosa, Nutt. Growing in shade of pine trees at St. Andrew's, *Vroom;* Petitcodiac, *Brittain*, Herb.; Andover, *Wetmore;* Lily Lake, *Hay;* Sheldon's Point, Lancaster, *Mrs. H. W. Frith.* (Monotropa Hypopitys of former editions.)

XLIV. PLUMBAGINACEÆ.

191. STATICE, Tourn. - - - SEA-LAVENDER.

414 S. Limonium, L., var. Caroliniana, Gray. Common in salt marshes round the coast. Kouchibouguac, *Fowler;* Sackville and St. John, *Hay*, Herb.

XLV. PRIMULACEÆ.

192. PRIMULA, L. - - - - - PRIMROSE.

415 P. farinosa, L. Restigouche, *Chalmers.*

416 P. Mistassinica, Michx. The form found on Lower Kennebeccasis Dr. Gray pronounces "P. Mistassinica passing into P. farinosa." Flat Lands, Restigouche, *Chalmers.*

193. STEIRONEMA, Raf.

417 S. ciliatum, Raf. (Lysimachia ciliata, L.) Salmon River in Kent Co., Fredericton, *Fowler;* St. John and King's, *Hay.*

194. LYSIMACHIA, L. - - - LOOSESTRIFE.

418 L. quadrifolia, L. "Sandy or gravelly soil, New Brunswick," Gray, Syn. Flor. Our botanists have not reported it.

419 L. stricta, Ait. Common in Kent Co., *Fowler;* St. John and King's, *Hay*, Herb.; Lancaster, Herb. *Mrs. Heustis.*

420 L. thyrsiflora, L. Rather rare. Shediac, *Fowler*; Hopewell Cape and Norton, *Hay*, Herb.

195. TRIENTALIS, L. - CHICKWEED-WINTERGREEN.

421 T. Americana, Pursh. Common throughout the Province.

196. GLAUX, L. - - - - SEA-MILKWORT.

422 G. maritima, L. Common round the coast everywhere.

197. ANAGALLIS, L. - - - - PIMPERNEL.

423. A. ARVENSIS, L. Rare. St. Andrew's, *Vroom*; St. John, *Hay*, Herb.

198. SAMOLUS, Tourn. - - WATER-PIMPERNEL.

424 S. Valerandi, L., var. Americanus, Gray. Muddy shore of a small brook at Kouchibouguac, only place I have noticed it.

XLVI. OLEACEÆ.

199. FRAXINUS, Tourn. - - - - ASH.

425 F. Americana, L. Common. Kent Co., *Fowler*; abundant on Tobique, *Hay*.

426 F. sambucifolia, Lam. Common. Abundant on Tobique, *Hay*.

427 F. pubescens, Lam. Bellisle, *Brittain*. On Darling's Island.

XLVII. APOCYNACEÆ.

200 APOCYNUM, Tourn. - DOGBANE. INDIAN HEMP.

428 A. androsæmifolium, L. Common in Kent Co., *Fowler;* St. John and King's, *Hay*, Herb.; Nepisiquit River, *Fowler*, *Dr. Bailey*, Can. Nat. 1864, p. 94.

429 A. cannabinum, L. Restigouche, Pabineau Falls, Grand Lake, Keswick Islands, *Fowler;* St. John and King's, *Hay*, Herb.; abundant on Upper St. John, *Wetmore*, *Hay*.

XLVIII. ASCLEPIADACEÆ.

201. ASCLEPIAS, L. - - - - MILKWEED.

439 A. incarnata, L. Keswick Valley, *Dr. Bailey*, *Hay*, *Fowler*, Welsford, Upper St. John and tributaries, Eel River, *Hay;* Charlotte and Carleton Co.'s, St. James and Richmond, *Vroom;* Pokiok and Tobique River, *Wetmore*.

431 A. Cornuti, Decaisne. In old fields, Fredericton, *Fowler;* Westfield and Upper St. John, *Hay*.

XLIX. GENTIANACEÆ.

202 GENTIANA, L. - - - - GENTIAN.

432 G. Amarella, L., var. acuta, Hook. f. At the mouth of the Restigouche, *Chalmers*, Herb.; Keswick Ridge, *G. H. Burnett;* Falls at the mouth of the St. John, *Hay*.

433 G. linearis, Fresl. Near Weldford Station, Kent Co., *Fowler;* Nashwaaksis, *Moser*, Herb.; near Green River, *Dr. Bailey* and *Mr. Reed*.

203. HALENIA, Borkh. - - SPURRED GENTIAN.

434 H. deflexa, Griseb. Abundant along the Restigouche River and at the mouth of the Upsalquitch, Carleton, St. John Co., *Fowler;* rather abundant on St John and its tributaries, Andover, *Hay*, Bulletin II. 30.

204. MENYANTHES, Tourn. - - BUCKBEAN.

435 M. trifoliata, L. Common in bogs, Kent, *Fowler;* St. John and King's, *Hay*, Herb.

205. LIMNANTHEMUM, Gmelin. - FLOATING-HEART.

436 L. lacunosum, Griseb. St. Stephen, *Vroom;* abundant in a lake near residence of G. G. King, Esq., Salmon River, Queen's Co., *Hay*, Herb.; King's Co., *Brittain;* Clifton Lake, *Wetmore;* Musquash, St. John Co., *D. McL. Smith.*

L. POLEMONEACEÆ.

206. COLLOMIA, Nutt.

437 C. linearis, Nutt. This plant is a native of the region from Winnipeg and Mackenzie River west to the Pacific. It is therefore strange to find it growing at Eel River, Restigouche Co., on sands often covered by the tides and on the high rocky hill towards Dalhousie. If it is not native, it is at least thoroughly naturalized.

LI. BORRAGINACEÆ.

207. CYNOGLOSSUM, Tourn. - HOUND'S-TONGUE.

438 C. Virginicum, L. Petitcodiac, *Brittain*, Herb.

208. ECHINOSPERMUM, Swartz. - STICKSEED.

439 E. Virginicum, Lehm. Sand beach at Eel River, Restigouche, *Fowler, Chalmers;* Carleton, *Hay*, Herb. (E. Lappula of former list.)

209. SYMPHYTUM, Tourn. - - - COMFREY.

440 S. OFFICINALE, L. Apparently naturalized in St. John Cemetery.

210. LYCOPSIS, L. - - - - - - BUGLOSS.

441 L. ARVENSIS, L. Sand beach, Eel River, Restigouche, Herb.

211. MERTENSIA, Roth. - - SEA-LUNGWORT.

442 M. maritima, Don. Sand beaches, Restigouche, St. John.

212. MYOSOTIS, L. - - - FORGET-ME-NOT.

443 M. laxa, Lehm. In wet ditches at Point LeNim, Restigouche, *Fowler;* rather abundant in southern sections of the Province, Howe's Lake, *Hay*, Herb.; Carleton, Herb. *Mrs. Heustis.*

444 M. ARVENSIS, Hoffm. Spreading from a garden at Bass River, Kent Co., 1876, *Fowler;* St. Andrew's, *Vroom.*

213. LITHOSPERMUM, L. - - GROMWELL.

445 L. OFFICINALE, L. Roadside near Campbellton, Restigouche Co., *Fowler*, *Hay*, Herb.

214. ECHIUM, L. - VIPER'S BUGLOSS. BLUEWEED.

446 E. VULGARE, L. Fredericton, *Fowler;* Petitcodiac and Quaco, *Brittain*, Herb.

LII. CONVOLVULACEÆ.

215. CONVOLVULUS, L. - - - BINDWEED.

447 C. sepium, L., var. Americanus, Sims. Rather common near the coast. Kouchibouguac, *Fowler;* Norton, *Hay*, Herb.

C. ARVENSIS, L. Cultivated fields, Richibucto. Rare.

216. CUSCUTA, Tourn. - - - - DODDER.

448 C. Gronovii, Willd. Twining around grasses and other herbaceous plants, mouth of Kennebeccasis, *Fowler;* Partridge Island, Lower St. John, Grand Lake, *Hay;* Cape Bald, *Brittain;* Nashwaaksis and St. Stephen, also at Lake Utopia, Bulletin III. 32.

LIII. SOLANACEÆ.

217. SOLANUM, Tourn. - - - NIGHTSHADE.

449 S. NIGRUM, L. Occasionally near dwellings. Kouchibouguac, Carleton, *Fowler*, *Hay*, Herb.

450 S. DULCAMARA, L. Near dwellings, Fredericton.

218. DATURA, L. - STRAMONIUM. THORN-APPLE.

451 D. STRAMONIUM, L. Rarely escaped from gardens in Kent, *Fowler;* weed well established at St. Andrew's and St. Stephen, *Vroom.*

452 D. TATULA, L. Garden weed. Richibucto, Carleton, ballast heaps, St. John.

219. HYOSCYAMUS, Tourn. - - HENBANE.

453 H. NIGER, L. Scarce. Miramichi, Richibucto, Bass River, *Fowler;* Dalhousie, St. John, *Hay*, Herb., Bulletin II. 31.

LIV. SCROPHULARIACEÆ.

220. VERBASCUM, L. - - - - - MULLEIN.

454 V. THAPSUS, L. Rather rare. Newcastle, Northumberland Co., Kouchibouguasis, Kent Co., *Fowler;* Dalhousie, Herb.; King's County, *Hay.*

455 V. BLATTARIA, L. St. Andrew's, Richmond, *Vroom.*

221. LINARIA, Tourn. - - - TOAD-FLAX.

456 L. Canadensis, Dumont. St. Stephen, *Vroom*, Herb.

457 L. VULGARIS, Mill. Escaped from gardens in a few places. Kouchibouguac, Bass River, *Fowler;* Woodstock, *Hay*, Herb.

222. CHELONE, Tourn. - SNAKE-HEAD. TURTLE-HEAD.

458 C. glabra, L. Common in Kent Co., *Fowler;* Norton, *Hay.* Herb.

223. MIMULUS, L. - - - MONKEY-FLOWER.

459 M. ringens, L. Common in wet places.

224. ILYSANTHES, Raf. - - FALSE PIMPERNEL.

460 I. gratioloides, Benth. In wet sandy or gravelly places subject to inundation. Bass River, *Fowler;* York County, *Moser.*

225. LIMOSELLA, L. - - - - - MUDWORT.

461 L. aquatica, L., var. tenuifolia, Hoffm. Very rare. Near St. Stephen, *Vroom.*

226. VERONICA, L. - - - - - SPEEDWELL.

462 V. VIRGINICA, L. Have only seen it in gardens.

463 V. Americana, Schw. Common in brooks and ditches. Kent Co., *Fowler;* Norton, *Hay*, Herb.; Andover and Chipman, *Wetmore.*

464 V. scutellata, L. Common. Along Richibucto River, Woodstock, *Fowler;* Norton, *Hay*, Herb.

465 V. officinalis, L. Dry fields or hills, Norton, and near Fredericton, *Fowler;* Campbellton, *Chalmers.*

466 V. serpyllifolia, L. Very common. Bass River, *Fowler;* Norton, *Hay*, Herb.; Carleton, Herb. *Mrs. Heustis.*

467 V. peregrina, L. Have only seen it at Kouchibouguasis in damp waste ground.

468 V. ARVENSIS, L. Chamcook Mt., *Hay*, Herb.; St. Andrew's, *Vroom;* Portage, King's Co., and Hillsborough, *Brittain.*

469 V. AGRESTIS, L. Escaped from a garden at Richibucto, and spreading, *Fowler;* Fredericton, University Herb.; Carleton, *Hay*, Herb.; St. Andrew's, *Vroom.*

227. CASTILLEIA, Mutis. - - PAINTED CUP.

470 C. pallida, Kunth., var. septentrionalis, Gray. Hills of Restigouche, *Fowler;* common on Upper St. John, Tobique, *Hay*, Herb., Bulletin II. 28.

228. EUPHRASIA, Tourn. - - - EYEBRIGHT.

471 E. officinalis, L. Very abundant on dry hills near Bathurst and St. John, *Fowler;* McAdam Brook, Charlotte Co., Carleton, *Hay*, Herb.

var. Tartarica, Benth. (E. latifolia, Pursh.) Cape Bald and abundant on a marsh at Cape Enrage, *Brittain.*

229. BARTSIA, L.

472 B. ODONTITES, Hudson. Westmoreland Co., *Trueman;* Lancaster beach, and abundant on an island at the Falls, mouth of St. John, *Hay*, Herb.

230. PEDICULARIS, Tourn. - - LOUSEWORT.

473 P. Canadensis, L. Grand Falls of the St. John, *Moser.*

474 P. Furbishiæ, Watson. Rather common on both sides St. John River between Grand Falls and Andover, *Hay* and *Wetmore;* abundant at mouth of Aroostook, *Vroom.*

231. RHINANTHUS, L. - - YELLOW-RATTLE.

475 R. Crista-galli, L. Common near St. John, North of Miramichi on Bathurst road; Blacklands, Restigouche Co., *Fowler;* St. John and King's, Herb.

232. MELAMPYRUM, Tourn. - - COW-WHEAT.

476 M. Americanum, Michx. Common in Kent Co., *Fowler;* St. John, *Hay*, Herb.

LV. OROBANCHACEÆ.

233. APHYLLON, Mitchell. - - CANCER-ROOT.

471 A. uniflorum, Gray. Nashwaaksis, *Fowler;* Petitcodiac, *Brittain.*

234. EPIPHEGUS, Nutt.

478 E. Virginiana, Bart. Rather rare. Bass River, Kent Co., and Norton, *Fowler.*

LVI. LENTIBULARIACEÆ.

235. UTRICULARIA, L. - - BLADDERWORT.

479 U. clandestina, Nutt. Shallow water of a small lake near Richibucto, *Fowler;* Cape Enrage, *Brittain.*

480 U. vulgaris, L. Common in stagnant waters and slow streams and lakes. Richibucto River, also Rothesay, *Fowler,* Herb.; McAdam Junction, *Hay.*

481 U. intermedia, Hayne. St. Patrick, Charlotte Co., *Vroom,* Herb.; Otty's Lake near Hampton, *Brittain,* Herb.

482 U. cornuta, Michx. Common in peat bogs. St. John, *Matthew, Sheraton, Hay,* Herb.; near Richibucto, *Fowler.*

LVII. VERBENACEÆ.

236. PHRYMA, L. - - - - - LOPSEED.

483 P. Leptostachya, L. Woodstock and Keswick Ridge, *Fowler;* Upper St. John, *Hay,* Herb., Bulletin II. 30; Lower Norton, *Brittain;* Andover, *Wetmore.*

237. VERBENA, Tourn. - - - - VERVAIN.

484 V. urticæfolia, L. Keswick Ridge, *Moser, Hay,* Herb.; Eel River, York Co., *Hay,* Bulletin II, 30.

485 V. hastata, L. Waste grounds. Kouchibouguac, *Fowler;* Norton and Tobique, *Hay,* Herb., Bulletin II. 30; Andover and St. George, *Wetmore.*

LVIII. LABIATÆ.

238. MENTHA, Tourn. - - - - - MINT.

486 M. VIRIDIS, L. Baltimore, Albert Co., *Brittain.*

487 M. PIPERITA, L. Sparingly escaped from gardens.

488 M. ARVENSIS, L. Field at Norton.

489 M. SATIVA, L. Escaped from gardens.

490 M. Canadensis, L. Common in Kent Co., *Fowler;* St. John and King's, *Hay*, Herb.

var. glabrata, Benth. Rather rare. St. John and Restigouche, *Fowler;* Campbellton, *Hay*, Herb.; *Chalmers.*

239. LYCOPUS, Tourn. WATER HOREHOUND. BUGLE-WEED.

491 L. Virginicus, L. Common in Kent Co., *Fowler;* King's, *Hay*, Herb.

492 L. sinuatus, Ell. Common in wet grounds, Kent Co., *Fowler;* King's, *Hay*, Herb.

240. HEDEOMA, Pers. - - - PENNYROYAL.

493 H. pulegioides, Pers. In a waste field at Green Head, St. John, *Fowler*, *Hay*, Herb.

241. CALAMINTHA, Tourn. - - CALAMINT.

494 C. Clinopodium, Benth. Open woods on hillsides, Restigouche, *Fowler;* Keswick Ridge, *Burnett;* Eel River, *Hay*, Herb.; Andover and Tobique River, *Wetmore;* Bellisle, King's Co., *Brittain.*

242. NEPETA, L. - - - - - - CAT-MINT.

495 N. CATARIA, L. Rarely escaped from gardens, Grand Lake, *Hay*, Herb.

496 N. Glechoma, Benth. About dwellings. Abundant on roadsides between Shediac and Shemogue, *Fowler;* Clifton, *Hay*, Herb.

243. SCUTELLARIA, L. - - - SKULLCAP.

497 S. lateriflora, L. Common everywhere. Herb.

498 S. galericulata, L. Common everywhere. Herb.

244. BRUNELLA, Tourn. - SELF-HEAL. HEAL-ALL.

499 B. vulgaris, L. Common everywhere. Herb.

245. STACHYS, Tourn. - - - WOUNDWORT.

500 S. palustris, L. Napan Bridge, Northumberland Co., *Fowler;* St. Stephen and Chamcook, *Vroom*, Herb.; Quaco, *Brittain;* Partridge Island, *Hay;* introduced in ballast at Buctouche, *Fowler.*

246. GALEOPSIS, L. - - - HEMP-NETTLE.

501 G. TETRAHIT, L. A very common weed in rich damp soil. Herb.

247. LEONURUS, L. - - - MOTHERWORT.

502 L. CARDIACA, L. Common in waste places near dwellings.

248. LAMIUM, Tourn. - - - DEAD-NETTLE.

503 L. AMPLEXICAULE, L. St. Andrew's, *Vroom.*

249. TEUCRIUM, L. - - - - GERMANDER.

504 T. Canadense, L. Sand beach, Kouchibouguac.

LIX. PLANTAGINACEÆ.

250. PLANTAGO, Tourn. - PLANTAIN. RIBWORT.

505 P. MAJOR, L. Everywhere near dwellings.

506 P. decipiens, Barneoud. Miramichi and St. John. (P. maritima of former list.)

507 P. LANCEOLATA, L. St. John, *Hay*, Herb.; *Fowler.*

DIVISION C.—APETALÆ.

LX. AMARANTACEÆ.

251. AMARANTUS, Tourn. - - AMARANTH.

508 A. RETROFLEXUS, L. Along the shore at Fredericton, *Fowler;* Salmon River, *Wetmore.*

LXI. CHENOPODIACEÆ.

252. CHENOPODIUM, L. - PIGWEED. GOOSEFOOT.

509 C. ALBUM, L. A very common weed.

510 C. URBICUM, L. At the railway depot, Carleton, *Fowler, Hay;* Petitcodiac, *Brittain.*

511 C. HYBRIDUM, L. Petitcodiac, *Brittain.*

512 C. BOTRYS, L. On the shore at Government House. Probably an outcast from the garden.

513 C. capitatum, Benth. & Hook. (Blitum capitatum, L.) Indigenous, or at least fully naturalized about Andover and mouth of Aroostook, *Wetmore;* Eel River, Restigouche Co., Herb.; Tobique River and Grand Lake, apparently indigenous, *Hay*, Bulletin II. 29.

253. ATRIPLEX, Tourn. - - - - ORACHE.

514 A. patula, L. Several forms of this very variable plant occur along the sea coast. *Fowler.*

var. hastata, Gray. Carleton, *Hay*, Herb.

var. littoralis, Gray. St. John, *Hay.*

254. SALICORNIA, Tourn. - GLASSWORT. SAMPHIRE.

515 S. herbacea, L. Common in salt marshes round the coast.

255. SUAEDA, Forskel. - - - SEE-BLITE.

516 S. maritima, Domortier. Salt marshes on the coast.

256. SALSOLA, L. - - - - - SALTWORT.

517 S. Kali, L. Common on sand beaches along the Gulf shore, *Fowler;* St. Andrew's, *Vroom*, Herb.

LXII. POLYGONACEÆ.

257. POLYGONUM, L. - - - KNOTWEED.

518 P. Pennsylvanicum, L. Shediac, *Moser;* Salmon River, *Wetmore.*

519 P. incarnatum, Ell. Moncton and Keswick, *Moser;* Salmon River, *Wetmore.*

520 P. PERSICARIA, L. Common about dwellings and barns.

521 P. Hydropiper, L. Common in wet grounds and ditches, Kouchibouguac, *Fowler;* Norton, *Hay*. Herb.; Chipman, *Wetmore.*

522 P. acre, H. B. K. Fredericton, *Moser;* Bass River, *Fowler.*

523 P. hydropiperoides, Michx. Keswick, *Moser;* Bloomfield, King's Co., *Brittain*, Herb.

524 P. amphibium, L., var. aquaticum, Willd. In water, Hammond River, *Fowler.*

525 P. Hartwrightii, Gray. (P. amphibium, var. terrestre of former list.) Wet soil, or in water, Oxbow, Salmon River, and in Kent Co., *Fowler;* Tobique, *Hay.*

526 P. aviculare, L. Abundant in yards. The European plant with 8 stamens occurs at the railway depot, Carleton. Mr. Brittain sends specimens of a plant from salt marshes at Moncton, Hillsborough, etc., which grows erect, nearly or quite 2 feet high, and which seems to be a tall form of this or an allied species.

527 P. maritimum, L. Sandy sea shore of Northumberland and Kent.

528 P. arifolium, L. Low grounds, Kouchibouguac, *Fowler;* Hopewell, *Brittain.*

529 P. sagittatum, L. Kouchibouguac, Fredericton, *Fowler;* Jemseg and King's Co., *Hay*, Herb.

530 P. CONVOLVULUS, L. Kouchibouguac and Bass River, *Fowler;* Eel River, Restigouche, Herb.

531 P. cilinode, Michx. Climbing over shrubs and fallen trees, Kouchibouguac, *Fowler;* Norton, *Hay*, Herb.

532 P. dumetorum, L., var. scandens, Gray. Norton, *Fowler;* along St. John River, *Hay.*

533 P. TARTARICUM, L. Extensively cultivated and spontaneous for a few years.

258. FAGOPYRUM, Tourn. - - BUCKWHEAT.

534 F. ESCULENTUM, Moench. Cultivated and remaining as a weed for a few years.

259. RUMEX, L. - - - - - DOCK. SORREL.

535 R. PRATENSIS, Mert. Campbellton, *Chalmers;* also Herb.

536 R. orbiculatus, Gray. In wet places, Kent, *Fowler;* Campbellton, *Chalmers.*

537 R. salicifolius, Weinmann. Shore of Richibucto River, *Fowler;* Campbellton, Herb.; Campbellton and New Mills, *Chalmers.*

538 R. CRISPUS, L. Fredericton. In grass fields.

539 R. OBTUSIFOLIUS, L. Tabusintac on Bathurst road, *Fowler;* Germain Brook, King's Co., *Brittain.*

540 R. maritimus, L. Shore near mouth of Molus River, and Shediac.

541 R. ACETOSELLA, L. The most abundant weed in old and barren fields.

542 R. occidentalis, Watson. Campbellton, *Chalmers. Fide* Prof. Macoun.

LXIII. ARISTOLOCHIACEÆ.

260. ASARUM, Tourn. - - - WILD-GINGER.

543 A. Canadense, L. Fredericton, *Fowler;* Queensbury, *Dr. Bailey;* Morrison's Mills, *Vroom*, Herb.; common about Andover in rich woods, *Wetmore;* abundant on Upper St. John and St. Francis, Salmon (Victoria Co.) and Eel Rivers, *Hay*, Bulletin II. 25; Darling's Island, *Brittain.*

LXIV. THYMELEACEÆ.

261. DIRCA, L. - LEATHERWOOD. MOOSEWOOD.

544 D. palustris, L. Keswick Ridge, *G. H. Burnett;* Hillsborough, *Brittain.*

LXV. ELEAGNACEÆ.

262. SHEPHERDIA, Nutt. - - SHEPHERDIA.

545 S. Canadensis, Nutt. Clinging to rocky banks at Grand Falls, St. John, and at Cape Bon Ami, Restigouche, *Fowler;* Narrows, Tobique River, *Hay*, Bulletin II. 30.

LXVI. SANTALACEÆ.

263. COMANDRA, Nutt. - BASTARD TOAD-FLAX.

546 C. livida, Richardson. Near St. John, *Matthew*, *Brittain;* Port Elgin, *Brittain.*

LXVII. EUPHORBIACEÆ.

264. EUPHORBIA, L. - - - - - SPURGE.

547 E. polygonifolia, L. Kouchibouguac beach in sand.

548 E. HELIOSCOPIA, L. River Charlo and Buctouche, *Fowler*, Herb.

549 E. CYPARISSIAS, L. Have only noticed it in gardens, *Fowler;* about roadsides in a few places, Nashwaak, *Vroom.*

550 E. PEPLUS, L. Spontaneous in gardens, Richibucto, *Fowler;* weed in gardens, Chipman, *Wetmore.*

LXVIII. URTICACEÆ.

265. ULMUS, L. - - - - - - - - ELM.

551 U. Americana, L. Common on rich intervales.

266. HUMULUS, L. - - - - - - - HOP.

552 H. LUPULUS, L. Cultivated. Scarcely wild.

267. CANNABIS, Tourn. - - - - - HEMP.

553 C. sativa, L. Spontaneous in a few places. Richibucto, *Fowler;* near Taborville Bridge, King's Co., *Brittain*, Herb.

268. URTICA, Tourn. - - - - - NETTLE.

554 U. gracilis, Ait. Rather common in waste places. Bass River, *Fowler*, Herb.; Salmon River (Victoria Co.), *Hay.*

555 U. DIOICA, L. Ballast, St. John, *Hay*, Herb.

556 U. URENS, L. Bass River, *Fowler;* St. John, *Hay*, Herb.; St. Andrew's, *Vroom.*

269. LAPORTEA, Gaudichaud. - WOOD-NETTLE.

557 L. Canadensis, Gaudichaud. Rich intervales, Kouchibouguac, Bass River, *Fowler;* Norton, *Hay*, Herb.

270. PILEA, Lind. - RICHWEED. CLEARWEED.

558 P. pumila, Gray. Odell's Grove at Fredericton, Norton, *Fowler, Hay;* Petitcodiac and Havelock, *Brittain;* a troublesome weed on grounds of C. E. Grosvenor at Canterbury, *Hay.*

LXIX. JUGLANDACEÆ.

271. JUGLANS, L. - - - - - - WALNUT.

559 J. cinerea, L. Rich woods along the St. John and its tributaries. Have not seen it in northern counties, *Fowler;* forming beautiful groves at Eel River, Woodstock and elsewhere on Upper St. John, Norton, *Hay*, Herb.

LXX. MYRICACEÆ.

272. MYRICA, L. - BAYBERRY. WAX-MYRTLE.

560 M. Gale, L. Wet places in barrens and along low shores of ponds and streams. Common.

561 M. cerifera, L. Sand beach on the sea shore, Kent and Northumberland, *Fowler;* Petitcodiac, *Brittain.*

562 M. asplenifolia, Endl. (Comptonia asplenifolia, Ait.) Abundant in dry gravelly ground, Kent, *Fowler;* Norton, McAdam Junction, *Hay*, Herb.

LXXI. CUPULIFERÆ.

273. BETULA, L. - - - - - - BIRCH.

563 B. lenta, L. Common forest tree.

564 B. lutea, Michx. f. Common forest tree in rich soil.

565 B. alba, L., var. populifolia, Spach. Common.

566 B. papyracea, Ait. Common in rich soil everywhere.

567 B. pumila, L. Swamps and bogs, Richibucto.

274. ALNUS, Gaertn. - - - - - - ALDER.

568 A. incana, Willd. Along streams everywhere.

569 A. viridis, DC. Common in damp soil. Richibucto, *Fowler;* Carleton, *Hay*, Herb.

275. OSTRYA, Scop. - HOP-HORNBEAM. LEVER-WOOD.

570 O. Virginica, Willd. Rather rare. Bass River, Fredericton.

276. CORYLUS, L. - - - - - HAZELNUT.

571 C. rostrata, Ait. Common along banks of streams.

277. QUERCUS, L. - - - - - - OAK.

572 Q. rubra, L. Rather common. Kent, Northumberland, York.

573 Q. macrocarpa, Michx. (Q. alba of former list.) Near residence of W. S. Butler, Esq., Grand Lake. Rare.

574 Q. coccinea, Wang., var. ambigua, Gray. Is said by Mr. Brittain to be quite common at Bellisle, King's Co. I have not seen it.

278. FAGUS, L. - - - - - - - BEECH.

575 F. ferruginea, Ait. Common forest tree.

LXII. SALICACEÆ.

279. SALIX, L. - - - - - . WILLOW.

576 S. humilis, Marshall. Dry barrens. Bass River, Kouchibouguac.

577 S. discolor, Muhl. Banks of streams and wet grounds. Common.

578 S. petiolarsis, Smith. Petitcodiac, *Brittain;* St. Stephen, *Vroom.*

579 S. cordata, Muhl. Bass River, *Fowler;* Petitcodiac, *Brittain;* Salmon River, *Wetmore.*

580 S. livida, Wahl., var. occidentalis, Gray. Very common.

581 S. VIMINALIS, L. Cultivated in a few places.

582 S. lucida, Muhl. Rather common. Kouchibouguac.

583 S. nigra, Marsh. Have only seen it at Harris Cove.

584 S. FRAGILIS, L. Commonly planted.

585 S. BABYLONICA, Tourn. Cultivated for ornament.

586 S. myrtilloides, L. In bogs, Richibucto.

587 S. pyrifolia, Anderss. Abundant in Gloucester, Northumberland, Kent Co.'s, also at Carleton, St. John Co. (Not in Gray's Manual.)

280. POPULUS, L. - - - POPLAR. ASPEN.

588 P. tremuloides, Michx. Common forest tree.

589 P. grandidentata, Michx. Rather common.

590 P. balsamifera, L. Not common. Kouchibouguac, Bass River. var. candicans, Gray. Planted for ornament.

LXXIII. EMPETRACEÆ.

281. EMPETRUM, L. - - - - CROWBERRY.

591 E. nigrum, L. Hillocks in bogs, common. Hanging over rocky banks some places along Bay Chaleur.

SUB-CLASS II. — GYMNOSPERMÆ.

LXXIV. CONIFERÆ.

282. THUJA, L. - - - - - - - CEDAR.

592 T. occidentalis, L. Common throughout the Province.

283. JUNIPERUS, L. - - - - JUNIPER.

593 J. communis, L. Dry pastures and barren hills. St. John, *Fowler;* King's, Charlotte, *Hay.*

594 J. Sabina, L., var. procumbens, Pursh. Sand beach, Eel River, Restigouche Co., *Fowler;* N. Head of Grand Manan, *Hay,* Herb.

284. TAXUS, Tourn. - - GROUND-HEMLOCK.

595 T. baccata, L., var. Canadensis, Gray. Common in Kent, *Fowler;* St. John, *Hay.*

285. PINUS, Tourn. - - - - - PINE.

596 P. Banksiana, Lambert. Abundant on dry burnt barrens in Kent and Northumberland, *Fowler;* "forms thick groves extending for miles about Petitcodiac and Anagance," *Vroom,* Bulletin II. 36.

597 P. resinosa, Ait. Abundant in many places in old forests.

598 P. Strobus, L. Our most valuable forest tree.

286. PICEA, Link. - - - - - SPRUCE.

599 P. alba, Link. (Abies alba, Michx.) Common throughout.

600 P. nigra, Link. (Abies nigra, Poir.) Common throughout.

287. TSUGA, Carr. - - - - - - HEMLOCK.

601 T. Canadensis, Endl. (Abies Canadensis, Michx.) In Kent, Northumberland, Gloucester and King's, forming large forests.

288. ABIES, Tourn. - - - - - - - FIR.

602 A. balsamea, Marshall. Common everywhere.

289. LARIX, Tourn. - - LARCH. HACMATAC.

603 L. Americana, Michx. Common throughout.

CLASS II.—ENDOGENOUS PLANTS.

LXXV. HYDROCHARIDACEÆ.

290. VALISNERIA, Micheli. - TAPE-GRASS. EEL-GRASS.

604 V. spiralis, L. In shallow water. St. Stephen, *Vroom.*

LXXVI. ORCHIDACEÆ.

291. MICROSTYLIS, Nutt. - ADDER'S-MOUTH.

605 M. ophioglossoides, Nutt. Several places in Kent, Fredericton; Eel River and Grand Lake, *Hay.*

606 M. monophyllos, Lind. Little Rocher, *Brittain, Vroom.* Have no specimen.

292. LIPARIS, L. - - - - TWAYBLADE.

607 L. Lœselii, Richard. Harris Cove, Lily Lake, *Fowler;* St. Stephen, Fredericton, *Vroom;* Grand Lake, Kennebeccasis, Eel River, *Hay.*

293. CALYPSO, Salisb. - - - - CALYPSO.

608 C. borealis, Salisb. Rare. "Collected at Somerset Vale, Bathurst, by J. Meehan, 1881; also a fine bunch from vicinity of Indiantown, as early as 1861, by one of Prof. C. F. Hartt's pupils." Many specimens found in Highland Park, near St. John, by G. U. Hay, 1882; also at Petit-

codiac by Mr. Vroom. Bulletin I. 22. Two specimens collected in Odell's Grove, Fredericton, in Herb. *Dr. Bailey.*

294. CORALLORHIZA, R. Brown. - CORAL-ROOT.

609 C. innata, R. Br. Scarce. Black River in Northumberland Co., Carleton, *Fowler*, Herb.; Andover, *Wetmore.*

610 C. multiflora, Nutt. Rather common in Kent Co., *Fowler;* St. John, *Hay*, Herb.

295. LISTERA, R. Brown. - - - TWAYBLADE.

611 L. cordata, R. Brown. Rare. Kouchibouguac, *Fowler;* Dorchester, *Hay*, Herb.

612 L. convallarioides, Hook. On the brink of a densely shaded brook near the Manse, Bass River, *Fowler;* Upper St. John and Madawaska River, *Hay*, Herb.; near Campbellton, *Chalmers.*

296. SPIRANTHES, L. - - LADIES' TRESSES.

613 S. latifolia, Torr. Titusville, *Brittain*, Herb.; Andover and Tobique River, *Hay, Wetmore;* Eel River, Carleton Co., *Hay;* North Mountain, *Vroom.*

614 S. Romanzoviana, Chamisso. Kouchibouguac, Richibucto, *Fowler;* Campbellton, and St. John and King's Co.'s, *Hay*, Herb.

615 S. gracilis, Bigel. Baie Verte, *A. I. Trueman*, Herb., Bulletin I. 22; Petitcodiac, *Brittain.*

297. GOODYERA, R. Brown. RATTLESNAKE-PLANTAIN.

616 G. repens, R. Brown. Sugar Loaf, Restigouche Co., and Bass River, *Fowler;* Long Lake, St. John Co., Upper St. John and Tobique, *Hay*, Herb.; St. Stephen, St. George, St. James', St. David's, *Vroom;* Tobique River, Clifton and Chipman, *Wetmore.*

617 G. pubescens, R. Br. Petitcodiac, *Brittain*, Herb.

298. ARETHUSA, L. - - - - ARETHUSA.

618 A. bulbosa, L. Scarce. Richibucto, Fredericton, *Fowler;* Norton, *Hay*, Herb.; Chipman, *Wetmore;* Musquash, St. John Co., *D. McL. Smith.*

299. CALOPOGON, R. Br. - - - CALOPOGON.

619 C. pulchellus, R. Br. Bogs. Richibucto, Kouchibouguac, Herb.; Tay's Mills, York Co., *Moser.*

300. POGONIA, Juss. - - - - - POGONIA.

620 P. ophioglossoides, Nutt. Scarce. Richibucto, Fredericton, *Fowler;* Clifton, abundant about Tomlinson Lake, Andover, *Wetmore;* Tay's Mills, York Co., *Moser.*

301. ORCHIS, L. - - - - - - ORCHIS.

621 O. spectabilis, L. Keswick, *Rev. Mr. McKiel;* Eel River, Carleton Co., *Hay*, Herb., Bulletin II. 30.

302. HABENARIA, Willd.

622 H. tridentata, Hook. Common in Kent, *Fowler;* St. John Co., *Hay.*

623 H. viridis, R. Brown, var. bracteata, Reichenbach. Taborville, Petitcodiac, Havelock, *Brittain*, Bulletin III. 32; Tobique Forks, *Wetmore.*

624 H. hyperborea, R. Br. Harris Cove, *Fowler;* Upper St. John, *Hay*, Herb.; Andover, *Wetmore.*

625 H. dilatata, Gray. Common. Kouchibouguac, Lily Lake, *Fowler;* Campbellton, Herb.; Tobique and Eel Rivers, *Hay;* Chipman, *Wetmore;* between Pabineau and Grand Falls on the Nepisiquit, *Dr. Bailey*, Can. Nat. 1864, p. 94.

626 H. obtusata, Richardson. Coal Branch, Kent Co., *Fowler;* Campbellton, *Chalmers;* Bald Mountain, Tobique, and St. John Co., *Hay*, Herb.

627 H. Hookeri, Torr. Kouchibouguac, Kingston, Kent Co., Grand Lake, Salmon River, *Fowler;* Petitcodiac, *Brittain*, Herb.

628 H. orbiculata, Torr. Bass River, *Fowler;* Loch Lomond, *Hay*, Herb.; Nepisiquit Lakes, Eel River, York Co., *Hay*, Bulletin II. 30; Clifton and Tobique River, *Wetmore.*

629 H. blephariglottis, Hook. Kouchibouguac, Maryland road near Fredericton, *Fowler;* Tay's Mills, York Co., *Moser;* Chipman, *Wetmore.*

630 H. lacera, R. Br. Kouchibouguac, *Fowler;* Petitcodiac and Hampton, *Brittain*, Herb.; common between Au Lac and Port Elgin, Bulletin III. 32.

631 H. psycodes, Gray. Common in wet meadows and bogs, Kent, *Fowler;* Norton, *Hay*, Herb.

632 H. fimbriata, R. Br. Rare. Bass River.

303. CYPRIPEDIUM, L. - { LADY'S SLIPPER. / MOCASSIN-FLOWER.

633 C. parviflorum, Salisb. Rare. Restigouche, *Fowler;* Tobique near Pokiok, *Dr. Bailey*, Can. Nat. 1864, p. 82, 83.

634 C. pubescens, Willd. Rather rare. Galloway, near Richibucto, *Fowler;* Edmundton, *Hay*, Herb.; common at Andover, *Wetmore.*

635 C. spectabile, Swartz. St. John Co., *Fowler*, *Hay*, Herb.; Restigouche, *Chalmers;* York and Carleton Co.'s, *Vroom;* Andover and Tobique River, *Wetmore.*

636 C. acaule, Ait. Rather common. Black River, Northumberland Co., Fredericton, *Fowler;* Lily Lake, *Hay*, Herb.; with white fls., St. Francis River, *Hay*, Bulletin II. 25.

LXXVII. IRIDACEÆ.

304. IRIS, L. - - - - - BLUE-FLAG.

637 I. versicolor, L. Abundant in wet places throughout the Province.

305. SISYRINCHIUM, L. . BLUE-EYED GRASS.

638 S. Bermudiana, L. Among grass everywhere.

LXXVIII. LILIACEÆ.

306. SMILAX, Tourn. - - CARRION-FLOWER.

639 S. herbacea, L. Rothesay, Fredericton, *Fowler;* rather common along St. John River, St. Hilaire, *Hay*, Herb., Bulletin II. 28.

307. POLYGONATUM, Tourn. - SOLOMON'S-SEAL.

640 P. biflorum, Ell. Fredericton, *Fowler;* St. Stephen, *Vroom*, Herb.; common at Salmon River and Andover, *Wetmore;* St. Francis and Upper St. John, *Hay*, Bulletin II. 25; Petitcodiac, *Brittain.*

308. STREPTOPUS, Michx. - TWISTED-STALK.

641 S. amplexifolius, DC. Kent and Northumberland, *Fowler;* Campbellton, *Hay*, Herb.; Lancaster, Herb. *Mrs. Heustis;* rather common at Salmon River, *Wetmore;* Tobique, *Dr. Bailey*, Can. Nat. 1864, p. 83, Bald Mountain, p. 87.

642 S. roseus, Michx. Very common in northern counties, *Fowler;* St. John and King's, *Hay*, Herb.

309. SMILACINA, Desf. - FALSE SOLOMON'S-SEAL.

643 S. racemosa, Desf. Bass River, *Fowler;* Welsford, *Hay*, Herb.; Nerepis Valley, Herb. *Mrs. Heustis.*

644 S. stellata, Desf. Moist banks, Kouchibouguac, *Fowler;* intervales, Salmon River, *Wetmore;* St. John River, Kennebeccasis, *Hay;* Petitcodiac, *Brittain;* Cedar Brook on Tobique, *Dr. Bailey*, Can. Nat. 1864, p. 86. Indian Falls, Nepisiquit, l. c. p. 92.

645 S. trifolia, Desf. Kouchibouguac and Hudson's Brook, Kent Co., *Fowler;* St. John Co., *Hay*, Herb.

646 S. bifolia, Ker. Very common throughout.

310. HEMEROCALLIS, L. - - - DAY-LILY.

647 H. FULVA, L. Occasionally escapes from gardens.

311. ALLIUM, L. - - - ONION. GARLIC.

648 A. tricoccum, Ait. Hampton and Petitcodiac, *Brittain*, Herb.; Eel River, Carleton Co., *Hay*, Bulletin II. 30.

649 A. Schœnoprasum, L. Pabineau Falls on Nepisiquit, and Rothesay, *Fowler;* Nauwigewauk, *Hay*, Herb.; very common along Upper St. John, Tobique and Eel Rivers, *Hay*, Bulletin II. 28; Indian Falls of Nepisiquit, *Dr. Bailey*, Can. Nat. 1864, p. 92; Hammond River, *D. McL. Smith.*

312. LILIUM, L. - - - - - - - LILY.

650 L. Canadense, L. Common on intervales and moist meadows. Herb.

313. ERYTHRONIUM, L. - DOG'S-TOOTH VIOLET.

651 E. Americanum, Smith. Have not noticed it in northern counties except a single plant near Hudson's Brook, Kent Co., abundant at Fredericton, *Fowler;* near St. John and at Norton on Kennebeccasis, *Hay*, Herb.; St. John, Herb. *Mrs. Heustis.*

314. TOFIELDIA, Huds. - - FALSE ASPHODEL.

652 T. glutinosa, Willd. Flat Lands, Restigouche, *Chalmers;* along Upper St. John, Eel and Tobique Rivers, *Hay*, Herb., Bulletin II. 27.

315. UVULARIA, L. - - - - BELLWORT.

653 U. sessilifolia, L. St. John and King's, *Hay*, Herb.; Lily Lake, Herb. *Mrs. Heustis;* Kouchibouguac and Grand Lake, *Fowler.*

316. CLINTONIA, Raf. - - - CLINTONIA.

654 C. borealis, Raf. St. John and King's, *Hay*, Herb.; St. John, Herb. *Mrs. Heustis;* Kouchibouguac, *Fowler;* along Tobique River, *Dr. Bailey*, Can. Nat. 1864, p. 83, 86. Bald Mt., p. 87, between Pabineau and Grand Falls, p. 94.

317. MEDEOLA, Gronov. - INDIAN CUCUMBER-ROOT.

655 M. Virginica, L. Kouchibouguac and Bass River, *Fowler;* St. John, *Hay*, Herb.

318. TRILLIUM, L. - THREE-LEAVED NIGHTSHADE.

656 T. erectum, L. Have not noticed it in the northern counties, though Chalmers sends it from Restigouche. Common about St. John, Loch Lomond, St. Croix River, *Fowler;* Upper St. John and tributaries, Norton, *Hay*, Herb.; St. John, Herb. *Mrs. Heustis;* Tobique near Pokiok, *Dr. Bailey*, Can. Nat 1864, p. 82. Bald Mt., p. 87.
var. alba from Eel River, Carleton Co., *W. T. L. Reed.*

657 T. cernuum, L. Gallows Hill near Napan, Northumberland Co., Bass River, Oxbow on Salmon River, *Fowler;* common on river flats at Andover and Salmon River, *Wetmore;* St. Francis and Kennebeccasis, Norton, *Hay*, Herb., Bulletin II. 25; Tobique at Two Brooks, *Dr. Bailey*, Can. Nat. 1864, p. 85.

658 T. erythrocarpum, Michx. Common, especially in recently burned grounds in northern counties, *Fowler;* St. John and King's Co., *Hay*, Herb.; St. John, Herb. *Mrs. Heustis.*

319. VERATRUM, Tourn. - { INDIAN POKE. / WHITE HELLEBORE.

659 V. viride, Ait. Rather common on intervales, Restigouche, Richibucto, St. John and Kennebeccasis Rivers.

320. ZYGADENUS, Michx. - - - ZYGADENE.

660 Z. glaucus, Nutt. Sand beach at Belledune.

LXXIX. PONTEDERIACEÆ.

321. PONTEDERIA, L. . - PICKEREL-WEED.

661 P. cordata, L. Kennebeccasis, near railway station, Fredericton, Grand Lake, *Fowler;* several places on the St. John River, Tobique Lake, Norton, *Hay*, Herb.; Herb. *Mrs. Heustis;* common in western parts of Charlotte Co., *Vroom;* Clifton Lake, *Wetmore.*

LXXX. XYRIDACEÆ.

322. XYRIS, L. - - - YELLOW-EYED GRASS,

662 X. flexuosa, Muhl., var. pusilla, Gray. Kendrick's Lake, near St. Stephen, *Vroom*, Herb.; Pointe de Bute, Westmorland, *A. I. Trueman.*

LXXXI. JUNCACEÆ.

323. JUNCUS, L. - - - RUSH. BOG-RUSH.

663 J. effusus, L. Abundant in marshy ground.
var. conglomeratus, Gray. Less common. Fredericton and elsewhere.

664 J. filiformis, L. Richibucto, Kouchibouguac, *Fowler;* Woodstock, *Hay*, Herb.; Salmon River, *Wetmore.*

665 J. Balticus, Dethard. Common on the coast of Kent.

666 J. Stygius, L. Peat bogs at Richibucto and Point Escuminac, *Fowler*, Herb.; Andover and Salmon River, *Wetmore;* near St. John, *Hay.*

667 J. bufonius, L. Very common throughout. *Hay*, Herb.

668 J. Gerardi, Loisel. Salt marshes at Kouchibouguasis, *Fowler;* St. John, *Hay*, Herb.

669 J. tenuis, Willd. Common. Hopewell Cape, *Hay*, Herb.; Andover, *Wetmore.*
var. secundus, Gray. Bass River, *Fowler;* Salmon River, *Wetmore.*

670 J. Greenii, Oakes & Tuckerm. Wet sandy places, Kouchibouguasis, Kent Co., *Fowler*, Herb.

671 J. pelocarpus, E. Meyer. Bocabec, *Wetmore;* Quaco, *Brittain.*

672 J. articulatus, L. Hampton, Petitcodiac, Baie Verte, *Brittain;* Clifton, *Wetmore.*

673 J. nodosus, L. Restigouche, *Fowler;* Campbellton, Herb.; Andover and Salmon River, *Wetmore;* Green River, Upper St. John, *Hay.*

674 J. Canadensis, J. Gay, var. longicaudatus, Engelm. Common in Kent.
var. coarctatus, Engelm. Rather common in Kent, *Fowler;* Bocabec and Chipman, *Wetmore.*

324. LUZULA, DC. - - - - WOOD-RUSH.

675 L. pilosa, Willd. Common in old fields.

676 L. parviflora, Desv., var. melanocarpa, Gray. Upper Gaspereaux and Blissville, Perth, Victoria Co., *Wetmore.*

677 L. campestris, DC. Dry fields. Common.

LXXXII. TYPHACEÆ.

325. TYPHA, Tourn. - - - CAT-TAIL. FLAG.

678 T. latifolia, L. Common in wet muddy places throughout.

326. SPARGANIUM, Tourn. - - BUR-REED.

679 S. simplex, Hudson. In wet places and borders of lakes. St. John Co., *Hay*, Herb.
var. Nuttallii, Engelm. In water, Bass River, *Fowler;* Welsford, *Hay*, Herb.
var. androcladum, Engelm. Norton, *Hay*, Herb.
var. angustifolium, Engelm. Salmon River, *Hay*, *Wetmore* Herb.; Kennebeccasis, Bass River, *Fowler.*

680 S. minimum, Bauhin. Campbellton, *Chalmers.*

LXXXIII. ARACEÆ.

327. ARISÆMA, Martius. - - INDIAN TURNIP.

681 A. triphyllum, Torr. Common. Bass River, Woodstock, *Fowler;* St. John and King's Co.'s, *Hay*, Herb.

328. CALLA, L. - - - CALLA. WATER ARUM.

682 C. palustris, L. In cold muddy places. Grand Falls, St. Francis River and Quispamsis, *Hay;* in Herb. *Mrs. Heustis;* Bulletin II. 32; Andover, Chipman, Clifton, *Wetmore;* Fredericton, Bathurst road N. of Miramichi, *Fowler.*

329. SYMPLOCARPUS, Salisb. - SKUNK-CABBAGE.

683 S. fœtidus, Salisb. Lake Utopia, *Vroom*, Herb.; Mr. G. F. Matthew reports it at Milkish, King's Co., and Dr. Duncan at Nigadoo River, Gloucester Co. "Near Episcopal Church, Lower Hammond River," *Brittain.*

330. ACORUS, L. - - SWEET-FLAG. CALAMUS.

684 A. Calamus, L. Common on borders of lakes and ponds. Kouchibouguac, *Fowler;* Kennebeccasis and Hopewell Cape, *Hay.*

LXXXIV. LEMNACEÆ.

331. LEMNA, L. - - - - - - DUCKWEED.

685 L. trisulca, L. Petitcodiac, *Brittain.*

686 L. minor, L. Petitcodiac, *Brittain.*

687 L. polyrrhiza, L. Sussex, *Brittain.*

LXXXV. ALISMACEÆ.

332. ALISMA, L. - - - WATER-PLANTAIN.

688 A. Plantago, L., var. Americanum, Gray. Common in wet places, Kent, *Fowler;* Campbellton and St. John, *Hay*, Herb.

333. SAGITTARIA, L. - - - ARROWHEAD.

689 S. variabilis, Engelm. Several forms or vars. of this extremely variable species occur. Common in water or soft mud.

690 S. calycina, Engelm., var. spongiosa, Engelm. Near the head of the tide in the Richibucto River, and at Rothesay, *Fowler*, Herb.; Tobique River, *Hay.*

691 S. graminea, Michx. In water, Rothesay, and in a small lake near Richibucto, *Fowler*, Herb.; Grand Lake and Upper St. John, *Hay;* Clifton, *Wetmore.*

LXXXVI. NAIADACEÆ.

334. TRIGLOCHIN, L. - - - ARROW-GRASS.

692 T. palustre, L. Rather rare. Belledune, *Fowler*; Carleton, *Hay*, Herb.; Andover, Tobique River, *Wetmore.*

693 T. maritimum, L. Common in salt marshes along the coast, *Fowler*; Carleton, *Hay*, Herb.

335. SCHEUCHZERIA, L.

694 S. palustris, L. Soft peat bogs. Richibucto, Fredericton, *Fowler*; Tay's Mills, York Co., *Moser*; St. Stephen, *Vroom*; McAdam Junction, *Hay.*

336. POTAMOGETON, Tourn. - - PONDWEED.

695 P. natans, L. In slow flowing water, Salmon River, Kent Co.

696 P. Claytonii, Tuckerman. Rather common. Hampton and Salmon River, *Fowler*; Norton, *Hay*, Herb.

697 P. Spirillus, Tuckerman. In the Kennebeccasis at Norton, *Fowler*; Lake Utopia and Salmon River, *Wetmore.*

698 P. hybridus, Michx. St. James and St. Stephen, *Vroom.*

699 P. rufescens, Schrader. St. Stephen, *Vroom.*

700 P. lonchites, Tuckerman. Tobique Lakes, *Hay. Fide* Prof. Macoun.

701 P. gramineus, L. In flowing water at Coal Branch, Kent Co., *Fowler*; Tobique River, *Hay*; Salmon River, *Wetmore.*

702 P. praelongus, Wulfen. Bass River, Kent Co.; Tobique Lake, *Hay.*

703 P. perfoliatus, L. Ponds and slow streams, Norton, *Hay*, Herb.

704 P. compressus, L. Still and slow flowing water, St. John.

705 P. obtusifolius, Mertens and Koch. Very rare. Little Rocher, *Brittain.*

706 P. pauciflorus, Pursh. Restigouche. The specimens are without fruit and therefore doubtful.

707 P. pusillus, L. Little Rocher, *Brittain.*
var. major, Fries. St. Stephen, *Vroom.*

708 P. pectinatus, L. Harris Cove, *Matthew;* Norton, *Fowler.*

709 P. Robbinsii, Oakes. Petitcodiac and Hampton, *Brittain,* Herb.; Tobique Lakes, *Hay.*

337. RUPPIA, L. - - - - DITCH-GRASS.

710 R. maritima, L. Growing under water in estuaries of rivers flowing into the Gulf.

338. ZANNICHELLIA, Micheli. - HORNED PONDWEED.

711 Z. palustris, L. Growing under water in streams rendered brackish by the tides. Richibucto, *Fowler;* Spurr's Cove, *Fowler, Hay,* Herb.

339. ZOSTERA, L. - EEL-GRASS. GRASS-WRACK.

712 Z. marina, L. Growing under water in shallow bogs along the Gulf coast.

340. NAIAS, L.

713 N. flexilis, Rostk. Potter's Lake, St. Stephen, *Vroom.*

LXXXVII. ERIOCAULONACEÆ.

341. ERIOCAULON, L. - - - PIPEWORT.

714 E. septangulare, With. Lily Lake, *Fowler;* Dark Lake, *Hay,* Herb.; Welsford, Herb. *Mrs. Heustis;* St. Stephen, *Vroom.*

LXXXVIII. CYPERACEÆ.

342. CYPERUS, L. - - - - GALINGALE.

715 C. diandrus, Torr. Fredericton, *Wm. Massie.*

716 C. phymatodes, Muhl. Sandy bank of Kennebeccasis, Norton, Fredericton, *Fowler, Vroom.*

343. DULICHIUM, Richard.

717 D. spathaceum, Pers. Very wet places. Kent, *Fowler;* Norton, *Hay*, Herb.

344. HELEOCHARIS, R. Brown. - SPIKE-RUSH.

718 H. Robbinsii, Oakes. Kendrick's Lake and Potter's Lake near St. Stephen, *Vroom*, Herb.

719 H. obtusa, Schultes. Muddy places. Common.

720 H. palustris, R. Br. Common, both the large form, which grows in water, and the smaller form in wet grassy places.

721 H. tenuis, Schultes. On a wet bank, Kouchibouguac, *Fowler;* Tobique Lakes, *Hay;* Petitcodiac and Hampton, *Brittain.*

722 H. acicularis, R. Br. Muddy shores and ditches, common, *Fowler;* Spurr's Cove, *Hay*, Herb.

723 H. pygmæa, Torr. Brackish marshes and shores, Kent Co.

345. SCIRPUS, L. - - BULRUSH. CLUBRUSH.

724 S. cæspitosus, L. Richibucto, *Fowler;* Lily Lake, *Hay*, Herb.

725 S. Clintonii, Gray. Madawaska, *Hay;* Digdeguash, St. Patrick, *Vroom* Herb.

726 S. subterminalis, Torr. Petitcodiac, Quaco, *Brittain*, Herb.

727 S. pungens, Vahl. Common on salt or brackish shores.

728 S. validus, Vahl. In still fresh water. Common.

729 S. maritimus, L. Salt marshes. Common.

730 S. microcarpus, Presl. Common. Kent, *Fowler;* Campbellton, *Hay*, Herb.

731 S. atrovirens, Muhl. Wet meadows and bogs. Norton, Fredericton, *Fowler;* Grand Manan, *Hay*, Herb.

732 S. rufus, (Blysmus rufus, L.) Marshy ground at mouth of Eel River, Restigouche Co., Herb.

346. ERIOPHORUM, L. - - - COTTON-GRASS.

733 E. alpinum, L. Grand Falls of Nepisiquit and near St. John, *Fowler;* St. Francis and Lily Lake, *Hay*, Herb.; shaded hillside at Andover, *Wetmore.*

734 E. vaginatum, L. Common in bogs. Kent, Carleton, *Fowler*, Herb.; Lancaster, *Mrs. Heustis.*

735 E. russeolum, Fries. Bog near Richibucto, *Fowler;* Cape Bald, Port Elgin, Hillsborough, Cape Enrage, *Brittain;* Chipman, *Wetmore.*

736 E. Virginicum, L. Common in bogs in northern counties, *Fowler;* Lily Lake, *Hay*, Herb.

737 E. polystachyon, L. Common throughout the Province.

738 E. gracile, Koch. Rather common. Bass River, *Fowler;* Lancaster, *Hay*, Herb.

347. RHYNCHOSPORA, Vahl. - - BEAK-RUSH.

739 R. fusca, Roem & Schultes. Near Hampton, *Brittain*, Herb.

740 R. alba, Vahl. Peat bogs. Near Richibucto, *Fowler;* border of Clifton Lake, *Wetmore.*

348. CAREX, L. - - - - - - - SEDGE.

741 C. gynocrates, Wormskiold. Restigouche, *Chalmers;* Arthurette, *Wetmore.*

742 C. pauciflora, Lightfoot. Bog near St. John, *Fowler;* mouth of Madawaska, *Hay*, Herb.; Chipman, *Wetmore.*

743 C. polytrichoides, Muhl. Rather common. Bass River, *Fowler;* Spurr's Cove, *Hay*, Herb.

744 C. bromoides, Schk. Petitcodiac, Pollet River and Portage, *Brittain;* Arthurette and Salmon River, *Wetmore.*

745 C. teretiuscula, Good. Swamps. Kouchibouguac, *Fowler;* Salmon River, *Wetmore.*

746 C. vulpinoidea, Michx. Near St. John, *Matthew.*

747 C. stipata. Muhl. Common. Bass River, *Fowler;* Norton, *Hay*, Herb.

748 C. rosea, Schk. Petitcodiac and Portage, *Brittain.*

749 C. arcta, Boot. Petitcodiac and Hampton, *Brittain.* Determined by Prof. Macoun.

750 C. tenella, Schk. Damp shady grounds, Bass River.

751 C. trisperma, Dew. Swamps and woods. Bass River, *Fowler;* Carleton, *Hay*, Herb.

752 C. tenuiflora, Wahl. Tobique River, *Hay;* Petitcodiac, *Brittain.*

753 C. canescens, L. Common. Bass River, *Fowler;* Lily Lake, *Hay*, Herb.

var. vitilis, Gray. Common. Bass River, *Fowler;* Carleton, *Hay*, Herb.; rather common at Salmon River, *Wetmore.*

754 C. Norvegica, Schk. Marshy ground, Shediac, *Brittain.* Determined by Prof. Macoun.

755 C. Deweyana, Schw. Bass River, *Fowler;* Petitcodiac, *Brittain*, Herb.; Gaspereaux River, Salmon River, *Wetmore;* Aroostook Falls, *Hay.*

756 C. sterilis, Willd. Petitcodiac, *Brittain.* Determined by Prof. Macoun.

757 C. stellulata, L. Petitcodiac, *Brittain.*
var. scirpoides, Gray. Common in Kent, *Fowler;* Carleton, *Hay*, Herb.; Petitcodiac, *Brittain.*
var. angustata, Gray. Wet ground, Bass River.

758 C. scoparia, Schk. Very common. Bass River, *Fowler;* Campbellton, Herb.
var. minor, Boot. Sent from Restigouche by *Chalmers.*

759 C. lagopodioides, Schk. Bass River, *Fowler*, Herb.; not rare at Salmon River, *Wetmore.*
var. moniliformis, Boot. Bass River.

760 C. cristata, Schw. Tobique River, *Hay.*

761 C. adusta, Boot. Richibucto River, Bass River, *Fowler;* Nepisiquit Lakes and Lower Tobique, *Hay* (the var. glomerata); Petitcodiac, *Brittain*, Herb. There are two forms of this Carex as determined by Col. S. Olney, one of which he identifies as C. albolutescens, Schw., var. glomerata, Olney, the other as var. sparsiflora, Olney. Both are found in Kent Co.

762 C. fœnea, Willd., var. sabulonum, Gray. (C. silicea, Olney.) Sand beaches on the coast. Kouchibouguac, *Fowler*, Herb.

763 C. straminea, Schk., var. typica, Gray. Kouchibouguasis, *Fowler*, Herb.; McAdam Junction, *Hay;* Fredericton Junction, *Fowler.*
var. tenera, Gray. Kent Co. Rather rare.
var. festucacea, Gray. St. John, *Hay*, *Fowler*, Herb.; Digdeguash, *Hay.*

764 C. vulgaris, Fries. Bass River, Carleton, *Fowler*, Herb.

765 C. aquatilis, Wahl. Kent Co., St. John Co., Harris Cove.

766 C. torta, Boot. Salmon Creek and Gaspereaux River, *Wetmore;* Petitcodiac, *Brittain.*

767 C. aperta, Boot. Near Richibucto, *Fowler;* rather common at Salmon River, *Wetmore.*

768 C. stricta, Lam. Richibucto, Fredericton, *Fowler;* Norton, *Hay*, Herb.; Salmon River, *Wetmore.*
var. strictior, Gray. Tobique and Salmon Rivers, *Wetmore.*

769 C. lenticularis, Michx. Bass River, *Fowler*, Herb.; not rare at Salmon River, *Wetmore;* St. Stephen, *Vroom.*

770 C. salina, Wahl. Salt marsh at Molus River, Kent Co. Only found it once.

771 C. maritima, Vahl. Salt marshes, Molus River, *Fowler;* Lancaster, *Hay*, Herb.

772 C. crinita, Lam. Along rills and brooks. Common. Kouchibouguac, *Fowler;* Norton, *Hay*, Herb.

773 C. gynandra, Schw. Tobique River, *Hay* and *Chalmers.*

774 C. limosa, L. Peat bogs, Richibucto, Bass River, *Fowler*, Herb.

775 C. irrigua, Smith. Peat bogs, Kent Co., *Fowler;* Lily Lake, *Hay*, Herb.

776 C. Buxbaumii, Wahl. Restigouche near mouth of Upsalquitch, *Fowler;* Lily Lake, *Hay*, Herb.

777 C. atrata, L. Madawaska River, *Hay;* Tobique, *Wetmore.*

778 C. aurea, Nutt. Near St. John, *Fowler;* Kennebeccasis Island, *Hay*, Herb.; Andover and Minister's Face, *Wetmore.*

779 C. panicea, L. Wet meadows, Bass River.

780 C. granularis, Muhl. Wet grounds, Bass River, *Fowler;* College grounds, Fredericton, *Wetmore;* Sussex, *Brittain.*

781 C. pallescens, L., var. undulata, Gray. Bass River, *Fowler;* Aroostook Falls, Carleton, *Hay*, Herb.

782 C. gracillima, Schw. Bass River, *Fowler;* Tobique, *Hay.*

783 C. laxiflora, Lam. Several vars. and forms of this exceedingly variable plant are found, but they have not been worked out. More material is required.

784 C. oligocarpa, Schk. Bellisle and Petitcodiac, *Brittain.*

785 C. pedunculata, Muhl. Petitcodiac, Havelock, *Brittain;* Red Bank and Salmon River, *Wetmore;* St. Stephen, *Vroom;* Nashwaaksis, *Moser.*

786 C. umbellata, Schk. Rocky ground near the Manse at Blackville, *Fowler;* Red Bank, *Wetmore;* Petitcodiac, *Brittain.*

787 C. Novæ-Angliæ, Schw. St. John, *Fowler*, *Hay*, Herb.; Petitcodiac, *Brittain;* Chipman, *Wetmore.*

788 C. Emmonsii, Dew. Dry bank near Manse, Blackville, *Fowler;* Petitcodiac, *Brittain;* Salmon River, *Wetmore.*

789 C. Pennsylvanica, Lam. Dry knolls in woods between Richibucto and Molus River, *Fowler;* not rare at Salmon River on dry banks, *Wetmore.*

790 C. varia, Muhl. Dry knolls in woods, Bass River, Fredericton Junction, *Fowler;* rather common at Salmon River, *Wetmore.*

791 C. pubescens, Muhl. Petitcodiac, *Brittain.*

792 C. scabrata, Schw. Wet grounds, Bass River, *Fowler;* Norton, *Hay;* Campbellton, Herb.

793 C. arctata, Boot. Margin of dry woods beside Manse, Bass River, *Fowler*, Herb.; rather common at Salmon River, *Wetmore;* St. John, *Hay;* various places in Westmorland, *Brittain*, Bulletin III. 36.

794 C. debilis, Michx. Bass River, Fredericton, *Fowler;* Carleton, *Hay*, Herb.; common at Salmon River, *Wetmore.*

795 C. capillaris, L. Bass River, *Fowler;* Edmundton, *Hay*, Herb.; Kennebeccasis Bay, *Wetmore.*

796 C. flexilis, Rudge. Near Weldford Station, *Fowler*, Herb.; Red Bank Creek and Tobique River, *Wetmore;* common at Petitcodiac, *Brittain.*

797 C. flava, L. Common in damp meadows. St. John, *Matthew;* Bass River, *Fowler*, Herb.

798 C. Œderi, Ehrh. Rothesay, on shore, *Fowler;* Carleton, Hay, Herb.; Tobique, *Wetmore.*

799 C. filiformis, L. Lake Elsie near Richibucto, *Fowler*, Herb.; Arthurette, *Wetmore.*

800 C. lanuginosa, Michx. Moncton and Petitcodiac, *Brittain*, Herb.; Edmundton, *Hay.*

801 C. Houghtonii, Torr. Dry grassy places, Coal Branch, Kent Co., *Fowler*, Herb.; Tobique River at Pokiok, *Wetmore.*

802 C. riparia, Curtis. In water near Weldford Station.

803 C. Pseudo-Cyperus, L. Frequent along borders of lakes and in ditches in Kent Co., *Fowler;* Long Lake, St. John Co., and McAdam Junction, *Hay.*

804 C. hystricina, Willd. Lily Lake, *Fowler;* Welsford, *Hay*, Herb.

805 C. tentaculata, Muhl. Abundant along the shore near Bass River Bridge.

806 C. intumescens, Rudge. Rather common in Kent, *Fowler;* King's Co. and on St. John River, *Hay*, Herb.

807 C. lupulina, Muhl. Hampton and Norton, *Fowler*, *Hay*, Herb.

808 C. folliculata, L. Norton, *Fowler*, *Hay*, Herb.; St. Martin's, *Brittain*, Herb.

809 C. rostrata, Michx. Bog at Rothesay, *Fowler;* Lily Lake, *Hay*, Herb.; border of Clifton Lake, *Wetmore.*

810 C. retrorsa, Schw. Common in wet places at Bass River, *Fowler*, Herb.

811 C. utriculata, Boot. Swampy places, Bass River, Fredericton, *Fowler;* Norton, *Hay*, Herb.

812 C. Vaseyi, Dew. Borders of Lake Elsie near Richibucto.

813 C. monile, Tuck. Wet places at Bass River and Fredericton, *Fowler;* Salmon River, *Hay.*

814 C. Tuckermani, Boot. Wet bank of Bass River near Bridge.

815 C. oligosperma, Michx. In a peat bog near Richibucto, *Fowler*, Herb.; Madawaska, *Hay.*

816 C. miliaris, Michx. Wet shores at Rothesay and on opposite side of river, *Fowler*, Herb.

817 C. longirostris, Torr. Andover, *Wetmore;* Sussex, *Brittain.*

LXXXIX. GRAMINEÆ.

349. PANICUM, L. - - - - PANIC-GRASS.

818 P. GLABRUM, Gaudin. Fredericton, on railway track, *Fowler;* Nashwaaksis, *Moser;* Hampton, *Brittain*, Herb.; Salmon River, *Wetmore.*

819 P. capillare, L. A weed in gardens and cultivated grounds, Bass River.

820 P. dichotomum, L. In dry fields and woods. Common in Kent.

350. OPLISMENUS, Beauv. - COCK-SPUR GRASS.

821 O. CRUS-GALLI, Kunth. (Panicum Crus-galli, L.) A very variable and troublesome weed about barnyards and gardens.

351. SETARIA, Beauv. - BRISTLY FOX-TAIL GRASS.

822 S. VERTICILLATA, Beauv. Reported by *Hay* on ballast, St. John.

823 S. GLAUCA, Beauv. A common weed in gardens and manured grounds, Bass River.

824 S. VIRIDIS, Beauv. Gardens and cultivated grounds, Bass River.

352. SPARTINA, Schreb. - CORD OR MARSH GRASS.

825 S. cynosuroides, Willd. Marshes, especially near the coast, Kent Co.

826 S. juncea, Willd. Salt marshes, Kouchibouguac, Richibucto.

827 S. stricta, Roth., var. alterniflora, Gray. Salt marshes, Richibucto.

353. ZIZANIA, Gronov. - WATER OR INDIAN-RICE.

828 Z. aquatica, L. Abundant in water at Hampton and other places in King's Co., *Brittain*; not rare at Salmon River, *Wetmore.*

354. LEERSIA, Solander. - - RICE CUT-GRASS.

829 L. oryzoides, Swartz. Wet banks of streams, Bass River.

355. ANDROPOGON, L. - - - BEARD-GRASS.

830 A. scoparius, Michx. Goat Island in Grand Lake.

356. PHALARIS, L. - - - CANARY-GRASS.

831 P. CANARIENSIS, L. Spreading from ballast at St. John.

357. ANTHOXANTHUM, L. - SWEET VERNAL-GRASS.

832 A. ODORATUM, L. Common in grass fields and pastures. Bass River.

358. HIEROCHLOE, Gmelin. - - HOLY-GRASS.

833 H. borealis, Roem & Schultes. Molus River, Richibucto and elsewhere in Kent Co.

359. ALOPECURUS, L. - - - FOXTAIL-GRASS.

834 A. geniculatus, L. Wet places. Carleton.

835 A. aristulatus, Michx. Wet places. Bass River.

360. STIPA, L. - - - - FEATHER-GRASS.

836 S. Richardsonii, Link. Petitcodiac, *Brittain.*

361. ORYZOPSIS, Michx. - - MOUNTAIN RICE.

837 O. asperifolia, Michx. Fredericton Junction and Port Elgin, *Fowler*; Petitcodiac, *Brittain*; common at Salmon River in blueberry barrens, *Wetmore.*

362. MILIUM, L. - - - - MILLET-GRASS.

838 M. effusum, L. Richmond, Carleton Co., *Vroom.*

363. MUEHLENBERGIA, Schreb. DROP-SEED GRASS.

839 M. glomerata, Trin. Weldford, Kent Co., banks of Kennebeccasis.

840 M. Mexicana, Trin. Fredericton, *Fowler;* Petitcodiac, *Brittain*, Herb.

841 M. sylvatica, Torr. & Gr. Low rocky places, Fredericton, *Fowler;* Bellisle, King's Co., *Brittain.*

364. BRACHYELYTRUM, Beauv.

842 B. aristatum, Beauv. Rocky woods, Molus River, Kent Co.

365. PHLEUM, L. - TIMOTHY. HERD'S-GRASS.

843 P. PRATENSE, L. Cultivated for hay.

366. AGROSTIS, L. - - - - BENT-GRASS.

844 A. scabra, Willd. Common throughout.

845 A. canina, L. Molus River, Kent Co., in dry barrens.

846 A. vulgaris, L. Abundant in old or dry fields.

847 A. alba, L. In damp grassy ground, Bass River.

367. CINNA, L. - - - WOOD REED-GRASS.

848 C. arundinacea, L., var. pendula, Gray. In deep shady places, Molus River, Bass River.

368. DEYEUXIA, Clarion. - REED BENT-GRASS.

849 D. Canadensis, (Calamagrostis Canadensis, Beauv.) The most abundant grass in wild meadows.

850 D. stricta, (Calamagrostis stricta, Trin.) Shediac, *Brittain.*

369. AMMOPHILA, Host. - - SEA SAND-REED.

851 A. arenaria, Host. (Calamagrostis arenaria, Roth.) St. John, *Hay;* Kouchibouguac, *Fowler.*

370. DESCHAMPSIA, Beauv. - - HAIR-GRASS.

852 D. flexuosa (Aira flexuosa, L.) On rocks near the mouth of the Kennebeccasis.

853 D. cæspitosa (Aira cæspitosa, L.) Kennebeccasis, Tabusintac on the Bathurst road, Restigouche.

371. TRISETUM, Persoon.

854 T. subspicatum, Beauv., var. molle, Gray. On rocky banks, Restigouche, *Fowler;* Upper Gaspereaux, *Wetmore;* Upper St. John, *Hay.*

372. AVENA, L. - - - - - - - OAT.

855 A. striata, Michx. Bass River, Tabusintac on Bathurst road, *Fowler;* Upper St. John, *Hay;* Petitcodiac, *Brittain,* Bulletin II. 32.

373. DANTHONIA, DC. - - WILD OAT-GRASS.

856 D. spicata, Beauv. Dry barren commons. Bass River.

374. PHRAGMITES, Trin. - - - - REED.

857 P. communis, Trin. Restigouche, *Chalmers;* St. Stepen *Vroom;* Sackville, Herb. *Mrs. Heustis.*

375. EATONIA, Raf.

858 E. Pennsylvanica, Gray. Scarce. Restigouche, Kennebeccasis.

376. DACTYLIS, L. - - - ORCHARD-GRASS.

859 D. GLOMERATA, L. Fields and yards. Bass River.

377. POA, L. - MEADOW-GRASS. SPEAR-GRASS.

860 P. annua, L. A troublesome weed in gardens and cultivated grounds.

861 P. compressa, L. Harvey, York Co., Fredericton Junction, St. John, *Fowler;* Bellisle, *Brittain.*

862 P. cæsia, Smith. Taborville, King's Co., *Brittain.*

863 P. serotina, Ehrh. Along brooks in damp fields, Bass River, *Fowler;* Hampton, *Brittain.*

864 P. pratensis, L. Bass River, *Fowler;* common about Petitcodiac, *Brittain.*

865 P. TRIVIALIS, L. Introduced in ballast at Richibucto.

866 P. debilis, Torr. Petitcodiac, *Brittain.*

378. GRAPHEPHORUM, Desv.

867 G. melicoides, Beauv. Petitcodiac and Titusville, *Brittain,* Herb.

379. GLYCERIA, R. Brown. - - MANNA-GRASS.

868 G. Canadensis, Trin. Common in bogs and very wet places.

869 G. elongata, Trin. Bass River, *Fowler;* Salmon River, *Wetmore.*

870 G. obtusa, Trin. St. Stephen, *Vroom.*

871 G. nervata, Trin. In damp grounds and meadows, Bass River, St. John.

872 G. pallida, Trin. In water, Petitcodiac, *Brittain.*

873 G. aquatica, Smith. In water and very wet places, Bass River.

874 G. fluitans, R. Brown. In shallow water, Bass River; St. John.

875 G. maritima, Wahl. Frequent on sea coast of Kent.

876 G. distans, Wahl. Salt marshes, Bathurst, St. John.

380. FESTUCA, L. - - - FESCUE-GRASS.

877 F. ovina, L., var. duriuscula, Gray. Scarce. Richibucto, *Fowler;* Moncton and Shediac, *Brittain.*

878 F. ELATIOR, L., var. PRATENSIS, Gray. In fields, Fredericton.

879 F. nutans, Willd. Lower Norton, *Brittain.* Have no specimen.

381. BROMUS, L. - - - - BROME-GRASS.

880 B. SECALINUS, L. Rare in wheat fields, Bass River.

881 B. RACEMOSUS, L. Among wheat, Bass River.

882 B. ciliatus, L. On intervales, Bass River, *Fowler;* Salmon River, *Wetmore.*

382. LOLIUM, L. - - DARNEL. RYE-GRASS.

883 L. PERENNE, L. Near railway depot, Carleton, *Hay*. No specimen.

884 L. TEMULENTUM, L. Near railway depot, Carleton, *Hay*. Almost the only noxious grass known. No specimen.

383. TRITICUM, L. - - - - - - WHEAT.

885 T. repens, L. A very troublesome weed on sandy soil. Varies greatly, especially on the sea coast.

886 T. caninum, L. On intervales, Coal Branch, Kent Co.

384. HORDEUM, L. - BARLEY. SQUIRREL-TAIL GRASS.

887 H. jubatum, L. Sandy soil along the Gulf shore.

385. ELYMUS, L. - LYME-GRASS. WILD-RYE.

888 E. Virginicus, L. On intervales, Hampton, Coal Branch.

889 E. Canadensis, L. University Herb. Sussex and Petitcodiac, *Brittain;* Eel River, Carleton Co., *Hay*.

890 E. mollis, Trin. Sand beaches, Kouchibouguac, *Fowler;* Restigouche, *Chalmers*.

386. ASPRELLA, Willd. - BOTTLE-BRUSH GRASS.

891 A. Hystrix, Willd. (Gymnostrichum Hystrix, Schreb.) Eel River, Carleton Co., *Hay*.

CRYPTOGAMIA.

CLASS III.—ACROGENOUS CRYPTOGAMS.

XC. EQUISETACEÆ.

387. EQUISETUM, L. - HORSETAIL. SCOURING RUSH.

892 E. arvense, L. Very common in damp soil.

893 E. pratense, Ehrh. Restigouche River, *Chalmers*.

894 E. sylvaticum, L. Very common throughout.

895 E. limosum, L. Rather common. Kent, *Fowler;* Tobique Lakes, Carleton, *Hay*, Herb.; Nepisiquit Lakes, *Bailey*, Can. Nat. 1864, p. 90.

896 E. hyemale, L. Rather rare. Bass River, *Fowler;* Drummond, Victoria Co., *Hay.*

897 E. scirpoides, Michx. Common about River Charlo and Point Le Nim, *Fowler*, Herb.

XCI. FILICES.

388. POLYPODIUM, L. - - - POLYPODY.

898 P. vulgare, L. Common in clefts of rocks near St. John. In the northern counties I have only seen it at one spot at Bass River, *Fowler;* Island in Nictau Lake, *Hay.*

389. ADIANTUM, L. - - - - MAIDENHAIR.

899 A. pedatum, L. Upper Restigouche and Upper St. John, Keswick Ridge, *Fowler;* Andover, *Hay*, Herb., Bulletin II. 30; Moose Mountain, Carleton Co., *Dr. Bailey;* Daley's Woods near Woodstock, *Hay.*

390 PTERIS, L. - - - BRAKE OR BRACKEN.

900 P. aquilina, L. Our most abundant Fern, everywhere.

391. PELLÆA, Link. - - - CLIFF-BRAKE.

901 P. gracilis, Hook. Cold damp clefts of densely shaded rocks. Morris Rock, Restigouche, Grand Falls, St. John, *Fowler;* Woodstock and Madawaska, *Hay.*

392. ASPLENIUM, L. - - - SPLEENWORT.

902 A. viride, Hudson. Clefts of rocks, Tattagouche Falls, Gloucester Co., Green Head near St. John, and Drury's Cove, *Fowler;* found at several stations about St. John, *Hay*, Herb.

903 A. thelypteroides, Michx. Rich shady woods, Bass River, *Fowler;* Fredericton, *Vroom*, Herb.; Salmon River (Victoria Co.) and Woodstock, *Hay.*

904 A. Filix-fœmina, Bernh. Very common throughout.

393. SCOLOPENDRIUM, Smith. - HART'S TONGUE.

905 S. vulgare, Smith. Near Woodstock, James Sutton, 1881, Herb. Presented to Herb. by Peter Jack, Esq, of Halifax, Bulletin II. 30.

394. PHEGOPTERIS, Fee. - - BEECH-FERN.

906 P. polypodioides, Fee. Common throughout. Carleton, *Hay*, Herb.

907 P. Dryopteris, Fee. Common throughout. Carleton, *Hay*, Herb.

395. ASPIDIUM, Swartz. - SHIELD-FERN. WOOD-FERN.

908 A. Thelypteris, Swartz. In wet places, Bass River, *Fowler;* Green Head, Herb.

909 A. Noveboracense, Swartz. Rather common. Kouchibouguac, Bass River, *Fowler;* Lily Lake, *Hay*, Herb.

910 A. fragans, Swartz. Have only found it in clefts of rocks at the railway tunnel in Restigouche. Said to be found near Dalhousie.

911 A. spinulosum, Swartz, var. intermedium, Eaton. Our common form found everywhere.

var. dilatatum, Eaton. Not common. Bass River, *Fowler;* St. John, *Hay*, Herb.

912 A. cristatum, Swartz. Scarce. Bass River, Green Head, *Fowler*, *Hay*, Herb.; Andover and Upper Gaspereaux, *Wetmore.*

913 A. Goldianum, Hook. Near Woodstock. Presented to Herb. by Mr. Peter Jack, Herb., Bulletin II. 31.

914 A. Filix-mas, Swartz. Keswick Ridge, *Moser*, *Hay*, Herb.; Daley's wood, Richmond, *Hay.*

915 A. marginale, Swartz. Rather common. Bass River, *Fowler;* Gondola Point, *Hay*, Herb.; St. Stephen, *Vroom.*

916 A. acrostichoides, Swartz. In the northern counties I have only noticed a single tuft near Molus River, Kent Co., *Fowler;* Upper Tobique, common near St. John, Kennebeccasis, *Hay*, Herb.; Mosquito Cove, Herb. *Mrs. Heustis;* Andover, common at Salmon River, *Wetmore.*

917 A. aculeatum, Swartz, var. Braunii, Koch. Not rare. Sugar Loaf in Restigouche, Odell's Grove, Fredericton, *Fowler*, *Moser*, Herb.; St. Francis River, Andover and Salmon River, *Hay*, *Wetmore*, Bulletin II. 25; Campbellton, *Chalmers*, Herb.

396. CYSTOPTERIS, Bernhardi. - BLADDER-FERN.

918 C. bulbifera, Bernh. Damp shaded ravines, Restigouche, St. John, *Fowler;* very abundant about Lower St. John, Coldbrook, *Hay*, Herb.

919 C. fragilis, Bernh. Rather common. Coal Branch, Kent Co., *Fowler;* Campbellton, Herb.; St. John and tributaries, *Hay;* Fredericton, *Vroom.*

397. STRUTHIOPTERIS, Willd. - OSTRICH-FERN.

920 S. Germanica, Willd. Common in rich alluvial soil, Kent Co., *Fowler;* very abundant on low grounds of Tobique, mouth of St. Francis, *Hay*, Bulletin II. 25; on Tobique River, *Dr. Bailey*, Can. Nat. 1864, p. 83.

398. ONOCLEA, L. - - - SENSITIVE-FERN.

921 O. sensibilis, L. Rather common in northern counties, *Fowler;* common on St. John and tributaries, Campbellton, *Hay*, Herb.; along Tobique River, *Dr. Bailey*, Can. Nat. 1864, p. 83, 85.

var. obtusilobata, Torr. Richibucto, *Fowler;* Havelock, King's Co., *Brittain.*

399. WOODSIA, R. Brown. - - - WOODSIA.

922 W. Ilvensis, R. Br. Restigouche on Sugar Loaf and at mouth of Upsalquitch, *Fowler;* St. Stephen, *Vroom;* found at Keswick, Nashwaaksis and near Green Head, St. John, *Hay;* in Herb. *Mrs. Heustis;* Minister's Face, Kennebeccasis, Bulletin II. 29; very abundant about Lower Tobique, *Hay.*

923 W. hyperborea, R. Br. Rare. At tunnel in Restigouche, *Fowler;* Aroostook Falls, *Hay* and *Wetmore*, Bulletin II. 29, Herb.; Grand Falls, *Peter Jack.* This fern was given as W. glabella in former list through a mistake in copying the label.

400. DICKSONIA, L'Her. - - - DICKSONIA.

924 D. punctilobula, Kunze. Very common in pastures, roadsides and open woods.

401. OSMUNDA, L. - - - FLOWERING-FERN.

925 O. regalis, L. Swamps and wet places. Bass River, Fredericton, *Fowler;* Upper Tobique and Campbellton, *Hay*, Herb.; St. John, Herb. *Mrs. Heustis;* Tobique, *Dr. Bailey*, Can. Nat. 1864, p. 83.

926 O. Claytoniana, L. Very common throughout. Lancaster, *Hay*, Herb.

927 O. cinnamomea, L. Very common in swamps in northern counties, *Fowler;* Campbellton, *Hay*, Herb.

var. frondosa, Gray. Beautiful specimens showing every step of the change from the common sterile form of frond to forms having several of the upper pinnæ completely fertile were once found by the writer at Molus River, Kent Co.

402. BOTRYCHIUM, Swartz. - - MOONWORT.

928 B. lanceolatum, Augstroem. Bass River near Manse, Fredericton, at Salamanca, *Fowler*, *Vroom*, Herb.; Kennebeccasis, *Hay*.

929 B. matricariæfolium, A. Br. Petitcodiac, St. Martin's, *Brittain*, Herb. Reported from near Dalhousie.

930 B. Virginicum, Swartz. Rather common. Bass River, *Fowler;* Eel River, Victoria Co., *Hay*, Herb.; St. John, Herb. *Mrs. Heustis;* on dry rocky heights at the mouth of the Upsalquitch is a reduced form only a few inches high, B. gracile, Pursh.

931 B. lunarioides, Swartz. Rather common. Bass River, Miramichi, Fredericton.

932 B. simplex, Hitchcock. Is said to be found near Dalhousie, but the writer has not seen it.

403. OPHIOGLOSSUM, L. - ADDER'S-TONGUE.

933 O. vulgatum, L. Hopewell and Cape Enrage, *Brittain*, Herb.

XCII. LYCOPODIACEÆ.

404. LYCOPODIUM.

934 L. lucidulum, Michx. Common in Kent, *Fowler;* Brookville, *Hay*, Herb.

935 L. Selago, L. Among grass on Carleton Heights, *Fowler*, Herb.

936 L. inundatum, L. Bass River and several places in Kent, *Fowler*, Herb.; not rare at Salmon River, *Wetmore*.

937 L. annotinum, L. In dry woods, common. *Fowler*, Herb.

938 L. dendroideum, Michx. Rather common. Bass River, *Fowler*, Herb.

939 L. clavatum, L. In dry woods, common. Bass River, *Fowler*, Herb.

940 L. complanatum, L. In dry woods. Common in Kent, *Fowler;* Campbellton, Herb.

405. SELAGINELLA, Beauv.

941 S. rupestris, Spreng. Keswick, *Burnett*, 1881. Herb.

406. ISOETES, L. - - - - QUILLWORT.

942 I. echinospora, Durieu, var. Braunii, Engelm. Rather common in Charlotte Co., *Vroom*.

APPENDIX.

List of Plants, mostly of European origin, found on ballast or spreading from ballast deposits, together with a few spontaneous in gardens or escaping from them.

Aconitum Napellus, L. Spontaneous in gardens, *Fowler, Vroom.*

Papaver dubium, L. Ballast, Buctouche, *Fowler.*

Papaver Rheas, L. Spontaneous in garden at Manse, Bass River, *Fowler.*

Glaucium luteum, Scop. Ballast, St. John, *Hay.*

Adlumia cirrhosa, Raf. Spontaneous in gardens wherever it is introduced.

Erysimum orientale, R. Brown. Apparently permanent on ballast heaps, Richibucto, *Fowler.*

Diplotaxis tenuifolia, DC. Ballast, Richibucto, *Fowler;* St. John, *Hay.*

Diplotaxis muralis, DC. Ballast, Richibucto, *Fowler;* St. John, *Hay.*

Brassica campestris, L. Ballast, St. John, *Hay.*

Tilia Europea, L. Planted for ornament.

Ampelopsis quinquefolia, Michx. Extensively planted for ornament, but has not yet been found wild.

Trifolium resupinatum, L. Ballast, St. John, *Fowler.*

Trifolium ornithopodioides, L. Ballast, St. John, *Fowler.*

Lotus corniculatus, L. Fairville, 1877, *Fowler;* ballast, St. John, *Hay*, 1881, Herb.

Ornithopus scorpioides, L. Occurring in a garden at St. Stephen the past two seasons, *Vroom*, Herb., Bulletin III. 33.

Ribes aureum, Pursh. Cultivated for ornament.

Bupleurum rotundifolium, L. Ballast, St. John, *Hay.*

Carum Carui, L. Becoming a very troublesome weed in several places in St. John Co.

Helianthus tuberosus, L. Spontaneous about garden fences.

Anthemis tinctoria, L. Ballast, St. John, *Hay.*

Chrysanthemum Parthenium, Pers. In gardens, scarcely wild.

Chrysanthemum Coronarium, L. Ballast, St. John, *Hay*, Herb.

Chrysanthemum segetum, L. Ballast, St. John, *Hay*, Herb.

Senecio Jacobæus, L. Firmly established at Newcastle, Miramichi.

Senecio viscosus, L. Spreading rapidly at Bathurst and Shediac.

Carduus crispus, L. West side Courtenay Bay, *Hay.*

Onopordon Acanthium, Vaill. Ballast at Buctouche.

Silybum Marianum, Vaill. In gardens.

Lampsana communis L. Ballast, St. John, *Hay.*

Crepis virens, L. Ballast, St. John.

Tragopogon pratensis, L. In a field, St. Stephen, *Vroom.*

Borago officinalis, L. Escaped from gardens in a few places.

Physalis pubescens, L. Found occasionally in gardens.

Linaria Cymbalaria, Mill. Ballast Wharf, St. John, *Hay*, 1881.

Linaria minor, Desf. Ballast Wharf, St. John, *Hay*, 1881.

Mimulus moschatus, Dougl. Alma, *Brittain.* Probably outcast from a garden.

Satureia hortensis, L. Found growing on a railroad embankment near Hillsborough, *Brittain.*

Galeopsis Ladanum, L. Ballast, St. John, *Hay.*

Mercurialis annua, L. Spread from ballast at Buctouche.

Daphne Mezereum. Near Fredericton, *W. T. L. Reed.*

Salix acutifolia, L. Planted for ornament, Kent Co.

Populus dilatata, Ait. Often planted under the name of Lombardy Poplar.

Populus alba, L. White Poplar or Abele. Often planted. Spreads by the roots.

ARTICLE II.

ABSTRACT OF PAPER ON SURFACE GEOLOGY OF FREDERICTON.

By W. T. L. Reed.

[*Read April* 1, 1884.]

AT the Race Course—a flat at the foot of the hills on the south west side of Fredericton, a section made by a small water course exposes the following series of beds:

		8. Sandy loam,	1 ft.	10 in.
		7. Friable sandy clay,	1	4
No remains.	*c*	6. Rust-spotted clay, somewhat sandy,	0	9
		5. Rusty greyish brown sand,	1	0
No remains.	*b*	4. Coarse sand,[1]	0	7
dark slate-colored beds with vegetable remains.	*a*	3. Fine sandy clay,	1	0
		2. Coarse sand, somewhat sticky from clay,	2	0
		1. Fine sandy clay,	0	6
		0. Blue clay, thickness unknown.		
			9 ft.	0 in.

In the lower part of this section there is no bed composed of vegetable matter entirely, but the remnants of trees and plants are scattered thickly through the sand and clay in a bed a little over three feet in thickness. A few entangled trees held fast in the mud may have formed the nucleus into which drifted other trees, grasses, seeds, leaves and twigs, becoming a tangled mass which gradually sank to the bottom. Among the fragments are found the maple, elm, yellow and white birch, spruce, fir, cedar, etc.; the appearance of the wood and size of the leaves indicate a growth similar to the present. It is evident that these remains were the drift of the lake, for while some show no wear, others are stripped of their bark, and fragments of wood, split and rounded, tell us of a journey over the

[1] 100 feet down the gully this band is 1 foot 6 inches thick.

rocky bed of some dashing stream. * * * * * The blue clay (No. 0) is of great depth in the central part of the valley, for in an attempt to sink an artesian well a point 125 feet below the surface was reached without getting through the clay. This (blue clay) is overlaid in many places by a clay more or less reddish in color, which is used for making bricks. Both of these clays after being subjected to the heat of the blow-pipe are attractable by the magnet and not a trace of soda could be detected in any of the tests made. [This remark relates to blue clay taken near the surface.] At the time the vegetable matter was being buried the shallow lake was taking on a river-like aspect. Though from a mile to three miles wide at this part, the water moved more rapidly and was digging a channel in the clay; sand bars were forming, and during the deposition of the bed (*c*) it is probable a sand bar had shut off the current from this part of the lake [1] except in times of flood.

This body of water, whether a fresh water lake or an inlet of the sea, at one time was very deep, but had become very shallow, partly from the filling up with sediment and partly from the falling of the water. There is evidence to show that this decrease of water was not wholly gradual, but one time at least the water, probably by the breaking away of some barrier, suddenly retired, leaving a considerable space on which rain and frost would act with great effect. * *

From the washing of the hills there would be a mingled deposit of sand and clay along the shores, but nearer the middle of the lake, where the current was greater, the deposit would be of sand entirely; and this is verified by observation: in the central part of the valley I find sand lying directly on the fine clay, and often the sand is very coarse, containing pebbles, while near the hills all the strata are generally more or less clayey. * * * * This Acadian lake, of which Grand Lake, with a score of smaller lakes and ponds, is a remnant, was larger by far than any existing lake of the Maritime Provinces * * * * occupying an area of not less than 300 square miles. In form it was right-angled, one arm extending from the Jemseg to the Keswick, the other from the Jemseg to the Gaspereaux River.[2] * * * *

[1] Mr. Reed argues that these deposits were made in a large lake extending from Keswick Valley to Grand Lake.—EDITOR.

[2] At the head of Grand Lake.—EDITOR.

ARTICLE III

ON THE ZOOLOGY OF THE INVERTEBRATE ANIMALS OF PASSAMAQUODDY BAY.

By W. F. Ganong, B.A.

[*Read Sept.* 2, 1884.]

THE Zoology of the Marine Invertebrates of New Brunswick has been, in one section at least, well studied. The Island of Grand Manan, lying near the mouth of the Bay of Fundy, with the tides and currents of the Atlantic washing its shores; having numerous outlying islands with sheltering bars and reefs, which thus give every variety of bottom, affords exceptional facilities for the study of marine life. That its advantages are appreciated by American scientists is evinced by the fact that not a summer now passes without one or more parties, either representing some university or working upon their own account, visiting the Island for the purposes of dredging and study. Some years ago a very complete catalogue of the invertebrate life of the surrounding waters was prepared by Dr. Stimpson and published among the Smithsonian "Contributions." He enumerates some sixty-four (64) species of Radiates, one hundred and forty-two (142) of Molluscs, and one hundred and seventeen (117) of Articulates, many of which were new species. Friar's Bay also, lying between Eastport and Campobello, and swept by the tide pouring through Lubec Narrows and around the North of Campobello, has been thoroughly dredged and the results published from time to time; but with these exceptions the Zoology of the Marine Invertebrata of the Southern coast of New Brunswick is comparatively unknown.

Passamaquoddy Bay, the "great pollock water" of the Indians, has never, so far as I have been able to learn, previous to this year, been sounded by the naturalist's dredge. Lying at the South-Western corner of Charlotte Co., with a length of fifteen and breadth of seven miles, it receives the water of four rivers and many smaller

streams, and is filled by the tide twice each day through four narrow channels. The degree of hardness of the surrounding rocks is very favorable to the existence of a great variety of life, for they consist largely of soft, easily eroded conglomerates and sandstones, which are carried away by the strong tides and deposited among the islands, forming pebble, sand, and mud bottoms, while numerous trap dykes afford rugged reefs and ledges.

In order to obtain specimens for study two methods are adopted, that of searching the tide pools and of dredging. As the tide ebbs it leaves pools among the rocks from which the water never entirely runs out, but leaves enough for the support of the animal life therein until the next flood tide refills it. Wading into these and turning over flat stones, pushing aside the great matted masses of seaweed, or peering into little hollows and caves in the ledges, the observer can study the living specimens in a way that is not possible when they are roughly dredged from the bottom. But very many species inhabit considerable depths, and then the dredge or trawl must be used. A few words as to the method adopted in dredging may not be out of place here.

The instrument used consists of an iron framework two feet long and six inches broad, made in such a form that a broad scraping surface always rests on the bottom, while behind there drags a fine net which catches everything that the scraper loosens. The boat being brought up into the wind until there is little headway, the dredge is let go until it rests on the bottom. Then the sail is allowed to fill and rope is allowed to run out to the length of between twice and thrice the depth of the water, its amount depending largely upon the character of the bottom. If the latter be muddy, just enough rope must be used to allow the dredge to just scrape the surface or go to a slight depth, for if too much is given out the iron jaws sink deep into the mud and act as an anchor. In such a case the rope must be allowed to run out freely while the boat is brought around upon the opposite tack, and it is lifted as an anchor would be. If, however, the bottom be sandy or pebbly less care is required, and the dredger soon comes to know the character of the bottom by the feeling of the rope and can regulate its amount accordingly.

In considering the Zoology of the Invertebrates of the Bay, I have deemed it best to endeavor to present to you an idea of its general character, together with some observations upon the habits

of the more common species, reserving more detailed and more technical considerations until further study will enable me to treat the subject with greater fullness and precision.

Of the mollusca some fifty species have been found, so far, in the Bay. Of the Tumcata or sac-molluscs some three species occur, including the beautiful *Cynthia pyriformis*, known among the fishermen as the "sea-peach," and no production of the sea has been more appropriately named. For when taken fresh from the dredge it has the delicate velvety bloom of a perfectly ripe peach, and the resemblance is still further increased by its being fixed by a short stem. Floating pieces of wood and stakes of weirs are found bored by a species of Teredo, which is a true mollusc, although likely at first sight to be taken for an annelid. At Frye's Island a broad and strong tide-dam was completely undermined and destroyed by them within the space of six years.

The next family, the Solenidæ, is represented by but one species, the razor fish (*Solen ensis*), which occurs in the sand at low water on Hospital Island. Uncovered only at the lowest tides, and possessing the power of moving with great rapidity by means of the large muscular "foot," they are extremely difficult to obtain, and for this reason are less used as an article of food than they otherwise would be. Far more abundant and obtained with much greater ease, and too well known to all of you to require any description, is the common clam (*Mya arenaria*). Filling every available locality where there are flats of fine sand and mud, there is probably not a single mile of coast on the Bay where they do not occur, their presence at any point being shown by the dead shells thrown up by the tide and by the little holes out of which they send a tiny stream of water from their siphons when disturbed. They were an important article of food to the Indians before the advent of the Europeans, as shown by the numerous and large shell heaps on the shores of the Bay. Their white successors, however, do not make such extensive use of them, but in case of famine or dearness of food from other causes they would become of great economic value.

Not less interesting to the naturalist is the somewhat rare shell *Thracia Conradi*, a bivalve larger than the clam, of a dingy white color, and living on muddy bottoms. The protean *Saxicava rugosa*, living among rocky ledges, has no two individuals alike, each one conforming itself to the irregularities of the cavity in which it lies

In great abundance on muddy bottoms below low water mark dwells the longitudinally ribbed, nearly circular *Astarte sulcata.* The larger and darker colored smoother *Cyprina Islandica* is less abundant but in similar situations, as is also the strongly radiate-ribbed *Cardita borealis.* A few specimens of the translucent *Yoldia sapolilla* have been found, and also several of the almost transparent, many toothed *Leda tenuisculata.*

Passing to the Mussel family (Mytilidæ), the Bay affords at least four species, of which far the most abundant is the edible mussel (*Mytilus edulis*). Crowded closely together above ground and clinging by the firm byssus, they occupy great beds, all of a dull black color except where a lighter colored specimen of the variety *pellucidus* is more conspicuous than its fellows. The nearer low water mark the larger they are, while they are found at their fullest perfection by dredging in four or five fathoms. In Gould's Invertebrata of Massachusetts the general length is given as 2 4-10 inches, but I have found them in abundance 3 1-2 inches long and even larger. Closely resembling it, but perfectly distinct in generic and specific characteristics, is the large horse-mussel (*Modiola modiolus*). This is a large rough shell, almost invariably having attached to it various sea weeds or colonies of bryozoa and corallines. In the Invertebrata of Massachusetts it is said to inhabit deep water, probably upon a rocky or pebbly bottom. The existence of a large and well situated tide pool on Pendleton's Island has enabled me to see the animal under the actual conditions under which it lives. At this place the tide leaves, for about an hour, a hollow in the rocks of an average depth of about a foot and extent of about 900 square feet. Here great numbers of the horse-mussel may be found, with its long and tough byssus so firmly fixed among the pebbles and small boulders of the bottom that it requires a very considerable amount of strength to tear it from its resting place, and then the byssus never gives way, but brings up with it the large mass of material to which it is attached. It lies about half imbedded in the bottom, gaping wide open, while every shell is rough with growths of nullipores, bryozoa, lamenaria and other parasite organisms.

Among the most delicately marked of our shells, especially when seen under a lens of moderate magnifying power, is the small *Modiolaria nexa*, the massing of the fine lines of the shell forming

what has been termed a "beautiful network of hexagonal indentations." Hardly less delicate is the marking of the smaller *Crenella glandula*, with its fine radiating lines on the exterior, and the interior pearl-like with a finely crenulate margin.

In the next family (the Pectenidæ) comes another of our important food molluscs, the scallop (*Pecten tenuicostatus*). Very abundant in L'Etang and Chamcook harbors upon muddy bottoms, at depths of from five to eight fathoms, they are but seldom dredged. Highly esteemed in parts of the United States, they are little known and appreciated among ourselves, but the mollusc that is most appreciated, the oyster, is not found in the Bay. With regard to the latter, the conditions here seem to be unfavorable for its existence, for many years ago a large number were brought from abroad and placed in the Bay, and not only did they not increase, but those placed there soon died. We have, however, two species of the same family as the oyster, the little pearly *Anomia ephippium* and the closely allied *Anomia aculeata*, both of them found attached to shells of the scallop.

In the class Brachiopoda we have but one family and in that but one species, dredged in twelve fathoms in Friar's Cove, *Terebratula septentrionalis*. They occur there clinging together in bunches, large and small together, and seem to prefer the clear fresh water upon pebbly bottoms. This species was regarded by Dr. Gould as identical with the European *Terebratulina caput-serpentis*. This, however, is still a disputed point. If it is so, it is the oldest in time of all living mollusca. Huxley says of it: "The longest line of human ancestry must hide its diminished head before the pedigree of this insignificant shell-fish. We Englishmen are proud to have an ancestor who was present at the battle of Hastings. The ancestors of *Terebratulina caput-serpentis* may have been present at a battle of *Ichthyosauria* in that part of the sea which, when the chalk was forming, flowed over the site of Hastings. While all around has changed, this *Terebratulina* has peacefully propagated its species from generation to generation, and stands to this day as a living testimony to the continuity of the present with the past history of the globe."

In the class Gasteropoda we have first the delicate little bubble shell *Cylichna alba*, which occurs at a depth of ten fathoms at several points. Two species of Chiton (*Chiton ruber* and *Chiton*

albus) are abundant in the large tide pool on Pendleton's Island, clinging to the rocks and to one another. As a general rule these are only obtained either by dredging or from the stomachs of fishes, but here they can be seen and studied as they actually live. This pool, to which I refer so frequently, teems with animal life, and a most interesting paper could be written upon its inhabitants alone.

Common everywhere on muddy bottoms is the trumpet-shaped *Entalis striolata*, and common everywhere in the littoral zone is the common limpet (*Tectura testudinalis*). The latter seems to attain a larger size here than elsewhere, for Dr. Gould says that the largest specimens he ever saw were 1 1-4 inches long, while I have collected them more than 1 1-2 inches in length. Perhaps the only one of the marine Gasteropods occurring in the Bay, that is eaten by civilized man, is the periwinkle (*Littorina littorea*). It is very abundant between high and low water mark, clinging to the rocks and seaweed, and seems to require to be exposed to the air for a certain length of time every day, as it is never dredged from deep water. This latter peculiarity is common to it together with several species, such as the purple shell, the limpet and others. The large round whelk (*Lunatia heros*) is found in many places, but most abundantly at Minister's Island, while *Lunatia triseriata*, formerly regarded as the young of *Lunatia heros*, is abundant among the shells of clams at several points. As the identity of *L. triseriata* with the young of *L. heros* is still a matter of dispute, the following facts, which seem to prove them to be distinct species, though closely allied, may be of interest.

(1). Specimens distinctly marked with the three dark lines of *L. triseriata* are found of far greater size than others of similar shape without the markings, which could hardly be the case were the former the young of *L. heros*.

(2). *L. triseriata* is found in large numbers burrowing in the sand among clams and lob-worms. While I have never found any specimens without the three lines in that situation, I have found them on the beach at low water mark, which would seem to indicate that burrowing in the sand is the proper habitat of *triseriata*, which is thus distinct from the unmarked shells, which are, without doubt, the young of *L. heros*.

Of the family Purpuridæ the purple shell (*Purpura lapillus*) from which was obtained the much valued "Tyrian purple" of the

ancients, is very common in the littoral zone, and also the long whelk (*Buccinum undatum*), while the small but elegant *Nassa trivittata* is quite abundant at various depths. A single dead specimen of one of the spindle shells (*Fusus Islandicus*) was found at Hospital Island, where the *Fusus decemcostatus* is very abundant. With regard to the latter shell Dr. Gould says: "It is seldom found with the mouth entire * * * * showing that it probably inhabits rocks in deep water." This, however, I have not found to be the case, for at L'Etang harbor I dredged them from a mud bottom in seven fathoms, while at Hospital Island great numbers of living shells occur in the sand at low water, the foot of the animal being buried and the spire of the shell projecting.

In the class Cephalopoda we have the common squid (*Loligo Bartramii*). It is very abundant, and both useful and pernicious to the fishermen—useful because it is easily caught and is the best bait known to them for cod and pollock, and pernicious both from the number of herring it destroys and from the fact that its presence in considerable numbers at any locality keeps these fish from entering the weirs at that place. The fishermen say that it can go backward or forward with equal ease, but this is a mistake. By the forcible ejection of water from a cavity enclosed by the muscular mantle it shoots backward with the swiftness and smoothness of an arrow, while its forward progress is very slow.

Passing to the Articulates, we have very many species of Tubicolæ, the annelids forming tubes in which they live, and of the Maricolæ or free sea-worms, but of most importance and interest are the Crustacea. The common crab (*Cancer pagurus*) is found, though not abundantly, around the mouths of rivers, seeming to prefer the somewhat brackish water to that which comes from the open sea. The lobster (*Homarus Americanus*) is also quite abundant in the pools near low water mark, hiding in cavities under ledges. Along the shores at various points is found the Hermit Crab (*Bernhardus pubescens*) occupying the cast-off shells of whelks and spindle-shells. At certain times in the year the shrimps are very abundant and afford food for the enormous numbers of herring which enter and leave the Bay with each tide. But most abundant of all the marine articulates are the Barnacles (*Balanus balanoides*), which are common everywhere in the littoral zone, and which are so abundant in many places that they give to the rocks a dull white color. But

in deeper water they attain much larger size, for at L'Etang harbor they may be dredged in six or seven fathoms of water, attached to shells of scallops or to stones, and as large as the largest walnut. They vary much in external form, as indeed do all shells fixed to any solid body, for they must conform to the irregularities of its surface.

Among the Radiates the Echnoderms are well represented in the Bay. The Holothuroids or sea-cucumbers are mostly of Ispecues, the large brown *Pendacta frondosa* and the elongated nearly transparent *Synapta tenuis*, both of which are abundant at the lowest tides upon Craig's Ledges, a great rugged rock mass about four miles from St. Andrews. The common Sea Urchin (*Toxopneustes drobachiensis*) lines the shore in many places with a dark green carpet of projecting spines, but is most abundant where there is a moderately strong tide-way or current. In many places they may be seen to occupy cavities in the rock, which they fit exactly and which are said to be made by themselves. As these cavities are only found where the tides are strong, it is probable that they are only made for the purpose of keeping the occupants from being swept away, while the constantly flowing tide brings to them a bountiful supply of food. The "Cake Urchin" or "Sand Dollar" (*Echinarachnius parma*) abounds in Chamcook harbor and at Hospital Island, at which latter place great numbers of the dead shells are thrown up upon the beach, together with those of the Hen-clam and Razor-fish.

Of the Asteroids or Star-fishes several species occur. The large red *Asteracanthion rubens* and the small green *A. littoralis* are common everywhere, while the ten-rayed *Solaster endeoa* and the "Sun Star" (*Crossaster papposa*) are found on the reefs around Pendleton's Island. At Friar's Cove the Basket-fish (*Astrophyton Agassizii*) occurs, from whose central disc five arms radiate, which soon divide into two equal branches, which themselves divide, and so on. In one case the continuous bifurcation was traced so far that 81,920 arms were shown to exist, and more beyond that could not be traced. Among the Ophiuroids the graceful, handsomely spotted *Ophiopholis bellis* may be found in abundance in dark pools and under rocks, and the drab colored, slow moving *Ophioglypha Sarsii* may be dredged almost anywhere in about ten fathoms.

The Acalephs are represented by comparatively few species, far the most common being the so-called "Sun-fish" (*Aurelia flavidula*) of which great numbers may be seen floating in the waters of the Bay during the latter part of July and August.

As is well known to you, these animals move by the rapid contraction and slow expansion of the disc. At Campobello I had the good fortune to see the method by which they can move backward. Going along at a rapid rate, and not possessing the sense of sight, one of them suddenly ran into one of the logs of a wharf. Stopping for a moment, and there being no current to carry it off, it began to move backward by contracting its disc, so that it extended as far as possible in the direction in which it wished to go, and then by a quick contraction of the edge drew itself backward, partially turning as it did so by contracting more on one side than the other, until it was clear of the obstruction, when it resumed its normal method of progression.

Around Pendleton's Island there is occasionally found the *Ptychogena lactea*, looking like a white cross on the water. The common sea-anemone (*Metridium marginatum*) occurs at Craig's Ledges, together with some other species, while many species as yet undetermined, of bryozoa, annelids, small crustacea, sertularians, etc., are abundant throughout the Bay.

In considering the Zoology of the Bay as a whole, it may be said that it is extremely rich in animal life, and more especially in the Mollusca, for which reason, as also on account of their greater practical importance, I have devoted more attention to them in this paper than to the Articulates and Radiates. The Bay affords an inexhaustable supply of food-molluscs, the chief reason for their non-utilization at present being that the cod, pollock, herring and other fish are still so abundant, while the cultivation of the land is very far from having reached that point at which the price of grain is raised because the people cannot produce enough for their own subsistence. Owing to the non-enforcement of the law relating to the matter, our only edible articulate, the lobster, is steadily decreasing both in numbers and size. Thus much for the practical aspect. To the naturalist the Bay affords a rich field for investigation, far the greater part of it being still unexamined, my own work having been almost exclusively in the upper part, while the whole extent from St. Andrews to Perry, embracing all that part between Deer Island and the mainland of Washington County, Maine, has never, so far as I have been able to learn, been dredged by any naturalist whatever. The best collecting ground in the Bay is at Craig's Ledges. At this point there is a narrow channel through which Chamcook harbor is filled and emptied.

The rocks consist mostly of much-jointed red sandstones, covered at the point by boulders of various sizes. Here may be found great numbers of the green spine clad sea urchins, red, yellow, green and purple star-fishes, holothurians displaying in some quiet tide pool their magnificent branching feathery tentacles, while on turning over some flat stone, clinging to its under surface is the spotted sand-star, turning its fine, snake-like, fringed arms in rapid and irregular motion, and colonies of bryozoa looking like miniature ranges of red and yellow volcanoes. If one is fortunate enough to find, without disturbing it, a sea-anemone in the water, he will be rewarded by beholding a beautiful sight, for the long and slender tentacles, moving continually, decompose the light and send back to the eye the most varied, lovely and ever-changing hues. And speaking of beauty, that man would be dull indeed who would not be moved to admiration by many of our marine invertebrates. If he love beauty of form, the arrowy flight of the cuttle fish, the slow and measured contraction and expansion of the disc of the jelly fish, the serpentine turning of the rays of the brittle star, the rapid sweep of the arm of the barnacles, will show him grace in motion; the wonderful structure of the interior framework of the rays of the star-fish, resembling the most delicate and perfect Grecian architecture, grace and elegance, fixed and embodied; while the ever-changing, iridescent hues of some of the annelids, the pearly light from the interior of a fresh mussel shell, the effects due to the decomposition and reflection of light by the slender tentacles of the sea-anemone, afford a richness and delicacy of coloring that cannot be surpassed. Very beautiful, too, is the phosphoresence. On a dark night a boat rowed over the water seems to plough through a sea of living fire; long lines of lambent flame run from the bow, while every dip of the oar makes to flash anew the ghostly gleaming water. But if the observer is fortunate enough to behold it at night, when the sky is overcast and the surf rolling in great waves upon the beach, he will see it at its best. All the water is dark except when a wave breaks, and then a line of bluish light is followed by darkness again, while upon the shore itself the water is incessantly alight, and rolling up upon the beach and receding, it leaves the sand carpeted with brilliancy. And all this effect is produced by the tiny bactilinea; such is the power of numbers.

But, after all, how little is really known not only of these but of

other forms of animal life. We study their habits and trace many secondary causes, but the "great primary cause," the secret of life itself, is as far from our grasp as ever, and the best that we can hope to do is to enter into what a great English writer calls "the bitter Valley of Humiliation, into which only the wisest and bravest men can descend, owning themselves forever children, gathering pebbles on a boundless shore."

St. Stephen, August 29, 1884.

ARTICLE IV.

AN OUTLINE OF RECENT DISCOVERIES IN THE ST. JOHN GROUP.

By G. F. Matthew, M.A., F.R.S.C.

With a Letter of Prof. Alpheus Hyatt relative to the Pteropods.

[*Read December* 2, 1884.]

FOR some years the Saint John Group has been known as a formation containing the fullest representation of the oldest Cambrian fauna yet discovered in America.

In Europe this very old fauna is well known, but in America the Cambrian rocks which are best known and have been most carefully studied do not contain it. These Cambrian rocks of America are known as the Potsdam sandstone; they cover extensive areas along the valley of the St. Lawrence and in the Middle and Western States, and are thus the oldest Cambrian group, recognized by its fauna, in the central region of North America, but they do not contain any of the species of the St. John Group.

On the shores of Lake Champlain and along the Hudson River another group of Cambrian rocks is found, older than the Potsdam sandstone, but even this, so far as we know, contains none of the St. John species. In short, nowhere west of the Appalachian Moun-

tains have Cambrian strata been met with containing remains of animals of the ancient type of those of the Acadian Provinces.

The crustacean genus Paradoxides is one of the most characteristic forms of this early fauna, and it has thus far been found in America only to the eastward of the Appalachian Chain. One species is known to occur in Massachusetts and three in Newfoundland, but the genus is represented by a greater variety of forms at St. John, N. B., than elsewhere on this continent. This genus is considered to be characteristic of the Lower Cambrian rocks. The late Professor C. F. Hartt, by a study of the fossils of the St. John Group, was able to declare that they were of the same type as those of the Primordeal Zone in Bohemia, which Joachim Barrande had shown to contain the oldest of all known organic remains.[1] But since Prof. Hartt made this determination the fauna of the Primordeal Zone has been further elaborated, and Paradoxides is now found to mark the lower part of the Primordeal or Cambrian System. This fact was ascertained for Central Europe by the illustrious Barrande, and for Great Britain by Mr. J. W. Salter and Dr. Henry Hicks. These savants discovered that while Paradoxides characterized the Lower Cambrian rocks, the Upper Cambrian could be recognized by the presence in it among other fossils of the crustacean genus Olenus. Dr. Hicks went further, and was able to divide the Lower Cambrian formation of Wales into three groups by means of the different assemblages of animals which it contains. He thus established the succession of the groups known as "Cærfai," "Solva" and "Menevian."

Prof. Hartt fixed the age of the St. John Group as nearly as was possible in his time as "Primordeal," or, as we now call it, Cambrian; but these later discoveries in Europe have enabled the writer to point out more exactly the Cambrian group in Wales holding a fauna to which the beds containing the St. John fauna described by Prof. Hartt correspond.[2] This has been shown in an article to the Royal Society of Canada (1884) and elsewhere, and we now know that Hartt's species more nearly represent those of the Solva Group than those of the Menevian. In other words, it is the fauna of the older part of the Lower Cambrian.

[1] That is the oldest known at that time.

[2] The two groups, one in Wales and the other in Acadia, are not necessarily on that account exactly cotemporaneous.

When we look for a source from which our Lower Cambrian fauna may have been derived we are met with the difficulty that no other large assemblage of animals of greater antiquity is known. The oldest creature known, *Eozoon Canadense*, so far preceded in time the advent of the Cambrian forms of life, that its influence upon them is almost beside the question. It is true that a species resembling *Eozoon Canadense* has been found in the pre-Cambrian rocks of Bavaria, but the genus Eozoon is not known to have left any successors or nearly related forms in the Cambrian limestones, and may therefore be considered as practically extinct at the opening of the Cambrian period.

Coming to more recent times than that represented by Eozoon, there is a geological stage in Newfoundland indicated by the "Intermediate Series" of Mr. Alex. Murray in which a single organism has been found. This Intermediate Series is regarded by Mr. Murray and others as equivalent to the Huronian System of Canada, and therefore intermediate between the Laurentian (the formation containing Eozoon) and the Cambrian. The organic form which occurs in this Intermediate System has been described by the late Mr. E. Billings of the Canadian Geological Survey, who appears to have thought it a representative of the Gasteropods (Sea-snails, etc.) and gave it the name of *Aspidella terranovica.* It is a curious patelliform fossil, which Mr. Billings was unable to refer to any known genus or family, so that its bearing on the question of the origin of the Lower Cambrian or Acadian Fauna of the St. John Group is somewhat problematical.

In the Acadian Fauna of the St. John Group, notwithstanding its antiquity, we do not have the ultimate source of Organic Life, but on the contrary an assemblage of animals already greatly differentiated and adapted to the conditions under which they existed. At the time when the Acadian Fauna flourished there must also have been other areas on the globe occupied by living beings, for when we consider the place and mode of occurrence of the species of the St. John Basin, belonging to Division or Series 1, both described and undescribed, it is clear that there were three successive irruptions of living forms into this area, all of Lower Cambrian type and all strictly within the limit upward of the Paradoxidean Zone. Each of the three sets of organisms in these beds contains a large proportion of distinct species with a smaller number of identical species. The latter

serve as connecting links to bind these several sub-faunas together as one connected whole.

Before describing the three assemblages of organic forms that are found in the lower part of the St. John Group, it may be well to give a brief statement of the nature and order of the beds in which they occur. The St. John Group has been divided into six principal masses of strata, designated as Divisions 0, 1, 2, 3, 4 and 5. Of Division or Series 0 it may be said that no organic remains have been found in it; but in Division 1 is found the fauna described by Professor Hartt and others. This fauna is not found at the base of Division or Series 1, but in one of the middle members. Series 1 at St. John has been described as consisting of four bands of strata, differing in the nature of the sediments, and designated respectively in ascending order as *a*, *b*, *c* and *d*. The band *a* is a barren group, and *c* contains the species already described; but both *b* and *d* are now found to have each its own peculiar assemblage of species.

The oldest fauna is found in the band *b*. It is littoral, and its deep-sea equivalent is not known, but its crustaceans differ from those of the next band. The connecting link between the fauna of this band and that of the band *c* above it, is found chiefly in the brachiopods and pteropods. In the fauna of *b* are two new and remarkable types of bivalve crustaceans. The solitary trilobite known, Agraulos (?) is notable for the great development of the axial lobe of the cephalic shield and thorax, and of the close approximation of the eyes to the glabella. In this feature it resembles *Conocoryphe Lyelli* of the Welsh Cambrian strata. Two species of the pteropods display the remarkable feature, in this class, of a camerated shell, and were apparently adapted to resist the accidents of life on a sandy sea shore. As for the brachiopods, we find among them only the most primitive types—Linnarssonia, Lingulella, Acrothele and Acrotreta.

On passing to the beds of band *c* a flood of new forms present themselves, among which are two types of sponges, Protospongia (?) and an undescribed genus. The Cystidian, Eocystites, also appears at this horizon. To the genera of brachiopods referred to as found in band *b* are now added three species of the genus Orthis, and another Lingulella takes the place of that found in band *b*. Among the gasteropods are several genera Stenotheca (?), Scenella, Harttia, etc. The pteropods are well represented in Hyalithoid species of three

different types. The bivalve crustaceans have a fair representation; those of the underlying band are not found, but new species appear, including those of the genera Primitia, Leperditia, etc. The trilobites are represented by the most ancient genera:—Agnostus has four species, Microdiscus two, Ptychoparia five or more, Conocoryphe three, an ancient type of Ctenocephalus one, and Paradoxides four; all four of this last genus have continuous eyelobes.

Passing to the beds of the next band, viz., *d*, a change in the fauna is at once apparent, though a connection with the preceding fauna is maintained by the presence of the undescribed sponge, all the pteropods, and of two familiar forms of brachiopods—Linnarssonia and Acrothele; there are also varieties of the Agnosti, the Ptychoparæ, and of Protospongia (?) of band *c*. On the other hand quite a number of new species appear at this horizon, among which may be named a Dendrograpsus (?), another Lingulella (?) and two new species of Stenotheca. Two worm-casts and new species of bivalve crustaceans also come in at this horizon. Among the trilobites also there are new species. The Agnosti have four; Microdiscus exhibits a new form closely allied to *M. punctatus*, Salter. Among the Ptychopariæ some species now appear for the first time, and Solenopleura has a representative. A Paradoxides with *shortened eyelobes* has left abundant fragments in these measures; it is a species which by its pleural spines, pygidium and hypostome is allied to *P. Bohemicus* of Europe.

This new fauna consists largely of forms similar to those of the Menevian Group, and is chiefly remarkable for the great abundance of Pteropods, Microdisci and Agnosti, and for the presence of a Paradoxides with shortened eyelobes. So far as they are at present known, each of these successive sub-faunas has an individuality of its own; that in band *b* contains forms the most remarkable for novelty; band *c* is notable for the variety of species it contains, and band *d* for the abundance of individuals of many of the species. The beds of the band *b* may be said to have been deposited on a sandy shore, those of *c* on a muddy shore, and those of *d* in deeper and more tranquil waters. Volcanic action in the vicinity of the St. John Basin seems to have been dormant during the time when the beds of band *a* were laid down, but awoke into activity during the period when the strata of *b* were deposited, and gradually died away while the olive grey mud beds of *c* were formed. The time when these successive faunas

were making their way into the St. John Basin was a period of decreasing volcanic action and of gradual subsidence in that area.

In concluding this article I quote a letter of Prof. Alpheus Hyatt of Boston, well known for his researches among the Cephalopods and Sponges, which relates to one of the new forms noticed in the preceding paper. Prof. Hyatt had very kindly offered to advise me in reference to difficult points connected with the fossils of the St. John Group, and I therefore availed myself of this opportunity to place before him the various specimens of pteropodous shells bearing upon the possible early connection of the pteropods with the cephalopods. Unfortunately the letter giving the details of his examination of these fossils has been lost in transmission, but the general results of the investigation are given in the summary quoted below from a later letter. By way of preface to Prof. Hyatt's letter I may say that more than one of the early pteropods of the St. John Group are remarkable for the presence of several distinct septa at the base of the tube. There are two such species in the band *b*; another, but a longer and narrower kind, is found in the band *c*, and this or a similar camerated shell occurs in the band *d*. Of these species (referring, however, chiefly to the oldest) Prof. Hyatt says (3rd February, 1885):

"I kept no notes of the details I had observed; my results, however, were quite definite in respect to the main points. These were: (1). The fossil is a Hyolithes allied to *H. undulatus*, Barr. Syst. Silur. pl. 11, f. 29. (2). The aspect of a siphon is due to the compression of the sharper against the flatter side and the form of the sutures, which favors this impression. Barrand figures, as I found after arriving at this decision, a similar case, pl. 15, figs. 35, 35*a*, of a closely allied species, *H. elegans*. (3). The sutures are similar to those of *H. elegans* in curvature, but wider apart. These fossils with their distinct septa are startlingly similar to certain forms of Nautiloidea, but there is no siphon. They, however, confirm Von Jhernig's and my opinion that the Orthoceratites and Pteropods have had a common, but as yet undiscovered, ancestor in ancient times."

SUMMARY OF MEETINGS.

FEBRUARY 5TH.

Mr. Matthew read his paper on "Discoveries at a Village of the Stone Age at Bocabec, N. B." This paper was published in Bulletin No. III.

MARCH 4TH.

Mr. W. M. McLean gave an account of the International Fisheries Exhibition held in London, G. B., in the summer of 1883. Canada was well represented at this exhibition. Its fish products were presented in the form of a pyramidal trophy, which attracted much attention. Lectures on fish culture, etc., were given by Mr. Wilmot, who was in charge of the Canadian exhibit.

APRIL 1ST.

Two papers were read on this evening. Mr. F. W. Daniel read a paper on the Gulls. He enumerated nine species, some of which were rare in New Brunswick. Immense numbers of gulls of several species are found in Passamaquoddy Bay and the numerous islands in the mouth of the Bay of Fundy. The second paper of this evening was by Mr. W. T. L. Reed, and gave an account of the Surface Geology in the Valley of the St. John River near Fredericton. An abstract of the paper is published in this Bulletin.

MAY 6TH.

Mr. Robert Chalmers read a paper on "The Origin of the Grand Falls of the St. John River." Mr. Chalmers stated that the Falls had been caused by a diversion of the river from its pre-glacial channel, which had been blocked up by drift during the ice-age. The Falls are slowly working backward and are losing in height as they work back to the old river valley.

JUNE 3RD.

The delegate to the meeting of the Royal Society of Canada gave a report of the proceedings of that Society at the meeting in May last. Dr. L. C. Allison also gave an address on the Rhizopods found in the vicinity of St. John. He attributed the comparative scarcity

of Rhizopods in the fresh waters about St. John to the large extent of limestone rocks where the ponds are found near St. John.

SEPTEMBER 3RD.

Mr. W. F. Ganong read a paper on the Invertebrata of Passamaquoddy Bay, which is printed in a preceding part of this Bulletin.

OCTOBER 7TH.

Mr. G. U. Hay read an interesting paper on the results of his botanical explorations in July and August on the tributaries of the St. John. He ascended the Tobique to the source of the Little Tobique (Lake Nictau) in company with Mr. Chalmers of the Geological Survey. Of the fertility of the intervales and terraces along this beautiful river, the luxuriant growth of the grass and plants and trees of many species, give abundant evidence. He ascended two of the highest mountain peaks along the river—Blue Mountain, below the Forks, and Bald Mountain, which rises from Nictau Lake to the height of nearly half a mile. From the summit of these two peaks a broad view can be obtained of a large portion of the centre of the Province, extending to the Restigouche on the north. No distinctly Alpine species of plants were found on the summit of Bald Mountain. In fact, the hills about St. John and along the shores of the Bay of Fundy, nearly 200 miles farther south, and near the level of the sea, have, if anything, more boreal types of plants than has Bald Mountain. No distinct zones of vegetation could be detected on the sides of this mountain other than would arise from purely local causes. The term "Bald" is a misnomer, since the greater portion of the top is a flat of the character of a sphagnous swamp, covered with a dense growth of moss and decaying fir trees. Mr. Hay also spoke of the character of the flora on Eel River and on Salmon River (Victoria County), portions of which he had visited, and on which several species of plants new to the Province had been discovered.

A valuable and instructive paper on the "Lower Forms of Plants and Animals" by Rev. Prof. Fowler of Queen's College, Kingston, was read at this meeting.

[NOTE.—The plants referred to above, together with those found by other botanists during the past season, new to the Province, will be found in the List of Plants appended to this issue of the Bulletin. They amount to twenty-six species. To these may be added the following list of mosses new to the Province, found chiefly on the Tobique, and identified by Prof. Macoun:]

1. Sphagnum intermedium, Hoffm. *Hay.*
2. Dicranum fulvum, Hooker. *Hay.*
3. Desmatodon cernuus, Bruch & Schimp. Restigouche, *Prof. Macoun.*
4. Bryum pendulum, Schimp. *Hay.*
5. B. uliginosum, Bruch & Schimp. *Hay.*
6. B. subrotundum, Brid. *Prof. Fowler.*
7. Tayloria splachnoides, Hook. *Hay.*
8. Splachnum ampullaceum, Linn. Rare. *Hay.*
9. Meesia longiseta, Hedw. Queens Co., *McKay.*
10. Polytrichum gracile, Menzies. *Hay.*
11. Cratoneurum filicinum, Linn. *Hay.*
12. Ctenidium molluscum, Hedw. *Hay.*

NOVEMBER 4TH.

This evening was devoted to the reading of papers presented by members of the Ornithological Committee. Mr. Alfred Morrissey described the Crows and their allies. The Raven is so much persecuted that it has become quite scarce in some parts of New Brunswick; the crows, however, are very numerous. The Canada Jay, another member of the Corvidæ, is very common about the lumber camps in winter time. Mr. F. W. Daniel descried the distribution and habits of the Cormorants. Two species of this family are found in New Brunswick, the "Common" and the "Double Crested," of which the latter is the more common. It is known at Grand Lake as the "Black Brant." Mr. Chamberlain gave an account of the migration of birds in New Brunswick. The great majority of birds make two migrations each year; those which go farthest north in summer go also farthest south in winter, and those which come earliest usually stay longest. They usually seek the same place to breed each year. Memory was an important factor in directing the migration of birds.

DECEMBER 2ND.

Mr. Matthew delivered an address explanatory of a paper by him on "Recent Discoveries in the St. John Group." This paper will be found on a preceding page.

JANUARY 20TH.

The President read his Annual Address on the "Ethics of Law," which is a part of this Bulletin.

REPORT OF THE COUNCIL OF THE NATURAL HISTORY SOCIETY OF NEW BRUNSWICK FOR 1884.

THE Council of the Natural History Society of New Brunswick beg leave to submit the following Report for the year ending January 20th, 1885:

MEMBERSHIP.

The Society has elected thirteen (13) Ordinary, three (3) Corresponding and six (6) Associate Members, making a total of 81 Ordinary, 48 Corresponding and 40 Associate Members.

MEETINGS.

During the year ten regular meetings were held, at which the following papers were read:

February 5*th*, 1884—G. F. Matthew, M. A., on Discoveries at a Village of the Stone Age at Bocabec.

March 4*th*—Wm. M. McLean, on the International Fisheries Exhibition.

April 1*st*—Fred W. Daniel, on Gulls; W. T. L. Reed, Lacustrine deposit at Fredericton.

May 6*th*—R Chalmers, Geology of Grand Falls.

June 3*rd*—L. C. Allison, M. D., Rhizopods.

September 2*nd*—W. F. Ganong, The Invertebrate Zoology of Passamaquoddy Bay.

October 7*th*—G. U. Hay, Botanical Notes on the Upper St. John; Prof. James Fowler, Some Differences between Animals and Plants.

November 4*th*—Alfred Morrissey, on Corvidæ; Fred W. Daniel, on Cormorants; M. Chamberlain, Migration of Birds.

December 2*nd*—G. F. Matthew, M. A., Fossils of the Cambrian Rocks at St. John.

January 6*th*, 1885—W. M. McLean, The Food Fishes of New Brunswick (postponed).

Besides the above there were five free lectures on Elementary Science, as follows:

February 19th—W. F. Best, The Atmosphere.

March 18th and *25th*—W. F. Coleman, M. D., Anatomy and Physiology of Digestion.

April 15th—M. Chamberlain, Winter Birds.

May 20th—G. U. Hay, Fertilization of Plants.

December 16th—L. C. Allison, M. D., Public Hygiene.

COUNCIL MEETINGS.

The Council has met seventeen times for the despatch of business.

A Conversazione was held January 25th, and a Field Meeting in connection with the Eclectic Reading Club July 12th. Both were largely attended and successful.

The Treasurer reports that the total income of the Society for the year is $402.32, and the expenditure is $192.34, leaving a balance of $209.98[1] on hand January 16th, 1885.

The Curators report that a set of cases for insects has been obtained, and that the collection of insects of the vicinity of St. John made by Mr. Herbert E. Gould, and also those presented by Mr. Gibson Williamson and others, have been arranged and catalogued by Mrs. C. E. Heustis, so that they are now available for comparison and study. Important additions to the Museum in the department of Archæology have been made during the past year. Two of these are worthy of special mention. Dr. J. Baxter of Chatham has very generously presented to the Society a skeleton (probably of the early French period) exhumed at Tabusintac in Northumberland County, and with it remains of fur clothing, birch bark, and fragments of coarse cloth and cordage, all of which were found buried in three large iron-rimmed copper kettles at the mouth of the Tabusintac River. The other donation to the Museum in this department is the large collection of objects brought from Bocabec by the Summer Camp party of 1883. The greater part of these have been examined, classified and placed temporarily in one of the cases in the Geology Room. They consist of implements in stone, bone and ivory, fragments of pottery, bones of various animals used for food, shell-fish,

[1] This amount has been appropriated for cases referred to in the Curators' Report.

etc. This collection will be useful to show the grade of culture attained in New Brunswick by the later people of the Stone Age. A set of cases for the geological collection is being made and will be ready in about a month. Besides these several new cases are necessary for the proper preservation, arrangement and exhibition of collections in the Museum, particularly the large herbarium of native and foreign plants, and the collection of birds' eggs and nests. It is also desirable to have the rooms of the Society open to the public on certain days in each week, so that the valuable collections in the Museum may be made useful to all who desire to study them, and the Curators recommend that a suitable person be employed to take charge of the rooms and keep them open as above suggested.

LIBRARY.

The Librarian reports that there are now six hundred and fifty-seven bound volumes and pamphlets in the Library, sixty-four of which were added during the present year. A few of these were purchased, the rest donated.

BOTANY.

The Botanical Committee are able to report that a List of Plants, revised and enlarged, has been prepared under the direction of Prof. Fowler of Queen's University, with the assistance of the botanists of this Province. The List is published as one of the articles of this issue of the Bulletin. The work done since the first catalogue of plants was published has been considerable, the addition of species new to the Province quite large, and the range of rare plants greatly extended, as the subjoined list will show. The thanks of the Society are due to Prof. Fowler for the warm interest he has taken in the development of our Flora, and the self-imposed labors he has undertaken and so well accomplished.

Owing to delays which have arisen in procuring cases ordered last summer for the Geological collection, a considerable balance appears in the hands of the Treasurer to the credit of the Society this year, but an amount equal to this balance has been appropriated for the cases above referred to. The amount available for general purposes during the coming year will therefore depend upon the sums collectable for members' fees and the grant from the Provincial Government. The grant received last year from the Provincial Government was appropriated as follows:

Cases for the Museum, ...	$200 00
Towards publication of the Bulletin of 1884, ...	50 00

With the accession to the funds of the Society in consequence of the grant now given by the Government, it is the intention of the Council to carry out the suggestion of the Curators relative to the opening of the Museum to the public. As usual, a course of free lectures on Elementary Science will be delivered during the present winter, and, in addition, Mr. W. F. Best has obtained the use of the rooms for the purpose of instructing a class in Elementary Chemistry. This, too, will be free.

By means of the Essay and Lecture Course much useful knowledge has been disseminated. The various specimens in the Museum have proved useful to those engaged in the different studies as a means of identifying collections made by themselves, while the knowledge of our birds, plants, minerals, fish, etc., has been greatly increased and made readily available by means of Catalogues and the Bulletin published by the Society.

The Council would again tender their thanks to the daily press of the city for kindly inserting preliminary notices of meetings.

In concluding, the Council have to congratulate the Society on its progress in the past year, and express the hope that during the year upon which we have now entered the members and public will take a still deeper interest in the Society and the objects it promotes, both by personal attendance at its meetings and by collecting and donating to the Museum articles of scientific interest.

Respectfully submitted,

WM. J. WILSON,
Secretary to Council.

St. John, N. B., January 20th, 1884.

DONATIONS TO THE MUSEUM

DURING THE YEAR ENDED JANUARY 20TH, 1885.

DATE.	DONORS.	DONATIONS.
Feb.	MEMBERS OF SUMMER CAMP OF 1883,	Pottery, Implements of Bone and Ivory, Stone Weapons, Stone Implements, Stone Objects, Substances found in and around the Huts, Articles used for Food, — from Kitchen Middens at Bocabec River, Charlotte Co., N. B.
March.	ROBERT CHALMERS,	Glaciated Stone which has been broken and cemented after grooving,— from Grand Falls.
	HENRY SWIFT,	Fossils (Calamites, Lepidodendra and Sigillariæ)—from Spring Hill Mines, N. S.
April.	M. CHAMBERLAIN,	White-Winged Gull, mature and immature.
	F. W. DANIEL,	Ring-Billed Gull.
May.	CAPT. R. COLE,	Sea Shells from Nassau, Sea Fan, Coral (Oculina) from Bermuda.
	CAPT. S. GREARSON, of Bark "E. Nicholson,"	Pumice found floating in the Straits of Sunda after the eruption of Krakatoa.
	J. H. LEONARD,	Part of Stem of Indian Fig.
June.	GEO. K. SMITH,	Granite Pedestal from St. George.
	W. D. MATTHEW,	Nest of small bird, Darling's Island.
	M. CHAMBERLAIN,	Double Crested Cormorant, from Mace's Bay.
	HAZEN DRURY,	Fossil Moss (encrusted with lime), from the Rocky Mountains.
	HENRY GILBERT, JR.,	Flying Squirrel, from Rothesay.
	W. S. GILPIN, JOHN DALEY,	Loon, Brant, Gull and three Ducks, from Digby, N. S.
Sept.	WILSON DOBIN,	Loligo Bertramei, St. John harbor.
	J. C. ALLISON,	Stem of Calamite (?), from the Old Mine, Sydney, C. B.
	JOHN MCGOURTY,	Sandstone with concentric bands of color, from a clay bank, St. John.

DATE.	DONORS.	DONATIONS.
Sept.	W. I. WHITING,	Limestone with fossil shells, from Truro, N. S.
	W. J. WILSON,	Several Molluscs, Baie Verte and Cape Tormentine, N. B.; Stem of Calamite, Clones, N. B.
	G. U. HAY,	Gypsum with associated rock, Tobique River, N. B.
	Late GEO. THOMAS,	Wilson's Phallerope from Point Lepreaux, N. B.
	GEO. BARNHILL,	Whistling Swan, Belvedere Lake, St. John Co., N. B.
	W. F. GANONG,	Thirty-four species of Molluscs, Passamaquoddy Bay.
Nov.	MRS. S. WOODBURY,	Collection of Seaweeds (mounted), Martin's Head, N. B.
	NORMAN ROBERTSON,	Fossil Molluscs and Corals, Regina, N. W. T.; Anthracite, Cascade Mountain, Rocky Mts.; Fossil Tree, Medicine Hat, N. W. T.; Cones and Bark of Douglas Pine, Calgary, N. W. T.
	T. MURPHY,	Copper Ore (Chalcopyrite), Waterford, Kings Co., N. B.
	FRED. STOCKTON,	Barytes, Smith's Creek, King's Co., N. B.
	M. CHAMBERLAIN,	Young Loon, St. John.
	F. W. DANIEL,	Common Cormorant, Mace's Bay.
	PETER CAMPBELL,	Bird's Eyes (artificial).
	ALFRED MORRISSEY,	White-Bellied Nut-hatch, Belleisle Bay, N. B.; American Bittern, Little River, St. John Co., N. B.
Dec.	J. BAXTER, M.D.,	Three Copper Kettles, a Skeleton, portions of fur cap and moccasins, pieces of coarse cloth, birch bark and rope,—from Indian Point, Tabusintac River.
1885.		
Feb.	ALEX. MONRO, C.E.,	Implements of the Stone Age (axes, spear heads, etc.) Port Elgin, N. B.

DONATIONS TO THE LIBRARY.

DATE.	DONORS.	DONATIONS.
Feb.	HENRY WILMOT,	Report of Progress, Survey of Canada, for 1880-2, and Maps.
	BOSTON SOCIETY OF NAT. HIST.,	Proceedings, Vol. XXII., Part II.
	G. F. MATTHEW,	Illustrations of the Fauna of the St. John Group. No. I., Paradoxides.
	ACADEMY OF NAT. SCIENCE, Phila.,	Proceedings, Part II.
	BOSTON ZOOLOGICAL SOCIETY,	Quarterly Journal, Vol. III., No. I.
April.	OTTAWA NAT. FIELD CLUB,	Transactions, No. 4, 1882-3.
	ACADEMY NATURAL SCIENCES, Phila.,	Proceedings, Part III.
	BELFAST NATURALIST FIELD CLUB,	Annual Report, 1882-3.
	CAN. RECORD NAT'L HIST. AND GEOLOGY,	Vol. I., No. I., 1884.
	ROYAL SOCIETY OF CANADA,	Proceedings, Vol. I., 1882-3.
	UNITED STATES FISH COMMISSION,	Report 1880 (1883).
	U. S. GEOLOGICAL SURVEY,	Bulletin No. I.; Second Annual Report, 1880-81; Monograph No. 2; Atlas to accompany the Tertiary History of the Grand Cañon District.
	ESSEX INSTITUTE,	Three Pamphlets.
May.	CANADIAN INSTITUTE Toronto,	Proceedings, Vol. II., No. II.
	NEW YORK METROPOLITAN MUSEUM,	Fourteenth Annual Report.
June.	NAT. HIST. SOCIETY, Toronto,	Label List of Insects of Canada; Check List of Insects of Canada.
	N. S. INSTITUTE OF NAT. SCIENCE.	Proceedings, Vol. VI., Part I.

DATE.	DONORS.	DONATIONS.
June.	EDITOR,	Canadian Science Monthly, 1884, No. 3.
	BOSTON SOCIETY OF NAT. HIST.,	Proceedings, Vol. XXII., Part III.
Sept.	ESSEX INSTITUTE,	Bulletin Nos. 1, 2, 3, 4, 5 and 6 of 1883; Nos. 1, 2 and 3 of 1884.
	E. GILPIN,	Quarterly Journal of Geological Society, London.
	C.W. WELDON, M.P.,	Report of Committee on Geological Survey.
Oct.	LINNEAN SOCIETY OF NEW YORK,	Transactions, Vol. II.
	E. GILPIN,	Quarterly Journal of Geological Society, London, Vol. XI., Parts II. and III.
	SMITHSONIAN INSTITUTION,	Report 1882.
	U. S. GEOLOGICAL SURVEY,	Mineral Resources of the United States.
Nov.	CANADIAN RECORD OF SCIENCE,	Vol. I., No. 2.
	G. F. MATTHEW,	Pamphlets on the Cambrian formation of Wales.
	COLORADO SCIENTIFIC SOCIETY,	Artesian Wells of Denver, Col.
	CANADIAN INSTITUTE	Proceedings, Vol. II., No. 2.
1885	CLIFFORD RICHARDSON.	Composition of American Wheat and Corn.
Jan.	BOSTON SOCIETY OF NAT. HIST.,	Proceedings, Vol. XXII., Part IV.
	ACADEMY NATURAL SCIENCE, Minnesota,	Bulletin, 1883.

ACT OF INCORPORATION.

EXTRACTS FROM ACTS OF THE GENERAL ASSEMBLY OF HER MAJESTY'S PROVINCE OF NEW BRUNSWICK.

CAP. XXIX.

AN ACT TO INCORPORATE THE NATURAL HISTORY SOCIETY OF NEW BRUNSWICK.

Passed 3rd May, 1883.

BE it enacted by the Lieutenant Governor, Legislative Council, and Assembly, as follows:

1. That LeBaron Botsford, M.D., George F. Matthew, George U. Hay, James A. Estey, Lucius C. Allison, M.D., G. Ernest Fairweather, William J. Wilson, Robert Chalmers, Montague Chamberlain, Harold Gilbert, W. F. Coleman, M.D., R. Peniston Starr and William F. Best, their associates, successors, and assigns, be and they are hereby created and declared to be a body politic and corporate, by the name of "The Natural History Society of New Brunswick," and by that name shall have all the general powers and privileges made incident to a Corporation by Act of Assembly in this Province, or otherwise, for the purpose of promoting the study of Physical Sciences, the forming a General and Provincial Museum, and Scientific Library, and facilitating generally the acquisition and dissemination of useful knowledge.

2. The said Corporation shall have power and authority to take and hold real and personal property for the purposes of this Act, provided that the value of the real estate held by said Society shall not exceed the sum of fifty thousand dollars, and may sue and be sued in its corporate name in any Court of law or equity, or otherwise howsoever.

3. The said Corporation shall also have power and authority from time to time to enact and pass such by-laws not contrary to law as it may deem necessary and desirable for its management and control.

OFFICERS OF THE SOCIETY

FOR 1885.

Patron: His Honor the Lieutenant Governor.

President: LeB. Botsford, M.D.

Vice Presidents: M. Chamberlain, James A. Estey.

Treasurer: Alfred Seely.

Corresponding Secretary: George U. Hay.

Recording Secretary: W. J. Wilson.

Librarian: S. W. Kain.

Curators: G. F. Matthew, F. W. Daniel, W. F. Best.

Members of Council: W. S. Harding, M.D., E. Fisher, L. C. Allison, M.D.

STANDING COMMITTEES

FOR 1885.

Physics and Chemistry: W. F. Best, G. U. Hay.
Meteorology: Gilbert Murdoch.
Mineralogy: W. F. Best, R. P. Starr, W. J. Wilson.
Geology: G. F. Matthew, R. Chalmers, W. J. Wilson.
Botany: G. U. Hay, J. E. Wetmore, J. Brittain, W. T. L. Reed.
Entomology: M. Chamberlain, G. Williamson, H. E. Goold.
Invertebrates: L. C. Allison, P. R. Inches, M.D., W. F. Ganong.
Vertebrates: LeB. Botsford, M.D., M. Chamberlain, W. M. McLean.
Ornithology: M. Chamberlain, J. W. Banks, A. Morrissey.
Library: S. W. Kain, W. J. Wilson, G. E. Keator.
Essays and Lectures: G. F. Matthew, G. U. Hay, C. H. Masters, LeB. Botsford, M.D., L. C. Allison, M.D., J. A. Estey.
Publication: M. Chamberlain, G. F. Matthew, G. U. Hay.
Hall: W. J. Wilson, S. W. Kain, G. F. Matthew.
Finance: A. Seely, W. J. Wilson, Edwin Fisher.
Press: J. A. Estey, W. F. Best, S. W. Kain.
Delegate to the Royal Society of Canada: M. Chamberlain.
Alternative: F. W. Daniel.

NEW MEMBERS ELECTED DURING THE YEAR

ENDED 20TH JANUARY, 1885.

ORDINARY MEMBERS.

February, 1884—Wm. Breeze, Rev. Dr. Pope, Alfred Seely.

March, 1884—Rev. Dr. Hopper, John H. Kinnear.

April, 1884—James W. Manson, Merchant.

June, 1884—W. Shives Fisher, Merchant.

September, 1884—James A. MacIntire (Portland).

October, 1884—Rev. W. Hancock (Rothesay), Rev. W. O. Raymond, Charles W. Hall.

November, 1884—Rev. G. O. Dobbs.

January, 1885—J. W. Holly (Portland).

CORRESPONDING MEMBERS.

May, 1884—Rev. E. C. Sanders, St. Stephen, N. B.

September, 1884—Alex. Monro, C.E., Port Elgin, N. B.

October, 1884—Fred W. Watson, Teacher, Harvey, Albert Co., N. B.

ASSOCIATE MEMBERS.

February, 1884—Miss C. Martin.

April, 1884—Mrs. Thomas MacLellan, Mrs. W. F. Best, Mrs. Wm. Shives.

December, 1884—Miss Janie Rowan.

January, 1885—Miss Nellie Robinson.

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OF THE

NATURAL HISTORY SOCIETY

OF

NEW BRUNSWICK.

No. IV.

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