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TRANSACTIONS
OF
THE CANADIAN INSTITUTE.

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VOLUME III., 1891-92.

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1891-1892.

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CONTENTS.

	PAGE.
Officers 1891-92.....	iii
Special General Meeting	1
Summer Session at Penetanguishene	1
Transactions—Session 1891-92	5
Regulations of the Canadian Institute	31
Section I. Of Membership, Election, and Fees.....	31
II. Of the Officers and Council and the Mode of their Election	33
III. Of the Auditors	34
IV. Of the Council	34
V. Of the duties of Officers.....	35
VI. Of Meetings	36
VII. Of Branch Societies	37
VIII. Of the Property of the Institute.....	37
IX. Of Visitors	37
X. Agreement with the Natural History Society	38
XI. Of Altering the Regulations	38
Regulations of the Library and Reading Room	39
Forty-Third Annual Meeting.....	44
Forty-Third Annual Report.....	45
Appendix I. Membership.....	50
II. Financial Statement.....	50
III. Papers Read—Session 1891-92	53
Report of the Librarian	55
“ Biological Section.....	56
“ Geological and Mining Section.....	58
“ Historical Section.....	59
Proceedings of the Ornithological Sub-Section.....	62
Occurrence of the Evening Grosbeak in Ontario, 1889-90	111
Canadian Wild Flowers.....	125

St. Columba or Colum Cille	131
REV. NEIL MACNISH, LL.D.	
Déné Roots	145
REV. FATHER A. G. MORICE, O.M.I.	
I. Introduction	145
II. Vocabulary	153
Note on Ocean Steam Navigation	165
SANDFORD FLEMING, LL.D., C.M.G.	
Note on Early Steamboats	174
SANDFORD FLEMING, LL.D., C.M.G.	
Note on Postage Stamps.....	177
SANDFORD FLEMING, LL.D., C.M.G.	
The Migration of the Evening Grosbeak in 1890	181
J. B. WILLIAMS.	
Their Appearance in Ontario	182
Their Appearance in the States	184
The Cause of Migration.....	184
Their Food.....	185
The Bressa Prize	186
The Great Centre: An Astronomical Study	189
J. C. HAMILTON, LL.B.	
The Abenakis of St. John River.....	195
EDWARD JACK.	
Celtic Prosody.....	206
REV. NEIL MACNISH, B.D., LL.D.	
National Characteristics and Migrations of the Hurons	225
A. F. HUNTER, M.A.	
An Episode in the Pontiac War, 1763	229
LIEUT. RUTHERFORD.	
Early Traders and Trade Routes in Ontario.....	253
CAPT. ERNEST CRUIKSHANK.	
Lake Currents.....	275
L. J. CLARK.	

CONTENTS.

vii

The Private Correspondence of Lieut.-Col. Coffin, 1837.....	281
H. R. FAIRCLOUGH, M.A.	
The Phocas of Terre Neuve	303
REV. PHILIP TOCQUE, A.M.	
Proposed Change in Reckoning the Astronomical Day.....	307
Report of Committee	309
Appendix. Opinions of Astronomers	311
Bibliography of Publications of Canadian Institute	317
Archæology	317
Art.....	317
Astronomy.....	317
Bibliography	320
Biology.....	320
Classical Philology	323
Chemistry	324
Engineering.....	325
Ethnology	326
Geography.....	327
History.....	330
Jurisprudence and Law	331
Linguistics.....	331
Literature.....	332
Mathematics and Physics	333
Medicine.....	334
Political Economy	334
Psychology.....	335
Miscellaneous	335
Appendix.....	335
List of Members.	337

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Vol. 3, C. 2

v. 3

p. 1

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CONTENTS.

	PAGE.
SUMMER SESSION AT PENETANGUISHENE	1
ABSTRACT OF MINUTES	5
REGULATIONS OF THE CANADIAN INSTITUTE.....	31
FORTY-THIRD ANNUAL MEETING	44
FORTY-THIRD ANNUAL REPORT	45
PROCEEDINGS OF ORNITHOLOGICAL SUB-SECTION.....	62
OCCURRENCE OF EVENING GROSBEAK IN ONTARIO..	111
CANADIAN WILD FLOWERS.	
D. W. Beadle, B.A., LL.B ..	125
ST. COLUMBA OR COLUM CILLE.	
Rev. Neil MacNish, LL.D....	131
DENÉ ROOTS.	
Rev. Father A. G. Morice, O.M.I	145

TRANSACTIONS
OF
THE CANADIAN INSTITUTE,
SESSION 1891-92.

SPECIAL GENERAL MEETING.

Special General Meeting, 19th June, 1891, the President in the chair, to consider plans for the enlargement of the building, or the acquisition of a new site and other proposals connected with the extension or change of the buildings and work of the Institute.

After discussion of various proposals the following resolution was carried :—That it be an instruction to refer the question of the alterations, or the selection of another site, to the Council to report to the Institute at a future meeting.

SUMMER SESSION AT PENETANGUISHENE.

First Meeting, 25th September, 1891, at 15.30 o'clock, in the Pavilion of "The Penetanguishene," E. A. Meredith, LL.D., in the chair.

Mr. A. F. Hunter, B.A., read a paper on "Military and Naval Exploits on the Nottawasaga during the War of 1812."

Towards the end of the year 1813 the Americans began to make preparations for the re-capture of Michilimackinac, which had been taken from them the year before. A relief expedition left Kingston in February, 1814, for that northern post, and halted on the Nottawasaga River. Here they constructed batteaux for their transportation across Georgian Bay, and a few weeks later a blockhouse was erected near the mouth of the river. This blockhouse was attacked by American boats on August 14th, 1814, and destroyed, as well as the Northwest Company's schooner *Nancy*, which was lying in the river at that place. Some extracts from books, now become rare, were given to throw light upon the incidents of that skirmish, besides two accounts from pioneers of the county.

It was stated in answer to enquiries that "Michilimackinac" meant "Great Turtle" and was shortened to "Mackinac" by the French, that

Gloucester Bay was on the other side of Tiny peninsula from Matchedash Bay, that the whole bay was called Gloucester Bay by Governor Simcoe in 1793, and that the route to Drummond Island was used till 1841.

Mr. A. C. Osborne read a paper on "The Land of the Wyandots."

Mr. O. A. Howland said the reader referred to the Indians offering tobacco to the Chaudiere Falls. It was probably as a propitiation to some presiding spirit, offered to secure a successful journey on the Great River. He had heard from the Indians on the North Shore of Lake Michigan a similar tradition about the cliff called the "Lover's Leap" on Mackinaw Island. The cliff overlooks the Straits of Mackinaw. The island is about midway in what must have seemed to canoemen a "grand traverse." According to the tradition given him, which he believed to be the true one, the Indians used to land and lay their offerings on this natural altar to the good or evil spirit presiding over the spot as thanks for a safe voyage so far and propitiation against the dangers of the remainder of the passage.

Rev. Father Laboureau said the offering of tobacco is not out of date. A practice still exists among many Indians of throwing a bit of tobacco to the "old woman."

Mr. Alan Macdougall read a paper on "The Indians of the Pacific Coast, an Attempt to Define their Artistic Work."

Second Meeting, 25th September, 1891, at 20 o'clock, in the Town Hall, the Mayor in the chair.

The Mayor delivered an address of welcome, to which a reply was made by Dr. Meredith.

Mr. David Boyle read a paper on "The Indian as a Mechanic"

Rev. Father Laboureau read a paper on "The Early History of the the Mission of St. Anne's, Penetanguishene." There was, he said, a naval and military station in Drummond Island at the time of its cession to the United States, and also a considerable number of traders, merchants, and their servants, mostly French Canadians, half-breeds, and Indians. The military and naval post was removed in the fall of 1827 to Penetanguishene. The civilians followed in the spring of the following year, landing at what is now the Reformatory Point. Barracks were then erected, and the civilians, after a year and a half, removed to the present town. The Indians were scattered around at Waubaushene, Coldwater, Beausoleil, Manitoulin, some staying at Penetanguishene. In February, 1832, Bishop Macdonnell, of Kingston, made his first pastoral

visit, accompanied by Father Crevier, the resident missionary on Sandwich Island, in Detroit River. Then clergymen came occasionally until the arrival of a resident priest. The absence of a regular clergyman was made up for partially by the devoted zeal of a Frenchman named D. Revol, who assembled the people for prayer on every Sunday and Church holidays, instructed them in their faith, and was especially successful with the Indians. He spent his time, money, and all that was best in him in their service. A log church was built in 1835 where the town hall now is. It became too small for the increasing congregation, and a new one was erected and blessed in 1861 by Archdeacon (now Archbishop) Walsh. Then in 1871 was commenced the memorial church in memory of the martyred Jesuits, De Brebœuf and his companions. The basement has been used for service since 1890. It is still unfinished. In 1835 the Rev. J. Baptiste Proulx came as resident missionary. He was specially interested in the Indians, and, having obtained another priest in 1837, Father Amable Charest, to reside in Penetang, he went with them to Manitoulin Island. In 1845 he transferred the care of them to the Jesuits, who have had remarkable success with them. Father Laboureau then gave an account of the different missionaries who have since laboured among whites and Indians in Penetang and neighbouring districts.

Mr. A. F. Hunter, B.A., read a paper on "National Characteristics and Migrations of the Hurons, as indicated by their remains in North Simcoe."

The Indian name of Lake Simcoe was *Ouentaron*, meaning "beautiful lake." It was called *Lac aux Claiés* or the lake of the hurdles by the French, which became corrupted into *Lac la Clie*, and so called for 150 years after the Huron-French period. It is altogether likely that the hurdles referred to in the name were those found at the Narrows The Huron-Indian village of Cahiagua, mentioned by Champlain, was situated three leagues (nine miles) from the Narrows, and not at Orillia as claimed by some writers on the subject. Remains of a Huron village are still to be seen at a place in the Township of North Orillia, corresponding closely with the position of Cahiagua as indicated by Champlain.

Mr. D. B. Read, Q.C., read a paper on "Macbeth, Historical and Dramatic."

Mr. A. C. Osborne presented to the Institute a stone knife and a stake from the "Narrows" at Orillia.

Third Meeting, 26th September, 1891, at 15 o'clock, in the Indian Council House on Christian Island, Dr. Meredith in the chair.

John Monague addressed the meeting in Indian, which was translated by John Lake, as follows.—

“I was born on the banks of the Nottawa River. The first thing I can remember was seeing ships anchored at the mouth, but I am not positive whether they were sunk there or not. (This statement, uttered incidentally, corroborates that of Mr. Hunter.) I did not travel much when young, only round about my home. I once went up to Sault Ste. Marie. Then I made a trip to Toronto, where I saw people marching round with drums, and wondered what it all meant. The Indians there told me that there was a war or rebellion. When I was in Toronto the Government sent men to tell the Indians that everyone over 21 years was to turn out and help find Mackenzie. A reward of \$1,000 was offered to the person who brought in Mackenzie's head. Four or five of us then started out to hunt for him, but we did not know him, and could not have taken him. The Indians told us he had gone over the Big falls; that he had walked to the front in woman's dress, and so we missed him. The Indians were then told to go to a house beyond Holland Landing, towards Barrie, in which there were plenty of weapons left by the cavalry. When we got there the house had been burned down. Afterwards I and my tribe settled in Coldwater and remained there about twenty years. We then went to Beausoleil Island and stayed there about fifteen years. Captain Anderson was the agent then. He told me that he would try to lease a mill we had on the Island to George Copeland for twenty years and that we should go to another island. We then moved to Christian Island and Manitoulin, the greater number went to the latter place. When we were moving Chief Assance was drowned, and he was succeeded by his son, who has been chief ever since. After Anderson, Jarvis came. He always came in a big canoe. After business was over he made us have canoe races, men in one canoe, women in another. He used to steer for the women, who always won. On these occasions his hat would be beautifully decorated with ribbons. Jarvis gave blankets as prizes. I do not know whether they belonged to Jarvis or to the Government. I used to go with Jarvis to Manitoulin as his pilot.”

Mr. A. C. Osborne read a paper on “The Flight of the Hurons from Ste. Marie to Christian Island.”

The following resolution was carried on motion by Mr. Boyle, seconded by Dr. Ellis :—

“That in the opinion of the Canadian Institute it is desirable that steps should be taken to preserve as far as possible the ruins of the old forts on the Wye and Christian Island, and that with this object in view it would seem proper that the Institute should address the Provincial Government,

the Councils of Simcoe County, Midland City and Penetanguishene, the Grand Trunk Railway Company and the Indians of Christian Island, asking those bodies to unite for this purpose."

Votes of thanks were passed to the Mayor and Council, to Chief Assance, John Monague, Father Laboureau, and Mr. Walter J. Keating for their efforts in promoting the success of the meetings.

FIRST MEETING.

First Meeting, 7th November, 1891, the President in the chair.

The President delivered his inaugural address: "A Critical Review of the Enterprise of Christopher Columbus." Previous discoveries by the Cabots were sketched, the disastrous and murderous government of the Spaniards in America alluded to, and the motives attributed to Columbus, not altogether unselfish, dealt with. After the address, a photograph in colors of the solar spectrum, thought to be the first ever exhibited in America, was shown.

SECOND MEETING.

Second Meeting, 14th November, 1891, Mr. J. Davies Barnett in the chair.

Donations since the Annual Meeting 68, Exchanges 1731.

A report of the summer work of the Biological Section was read.

The following were elected members:—Alfred Boyd, V. B. Wadsworth, William Ker, M. B. Aylsworth, Henry Wade, T. C. Jackson, Milner Hart, Daniel Clark, M.D., Henry E. Caxton, Thomas M'Crosson, W. J. Keating, A. C. Osborne, A. P. Coleman, Hon. J. B. Robinson.

Mr. W. J. Smith read a paper on "The Formation of Niagara River." He opened his reading with recounting the theories held by Sir Charles Lyell, Mr. Blackwell, Prof. Gilbert, Prof. Scovel, and others, all varying in statement of method, but all agreeing on the one point that the "Gorge," from Lewiston to the Falls, has been due to the action of the waters eroding the rocks backwards. Mr. Smith contends that facts do not substantiate the theory so held in any one particular, and he first takes the ground that Niagara river should not be the only instance in the world where waters in similar positions have eroded their rock bed. In support of his non-erosion theory, he recites parallel instances in a number of well-known falls within the Dominion—coeval in point of time

with the Niagara. He instances falls on the European and African continents, particularly one described by Livingstone on the Zambesi. The waters of that immense river have fallen into a rock crevice about 60 feet wide, and the full span of the river, over 3,000 feet. For untold ages the waters have beaten the wall rock of that fissure, and erosion has not taken place; yet under such an erosion theory as set up by the scientists the waters should have increased the opening, even under a recession rate of three inches per annum, at least 7,000 feet; in other words it should have formed a similar gorge to the Niagara of that extent. The rock was "Basaltic," therefore much more friable and easier to erode than the limestone rock forming the bed of Niagara river and its gorge. This river was certainly coeval with the Niagara, and, at a recession of one foot per annum, it should have presented a gorge far in excess of the length of the Niagara. He claims the instances in our own country should have presented corroborative evidence of erosion, yet they do not. Speaking of the recent report of the engineers of the New York State Geological Survey of the cliff of the Falls, and its recession, Mr. Smith places it in many peculiar ways. For instance: The report states that the total superficial area of rock which has disappeared between 1842 and 1890 is, at the American Falls, 32,900 feet, or 755-1,000 of an acre, and at the Horseshoe Falls 275,400 superficial feet 6 32-1,000 acres. If, then, such was the case, as the superficial area must be multiplied by the rock, depth or fall of water, 164 feet, and divided by the number of days in the 48 years, there should be a daily loss of rock equal to 190 tons, yet, as he puts it, the vertical face of the rock at the Falls, as well as the rock forming the cascades, presents the same old moss-grown face which it has done each and every day during all time. If the rock eroded, how could the vegetable growth exist on any part thereof? Mr. Smith argues further that Goat island "presents a vertical face of 1,500 feet in length and 100 high on the line of the falls. It is similar in appearance to the rock surrounding and lining the "gorge." Evidently, then, that island was at one time produced across the chasm, and more than likely joined the main rock on the Canadian side. Now let these scientists take either horn of the dilemma. If that island joined the main rock, how did the waters get over the 100 feet high rock barrier to enable the formation of its present appearance? The American falls were open, therefore all waters must have flowed over at that time, the rock island could not have then been eroded. Extend the island even part of the way, and its appearance demands the production, therefore the waters would have flowed around to the west and over our Canadian park, making connection further down the "gorge." In no way could the island be eroded. Mr. Smith describes the formation as due to fracture. He

enters into many particulars as to the method, treating it on well-known geological lines. He supports his theory by existing evidence. He admits the startling nature of his thesis, in the face of the statements of so many scientists, but he says the evidence of facts will always displace that of theory. The facts in this case are so many that, when studied from his standpoint, conviction must follow. He denies emphatically that there was an "ancient river bed," and brings proof to bear, stating that such an outflow could not be restrained by any gravel and clayey bed as the old course is said to have been. Nothing but a rock barrier could have confined the waters. The theory he said was so radical a change from that which we have been led through so many years to believe as to confound us for the time being. But the question was deserving, from a scientific point of view, of the most careful investigation.

THIRD MEETING.

Third Meeting, 21st November, 1891, the President in the chair.

The President, Secretary, and Dr. Meredith were appointed to represent the Institute at the Prison Reform Conference to be held on the 27th November.

Donations and Exchanges since last meeting, 54.

Daniel Rose, R. A. Donald, Ernest Lefroy, and Dr. G. B. Smith were elected members.

Dr. Kennedy read a paper by the Rev. A. G. Morice on "Déné Roots," the principal portion of which is a vocabulary, showing the equivalents in about 20 dialects of 370 English words and phrases. The object of making this vocabulary is to enable students in other parts of the world, and especially in Eastern Asia, to compare their words with corresponding words in the languages of other tribes, and thus lead to important conclusions as to the affinity of widely separated nations. In a brief introduction the Rev. Father shows the supreme importance of comparative philology in discussing the affinities of races, and outlines some of the characteristics of the languages he is dealing with.

Mr. Macdougall referred to a former paper by Father Morice, in which it was stated that almost all the customs in the book of Leviticus were found among the Indians. From the striking resemblance of the Indians to the Mongolians, it was natural to conclude that the west coast of America had been settled from the eastward. A Japanese man of war had put into the harbor of Esquimalt. The sailors dressed up some of

the Indians in their own clothing, and it was difficult to distinguish the Indians from the Japanese.

Dr. W. R. Shaw read a paper on the disease called "Peach Yellows." After sketching a history of the disease in the United States and Canada he went on to detail the signs which characterize the disease. He enumerated the preliminary results which he has obtained during the past season in the bacteriological investigation of the disease, and demonstrated that a particular germ has been found which is the probable cause of it. He stated that he would lay before the Institute at some future date the results of inoculations, etc., into healthy vines to find out if the diseases be actually due to the bacillus which he has found. Dr. Shaw's paper was illustrated by the microscope and culture tubes.

Prof. Macallum said that it had been stated to him that probably in six or seven years there would be no peach orchards in Niagara. He hoped that Dr. Shaw would continue to pay attention to the subject, as the results were such as would reward him for his investigations. He suggested that the Biological Section should take up the matter. The Institute should also take action. They should urge the importance of the subject on the legislature, and in view of the great annual loss sustained of about \$100,000, should obtain aid in carrying on the investigation. As the whole Dominion was interested in this matter of diseased peaches it should also be brought to the attention of the Dominion Government and stringent measures adopted.

A resolution was passed referring the paper to the Council of the Institute to take necessary steps to bring the subject before the Government and people of the Province and Dominion.

FOURTH MEETING.

Fourth Meeting, 28th November, 1891, the President in the chair.

Donations and Exchanges since last meeting, 44.

Prof. J. G. Hume, and Henry Duggan were elected members.

A paper by Dr. MacNish on "St. Columba or Colum Cille," was read. The paper gives some facts as to the geography and history of the island of Iona, sketches rapidly the life and work of St. Columba, gives some account of his writings, and concludes by a comparison of a number of words and phrases in the Irish and Scottish dialects of the Gaelic language.

The following resolution was passed on motion by Mr. Clark, seconded by Mr. Morrison:—

That the Secretary be requested to obtain from the City Council the results of the observations taken on lake currents, with a view to consideration thereof and report by the Committee.

FIFTH MEETING.

Fifth Meeting, 5th December, 1891, the President in the chair.

Donations and Exchanges since last meeting, 73.

Mr. F. E. P. Pepier was elected a member.

A resolution was adopted requesting the Vice-President and Secretary to attend the meeting of the Ontario Society of Artists in regard to obtaining the old Upper Canada College buildings from the Ontario Government for art and science purposes.

A paper was read by W. A. Sherwood, A.R.C.A., on "The Spirit of National Art." He lamented the fact that there was so little of this spirit in Canada, and that national art was almost unknown. He made reference to the life labor of Sir Joshua Reynolds, who strove to build up a national art in England. The results of his work may now be seen in the magnificent art in England to-day, which compares favorably with that of any other country. In this democratic country there is no patronage, and all that can be looked for is a broad sympathy with every department of art. This broad sympathy was a more powerful factor in building up a national art than any individual patronage, and he looked forward to the time when it would be heartily extended. The art of any country should reflect the individuality, the customs and the philosophy of the people. The spirit of national art has a patriotic tendency, and the state should assist in fostering it to the utmost. Its object and aim is to develop to the furthest every portion of the community to a higher appreciation of created things, to bring the mind in closer communion with nature, viewing with reverence all created forms and all conditions of social and domestic life. Like its sisters, music and poetry, it strives to touch with a delicate hand the finer sensibilities of nature: like its sterner sister science, to wield no uncertain wand over the grosser prostitution of sacred things; a priestess in the temple of nature truly zealous of her sacred duties, keeping the lights ever burning upon the golden minaret of the altar. The homogeneous condition of the Canadian commonwealth would in time produce an art peculiarly national and superior to that of any other country. In it would be

combined all the beautiful characteristics of the English, the French, the German and the Italian schools, and it would also have the refining influence of the Japanese art. He looked to the French in Quebec to produce a great Canadian painter. Speaking of the spirit of art in the United States, Mr. Sherwood remarked that there was but little of it there. The wealthier class practically despise American painters and search in the art centres of the old world for the adornments of their homes. Whistler, for instance, is now looked upon as a very eminent painter in England. In Baltimore, his home, where he worked for years, he was neither appreciated nor recognized. Canada, with its lakes, its forests, its glorious scenery, its clear sky and its noble people, should produce a school of art superior to any in the world. He laid great stress on the sacredness of art, and in its refining and elevating influences he placed it on an equal footing with the pulpit and the professor's chair.

Mr. Pursey thought that the best pictures were not exact representations of nature. The artist took the outline from nature and filled it up with the ideal.

Mr. Macdougall referred to pictures that were defective from a lack of scientific knowledge on the part of the artist or a want of accurate observation of nature. Some were defective in their cloud effect, owing to the neglect of the study of meteorology. In a picture of sheepshearing the shearer was represented as shearing with his left hand. A countryman who saw it and had more accurate knowledge of nature than the artist, said the picture was wrong, as the man could not shear the sheep with his left hand.

Mr. Fairclough referred to a painting of Turner's in which the Thames was represented flowing the wrong way.

The President remarked as to religious art that there was none in the world at the present day; the earlier productions of the European painters were inspired by their strong faith. As this faith gradually died out, there was a corresponding decline in religious art. He thought that historical art was not to be looked for in Canada. In paintings of scenery the Canadian artists had done very well. They had produced some charming pictures that were fully equal to those on the other side. He thought that their works were very fairly appreciated, and brought good prices. He held that the present time was not one in which art could attain a high level. It was too practical. It was a photographic age. People required an actual representation of nature. It was not always desirable to have an actual representation of nature. As to the pictures placed before children in the schools he gave reasons why

perfect pictures should not be placed before them. He thought that they could not comprehend a finished and perfect picture and that it would be better to give them something simple.

SIXTH MEETING

Sixth Meeting, 12th December, 1891, the President in the chair.

Donations and exchanges since last meeting, 117.

Mr. J. A. Fowler was elected a member.

A committee was appointed to co-operate with the committee of the Ontario Society of Artists in their endeavours to obtain some portion of the Upper Canada College buildings for art and science purposes.

The Committee on Lake Currents appointed last session was continued, with power to add to their number.

Mr. A. F. Chamberlain, M.A., late of Toronto, now of Clark University, Worcester, Mass., was appointed to represent the Canadian Institute at the meeting of the American Folk-Lore Society, which will be held at Washington on the 29th and 30th December inst.

Mr. W. A. Douglass, B.A., read a paper on "The Finances of the American Civil War."

SEVENTH MEETING.

Seventh Meeting, 19th December, 1891, the President in the chair.

Donations and exchanges since last meeting, 50.

Messrs. Samuel McAllister, C. C. James, and H. R. Cockin were elected members.

The following resolution, sent up by the Historical section :—"That the members of this section consider that the setting apart and proper maintenance of a portion of the public domain as a national park would much conduce to the fostering of patriotic feeling as well as be a means of increasing interest in Canada abroad, and therefore resolve that the Institute be requested to memorialize the Dominion and Local Governments to the end that such action may be taken as will result in this object," was referred to the Council.

Mr. Levi J. Clark read a paper on "Testing the New Water Pipe," in which he briefly described the construction and laying of the pipe, and its history since it came into use. The method of ascertaining the amount

of the leakage was minutely described, and the conclusion drawn by him was that from 84 to 140 gallons per minute of bay water was finding its way into our water supply. The quantity varies with the location, being greater the nearer the pumping station is approached. He illustrated his paper by drawings on the blackboard, and referred to several scientific truths relating to the flow of water in pipes, which were exemplified in the course of the investigations. He thinks that the only leak of any consequence has now been discovered at the crib at Hanlan's Point, and that there will be no difficulty in stopping it, when the long-standing charge of our city water being polluted by bay water or sewage may be wiped from the slate.

EIGHTH MEETING.

Eighth Meeting, 9th January, 1892, the President in the chair.

Donations and exchanges since last meeting, 289.

The Rev. Philip Tocque, A.M., read a paper on "The Aborigines or Bœothicks of Baccalaos."

The report of Mr. A. F. Chamberlain, delegate from the Canadian Institute to the annual meeting of the American Folk-Lore Society, held in the city of Washington, December 29th and 30th, 1891, was read. It stated that the meeting was very successful, each day's attendance being large and appreciative. The Society ended its third annual gathering with the confidence that the study of folk-lore in America was now being carried on in true scientific spirit, and the fields of investigation, hitherto almost untouched, bid fair before long to yield rich harvests. Seventeen papers were read, dealing largely with the lore of the aborigines, although the study of the folk-lore of the European immigrants was duly represented. Due recognition of the Canadian members of the society was made in the election of Horatio Haic, of Clinton, Ont., and James Deans, of Victoria, B.C., as members of the Council. It was gratifying to know that not only at the meeting of the Folk-Lore Society, but also at those of the Modern Language Association of America, the American Dialect Society, the American Historical Society, and the Society of Church History, all of which met in Washington contemporaneously, the programmes show that Canada was well represented in the papers which were read.

NINTH MEETING.

Ninth Meeting, 16th January, 1892, the President in the chair.

Donations and Exchanges since last meeting, 50.

On a communication from Dr. Rosebrugh the following resolution was adopted :—

“ That we heartily approve of the ten resolutions adopted by the Provincial Prison Reform Conference held in Toronto, November 27th, 1891; that the same are commended to the favourable consideration of our legislators, both Dominion and Provincial, and that copies of this resolution be forwarded to the Hon. Sir John Thompson, Minister of Justice, and to the Hon. Oliver Mowat, Attorney-General, Province of Ontario, and to the Press for publication.”

Mr. George E. Atkinson was elected a member.

Mr. William Houston, M.A., read a paper on “ Economic Science for Canadian Students.”

Mr. Harvey had listened to Mr. Houston, as he always had done, with the greatest pleasure. On nearly all the points he agreed with him. There were a few, however, on which he differed. He did not think that economic science was one of locality. In his opinion economic science did not belong to a small community, but to the brotherhood of mankind at large. But was there such a science as political economy? There was no more a science of political economy than there was of literature. There could be no exact science of either. Behind all this was the question, What was truth? The idea of what was truth was continually changing except in the mathematics. When you come to enquire what was perfectly just between man and man, there was constant change. As to the method of investigation, the inductive method had been the most successful for the past 300 years. He did not think that we should neglect the deductive method. The former was the best when we were young, the latter when we were old.

TENTH MEETING.

Tenth Meeting, 23rd January, 1892, the President in the chair.

Donations and Exchanges since last meeting, 66.

A paper by Mr. Edward Jack on “ The Abenakis of the St. John River,” was read by Mr. Macdougall. The paper deals with the history and legends of the tribe, gathered during many years of intercourse with them. They originally inhabited what is now Maine, New Hampshire, New Brunswick, and even a portion of Nova Scotia; and were subdivided into several divisions. The principal ones took their characteristic names from the districts they lived in; such as Kanibesinnoaks, “ those

who lived near the lakes"; Sokowakiakio, "men of the south"; Nurlantsuaks, "those who travel by water." The remains of the tribes called "Muskrats" and "Etemankiaks," now called Malecites, occupy the greater part of New Brunswick. The early connection of the tribe with the English is found in their word for king, which is Kinzames, evidently intended for King James of England. A somewhat similar name is used for our Queen. The Abenakis say they came from the West, and originally worshipped the sun and moon. The first missionaries to visit them were the Jesuits, who came among them in 1611. Numerous legends are given, which are similar to some of those of our Western Indian. On relating the story of the beaver, muskrat, and squirrel to a Chippewah in Wisconsin, the latter knew it well. The story is that the muskrat lent the beaver his tail, which the latter refused to return; the Chippewah added to this, yes, and he has been whining for it ever since.

The President read some notes in which he gave further particulars respecting the Abenakis. In 1641 we first get the name of the Abnaquois. In 1643 we find in the "Relations des Jesuites" that the Abnaquois had no dealings with any but the English. 1644-1646, some Abnaquois came to Quebec and were baptized by Father Dreuilletes. 1647. There is a whole chapter in "Les Relations" respecting them. Father Dreuilletes studied their language, and said it had no little similarity to the Algonquin.

ELEVENTH MEETING.

Eleventh Meeting, 30th January, 1892, the President in the chair.

Donations and exchanges since last meeting, 53.

Mr. Alexander MacInnes was elected a member.

Messrs. Bain and Macdougall were appointed delegates to the Industrial Exhibition Association.

Communications were read from the Manchester Geographical Society announcing the death of the President, the Duke of Devonshire; from the Royal Society of Canada respecting their meeting in May; and from the Committee appointed by the Spanish Government on the celebration of the fourth centenary of the Discovery of America inviting the co-operation of the Institute.

The President laid on the table his paper on "The Position of the French Race in Canada," read by him at the Congress of Roman Philo-

logy held in Montpelier, and published in *La Revue des Langues Romanes* with a note by Dr. Bourinot on French Canadian Biography.

Mr. Henry Spencer Howell read a paper on "The Volcano of Kilauea and the Hawaiian Islands."

The Hawaiian Islands are situated in the North Pacific ocean, lying between the 18th and 23rd parallels of north latitude, and from 155 to 161° west longitude; and are, therefore, just within the tropics. There are eight principal islands, Hawaii, with an area of 4,210 square miles; Maui, 760; Oahu, 600; Kauai, 590; Molokai, 270; Lanai, 150; Niihau, 97; and Kahoolawe, 63. The last named is uninhabited; and there are four small islets, one of which (Molokini) is an extinct volcano with one side of the crater open to the sea—showing either subsidence or denudation. No finer climate can be found in any part of the world; it is as salubrious as that of Madeira, and its evenness is the delight of those who come here for pleasure or to benefit health. The tropical heat is so tempered by the sea breezes—the soft trade winds of the north—that the greatest degree of heat at Honolulu during the past twelve years was 90° in the shade, while the lowest was 54°; the average being 75°. The daily range of the thermometer is 12°. Of course it is hot in the sun at noon; but the mornings and the evenings are delightful. Sugar is the chief product; and rice, tobacco, coffee, bananas, and pineapples are grown in great quantities; all sorts of citrus fruits abound, and the cocoa palm grows to perfection. Most people are under the impression that these islands were discovered by Captain Cook, and many books chronicle the error—for an error it is; they were discovered by Gactano, an early Spanish navigator, in the year 1542, and the chart drawn by Mendana in 1567 gives a very nearly accurate position of the group—absolutely correct in regard to Kauai. There is a tradition among the natives that two vessels from Spain were wrecked on the large island about 1527, in the reign of Kealiiohaloa, a king of Hawaii. Captain Cook, on his second visit, landed at Kealahou Bay: on his former visit Cook was looked upon as a god—the long-lost "Lono" of the Hawaiian Trinity—and he was treated with the greatest respect; the natives say that he allowed himself to be worshipped, and accepted sacrifices as a deity; but in their last visit, February, 1779, the Englishmen seem to have acted like pirates, for they over-ran the heiaus (sacred temples), broke the tabus (religious laws), demanded the best of everything in the way of fresh meat and fruits, and the sailors of the *Resolution* and *Discovery* took the greatest liberties with the natives. Then began a series of petty quarrels between the ships' officers and the chiefs, ending in the death of several native chiefs and the luckless circumnavigator, whose name is revered in England and

the colonies, but not in these islands, for overweening confidence, carelessness, and vanity are not considered by the Hawaiians as attributes of a commander. The early history of the people of Hawaii and the other islands is unknown; the place whence they originally came, the date of their first appearance here, and the primary source of their religion, are mysteries that will likely remain unsolved forever. Taken into consideration that their traditions have been handed down verbally from father to son and from chief to chief—or chiefess—it is remarkable that they have preserved so much of the history of their ancestors; from the year 1095 (approximate) to the present day there has been an unbroken line of sovereigns of Hawaii. During the three centuries preceding the “Confederation” the history of these islands is one long story of romance, warfare, and religion; a story of a noble race, of brave men, and gentle, loving women—a nation-story much the same as it is, was, and ever will be, all the world over; with men of all creeds and colours, two great factors influence their lives for better or for worse—ambition and affection. Although the Hawaiians never practised the horrible habit, cannibalism was common among a band of savages who came from one of the South Sea Islands and established themselves for a time in the mountain districts of Kauai and on the northern shore of Oahu. But they were not permitted to stay long there, for the natives, finding out that they were man-eaters, made war upon them and drove the foreigners from island to island; till finally the “consumers of home production” were forced to set sail for the place from which they came—the unknown land. Thus came and went the last of the cannibals. The religion of the Hawaiians was a system of idolatry based upon certain meles, or song stories, which had been handed down from generation to generation, and preserved with integrity by the priests, who met at the heiaus and recited—the older to the younger—the “articles of belief,” the traditions of Church and State. But, says a recent writer, “How did the Hawaiian priesthood become possessed of the story of the Hebrew Genesis?” In 1794 Kamehameha, chief of Hawaii, succeeded in conquering the entire archipelago, and it has been a “kingdom” ever since. The present queen, Liliuokalani, is the elder sister of the late king, Kalakaua, and the heir to the throne is the Princess Kaiulani-Lunalilo-Kalaninuiāhīlāpalapa. The population at the time of Cook’s visit was about 400,000; now it is only 95,000. The Hawaiian Islands are of volcanic origin; on every island are vestiges of these phenomena, and extinct craters are scattered over the surface, differing in size from the giant “Haleakala”—the Palace of the Sun—on the island of Maui, to the “Punch-bowl” in the city of Honolulu. Of extinct craters Haleakala is doubtless the largest in the world; it is 10,032 feet high, 23 miles in diameter, and nearly eighty miles

in circumference! This monster volcano has not been active within the memory of man. The summit is crowned with immense walls of scoriaceous lava and basalt, and there are two discharge ways, a mile and a half wide, which pass between rock walls over 2,000 feet in height. The interior is a large cinder field, containing cones 400 to 900 feet high. Mauna Kea (the "White Mountain"), on the island of Hawaii, is the highest point of land in the group; it is 13,805 feet above the sea. This has been an extinct volcano for centuries, but its ignipotent sister Mauna Loa (the "Long Mountain"), 20 miles to the south, has been very active within the last few years. Mauna Loa is 13,650 feet in height; and on a "shoulder," 20 miles to the east, is the active crater of Halemau-mau (the "House of Everlasting Fire"), or, as it is usually called, the volcano of Kilauea. There have been many eruptions of Mauna Loa from 1832 to 1887, but perhaps the most destructive was in 1868—the famous "mud-flow." The earthquake destroyed nearly all the villages in the district; the tidal wave, 20 feet high, washed along the shore, doing immense damage, and the flow from the mountain carried away cattle, horses, sheep, and human beings; 81 lives were lost. In 1881 there was another great eruption, and the fiery lava travelled for 30 miles (in nine months), and stopped within three-quarters of a mile of the town of Hilo, a place of about 6,000 inhabitants! Property was very cheap there at that time. During the eruptions of January, 1887, "618 earthquake shocks were counted" in two days. Prof. Dana, in his "Characteristics of Volcanoes," tells us that "the origin of Volcanic heat, the source of lava columns beneath the volcano, the cause of the ascensive force in the lava column, are subjects on which science has various opinions and no positive knowledge." Volcanoes may be "explosive," either when water gains access to the interior (*i.e.*, liquid lava) and generates enormous projectile force, or they may be subordinate or "lateral," coming from the side of a mountain; there may be earthquakes in connection with the eruptions or the vibrations may scarcely be felt. Volcanoes eject lava (melted rock); projectile discharges which become cinders, ashes, and, if very large, they are called "lava bombs"; and gaseous discharges. But the pictures which show flames issuing from a crater are misrepresentations; the fiery glow is the reflection on the vapour from the liquid lava within the crater. Around the Hawaiian volcanoes are large deposits of sulphur; the natives place carved boxes, trays, etc., beside the fissures until they become encrusted a bright yellow.

After giving numerous quotations from authorities on the subject of volcanic phenomena, Mr. Howell described his visit to the crater of Kilauea, and his descent into the crater of Hale-mau-mau, in October of

last year. The latter crater is very active ; it is half a mile in diameter, and 250 feet deep from the "floor" of Kilauea, and in this awful fiery chasm the waves of liquid lava are continually moving—irresistibly drawn to the centre, the seething whirlpool, where masses of lava are fused like blocks of sealing wax, and where great fountains of brilliant lava are hurled high up in the air ! Kilauea is 300 miles from Honolulu, and the volcano is 4,000 feet above the sea-level. It took the travellers over an hour to climb the lava field of Kilauea, and nearly two hours were occupied in descending and returning within the crater of Hale-mau-mau.

TWELFTH MEETING.

Twelfth Meeting, 6th February, 1892, the President in the chair.

Donations and Exchanges since last meeting, 42.

The President laid on the table a list of contributions to Geology and Mineralogy, published in the Journal and Proceedings of the Canadian Institute, and prepared for the Committee on the Bibliography of Geology appointed by the International Congress of Geologists.

The following resolution was passed, on motion by Professor Macallum seconded by Dr. Shaw :—

"Whereas the attention of the Institute has been directed to the great danger threatening the orchards, and peach orchards in particular, in this province from the disease known as the 'yellows,' which has in former periods within the last century devastated large tracts of orchard lands in the neighbouring portions of the United States ;

"And whereas scientific investigation has been partially made, and is now being carried on by some learned members of the said Institute into the causes of the said disease, with a view to find out some remedy and the best means of applying the same ;

"And whereas the Legislature of the Province of Ontario passed an Act in 1881, which was amended in 1884, the special sections of which are :—

"Revised Statutes of Ontario, 1887—under noxious weeds and diseases affecting fruit trees :—

"Sect. 2, div. 3.—To cut down and burn any peach, nectarine or other trees on the land infected with the disease known as the 'yellows,' and to destroy all the fruit of the trees so affected.

"Sect. 3, div. 2.—Such council may and upon a petition of 50 or more ratepayers shall appoint at least one inspector to enforce the provisions

of this Act in the municipality and fix the amount of remuneration, fees or charges he is to receive for the performance of his duties ; and in case a vacancy shall occur in the office of inspector it shall be the duty of the council to fill the vacancy forthwith.

“ Sect. 8.—If written complaint be made to the inspector that yellows or black-knot exist within the municipality, in any locality described in such complaint, with reasonable certainty, he shall proceed to examine the fruit trees in such locality and if satisfied of the presence of either disease he shall immediately give notice in writing to the owner or occupant of the land whereon the affected trees are growing, requiring him within five days from the receipt of the notice to deal with such trees in the manner provided by Sect. 2 of this Act.

“ Sect. 10.—Deals with the penalties, which are not under \$5 nor more than \$20 for not removing such trees, and for selling fruit so affected also same penalty.

it is the opinion of the Institute that the said Legislation is more permissive than compulsory and not sufficiently stringent to effectually stamp out the disease. Therefore, be it

“ Resolved, that the attention of the Government of the Province be drawn to this important question, and that it be respectfully requested to give its most favourable consideration to the introduction of such more stringent legislation as shall enforce the destruction of infected trees, prevent the sale of diseased fruit, and regulate the appointment and duties of inspectors in such manner and with such powers as shall enable them to enter all orchards in their district at all times to enforce in full the provisions of the said legislation, and that copies of this resolution be sent to the Hon. the Attorney-General, and to the Hon. Minister of Agriculture.”

Mr. J. C. Hamilton, LL.B., read a paper on “ The Great Centre—an Astronomical Study.”

Mr. Lumsden thought that if there was a star that, on account of its size, would be likely to be the centre of the universe that star would be Arcturus. It was stated to be the largest star we have any knowledge of. Its diameter would reach from the sun to the earth.

The President said the theory of a central star was very fascinating, but he had never read or heard of anything in Astronomy to confirm the idea.

THIRTEENTH MEETING.

Thirteenth Meeting, 13th February, 1892, the President in the chair.
Donations and Exchanges since last meeting, 54.

The death of Dr. T. Sterry Hunt, the eminent chemist and geologist, and author of several valuable works, was announced. Dr. Hunt had been for a long time connected with the Canadian Institute as a life member, and a copy of his recent work on "Systematic Mineralogy based on a Natural classification" had just been received from him as a present to the Institute.

Dr. George Kennedy read a paper by Prof. Campbell, Montreal, on "Siberian Inscriptions." It was not only a review of the volume of inscriptions from the Yenesei published by the Archæological Society of Finland, but an actual attempt to decipher these hitherto unread relics of ancient literature by means of more accurate copies obtained by the writer from St. Petersburg. The language they yield is Japanese, and it is the contention of Prof. Campbell that the authors of the inscriptions, mounds, and other remains of old civilization found throughout Southern Siberia were the Japanese in north-eastward migration from India, whence some of their own historians have derived them. The samples of inscriptions contained in the paper, which was illustrated by fac-simile drawings of the documents, plainly betray their origin as the work of Buddhist priests, and are dated from the time of Gautama's death. The oldest so far belongs to the fifth century, A.D., and is the memorial of Sekata, the Sagoteno of Japanese, and the Shekingtang, or Sheketang, of Chinese historians. The inscriptions submitted are but specimens of a large number to be published, along with Indian, Buddhist, and American mound-builder relics, in Prof. Campbell's forthcoming work, "The Eastern Track of the Hittites." Should his readings stand the test of criticism the light they will shed upon the history of the Khitan dynasty of China and of the peopling of north-eastern Asia and the western coast of America will open up a record of novel and absorbing interest.

Mr. Harvey said that the true opinion according to the best authorities was that the Etruscan people were subject to the Kabyle race. The Kabyles had ruled over Etruria for a couple of centuries. The language of the Etruscan inscriptions was taken from the Kabyle country. Prof. Campbell would have to reckon with these authorities. The Accadians were Mongols and had attained a very high civilization.

FOURTEENTH MEETING.

Fourteenth Meeting, 20th February, 1892, the President in the chair.
Donations and Exchanges since last meeting, 92.

The following resolution was adopted :—

"The Canadian Institute has received the intimation of the death of Dr. T. Sterry Hunt, F.R.S. &c., a life member of the Institute, with profound regret. In the long period in which Dr. Hunt was connected with the Institute, he contributed many valuable original contributions to its publications. The Institute, in common with all other scientific corporations, recognises the immense advantages derived from the assiduous labors and investigations in the fields of geology and mineralogy, which have rendered the name of Dr. Hunt famous in both hemispheres, and the Institute tenders to his sorrowing relatives the most respectful expression of sympathy in their present bereavement."

It was resolved on motion by Mr. Macdougall, seconded by Prof. Macallum:—

"That a circular be printed and sent to the societies exchanging proceedings with us, mentioning the volumes of their publications we require to complete our sets, and requesting them to aid us by supplying missing numbers; also asking them who thus favor us to state which of our publications they may not have in their libraries, and promising to send them as far as we are able; that the Librarian be asked to report to the Council a list of those societies to whom this circular should be addressed, and the numbers of their proceedings wanting on our shelves."

Mr. Boyle presented the Annual Archæological Report.

Dr. Sandford Fleming read a paper on "Electoral Representation and the Rectification of Parliament."

At the close of the paper the President read the following:—

"A friend of the Institute, deeply impressed with the great national importance of the subject dealt with in Mr. Fleming's communication, has offered (without wishing his name to be known) to place at the disposal of the council the sum of \$1,000 to aid in obtaining a satisfactory solution of the problem referred to. The willing donor suggests that the sum (in whole or in part) may be awarded by the Institute for the best workable measure which, if made law, would give the whole Canadian people equal representation in Parliament, and each elector due weight in the Government through Parliament."

Prof. Ashley made various objections to the plan proposed by Dr. Fleming. With all its defects party government does furnish a tolerably fair basis for government. Under any other system it would be difficult to secure the adherence of sufficient numbers to carry out measures of importance. The plan of minority representation proposed by Hare was altogether a curiosity and was outside the range of practical politics

He was present at a meeting in Oxford when the matter was taken up. It was universally pronounced chimerical.

Mr. Douglass, while aware of many difficulties in the carrying out of a system of minority representation was strongly in sympathy with the paper to-night. He wished for further information on the subject.

Mr. Meek urged the advantages of Party Government. With all its faults and shortcomings it is after all (taking into consideration the true objects of all governments), the best system of government the world has had any experience of. Party government is not an invention or creation. It is a natural growth, a natural development. Theorists may propound theories of government which appear more symmetrical, but not having sprung spontaneously from the people, they lack vitality. A tree may be constructed which will appear more artistic in form, and more beautiful in outline than a living tree, but the one is dead, and the other has life. We should not seek to destroy representative party government as it now exists, but to improve it, and remove its real defects. Wherever we find free institutions, wherever we find political liberty, there we find party government in some form. Wherever we find despotism, wherever political liberty is suppressed, party government does not exist. They have no political parties in Russia or Turkey. There is no political life in those countries. Our present methods of representative government are modern, but party government existed in the cities of ancient Greece. The moment a city acquired free institutions, party government naturally and necessarily came into existence. As soon as free institutions were done away with, party government ceased. The same thing happened in Rome. While Rome retained a real republican government, different parties contended with each other for the supreme power, and Rome was aggressive, and progressive. When imperial military authority became established, party government ceased, party strife ceased, and progress and civilization became stagnant. Our aim should be to improve, not to destroy. The contention of party leaders is not so much energy and talent wasted. Their struggles prevent political stagnation. They educate the people. They are the life of free institutions. Minorities are not without representation, they are represented by the opposition. All parties necessarily and naturally consolidate into two, representing the ins and outs. Party government and representative government, as we now have them, have many defects which can be reformed and corrected. Our senate might be reconstructed. Our voters' lists might be simplified. The limits of the constituencies might be settled or adjusted so as to prevent any political party from altering them to suit its own purposes. But, the greatest of

all improvements must be brought about by educating the voters to cast their ballots, not blindly in favour of the political party to which they may have become attached, but rather in favour of the best men, and the best measures. In other words intelligence and patriotism should be cultivated. Then as to the offer of "a friend of the Institute, to place at the disposal of the council the sum of \$1,000, to be awarded by the Institute for the best workable measure to give equal representation in parliament to the whole Canadian people, and each elector due weight in the government through parliament," I would say it seems to me that "equal representation of the whole Canadian people in parliament" is not the most important thing to be attained. Equal representation means that the most ignorant, prejudiced, superstitious and vicious in the community would have the same voice and an equal right in choosing representatives that the most educated, intelligent, enlightened and moral person would possess. The object of government should be rather to prevent the ignorant, the superstitious, the vicious, the prejudiced and the immoral elements from having equal weight and equal influence. All classes, all persons, all societies, all beliefs and all interests should not be represented. The objects of government are to give the greatest power and influence to the most intelligent, the most progressive, the most industrious, the most enterprising and the best elements in the community. A good government is one which not only preserves order in the community but which develops, promotes and stimulates industry, invention, progress, intelligence—in short, a higher civilization. What would or might call for useful essays and treatises would be a prize offered, say for the best essay or treatise on "improvements in representative parliamentary government," or, suggesting "practical improvements in our present system of party government," or, "treaties showing the defects and imperfections in our present systems of representative parliamentary party government," and, "suggesting remedies for the evils pointed out, and such amendments and improvements as the system is capable of."

The following resolution was then adopted by the meeting:—

"That the best thanks of the Institute be tendered to the friend, who does not wish his name to be known for his generous offer, in contributing the sum of \$1,000 to aid in obtaining a satisfactory solution of the problem referred to in Dr. Sandford Fleming's paper, that the Institute accepts the offer and empowers the council to take the necessary steps to obtain essays or treatises, and award the premium to the best workable measure which, if made law, would give the whole Canadian people equal representation in the Government through Parliament, and each elector due weight in the Government through Parliament."

FIFTEENTH MEETING.

Fifteenth Meeting, 27th February, 1892, the President in the chair.

Donations and Exchanges since last meeting, 53.

H. H. Langton, B.A., and Alexander Primrose, M.B., were elected members.

A communication was read from the secretary of the Lincoln's Farmers' Institute, enclosing a copy of a resolution adopted by that body at its meeting in Niagara on the 23rd instant, respecting diseases of fruit trees. After referring to a resolution adopted by the Canadian Institute on the subject of the inefficiency of the present law regarding the diseases of fruit trees, and stating that the general principle of such resolution appears to be in accord with the views of the meeting, it was resolved that a committee of three fruit-growers of the County of Lincoln be appointed to co-operate with a committee of the Canadian Institute for the purpose of drafting such amendments as will make the working of the present law more effective, and in urging the Legislature to take action in this matter at its present session. The committee is composed of James Sheppard, of Queenston; Lucas Woulverton, of Grimsby, and Roland W. Gregory, of St. Catharines.

Capt. Ernest Cruikshank read a paper on "Early Traders and Trade Routes in Ontario and the West." The paper began by a reference to the fact that from 1763 to 1816 the trade not only of Western Canada but of the entire American North-West, including the present States of Illinois, Iowa, Wisconsin, and Minnesota, was conducted by British merchants from Montreal. The French trading posts were enumerated, and the extent of their commerce with the Indians was briefly sketched as it existed about the year 1754, just previous to the outbreak of the war which terminated in the conquest of Canada by the English. The old canoe routes from Montreal to the upper lakes, from Lake Erie to the Ohio and the Wabash, from Lake Michigan to the Illinois and Mississippi, and from Lake Superior to the Canadian North-West were next described, as well as the distribution and numbers of the Indian tribes living in the vicinity of those rivers, and the condition of French settlements in the West at the date of the conquest. The beginning of British commerce was traced. Alexander Henry was selected as a type of these early traders. A summary was given of his travels from 1761 to 1776, and of an unsuccessful attempt to work the copper mines of Lake Superior in 1770 and 1771. Notice was taken of the explorations of Carver, Rogers, and others in the direction of the Mississippi, and of the success of the Frobishers and their associates in penetrating from Lake

Superior to Lake Winnipeg and the Saskatchewan valley, and discovering trading stations unknown to the French. The trade of Mackinac, Detroit, and Niagara, and other stations at the beginning of the American revolution, the character of the traders and their relations with the Indians, were next considered in the light of unpublished documents, from which copious quotations were made. The effects of the war were instanced, and a general review taken of the state of the Western trade during this period. Some account was then given of the variety of goods required for the business and the value of the returns, and in conclusion the writer advocated the preparation of a historical map of Ontario and the Canadian North-West.

SIXTEENTH MEETING.

Sixteenth Meeting, 5th March, 1892, the President in the chair.

Donations and Exchanges since last meeting, 62.

Prof. Macallum, J. B. Williams, and J. G. Ridout were named to meet the Minister of Agriculture with the deputation from Lincoln and Niagara on the diseases of fruit trees.

A communication was read from the Imperial Russian Society of Geography announcing the death of the President His Imperial Highness the Grand Duke Constantine.

C. G. Horetzky was elected a member.

Mr. W. D. Stark read a paper on "The History of Greenland and Iceland," giving a short description of the coasts of Greenland and Iceland, noting some facts concerning the antiquity of the islanders. Their manners, habits, and modes of livelihood were touched upon, including some account of the animals useful to the inhabitants of those desolate regions.

The President, Mr. Arthur Harvey, then read "Rutherford's Narrative—An Episode in the Pontiac War, 1763—an unpublished manuscript with introductory notes by Mr. Harvey." This graphic and interesting narrative of the capture and enslavement of Lieut. Rutherford, an officer of the "Black Watch," by the Indians of Detroit in 1763 was presented by the narrator's grandson, Colonel T. W. Rutherford, of the Madras Staff Corps, late commandant at Delhi, India, to Mr. Thomas Hodgins, to be used as he saw fit. Mr. Hodgins presented it to the Institute, for which a vote of thanks was tendered to him.

SEVENTEENTH MEETING.

Seventeenth Meeting, 12th March, 1892, the President in the chair.

Donations and Exchanges since last meeting, 53.

The following were elected members :—Prof. Ashley, R. W. Spence, Lancelot Middleton, C.E., and James T. Locke.

The President gave a report of the interview of the deputation on "Peach Yellows" with the Minister of Agriculture.

The following resolution was adopted :—

"1. That special investigations into the cause of the disease known as 'Peach Yellows' have been made by Dr. W. R. Shaw, a member of this Institute.

"2. That a committee of the Institute has waited upon the Provincial Government, with whom appeared also representatives of the Lincoln Farmers' Institute, the Niagara District Fruit Growers' Association, and of the Ontario Fruit Growers' Association.

"3. That this deputation asked for amendments in the existing laws on the subject, and had a very favorable reception.

"4. But that one cause of infection appears to be the introduction of young trees from the United States, grown from 'pips' from infected fruit, and that such young trees, if they come to maturity so as to bear fruit for a year or two, must in the end succumb to the disease and be the means of contagion to other orchards.

"5. That the Institute therefore prays for the enactment of a law to prevent, under proper regulations (to be made by the Governor-General in Council), the importation of any peach trees or other young fruit trees unless a clean bill of health accompany, to certify that no disease exists in the districts from which such young trees come, with a proper guarantee that no disease is inherent in such young stock, in the same way as enacted by the State of California and other places interested in maintaining the integrity of their orchards.

"6. That the Secretary be instructed to send a copy of this resolution to the Department of Agriculture at Ottawa, with copies of Dr. Shaw's paper."

Mr. H. Rushton Fairclough, M.A., read a paper on "Lieut.-Col. Coffin and his private correspondence during the rebellion of 1837." He pointed out that the subject of his paper (Wm. Foster Coffin) was the son of a major in H. M. 15th Regiment of Infantry, and grandson of a distinguished U. E. Loyalist, to whom General Sir Guy Carleton attributed much of

the credit of saving Quebec when assaulted by Arnold and Montgomery. After giving a short account of the Colonel's movements until 1873, when the Department of the Interior was organized, and he (the Colonel) was promoted to the position of Commissioner of Ordnance and Admiralty Lands, which he held up to the time of his death, in 1878, the paper enumerated the important special offices to which he had been appointed. The correspondence to which Mr. Fairclough called attention covers a period of over six years (1834-40). The letters, twenty-six in all, were written to Colonel Coffin's cousin, Mrs. Grant, afterwards Baroness de Longueuil, and her daughter, now Mrs. J. A. Allen, of Alvington, Kingston, for some years the residence of the Governors-General of Canada. Besides the family and social gossip given in the letters, there is a great deal that must be interesting to Canadians in general, and it is chiefly the writer's free-spoken comments on the exciting political events of the day that Mr. Fairclough brought before the Institute. The first letter in the packet gives a most vivid description of the burning of the Chateau de St. Louis at Quebec on January 23rd, 1834. This castle had been used as the residence of the Governors of Canada for upwards of 150 years. It was never rebuilt. The characteristics of the commissioners appointed in 1835 by Lord Melbourne are humourously described. The Earl of Gosford, Sir Charles Grey, and Sir George Gibbs were known as the three G.'s, gander, goose, and gosling. The conflict in Upper Canada between "His Jockeyship" Sir F. B. Head and the Assembly, the deadlock in 1836 in Lower Canadian politics, the party dissensions of the day, and the racial character of the strife in Quebec, are dwelt upon at length by Colonel Coffin. The earlier incidents of the civil war—the repulse of the troops at St. Denis, Wetherell's victory at St. Charles, and the brutal murder of Lieutenant Weir are all recorded, but what is most worthy of publication is the remarkably vivid description given by the writer as an eye-witness of the battle of St. Eustache. Colonel Coffin characterizes, in a most pointed and vigorous manner, the aristocratic Whig lord, the Earl of Durham, who, in May, 1839, arrived in Canada as "Her Majesty's High Commissioner for the adjustment of certain important affairs affecting the provinces of Upper and Lower Canada." A high eulogy is passed upon this distinguished man, who in the short space of five months investigated and determined the causes of dissension in these provinces, and whose report is one of the most valuable documents ever written upon colonial affairs. Many a tribute of affection and respect is paid to the honest soldier Sir John Colborne. Though these letters add but few historical facts to those already recorded, still nothing could better enable Canadians to realize vividly the state of their country in

those critical years, 1834-40, than a perusal of this interesting correspondence.

Mr. Bain referred to the series of papers on Lower Canada published last year in the *Montreal Star*, and urged the importance of collecting and preserving historical documents such as that read this evening, as the principal characters were fast passing away.

EIGHTEENTH MEETING.

Eighteenth Meeting, 19th March, 1892, the President in the chair.

Donations and Exchanges since last meeting, 59.

Messrs. Howland and Macdougall were appointed to attend a meeting of the Ontario Artists' Association with the Government and the University authorities respecting the preservation of the old U. C. College buildings and grounds for art, science and literature.

Messrs. Clark and Ridout were named auditors for the year.

It was decided to call a special general meeting for the 9th April next to consider certain amendments to the regulations proposed by the Council.

A vote of thanks was passed to Drs. Susanna Boyle and Letitia K. Meade for their services in the work of craniometry for publication in the last archæological report.

Mr. J. W. L. Forster read a paper on "Nineteenth Century Sacred Art." After quoting authority to show that no such art exists in this age, he made a review of the rise of the art in the middle ages and the causes that led to it. Turning to the spirit of this age and its effect upon art, he said that the art of to-day exhibited less of the adornment and precision of the conventicle, and more of the pathos of the soul that has learned for itself the meaning of suffering, right down in the throbbing populations of the world.

Mr. Harvey had made the statement at the reading of a former paper that sacred art has become impossible. Mr. Forster does not meet this question in the spirit the statement was made. He evades the question by introducing a new definition which was not the common one. He questioned very much whether religion was at all artistic. It seemed to him that the tendency in religion was to consider moral and religious questions without the aid of art, and it was better so to consider them. Mr. Forster had made the remark that art flourished more when the people were illiterate. It was the object of the art of the middle ages to educate

the people, hence sacred subjects were placed on the stage. He considered the pictures of to-day simply figure pictures; they were not meant for incitements to faith.

A paper on "The Southwold Earthwork and Country of the Neutrals," by Mr. Coyne, was read by Mr. David Boyle. The paper dealt very fully with accounts of the almost forgotten race of Neutrals, described the country where they lived, their manners, habits, and race. They formed part of the great Huron-Iroquois family, and their territory embraced the whole of South-Western Ontario from Lake Huron to the Niagara river. The paper also gave an account of the work of the missionaries with the Neutrals, and in fact nearly all the knowledge obtained regarding them came through the missionaries.

. NINETEENTH MEETING.

Nineteenth Meeting, 26th March, 1892, the President in the chair.

Donations and Exchanges since last meeting, 58.

Walter M. Rutherford and George E. Musson were elected members.

The Council was instructed to take all necessary proceedings to have the Institute properly represented at the meetings to commemorate the centenary of the first parliament of Upper Canada.

Dr. George Kennedy read a paper by Mr. G. S. Wilgress, B.A., on the "Game Laws of Ontario." The writer stated that since he volunteered some four months ago to read a paper on the subject of "The Game Laws of Ontario," much had been done towards State protection of the animals known as game, as is seen in the bills now before the Ontario House of Assembly to amend the Act for the Protection of Game and Fur-bearing Animals, and to amend the Act to Encourage the Destruction of Wolves, which doubtless embody the changes recommended in the excellent report of the Fish and Game Commission recently issued. The Forest park which it is proposed to establish in the district of Nipissing will also prove a valuable means of preserving game. The writer then dwelt at some length on the deer, the different methods of hunting them, and their enemies, which he classified as men, dogs, and wolves, the latter being by far the most destructive. The paper closed with an account of the moose or elk. Considering not only the value of the hide, but also that of the head and meat, he thought that the penalty imposed at present of from \$10 to \$50 was certainly not large enough to deter pot-hunters from killing the animal, as they would

lose nothing after paying the fine, provided they could succeed in smuggling the carcass away so as to be able to sell it to advantage.

After the reading of the paper, the sale of last year's periodicals took place.

TWENTIETH MEETING.

Twentieth Meeting, 2nd April, 1892, the President in the chair.

Donations and Exchanges since last meeting, 72.

Rev. Philip Tocque read a paper on "The Phocas of Terre-neuve," a description of the seal fisheries of Newfoundland. A paper on "An Animated Molecule and its Nearest Relatives," by Dr. Daniel Clark, was read by Dr. George Kennedy.

TWENTY-FIRST MEETING.

Twenty-first Meeting, 9th April, 1892, the President in the chair.

Donations and Exchanges since last meeting, 71.

Mr. D. W. Beadle read a paper on "Canadian Wild Flowers."

Mr. Macdougall wished that a copy of the paper could be placed in the hands of every one of the school children of the city. It would excite an interest in the study of our wild flowers.

Mr. Noble thought that the subject that had been taken up was of interest to everybody, not as some of the papers read before the Institute, that were of interest only to some particular persons. In regard to High Park, he was glad that he had been one of those who had taken an interest in the preservation of its wild flowers and shrubs. Their efforts were successful so far as to prevent the wholesale laying waste of the wild flowers. In regard to the burning of High Park, he was very sorry to say that they had not been successful. Some plants that strike their roots deeper than others were not injured. He hoped that the practice would be discontinued.

Mr. L. J. Clark had no doubt that the School Board would be to the expense of placing a copy of the paper read in the hands of every teacher.

Mr. Armstrong spoke of the extensive destruction of the wild flowers. Every season we saw people digging them up and carrying them away, which was utter destruction; they may as well have been burned. Some beautiful flowers had entirely disappeared. With regard to High

Park he did not expect any improvement till an intelligent gardenor was placed at the head of affairs.

The meeting was pursuant to notice constituted a Special General Meeting to consider certain amendments to the regulations proposed by the Council.

The amendments were considered, and the regulations as amended were consolidated and adopted as follows, to come into force on 1st July, 1892 :—

REGULATIONS OF THE CANADIAN INSTITUTE.

(Consolidated and amended, 1892.)

SECTION I.

OF MEMBERSHIP, ELECTIONS, AND FEES.

1. The Canadian Institute, established under Royal Charter, November 4th, 1851, shall consist of Ordinary, Honorary, Corresponding, Life, Junior, and Associate members. All persons who are desirous of forwarding the objects of the Institute are eligible to membership.

2. Persons wishing to be admitted as Ordinary members must be proposed at least one week before election, in accordance with a form of application given in Form A, to be obtained from the Secretary. The election shall be by ballot, and the proportion of votes requisite for admission not less than three fourths of the votes cast. Provided that during the recess, *i.e.*, between May 1st and November 1st, the Council (as hereinafter constituted) shall have power to elect members by the unanimous vote of those present at any meeting.

3. Persons under the age of 21 years may become Junior members. They shall not be subjected to election as above, but must be recommended by two members, in writing, according to Form B., and such recommendations shall be delivered to the Secretary, and transmitted to the Council for approval or rejection. On approval, the recommendation shall be signed by the Chairman, and the candidates shall be admitted. On their attaining the age of 21, they may apply to the Council for transfer to such other class of membership as they may desire.

4. Honorary members shall be persons eminent for their services to science and literature, and their number shall be limited to twenty-five, of whom not more than ten shall be residents of Ontario. They must be recommended by at least three members, who shall state the reasons for their recommendation, in writing, such recommendation to be transmitted through the Secretary to the Council. If approved, it shall be signed by the Chairman, and read at the next ordinary meeting, previous to the ballot being taken.

5. Corresponding members shall be persons who have shown interest in the

work of the Institute, or who have made or are likely to make contributions to the Proceedings or donations to the library, museums, etc. They shall be elected in the same way as Honorary Members for a term not exceeding five years. The number from the Province of Ontario shall not exceed ten.

6. Associate Members shall be those who wish to take special interest in portions only of the work of the Institute. They shall be admitted in the same way as Ordinary Members.

7. Associates and Junior members shall have all the privileges of membership, except the right of voting, holding office, taking part in the business management of the Institute, and receiving copies of its publications.

8. Honorary and Corresponding members shall have every privilege of Ordinary membership except that of holding office.

9. The annual fee or subscription shall be :—For Ordinary membership \$5.00. For Junior membership \$1.00. For Associate membership \$2.00. Provided that no change shall be made in the subscriptions of members elected prior to 1st July, 1892.

Every Ordinary, Junior or Associate Member shall be liable to continued payment of the annual subscription until he has signified, in writing to the Secretary, his withdrawal, and paid all his dues to that date, when his liability shall cease. But any Ordinary Member not in arrears may compound for future subscriptions, and become a Life member on payment of \$50.00.

The Secretary shall inform each candidate of his election by sending Form C. (appended), and if he fail to pay the proper fee within one month, the election shall become null, and no re-nomination shall be made unless accompanied with the said fee. Until the payment of the fees no person shall enter into the privileges of membership.

Any person elected after the 31st of March in any year shall be called upon to pay only a *pro rata* fee until December 31st next ensuing, but if such election be after the 30th September, he shall pay the subscription for the next year at the same time as the *pro rata* amount for the current year. All subscriptions shall be due for renewal on the first day of January (in advance).

Ordinary members who reside more than ten miles from the General Post Office in the City of Toronto shall be called upon to pay only \$3.00 as their annual fee.

Any member whose annual subscription shall be six months in arrear shall be reported to Council on the first Monday of July, and unless the Council shall otherwise decide, shall be suspended from membership, and shall be notified of such suspension; but such member may be re-instated within the year upon payment of arrears.

At least fourteen days previous to the annual election in each year, the Secretary and Treasurer shall prepare and sign a roll of the names and addresses of members who have paid their subscriptions, and are in good standing. Such roll, which shall be subject to correction by the Council only, shall be hung up in the Reading Room, and only those whose names appear on it shall be entitled to vote or hold office.

The Council shall have power to remit the annual subscription or arrears thereof in case of a member who, from ill health, advanced age, or other sufficient cause, is unable to pay the same, or to accept from him in lieu thereof any manuscripts, books, drawings, models, or specimens which are in their opinion valuable to the Institute. But each case must be considered and reported on by a committee of Council appointed for such purpose.

10. If any complaint is brought against a member, the charge shall be in writing, signed by the complainant, and shall be considered by the Council, and opportunity given for a reply. If the Council deem it desirable, they may then call a special general meeting for the consideration of the matter at issue, of which not less than a week's notice shall be given, and if two-thirds of the members present at that meeting are of opinion that such member should be expelled, the officer presiding thereat shall pronounce his expulsion, and the fee paid by the member for the current year shall be refunded to him.

11. For the study of special branches of Literature, Science, and Art, members may group themselves into such Sections as the Council may from time to time approve, subject to the ratification of the Institute at any of its ordinary meetings. Each Section shall form its own regulations and by-laws, but subject to the sanction of the Council, to whom they shall be transmitted for that purpose. Associate members who join any Section may vote and hold any office therein, except that of Chairman, and take part in all its proceedings.

SECTION II.

OF THE OFFICERS AND COUNCIL, AND THE MODE OF THEIR ELECTION.

1. At the annual general meeting, which shall be held on the first Saturday in May (unless that day falls upon a holiday, and then on the following Saturday), there shall be elected a President, two Vice-Presidents, a Secretary, a Treasurer, an Editor, a Librarian, a Curator, and six other members to form the Council.

2. The election shall be confined to those nominated for such positions at the last ordinary meeting in April, but any one nominated to an office, and not elected thereto, shall be eligible as a Councillor without office.

3. Election shall be by ballot, and the Chairman shall appoint two Scrutineers to receive and examine the votes, and report them to him for a declaration of the result.

4. The officers above named shall first be balloted for by separate ballots, in the order mentioned, and one ballot shall thereafter be taken for members of the Council without office. If in any case the votes are equal, the decision shall be by ballot.

5. Each Section shall elect its officers at the meeting of the Section last preceding the annual meeting of the Institute above referred to. If there are ten members of the Section present thereat, or if during the session the Section shall have held three meetings, each attended by ten members, the Chairman elected at such meetings shall be thereby held to be nominated as a member of the Council, in terms of Clause 1 of this Section, but not otherwise.

The new Council shall enter upon their duties on the Saturday following their election.

SECTION III.

OF THE AUDITORS.

Two Auditors shall be appointed at the last ordinary meeting in March of each year; one by the members, the other by the Chairman at that meeting. They shall audit the accounts of the Institute for the year, and present their report to the Council at least one week before the annual general meeting.

SECTION IV.

OF THE COUNCIL.

1. The Council shall meet at least once a month during the session, or oftener if necessary.

2. Any two members of the Council may, by letter to the Secretary, require a special meeting to be called, and two days' notice of such meeting must be given to each member of the Council.

3. At any meeting of the Council five members thereof shall constitute a quorum.

4. The Council shall have power to appoint committees for special purposes, and such committees shall report to the Council.

5. The Council shall present at the annual general meeting a report on the state of the Institute, in which shall be given an abstract of all the proceedings, and of the receipts and expenditures, during the year ending March 31st next before such meeting.

6. In the event of any office becoming vacant before the annual general meeting, by death or otherwise, the Council shall have power to fill the vacancy; and in the event of any officer being unable to perform his duties, the Council shall have power to relieve him from their performance, and appoint another to act in his stead.

SECTION V.

OF THE DUTIES OF OFFICERS.

1. The President shall have the general direction of the affairs of the Institute subject to the Regulations, preside at all meetings of the Institute or the Council at which he is present, and regulate and keep order in the proceedings.

2. The Vice-Presidents shall (in the order of their precedence) discharge these duties in the absence of the President.

3. In the absence from any meetings of the President and Vice-Presidents, the members present may elect one of their number to take the chair.

4. The Treasurer shall receive for or on account of the Institute all moneys payable to it, keep an account thereof, and deposit them forthwith in one of the Banks in the city of Toronto to the account of and for the use of the Institute, unless otherwise ordered by the Council. No money shall be paid out except by order of the Council.

5. The Secretary shall keep the seal of the Institute and send out the notices provided for in these Rules. He shall take minutes of all the proceedings of the Institute and of the Council, enter them in proper books, and read at each meeting the minutes of the previous meeting. Subject to the direction of the Chairman he shall bring before the meeting all business matters according to the order established in these regulations and conduct the correspondence of the Institute.

6. The Secretaries of Sections shall perform the like duties for their respective Sections, and shall, on or before the 20th day of April of each year, present to the Council a report on the work done by their Sections and the list of their members during the past year. If no such report be made, or if a Section have not held at least two meetings during the year, it shall, *ipso facto*, cease to exist.

7. An assistant Secretary may be appointed by the Council, who shall hold office during their pleasure. They shall define his duties and fix his remuneration.

8. The Editor shall have charge of the publication of the Transactions of the Institute in conjunction with an Editing Committee to be nominated by the Council from among its members at the first meeting thereof after the Annual meeting. All papers or abstracts of papers read before the Institute and intended for publication shall be handed to the Editor at the close of the meetings at which they are read, or as soon as possible thereafter, and the decision as to publishing any paper shall rest with the Editing Committee.

Every report of any Section, Committee or officer of the Institute shall be made to the Council and approved by them before publication.

9. The Librarian shall have the care of all books, documents, plans, drawings,

and the general superintendence of the same, under the direction of the Council. He shall keep a list of all donations to the library, and report them to the Council.

10. The Curator shall have charge of the museums and of all models and specimens deposited therein, and the general superintendence of the same, under the direction of the Council. He shall keep a list of all contributions and contributors to the museums, and report them to the Council at the next meeting.

Assistant Curators may be appointed by the Sections, and shall assist the Curator in the care of the museums and the specimens contained in them so far as relates to their own departments.

SECTION VI.

OF MEETINGS.

1. The ordinary meetings of the Institute shall be held at such times as the Council shall direct, but may be changed by resolution of the Institute at any general meeting, after one month's notice. Until otherwise ordered, they shall be held at 20 o'clock on each Saturday from 1st November to 1st of May.

2. The ordinary meetings of Sections shall take place at the times agreed upon by those sections, with the approval of the Council.

3. Special meetings of the Institute may be called :—

(a) By the Council, giving six days' notice in writing, and sending the same by messenger or by mail to the last known address of every member.

(b) By the President, or, in his absence, a Vice-President, on being required so to do by at least twelve members. Such requisition must be in writing, specifying its object. The same notice should be given as in the preceding clause provided.

At such special meetings, twelve members shall constitute a quorum, and no motion shall be deemed carried unless there be such quorum present at the vote, and a majority vote in its favor.

4. Special meetings of Sections may be called by their Chairmen in any way authorised by their rules.

5. At the ordinary meetings of the Institute, the following order of business shall be observed as closely as circumstances will admit :—

(a) The minutes of the previous meeting shall be read, and after correction (if necessary) and approval, shall be confirmed by the signature of the Chairman, and no entry shall be valid unless this is done.

(b) Nominations of candidates for admission.

(c) Business arising out of the minutes.

(d) Communications and donations received since the last meeting.

(e) Communications from Council and from Sections. Reports from Librarian and Curator.

(f) Notices of motion.

(g) New business.

(h) Election of candidates. One ballot shall be taken for all the candidates proposed on the same day, but if negative votes appear, each candidate shall be separately balloted for under Section I., clause 2.

(i) The reading of papers.

(j) Discussion thereof and remarks thereon.

(k) Announcements.

SECTION VII.

OF BRANCH SOCIETIES.

On the petition of ten or more persons, members of the Institute, or desirous of becoming members, and resident in any city or town in Canada, other than Toronto, the Council may make arrangements (subject to confirmation by the Institute at a special meeting) for the establishment at such places of branches of the Institute, to be governed as sections are.

SECTION VIII.

OF THE PROPERTY OF THE INSTITUTE.

1. The control of the property and effects of the Institute shall be vested in the Council.

2. No papers, plans, maps, or other property belonging to the Institute, shall be taken out of the rooms thereof, excepting under the rules to that end made and provided, but every member shall have a right to inspect the same at such hours as the Council may appoint.

3. Every person desirous of bequeathing to the Institute any manuscripts, books, maps, plans, drawings, instruments, geological, botanical, or other specimens, natural curiosities, works of art or manufacture, real estate or personal property, is requested to make use of the following form in his will, viz. :—"I give and bequeath to the CANADIAN INSTITUTE, incorporated by Royal Charter, November 4th, 1851 (*here enumerate and particularize the effects or property intended to be bequeathed*), and I hereby declare that the receipt of the Treasurer of the said Institute for the time being shall be an effectual discharge to my executors for the said legacy."

SECTION IX.

OF VISITORS.

Members may introduce their friends or strangers visiting the city to the meetings of the Institute or to the reading rooms and museums under such regulations as the Council may from time to time make, and the Institute approve.

SECTION X.

AGREEMENT WITH THE NATURAL HISTORY SOCIETY.

Nothing in these Resolutions shall interfere with rights enjoyed under a special agreement heretofore made with the Natural History Society of Toronto.

SECTION XI.

OF ALTERING THE REGULATIONS.

These Regulations shall come into force on the first day of July, 1892.

A motion to alter them may be made at the annual general meeting, or at a special general meeting called for the purpose, and not otherwise ; and notice of the proposed alteration shall be given at two consecutive ordinary meetings prior thereto.

APPLICATION FOR MEMBERSHIP.

[Form A.]

To The Canadian Institute:

I, the undersigned, proposing to become a _____ of the Canadian Institute, do hereby promise that I will be governed by the Royal Charter and by the Regulations and By-laws of the said Institute, and I promise to promote its objects as far as shall be in my power, and to attend the meetings thereof as often as I conveniently can.

Witness my hand, this _____ day of _____ 189 _____

We, the undersigned, consider the applicant a fit and proper person to belong to the Canadian Institute.

Witness our hands.

..... } Members of the Institute.
..... }

[Form B.]

We, the undersigned, consider _____ a fit and proper person to be a junior member of the Institute. He is _____ years of age.

Witness our hands.

..... } Date.. ..
..... }
Members of the Institute.

[Form C.]

CANADIAN INSTITUTE,
.....

SIR,—

I have the honor to inform you that you were duly elected (a member) or (Associate) of the Canadian Institute, on the day of and I beg to enclose a copy of the regulations.

The subscription for the current year, you will observe, is payable within a month of the date of your election. On your remitting the amount to the treasurer, all publications or notices to which you are entitled will be forwarded according to your directions.

I have, &c., &c.,

.....Secretary.

[Form D.]

CANADIAN INSTITUTE.
.....

SIR,—

I have to call your attention to Rule 9, Section 1, which provides that as your subscription was not paid prior to July 1st, inst., you are suspended from membership, but on payment of the same you will be re-instated.

I have, &c., &c.,

.....Secretary.

REGULATIONS OF THE LIBRARY AND READING ROOM.

Adopted at meeting of Council, February 1st, 1892.
.....

1. Any member may obtain the loan of any periodical from the Reading-Room, not to exceed two numbers at any one time, for a period not longer than one week.
2. Periodicals shall not be loaned until they have been on the table one month in the case of monthlies and quarterlies, and one week in the case of weeklies.
3. Any member may obtain the loan of any exchange from the Reading-Room after it has been 14 days on the table, not to exceed two numbers at any one time, for a period not longer than 14 days, which may be renewed for further periods on presentation of the volume at the Institute, if in the meantime, no request for the same has been made by any other member.
4. Any member may obtain the loan of any book from the Library, not reserved under rule No. 11, not to exceed three volumes at one time, for a period

not longer than one month, which may be renewed for a further period of one month on presentation of the volume at the Institute, if in the meantime, no request for the same has been made by any other member.

5. Non-resident members may obtain the loan of periodicals, exchanges or books, by paying the postage both ways.

6. If any member retain a periodical or exchange from the Reading-Room or a book from the Library longer than the time specified, he shall be notified by the Librarian and shall return it at once. Any member failing to comply with this regulation shall forfeit his right to receive the Transactions of the Institute.

7. In case any book or periodical is injured or lost while in the possession of a member, it must be replaced by a perfect copy or an equivalent in money.

8. No book or periodical shall be removed from the Library or Reading-Room without the permission of the Librarian, and the presentation of a ticket signed by the applicant, who shall be responsible for the books, &c., taken out until such ticket is cancelled.

9. Any Member may introduce a friend, not resident in Toronto or vicinity, to the privilege of reading in the Library or Reading-Room for a period not exceeding one month, on entering his own name with that of the person introduced by him in a visitors' book to be kept for that purpose, such privilege not to be renewed until a period of six months shall have elapsed.

10. Any person not a member of the Institute engaged in any special scientific enquiry or research, may be allowed to consult the exchanges and books under such rules and regulations as the Council shall from time to time determine.

11. The Librarian shall reserve from public circulation such periodicals, books, engravings, drawings, plans and other documents for reference purposes, as the Council may from time to time determine.

TWENTY-SECOND MEETING.

Twenty-second Meeting, 16th April, 1892, the President in the chair.

Donations and Exchanges since last meeting, 43.

George W. Grote was elected a member.

A paper by Rev. Dr. MacNish on "Celtic Prosody" was read by Dr. George Kennedy. The paper, after alluding to the important place held in Celtic literature by poetry, dwells upon the contrast between Greek and Latin verse and Celtic verse, the scansion of the one depending on quantity, that of the other on accent. Celtic poetry is founded up-

on the agreement of sounds, hence arise rhyme, alliteration, and concord not always depending on the coincidence of final words, but also on some radical vowel in corresponding words, and these not terminal alone, but recurring in several places throughout the verse. Numerous illustrations were given of the various kinds of correspondence and concord, examples being taken from Gaelic, Irish, Armorican and Welsh poems, both ancient and modern, among the modern being Evan MacColl. The hope is expressed that some one with sufficient leisure will prepare a Celtic classical dictionary to do for Celtic scholars what Lempriere and Smith have done for Greek and Latin students, and that some Hermann or Bentley will soon appear with a full and lucid treatise on Celtic prosody, acting, until his task has been happily completed, on the advice of one of the acknowledged masters of Latin verse: "Nocturna versate manu, versate diurna."

TWENTY-THIRD MEETING.

Twenty-third meeting, 23rd April, 1892, the President in the chair.

Donations and Exchanges since last meeting, 61.

A. Gilchrist and T. A. Patrick, M.D., were elected members.

A communication was read from the Royal Society of Turin, announcing the conditions of the Bressa Prize.

The following resolution was passed, on motion by Mr. Bain, seconded by Mr. Hunter:—

"The Canadian Institute is called upon to mourn the loss of one of its honorary members, the late Abbé Provancher, who during his lifetime was an ardent and zealous naturalist, working in the fields of Botany and Zoology. He furthered, by his indefatigable labors as editor of *Le Naturaliste Canadien* during twenty years, the expansion of these branches of science, and gave to the world the results of his diligent and thorough research. The Institute places on record its appreciation of his services to science, and joins with the rest of the Dominion in mourning for the loss the scientific world has suffered in his death."

Mr. L. J. Clark read a paper on "Lake Currents." He explained the nature of the investigations carried on by the City Engineering Department last summer, for the purpose of ascertaining if sewage could be safely discharged into the lake, and, if so, the most favourable place. Operations were carried on from 35 to 40 days during the months of July, August, September, and October, under the supervision of Mr. C. Rust, Assistant Engineer. The Provincial Board of Health made an

analysis, both bacteriological and chemical, of a large number of samples of water, taken from the bay and from other points. The general tendency of the currents seemed to be controlled by the direction of the wind, although in some cases the undercurrent was found to be contrary to the wind and to the surface current. They mostly flow parallel to the coast line, that is north-east and south-west ; and he is of the opinion that if the sewage were discharged well out into the lake, to the east of the intake pipe, there would be no danger of contaminating the water supply of the city. The intake pipe is considered to be in the best possible location, as it is the nearest point where deep water can be reached : and the main thing is to carry the sewage beyond the range of the mouth of the pipe.

Mr. Alan Macdougall read a paper on "The Indian as an Artist." He acknowledged the indefatigable labors of Mr. David Boyle in the cause of archæology and the generous liberality of the Provincial Government in aiding this branch of science by its annual grants. Referring to the Indians of this Province, he regretted the absence of any early writings from which one could learn anything of the technique of the Indians when the Jesuits laboured among them. Judging them by their pottery, there was reason to believe they must have had some alliance, ethnological or commercial, in early days with that interesting nation the Mound Builders. By numerous illustrations of their work, he pointed out the beauty of form in their flint arrow heads, the stone chipped celts, and other implements, all of which contain the special angles which form the graceful lines of the Gothic arch and other proportions which grace many architectural designs. Passing on to the Pacific coast, a rapid review was given of the work of the Queen Charlotte Island Indians, for whom he claimed an Egyptian origin, as the basis of their art. Filtered through many vicissitudes of wanderings and comminglings with other nations, the origin of their art was lost ; but a hereditary instinct seemed to be left to them which gave them the skill requisite to produce the beautiful slate carvings which are undoubtedly entitled to rank as works of art. Assuming this to be the characteristic of the tribes, there seems to be sufficient authority to advance the theory that years ago, by trade if by no other means, the British Columbia Indians came under the influence of East Indian, and perhaps Japanese, art. Even in their grotesque carvings there are evidences of these influences. Referring to the famous totem poles, he illustrated through numerous photographs his belief that they were heraldic symbols, and expressed his belief that the Indians of this continent are the remains of a civilization which has been the foster mother of Greek and Roman and all other art.

TWENTY-FOURTH MEETING.

Twenty-fourth Meeting, 30th April, 1892, the President in the chair.

Donations and Exchanges since last meeting, 45.

Thomas McCracken and D. W. Beadle were elected members.

Nominations were made for officers and members of Council for the ensuing year.

The President read a translation from the Italian of the conditions of the Bressa Prize.

A paper by Mr. Richard Nettle on "The Artificial Propagation of Salmon and Trout in Canada," was presented by the Secretary. The first ovary was constructed in Mr. Nettle's office in Quebec in 1857. He appears to have been very successful in his efforts. In 1862, an enthusiastic fly-fisher told him the River Moisie had increased its output in four years from 300 to 800 barrels. Reports from other rivers were equally favourable. He mentions an interesting case of gold fish leaping out of their division of an aquarium into that of the young salmon and devouring them; and another in which ova taken from a trout had vivified and hatched out in large numbers.

A. F. Chamberlain, M.A., Ph.D., read a paper on "Colour Comparisons in the Low German Poets." He discussed the use of colour comparisons by Meyer, Groth, Boysen, Babst, Bornemann, Weber, Ahrens, Ernst, Heyse, and other Plattdeutsch poets, paying special attention to those who wrote in the Ditmarsch dialect. By "colour comparisons" are meant such compounds and similes as correspond to the English:— Snow-white, pitch-dark, sky-blue, blood-red, bottle-green, green as grass red as a lobster, black as a crow, etc. Individual writers sometimes, prefer special forms, such as "rose-red," "white as chalk." The users of dialect often show their keener insight into nature by the comparisons which they employ. Thus we have "green as a beech tree in May," "eyes blue as the forget-me-nots," "yellow as the dandelion." "eyes black as currants," "white as a birch," etc. The presence of certain things favours the general use of some one form of comparison more than all others. Thus in some districts "white as a sea-mew," "white as chalk," "green as grass," may attain such general acceptance. He also referred to and discussed some curious figurative uses of the words for colour in the Plattdeutsch languages, such paradoxical forms as rot black ("red ink," literally, "red black"), groen black ("green ink") occur not infrequently. In one dialect witt lachen ("to laugh white") signifies to laugh in a kind or agreeable manner, and in another, gel snacken ("to

talk yellow") means to talk High German, which the Plattdeutsch peasant pleases to term "nonsense." In another part of the Low German linguistic territory an imperfectly known or uncertain colour is called blitzblau und dunnergrau ("lightning blue and thunder grey") though it may be neither blue nor gray.

Prof. A. B. Macallum, B.A., M.B., Ph.D., read a paper on "The Structure of Cell Protoplasm." It treated of the question of the structure of living protoplasm as known from studies on the dead cell, and from observations on the living elements. The various views were commented upon, and it was pointed out that all of these were the result of observations in limited fields of cystological research; that while, for example, the reticular structure is present in some cellular elements, the vesicular forms in others, and the fibrillar in others again, neither of these types of structure may be present in the living cell, and that, therefore, students must look to some other view which will cover, more fully than those at present at their disposal, all the phenomena of cell structure already observed and at the same time explain the relations of the nucleus to the cell and to life. A view was advanced that the cell protoplasm is an intermediary organ between the living element proper—the nucleus—and the outer world, and that the protoplasm is largely, if not wholly, derived from the nucleus elements, and therefore, as life advances, in accordance with Prof. Minot's view, the nuclear substance diminishes while the cell protoplasm is increased so much that the physical conditions imposed by so relatively large an intermediary organ bring the life of the element to an end. This view was applied to the elucidation of some of the phenomena connected with secretion, excretion, movement, etc. Its connection also with the present views as to what life is was also discussed.

FORTY-THIRD ANNUAL MEETING.

The Forty-Third Annual Meeting was held on 7th May, 1892, the President in the chair.

Donations since last meeting, 80, including 77 back numbers of The Canadian Journal, presented by the executors of S. B. Harman; Exchanges, 51.

A letter was read from the P. O. Dept., Ottawa, stating that the Postmaster General had received authority from the Executive Council to relieve the Institute of the expense of prepaying postage on their reports issued from time to time, and to either frank them or place the necessary stamps upon them. The Secretary was instructed to return thanks to the Post Master General.

The election of officers and members of Council for the ensuing year resulted as follows :—

President—Arthur Harvey, Esq.

Vice-President—Prof. A. B. Macallum, Ph.D.

Secretary—Alan Macdougall, M. Inst. C.E.

Treasurer—James Bain, Jr., Esq.

Librarian—D. R. Keys, M.A.

Curator—David Boyle, Esq.

Editor—George Kennedy, M.A., LL.D.

Members of Council—O. A. Howland, Esq.

L. J. Clark, Esq.

A. Blue, Esq.

James H. Pearce, Esq.

John Maughan, Ch. Biolog. Sec.

J. B. Williams, Sec'y Biolog. Sec.

J. C. Hamilton, LL.B., Ch. Hist. Sect.

B. E. Walker, Ch. Geol. and M. Sec.

The 43rd Annual Report was read and adopted.

The following resolutions were passed :—

That the thanks of the Institute be tendered to the Press for their courtesy in reporting so fully the meetings of the Institute.

That the Council be requested to consider the propriety of applying to the Dominion Government for a supplementary charter to add History, Literature and Art to the objects the Institute may study and promote, and to make clear the mode of election of the members of the Council.

FORTY-THIRD ANNUAL REPORT.

The Council of the Canadian Institute has the honor to lay before its members its Forty-third Annual Report.

It is once more an agreeable task to record the progress of the Institute. The meetings have all been well attended. An ample supply of papers, with a range as wide and varied as in any previous session, has created much interest and elicited spirited discussions at the ordinary meetings.

During the present session the regulations and by-laws have been remodelled and adopted at a special general meeting held for that purpose on the 9th of April. Considerable changes have been made; two new classes of members have been introduced—corresponding members

and associate. The former is an old class revived, on lines likely to promote interest in the Institute. The latter is a new class, which has very wide limits, created for the purpose of enlisting the co-operation of many who, not sufficiently advanced in science to be interested in all the work of the Institute, are earnest workers in such subjects as history, archæology, geology, botany, political and economic science.

The small fee of \$2 per annum will enable many to join, and take advantage of the liberal privileges extended to this class.

The rules of the library and reading room have also been amended. The new rules came into force on the 1st of February and have since that date been carried out to the advantage of the members.

The interest in the work of the sections increases.

The Biological or Natural History Section has held 15 meetings, at which 15 papers were read. The field days have been as successful as formerly, and the work of the sub-sections has been vigorously carried on.

The Historical Section has increased its membership from 27 to 45. Six meetings were held during the session; all were well attended; six papers were read. The Section makes special note of the increasing interest in historical matters, both in the Institute and by the general public, and expresses satisfaction at the steps taken by the government towards the establishment of a national park.

The Mining and Geological Section held three meetings at which a like number of papers were read. The membership has not increased, though they look for an increase in the immediate future.

Early in the summer of last year, a movement was inaugurated to consider the most advantageous scheme for enlarging the scope of the Institute, and the advisability of removing to a more central and readily accessible situation. Two plans were presented: one embraced the enlargement of the present building by adding a museum on the vacant portion of our lot, and remodelling the present reading room and library; the other contemplated the removal of the Institute from the present site to one in a more northern or up-town district. After several meetings had been held, at which the projects were fully discussed, the members at a special General Meeting called for the purpose on the 19th June, 1891, vetoed all the proposals laid before them.

The adoption of cosmic time, in relation to the use of the 24-hour notation, has been greatly advanced by the labors of a special committee of the American Society of Civil Engineers, the chairman of which was our distinguished honorary member, Sandford Fleming, LL.D., C.M.G.

The Committee recommended in their final report which was presented on the 20th January, 1892, the adoption of the new notation of time on all railways in America "on the 12th October, 1892; that date being suggested in compliment to the fatherland of Columbus." The report states that "From the latest information received, it is evident that Europe is now making the first great step in time reform which America made in 1883, in introducing Standard Time into general use. In the second important step, the adoption of the 24-hour notation, this country is somewhat anticipated by India, and we need not be greatly astonished to hear of a rapid development of the reform in Europe, when once the first step is fully taken."

The Council noted with much pleasure the formation of a Royal Commission to enquire into the protection of fish and game.

A Royal Commission has been issued to enquire into and report upon the preservation of the forests and the formation of a National Park.

A paper of very great interest to the fruit-growing industry was presented by Dr. W. R. Shaw, the subject being the disease known as "Peach Yeliows." This paper created a deep interest in the great peach-growing district, the Niagara peninsula. Resolutions were passed by the Lincoln Farmers' Institute, and the Fruit Growers' Association, the Council of the Township of Niagara, and other bodies, requesting the Institute to bring the subject under the notice of the Local Legislature during its last session. An influential deputation from the bodies named, accompanied by a Committee from the Institute, waited on the Government, by whom they were courteously received. Owing to the late period of the session it was not practicable to introduce the legislation asked for; there is no doubt, however, that at the next session important legislation will be obtained intended to prevent the spread of peach yellows, black knot, and other dreaded diseases among our orchards, and that this valuable and extensive industry will have proper protection accorded to it.

A paper on Electoral Representation and the Rectification of Parliament, by Dr. Sandford Fleming, has created great interest. A friend of the Institute, who has declined to make known his name, has generously placed at the disposal of the Council the sum of \$1,000, to be awarded in whole or in part, for the best measure which if made law would give to the whole Canadian people equal representation in Parliament and each elector due weight in the Government through Parliament. The conditions of the competition have received the most careful attention of the Council, and will be made public in a few days.

The invitation to hold a summer convention in the town of Penetanguishene led to a very pleasant and interesting visit to soil rendered historical by the establishment there at a very early epoch of a fort for the protection of the Jesuit Fathers and the French interests at large. The convention was held on the 25th and 26th September, the meetings were well attended, and the papers read by the resident historians were of much interest. An Excursion was made to Christian Island on the 26th. A meeting was held in the Council chamber of the Indian village of St. Joseph, at which Chief Samuel Assance, Thomas Skye, a veteran of 97 years of age, and John Monague spoke. The latter, an old man of 80, gave an interesting account of how he and others were taken to Toronto, in 1837, and sent to look out and intercept Mr. W. Lyon Mackenzie. He added naively that as he and his party did not know Mr. Mackenzie, they did not see how they could intercept him. Fort Ste. Marie was thoroughly explored. Another excursion was made to Fort Ste. Marie, on the River Wye, near the town of Midland, on the 28th; the ruins examined, the site traced out, the water gate readily recognized and the channel of the canal, which had been used by the Jesuits for approaching the fort, identified. A proposal to secure this extremely interesting historical site for future preservation as a public memorial has received encouragement, and an advantageous offer for the purchase of the land on which the fort stands has been made to the Institute.

The Council takes pleasure in again acknowledging the *generosity* of the Government in continuing the Archæological grant.

The Archæological Report of the curator published in advance of this, again deals with a wide field of interest. In the chapter on craniometry, 48 skulls are figured and described; the Institute is indebted to Drs. S. K. Boyle and L. K. Meade for their kind labors in this matter. The demand for this report has been so great that the edition is already exhausted.

Additions by purchase and presentation have been made to the museum of specimens from all parts of the Dominion, the greater number being naturally from friends in our own province. A full list of the names of donors to the museum is published in the report.

An agreement was entered into with the Public Library Board for the transfer of the custody of our Archæological collection to that Board, to be placed in their proposed museum. The arrangement has unfortunately been interfered with by adverse action of the City Council, but there is still a prospect of arrangements being arrived at which will carry out in part this plan, thereby relieving the overcrowding of the

museum and library and placing considerable space at the disposal of the sections for the extension of their special work.

The approaching centennial celebration of the formation of the Province of Upper Canada, and the institution of parliamentary government which gave us self-governing powers, is to be celebrated with fitting ceremonies at Niagara on the 16th July, and in Toronto on the 17th September. The Council impresses on the members the value of the occasion to urge on the government and the public generally, the great importance of preserving historical documents deserving the attention of the administrations of all the provinces in the Dominion, as well as the preservation of historical spots, such as the numerous forts scattered over the provinces, which have played important parts in our early history.

The accommodation in the reading room is inadequate, and the comfort of the members in consequence much impaired; it is intended to relieve this as soon as the museum can be moved to the public library building.

The Treasurer's accounts have been audited and found correct. They will be found in Appendix II.

The state of the membership will be found in Appendix I.

When the new rules and regulations come into force on the 1st of July of this year, the present associates will be termed juniors.

An entirely new class has been formed who will be known as associates.

During the past year the Institute has lost by death one honorary member, the Abbé Provancher; two life members, Dr. T. Sterry Hunt, and Mr. John Page, and one ordinary member, Mr. Chas. Levey.

The thanks of the Institute are due and are tendered to the Press for full reports of our meetings.

The reports of the Sections are given in full in the appendices.

The Council again acknowledges with pleasure the services rendered to the Institute by the Assistant Secretary, Mr. R. W. Young, M.A.

All of which is respectfully submitted.

ARTHUR HARVEY,
President.

ALAN MACDOUGALL,
Secretary.

TORONTO, 29th April, 1892.

APPENDIX I.

MEMBERSHIP.

Honorary Members	6
Life Members	9
Ordinary Members, May 1, 1891	273
Deaths	1
Resignations.....	12
Suspense	1
Names erased	16
	<hr/>
	30
	<hr/>
	243
Members elected, 1891-92	40
	<hr/>
	283
	<hr/>
Total membership, 1 May, 1892	298
Associates as at May 1, 1891.....	17
Resignations.....	2
Names erased	1
Transferred to members.....	2
	<hr/>
	5
	<hr/>
Total, May 1, 1892.....	12

APPENDIX II.

FINANCIAL STATEMENT.

James Bain, Jr., Treasurer, in account with the Canadian Institute for the year ending March 31st, 1892.

DR.

To Balance in Imperial Bank	\$ 668 39
" Cash in hand	42 34
" Annual Subscriptions.....	718 31
" Rent	19 25
" Government Grant	1,000 00
" Periodicals sold.....	46 15
" Extra Copies of Transactions.....	3 27
" Interest on Deposits.....	24 58
" Dr. Fleming's Annual Donation.....	200 00
" Amount refunded by Univ. Library for binding	9 32
	<hr/>
	\$2,731 61

CR.	
By Salaries.....	\$384 00
" Printing (Transactions)	386 84
" " (Miscellaneous)	58 62
" Engraving	148 89
" Stationery	35 10
" Postage.....	165 35
" Freight and Express Charges	14 74
" Repairs	67 43
" Gas	34 90
" Water	6 25
" Periodicals	154 30
" Furniture	163 20
" House Cleaning.....	71 50
" Fuel.....	118 00
" Museum Expenses	5 68
" Duty.....	43 00
" Type Writing.....	5 00
" Surveyor's Report.....	5 00
" Legal Expenses.....	6 00
" City Directory.....	5 00
" Petty Charges.....	3 60
" Interest	200 00
" Balance in Bank to Building Fund....	700 00
" " " Ordinary Account	80
" Cash in Hand.....	9 41
	\$2,731 61

Examined and found correct.

(Signed) JOHN G. RIDOUT, }
L. J. CLARK, } *Auditors.*

April 25th, 1892.

ASSETS AND LIABILITIES.

ASSETS.	
Building and Grounds.....	\$18,000 00
Library	5,000 00
Specimens	6,000 00
Personal Property	1,000 00
Building Fund, Cash in Bank	700 00
	\$30,700 00

LIABILITIES.

Mortgage due 1896	\$ 4,000 00
Balance in favour of the Institute.....	26,700 00
	<hr/>
	<u>\$30,700 00</u>

Audited as an approximate estimate.

(Signed) JOHN G. RIDOUT, } *Auditors.*
L. J. CLARK, }

April 25th, 1892.

ARCHÆOLOGICAL FUND.

James Bain, Jr., in account with the Archæological grant to the Canadian Institute, 1891-92.

1891.	
May 1. To Balance in hand	\$ 180 05
June 22. " Annual Grant	1,000 00
Balance due Treasurer.....	7 63
	<hr/>
	<u>\$1,187 68</u>

1891.	
By Travelling Expenses and Postage	\$ 188 45
" Purchase of Specimens	518 85
" Curator's Salary.....	400 00
" Cases	80 00
" Bank Draft.....	38
	<hr/>
	<u>\$1,187 68</u>

Audited and found correct as per vouchers.

(Signed) JOHN G. RIDOUT. } *Auditors*
L. J. CLARK. }

April 25th, 1892.

We the undersigned Auditors beg leave to report that we have checked the cash account with the vouchers, and have examined the bank book and find the various items and balances correct; and have also examined and compared with vouchers the various items relating to the Archæological grant, and find the same, as well as the balance due the Treasurer, correct.

Respectfully submitted.

(Signed) JOHN G. RIDOUT, } *Auditors.*
L. J. CLARK, }

Toronto, April 25th, 1892.

APPENDIX III.

PAPERS READ DURING THE SESSION 1891-92.

1891. Nov. 7. "A Critical Review of the Enterprise of Christopher Columbus,"—Inaugural Address by the President, A. Harvey.
- " " 14. "The Formation of Niagara River,"—W. J. Smith.
- " " 21. "Déné Roots,"—Rev. A. G. Morice, O.M.I.
- " " "Peach Yellows,"—W. R. Shaw, M.D.
- " " 28. "St. Columba, or Colum Cille,"—Rev. Neil MacNish, LL.D.
- " Dec. 5. "The Spirit of National Art,"—W. A. Sherwood
- " " 12. "The Finances of the American Civil War,"—W. A. Douglass, B.A.
- " " 19. "Testing the New Water-pipe,"—Levi J. Clark.
1892. Jan. 9. "The Aborigines, or Bœothicks of Baccalaos,"—Rev. Philip Tocque, A.M.
- " " 16. "Economic Science for Canadian Students,"—W. Houston, M.A.
- " " 23. "The Abenakis of the Saint John River,"—Edward Jack, Fredericton, N.B.
- " " 30. "The Volcano of Kilauea and the Hawaiian Islands,"—H. Spencer Howell, Galt, Ont.
- " Feb. 6. "The Great Centre: An Astronomical Study,"—J. C. Hamilton, LL.B.
- " " 13. "Siberian Inscriptions,"—Rev. Prof. Campbell, LL.D.
- " " 20. "Electoral Representation, and the Rectification of Parliament,"—Sandford Fleming, LL.D., C.M.G.
- " " 27. "Early Traders and Trade Routes in Ontario and the West,"—Captain Ernest Cruikshank.
- " Mar. 5. "History of Greenland and Iceland,"—W. D. Stark.
"Rutherford's Narrative: An Episode in the Pontiac War, 1763: An unpublished MS., with introductory notes,"—Arthur Harvey.
- " " 12. "Lieut.-Col. Coffin and his Private Correspondence during the Rebellion of 1837,"—H. R. Fairclough, M.A.
- " " 19. "Gleanings from European Art Fields; II. Paper: (Nineteenth Century Sacred Art),"—J. W. L. Forster.
"The Southwold Earthwork, and the Country of the Neutrals,"—James H. Coyne, B.A.

1892. Mar. 26. "The Ontario Game Laws,"—G. S. Wilgress, B.A., Barrister, Huntsville.
- " April 2. "The Phocas of Terre-Neuve,"—Rev. Philip Tocque, A.M.
 " " " " "An Animated Molecule and its Nearest Relatives,"—Daniel Clark, M.D.
- " " 9. "Canadian Wild Flowers,"—Delos W. Beadle.
- " " 16. "Celtic Prosody,"—Rev. Neil MacNish, LL.D.
- " " 23. "Lake Currents,"—Levi J. Clark.
 " " " " "The Indian as an Artist,"—Alan Macdougall, M. Inst., C.E.
- " " 30. "Colour Comparisons in the Low German Poets,"—A. F. Chamberlain, Ph. D.
 " " " " "The Structure of Cell Protoplasm,"—Prof. A. B. Macallum, Ph. D.
 " " " " "On the Artificial Propagation of Salmon and Trout in Canada,"—Richard Nettle.

Total number of papers read at the ordinary meetings of the Institute during the session 1891-92, 31, which may be classified as follows:—

Archæology	1	History	5
Astronomy	1	Literature	1
Biology	3	Philology	4
Botany	1	Pisciculture	1
Economics	2	Political Science	1
Engineering	2	Zoology	1
Ethnology	3	Miscellaneous	1
Fine Arts	2		—
Geography	1	Total	31
Geology	1		

READ AT MEETINGS OF SECTIONS.

Biological Section	15
Geological and Mining Section	3
Historical Section	6
	—
Total	24
Total read during the Session	55

REPORT OF THE LIBRARIAN.

TORONTO, May 6th, 1892.

To the Council and Members of the Canadian Institute :—

GENTLEMEN,—In presenting his annual report your librarian has first to record the establishment of a new set of rules intended to facilitate and increase the use of books and periodicals by making it possible for a larger number of members to avail themselves of the privileges of the library and the reading room. The experience of the few weeks during which the rules have been in operation gives evidence that they have had the effect intended, and have been appreciated by the members whose earnest co-operation in carrying them out will add greatly to the educative value of this important branch of the work of the Institute.

The cataloguing of the library has been deferred owing to the state of the treasury, which has rendered it impossible to obtain even the smallest appropriation for such a purpose. Your librarian would urge upon the Council and members the importance of a catalogue and the insecurity that results from the lack of one in the present state of the library.

The plan for a bibliographical catalogue of the contents of the Institute's periodicals and exchanges has made better progress. This scheme requires men rather than money, and it is a pleasing proof of the scientific ardor of the members of the Institute that a number of gentlemen have undertaken this laborious but not uncongenial task. In connection therewith the President has suggested the preparation of a bibliography of the Transactions of the Institute to which he himself has already made an important contribution, and which it is proposed to complete in the course of the coming session.

In conclusion your librarian begs to report the library statistics as follows :—

LIBRARY STATISTICS—1891-92.

Periodicals subscribed for.....	34
Separate numbers received from April 1, 1891, to April 1st, 1892.....	835
Number of books and periodicals taken out...	2,013
Number of societies, individuals and periodicals to which the publications of the Institute are sent.....	525

DONATIONS AND EXCHANGES.

(From April, 1891, to, April 1892.)

Donations	176
Exchanges received from—	
Canada	247
United States	911
Mexico, West Indies and South America.....	59
Great Britain and Ireland	484
Austria-Hungary	157
Belgium	18
Denmark	5
France	441
Germany	421
Italy	235
Netherlands	30
Norway	35
Portugal	13
Roumania	3
Russia	54
Spain	15
Sweden	14
Switzerland	12
Turkey	19
Asia	75
Australasia.....	19
 Total Exchanges	 3,267
Donations	176
Purchases	835
 Total received during the year	 4,278

All of which is respectfully submitted,

(Signed) D. R. KEYS,
*Librarian.*REPORT OF THE BIOLOGICAL SECTION OF THE
CANADIAN INSTITUTE, 1891-92.

TORONTO, April 20th, 1892.

It is with pleasure that on my retirement from the office of Secretary of this Section, I am able to report a successful session.

Fifteen meetings have been held, at which fifteen papers were read. A schedule of them is attached.

Field days have been very successful, many plants having been added to our museum through the energy of the members and their friends. The outings were held at Mount Dennis, Scarboro Junction, and Victoria Park respectively, with good attendance.

Most of the work of the Section has been concentrated in its Sub-sections.

The Ornithological Sub-section has again handed in a vast amount of very valuable material for publication. The work of this Sub-section is advancing, and the results are increasing under the able chairmanship of Mr. Wm. Brodie.

The Microscopical Sub-section has been progressing. The work done is not confined to any particular branch of Microscopical Science, but embraces both Organic and Inorganic Science, and which is being thoroughly investigated under the leadership of Mr. G. G. Pursey, at meetings held fortnightly throughout the year.

The Botanical Sub-section, under the chairmanship of Mr. Samuel Hollingworth, was organized on April 11th, 1890, and has held 35 meetings, at which 557 species of plants were identified, of which 389 bear date up to the end of 1890, including specimens from the collection of the late Dr. Cowdry, collected in and after 1866, also a collection by Mr. Samuel Hollingworth, 1885, and a collection of ferns by J. L. Little, 1888. Four hundred and seventy-four species were identified in 1891, of which 171 were new records over the previous year. Of the above total 499 species were found in the vicinity of Toronto.

This Sub-section has again to acknowledge great assistance from Miss Alice Hollingworth, of Beatrice, Muskoka, in collecting specimens and information of the 'flora' of that district, also to Mr. Geo. P. Payne, of Toronto, to whose energy in collecting we owe many of the specimens in our Herbarium.

Several additions have been made to the museum, and our Curator, Mr. Jas. Noble, is now busy arranging the different departments, with a help of a museum committee. The Botanical cabinet is finished and most of the specimens are transferred to it, but not yet properly arranged and catalogued.

Your President of the Natural History Society, and Chairman of the Biological section of the Canadian Institute desires to thank you for his position for four years, to express his regrets that ill-health precludes him from attending night meetings at the season which demands his

presence, and to say that all he can do in the future will be willingly accorded, with the knowledge that the study of nature brings us closer to nature's God.

JAMES H. PEARCE,
President.

CHAS. W. ARMSTRONG,
Secretary.

PAPERS READ DURING SESSION 1891-92.

Jas. H. Pearce	<i>President's Address.</i>
C. W. Armstrong.....	<i>Eucalyptus Globulus.</i>
Arthur Harvey.....	<i>Latest Developments of Glacial Action around Toronto.</i>
Jas. Noble.....	<i>Trilliums</i>
J. Thurston.....	<i>Report of Ornith. Sub-section.</i>
J. B. Williams.....	<i>Migration of Evening Grosbeak.</i>
C. W. Armstrong.....	<i>Botanical Sub-section: Its Work and Progress.</i>
Jas. H. Fleming.....	<i>Birds Seen in the Market at Nice.</i>
J. Maughan, Jr.....	<i>Taxidermy as an Art. Part I.</i>
W. D. Stark	<i>Solan Goose.</i>
J. B. Williams	<i>Notes on an European Tour.</i>
Jas. Noble.....	<i>Vernation.</i>
J. B. Williams	<i>Canadian Walking Stick Insect.</i>
Alice Hollingworth.....	<i>Scientific Researches in Rural Dis- tricts.</i>
Jno. Maughan, Jr.....	<i>Taxidermy as an Art. Part II.</i>
“ “ “	“ “ “ <i>Part III.</i>

REPORT OF THE GEOLOGICAL AND MINING SECTION.

TORONTO, April 29th, 1892.

Hon. Secretary of the Council of the Canadian Institute:—

DEAR SIR,—I beg to report on the Geological and Mining Section for the season 1891-92.

There have been three papers read before the Section during the present year, viz., one by Mr. Hamilton Merritt, F.G.S., on the “Silver Ores of West Kootenaie, B.C.” Mr. Merritt shewed numerous samples collected during his visit to that Province, and gave an interesting account of the Geological features of that important region.

Mr. J. B. Hammond, of Sudbury, read a paper on “The Nickel Deposits of Algoma,” which was followed by an interesting discussion.

Mr. George Mickle, M.E., read a paper on the "The new Nickel Compound, Nickel Carbon Oxide," and exhibited specimens of Nickel which he deposited on glass tubing from this gaseous compound.

The Section regret to report that their membership has not increased during the present year, but several have promised to join next year, and their presence will, no doubt, impart new life to the Section.

The following officers were elected for the coming year:—*Chairman*, Mr. B. E. Walker; *Vice-Chairman*, Prof. Coleman; *Secretary*, George Mickle, M.E.; *Committee*, Messrs. Archibald Blue, D. Boyle, Arthur Harvey, T. R. Clougher, W. H. Merritt, F.G.S; *Curator*, Mr. R. Dewar.

I remain, yours,

GEORGE MICKLE,

Secretary Geological and Mining Section.

REPORT OF THE HISTORICAL SECTION.

TORONTO, April 21, 1892.

To the Council of the Canadian Institute:—

The Historical Section begs to report, at the end of its second year's existence, that the number of members on its roll has increased from 27 to 45. The attendance at the meetings has been large and the discussions following the reading of papers full of interest. The Section notes with much pleasure the increased attention given to historical subjects by the Institute at large, also by the general public, and believes it has in some measure contributed thereto. Under the new and liberal rules of the Institute, which permit gentlemen and ladies who are interested in the particular work of any one section to become associates of the Institute for a merely nominal fee and to take part in all the proceedings of that Section, it is probable that a further impetus may be given to the study of History, which has hitherto been in Canada too much neglected.

The following proceedings are recorded in the minutes of the Section:—

Oct. 16th, 1891.—Business meeting, recommending the purchase by public subscription of the site of the old Fort Ste. Marie, on the Wye. Correspondence between our local agent and the owner is in progress, which will, it is hoped, result satisfactorily in securing this interesting spot for the Institute.

Nov. 19th, 1891.—Paper by W. Canniff, M.D., M.C.S., on "Pioneer Medical men of Upper Canada." The paper gave many interesting

details of the modes of licence, examination and practice in the early days of this province.

Dec. 17th, 1891.—Mr. D. Boyle presented a paper on "The Discovery of the Great Falls of Labrador." This was opportune, as the newspapers of New York were claiming for a Bowdoin College expedition, the discovery of these falls, and the right of naming them. The discovery was made in 1839, by the late John McLean of the Hudson's Bay Company's service. The paper was recommended for publication in the "Transactions" and the Section is pleased to see it has been published in the number just issued. A very interesting paper was read at the same meeting by Mr. J. G. Ridout, "Gibraltar, with Illustrations." At this meeting, too, a resolution was passed and forwarded to the Council to call attention to the importance, as formerly urged by the Institute, of setting apart several townships on the head waters of some of our northern rivers as a national park. The Section is pleased to note that a Royal Commission has been appointed by the Lieut.-Governor in Council to fully consider this subject, for, in addition to its value to natural history, forestry, pisciculture and the preservation of many animals and birds from possible extinction, the establishment of natural parks will conduce to the fostering of a patriotic spirit and be a means of increasing interest in Canada abroad.

Feb. 21st, 1892.—At this largely attended meeting Mr. Arthur Harvey read a treatise on "The Labarum of Constantine the Great, and the new views thereon of Mr. Christopher Samarsidis, Gymnasiarch (Principal of the Collegiate Institute), of Adrianople, Turkey." Mr. Samarsidis had traced in the arcs and crosses of a parhelion, as in a monogram, the very letters of the celebrated *TOYΤΩ ΝΙΚΑ*, and the emblems *XP*. The paper dealt with this subject and was illustrated by diagrams of parhelia (frequent in Canada) and other atmospheric phenomena which may have had some connection with the vision of Constantine. The feeling formerly, and even yet, excited by such displays was alluded to, with quotations, also the circumstances which led to the decay and fall of Polytheism, and the adoption of Christianity as the religion of the Roman Empire. One of the objects of the paper was to show "how rapidly a ripple on the shores of the blue *Ægean* now reaches our Canadian lakes."

March 24th, 1892.—A paper by Mr. Jas. Bain, Jr., on "The Rebellion of 1837-8, as seen by an English officer," gave an account by Lieut. Hutton, 34th Regt., of his travels with the troops and the part they took in repelling the American sympathisers of that day. The action at Sandwich in which Col. Prince commanded the Canadian militia was described in apparently impartial terms. The paper elicited a warm.

discussion, and it became evident that the time has hardly arrived yet for a dispassionate survey of the events of that period. It was stated by Mr. Bain that diaries and letters relating to these times exist in greater quantity than usually supposed, and it is to be hoped that their possessors will place them at the disposal of this section for copying, if not for the preservation of the originals.

April 21st, 1892.—The last paper of the Session was read by Mr. J. C. Hamilton, LL.B., "Afro-Canadian—Retrospect and Prospect," being the conclusion of his exhaustive work on the colored race in Canada, of which several prior chapters have been communicated to the Institute or to the Section. We hope soon to see the completed volume in print, and trust it will be as acceptable to the general public as it has been interesting to the members.

The officers of the Section, elected for the ensuing year, are:—
Chairman, J. C. Hamilton, M.A., LL.B.; *Secretary*, O. A. Howland;
Council, J. G. Ridout, Robt. Jenkins, Geo. M. Rae.

ARTHUR HARVEY,

Secretary.

PROCEEDINGS OF THE ORNITHOLOGICAL SUB-
SECTION OF THE BIOLOGICAL SECTION
OF THE CANADIAN INSTITUTE.

EDITED BY THE EDITING COMMITTEE.

(Twenty-sixth meeting, April 15, 1890).

Arrivals.—*Totanus melanoleucus*, Greater Yellow-legs April 4, on the sand-bar, Ashbridge's bay. *Sayornis phoebe*, April 14, Phoebe on Don Flats. *Zonotrichia albicollis*, April 14, White-throated Sparrow in city. *Turdus aonalaschkæ pallasii*, Hermit Thrush, collected April 14, in the city.—JOHN EDMONDS.

Arrivals at Sharon, Ont.—*Melospiza fasciata*, Song Sparrow first seen April 3, numerous on April 5, *Sialia sialis*, Bluebirds first seen flying high overhead on April 3; April 4, they began to settle down and on April 5, were quite common about every fence and stump. *Sturnella magna*, First Meadow Larks seen on April 3, common on April 5. *Sayornis phæbe*, Phæbe, observed on April 5, quite common on April 7. *Passerella iliaca*, Toronto.—On April 13, I observed a small flock of Fox Sparrows in the Queen's Park. *Sphyrapicus varius*. On April 13, I watched a female Yellow-bellied Sapsucker in the Queen's Park, sucking sap from holes she had pierced in the bark of a maple tree. Having sucked the sap from the holes already made she began pecking another hole and by the time it was finished the old ones were filled again, and she would return and empty them. A slight disturbance would cause her to fly away a short distance but she soon returned to enjoy her favorite drink. Examining the ground at the root of the tree I found pieces of bark, cut from the holes, scattered around.—C. E. PEARSON.

Otocoris alpestris praticola.—On April 4, I collected a pair of Shore Larks on the Island. The female had been sitting on eggs.—J. A. VARLEY.

Tachycineta bicolor.—On April 4, I observed the first Tree Swallows on the Island and on April 5, I saw about a dozen at Balmy Beach.

Spizella monticola, Tree Sparrows, were first observed on April 4, and Savannah Sparrows, *Ammodramus sandwichensis savanna*, were seen on April 12, at the Woodbine Race Course.—J. B. WILLIAMS.

Arrivals—April 7, Piping Plover, *Ægialitis meloda*. April 4, White-rumped Shrike, *Lanius ludovicianus excubitorides*. April 7, Blue Heron, *Ardea herodias*.—W. CROSS.

Arrivals.—At Ayr, Ont., 1890, February 2, *Acanthis linaria*, Redpoll *Cyanocitta cristata*, Blue Jays have been seen here regularly since March 1. March 15, *Merula migratoria*, Robin. March 16, *Melospiza fasciata*, Song Sparrow. *Molothrus ater*, Cow-bird. March 24, *Sturnella magna*, Meadow Lark. *Sialia sialis*, Blue-bird, May 7, *Icterus galbula*, Baltimore Oriole.—W. PARKS, AYR.

(Twenty-seventh meeting, April 29, 1890.)

Arrivals.—March 25, Blue-birds, *Sialia sialis*, Robins, *Merula migratoria*, Field Sparrows, *Spizella pusilla*, were seen at Georgetown. March 31, *Otocoris alpestris praticola*, Shore Larks, *Falco sparverius*, common at Georgetown; a scattering of snow on ground. March 31, *Merula migratoria*, *Sialia sialis*, *Melospiza fasciata*, first seen at Lamaroux, Scarboro Township. The ground was covered with snow, and deep drifts in many places. April 2, *Merula migratoria*, *Spizella fasciata*, common at Toronto. April 5, Bronzed Grackles *Quiscalus quiscula æneus*, were first seen at Toronto.—WM. BRODIE.

March 26.—To-day I saw the first Bronzed Grackles *Quiscalus quiscula æneus*, on Bathurst St. March 30, I saw a flock of geese, flying high in the air, towards the North. April 4, Observed first Phoebe, *Sayornis phæbe*, Golden-crowned Kinglet, *Regulus satrapa*, and Tree Swallow, *Tachycineta bicolor*. April 4, Saw first Ruby-crowned Kinglet, *Regulus calendula*, Brown Creeper, *Certhia familiaris americana*, Field Sparrow, *Spizella pusilla*, Tree Sparrow, *Spizella monticola*, Cowbird, *Molothrus ater*, Hairy Woodpecker, *Dryobates villosus*, Bank Swallow, *Clivicola riparia*, and secured one Meadow Lark, *Sturnella magna*. April 5, secured the first Vesper Sparrow, *Pooecetes gramineus*, Chipping Sparrow, *Spizella socialis*, Savannah Sparrow, *Ammodramus sandwichensis savanna*. April 6 and 7, no Tree Swallows, *Tachycineta bicolor*, were to be seen around the city, weather being colder. April 8, Tree Swallows returned. April 8, saw first Purple Martin, *Progne subis*, Barn Swallow, *Chelidon erythrogaster*, and Yellow-bellied Sapsucker,

Sphyrapicus varius. April 11, I counted twenty three Flickers, *Colaptes auratus*, on the University Lawn. April 12, saw first Baltimore Oriole, *Icterus galbula*. April 13, *Zonotrichia leucophrys*, White-crowned Sparrow, *Zonotrichia albicollis*, White-throated Sparrow, *Pipilo erythrophthalmus*, Towhee, *Turdus aonalaschkæ pallasii*, Hermit Thrush, *Turdus swainsonii*, Olive-backed Thrush, *Turdus fuscescens*, Wilson's Thrush. *Passerella iliaca* in flocks.—To-day, April 13, I saw a flock of about forty of the above birds in the University Ravine; but they were so shy I could only secure one specimen. This is the first record, of a flock of Fox Sparrows, in Toronto, and the first record of any being taken in the spring. They were feeding on the ground, and could be seen scratching among the leaves on the side of the ravine, and on being disturbed, they flew up among the bushes, and were off before a shot could be secured. I also saw another flock on Well's Hill, and secured two specimens on April 14. They were surrounded by a guard of Juncos, *Junco hyemalis*, and were very hard to approach, as the Juncos flying up startled them, and they were off immediately. April 15, Saw two specimens of *Carpodacus purpureus*, Purple Finches, and two *Loxia leucoptera*, White-winged Crossbills, in the University Grounds; also saw first *Dendroica coronata*, Myrtle Warbler, and first *Troglodytes ædon*, House Wren.—G. E. ATKINSON.

***Acanthis linaria rostrata*, at Toronto.**—Among a number of Redpolls sent to Washington for determination by Mr. Ridgeway, is a young male, taken at Toronto by Mr. Cross, on February 10, 1890, and an adult female taken at Lorne Park, November 9, 1889, which were pronounced the Greater Redpoll.

***Acanthis linaria holboëllii*, at Lorne Park.**—Three specimens, one male taken March 3, and a male and female March 15, 1888. were determined Holboëll's Redpoll, but they are not typical of the form but nearer to that than to *linaria*.

***Otocoris alpestris praticola*, notes from Ottawa.**—On the level plain that extends three miles north of this city, I saw, on March 23, seven solitary Shore Larks, and one pair, and on the open plain of Quinnville I saw another pair; although the weather is cold, and the snow is still deep; they seem to be mated and settled for the season, On the experimental farm I secured a male, on March 25, and was told by Mr. Fletcher, that several pairs breed each year, on the high dry knolls of the farm, and raise two broods each season.—ERNEST E. THOMPSON.

Arrivals.—On Sept 23, T. Harmer, secured the first Spotted Sand-piper, *Actitis macularia*, also Tree Swallow, *Tachycineta bicolor*, Cliff

Swallow, *Petrochelidon lunifrons*, and Bank Swallow, *Clivicola riparia*. April 24,—Swamp Sparrow, *Melospiza georgiana*, Sora Rail, *Porzana carolina*. April 27.—Black and White Warbler, *Mniotilta varia*, Black-throated Green Warbler, *Dendroica virens*. April 28, This morning I secured a fine Meadow Lark, *Sturnella magna*, in a thick hardwood bush in Rosedale.—JAMES R. THURSTON.

Port Sydney Observations for 1888, and 1889.—The following rare birds have been observed by me at the above place in 1888, April 7, Three-toed Woodpecker, *Picoides arcticus*, Fox Sparrow, *Passerella iliaca*, on May 1, I shot a fine specimen of the latter species. May 3, secured a pair of Pileated Woodpeckers, *Ceophloeus pileatus*, May 16, Traill's Flycatcher, *Empidonax pusillus traillii*, this species seems to be abundant, as I have since observed a large number, several of which I secured. May 19, Virginia Rail, *Rallus virginianus*, Solitary Sandpiper, *Totanus solitarius*. June 14, Olive-sided Flycatcher, *Contopus borealis*.

March 15, 1889.—Pair of Canada Jays, *Perisoreus canadensis*. March 19, Pine Siskin, *Spinus pinus*, March 22, another pair of *Perisoreus canadensis*.

Gravenhurst Observations 1889.—May 25, Catbird, *Galeoscoptes carolinensis*, May 28, House Wren, *Troglodytes aedon*, caught on nest which contained six eggs. September 9, Sora Rail, *Porzana carolina*, found dead on R. R. track; Least Bittern, *Botaurus exilis*.

1890.—Jan 4, Robin, *Merula migratoria*; January 17, Male Evening Grosbeak, *Coccothraustes vespertina*; January 19, two Pine Grosbeaks, *Pinicola enucleator*; January 8, full plumaged Goshawk, *Accipiter atricapillus*, January 29, Robin; March 11, to 28, secured specimens of Shore Lark, *Otocoris alpestris*; March 12, two Pine Grosbeaks, *Pinicola enucleator*; March 28, three male Snow Buntings, *Plectrophenax nivalis*.

—WM. MELVILLE.

Corvus americana nesting.—On April 16, I found a Crow's nest in the University Grounds. It contained five fresh eggs. This nest was in the top of a pine tree; on the same day I got another containing four eggs, out of a beech tree at Greenwood's Crossing.

Migrants.—White-throated Sparrows, *Zonotrichia albicollis*; Hermit Thrushes, *Turdus aonalaschke pallasii* and other northern birds have been very numerous around the Queen's Park since April 22, migration is evidently in full swing.—CHAS E. PEARSON.

Passerella iliaca.—On April 18, at the University Grounds I saw several of the above rare Sparrows, I also saw several more travelling with Juncos on Well's Hill on the same day and also from April 20 to April 23.

Merula migratoria, nesting. On April 22 I found two nests of the robin nearly completed.—HUBERT H. BROWN.

Ægialitis vocifera arrived.—On April 20, I saw first of the above plover at Leslie's Nurseries, East Toronto. On same day I saw a Fox Sparrow (*Passerella iliaca*), in Rosedale.—JOHN. EDMONDS.

The following list of birds are mentioned as occurring at Listowel, County Perth, by W. L. KELLS.

Podilymbus podiceps.—Mentioned as taken occasionally on the river.

Aix sponsa.—A Pair of Wood Ducks nested near there for several successive years, some of the young were captured.

Botaurus lentiginosus.—Casual visitor.

Botaurus exilis.—Casual visitor supposed to breed.

Ardea herodias.—A common visitor to the creeks and ponds in the neighbourhood.

Ardea virescens.—One specimen of the Green Heron captured in 1889.

Nycticorax nycticorax nœvius.—One specimen taken from a flock of five in 1887.

Rallus virginianus.—Occasionally breeds.

Porzana carolina.—A summer resident, several nests taken.

Philohela minor.—A rare summer resident.

Gallinago delicata.—A fall migrant.

Tringa minutilla.—Generally seen as a fall migrant.

Totanus melanoleucus.—A few seen in the spring of 1889.

Totanus flavipes.—Sometimes seen in the fall.

Totanus solitarius.—Common about ponds and marshy places, have observed it till the first week in June, then not till after the middle of July, when it remains till the end of August.

Actitis macularia.—Common on the banks of streams and ponds, breeds.

Charadrius dominicus.—A fall migrant.

Ægialitis vocifera.—A common summer resident appearing in March, breeds.

Colinus virginianus.—Very rare in this locality now, not observed breeding for many years.

Bonasa umbellus.—A few resident in the locality.

Ectopistes migratorius.—Becoming rare, a flock of eleven seen June 10, 1885, only odd ones seen since.

Zenaidura macroura.—One procured in 1889, may become more common.

Accipiter velox.—Not common, one nest of four eggs taken May 24, 1882.

Accipiter cooperi.—Rather common, appearing about the first of April; the most destructive of our hawks to young poultry, pigeons, and wild birds.

Buteo borealis.—Fairly common in summer, arrives about the middle of March, may breed.

Buteo lineatus.—Common, arriving about March 21, breeds here.

Buteo latissimus.—Common, may breed.

Archibuteo lagopus sancti-johannis.—Captured one specimen in a trap, rare.

Falco columbarius.—Occasionally observed.

Falco sparverius.—Common, nests in holes in trees mostly those of Woodpeckers.

Asio wilsonianus.—A few have been taken here.

Asio accipitrinus.—Have seen several specimens in local collections.

Syrnium nebulosum.—Commonly met with in spring, may breed.

Scotiaptex cinerea.—A few observed, mostly in winter.

Nyctala acadica.—Rather rare, may possibly breed.

Megascops asio.—Common in winter.

Bubo virginianus.—Occasionally met with in dense woods, doubtless breeds.

Nyctea nyctea.—A rare winter visitor.

Coccyzus americanus.—Rare, one nest of two eggs taken July 20, 1884.

Coccyzus erythrophthalmus.—A common summer resident, breeds.

Ceryle alcyon.—A common resident, nests in self-made burrows.

Dryobates villosus.—A common resident, breeds here.

Dryobates pubescens.—Occasionally observed at all times of the year.

Picoides arcticus.—A pair frequented my farm from the fall of 1888 to spring of 1889, one captured at Elma, in June.

Sphyrapicus varius.—A common summer resident, breeds, arrival and departure uncertain.

Ceophloeus pilatus.—Very rare, or, ce more common.

Melanerpes erythrocephalus.—A common summer resident, breeding on the margins of the woods.

Colaptes auratus.—A common summer resident from the end of March to middle of October, breeds here.

Antrostomus vociferus.—Common from May to October, breeds here.

Chordeiles virginianus.—A common summer resident, breeds.

Chætura pelagica.—An abundant summer resident, breeding in outhouses, chimneys, and hollow trees.

Trochilus colubris.—A common summer resident, probably nests

Tyrannus tyrannus.—Common from middle of May to September.

Myiarchus crinitus.—Heard mostly in May and June.

Sayornis phœbe.—Common from first of April, to middle of October, mostly about water, breeds.

Empidonax pusillus traillii.—Common in certain woods, several nests seen.

Empidonax minimus.—Common, breeds.

Cyanocitta cristata.—A resident, sometimes seen in large flocks, a few breed.

Corvus corax sinuatus.—Two pair have been observed.

Corvus americanus.—Very common from middle of February to November, specimens have also been seen in other winter months, breeds.

Dolichonyx oryzivorus.—Bob-o-link, common summer resident, breeds.

Molothrus ater.—Cow-bird, common summer resident, generally seen in flocks.

Agelaius phœniceus.—Red-winged Black-bird, common, arrives about March 20, last seen in middle of October.

Sturnella magna.—Meadow Lark, common summer resident, breeds.

Icterus galbula.—Baltimore Oriole, a summer resident in town and country, breeds.

Scolecophagus carolinus.—Rusty Grackle, migratory visitor, formerly nested.

Quiscalus quiscula æneus.—Crow Blackbird, abundant summer resident, breeds.

Coccothraustes vespertina.—Evening Grosbeak, a rare winter visitor, one seen December 12, 1889, two flocks previously seen, data not taken.

Pinicola enucleator.—Pine Grosbeak, specimens seen nearly every winter, abundant in the winter of 1884.

Carpodacus purpureus.—Purple Finch, common summer resident, nests in Balsam plantations.

Loxia leucoptera.—White-winged Crossbill, occasionally collected.

Loxia curvirostra minor.—Red Crossbill, flocks seen every winter, nest taken.

Acanthis hornemannii exilipes.—Hoary Redpoll, one pair collected March 15, 1890.

Acanthis linaria.—Redpoll common in large flocks every winter.

Spinus tristis.—Goldfinch, abundant summer resident, sometimes seen in winter, nests.

Spinus pinus.—Pine Siskin, common winter visitor, observed from December to April.

Plectrophenax nivalis.—Snowbunting, observed in large flocks, from November to end of March.

Calcarius lapponicus.—Lapland Longspur, a rare winter visitor.

Pooecetes gramineus.—Vesper Sparrow, common from middle of April to October, breeds.

Ammodramus sandwichensis savanna.—Savanna Sparrow, common in meadow and pasture fields, breeds.

Zonotrichia leucophrys.—White-crowned Sparrow, common from middle of April to middle of May, not noticed in the fall.

Zonotrichia albicollis.—White-throated Sparrow, common summer resident, breeds.

Spizella monticola.—Tree Sparrow, migratory visitor.

Spizella socialis.—Chipping Sparrow, common summer resident, breeds.

Junco hyemalis.—Black Snowbird, common resident, breeds, seen sparingly in winter.

Melospiza fasciata.—Song Sparrow, abundant, breeds.

Melospiza georgiana.—Swamp Sparrow, occasionally seen.

Passerella iliaca.—Fox Sparrow, rare migrant.

Pipilo erythrophthalmus.—Towhee, becoming more common, may breed.

Habia ludoviciana.—Rose-breasted Grosbeak, common especially in low thick hardwoods, nests.

Passerina cyanea.—Indigo Bunting, common on the margins of second growth woods, nests.

Piranga rubra.—Summer Tanager, a few specimens seen.

Piranga erythromelas.—Scarlet Tanager, not common, a few nests seen.

Progne subis.—Purple Martin, a common summer resident, in the Town.

Petrochelidon lunifrons.—Cliff Swallow, common, nests in colonies.

Chelidon erythrogaster.—Barn Swallow, abundant summer resident breeds.

Tachycineta bicolor.—Tree Swallow, a common summer resident, nests in Town and country.

Ampelis garrulus.—Bohemian Waxwing, occasionally observed in winter, sometimes in large flocks in spring.

Ampelis cedrorum.—Cedar Wax-wing, common from end of May to middle of August, nests.

Lanius borealis.—Northern Shrike, observed singly in winter, sometimes in flocks, from two to six, carries its prey in claws and beak.

Lanius ludovicianus excubitorides.—White-rumped Shrike, observed from early in April to last of October, local in distribution, nests in thorn trees.

Vireo olivaceus.—Red-eyed Vireo, common, breeds.

Vireo gilvus.—Warbling Vireo, not common, heard in Orchards and deep woods.

Vireo flavifrons.—Yellow-throated Vireo, summer resident.

Vireo noveboracensis.—White-eyed Vireo, one collected in middle of October 1890.

Mniotilta varia.—Black and White Warbler, common, several nests seen.

Helminthophila chrysoptera.—Golden-winged Warbler, generally observed in early summer, one nest taken.

Helminthophila ruficapilla.—Nashville Warbler, rarely seen in spring, may breed.

Compsothlypis americana.—Parula Warbler, a few noticed.

Dendroica æstiva.—Yellow Warbler, common, breeds.

Dendroica cærulescens.—Black-throated Blue Warbler, common in several high woods, several nests seen.

Dendroica coronata.—Myrtle Warbler, occasionally met with in certain damp woods, one nest taken.

Dendroica cærulea.—Cærulean Warbler, generally noticed in summer, may nest.

Dendroica pensylvanica.—Chestnut-sided Warbler, common in low second growth hardwood, nests.

Dendroica castanea.—Bay-brested Warbler, casually noticed, one nest taken.

Dendroica striata.—Blackpoll Warbler, occasionally observed in spring and early summer, also in August, may breed.

Dendroica blackburniæ.—Blackburnian Warbler, a spring visitor.

Dendroica vigorsii.—Pine-creeping Warbler, a few specimens observed.

Seiurus aurocapillus.—Oven-bird, common summer resident, breeds.

Seiurus noveboracensis.—Water Thrush, common in low swampy woods, heard from first of May to last of August, breeds.

Geothlypis agilis.—Connecticut Warbler, an occasional resident on the margin of certain low woods, several nests taken.

Geothlypis philadelphia.—Mourning Warbler, occasional resident, one nest taken.

Geothlypis trichas.—Maryland Yellow-throat, a summer resident becoming more common, no nest yet taken.

Sylvania canadensis.—Canada Warbler, met with in certain low swampy woods, several nests taken, last in June 5, 1888.

Setophaga ruticilla.—American Redstart, abundant in all high hardwood, nests.

Anthus pensilvanicus.—Titlark, abundant spring and autumn visitor.

Galeoscoptes carolinensis.—Catbird, common summer resident breeds.

Harporhynchus rufus.—Brown Thrasher, seen for the first time in this vicinity, July 1889, may become more common and breed.

Troglodytes ædon.—House Wren, common summer resident, breeding in town and country,

Troglodytes hiemalis.—Winter Wren, common in swampy woods, a number of nests observed.

Certhia familiaris americana.—Brown Creeper, common in swampy woods, several nests taken.

Sitta carolinensis.—White-bellied Nuthatch, common resident, breeds.

Sitta canadensis.—Red-bellied Nuthatch, occasionally observed, more common in evergreen woods in winter than in summer.

Parus atricapillus.—Chicadee, common resident, breeds.

Regulus satrapa.—Golden-crowned Kinglet, a common winter resident.

Regulus calendula.—Ruby-crowned Kinglet, uncommon spring visitor, not observed in autumn.

Polioptila cærulea.—Blue-gray Gnatcatcher, occasionally observed in spring, may breed.

Turdus mustelinus.—Wood Thrush, a common summer resident, breeds.

Turdus fuscescens.—Wilson's Thrush, not so common as the Hermit Thrush, breeds.

Turdus ustulatus swainsonii.—Olive-backed Thrush, a rare spring visitor.

Turdus aonalaschkæ pallasii.—Hermit Thrush, common, breeds.

Merula migratoria.—Robin, abundant summer resident, breeds.

Sialia sialis.—Blue-bird, abundant summer resident, breeding in town and country.—W. L. KELLS.

More *Passerella iliaca*.—On April 17, I shot another Fox Sparrow on Well's Hill, and on April 19, I secured one in University grounds out of the flock mentioned before. It is remarkable that these birds, which have seldom been seen in Toronto in the spring, and only as stragglers in the fall, should come in such numbers this year, and at such an unusual time.

Antrostomus vociferus.—On April 19, I secured the first specimen of the Whip-poor-will, and first Pine Warbler, *Dendroica vigorsii*, on Well's Hill; and on April 29, I saw five Chimney Swifts, *Chetura pelagica*, sailing around the ruins of the University. Migration has seemingly lulled for a while, and the arrivals have departed for the north, leaving our woods ready for another consignment.—G. E. ATKINSON.

After the reports were taken an Editing Committee composed of Dr. Brodie, J. R. Thurston, H. H. Brown, and G. E. Atkinson was appointed to look after the editing of the proceedings.

(Twenty-eighth Meeting, May 13.)

Seiurus aurocapillus on Yonge Street.—On May 9, I was handed a fine Oven-bird, which was secured by a boy in a lane on the south-east corner of King and Yonge Streets.—J. A. VARLEY.

Megascops asio.—On April 27, I found a nest of the Screech Owl about five miles east of Victoria Park. It was in a hollow stump about seven feet from the ground and the cavity was eight or nine inches deep, lined with a few feathers and contained five fresh eggs.

Arrivals.—On May 4, I observed the first Brown Thrasher, *Harporhynchus rufus*, Cat-bird, *Galcoscoptes carolinensis*, and Oven-birds, *Seiurus aurocapillus*, in Rosedale.—JOHN L. JACKSON.

Arrivals.—May 3, Ruby-throated Humming Bird, *Trochilus Colubris*, Virginia Rail, *Rallus virginianus*. May 4, Florida Gallinule,

Gallinula galeata. May 6, Least Bittern, *Botaurus exilis*. May 8, Long billed Marsh Wren, *Cistothorus palustris*. May 10, American Pipit *Anthus pensilvanicus*.—JOHN EDMONDS.

Arrivals.—May 3, Black-throated Blue Warbler, *Dendroica caerulescens*, Parula Warbler, *Compsothlypis americana*.

Sparrows eating buds—On May 13, I saw a flock of about fifty White-throated Sparrows, *Zonotrichia albicollis*, and White-crowned Sparrows, *Zonotrichia leucophrys*, eating the buds of a maple tree, in the University Grounds.

Sialia sialis nesting.—On May 3, I found a nest of the Blue-bird in the Cricket Grounds. It had contained eggs but they were taken.

Albino *Spizella socialis*.—On May 9, I secured a bird which I had noticed around the University Grounds since May 1, but had been unable to secure it. It seemed a new bird in appearance, but its song resembled that of the Chipping Sparrow, and upon examination it proved to be an albino of the above species.—CHAS. E. PEARSON.

April 30.—I received three Caspian Terns, *Sterna tschegraya*, which were killed out of a flock of about fifty, they were all females.

Green Heron.—A fine specimen of *Ardea virescens*, was shot in Toronto Marsh and brought to me on April 30.

May 8.—I received another Caspian Tern, which was also a female.

Chicadees nesting.—On May 12, while at the Humber, I found three pair of the above *Parus atricapillus*, busy preparing their nests. One stump containing a nest had three or four holes started and left evidently proving too hard for the little workers. The same day I saw a pair of Mourning Warblers, *Geothlypis philadelphia*.

Ectopistes migratorius, at Humber.—On May 12, at the Humber I heard a cooing in the distance and following it up I came across a beautiful male Passenger Pigeon, and got within easy range but unfortunately had only a charge of small shot which failed to bring down the prize.

Nests found.—On the same day I saw Kingfishers, *Ceryle alcyon*, building, and found nest of Song Sparrow, *Melospiza fasciata*, containing four eggs.

May 2.—I received the first Scarlet Tanager *Piranga erythromelas*.—WM. CROSS.

Arrivals and collections.—April 30, I saw the first Brown Thrashers, *Harporhynchus rufus*, in the University Grounds. May 2, saw the first

Yellow Warbler, *Dendroica aestiva*. May 3, secured two males and one female Red Crossbill, *Loxia curvirostra minor*, at the same place. May 4, saw first Crested Flycatcher, *Myiarchus crinitus*, on Well's Hill.

Sparrows eating beech buds.—May 5, I watched a flock of *Passer domesticus*, eating beech buds in the University Grounds. They go in flocks of about 20, from tree to tree and destroy the buds at the rate of about 5 per minute for each bird. They cut the buds off close to the twig, eat the soft pip and drop the shells. On May 11, I also saw three Rose-breasted Grosbeaks feeding at the same place and in the same manner, occasionally darting out at a passing insect. I managed to secure one and its stomach was packed with these buds.

More arrivals.—May 6, Oven-bird, *Sciurus aurocapillus*. May 10, Rose-breasted Grosbeak, *Habia ludoviciana*, Blueheaded Vireo, *Vireo solitarius*. May 13, Bob-o-link, *Dolichonyx oryzivorus*, Catbird, *Caloscotes carolinensis*.—G. E. ATKINSON.

Twenty-ninth meeting, May 27, 1890),

Arrivals.—May 19, *Tyrannus tyrannus*, Kingbird. *Sylvania pusilla*, Wilson's Warbler. *Sylvania canadensis*, Canadian Warbler.

Observations and collections, at Orillia, Ont.—I secured three Baltimore Orioles, *Icterus galbula*, and several Warblers on May 24. May 25, secured a male Maryland Yellow-throat, *Goethlypis trichas*.

Nests.—May 26, at Orillia, I found a nest of *Quiscalus quiscula cæneus*, Bronzed Grackles, containing four full fledged young birds. One nest of Chipping Sparrow, *Spizella socialis*, containing two eggs, and one nest of the Barn Swallow, *Chelidon erythrogaster*, containing four eggs.—G. E. ATKINSON.

Migration at its height.—On May 3, in Rosedale, I saw large numbers of Warblers, among them were the Chestnut-sided, *Dendroica pensylvanica*, Blackburnian, *Dendroica blackburnie*, and one Cerulean Warbler, *Dendroica cærulea*. May 24, a Mourning Dove, *Zenaidura macroura*, was secured at Little York, also three Baybreasted, *Dendroica castanea*, one Cerulean Warbler, *Dendroica cærulea*, and one Cape May Warbler, *Dendroica tigrina*, were brought to me. I also secured several specimens of the Ruby-throated Hummingbird, *Trochilus colubris*, which are very numerous this season; a male specimen of

Ardea virescens, Green Heron, was shot at the Humber and brought to me on May 24.

A new species for Ontario.—On May 18, a very interesting capture was made on Toronto Island, and I afterwards received the bird; it was a small Bittern with all the colorings very dark and blended into rich chestnut brown on the back. It was so unlike the Least Bittern that I put it down as a new bird and soon identified it as *Botaurus neoxenus*, Cory's Least Bittern. It is a resident of Florida and Mexico, and is supposed to have wandered up here with our *Botaurus exilis*, during migration.—W. CROSS.

(Thirtieth Meeting, June 3).

Another rare species.—On May 23, a Gull was brought to my store. It had been shot on Toronto Island and being unlike any of our native species I had it thoroughly examined and it proved to be a male Laughing Gull, *Larus atricilla*. This is, I believe, the first record of this bird for Ontario.

Other rare birds.—June 2, I received a female Wilson's Phalarope *Phalaropus tricolor*, in full breeding plumage shot at Toronto Marsh. Also one Black Tern, *Hydrochelidon nigra surinamensis*, and on May 28, one Caspian Tern, *Sterna tschegrava*, and one Yellow-billed Cuckoo, *Coccyzus americanus*.—WM. CROSS.

Coccyzus erythrophthalmus.—The first Black-billed Cuckoo was secured on Well's Hill on May 28.

Mature Accipiter atricapillus.—On June 2, on Well's Hill I heard crows raising a disturbance and on investigating I saw a large Hawk fly to the top of a tree near by. I at once identified it as an adult Goshawk. I fired but the charge was too light and I did not secure him.—G. E. ATKINSON.

Passerina cyanea.—On June 3, I saw the first Indigo Bunting at Kew Gardens.—J. A. VARLEY.

(Thirty-first meeting, June 17).

Seiurus motacilla, at the Credit.—On August 23, 1888, I collected a young female of the Large-billed Water Thrush, on the Credit River, about five miles north of Lake Ontario. This I believe is the most

northern record for the species in Ontario. Its dimensions are:—length 5.88; extent, 10; wing, 3.19; tail, 2.06; beak, .51. It was in fair condition, and had been feeding on grasshoppers and coleoptera.—ERNEST E. THOMPSON.

Arrivals &c.—On May 21, at Well's Hill I shot an adult female Broad-winged Hawk, *Buteo latissimus*, and secured the first Baybreasted Warbler, *Dendroica castanea*, and a Yellow-bellied Flycatcher *Empidonax flaviventris*.—H. H. BROWN.

Albino Passer domesticus.—Since June 10, I have observed a sparrow, which is completely white, in company with others of its species, around the Woodbine Race Track, but as yet have not secured it.—JAS A. VARLEY.

June 7.—I received a Marbled Godwit *Limosa fedoa*, and a Northern Phalarope, *Phalaropus lobatus*, one specimen of Black Tern, *Hydrochelidon nigra surinamensis*, and on June 14, a full plumaged Night Heron, *Nycticorax nycticorax naevius*, and White-rumped Sandpiper, *Tringa fuscicollis*, all collected on Ashbridge's Bar.—W. CROSS.

Towhee's nest.—On May 25, I found a nest of *Pipilo erythrophthalmus*, in Rosedale. It contained four fresh eggs and was constructed of grape-vine bark lined with coarse grass.

Coccyzus americanus, in Union Station—On May 29, I was given a female Yellow-billed Cuckoo, which was caught about 4 a.m. while roosting in the Union Station; and on May 30, I received a Virginia Rail *Rallus virginianus*, caught in the same place where they had evidently gone to roost.

Nests found.—On May 31, I found a nest of the Savannah Sparrow *Ammodramus sandwichensis savanna*, containing four eggs; two of the Sora, *Porzana carolina*, one containing six, and the other two eggs, also several nests of Red-winged Blackbirds, *Agelaius phoeniceus*, some with eggs and some with young in. June 4, one nest of Spotted Sandpiper, *Actitis macularia*, containing four fresh eggs. June 7, several nests of Bank Swallow, *Chelidon erythrogaster*, with eggs at different stages of incubation, and several nests of Purple Martin, *Progne subis*, and Tree Swallow, *Tachycineta bicolor*. These two latter seem to have two nests containing eggs at the same time, as the boxes examined contained two nests and eggs each, while only one pair of each of the birds were observed.

Trochilus colubris nest.—While collecting east of Toronto on June 7, I was attracted by a Humming Bird which was flying around my head;

on following it I discovered its nest on the bough of a small cedar about ten feet from the ground. The mother came and sat on the eggs three times while I was watching it but I could not secure her. The nest contained two eggs which were partly incubated.

Carpodacus purpureus.—On June 14, I approached a pair of Purple Finches in the Queen's Park. I managed to get close enough to strike one of them with a stick, and captured it.—CHAS E. PEARSON.

Bonasa nest in Rosedale.—On June 9, I found a nest of the Ruffed Grouse, *Bonasa umbellus togata*, in Rosedale. It contained fifteen eggs, all but three of which had been hatched and the young gone. The shells of each egg had been cut around the large end and the young let out, and the large end turned inside the remainder of the shell, so that every shell was quite complete, two of the remaining three were bad and the third contained a dead bird. The nest was in a small depression on the side of a ravine. The same day I found a nest of Wilson's Thrush, *Turdus fuscescens*, containing three of its own eggs, and one of the Cowbird *Molothrus ater*, at the same place.—G. E. ATKINSON.

Migration observations, from Port Sydney.—The following is a list of the dates on which the different birds arrived here last spring, and a comparison with the arrivals up to April 1890. *Acanthis linaria*, Redpoll arrived January 25, 1889, November 1, 1889, much earlier. *Otocoris alpestris praticola*, Shorelark, March 5, 1889, February 27, 1890, much earlier. *Spizella monticola*, Tree Sparrow, March 11, 1889, April 7, 1890, later. *Junco hyemalis*, Junco, March 17, 1889, April 7, 1890, later. *Merula migratoria*, Robin, March 22, 1889, April 23, 1890, later. *Sialia sialis*, Blue-bird, March 22, 1889, April 25, 1890, later. *Larus argentatus*, Herring Gull, March 22, 1889, March 18, 1890, earlier. *Melospiza fasciata*, Song Sparrow, March 24, 1889, April 7, 1890, later. *Scolecophagus carolinus*, Rusty Grackle, April 1, 1889, April 9, 1890, later. *Quiscalus quiscula cenicus*, Bronzed Grackle, April 9, 1889, April 9, 1890, same. *Sphyrapicus varius*, Yellow-bellied Sapsucker, April 11, 1889, April 12, 1890, later. *Colaptes auratus*, Flicker, April 11, 1889, April 12, 1890, later. *Spinus tristis*, American Goldfinch, April 11, 1889, April 10, 1890, earlier. *Sayornis phoebe*, Phoebe, April 11, 1889, April 14, 1890, later. *Accipiter velox*, Sharp-shinned Hawk, April 16, 1889, April 12, 1890, earlier. *Falco sparverius*, Sparrow Hawk, April 16, 1889, April 12, 1890, earlier. *Contopus virens*, Wood Pewee, April 16, 1889, not yet come, later. *Pooecetes gramineus*, Vesper Sparrow, April 16, 1889, April 11, 1890, earlier. *Ceryle alcyon*, Kingfisher, April 16, 1889, April 12, 1890, earlier. *Tring*

lytes hiemalis, Winter Wren, April 4, 1889, April 9, 1890, later. *Turdus fuscescens* Wilson's Thrush, April 16, 1889, April 17, 1890, later. *Ardea herodias* Blue Heron, April 12, 1889, April 3, 1890, earlier. *Regulus calendula*, Ruby-crowned Kinglet, April 4, 1889, April 11, 1890, later. *Regulus satrapa*, Golden-crowned Kinglet, April 4, 1889, April 11, 1890, later. *Passerella iliaca*, Fox Sparrow, April 17, 1889, April 17, 1890, same. *Zonotrichia albicollis*, White-throated Sparrow, April 20, 1889, April 17, 1890, earlier. *Tachycineta bicolor*, Tree Swallow, April 17, 1889, April 17, 1890, same. *Urinator imber*, Loon, April 20, 1889, April 20, 1890, same. *Spizella socialis*, Chipping Sparrow, April 20, 1889, April 20, 1890, same. *Archibuteo lagopus sancti-johannis*, Rough-legged Hawk, April 22, 1889, April 22, 1890, same. *Botaurus lentiginosus*, American Bittern, April 24, 1889, April 24, 1890, same.

Northern migrants wintering.—The following birds came down from the north and remained with us *Nyctea nyctea*, Snowy Owl; *Perisoreus canadensis*, Canada Jay; *Picoides arcticus*, Arctic Woodpecker; *Pinicola enucleator*, Pine Grosbeak; *Acanthis linaria*, Redpoll.

Resident birds at Port Sydney —The following birds are resident with us summer and winter, *Ceophylus pileatus*, Pileated Woodpecker; *Dryobates villosus*, Hairy Woodpecker; *Dryobates pubescens*, Downy Woodpecker; *Sitta carolinensis*, White-breasted Nuthatch; *Sitta canadensis*, Red-breasted Nuthatch; *Carpodacus purpureus*, Purple Finch; *Spinus tristis*, Goldfinch; *Cyanocitta cristata*, Blue Jay; *Loxia curvirostra minor*, Red Crossbill; *Loxia leucoptera*, White-winged Crossbill; *Parus atricapillus*, Chickadee; *Bubo virginianus*, Great-horned Owl; *Syrnium nebulosum*, Barred Owl; *Megascops asio*, Mottled Owl; *Nyctala acadica*, Saw-whet Owl; *Scotiapter cinerea*, Great Gray Owl; *Lophodytes culicellatus*, Hooded Merganser. Our rivers are very much cut up by rapids around which there is always open water which is frequented by this duck and a few other species, which always find plenty of food. During the coldest weather I have seen flocks of as many as twenty, sporting around among the ice as contented as in mid-summer.

Rare birds at Port Sydney.—Ten years ago the Red-headed Woodpecker, *Melanerpes erythrocephalus*, was a very rare bird here, but is now very numerous; within the last 27 years, the Meadow Lark, *Sturnella magna*, has introduced itself, is likewise becoming common, and it is only three years since the first Shore Lark, *Otocoris alpestris praticola*, appeared and has become common. The Cow-bird, *Melospiza ater*, has not reached us yet. Two years ago I collected a Baltimore Oriole,

Icterus galbula, the only specimen ever collected here, and I also collected the only male and female Towhee *Pipilo erythrophthalmus*, ever taken here. On May 6, 1890, I collected a Black-throated Green Warbler, *Dendrouca virens*, which are just becoming common.

Nesting of *Sitta canadensis*, and *Parus atricapillus*.—Last summer I found a nest of the Red-breasted Nuthatch, it was dug in a rotten stump about five feet from the ground, and contained young birds almost able to fly. Around the entrance to the nest was a ring of pine or balsam gum, and as I saw the young birds picking at it I inferred it was an insect trap. I also found three nests of the Chickadee, and each was lined with the hair of the *Lepus americana*.

Kingfisher nesting.—Last summer I saw two nests of the *Ceryle alcyon*, one containing seven eggs and the other six. In the first I caught the male and in the second the female, which goes to show that the male assists in the incubation.—A. KAY, Port Sydney, Muskoka.

Nesting of Ontario birds.—From a paper read before the Biological Section May 26.

***Coccyzus erythrophthalmus*.**—In July 1885, I saw a Black-billed Cuckoo, fly off a Wood Pewee's nest, in an orchard on Bathurst Street; and in July 1886, I saw another come off a Yellow Warblers nest in the same orchard, I got both eggs. There is no doubt that it was the Black-billed Cuckoo, as I shot the bird which came off the Pewee's nest.

***Dryobates pubescens*.**—I find a Downy Woodpecker's nest, every year in a dead tree about fifteen feet from the ground.

***Colaptes auratus*.**—I have found the Flickers' nesting every year, but in May 1889, I found a nest which caused a great deal of interest. It contained three fresh eggs, and hearing of the strange habit of laying a fresh egg every morning whether disturbed or not, I took the three eggs and returned next day and got another, and the next day I got the fifth. I visited the nest regularly every morning, and always got an extra egg until I got twenty eggs out of the nest. This settled it, and she left, but I saw her at another tree near by a few days later; she was evidently preparing another nest, this time higher up. I got up and found this hole about a foot deeper than the first being about twenty or twenty-two inches deep, it was empty so I watched her to see if I would get another haul but not so. Although I saw her at the hole every day, and got up two or three times a week I could find nothing until one Sunday morning July 20, I saw her sitting beside the hole, and seemingly pecking at something inside. I frightened

her off, and at the same time looked up at the hole, and saw five heads come out, and then two young birds fly out. I at once scrambled up the tree, and caught the last one by the feet, as he was going off. In the meantime my friend was engaged with one which fell in the creek. Taking a stick he shoved the bird to the opposite shore, and as he crossed, it scrambled across the sand, and then up a tree.

Chordeiles virginianus.—Nests found occasionally on flat-roofed houses.

Chætura pelagica.—Swifts' nests are taken nearly every year from chimneys, in Toronto.

Tyrannus tyrannus.—I have taken the Kingbird's nests occasionally from the tops of pines.

Myiarchus crinitus.—I have found two or three nests of the Crested Flycatcher, in holes in dead trees. In 1887 I found one nest in a tree about fifty feet from the ground, directly over a Highholders nest with whom the male bird used to fight for the only branch on the tree, and I may say he always came off victorious, and has nested in the same tree every summer since then.

Contopus virens.—I find the Wood Pewee's nests every season generally in an orchard, in the crotch of an apple tree.

Agelaius phœniceus.—The Red-wing Blackbird nests may be found quite plentifully around any marsh, and I have found several every year.

Sturnella magna.—Found one nest of Meadow Lark in 1886 on Well's Hill, and in 1888 I found one nest on Don Flats, and in 1889 one on Spadina Road.

Icterus galbula.—I found the nest of the Oriole in 1884 and 1886, on Bathurst Street, and in 1889 I found three near West Toronto. I find that this bird builds its nest with only one hole to enter, and after the eggs are laid she makes a second hole, and goes in one side, and off the other. I say this because I have found the nests with fresh eggs in, and they only had the one hole, while every old nest I have examined, and all those which contained young birds were either open altogether at the top, or had two holes.

Quiscalus quiscula æneus.—The Bronzed Grackle is not found in the woods surrounding the city, the only chance that remains to get them is in the private grounds in the city where they breed in large numbers every year.

Spinus tristis.—The American Goldfinches breed every year in and about the city.

Pooecætes gramineus.—Vesper Sparrows' nests are likewise quite common in the fields around the city.

Ammodramus sandwichensis savanna.—The Savannah Sparrow's nests are occasionally found, but not as common as the Vesper.

Spizella socialis.—Chipping Sparrows' nests very common all over, but the number is fast decreasing since the introduction of the *Passer domesticus*.

Melospiza fasciata.—The Song Sparrows' nests are the commonest of all our native birds' nests. While at Linwood, Ont., in May, 1889, I was standing by the gate on Sunday morning 5th, when I heard something flutter, and turning saw a bird come out of a hole in the gate post. On examining the nest I found one egg: being anxious to capture the bird alive, I watched the hole but she did not go back that day, and next day I looked and found two eggs, and on the third and fourth morning I found an extra egg; on the fifth morning I caught her just as she entered the nest, and about half an hour afterwards she laid the fifth egg in the cage. During the four days of laying she had not sat on the eggs either day or night, and only for about half an hour each morning while laying. The same condition holds good among all the other birds I have observed, except one Catbird.

Towhee, *Pipilo erythrophthalmus*.—One nest found in a pile of brush on Well's Hill in 1888.

Indigo Bunting, *Passerina cyanea*.—Found occasionally in raspberry bushes.

Progne subis.—The Purple Martins breed around the high buildings on the main streets of the city, and are therefore hard to get.

Chelidon erythrogaster.—Barn Swallow found common every year.

Tachycineta bicolor.—Tree Swallows nest every year in the bird-houses around the city.

Petrochelidon lunifrons.—Cliff Swallows and *Clivicola riparia*, Bank Swallows are to be found in thousands in the high banks on the lake shore east and west of Toronto, and in July, 1888, I dug out one nest of the *Stelgidopteryx serripennis*, Rough Winged Swallow out of a nest which was among the others at Long Branch.

Ampelis cedrorum.—Find two or three every season in the orchards about the city.

Vireo olivaceus.—The Red-eyed Vireo's nests are found occasionally but may be more common than supposed to be.

Dendroica æstiva.—The Yellow Warbler's nests are to be found everywhere, and every season, and are generally the depositary of the Cowbird.

Dendroica blackburniæ.—In 1885 I found one nest of the Blackburnian Warbler in a cedar tree north of Well's Hill. It was the only nest of this species I ever saw here. It resembled that of the *D. æstiva*, but a little smaller and shallower, it contained two eggs which were marked very much similar to those of the Yellow Warbler.

Seiurus aurocapillus.—Oven-bird found occasionally on Well's Hill.

Setophaga ruticilla.—Redstart nests are found occasionally in the deeper bushes north of the hill.

Galeoscoptes carolinensis.—I find the Catbird's nests every year, but in July 1885 I found a nest on the hill which contained one fully fledged bird, one fresh egg and one addled egg. I took the addled egg and the young bird, and returned in about two weeks and got another full fledged bird. This is the only case I have known of fresh eggs and young birds being found in the same nest around Toronto.

Harporhynchus rufus.—I have found two or three Thrasher's nests among the low scrub on the hill.

Troglodytes aëdon.—House Wrens' nests can be found in almost every orchard or bit of bush around the city. They build in holes in the side of a house or in a tree.

Cistothorus palustris.—The Long-billed Marsh Wren's nests are abundant in Toronto Marsh every year.

Parus atricapillus.—Have found Chickadees' nests every year in old stumps.

Turdus fuscescens.—The nests of Wilson's Thrush are to be found every year quite common in the deep woods.

Merula migratoria.—The Robin's nest is about the most familiar to all collectors, and is by far the most plentiful both in and outside the city.

Sialia sialis.—I find about two Blue-birds' nests every year, generally in a hole in a tree or post, with a small hole just big enough to admit the

bird, but, in 1889, I found one nest on Spadina Road in the stump of an apple tree, where the hole was about three inches broad and the nest was only about three inches below the level of the hole; it contained five eggs.—G. E. ATKINSON.

(Thirty-Second Meeting, Sept. 23, 1890.)

Haliaeetus leucocephalus.—On Sept 15, I received a fine Bald Eagle from Pickering, Ontario. It was a very large specimen and had been seen repeatedly carrying away small lambs.

Buteo swainsoni.—A fine male specimen of the Swainson's Hawk was secured on the Don flats and brought to me on Sept. 5. This is the first specimen I ever received in the flesh and the first record of its occurrence about Toronto.—WM. CROSS.

Vireo solitarius.—On Sept. 17, I collected a specimen of the Blue-headed Vireo in Rosedale.—WM. METCALFE.

Albino Passer domesticus.—On June 21, I secured an entire albino English Sparrow at Kew Gardens, it was a female and had been setting. Its color was a dark cream on the breast and a few very light brown markings on the shoulders and back corresponding to the dark markings of the ordinary specimens and the wings and tail were all dirty white.

Aix sponsa. Buteo latissimus.—At Sparrow Lake, Muskoka, I found Wood Ducks and Broad-winged Hawks very numerous during August.—J. A. VARLEY.

Micropalama himantopus.—On July 28, I shot a fine Stilt Sandpiper on Ashbridge's Bar. This bird is considered very rare about Toronto.

Phalaropus tricolor.—On Sept. 15, while Mr. A. Bunker was watching for ducks off the Sandbar at the west end of the Island, a Wilson's Phalarope pitched among his decoys and was secured. This also is considered a rare capture in this vicinity.—T. HARMAR.

Summer Collections.—June 18th, *Calidris arenaria*, Sanderling, collected on Ashbridge's Bar; July 17, young Coot, *Fulica americana*, secured in the marsh.

Aythya affinis.—About July 21 there seemed to be an unusual migration of ducks and shore birds, several species of the former having

been secured, and flocks of Sandpipers were noticed about their usual haunts, and then for about a month they almost disappeared and very few specimens were seen.

Larus philadelphia.—On August 4, while returning from Port Credit, I secured two Bonaparte's Gulls, out of a large flock that were standing on pieces of floating wood in Humber Bay.

August 20.—I received a large Ring-billed Gull, *Larus delawarensis*, and a Pectoral Sandpiper, *Tringa maculata*, shot on Ashbridge's Bar.

Nycticorax nycticorax nævius.—On August 27, I secured a Night Heron, on Ashbridge's Bar. It was a female in the young plumage, but had evidently been incubating from the appearance of the skin on the belly. On the same date, I also secured a Marsh Hawk *Circus hudsonius*, at the same place.

On September 13.—I observed several of the Swallows, principally *Chelidon erythrogaster*, and *Tachycineta bicolor*, with a few specimens of *Clivicola riparia*, still frequenting the Bar. Mr. Loane informs me that the Swallows and Blackbirds do not migrate at night, and mentions that on several occasions while he was lying in the rushes, he saw them rise up just at daybreak, and circling round at a great height in the air, they would strike off in a straight line south; and in the spring he has seen immense flocks of these birds arrive and settle in the rushes between six and nine o'clock in the morning.

September 15.—I collected two Black and White Warblers, *Mniotilta varia*, one Pine Warbler, *Dendroica vigorsii*, and one Tennessee Warbler, *Helminthophila peregrina*, and a female Sharp-shinned Hawk, *Accipiter velox*.

September 17.—Received two Golden Plover, *Charadrius dominicus*, from Ashbridge's Bar.

September 20.—In Rosedale to-day, I collected one Nashville Warbler, *Helminthophila ruficapilla*, and one Blue-headed Vireo, *Vireo solitarius*.

September 20.—I received one Buff-breasted Sandpiper, *Tryngites subruficollis*, one Baird's Sandpiper, *Tringa bairdii*, one Bonaparte's Gull, *Larus philadelphia*, and one Greater Yellow-leg, *Totanus melanoleucus*, from Ashbridge's Bar.—J. R. THURSTON.

Totanus flavipes.—On August 7, I secured three species of the Lesser Yellow-leg, on Ashbridge's Bar.

Fall migrations begun.—On September 7, I noticed the first sign

of migration among the insectivorous birds. Redstarts, *Setophaga ruticilla*, and several other Warblers were to be seen in great numbers.

September 16.—I secured a young Maryland Yellow-throat, *Geothlypis trichas*, and a male Olive-back Thrush, *Turdus ustulatus swainsonii*, in the University Grounds.

September 21.—I observed numbers of White-throated Sparrows, *Zonotrichia albicollis*, in different parts of the city, and saw two Purple Finches, *Carpodacus purpureus*, in the University Grounds.—G. E. ATKINSON.

(Thirty-third Meeting, October 7, 1890.)

Port Sydney observations.—May 7, saw Brown Thrasher, *Harporhynchus rufus*, and Snowbirds, *Plectrophenax nivalis*.

May 14.—Saw three more Snowbirds.

May 18.—Saw a Maryland Yellow-throat, *Geothlypis trichas*.

May 23.—Secured an Olive-sided Flycatcher, *Contopus borealis*.

May 25.—Saw three male Towhees, *Pipilo erythrophthalmus*. This bird is becoming commoner every summer, a few years ago it was never seen here at all.

May 28.—Blue-headed Vireo, *Virco solitarius*, also saw a flock of Pine Siskins, *Spinus pinus*, which stayed three days, and then went north.

August 15.—Great numbers of Swallows migrating south, rested on my farm fences for two days. Pipits, *Anthus pensilvanicus*, are also here now. They remain longer in the fall than the spring.—W. KAY, Port Sydney, Muskoka.

Troglodytes hiemalis.—On October 5, I observed the last Marsh Wren, in Toronto Marsh.—JOHN EDMONDS.

Accipiter atricapillus.—In October a male Goshawk was shot by a gunner on Ashbridge's Bay, as it flew at his duck decoys.—J. R. THURSTON.

Migration notes.—The last week of September, and first week of October, migration has been at its height. Sparrows, Warblers, Thrushes, and Blackbirds, are to be seen all about the city. White-throated Sparrows, *Zonotrichia albicollis*, Myrtle Warblers, *Dendroica coronata*,

Hermit Thrushes, *Turdus aonalaschkae pallasii*, predominating among their respective groups.

Spinus tristis.—On October 5, I trapped twelve Goldfinches, between 10 a.m. and 4 p.m.

Zonotrichia albicollis.—On September 24, I caught two White-throated Sparrows, and between that date and October 7 I caught eighteen specimens, and one White-crowned Sparrow, *Zonotrichia leucophrys*, and one Swamp Sparrow, *Melospiza georgiana*. The White-throated Sparrows are exceedingly quarrelsome or I might have secured double the number as directly a second bird went on the nest the first comer would dash at him and drive him off, and I had to be contented with single birds generally, where I might have secured a dozen of any quiet dispositioned bird.—G. E. ATKINSON.

Holland River notes.—August 15 to August 19, were spent at Holland River, about forty-five miles north of Toronto, and a large number of birds were seen, and a few secured. On the morning of August 16, flocks of thousands of Red-winged Blackbirds, *Agelaius phoeniceus* were seen near Holland Landing, and all down the river to Cook's Bay. Numbers of ducks, mostly Teal, were seen as well as quite a number of American Bittern, *Botaurus lentiginosus*, and Blue Herons, *Ardea herodias*, several young Black Terns, *Hydrochelidon nigra surinamensis*, and Common Terns, *Sterna hirundo*, were also flying about the marsh as if they had been breeding there. Coots, *Fulica americana*, Gallinules, *Gallinula galeata*, and different Grebes were common at the mouth of the river. We secured one Green-winged Teal, *Anas carolinensis*, three Bitterns, *Botaurus lentiginosus*, several Coots, *Fulica americana*, one Pigeon Hawk, *Falco columbarius*, three Yellow-legs, *Totanus flavipes*, several Blackbirds, and one Kingfisher, *Ceryle alcyon*, and J. R. Thurston secured a Coot's nest containing four eggs.—J. R. THURSTON, ED. DEACON, G. E. ATKINSON.

(Thirty-fourth Meeting, November 11th, 1890.)

Chordeiles virginianus.—On Sept. 27, Mr. J. Kelly disturbed a flock of about a dozen Night Hawks at Kew, evidently migrating. On Oct. 4, I secured a pair of Towhees, *Pipilo erythrophthalmus*, at Victoria Park, also one male Black-throated Green Warbler, *Dendroica virens*. On Nov. 1, I observed a flock of about eight Snowbirds, *Plectrophenax nivalis*. —J. A. VARLEY.

Asio wilsonianus.—On Nov. 6, I secured a female Long-eared Owl in Rosedale.—WM. METCALFE.

Passerella iliaca.—For about a week Fox Sparrows have been quite common about the city. On Oct. 12, on Well's Hill, I saw a flock of about twenty, in company with Juncos; but on Oct. 13, I secured three specimens, and the same afternoon I trapped another in an orchard near our place. On Oct. 14, I secured three more on Well's Hill. The other Sparrows are equally plentiful.—G. E. ATKINSON.

Holland River Notes.—On Oct. 17, a party of four took a trip to Holland River to do some collecting among the water-fowl and marsh birds. On Oct. 18, large flocks of Rusty Grackles, *Scolecophagus carolinus*, were observed all the way down the river and about the shanty small flocks of Swamp Sparrows, *Melospiza georgiana*, Song Sparrows, *Melospiza fasciata*, Red-wing Blackbirds, *Agelaius phoeniceus*, Cowbirds, *Molothrus ater*, and Rusty Blackbirds, were to be seen at all hours of the day until Oct. 31. On Oct. 18, a large flock of Bonaparte's Gulls, *Larus philadelphia*, were seen and several specimens secured. One specimen of Pied-billed Grebe, *Podilymbus podiceps*, was secured the same day. Oct. 20, several large flocks of Snowbirds, *Plectrophenax nivalis*, which remained around for about two weeks roving about and alighting on the rushes at the water's edge; three specimens alighted on the bow of our boat on one occasion while we were watching for Ducks. Oct. 21, a day was taken in the bush, and several Hairy Woodpeckers, *Dryobates villosus*, Downy Woodpeckers, *Dryobates pubescens*, Bluejays, *Cyanocitta cristata*, Meadow Larks, *Sturnella magna*, and Ruffed Grouse, *Bonasa umbellus togata*, were observed, and a few Woodpecker; and one Jay were secured, but no Partridge. In the evening of the same day O. Spanner shot one young and one adult male Caspian Tern, *Sterna tschegrava* and another Pied-billed Grebe. Oct. 22, one young Horned Grebe, *Colymbus auritus*, two Coots, *Fulica americana*, and three Yellow-legs, *Totanus flavipes*, were secured. Oct. 23, two Pied-billed Grebes, one Gallinule, *Gallinula galeata*, and two Coots. Oct. 26, three Red-backed Sandpipers, *Tringa alpina pacifica*, and one Virginia Rail, *Rallus virginianus*, seen. Oct. 28, large flocks of Yellow-legs observed and a few secured. Oct. 31, one young Holbæll's Grebe, *Colymbus Helballii*. On Oct. 20, a flock of about twenty Geese, and Oct. 28 another flock of about ten were seen flying south. Besides the above a number of ducks were secured consisting of Scaup Ducks, *Aythya marila nearctica*, Lesser Scaup Duck, *Aythya affinis*, first secured Oct 18. Oct. 20, Ring-necked Duck, *Aythya collaris*. Oct. 22, American Golden-eye, *Glaucionetta clangula americana*, Buffle-head, *Charitonetta albeola*,

Ruddy Ducks, *Erismatura rubida*, Black Duck, *Anas obscura*, Scoter, *Oidemia americana*. Oct. 25, Mallard, *Anas boschas*, Pintail, *Dasila acuta*. Oct. 26, Hooded Merganser, *Lophodytes cucullatus*. Oct. 27, Redhead, *Aythya americana*.—G. E. ATKINSON.

Spizella monticola, *Junco hyemalis*.—On November 6, I collected several Tree Sparrows and Juncos, which were feeding in a stubble-field surrounded with trees on Well's Hill. On November 8, around the Bell-buoy at Lighthouse Point, I observed a large number of Winter Ducks, *Clangula hyemalis*, White-winged, and other Scoters, also several Herring Gulls, *Larus argentatus smithsonianus*, and Bonaparte's Gulls, *Larus philadelphia*. The first Cowheens were secured in the same locality, about October 11.—J. R. THURSTON.

Ectopistes migratorius.—A young female Passenger Pigeon was secured at Greenwood's Ave., on September 20.

Larus delawarensis.—Ring-billed Gulls have been numerous about Toronto Bay for some time, I have secured several specimens.—JOHN EDMONDS.

(Thirty-fifth Meeting, November 25, 1890.)

Buteo latissimus.—A young Broad-winged Hawk, collected by me on the Don Flats, on August 23, during the beginning of migration, —W. METCALFE.

Nyctala acadica.—A Saw-whet Owl was captured alive on a doorstep opposite my house, on November 4, and came into my possession.—J. A. VARLEY.

Spizella monticola.—On November 15, I saw a flock of Tree Sparrows feeding in a piece of swampy ground, at the Humber. November 23, I saw a Red-tailed Hawk, *Buteo borealis*, on Well's Hill. —E. DEACON.

Nyctala acadica, *Passerella iliaca*.—I secured one Fox Sparrow, on Well's Hill, on October 25 and on November 9 I secured a Saw-whet Owl at Lambton.—F. TWEED.

Antrostomus vociferus, *Passerella iliaca*, *Plectrophenax nivalis*.—On September 30, I secured a Whip-poor-will, which I consider late for this bird. October 4, I secured one Fox Sparrow, the first record, I believe, this fall. On October 25, I received a Snow-bird which was shot on Ashbridge's Bar in company with a few others. —H. H. BROWN.

(Thirty-sixth Meeting, December 9, 1890.)

Summer collections, and observations.—July 9, young *Fulica americana*, and Virginia Rail, *Rallus virginianus*. August 12, I collected one Baird's Sandpiper, *Tringa bairdii*, and another on August 18. This bird is mentioned as being rare in Ontario, but it has been common about Toronto this fall. August 15, Solitary Sandpiper, *Totanus solitarius*. August 23, White-rumped Sandpiper, *Tringa fuscicollis*. September 22, Black-throated Green Warbler, *Dendroica v. ens*. September 23, Black-poll Warbler, *Dendroica striata*. September 27, Northern Phalarope, *Phalaropus lobatus*. September 28, Whippoorwill, *Antrostomus vociferus*. October 4, Buff-breasted Sandpiper, *Tryngites subruficollis*. October 6, Short-eared Owl, *Asio accipitrinus*. October 10, Hair Woodpecker, *Dryobates villosus*. October 21, Snowflakes, *Plectrophenax nivalis*, first of the season seen on Ashbridge's Bar. October 22, one Snowy Owl, *Nyctea nyctea*, Golden Plover, *Charadrius dominicus*. October 26, Winter Wren, *Troglodytes hiemalis*. November 16, Tree Sparrows, *Spizella monticola*, very plentiful on the Bar. September 27, Spotted Sandpiper, *Actitis macularia*.—JOHN EDMONDS.

Buteo swainsoni.—On May 3, a male Swainson's Hawk was captured in Rosedale. This is an exceedingly rare capture for this vicinity.

Pandion haliaëtus carolinensis.—On Sept. 15, a male Osprey was shot on the Don Flats and brought to me.

Urinator lumme.—A Red-throated Loon was shot at Green River east of Toronto, on Oct. 4. It was a full plumaged male bird.

Buteo borealis.—On Oct. 30, a female Red-tailed Hawk was sent me from Green River.

Nyctala acadica.—On Nov. 6th, I secured a Saw-whet Owl, one Barred Owl, *Syrnium nebulosum*, and one Long-eared Owl in Ashbridge's Woods. On the same day a partly albino Robin, *Merula migratoria*, was secured in Rosedale. It was a most peculiar bird being much larger than any I ever handled. The following are the measurements:—length, 10 inches; wing, 5 $\frac{3}{8}$ inches. The back was very dark and the head entirely white.

Plectrophenax nivalis.—On Dec. 6, I shot one snowbird and two Goldfinches, *Spinus tristis*, in Rosedale.—D. G. COX.

Larus glaucus.—A Glaucous Gull was shot off the Queen's Wharf on Dec. 8th, and brought to me.

Somateria dresseri.—A Common Eider was shot off Toronto Island

on Dec. 6. On the same date a Cooper's Hawk, *Accipiter cooperii*, was shot on Davenport Road near High Park, where it had previously killed a hen.

Lanius borealis.—On Dec. 13, a Northern Shrike was brought in from North Toronto.—W. CROSS.

On the forenoon of Sunday Nov. 30, 1890, I heard a flock of crows making a loud outcry among a clump of evergreens in St. James cemetery, and thinking they had an owl in chase, I was making my way towards them when they took flight up the Don Flats and rested among dense evergreens. In this flight they passed so close that I had no difficulty in determining the object of pursuit to be a Red-tailed Hawk. The crows—as is always the case with them—were very eager in the pursuit, clamoring loudly, laboriously flapping upwards, and then shooting downward in graceful curves quite close to the hawk, whose only care seemed to be to elude the "brawling brood" of annoying screamers. Again the hawk darted off towards the evergreens on the Castle Frank heights, and rested as before in a dense mass of foliage, closely pursued by the crows. These short flights were repeated several times until the Rosedale heights were reached. The hawk, perhaps hungry, and knowing of the whereabouts of breakfast, seemed unwilling to leave the ground, but by this time the crows were largely reinforced, numbering over thirty, and their deafening outcry was quite unsupportable. After the lapse of a few minutes the hawk again darted off southward, doubling on his former course, closely followed by a crowd as eager, noisy and eldritch as Tam o' Shanter's witches. When immediately above the drive in the Rosedale ravine, being at an elevation of about 100 yards, he suddenly swooped downwards at almost a right angle to his course with astonishing velocity, to within a few yards of the ground. then executing a short and rapid curve he darted up the ravine, and in a few minutes he was soaring above the trees and his outmanoeuvred and now rapidly dispersing foes. It was one of the greatest and neatest feats of bird flight I ever saw executed. The velocity was greater than that of a falling body, words fail to convey an adequate idea of the suddenness and magnitude of the lunge.—DR. W. BRODIE.

(Thirty-seventh Meeting, December 23, 1890.)

Lanius borealis.—On December 17, I secured a Northern Shrike on Ashbridge's Bar, also one Song Sparrow, *Melospiza fasciata*, and one Tree Sparrow, *Spizella monticola*, at the same place.—W. METCALFE.

Junco hyemalis wintering.—On December 12, on Well's Hill, I saw a large flock of Juncos. It was a mild warm day. I passed the same place on December 8, but saw no birds, as the weather was cold and frosty.—G. E. ATKINSON.

(Thirty-eighth Meeting, January 13th, 1891.)

Lanius borealis. *Syrnium nebulosum*.—On December 25, I saw a Northern Shrike on Well's Hill, and on January 4, I saw a Barred Owl in the ravine at the same place.—E. DEACON.

Loxia curvirostra minor.—On December 25, I secured a male Cross-bill on Well's Hill, which I believe is the first record of the season. On January 5, I saw a Screech Owl, *Megascops asio*, on the wires in front of the post office.—F. TWEED.

Bubo virginianus.—On December 29, I saw a flock of crows chasing a Great Horned Owl on the Don Flats, and I followed it for a long distance but could not get a shot at it. On January 9, I secured a Northern Shrike, *Lanius borealis*, on Gerrard St. East. It had been eating a mouse.—W. METCALFE.

Molothrus ater and *Agelaius phoeniceus*.—On December 25, a Cow Bird and a Red-wing Blackbird were shot north of Toronto out of a small flock of Cow Birds.

Scotiaptex cinerea.—The first and only specimen of the Great Gray Owl was received from north of Toronto on January 13.—W. CROSS.

Habits of Native Birds in Captivity.—One of the chief aims of a Naturalist is to collect original information, and I don't think there is a better way of doing original work than by having living specimens to study from, in as near their natural condition as possible. To do this requires considerable time and trouble, but in the end you are satisfied, and fully repaid for your work. In dealing with birds some of the principal points to be noticed are, (1) Which birds agree; few would think of putting a Canary in a cage with an Owl. (2) To know what food these birds will live on and thrive, for instance Meadowlarks, Highholders, Robins and Bluebirds will not thrive on sunflower seed as Grosbeaks do, or Grosbeaks will not thrive on small seeds as the Sparrows do. (3) To study the habits of any bird thoroughly I find that (1) there should be regularity in everything, feeding, and cleaning cages, even heat, no draughts; birds can stand a great deal of cold but the hardiest will not

last long in a draught, (2) kindness and attention; they should not be frightened or caught, and if a little cautiousness is exercised your birds will soon know you and will not be at all alarmed when you are near.

Bubo virginianus, *Great Horned Owl*.—This specimen came into my possession in infancy and although handled frequently gradually became of uncertain temper and objected to such intimacy. However he still shows some affection for his owner, and when hungry screeches if I appear within sight, until satisfied. He has a very peculiar appetite, sometimes being content with fresh meat, or living birds and mice, and sometimes he will leave the meat in a corner of the cage until in a putrid condition and then eat heartily of it. When he was about four months old he would take seven birds as big as sparrows at one meal. He will eat almost anything from a piece of fresh beef to a handful of cotton batting; if a mouse or small bird be given him he seizes it by the head crushes the skull, and with two or three jerks it is swallowed, feathers, fur and all; after digestion he throws up the feathers or fur with the bones and hard portions rolled up into a ball. Birds the size of a Sapsucker are swallowed whole, but large birds or animals are torn to pieces with the beak and claws. He will take a bath about twice a week in warm weather but not at all in winter; from November till about May, he hoots nearly all night and part of the day, but the remainder of the year only makes a sharp screech. He shows great aversion to a dog, cat or rabbit and whenever any of them come near the cage he lowers his head, throws back his horns, curves his wings, and spreading his tail will raise all his feathers to their full extent and walk about snapping his beak and hissing most ferociously; should the animal come near the cage he will bound against the bars at it and, as a rule, the intruder, taken by surprise, will depart hastily. When a snake is brought near him the tables are turned, he will then fly to the farthest corner of the cage and remain as quiet as possible, watching it until it disappears. If I am working near his cage at night he will amuse himself by throwing sticks and pieces of rag about and pouncing on them suddenly.

Colaptes auratus.—Flicker or Highholder. These birds being naturally of a shy disposition are very difficult to keep in a cage, as they dash themselves against the bars until exhausted. In confinement they will feed on corn or meat, but seem to get no nourishment from anything, and soon pine and die, if not liberated.

Otocoris alpestris praticola.—The Shorelark is a timid little creature, and although it takes readily to a cage and feeds well, it is constantly alert as if expecting to be taken by surprise, and at the slightest alarm it rushes to a corner, and conceals itself from view. It

feeds on small seeds, wheat, and occasionally a worm. Occasionally on a bright day I have found it running from one end of the cage to the other, flipping its wings, and chirping as if in the height of enjoyment. It sometimes sings in confinement, and always has a faint chirp which it keeps up all night. I have frequently found it with its head under its wing, chirping about once a minute.

Corvus americana.—Crow. Of all the birds kept by myself, and friends, the crow takes the lead for mischief. To tell of all the antics of this bird would fill a volume; so I will just give a few of his principal traits. He will not be contented in a cage, but must have the yard, shed, fences, and sometimes the kitchen, where he wanders about seeking what he may steal. My Crow when I fed him would eat what he required, and put the remainder through a hole in the fence to a dog in the next yard. At last the dog got to bark for his meat, but the Crow fixed him; he would put the meat up to the hole, and as soon as the dog put his nose there he received a ferocious dig from the big black beak that sent him away howling, only to return in a few minutes for another. When he was not fed regularly he would perch on my fish-tank, and watch till a fish came near the top, when he would immediately seize and swallow it. In that way he ran down my stock of fish considerably before I discovered the cause; and when I put a net over the tank he got on it, and tried with might and main to dig a hole through it, but did not succeed.

Molothrus ater.—The Cowbird takes readily to a cage, becoming quiet and contented in about a week, but is very unsociable. Should any other bird approach him he snaps at it viciously, generally depriving it of some feathers; he accompanies every snap with a kind of "chuck" and if victorious hops to his mate and tries to express his love for her with a spluttering "cree." They eat any kind of seed in confinement and when let out in the yard devour any insects they come across.

Sternella magna.—Meadowlark. This bird when first caged will starve itself until almost able to squeeze through the bars, but eventually resigns itself and takes to feeding. On the slightest excitement it dashes against the wires in great alarm and finding escape impossible generally hides in a corner. When walking it stands up very straight, the back being almost at right angle with the ground. At every step he opens and closes the tail shewing the white feather at every spread. While in my possession he killed and partly eat a Shorelark, a White-throated Sparrow, and badly injured a Pine Grosbeak.

Coccothraustes vespertina.—The Evening Grosbeak takes readily to the cage but does not associate with any of the inmates. Generally be-

ing contented with their own company, they will sit quietly in the cage for sometimes a whole day, and again they are on the jump the whole time and keep up a kind of wrangling noise among themselves. This and the loud call something similar to that of the Great-crested Flycatcher, are the only sounds they make. They are very destructive to the smaller inhabitants of the aviary which may incur their displeasure and come within the reach of their powerful beaks. When fighting among themselves they use their beaks as a sort of shield receiving the blows of their opponent thereon. In confinement they eat ravenously of almost any seed, but are partial to sunflower and hemp. With a few slight variations in the olive green markings of the male, the plumage is the same all the year.

Pinicola enucleator.—The Pine Grosbeaks are of a gentle disposition, and never interfere with other birds, but seem to enjoy their company, and are as contented in a cage as in a tree after the first day. My male bird would watch for my coming to feed him, and would hop out on my hand on to my shoulder, and down into the yard where he would hunt worms for a while and always went back to the cage door to get in. If I did not let him out, he would mount to the highest perch and solace himself with a song, which is very sweet but muffled. They are, however, very hard to keep in hot weather; no matter how cool the cage may be, they seem to take a kind of decline and do not last long. In the summer and fall the red of the male turns to yellow and he looks like a new species, with the red and yellow feathers mingling together. They eat almost any kind of seed, but are partial to sunflower, hemp and buckwheat. They will also eat berries or fruit of any kind, or a piece of meat or worm.

Carpodacus purpureus.—The Purple Finch is tolerably well known as a cage bird, and seems as contented in a cage as in the bush; the specimen which I kept was better contented in the cage than in a room. They are very clumsy birds when let loose, and will fly against a pane of glass or a wall, and falling to the floor remain there till picked up and put in the cage where they soon begin to arrange their feathers. The male has a very beautiful song, and sings almost as well in a large cage as in his native haunts; they are very fond of sunflower and hemp seed, but will eat almost anything given them in the shape of berries, occasionally they take a grub or worm.

Acanthis linaria.—The gay little Redpoll is also well known as a cage bird, and is quite happy in a small cage, but does not seem to get along well in company with other birds, they seem to be continually eating, yet never seem to put on flesh, generally being very thin and poor when dead.

Spinus tristis.—The American Goldfinch is certainly the most interesting and handsomest bird I have ever kept, displaying a good deal of affection and being always lively. They are, however, hard to keep in the fall, being subject to the same decline as the Redpoll; both the spring and fall changes in plumage take place by moulting. They will feed on almost any seed, but are partial to sunflower and hemp, and will occasionally catch flies and beetles.

Zonotrichia leucophrys.—White-crowned Sparrow. The Sparrows as a class are almost alike in their feeding habits, and if one species is secured and watched there is no difficulty in relating the habits of nearly every species. They spend their time on the ground, and are constantly scratching. Of course as regards sociableness, there is considerable difference between some of them. The White-crowned are, however, very quiet inoffensive birds among other species: how they may be with their own species I have yet to learn. They feed on the ground, on the seed thrown out of the box by the others. I secured one specimen of this bird in the beginning of October, and had him about three weeks, when he was killed by the female Evening Grosbeak.

Zonotrichia albicollis.—White Throated Sparrow. This species lives well in confinement, and often utters his peculiar song, especially after gaining a victory over some of the other birds in the aviary; they seem to regard it as their especial mission to harass and annoy the other birds, and after a successful combat the male will mount to the topmost perch, and with wings and tail drooped and beak pointing upwards, will pour out his mournful "Old Tom Peabody," as if it was to be the last sound he would ever utter. In a cage they spend a large portion of their time on the ground, scratching over the loose seed.

Junco hyemalis.—In some respects the Juncos' habits are the same as the Sparrows', being often on the ground; they are more sociable and very timid, seldom showing themselves while they are watched, and on the slightest disturbance they hide in a corner or against the tree, and will not show themselves till everything is quiet, when they will hop out suddenly and chirp away as pleasantly as if they were in the bush. On a bright warm day they mount about half way up the tree and sing out their little ditty, which seems to put new life into the dullness of the aviary and generally starts all the other birds singing. They eat very little, and keep in good condition on the seed thrown about the ground by the Sparrows.

Melospiza fasciata.—The Song Sparrow has the same habits as the majority of sparrows but is rather more sociable and has some of the

hiding nature of the Junco. They feed the same as the Junco, and have a great partiality for worms and caterpillars.

Melospiza georgiana.—The Swamp Sparrow has precisely the same habits as the Song Sparrow with a greater fondness for the water; after taking a good bath and getting thoroughly soaked it will roll in the sand; it feeds the same as the Song Sparrow and will eat worms, caterpillars, grasshoppers, and berries.

Passorella iliaca.—The Fox Sparrow is the largest and handsomest of the Sparrows I have ever kept, they are of a sociable disposition and their habits and food the same as the other Sparrows.

Pipilo erythrophthalmus.—The Towhee is a most interesting bird, very tame and quiet, but very hard to keep long, sensitive to cold and draughts; they are of a playful nature, and will play with anything they find in the cage such as string, etc. They spend all their time on the ground searching for seed and have a great partiality for hemp and sunflower seed.

Cardinalis cardinalis.—The Cardinal is much like the Towhee in habits but not quite so familiar with the other birds that seem to hold him in a kind of reverence; they very seldom molest him and are glad to get away when he is disturbed. It is very sensitive to cold and draught and spends most of its time on the ground. They eat sunflower, hemp, buckwheat and mountain ash berries.

Regulus satrapa.—Golden-crown Kinglet. These minute and beautiful little birds may be kept for a while in a cage and fed on small seeds, but will not thrive unless they have insect food. They are very tame but not cowardly and will attack any bird that comes near them.

Sialia sialis.—The Bluebirds can be kept in a cage, but not with success; they can be fed on hemp seed and Mocking Bird food, with an occasional worm; they will become very tame and feed from the hand, but seem to always pine for liberty, and if not released soon die.

Passer domesticus.—For four years I have kept English Sparrows in confinement and though they are credited with doing great damage to grain crops, my birds would never touch wheat, oats, corn, or peas, they would prefer crumbs of bread or a crust to seed at any time, and never kept healthy when fed on seed alone. This summer I caught several young Sparrows and put them in a cage in the yard to be fed by the old birds, which laboured from morning till night bringing caterpillars and grasshoppers from a neighbouring garden to feed them, and I have watched the old birds on the berry bushes picking off the caterpillars and other insects but leaving the berries untouched.—GEO. E. ATKINSON.

(Fortieth Meeting, February 10, 1891.)

Merula migratoria.—February 1, I saw four Robins in the University Grounds.

Cyanocitta cristata.—February 5, observed a number of Bluejays in the University Grounds.—GEO. E. ATKINSON.

Ardea herodias.—On February 1, as I was walking along the Esplanade, I saw a Great Blue Heron, flying over the Bay, and afterwards learned that the bird had been about for several days.—JAMES H. AMES.

Otocoris alpestris praticola.—February 8, observed a pair of Shorelarks in the fields north of the city, one of them flew up, and lit on a telegraph wire.—ED. DEACON.

Larus glaucus.—On February 7, I saw a fine Glaucous Gull, flying over the bay.—WM. CROSS.

(Forty-first Meeting, February 24, 1891.)

The following list of birds are given as occurring in the vicinity of Orillia:

Ampelis cedrorum.—A pair of Cedar waxwings were observed here from December 1890, to January 1891, feeding on berries of Mountain Ash.

Calcarius lapponicus.—A flock of Lapland Longspurs, observed at Gravenhurst, April 29, 1890.

Quiscalus quiscula.—Crow Blackbird, an albino specimen collected at Gravenhurst.

Junco hyemalis.—An albino Junco, collected August, 1890.

Corvus corax sinuatus.—A fine specimen of the Raven, collected December, 1890.

Dendragapus canadensis.—A Canada Grouse, collected December 15, 1890.

Haliaeetus leucocephalus.—Bald Eagle, a specimen collected at Waubauskene, November 12, 1890.—W. MELVILLE, Orillia.

Spinus tristis.—On February 21, I collected a pair of American

Goldfinches from a flock of four, the male had begun to acquire the yellow plumage.—J. A. VARLEY.

Ampelis cedrorum.—On February 22, I saw several Cedar Waxwings, in the Queen's Park.—HUBERT H. BROWN.

Lanius borealis.—Observed a specimen of the Northern Shrike, at Georgetown, also Crows feeding on seeds of Sumach.—W. METCALFE.

(Forty-first Meeting, February 24, 1891).

Nesting of the Winter Wren (*Troglodytes hiemalis*)—As I usually do in the early part of May, I took a ramble to some woods southwards of the town, where I saw some newly made nests of this species, in their usual nesting places, *i.e.*, the roots of newly-fallen trees, from which I hoped to secure some sets of eggs, but revisiting them on the 24th of May, I was returning disappointed, when I concluded to make a short nest-hunting ramble, in a piece of scattered wood to the right of my way. Near the western outskirt of this tract, the newly turned up root of a medium sized hemlock tree caught my notice, and to it I directed my steps. This tree in its fall had caught on another stub, so that its top was still high off the ground, and the upper part of the "root" slanted like the roof of a hut, the top of which would be about seven feet from the ground; and under this was a well-sheltered nook. Looking into this natural wigwam, the nest of a Winter Wren at once caught my eye, for it was directly in front, and towards the top of the roof, and some of the vegetable fibres used in its construction hung downwards, altogether it was less compactly formed, and more exposed to view than the nests of this species generally are, and more grass and other vegetable fibres and small brambles were employed in the formation of this particular nest, than this bird usually makes use of. The greater part, however, of this ball-shaped structure was composed of the common moss that grows on old logs, and the sides of certain trees in low places, while the inside was lined with fine dry grass, some small feathers and a little hair from the tails of cattle or horses; around the entrance were variously arranged the dry stems of hemlock leaves, a species of material always used by this bird for this purpose, when it can procure them in the vicinity of its nesting place. The entrance into this nest, as indeed the whole structure, was so much like that made by a mouse, that a person not acquainted with the subject, might easily mistake it for a nest of that little animal.

When removed from its site in the mould, and rootlets of the "turn up," I found that the outside circumference was about fourteen inches, inside it would be about eight. The door was near the top in the outer side, leaving a soft and warm cavity of about two inches deep for the reception of the eggs and the cradle of the young. I did not at this time see or hear either of the parent Wrens, near the nest, but when I next visited the place, the songs of the male bird fairly made the echoes ring in the vicinity. There was, however, no mistaking the sound as that of the Winter or Wood Wren, for there is no other Canadian bird that makes a nest in any way resembling it, though the eggs are very like those of the Chickadee and Brown Creeper. From what I could see of the inside of this nest when discovered, I inferred that it was finished, and probably occupied, and I was not disappointed, for on inserting a finger, I found that it contained five eggs, and perfectly fresh, the color almost pure white, with a few reddish dots towards the larger end, being less spotted than others that I had seen, and before the contents were extracted they had a pinkish hue. Some five or six other newly made nests of this species were observed in this vicinity the past season, but none of them contained eggs or had inner lining, and I am led to conclude that they were the work of male birds. All of these were in the roots of fallen trees, and well concealed, and the female must have had her true nest near by, as the songs of the males were heard throughout the season. This was the fourth nest with eggs found in this vicinity in a period of fourteen years.—WM. L. KELLS, Listowel.

(Forty-Second Meeting, March 11, 1891.)

Perisoreus canadensis. *Picoides arcticus*. *Dryobates villosus leucomelas*. *Nyctala acadica*.—On February 24, received a pair of each of these species from Bardsville, Muskoka.—W. CROSS.

Loxia curvirostra minor.—February 25, saw a small flock, feeding on Mountain Ash berries, on College Street, Toronto.—E. DEACON.

Spinus tristis.—February 26. A flock of twenty are feeding on crumbs at my back-door, the first I have seen this season.

Acanthis linaria.—I have neither seen nor heard one this winter. February 21.

Corvus americana.—Occasional during this winter, 1891.—A. KAY, Port Sidney, (is about 150 miles north of Toronto.—EDITORS.)

(Forty-third Meeting, March 24, 1891.)

Sialia sialis.—March 21, a small flock north of Rosedale. An early arrival.

Otocoris alpestris praticola.—March 2, very numerous in bare fields north of Toronto.—H. H. BROWN.

Sialia sialis.—March 22. Saw a flock high up in the air, flying to the west, also on March 23, two flocks flying to the north east, these are early arrivals.

Carpodacus purpureus.—March 23, collected a fine specimen in University Park.

Merula migratoria.—March 23, common in University Park.—G. ATKINSON.

Sialia sialis.—March 17, saw a pair within city limits.

Merula migratoria.—March 23, on the roof of a house, Queen Street east, Toronto.

Junco hyemalis.—March 23, saw a flock in Rosedale in full song.

Merula migratoria.—March 24, collected a specimen on Don Flats

Dryobates pubescens.—March 24, collected a male specimen on Don Flats.

Sialia sialis.—March 24, common everywhere on Don Flats.—W. METCALFE.

Sturnella magna.—March 20, collected near Toronto, handed to me for mounting.

Bubo virginianus.—March 20, a fine specimen collected near Toronto and handed to me for mounting.—J. R. THURSTON.

(Forty-fourth Meeting, April 14, 1891.)

Sialia sialis.—March 25, collected two males on Well's Hill.

Certhia familiaris americana.—March 27, at Port Credit, fourteen miles west of Toronto, none were seen in the morning, but in the afternoon they were numerous, collected first specimen of the season.

Corvus americana.—March 29, building in University Park.

Sturnella magna.—March 30, first seen.

- Agelaius phœniceus*.—April 1, first seen.
- Quiscalus quiscula æneus*.—April 1, first seen.
- Molothrus ater*.—April 2, arrived.
- Junco hyemalis*.—April 2, migrating northwards.
- Melospiza fasciata*.—April 2, arriving in large numbers.
- Spizella monticola*.—April 2, arriving, numerous.
- Sialia sialis*.—April 2, numerous all day, flying slowly eastwards.
- Passerella iliaca*.—April 5, several on Well's Hill.
- Sayornis phœbe*.—April 5, collected one specimen on Well's Hill.
- Falixæetus leucocephalus*.—April 5, saw one specimen flying northwards
- Poocætes gramineus*.—April 9, arrived. Secured first specimen of the season.
- Regulus satrapa*.—April 10, first seen in Park.
- Colaptes auratus*.—April 10, first seen.
- Sphyrapicus varius*.—April 11, first of season.
- Passerella iliaca*.—April 11, several on Well's Hill.
- Turdus aonalaschkæ pallasii*.—April 11, collected specimen in Park.
- Pipilo erythrophthalmus*.—April 13, first seen.
- Loxia leucoptera*.—April 13, collected male.
- Tachycineta bicolor*.—April 13, first seen.
- Regulus satrapa*.—April 13, saw a large number in University Park ravine, hopping and flitting about on the grass. They would rise about six feet in the air, fly about ten feet forwards and drop on the grass. They resembled butterflies flitting in the sun. It was a very beautiful sight.
- Ectopistes migratorius*.—April 13, saw a male specimen in University Park ravine, which I pursued for half an hour but failed to collect.
- Troglodytes hiemalis*.—April 14, first seen in University Park.
- Zonotrichia albicollis*.—April 14, collected specimens in University Park.
- Regulus calendula*.—April 14, collected specimens in University Park.
- Passerella iliaca*.—April 14, numerous in University Park Ravine.—

Merula migratoria. *Melospiza fasciata*.—March 27, collected specimens on Well's Hill.

Sialia sialis. *Passerella iliaca*.—April 5, on Well's Hill.

Melospiza fasciata. *Spizella monticola*. *Sayornis phœbe*. *Molothrus ater*.—April 6, on Well's Hill.

Sitta canadensis.—April 6, on Well's Hill, the first seen since Christmas, 1890.

Halæetus leucocephalus.—April 6, flying eastward.

Quiscalus quiscula æneus. *Sturnella magna*. *Passerella iliaca*.—April 6, collected specimens on Well's Hill.

Merula migratoria. *Sialia sialis*. *Melospiza fasciata*.—April 7, collected specimens on Well's Hill.

Junco hyemalis. *Molothrus ater*. *Loxia curvirostra minor*.—April 8, collected on Well's Hill.

Poocætes gramineus.—April 9, numerous specimens came this morning.

Pica pica hudsonica.—April 9. This morning I saw three birds flying northwards, which might have been of this species. They were less than Crows, their bodies were black, and wings white. They were flying with a small flock of Crows.

Dendroica coronata.—April 13, numerous specimens arrived this morning.

Loxia curvirostra minor. *Sayornis phœbe*. *Passerella iliaca*. *Regulus satrapa*.—April 13, collected on Well's Hill.—F. TWEED.

Melospiza fasciata.—March 25, 9 a.m., a fine clear morning, bright sunshine, temperature about 40°, light wind from the North-east; saw and heard nine Song Sparrows, along Don improvement and in Eastern Park, on an area of about three acres. They appeared to be quite numerous feeding among masses of *chenopodium*, *polygonum*, and *solidago* of last year's growth.

During the night of the 24th, the temperature fell to 29° with a strong north-easterly wind, ice formed a quarter of an inch thick. As the Sparrows were not here on the 24th and as it is not likely they would cross the Lake in such a cold night, in face of a brisk wind, they most probably were resting during the night of the 24th among the Typhas and semi-aquatic vegetation of Toronto Marsh, and took the first opportunity of moving northwards on the warm morning of the 25th. The morning of the 26th was clear and warm but only one Song Sparrow was heard.

The afternoon of the 29th, was bright and warm, numerous specimens of Diptera, also *Aphedius fimetarius* and *Vanissa antiopa*, were observed. ravines east of the city limits, several Song Sparrows were heard and seen.—W. BRODIE.

Melospiza fasciata.—April 13, a bright warm forenoon, grassy fields beginning to look green patches of ice and snow still lying in sheltered places. *Bufo lentiginosus* heard for the first time this season. Song Sparrows beginning to pair, apparently resident, numerous, singing.

Sialia sialis.—April 13, saw three pairs; they were looking for nesting places.

Merula migratoria.—April 13, saw one pair preparing to nest, heard several singing.

Corvus americana.—April 13, all paired and nesting.—W. BRODIE.

Melospiza fasciata. *Merula migratoria*.—March 29, abundant in Rosedale Wood.

Quiscalus quiscula æneus.—April 1, a small flock in a clump of pines on Bloor St. all day, but left during the night.

Philohela minor.—April 2, a male specimen in splendid spring plumage was received at the store. It had been killed by flying against the telegraph wires on College St. during the night.

Sayornis phœbe. *Sialia sialis*.—April 4, numerous specimens.

Molothrus ater. *Quiscalus quiscula æneus*. *Melospiza fasciata*. April 5, common in and around city.

Junco hyemalis. *Regulus satrapa*.—April 12, saw a flock of these two in company.

Troglodytes hiemalis.—April 12, a few specimens seen.

Sturnella magna. *Colaptes auratus*.—April 13, numerous specimens seen.

Spinus tristis.—April 13, observed a large flock in breeding plumage, the first seen since February 12.—E. DEACON.

(Forty-fifth Meeting, April 28th, 1891).

Spizella monticola.—April 17, common up to date, but this morning I could neither see nor hear any.

Pooecetes gramineus.—April 17, this species seems to have taken the place of the Tree Sparrows.

Harporhynchus rufus.—April 21, several males seen in Rosedale woods in full song.

Spizella pusilla.—April 21, the first of the season, numerous, in full song.—E. DEACON.

Quiscalus quiscula æneus. *Pooecætes gramineus*.—March 27, observed several specimens.

Fulica americana. *Botaurus lentiginosus*.—April 11, observed in Toronto marsh.

Ammodramus sandwichensis savanna.—April 26, collected on sand bar, Ashbridge's Bay.—J. EDMONDS.

Ceryle alcyon.—April 19, observed at Victoria Park.

Spizella pusilla.—April 16, observed a flock in Rosedale woods.

Fulica americana. *Progne subis*.—April 19, collected in Ashbridge's Bay.

Harporhynchus rufus.—April 26, common in Ashbridge's Bush.

Corvus americanus.—April 26, a nest found containing four eggs.—J. L. JACKSON.

Otocoris alpestris praticola.—March 11, collected a female specimen in full breeding plumage.

Agelaius phœniceus.—March 29, observed a flock flying over sand-bar, and marsh at Kew. They seemed very uneasy, and unwilling to alight. collected specimens.

Melospiza fasciata.—March 29 and 30, arrival of great numbers of Song Sparrows. Height of spring migration. I collected specimens, the plumage seemed darker than that of specimens arriving later.

Sturnella magna.—March 30, collected specimens at Kew.

Quiscalus quiscula æneus.—April 2, observed a pair near the Woodbine.

Lanius borealis. *Dryobates pubescens*.—April 9, collected specimens at Kew.

Sayornis phœbe. *Certhia familiaris americana*. *Junco hyemalis*.—April 12, numerous specimens observed at Kew.

Trinator imber.—April 20, a pair observed out in the lake, opposite Kew.

Pooecætes gramineus. *Sayornis phœbe*. *Sialia sialis*.—April 13, collected specimens at Kew, the Vesper Sparrows were very numerous.

Spizella monticola. *Sturnella magna*. *Molothrus ater*.—Collected specimens at Kew, April 15.

Ceryle alcyon.—April 17, a pair observed at Kew.

Ceryle alcyon. *Passerella iliaca*. *Sialia sialis*. *Junco hyemalis*. *Colaptes auratus*.—April 8, collected specimens at Kew. The Fox Sparrow was in company of a pair of Song Sparrows one of which was endeavouring to drive it away.

Regulus calendula. *Dendroica coronata*.—April 20, collected specimens at Kew.

Colaptes auratus. *Melospiza georgiana*.—April 25, collected specimens at Kew.—J. A. VARLEY.

Passerella iliaca. *Turdus aonalaschkæ pallasii*. *Sphyrapicus varius* and *Ceryle alcyon*.—Arrived on April 15.

Passerella iliaca.—Fox Sparrows appeared in large numbers on April 16, and had almost entirely disappeared by April 20.

Colaptes auratus. *Spizella socialis*.—Noticed on April 15.

Zonotrichia albicollis. *Spinus tristis*. *Molothrus ater*.—Observed on April 18.

Poocætes gramineus.—Arrived on April 20.

Tachycineta bicolor.—A Tree Swallow was seen on April 21.

Carpodacus purpureus.—I observed on April 25 a Purple Finch.—FRANK TWEED.

Passerella iliaca.—On April 15, I saw a Fox Sparrow, in company with a small flock of Juncos (*Junco hyemalis*).

Spizella socialis.—April 15, I saw a Chipping Sparrow.

Tachycineta bicolor. *Ceryle alcyon*.—I first saw Tree Swallows on April 17, and on the same date saw a Kingfisher.—WM. METCALFE.

Nyctea nyctea.—A male Snowy Owl was shot at Bolton on April 16. The bars on the plumage were very brown.

Botaurus lentiginosus.—On April 21, an American Bittern was shot on the Humber.—JAS. R. THURSTON.

Clivicola ricaria.—I note the arrival of Bank Swallows on April 19.

Carpodacus purpureus, etc.—On April 20, I saw Purple Finches and Prairie Horned Larks (*Otocoris alpestris praticola*).

Melospiza georgiana.—I first saw Swamp Sparrow on April 20.

Sturnella magna, etc.—Meadow Larks were quite common on April 25, but were very wild. On April 23, a flock of Wild Geese was seen by Mr. Herbert Petman, flying in a north-easterly direction over the bay.—
J. B. WILLIAMS.

Turdus fuscescens. *Chætura pelagica*.—On April 19, I heard the Wilson's Thrush for the first time, and on April 18, Mr. F. Cockburn observed Chimney Swifts.

Antrostomus vociferus. *Spizella pusilla*.—On April 25, Whip-poor-wills and Field Sparrows had arrived.

Chelidon erythrogaster. *Frogne subis*.—I saw a Barn Swallow and a Purple Martin on April 25.

Mniotilta varia.—Black and White Creepers around on April 27.

Harporhynchus rufus.—Arrived on April 28.—GEO. E. ATKINSON.

(Forty-sixth Meeting, May 12th, 1891.)

Philohela minor.—On April 29, I saw an American Woodcock at North Toronto.

Chordeiles virginianus. *Helminthophila ruficapilla*.—I saw for the first time this season Night Hawks and Nashville Warblers, on May 1.

Dendroica cærulescens. *D. virens*.—May 6, Black-throated Blue Warblers arrived. May 8, Black-throated Green Warblers arrived.

Icterus galbula and *Zonotrichia leucophrys* arrived on May 9, at Toronto.

Melanerpes erythrocephalus.—Red-headed Woodpecker seen on May 10.

Dendroica maculosa.—May 12, I saw Magnolia Warblers.—FRANK TWEED.

Compsothlypis americana.—On May 12, I observed a Parula Warbler in Rosedale, Toronto.

Dendroica blackburniæ.—Saw a Blackburnian Warbler in Rosedale on May 12.—W. METCALFE.

Habia ludoviciana.—I shot two Rose-breasted Grosbeaks on the Don, on May 9.

Antrostomus vociferus.—On May 10, I shot a Whip-poor-will.

Dendroica pensylvanica.—Seen on May 10.—J. B. WILLIAMS.

Icterus galbula and *Dendroica æstiva*.—I heard two Baltimore Orioles, and several Summer Warblers on May 10, in north part of city.—HUBERT H. BROWN.

Sturnella magna, nesting.—On May 2, a nest of this species was brought to me with three eggs found just north of the city.

Merula migratoria, nesting.—On May 3, I found a Robin's nest containing two eggs, in an elm tree. I think the situation was very unusual the tree being bare; they usually build in evergreens when breeding early in the season. I also found several other nests later on.—GEO. F. ATKINSON.

Compsothlypis americana.—I saw a Parula Warbler in the city on April 30.

Galeoscoptes carolinensis arrived.—I saw a Catbird first on May 5.

Dendroica æstiva. *Icterus galbula*.—Yellow Warbler arrived May 6, and Baltimore Oriole on May 8.

Setophaga ruticilla.—Saw an American Redstart on May 12.—F. COCKBURN.

Trochilus colubris.—On May 10, I saw a Ruby-throated Hummingbird on the sandbar.

Cistothorus palustris. *Melospiza georgiana*.—I observed these in the marsh on April 14.—JOHN L. JACKSON.

Poliophtila cærulea at Toronto.—I collected a female Blue-gray Gnatcatcher on May 5, on Well's Hill, North Toronto. This bird is a rare visitor in this locality.

Totanus melanoleucus.—On May 8, I shot a pair of Greater Yellowlegs on the sandbar.—O. SPANNER.

Ægialitis meloda at Toronto.—I collected a specimen of the Piping Plover on May 1, at sandbar, and I also procured a Gallinule, *Gallinula galeata*.

Anas discors.—On the same date large numbers of Bluewinged Teal were observed in company with Scaup Ducks.

Sterna tschegrava.—On May 7, I procured three fine specimens of the Caspian Tern, at Ashbridge's Bay, and on May 10, I observed several of this species on the Humber Bay.

Merganser americanus. *Oidemia deglandi*.—On May 11, I saw American Mergansers near Mimico, and also a pair of White-winged Scoters.—J. R. THURSTON.

(Forty-seventh Meeting, May 27, 1891.)

Zonotrichia leucophrys.—On May 16, I found quite a flock of White-crowned Sparrows in the Don Valley.

Passerina cyanea.—I saw an Indigo Bunting on May 23.

Sylvania canadensis. *Spinus tristis*.—Of the former I secured a male specimen, the latter were very numerous on May 23.

Dolichonyx oryzivorus.—I saw a Bobolink on May 25.

Piranga erythromelas, scarce.—There seems to be a scarcity of Scarlet Tanagers this year; their movements seem to be very erratic.—
J. B. WILLIAMS.

Vireo olivaceus. *Dolichonyx oryzivorus*.—First seen on May 13.

Seiurus noveboracensis.—Arrived May 14.

Large migration of *Zonotrichia leucophrys*.—During the night of May 13th, the largest migration of White-crowned Sparrows on record took place at Toronto. On the morning of the fourteenth the city was swarming with them. They were to be seen in every yard, tree, shrub and street and their song seemed to be universal.

Their numbers increased till the fifteenth, and on the sixteenth there was a marked movement to the north, and they continued to diminish in numbers till the twenty-third when but one or two were to be seen.

While here they would mix with *Passer domesticus* and feed on horse manure, etc. This movement was remarkable as it appeared to be local, for Mr. Brown informs me that even in the near surrounding country and woods, there were very few to be seen, while in the city they were exceedingly abundant.

Vireo gilvus.—On May 16, I secured a Warbling Vireo in the University grounds.—GEO. E. ATKINSON.

Pooecætes gramineus, nesting.—May 12, on Well's Hill, North Toronto, I found a Vesper Sparrow's nest with two eggs.

Dendroica maculosa. *D. coronata*.—I saw Magnolia Warblers on May 14, and Myrtle Warblers on May 18.

Myiarchus crinitus. *Empidonax minimus*.—Seen on May 14.—
FRANK TWEED.

Piranga erythromelas.—I shot a female Scarlet Tanager at East Toronto on May 25. This is the only one of this species I have seen this season.

Vireo olivaceus.—Were unusually numerous at East Toronto on May 25.—HUBERT H. BROWN.

Ardea virescens at Toronto.—I saw a Green Heron on May 17,

in Toronto marsh, and on May 16, I shot a male *Piranga erythromelas*, at Kew Beach, Toronto.—J. A. VARLEY.

(Forty-eighth Meeting, June 9, 1891).

Zonotrichia albicollis.—On June 6, I came across a pair of White-throated Sparrows, whose actions suggested the proximity of their nest, but I failed to find it, so I shot both birds. Next day I visited the same place and heard another bird singing, and on approaching him, the female flew from a clump of bushes. I hunted thoroughly for a nest but could not find one, so I left the birds intending to watch them more closely another time.—EDWARD DEACON.

Bald-headed Eagles killing Deer.—In the spring of 1891, I had two specimens of the Bald-headed Eagle, *Haliaeetus leucocephalus*, sent to me to be mounted, from Redwood, on Lake Joseph, Muskoka. On making enquiries, I learned that they were caught in the act of eating a Deer they had just killed. Mr. Lee, who owns them relates the circumstances as follows:

“The winter of 1890-1, I spent in company with a friend trapping in that section of country lying north-west of Lake Joseph. Returning one day from a visit to our traps, we were going round an arm of the lake when five eagles rose from the ice and flew out towards the lake. I was carrying a pack of skins and had my rifle strapped on my back, but my partner not being hampered, fired and killed the white-headed bird. We went to where they rose from, and found the remains of a doe fawn of about seventy-five pounds weight; the animal had ventured out on the ice, and being some distance from cover had fallen an easy prey to the flock of hungry birds. We went back on the tracks some distance, and not seeing the tracks of any other animal were quite sure that it was killed by the Eagles. We poisoned the carcass and returning next day found the young bird dead, close by. Two other cases of small Deer killed by Eagles had come under my notice the same winter, but I have never known them do so during my former residence in the country, and do not know of anybody who has had a like experience.” The white-headed bird referred to was a mature specimen with pure white head and tail, and large yellow beak, the young bird was full sized, a large powerful bird, possibly over a year old, the bill horn coloured, and the head and tail washed and blotched with a dirty greyish white, the markings from the head extending some distance down the middle of the back below the usual termination of the neck marking.

Mr. Lee was of the opinion that all five birds were of the same family, *i.e.* two old birds and three youngones.—JAMES R. THURSTON.

REPORT OF THE OCCURRENCE OF THE EVENING
GROSBEAK, (*COCCOTHAUSTES VESPERTINA*),
IN ONTARIO DURING THE WINTER OF
1889-90.

Being a summary of recorded observations of the occurrence of this bird at Toronto, and other localities in Ontario; also notes on the occurrence and habits of the bird in the Province of Manitoba, collected and arranged by the Ornithological Sub-section of the Canadian Institute.

January 11, Mr. C. H. Baird, of Paris, Ont., has informed me that a large flock of Grosbeaks were in that vicinity for some days at this date, none were collected.—J. EDMONDS.

January 16, one female specimen collected from a flock of twenty observed near Lorne Park, about fourteen miles west of Toronto. The gizzard was distended with choke cherry and haw stones, crushed by the powerful beak of the bird.—E. E. THOMPSON.

January 18, observed a solitary specimen on Wilcox St., feeding on mountain ash berries, but failed to collect it.—G. E. ATKINSON.

January 18, while walking in Rosedale I observed a large flock of birds resting on some oak trees, and soon made them out to be Evening Grosbeaks. I made a double shot but was much disappointed to find my second shot had brought down an adult male Pine Grosbeak, however, on stepping under the tree I was pleased to find as the result of the first shot, my first Evening Grosbeak. Soon after I collected another male and two fine females.—W. CROSS.

January 19, saw a flock of eight Evening Grosbeaks resting on a tree by the G. T. R. track, East Toronto. On the afternoon of the same day I observed a flock flying over Winchester St., within city limits.

January 21, Messrs. Mitchell, Gray and Marsh collected twenty-four specimens, nine males and fifteen females, in Rosedale. I obtained six of them and found them all very fat. Their crops were full of unbroken pits of *Prunus serotina*, while their gizzards were crammed with the same broken, sharp sand, and a few fragments of a shell, probably a *Helix*.—D. G. COX.

January 21 to February 3, Evening Grosbeaks were common at the Highland Creek, about fourteen miles east of Toronto. None were observed at Claremont, ten miles to the north.—JAS. ANNIS.

January 22, I again visited the locality in Rosedale where I had found

them on the 18th, without finding any, but on going a little further on, I surprised two males feeding on the ground, but failed to collect them. Meeting a friend we went to where he had previously seen a large flock feeding on the ground. We soon came on them still feeding on the ground, and I secured several pairs in first rate condition.—W. CROSS.

January 22, I came on a flock of about fifteen Evening Grosbeaks in a field north of the city, and collected three specimens. They were feeding on the ground, on witch hazel, white oak and red hawthorn. On my way home I saw a pair on Jarvis St., feeding on berries of the mountain ash.—J. B. WILLIAMS.

January 24, I observed three Evening Grosbeaks in Rosedale, and watched them for some time. They fed on the ground, and their actions were much like those of the *Pipilo erythrophthalmus*. No doubt they were in search of fallen fruits and seeds. Two specimens secured this day had been feeding on the sprouted seeds of maple; their stomachs were excessively distended.—E. E. THOMPSON.

January 24, I saw two pairs of Evening Grosbeaks in the Normal School Grounds, feeding on mountain ash berries. They were very tame.—H. H. BROWN.

January 24, while walking in Rosedale to-day, I came on a flock of Evening Grosbeaks, and collected five fine specimens.—J. H. AMES.

January 25, at North Toronto I saw a flock, but could not collect any. Several collectors had been hunting them, and six or eight specimens had been procured. H. Parish saw two in the Normal School Grounds.—H. H. BROWN.

January 25, Mr. Powell secured three pairs in Rosedale. They had been feeding on seeds of white ash and on pits of mountain ash.—D. G. COX.

January 27, Mr. Ames and I saw a large flock in Rosedale, but did not collect any.—W. CROSS.

January 27, I noticed a flock of the same birds flying north over the C. P. R. track.—J. B. WILLIAMS.

February 1, I have not observed any Evening Grosbeaks about Claremont. I heard of their appearance east, west, and south of this point, and anxiously watched for them.—G. BRODIE, M.D.

February 1, I saw a flock of six or eight, at North Toronto.—H. H. BROWN.

February 1, I saw a flock of five north of Rosedale.—J. B. WILLIAMS.

February 1, I have looked for Evening Grosbeaks, but up to date have seen none in the neighborhood of Scarborough.—W. HORSEY.

February 2, saw one specimen at North Toronto.—H. H. BROWN.

February 3, saw large flock pass over my head. They passed and repassed several times during the day. I collected two specimens at corner of College and Spadina Avenue.—G. E. ATKINSON.

February 8th, saw three small flocks on Carlton St., feeding on mountain ash berries. In the afternoon I saw a flock of about thirty in the Don Valley, feeding on the seeds of the white ash. I watched their manner of feeding; some of the birds cut the seeds off allowing them to fall to the ground before eating them, others ate the seeds as they picked them. I collected four specimens, two males and two females. Their stomachs contained nothing but white ash seeds.—WM. METCALFE.

February 9th, I saw five males and four females in a mountain ash tree on College Street, there were also several feeding on the ground. I subsequently saw about fifty on Huron Street, they were nearly equally divided between Pine and Evening Grosbeaks, I shot a female. These birds were very tame, and I almost got near enough to knock them over with a walking stick. I think the recent fall of snow has driven them into the city in search of mountain ash berries, their favorite food, the black ash seeds being too far under the snow. The berries are eaten off nearly all the mountain ash trees.—H. H. BROWN.

February 9th, I collected three in the city.—GEO. E. ATKINSON.

February 9th, noticed a number of Grosbeaks in a mountain ash tree on Rose Avenue, some of them were red plumaged, *Pinicola enucleator*, while two were of the same species in female plumage, they were feeding on the berries. On the ground was a female *Coccothraustes vespertina*, eating the fruit dropped by those in the tree, this is eminently characteristic of both species. The Pine Grosbeak rarely feeds on the ground, while the Evening Grosbeak commonly does so. Other flocks of both species were observed flying in a southerly direction at a considerable height. These flocks consisted of from half to a dozen birds each.—ERNEST E. THOMPSON.

February 10th, saw three Evening Grosbeaks on College Street.—C. E. PEARSON.

February 10, saw a flock of about ten birds on Rose Avenue.—J. B. WILLIAMS.

February 10, I secured three males and three females, two of the latter

being alive and almost uninjured. Altogether I have collected thirteen specimens up to date.—G. E. ATKINSON.

February 10, on Surrey Place I saw one Evening Grosbeak among a flock of about twenty-five *Pinicola enucleator*.—HUBERT H. BROWN.

February 10, in the Queen's Park I saw three Evening Grosbeaks eating the berries of the mountain ash, but I failed to secure any.—C. E. PEARSON.

February 11, I have two fine male Evening Grosbeaks alive, which were taken on February 11. They seem to be taking kindly to captivity and their new food, they will take mountain ash berries from the hand I hope to be able to keep them and hear their song.—WM. CROSS.

February 11, I caught three female Pine, and one female Evening Grosbeak alive by the aid of a pole, and fine wire noose. The birds are so tame that it is easy to slip a noose over their heads as they feed. The males however of both species are rather wary, they keep to the top of the trees, and fly off even at a slight alarm, so I failed to secure any males alive. Immediately on being caught the Evening species utters a loud cry or shriek which it keeps up for some time, and the Pine Grosbeak cries out in a much weaker and more husky voice. When put in a cage the Evening Grosbeak set upon the others and used them very badly, having a great advantage in the powerful bill.—E. E. THOMPSON.

February 11, I saw a beautiful male specimen in the Queen's Park.—C. E. PEARSON.

February 13, I secured a male specimen on Howard Street, Rosedale. J. A. VARLEY.

February 15, the last observed flock of Evening Grosbeaks, at Lorne Park is reported by Mr. Luker, for February 15.—ERNEST E. THOMPSON.

February 23, I saw three Evening Grosbeaks in the city.—J. L. JACKSON.

February 25, for the past few days Evening Grosbeaks have been common in East Toronto.—C. W. NASH.

March 16, I observed Evening Grosbeaks in my garden on this date. they were feeding on the apples left on the trees from last year.—MRS. J. R. BARBER, Georgetown.

March 17, we had these birds here the greater part of the winter. In one corner of my yard there is a mountain ash, which was plentifully covered with berries, that proved a glorious feast for the little beauties

Several times I had my gun ready to secure specimens, but my heart failed me each time. They have been noticed in bunches of three to five, all over this section, and are exceedingly tame, a number were secured by Mr. Melville, our local taxidermist.—A. P. CORNELL, M.D. Gravenhurst.

March 19, I observed two evening Grosbeaks on this date in our orchard.—MRS. J. R. BARBER, Georgetown.

April 11, at Todmorden, north-east of Toronto, I saw five Evening Grosbeaks on a birch tree, near Taylor's Paper Mills, there were four males and one female. On returning half an hour afterwards they had flown, and hearing them in a piece of woods close by, I went over and found a small flock in the top of a pine tree. They were playing with each other, apparently pairing, but although the males exceeded the females in numbers there was no fighting. They were uttering their characteristic whistle and another call which I never heard before, the whistle blending into a soft musical r-r-r-r-r. These calls repeated by a number of birds made a very pleasing little concert. I watched them as they flew from tree to tree several times, and I counted thirty-five specimens, of these at least twenty-four were males. At one time nineteen settled on the top of a red oak, so closely together that a charge of small shot might have killed every specimen. On walking about a mile homewards I came on a flock of over fifty in R. Davies' orchard, feeding on the ground among brewery refuse which was scattered as manure.—W. BRODIE.

April 13, while shooting at Chester with Mr. Jas. R. Thurston we came upon a flock of about fifty birds, feeding on brewery refuse. We collected seven males and females. There were more males than females in the flock.—JOHN EDMONDS.

April 15, while collecting on Well's Hill I came across a flock of Evening Grosbeaks which numbered about thirty, in the top of a clump of pines. I followed them and eventually secured five females and three males, one of the former taken alive. I only observed six or seven males in the flock. These birds have been absent almost entirely from Toronto since March 1.

April 17, I saw a female take several straws from a Sparrow's (*Passer domesticus*) nest, and expecting she was building I followed her. She carried them about for some time and at last carelessly dropped them on top of a witch hazel tree and left them.

April 21, the birds were observed in the same place, but no further attempt at nesting was apparent, nor did they seem paired.

April 29, these birds are still here.

May 7, 18, and 26. I saw the same birds, but they got shy and at last disappeared as mysteriously as they came.—G. E. ATKINSON.

I have not observed the Evening Grosbeaks at Mildmay, and I have come to the conclusion that they were not seen north of Guelph.—W. A. SHOENAU.

Evening Grosbeaks are quite unknown in this district. Mr. W. P. Melville, collected a few at Gravenhurst in March, 1890, the only Muskoka specimens I ever heard of.—A. KAY, Port Sydney, Muskoka.

January, 1890, Evening Grosbeaks common here, four specimens collected.—W. SUTHERLAND, Orillia, Ontario.

March, 1890, several specimens of the Evening Grosbeak were seen here, a few were collected.—W. P. MELVILLE, Gravenhurst, Ontario.

A large number of Evening Grosbeaks arrived here about the first of March, 1890, and they were apparently feeding on the ash berries and the cedar. They stayed here about five weeks, leaving the first week in April. I have not observed any since. I mounted I think about a dozen birds for different persons in this neighborhood, there were some very fine specimens among those I mounted, and I have four or five still in my possession.—R. C. BURT, Chemist, Chatham, Ontario.

Food of Evening Grosbeak determined from dissections. All the birds were collected in the vicinity of Toronto, they were all fat and the stomachs of all were full.

Jan. 21, ♀, seeds of white ash and maple.

24, ♀, crop and gizzard, seeds of maple.

24, ♂, crop and gizzard, seeds of maple.

24, ♀, seeds of ash.

25, ♂, seeds of ash.

25, ♀, seeds of ash.

26, ♀, seeds of white ash and maple.

26, ♂, seeds of mountain ash.—E. E. THOMPSON.

Of the eighteen specimens examined by me, all were very fat and the stomachs in nearly every case full. The contents were as follows:—

Jan. 25, ♀, nutlets of *Prunus serotina*, with pieces of the shell and sand.

25, ♂, nutlets of *P. serotina*, shell and sand.

25, ♀, nutlets of *P. serotina*, shell and sand.

25, ♂, seeds of *Fraxinus americana*, nutlets of *P. serotina* and *Pyrus acuparia*.

25, ♂, nutlets of *P. serotina*, and broken up shell.

- Jan. 25, ♀, the crop and gizzard full of nutlets of *P. serotina*, and broken up shell.
- 21, ♂, nutlets of *P. serotina*, whole in crop, in gizzard broken up with pieces of shell and sand.
- 21, ♂, nutlets of *P. serotina*, pieces of shell and sand.
- 21, ♀, nutlets of *P. serotina*, shell and sand.
- 21, ♀, nutlets of *P. serotina*, shell and sand.
- 21, ♀, nutlets of *P. serotina*, shell and sand.
- 21, ♀, nutlets of *P. serotina*, shell and sand.
- Feb. 1, ♂, nutlets of *P. serotina*, and *Croctagus*, sp.
- 1 ♂, seeds of *F. americana*, and sand.
- 1, ♂, seeds of *F. americana*, and sand.
- 8, ♂, seeds of *Pyrus acuparia*, and sand.
- 8, ♂, seeds of *Pyrus acuparia*, and sand.
- 8, ♀, seeds of *Pyrus acuparia*, and sand.—DANIEL G. COX.

Food of the Evening Grosbeak.—Of the seventeen specimens dissected by me, all were in good condition, it would be more accurate to say they were fat, the gizzards were all full, and all were collected in or near Toronto.

- Jan. 16, ♂, broken nutlets of *Croctagus* sp.
- 16, ♀, seeds of *Fraxinus americana*, sand.
- 18, ♀, broken pits of *Pyrus acuparia*, crop and gizzard full.
- 18, ♀, pits of *P. acuparia*, seeds of *F. americana*, sand.
- 18, ♀, seeds of *F. americana*, sand.
- 18, ♀, seeds of *F. americana*, sand.
- 22, ♀, sprouted seeds of *F. americana*, sand.
- 22, ♂ seeds of *F. americana*, sand.
- 22, ♂, seeds of *F. americana*, broken nutlets of *Croctagus*, sp.
- 22, ♂, seeds of *F. americana*, pits of *P. acuparia*, sand.
- 22, ♀, seeds of *F. americana*, pits of *P. acuparia*, sand.
- 22, ♀, broken pits of *Prunus virginiana*, *P. acuparia*.
- 22, ♀, broken pits of *P. virginiana*, *P. acuparia*, seeds of *F. americana*.
- 25, ♀, broken pits of *P. virginiana*, sand.
- 25, ♀, seeds of *P. acuparia*, sand.
- 25, ♂, seeds of *P. acuparia*, *Hamamelis virginiana*, sand.
- 25th, ♂, seeds of *P. acuparia*, *F. americana*, sand.—W. BRODIE.

Evening Grosbeak at Hamilton, Ont.—This bird was first observed here on December 19, feeding on the berries of the cedar; flock after flock passed along, going east, till near the end of January, when for a few days none were seen. I heard of them all along the north shore of the lake, as far down as Kingston. About February 10, the return migration began, and was very active while it lasted, but they were only noticed for three or four days. At this time they fed mostly on the seeds of such apples as were found still hanging on the trees in the orchards, the berry bushes being well cleared of fruit on the eastern trip. I made enquiry at different points west to find out if possible by what route they travelled, but Chatham was the only point where I heard of them, around Chicago they were not observed. Most likely they came down the east shore of lake Huron.—T. McILWRAITH.

Evening Grosbeak.—This bird is a common winter visitor to the Province of Manitoba, frequenting the woods along the banks of the Assiniboine River in great numbers; on the Red River it is common at times, but does not appear to settle down into permanent winter quarters there. In the Riding Mountains latitude 50° 30' I found it common in December 1884, the thermometer at the time ranging from 30 to 40 below zero.

It is also found in all other parts of the Province that are heavily timbered, its favorite resorts being the groves of North-west maple or box elder, which usually grows on the banks of rivers or lakes, on the seeds of this tree it feeds, perhaps occasionally varying its diet with buds of other deciduous trees. I examined the stomachs of a great many in Manitoba, and never found anything else contained in them. Whilst here they seldom visit the low scrub or the ground, except in spring, when they will sometimes crowd thickly together on a bare spot, apparently seeking gravel for digestive purposes.

They first arrive early in October, continually increasing in numbers until the 1st of December, when they reach the maximum, and they remain until about May 16th, when they all disappear together.

The following are dates of their arrival and departure for three years:

FIRST SEEN.	LAST SEEN.
1884,	May 16th, several flocks.
1885, October 12th, one flock.	May 16th, many seen.
1886, October 1st, a small flock.	April 23rd, a few seen.

Mr. Thos. S. Roberts records them as regular visitors in winter to Minneapolis, Minnesota, and in 1880 says he saw them last on May 3rd, though they usually stay much later, but the weather being very warm at that time, probably hastened their departure. At this place they

resort to an island which is timbered in part with maple and box elder, the seeds of which they make their regular diet, as they remain hanging in bunches on the trees through the winter.

During the winter in Manitoba they are usually seen in small parties, not exceeding six or eight in number, and are quiet and unobtrusive in their manner, flitting about the maples feeding, occasionally uttering their single call note, which very much resembles that of the European Bullfinch.

Early in April they congregate into large flocks, in which the males preponderate, they are then restless, frequently rising from the tops of the trees and making long flights high in the air over their haunts.

In view of the fact that this bird's nest has never been found, it may be worth noting, that the Pine Grosbeak, its usual winter associate, whose nest and breeding place are known, arrives in this Province about the middle of November, and leaves here about the end of March, whilst the Evening Grosbeak arrives about six weeks earlier in the autumn, and remains about six weeks later in its winter quarters, from which I should infer that it does not go so far from its winter haunts to nest, as does the Pine Grosbeak.

In January 1890, immense numbers of these birds were seen in eastern Canada and the United States, they having for some unexplained reason wandered far from their range. A most peculiar feature of this movement in Canada was the first appearance of the birds in the east, and their gradual extension westward, exactly the reverse of what one would expect from birds whose habitation is the interior of north-western America.

The first records I have of their occurrence at that time are from near Montreal in Quebec, and Kingston in eastern Ontario, during the first two weeks of January. At the end of this month they had reached Toronto, where I saw them in considerable numbers; at this time they were also seen in the States of New York, Massachusetts, and Connecticut. Early in February they had reached the States of Ohio, Michigan and Illinois. Judging from these records, I assume that a large number of the birds must have migrated from their summer home in an easterly direction, until they reached the Province of Quebec and some of the eastern States, thence they gradually worked westward along the Great Lakes to their proper habitation.—C. W. NASH.

Observations on migration of Evening Grosbeaks. 1890.—On the 21st, January, 1890, Messrs Gray, Marsh, and Mitchell, reported a flock of about three-hundred Evening Grosbeaks, males and females, on Rosedale Heights, north of C. P. Railway track, they were feeding on the ground and seemed to find abundance of food. The subsequent examinations of the stomachs determined the food

to be nutlets of the wild cherry, *Prunus serotina*, which had fallen the year before. The above named gentlemen secured nine males and fifteen females that day besides leaving several wounded birds which escaped to the neighbouring gardens. They were in excellent condition, being very fat. The birds remained in that vicinity about two weeks and during that interval Gray, Mitchell, and myself visited the place, and obtained specimens each time, in fact they were seen there as long as the food lasted. From February 1st, to 8th, I saw several small flocks on Ontario and Howard Streets, and on the Danforth Road, feeding on the seeds of mountain ash, *Pyrus acuparia*, and on February 27th, I saw a flock of about thirty Evening Grosbeaks, in company with about a dozen Pine Grosbeaks, *Pinicola enucleator*, in Mr. William's garden on Ontario Street, stripping an apple tree which contained about half a bushel of rotten fruit, that had not been gathered the year before. On making an examination of the refuse under the tree after the birds departed, I found that only the seeds had been eaten, as in every case where I have made examinations of the stomachs of these birds, I found the kernels of the different seeds, and nutlets composing their food have been entirely denuded of their shell.

I had reports given me, almost every day by many reliable persons, of flocks being seen on Logan and Pape Avenues, from the 1st to the 20th March, on which last date while collecting Gulls in the vicinity of Norway, I saw a flock feeding on the cones of a large pine tree, *Pinus resinosa*, this is the last time I saw the birds that year, although I heard several reports of them being seen till the middle of April. In my opinion from the first appearance of the birds in January, until the middle of April, they were seen every day by some persons about Toronto and suburbs, and that they came to us for food is very evident by their remaining with us so long, and their being so exceedingly tame. Numbers of them were killed by boys with sticks and catapults every day, in the streets of our city.—D. G. COX.

I have made as extensive enquiry as possible in regard to the occurrence of the Evening Grosbeak in this vicinity in the early part of January, 1895. All the evidence that I can collect goes to show that the birds arrived here about the 1st of January, and at least some of them remained until March.

In looking over my notes, I find an entry on January 20th, to the effect that the Evening Grosbeaks, a heretofore unknown bird in this vicinity, had been with us in large numbers for three weeks.

About January 1st, a boy brought me a bird that he said I might want for a specimen, as it had very bright plumage. The bird was new,

to me, although I knew it to be a Grosbeak. It proved to be a male Evening Grosbeak, and was shot in the asylum grounds.

The birds remained with us several weeks, in fact I saw one early in March, feeding on mountain ash berries. In the asylum grounds they were to be found very constantly, in the tamarac and mountain ash trees, and several times I saw them in the tamarac with the Pine Grosbeaks, which were quite common in the winter of 1890.

On the 13th or 14th January, 1890, Mr. Geo. Nicol of Cataraqui, shot a male and female Grosbeak (Evening), and sent them to Mr. R. M. Horsey, who wrote a letter on the subject to the *British Whig*, January 17th, and Mr. Horsey corroborates my observations in regard to the time the birds remained with us, in the following note: "I have a specimen (male) given me by Sir Richard Cartwright's gardener, which he procured about the end of January, and which he shot at the "Maples," Sir Richard Cartwright's summer residence on the banks of the St. Lawrence, a short distance from Kingston, where I understood from him the birds remained until early in March, or towards the middle of the month."

In the asylum grounds the ash berries seem to have been the chief attraction, but the birds were not nearly so numerous with us as at the eastern part of the city, and along the banks of the St. Lawrence. The reason for their presence there was that the woods are full of red cedars, and Barriefield Common, on the eastern side of Kingston, is covered with junipers. The birds subsisted on the berries of the red cedar and juniper.

Mr. H. Stratford, taxidermist, tells me that the crops of the many birds he mounted, were invariably filled with the red cedar and juniper berries.

There is no record of any of the birds having been kept in captivity and I cannot find out how many specimens were procured, but Mr. Stratford, the taxidermist, mounted several for different persons, and Mr. Horsey had three. The birds were quite common, and little difficulty would have been experienced in securing a large number. In the asylum grounds I would not allow any of them to be destroyed, after the first had been shot.

Mr. Stratford tells me that shortly after the arrival of the Grosbeaks here, they were observed in Perth, (Lyn), and if you wish I can find out the particulars regarding this, as Perth, (Lyn), is further east than Kingston. My impression is that the migration took place from the west, as the dates that the birds were observed in the western part of Ontario, were certainly earlier than our dates.

I find that I made a slight mistake in my notes on Grosbeaks: instead

of Perth I should have written *Lyn*, a place six miles west of Brockville.

Mr. Nicol of Cataraqui was driving near Lyn, when the Grosbeaks were here and saw a large flock of the birds. Two were also sent to Mr Stratford, from McDonald's Corners. Mr. Stratford mounted eleven Evening Grosbeaks in all, nine obtained from this locality, and two that were sent from McDonald's Corners, in the County of Lanark.

Dr. A. C. Bowerman, of Bloomfield, near Picton, Prince Edward County, writes as follows.

"I have the skin of a female Evening Grosbeak. They came about Christmas, and remained up to March, and the birds were quite numerous.

Mr. Elkington, taxidermist, brought me a bird about the 1st of March, which I skinned."—C. K. CLARK, M. D., Kingston.

During the thirty years I have lived in Guelph, I have never known a single specimen of the Evening Grosbeak having been taken.

The Pine Grosbeak, *Pinicola enucleator*, during that time has visited this section of the country several times, and the Rosebreasted Grosbeak, *Habia ludoviciana*, is comparatively plentiful in the woods of the surrounding country, but I am not aware of any of the Evening Grosbeak being seen in this vicinity —JAS. GOLDIE, Guelph, Ontario.

With reference to that interesting flight of Evening Grosbeaks, in the winter of 1889-90. On turning up my notes I find the first record on January 21, 1890, when I saw for the first time, a pair of these birds alive. They were upon an orchard tree in the town. On the 24th, I received from my friend Mr. McIlwraith, of Hamilton, a pair of these beautiful birds in the flesh, and while examining them at my window I happened to look out and there upon the ground, under my very nose, was a pair of the beauties. I am almost ashamed to say I ran for my gun and shot them both. There were three more in one of the trees uttering a plaintive call note as if for their mates. Next morning on looking out I saw six of these birds either hens or young birds, found they were feeding upon the seeds of the *Robinia pseudacacia*, or common locust tree the pods of which strewed the sidewalk. The two pairs I mounted and have in my collection. In their stomachs I found only the above seeds. On February 20, five of them were still seen feeding upon the locust tree although they were occasionally seen upon the ground feeding. March 15, saw four hens or immature males. March 29, great snow storm, covers the ground six inches deep. Saw six Evening Grosbeaks feeding in the locust tree, which is the last record I have of them. During January, February, and March, 1890, I heard of these

strange birds having been seen at different points, six or seven miles from here, and always the same habits reported, that they are rather sluggish in their habits, sitting quietly in the trees occasionally uttering their sad call note, but no attempt at a song. I may say that although I could have collected a number, I only took the one pair. From reports I must have heard of twenty-five or thirty birds in small parties, which could hardly have been the same lots that are in this section.—G. A. MACCALLUM, M. D., Dunnville, Ontario.

I have the assurance of Mr. Fletcher, Entomologist for the Agricultural Department of the Dominion of Canada, that none of these birds were observed at Ottawa.—W. BRODIE.

The first time I came across this rare visitant of southern Ontario was in the spring of 1855, in Glanford Tp., near Hamilton. There were five together on the ground, of which I shot two. This occurred after the snow had gone, or was nearly so, in early April.

I removed from that section and came to the northern part of Huron County a few years after. The first time I got one of these rare birds was in the winter of 1861. This occurred in the middle of February, and I had the skin for some years, but it was lost in a fire, this was a female. I saw several during the winter of 1861. The snow, however, was so deep in the bush that it was impossible to collect any. In the next year, 1862, several were seen as I was driving round in my cutter to visit sick people, also *Pinicola enucleator*, the Pine Grosbeak, was comparatively scarce. This I always found in swampy places, on scrubby pines, tamarac and spruce, and also I saw once an Evening Grosbeak sitting on a high bush cranberry, on the roadside within ten yards of me, pecking at the berries. This was in the township of Turnberry. In 1865, one of these birds was sitting high up on a soft maple, and I shot it.

In 1874 one was shot by me but much torn up with heavy shot, a male.

In 1883 quite a number were found all over this section during the months of January and February, several of which I saw in the possession of Dr. Tennent, and Mr. Anderson.

In 1891 I shot one in Kinloss Township. It was on a tree, by the banks of a creek, February 13. It may seem strange, yet on not one occasion did I ever hear any notes made by this bird.—JOHN H. GARNIER, M.D., Lucknow, Ontario.

No evidence of an eastern migration was obtained, but several observers reported flocks flying westward along the lake shore. The consensus of opinion seemed to be that the birds which came first, remained in or around the city until late in the spring, or were killed.

A number of observers were of opinion that the birds frequented the same localities until the supply of food was exhausted. On the southern slopes of the hills north of the city and of the Don ravines, the snow soon melted away, and the fallen seeds of *Prunus*, *Cretagus* and *Fraxinus* were abundant under the trees, and of course the birds were found feeding on the ground.

The food of this bird in Manitoba is the seeds of the box elder, *Negundo aceroides*, (Nash) the seeds hang on the trees during the winter and are picked off by the birds, but although many pistillate trees of this species grow on the Don flats and hill sides, which were heavily loaded with fruit, the birds were not observed to feed on them, nor did any of the dissections reveal the presence of *Negundo* seeds.

The range of food as shown by stomach dissections was not large.

Seeds of *Robinia pseudacacia*, *Cretagus coccinea*, *Fraxinus americana*, *Pyrus acuparia*, *Prunus virginiana*, *Prunus serotina*, *Acer saccharinum*, *Hamamelis virginiana*, *Juniperus communis*, *Juniperus virginiana*, and although not shown by dissections, they were observed to feed on seeds of apples which were hanging on the trees. The birds freely entered the residential parts of the city, and fed on the seeds of the European mountain ash, an abundant ornamental tree. They were quite unsuspecting and tame, and were unmercifully and wantonly killed with clubs, catapults, revolvers, pea-rifles, and many were taken alive with a slip-noose attached to the end of a long stick. We have collected reliable information of 453 specimens, which were collected in and near Toronto, most of which were made into skins or mounted by taxidermists and students of ornithology, but the actual number killed must have exceeded 1000.

Several living pairs were collected and kept for some time in cages, but they did not pair. At this time, February 17th, 1892, we know of but one living specimen, a female, in excellent condition.—EDITING COMMITTEE.

Since last date given, no birds have been noticed at Toronto to date of going to print. November 25, 1892.

CANADIAN WILD FLOWERS.

BY D. W. BEADLE, B.A., LL.B.

(Read 9th April, 1892.)

The purpose of this paper is to awaken an increased interest in our native wild-flowers, by shewing that they are worthy of a prominent place in our flower gardens, and thereby to rescue at least some of them from impending extermination.

Hitherto the floral embellishment of our lawns has been largely confined to the annual planting of tender exotics. This necessitates a yearly expenditure in the preparation of beds, procuring and setting out of plants and subsequent care. After planting, a considerable interval must usually elapse before sufficient growth can take place to make the bed an attractive object. When at length it attains to the fullness of its display, it is the same unvarying picture, presenting no new feature throughout the season, becoming even tiresome by reason of its uniformity. And at the first sharp frost of autumn all the brightness is suddenly extinguished, so that we are fain to have the plants removed out of our sight, and content ourselves with the bare brown earth prospect, until winter covers it with a mantle of snow.

But now a tendency is being manifested towards the adoption of a more natural system of flower gardening, a system that does not demand new plants every season; in which are no bare earth prospects through the spring and fall, nor pinched and shivering look of plants waiting for weather warm enough to enable them to put forth their flowers, nor tiresome monotony of forms and color, and at the last the sudden death of all in a night. In the natural system, the early flowers will begin to appear with the first mild days of spring, and from thence forward new forms and colors are appearing in continuous succession, so that each passing week some fresh object of interest is presented, and when the cooler days and frosty nights of autumn come, there will be no painful sense as of sudden death in the garden; Flora will but wrap her mantle of crimson and gold about her and gently sink into her winter slumber.

At this juncture, when tired of the artificial, public attention is being turned towards a system of flower gardening more consonant with nature, it seems opportune to direct attention to our wild-flowers, to shew to the general public the floral treasures of our own land, and awaken, if

possible, a sense of the appropriateness of enriching Canadian flower gardens with the wealth of Canadian wild-wood beauty, inured to our Canadian climate, and waiting at our very doors to be employed to ornament our Canadian homes. Surely the flowers of our native land are more lovely in our eyes than those of any other. We gathered them in childhood, twined them in our playmate's hair, and linked them with all the joyous memories of youth, so that by the very richness of their associations they speak to our hearts as can those of no other land. Have not many of you, when taking a country outing, paused in your ramble at sight of some woodland flower, and while you looked, the shadow on life's dial fled many degrees backward, and you found yourself listening again to the merry tones of young voices once familiar, and could almost feel again "the touch of a vanished hand;" and as you turned reluctantly away, that simple modest flower had for you a loveliness that the most princely exotic can never possess?

Like the Red-man of the forest our wild-flowers are passing away, and before very long many of them will be gone. The settlement of the country with its attendant industries, must necessarily destroy the conditions favorable to their existence. The axe and the plow are doing their work, and not these alone, but the careless gatherer is pulling them up by the roots, as though anxious to exterminate them as soon as possible. The burning off of the dry leaves is also destructive to those plants, the roots of which lie near the surface; and when the ground is dry and the soil of a fibrous or peaty character, the fire will penetrate to a considerable depth, quite far enough to kill out even those plants that may be called deep rooted. And even when the plants are not roasted to death, the fire consuming the leaves lying on the ground robs them of the food which the decaying leaves supply, and of the moisture which these leaves retain.

What can be done to stay this destruction and preserve to us our native flowers from the extinction which threatens them? Canada has no botanic garden into which they might be gathered. "I speak this to our shame." Once the writer had hopes that a portion of the grounds of the Ontario Agricultural College would be used for an arboretum and garden, into which would be collected such trees as would thrive there, and at least the most interesting of our native plants. Such a collection was thought to be a desirable, if not an essential factor in the education of those designing to devote themselves to rural pursuits. Under the superintendence of a committee of the Fruit Growers' Association, appointed at the request of the Hon. S. C. Wood, then acting Commissioner of Agriculture, which was composed of Mr. Wm. Saunders, now

Director-in-chief of experimental farms, Mr. James Goldie, of Guelph, an enthusiastic botanist, and the writer; plans were prepared and a commencement made, thus laying the foundation of such an institution. But there came a change of ministers, and with that a change of counsels, and the discharge of the committee. There is now no prospect of such an arboretum and garden being established in our day, nor for many a day to come. Hence, the only hope of preserving to those who will come after us the beautiful plants that now are scattered in wild-wood shade, by running stream, in marshy fen, on sunny bank, and in open prairie, seems to lie in the possibility of being able now to awaken in our citizens, and especially in those who with the writer claim this as the land of their birth, an interest in these wild-flowers as a means of beautifying the grounds about their dwellings.

In order to the awakening of this interest it will be necessary to substitute a more simple and natural taste in the place of that engendered by the bedding-out system so long in vogue, which demands masses of blazing color, ribbons of red, white and blue, and formal designs in flower or foliage in which there is not one touch of nature; yet this change will come, its dawn is already breaking. Deep down in the human heart there ever lives a chord that vibrates in unison with nature. It is made apparent by the desire so very commonly cherished by busy toilers in the marts of commerce to have a country seat in which they may spend a part of each year, and to which they may retire in life's evening. Let a fair trial of a natural system of gardening be made, it will then be found that it responds to this love of nature, that it gives a satisfaction and pleasure that apparent art is powerless to confer.

Further, it will be necessary to dis-abuse the public mind of a prevalent impression that the wild-flowers do not take kindly to civilization. One instance of their successful domestication is more potent than any argument. Fortunately such an instance is at hand, would that there were more. Mr. Jas. L. Hughes has 328 varieties of wild-flowers growing in his garden, and he states that "nearly every variety grows as well under cultivation as in its native locality, many of them do better." Could we have a few more such gardens, exemplifying the adaptedness of Canadian wild-flowers to the requirements of floriculture, there would be good ground to hope that such an interest might be awakened as would secure the cultivation and thereby the preservation of our most beautiful and desirable species.

The enumeration of all the wild-flowers that could well be employed in ornamental gardening would be but a wearisome repetition of names, yet it seems desirable to mention some of the most prominent, those most likely to interest the general public.

Among the very first to bloom in early spring is the trailing *Arbutus*, *Epigaea repens*, putting forth its delicately rose-colored flowers, laden with a rich spicy fragrance, even before the snows have ceased to fall. It is a shade loving plant that would thrive under the trees that skirt so many of the city lawns. In this connection we may name the pretty little *Linnaea borealis*, a slender creeping evergreen that loves the cool shade. Its graceful nodding flowers, purple and white, and sweetly fragrant, appear in June. It was a special favorite of the great Swedish botanist, and therefore bears his name. Also the Winter-green, *Gaultheria procumbens*, is most at home under the shade of evergreen trees. Its nearly white flowers appear in July, followed by bright red berries. *Mitchella repens*, as its name indicates, is a creeping plant, it thrives well in dry soils, is covered in June and July with white flowers that are pleasantly fragrant, followed by a profusion of bright scarlet berries which continue through the winter. This pretty plant is not only useful to hide the bare earth under trees, but its bright shining evergreen leaves set off with the scarlet berries, make it an appropriate Christmas decorative plant. We have yet another evergreen trailer bearing flesh-colored fragrant flowers in June, suitable for planting in dry soils, known by the name of Pipsissewa, *Chimaphila umbellata*. These and other evergreen plants, trailing in habit, and thriving best under the shade of over-spreading trees, could be made to contribute greatly to the charm of our lawns, not only by carpeting the earth beneath them, but by filling the air during their flowering season with grateful odors.

We have several very pretty *Anemones*. *A. hepatica* vies with the *Epigaea* in time of flowering. Its blue flowers running through many shades, sometimes white, are too well known to need description or words of praise. It is at home in partial shade. *A. patens*, var. *Nuttalliana*, has large purplish flowers in early spring. It prefers the open ground. *A. parviflora* gives us white flowers in May and June. *A. multifida* is more rare, its flowers are red, opening in June. *A. Pensylvanica* continues to display its white flowers from June to August.

It is quite possible that we have four varieties of *Trillium*, though the writer has not seen the white nodding *T. cernuum*, nor the painted *T. erythrocarpum*, (*T. pictum* Pursh.) The flowers of the latter are white, marked with purple stripes at the base of each petal. With *T. grandiflorum*, the large white flowers of which are so showy, remain so long in perfection, turning before they disappear to light rose-color; and with *T. erectum*, the dark purple flowers often intermingled with the white blooms of *T. grandiflorum*, you are all familiar. Our European cousins know how to appreciate their beauty, so much so that large numbers have been shipped to the other side of the Atlantic.

Dicentra gives us two interesting species. *D. cucullaria* prefers rich soil and moist shade. The leaves are finely cut, indeed the whole plant has a most delicate appearance. The flowers, white tipped with light yellow, are at once pretty and odd. *D. Canadensis* blooms in May. The heart-shaped flowers, greenish white tinged with rose, have the fragrance of hyacinths.

We are rich in Violets. The season of bloom extends from early spring until autumn. *V. rotundifolia* and *V. pubescens* are yellow, the round-leaved flowering in spring, the other in early summer. *V. cucullata* varies greatly both in the size and color of its flowers, which is almost of every shade, from nearly white to the deepest blue. The flowers appear in early spring. *V. canina*, var. *sylvestris*, (*V. Muhlenbergii*) flowers light blue, and *V. Canadensis*, flowers white, upper petals often tinged with violet on the under side, continue in bloom all summer. *V. sagittata* and *V. pedata* are large flowers, the latter especially, its flowers being an inch in breadth. They both vary from light to dark blue. *V. pedata* is a most elegant plant, its flowers have a delicate and agreeable fragrance, and last long in perfection. In grace and beauty it is the rival of any exotic. It thrives best in a somewhat sandy soil. The white flowered *V. blanda* is also, though faintly, sweet scented. All of these violets are of easy culture, take kindly to the garden, and increase rapidly.

Two species of *Lobelia*, *L. cardinalis*, the flowers a most brilliant scarlet, and *L. syphilitica*, light blue, are late summer bloomers, the former exceedingly showy, both of easy cultivation, care being taken to plant the *cardinalis* in moist loam.

Our Lilies, *L. Philadelphicum*, *superbum* and *Canadense*, are long since to be found in every collection of hardy lilies that makes any pretense to completeness.

Campanula rotundifolia, the only one we have that is perennial, unless *C. linifolia* be accepted as a species, is well-known as the Harebell of Europe. It is a pretty graceful plant, grows well in any good garden soil, and yields its bright blue flowers in profusion. This is the flower referred to by Sir Walter Scott :

"E'en the slight Harebell raised its head
Elastic from her airy tread."

We have a large number of pretty things belonging to the Orchis family, several of them of such showy appearance as to make them desirable ornaments of the garden. By giving attention to the preparation of the bed, selecting a cool well shaded locality, and incorporating

with the soil a supply of peaty loam and sphagnum, they can be grown with most gratifying success. They endure any amount of cold, but perish if subjected to severe drouth. Once started they will take care of themselves, yearly increasing in strength and beauty. To the student of nature they are all exceedingly interesting, especially in contrivances found in many to secure cross-fertilization. The following are named as being the most interesting to the decorative gardener: *Orchis spectabilis*, flowers pink purple, undivided lip white, in May. *Habenaria ciliaris*, bright orange yellow, bordered with a long copious fringe, July to September; *H. blephariglottis*, flowers white and also fringed, July; *H. fimbriata*, flowers purple, fringed, June. *Cypripedium candidum*, flower small, white, May or June; *C. parviflorum*, flowers about an inch long, bright yellow and fragrant, June; *C. spectabile*, the most showy of them all, about two feet high, flowers two inches long, three or more on a stalk, white, marked with purplish pink, and last a long time in perfection.

The foregoing will suffice to indicate that we have native plants worthy of a place in ornamental gardening. It is necessarily very incomplete. We have but touched the hem of our Flora's robe. Intentionally only those have been mentioned that seemed most likely to interest those who plant for ornament, and of such only a small part, and that part wholly confined to the flowering plants. Yet, planting for ornament in the eye of one who is a true lover of nature, will not be confined to these. There is marvelous beauty to be found among the flowerless plants. In many of the lawns are to be found places just the thing for ferns. Can anything be prettier than a well arranged fern-border? and we have not far to seek in order to fill such a border with Canadian ferns of graceful form and charming beauty. Can we not do something to quicken into action the love of nature that all possess in greater or less degree, so that the beautiful things indigenous to our climate shall be cherished, not neglected because they are Canadian?

ST. COLUMBA OR COLUM CILLE.

BY REV. NEIL MACNISH, LL.D.

(Read 28th November, 1891.)

IN his Essay on Gaelic literature, language and music, which is to be found in Fullerton's *Scottish Highlands*, Dr. MacLauchlan, the talented translator and editor of the *Dean of Lismore's Book*, thus writes: "It has been often said that the Literature of the Celts of Ireland was much more extensive than that of the Celts of Scotland; and that the former were in fact a more literary people. Judging by the remains that exist, there seems to be considerable ground for such a conclusion. Scotland can produce nothing like the MS. collections in Trinity College, Dublin, or the Royal Irish Academy. . . . We have our doubts as to Ireland having furnished Scotland with its Gaelic population, and we have still stronger doubts as to Ireland having been the source of all the Celtic Literature which she claims. . . . To say that a work is Irish, because written in what is called the Irish Dialect, is absurd. There was no such thing as an Irish Dialect. The literary dialect said to be Irish, is nearly as far apart from the ordinary Gaelic vernacular of Ireland as it is from that of Scotland." To St. Columba and his successors on the Island of Iona, the honour belongs of having during several centuries formed a constant link of connection between the Gaels of Ireland and the Gaels of Scotland. Than the Island of *I* or *Hy*, or *Iona* or *Icolunkill*, there is no place more famous or dearer to all lovers of enlightenment in the earlier centuries of the Christian faith. Iona continued for many generations to be the grand centre whence radiated to various portions of Great Britain, as well as of the Continent of Europe, intellectual and religious light. Dr. Samuel Johnson, who certainly cannot be accused of having or of entertaining any large exuberance of affection for the Scottish Highlands, followed the promptings of his more serious and sensible nature, and thus wrote with regard to Iona: "We were now treading that illustrious island which was once the luminary of the Caledonian regions, whence savage clans and roving barbarians derived the benefits of knowledge, and the blessings of religion. Far from me and from my friends be such a frigid philosophy as may conduct us indifferent and unmoved over any ground which has been dignified by wisdom, bravery or virtue. That man is not to be envied whose patriotism would not gain force upon the plains of

Marathon, or whose piety would not grow warmer among the ruins of Iona."

In the preface to Lluyd's *Archæologia Britannica* which was published in 1707, there are to be found complimentary addresses in Latin verse by Gaelic ministers. Those addresses extol the zeal and learning of the Welsh philologist, and are couched in Hexameters and Alcaics and Sapphics of such tuneful accuracy as to show that the ministers of that time were good classical scholars. The Rev. John MacLean, at that time minister of the parish of Kilninian, Mull, bestowed warm commendations in Gaelic verse on the father of Celtic philology. With regard to the antiquity of Gaelic, he thus writes:

"Si labhair Padric 'nnise Fail na Rìogh
'San faighe caomhs'in Colum naomh tha'n I;
Na Francigh liobhta 'lean gach tir a mbeus
O I na ndeori, ghabh a m'foghlum freimh.
B'i bhoide muinte' Luchd gach duthch is teangth.
Chuir Gaill is Dubhghaill chuic'an tiulsa' n'elonn,
Air Sar o Liath biodh adh is cuimhnn' is buaidh,
Do rinn gu hur a d'usgadh as a huaimh."

Those verses have been happily rendered into English verse:

"T was Gaelic Patrick spoke in Innis-Fayl
And sainted Calum in Iona's Isle,
Rich polished France where highest taste appears,
Received her learning from the Isle of tears.
Ie alma mater, of each tribe and tongue
Once taught for France and Germany their young.
Great praise and thanks, O noble Llwyd be thine,
True learned patriot of the Cumbrian line!
Thou hast awaked the Celtic from the tomb,
That our past life her records might illumine."

The Island of I or Iona or Icolmkill, is on the Western Coast of Argyllshire. A few miles north of it is the Island of Staffa with its wonderful cave, which bears the name of Fingal's Cave. The Giant's Causeway in the north of Ireland may be regarded as a continuation or a reproduction of the same basaltic and many sided columns which go to form Fingal's Cave, though seventy or eighty miles intervene between Staffa and the north of Ireland. North-east of Iona lies the Island of Ulva, famous as the birthplace of the ancestors of the illustrious David Livingstone. Not far from Iona is a group of islands, forming a parish to which the designation, the parish of small isles is given—a parish of which the Rev. Zachary Macaulay, the great-grandfather of Lord Macaulay the English historian, was once minister. To the north-east of Iona lies Morven—a name which every lover of Gaelic associates with

the MacLeods than whom no more patriotic or elegant Gaelic scholars have appeared in this century. Mull, Colonsay, Islay, Jura, Tiree—such are the names of other islands that lie around Iona—islands from which men have repeatedly gone forth, who achieved no small success and renown as well in the strife of arms as in the vigorous prosecution of the peaceful industries and professions of life. Iona is thus situated in the heart of classic ground. It belongs to the Ducal House of Argyll. The present Duke, true to his varied culture, has shown a praiseworthy interest in Iona, and in the preservation of those buildings and graves and monuments which, calling up as they do sacred memories and hoary occurrences, have survived the rude Vandalism of the Scandinavians.

Very great ingenuity has been expended for the purpose of determining what the meaning or derivation of the word Iona is. There can be no doubt that I, pronounced in English *ee*, is the original form of the name Iona. The inhabitants of Iona and of the surrounding islands always apply the name I to the island in question, and thereby furnish the best evidence as to what the original name of the island was. I is a Gaelic word for island, I, *Iunis*, *Innsean*. Flathinnis, a common appellation for *Heaven*, properly signifies the island of the brave or noble men. Latin writers of the time of St. Columba spelled I, the name of Iona, *Hy*, *Hia*, *Hya*, and formed the adjective *Hyensis*, *Huensis*, from it. It appears that the designation *Ioua insula* was frequently applied to Iona. It is said that Colgan, imagining that Ioua was an incorrect form of Iona, substituted the latter word for the former, and thus led the way to the general employment of the term Iona. Fordun supposes Iona to be an adaptation of St. Columba's Hebrew name, "Insula I vel Iona Hebraice quod Latine Columba dicitur sive I Columkill." Adamnan thus writes: "There was a man of venerable life and blessed memory, the father and founder of monasteries, having the same name as Jonah the prophet; for though its sound is different in the three different languages, yet its signification is the same in all. What in Hebrew is Jonah, in the Greek language is called $\pi\epsilon\pi\tau\epsilon\tau\tau\alpha$, and in the Latin Columba." It has likewise been sought to resolve *Iona* into *I thonn*, the Isle of the waves, and into *I shona*, the blessed or happy Isle. It seems altogether better to accept the interpretation that the original word or name I was sometimes written *Ioua*, and that by an easy process *Ioua* came to be written Iona. The island has come to bear another name, Iolumkill, in consequence of the intimate and honourable connection which St. Columba had with the fame and fortunes of the island. *Calum-cille* is the common appellation which St. Columba bears among the Gaels of Scotland. The word *kill*, *ceall*, *call*, is derived from the Latin term *cella*, which among its other significations, has the meaning *shrine* or *chapel*. *Ceall*

in Irish means Church, a cell or place of retirement. It was customary in Scotland until a comparatively recent period, to have a Burying-ground attached to the Church. The ruins of ecclesiastical buildings can be easily detected in the old Burying-grounds of Scotland. The word *ceall* or *cill* has now come to designate the grave or Burying-ground. *Tha è anns a 'chill, he is in the grave*, is a phrase that is of common application to indicate that an individual is dead. *Calum cille* was eminently the apostle of the Picts. He was the leader of a galaxy of Celtic abbots, who with Iona as the centre of their operations in Scotland or in Albin—for Scotia was in those days an appellation of Ireland—exercised a deep and wide-spread influence over a large portion of Scotland, as well as indirectly over the north of England, in addition to keeping in close and constant familiarity the Gaels and Gaelic of Ireland and Scotland.

St. Columba was born at Gartan in the County of Donegal, on the 7th December, 521. He was of royal lineage. His genealogy runs thus: he was the son of Felim, the son of Fergus, the son of Conall the son of Neil of the nine hostages—*Niall naoi' ghiallach*—son of Eochaidh, son of Murdoch, son of Cairbre, son of Cormac, son of Airt, son of Conn of the hundred battles, son of Herimon, son of Mili of Spain. His mother whose name was Eithne was descended from an illustrious King of Leinster. It was thus in a very lordly and influential station that S Columba was born. At his baptism he received the name Colum, to which the addition of *cill* (the genitive of *ceall*) was subsequently made in reference to his diligent attendance at the Church of his youthful associations. When he arrived at a sufficient age, he went to Moville (*Magh bhile*, the lip or margin of the plain) a place that is well known to Canadians who cross the Atlantic. He there became the pupil of the celebrated Bishop St. Finnian. From Moville he proceeded to Leinster, where he was for some time under the instruction of an aged bard called Gemman. After he left Gemman he entered the Monastery of Clonard (*cluan ard*) over which St. Finnian the founder then presided. St. Cargall, St. Ciaran, Caimneach, were his fellow-students in the Monastery; and subsequently at Glas Naoi-thean now Glasneven near Dublin. About the year 553 he founded *Dair magh*, the plain of the oaks, which was his principal and most famous institution in Ireland. In *Leabhar Buidhe Lecain*, this account is given of the reason which induced St. Columba to leave Ireland, and to take up his abode in Scotland. On one occasion St. Colum Cille paid a visit to St. Finnen, of Drom Finn in Ulster, and while on this visit he borrowed St. Finnen's copy of the Psalms. He made a copy of the book by remaining in the Church after the people had left it. He was

detected, and when an appeal was made to the monarch of Erin-Diarmaid MacFerghusa Gerrbheoil, he gave the remarkable judgment which to this day remains a proverb in Ireland, when he said *Le gach boin a boinin*, i.e. to every cow belongeth her little cow or calf, and in the same way to every book belongeth its copy; and accordingly, said the king, the book that you wrote, O Colum Cille! belongs by right to Fiann. That is an unjust decision, O Diarmaid! said Colum Cille, and I will avenge it on you. Complications afterwards came in connection with the rude conduct of Diarmaid, who seized a son of the King of Connacht, and put him to death for a certain offence, and in violation of the immunity which the young prince might claim, forasmuch as he was in the arms of St. Colum Cille. Colum Cille with his great influence had much to do in inciting and in raising an army to oppose Diarmaid King of Ireland. The result of the conflict was that a battle was fought in which the royal army was routed with a great loss, and the monarch returned discomfited to Tara. Diarmaid soon after made his peace with St. Colum Cille, and his friends. The Saint to relieve his conscience went to confession to St. Molaise of Damhninis. St. Molaise then passed upon him the penitential sentence to leave Erin forthwith, and never again to see its land. This penance St. Colum soon performed by sailing to the coast of Scotland with a large company of ecclesiastical students and others. They landed on the island of I or Hy. Eugene O'Curry tells us that in O'Donnell's life of St. Colum Cille regarding the Cathach "the Cathach indeed is the name of the book on account of which the battle was fought, and it is it, that is, Colum Cille's high relic in Tir Conaill; and it is ornamented with silver, and it is not lawful to open it; and if it is carried three times to the right around the army of the Cenel Conaill when going to battle, it is certain that they would come out of it with victory: and it is on the breast of a Comharba, or a priest without mortal sin upon him (as well as he can), it is proper for the Cathach to be at going round that army." We are informed by Bede that "in the year of our Lord 565, when Justin the younger, the successor of Justinian had the government of the Roman Empire, there came into Britain a famous priest, and abbot, a monk by habit and life, whose name was Columba, to preach the word of God to the provinces of the Northern Picts. Columba came into Britain in the ninth year of the reign of Bridius who was the son of Meilechon and the powerful king of the Pietish Nation, and he converted that nation to Christ by his preaching and example whereupon he also received from them the aforesaid Island, i.e. I, for a Monastery." In the Anglo-saxon Chronicle, it is stated that in 565 "Columba a mass priest came to the Picts, and converted

them to the faith of Christ. They are dwellers by the northern mountains and their king gave him the Island which is called Ii, Iona. Therein are few hides of land, as men say. There Columba built a Monastery, and he was Abbot there thirty-seven years, and there he died when he was seventy-two years old."

The ecclesiastical influence and government of St. Columba extended very widely. The names of no less than thirty-seven Churches are given which were founded by him in Ireland, and in which his memory was specially venerated. In Londonderry, Sligo, Louth, Kildare, Dublin Longford, Kilkenny, Galway, and other portions of Ireland, Churches and Monasteries were founded by Columba, so that a very large portion of Ireland was visited by him, and acknowledged his ecclesiastical supremacy. In the kingdom of the Scots, there were thirty Churches or Chapels that were more or less intimately associated with the name of Columba. Among the Picts there were twenty-one Chapels with which Columba had a similar relationship. In the Orkney Isles, in Caithness, Sutherland, Nairn, Aberdeen, Inverness, Perth, Renfrew, throughout the Hebrides and other portions of Scotland, Churches were founded by Columba and his followers, or at least owed allegiance to the apostle of the Picts. From the fact, therefore, that the influence of Columba and his successors in the Abbey of Iona, extended so widely over Ireland and Scotland, may we not with all fairness draw the inference—that the Irish and Scottish Gaels were thus brought very closely together; that as they owed allegiance to the same ecclesiastical superiors, their literature must have been largely identical; that the education which was given in the Irish and Scottish monasteries must have been very much the same; and that the Irish and Scottish Gaels were almost, if not in reality one people, having the same literature and speaking the same language?

That conclusion which seems to be legitimate enough, derives strength from the consideration, that the abbots of *Iona* who came after Columba, were many of them at least of Irish birth, were educated in Ireland, and held honourable and responsible positions in the Churches and Monasteries of that country before they succeeded to the Abbey of Iona. The annals of Ireland record the names of forty-nine abbots or Coarbs of Iona, who exercised the functions of that office from 565 or 563, when Columba took possession of Iona, until 1198 or 1202, when the last abbot, *Giollacrist*, of whom any reliable account is given, wielded the power of abbot. A radical change passed about that time over the ecclesiastical and political affairs of Scotland; and with that change, the great supremacy of Iona ceased.

For more than six hundred years, abbots of Irish birth and education

bore sway in Iona, and contributed very largely towards making the Gaels of Ireland and Scotland, one in language, one in literature, and one in religious belief. In the Monasteries of Iona, Oransa, Archchattan, Uist, Melrose, etc., the Gaelic as well as the Latin language was cultivated. In Iona itself there must have been numerous MSS. of a very valuable character. So far as Scotland, however, is concerned, little or nothing of what must have been an extensive and valuable literature has escaped the ravages of the Scandinavians, and the spoliation of Edward I. in 1296, who with ruthless severity gave orders for the destruction of the records and all those monuments of antiquity which might preserve the memory of the independence of Scotland, and refute the English claims of superiority. To complete his task of literary vandalism, the same monarch subsequently ordered such records or histories as had escaped his former search—the MSS. of Iona doubtless among the rest—to be burnt or otherwise destroyed. Aikman, the translator of Buchanan's History of Scotland, remarks in the preface, "That he has the firm conviction that Buchanan had the use of records which now no longer exist." In foot-notes he also remarks: "I cannot refuse my belief to the assertion that Edward the I. did carry away a number of valuable records pertaining to this period—the loss of which is irretrievable. . . . It cannot be denied that Cromwell swept the country of whatever documents he thought of value. That Edward I. carried away the records of Scotland is allowed, that he preserved whatever suited his own purpose and that we have a list of them is also not denied. . . . What Cromwell carried off cannot be ascertained, but this much is known that several large hogsheads full of papers connected with Scottish history which had been carried out of the kingdom, were shipwrecked in the time of Charles II., in their passage from London to Scotland."

Eugene O'Curry remarks, "That we have three lives of St. Colum Cille written on vellum: one in *Leabhar mor Duná Doighre*, in the Royal Irish Academy; one in the Book of Lismore; and O'Donnell's great life of his patron saint and illustrious relative, now in the Bodleian Library at Oxford." Cuimine Ailbhe, or as Adamnan writes, Cummeneus Albus, who was the seventh abbot of Iona, 657-669, gathered into a small book the leading incidents in the life of Columba: *De Virtutibus Sancti Columbae*. Adamnan who was the ninth abbot, (679-704) wrote another life of St. Columba. It is written in Latin and is divided into three books. Alcuin places Adamnan in the same category with the most eminent men of his nation.

Patricius, Cheranus, Scotorum gloria gentis,
 Atque Columbanus Congallus, Adamnanus atque,
 Praeclari patres Morum Vitaque Magistri.

The candid reader of Adamnan's life of Columba cannot receive as undeniable truth all the prophecies and miracles which he ascribes to Columba. Even the Apostles of Jesus Christ had no higher or stronger supernatural gifts than are continually assigned to Colum Cille by Adamnan. We must assign to the credulous spirit of that age much of what is marvellous in the work of Adamnan. In his preface to the third book, he adds that in the first book, he related some of the prophetic revelations which were made to Columba; that in the second book, he recorded the powerful miracles which the blessed man wrought; and that in the third book he will describe the apparition of angels which either Columba received regarding others, or others saw regarding him. That the tenor of Adamnan's life of Columba may be better understood, I shall make a few citations from it. As a specimen of the prophetic power of the Saint, his prophecy regarding the poet Cronan may be cited. "At another time, says Adamnan, as the Saint was sitting one day with the brothers beside Loch Cé (Lough Key in Roscommon) at the mouth of the river called in Latin Bos (Boyle), a certain Scottish Poet came to them, and when he had retired after a short interview, the brothers said to the Saint: Why didst thou not ask the Poet Cronan before he went away, to sing us a song with accompaniment according to the rules of his profession? the Saint replied, why do you even now utter such idle words? how could I ask that poor man to sing a song of joy who has now been murdered, and thus hastily has ended his days at the hands of his enemies? The Saint had no sooner said these words than immediately a man cried out from beyond the river. 'The poet who left you in safety a few minutes ago, has just now been met and put to death by his enemies.' Then all that were present wondered much and looked at one another in amazement." With regard to the miraculous power which St. Columba wielded, Adamnan writes, "Our belief in the miracles which we have recorded but which we did not ourselves see, is confirmed beyond doubt by the miracles of which we were eyewitnesses; for on three different occasions we saw unfavourable gales of wind changed into propitious breezes." As the account which Adamnan has given of the closing scenes in the life of Colum Cille has been very much admired, I shall make a few extracts from it. "In the end then of this same week, that is, on the day of the Sabbath, the venerable man and his pious attendant Diormit went to bless the barn which was near at hand. When the Saint had entered in and blessed it and two heaps of winnowed corn that were in it, he gave expression to his thanks in these words, saying: 'I heartily congratulate my beloved monks that this year also I am obliged to depart from you. You will have a sufficient supply for the year. This day in the Holy Scriptures is called the

Sabbath, which means rest, and this day is indeed a Sabbath to me; for it is the last day of my present laborious life, and in it I rest after the fatigues of my labours, and this night at midsummer, which commenceth the solemn Lord's Day, I shall according to the saying of Scripture, go the way of our fathers. For, already my Lord Jesus Christ deigneth to invite me, and to Him I say in the middle of this night shall I depart at His invitation, for so it hath been revealed to me by the Lord Himself." The attendant hearing those sad words began to weep bitterly, and the Saint endeavoured to console him as well as he could. Then leaving this spot, he ascended the hill that overlooketh the Monastery, and stood for some little time on its summit, and as he stood there with both hands uplifted, he blessed his monastery, saying: 'Small and mean though this place is, it shall be held in great and unusual honour, not only by Scottish kings and people, but also by the rulers of foreign and barbarous nations and by their subjects. The saints also of other Churches shall regard it with no common reverence.' After those words he descended the hill, and having returned to his Monastery sat in his hut, transcribing the Psalter, and coming to the verse of the 33rd Psalm, (English version 34th Psalm), where it is written: They that seek the Lord shall want no manner of thing that is good. 'Here,' said he, 'at the end of this page I must stop, and what follows let Baithue write.' Then as soon as the bell tolled at midnight, he rose hastily and went to the Church, and running more quickly than the rest he entered in alone, and knelt down in prayer beside the altar. At the same moment his attendant Diormit, who more closely followed him, saw from a distance that the whole interior of the Church was filled with a heavenly light in the direction of the Saint, and as he drew near to the door, the same light he had seen, and which was also seen by a few more of the brethren standing at a distance, quickly disappeared. Diormit, therefore, entering the Church cried out in a loud voice, 'Where art thou Father?' and feeling his way in the darkness, as the brethren had not yet brought in the lights, he found the Saint lying before the altar, and raising him up a little, he sat down beside him and laid his holy head in his bosom. Meanwhile, the rest of the monks ran in hastily in a body with their lights, and beholding their dying father burst into lamentations, and the Saint as we have been told by some who were present, even before his soul departed, opened wide his eyes and looked round him from side to side with a countenance full of wonderful joy and gladness, no doubt seeing the holy angels coming to meet him. Diormit then raised the holy right hand of the Saint that he might bless his assembled monks, and the venerable Father himself moved his right hand at the same time as well as he was able, that as he could not in words while his

soul was departing, he might at least by the motion of his hand, be seen to bless his brethren; and having given them his holy benediction in this way, he immediately breathed his last. After his soul had left the tabernacle of the body, his face still continued ruddy and brightened in a wonderful way by his vision of the angels, and that to such a degree that he had the appearance not so much of one dead as of one alive and sleeping. Meanwhile the whole Church resounded with loud lamentations of grief."

The very intimate relationship which obtained during many centuries between the Gaels of Scotland and the Gaels of Ireland, can be further exemplified by the prevalence of names of persons and places—names which were derived from prominent Irish Ecclesiastics who were wont to visit Scotland or to reside in that country.

From Calum comes Malcolm, *Maol*, a servant, and Calum, the servant of Columba.

MacCallum, MacGhille Chaluim, the son of the servant of Columba.

Paterson, MacGhille Phadruig, the son of the servant of Patrick.

MacLennan, MacGhille Fhinnein, the son of the servant of St. Finnan.

MacLellan, MacGhille Fhoalain, the son of the servant of St. Fillan.

MacMillan, MacMhaoilaon, the son of the little servant or of the bald one.

Very frequent in Argyllshire at least is the occurrence of names of Churches and parishes, and places which have an unmistakable connection with Irish ecclesiastical dignitaries.

If we begin at the south of Kintyre or at that portion of Argyllshire which is within easiest reach of Ireland, we shall find that Irish names are continuously present.

Sanda, Sancti Adamnani Cella: the Cel' or Church of St. Adamnan. MacCulloch in his Highlands and western Isles of Scotland, observes that Sanda was a common station for the Scandinavian Fleets, during the contest so long ago carried on for the possession of Cantyre, and the neighbouring islands. The name *Avona* or *Avon* by which it was known is a corruption of the Danish *hafn*, a *haven*.

Kilellan, the cell or church of St. Fillan.

Killonan, the cell or church of St. Adamnan.

Kilkerran, the cell or church of St. Ciaran.

Kilchriost, the cell or church of Christ.

Kilkenzie, the cell or church of Cuineach or Coinneach.

Killeán, the cell or church of St. John.

Kilcalmonell, the cell or church of Colum Cille.

Kilchoman, the cell or church of Caomhan.

Kilmartin, the cell or church of St. Martin.

Kilmichael, the cell or church of St. Michael.

Kilbride, the cell or church of St. Bridget.

Kilmory, the cell or church of Mary.

Kilfinnan, the cell or church of St. Finnan.

Kilmacolm, the cell or church of Calum Cille, is the name of a place near Port Glasgow.

Kirkholm, the kirk of Calum Cille, is the name of a place in the south of Scotland.

Inchcolm, the island of Calum Cille.

In addition to Iona, there were other islands in the neighbourhood which were under the immediate control of Columba and his successors. It is difficult to identify all the islands that are mentioned by Adamnan, owing to the difference between the Latin names which he gives to them, and the Gaelic names by which they are better known. On *Tiree*, a flat island west of Iona, there was a Monastery at *Magh Luinge*, or at the plain of the ship. Adamnan gives to *Tiree* the designation of *Insula ethica*. Various derivations have been assigned for the word *Tiree*. Some have maintained that the second Gaelic syllable *ithe* means island; and that therefore, *Tiree* means the land of the island; for there can be no doubt that the first syllable *tir*, signifies *land*. Others suppose that the second syllable stands for Aodha or Hugh, and that thus *Tiree* means the land of Hugh—an explanation which finds its counterpart in *Tirhugh* in Donegal. In consequence of its great flatness, *Tiree* has been styled *Ruigheachd barr fo thuinn*.

In the number of the *Teachdaire Gaidhealach* for January, 1831, there is a beautiful poem bearing the name *Iul an Eileanaich*, and having reference to *Tiree*, and to the difficulty of seeing it from even a short distance when the storm is raging and darkness is on the deep. There is in Irish a word *ith*, which signifies corn. From *ith*, *ioth*, *eatha*, *etha*, Adamnan doubtless formed the adjective *ethica*, so that his name of *Tiree Insula ethica*, means the island of the corn, or the productive island, and that the correct explanation of *Tiree* is *tir* and *ithe*, the land of the corn.

The Topography of Iona furnishes an indissoluble link between the Gaelic of modern days and the Gaelic which Calum Cille and his monks and their successors were wont to speak.

It is only natural that the names of places should be subjected to an imperceptible process of polish and attrition, as the language to which they belong is undergoing development; because such words are in continual use and are modified according to the growth of language. There can be no greater difference between the names of places in Iona as they were wont to be pronounced by Calum Cille and his successors, and as they are pronounced by the modern Gael, than obtains between the robust and rugged verses of Chaucer, and the musical and polished rhythm of the poems of Tennyson. Among the topographical names of Iona are these :

Aird, height.

Am bealach mor, the large gap or opening.

Blar buidhe, the yellow plain.

Carnan buidhe, the yellow heap.

Carn cul ri Eirinn. The heap with its back to Ireland.

Carraig a' Chaolais, the rock of the straits.

Cladh an Discart, the cemetery of the deserted place.

Cnoc an tobair, the hill of the well.

Cnoc na h-analach, the hill of the breath, the steep hill.

Dusgeir, the black rock.

Eilean nan con, the island of the dogs.

Fang Mhaolain, the enclosure of the brow of the hill.

Goirtean Tomhair, the field of protection.

Iomaire nan righ, the ridge of the kings.

Loch Staonaig, the loch of the juniper berry.

Cnoc Odhrain, the hill of Odhran.

Reilig Odhrain, the burying-place of Odhran.

Port a' churraich, the harbor of the Coracle.

Maol nan uan, the bare place of the lambs.

Sron Iolaire, the eagle's nose.

Sruth a' mhuillinn, the stream of the mill.

Tigh an Easbuig, the Bishop's house.

Tobar na h-aoise, the well of age.
 Uamh an t-scídidh, the cave of blowing.
 Uamh nan calman, the cave of pigeons.
 Uamh na Caisg, the cave of Easter.
 An uiridh riomhach, the splendid bed.

According to Adamnan, Columba was much devoted to writing. Three Latin Hymns are attributed to him. In the Burgundian Library at Brussels, there is a collection of some fifteen poems which bear his name. In the Bodleian Library at Oxford, there is a manuscript which it is said, "embraces everything in the shape of Poem or fragment that could be called Columba's, and that industry was able to gather together at the middle of the sixteenth century." A collection bearing the name, *The Prophecies of St. Columb'Kille*, was published in Dublin in 1856. Competent scholars, like Eugene O'Curry, strongly maintain that many of the poems which bear the name of Colum Cille are forgeries, and are on grounds of internal evidence to be assigned to a comparatively modern date. The *Altus Prosator—Hominum Sator atque Deorum*—is the name of a celebrated poem or hymn, which was written by St. Columba in Iona in honor of the Trinity, when the messengers of Pope Gregory came to him with the great cross and other presents. A careful edition of the *Altus* has been published by Dr. Todd, one of the best Irish scholars of our time.

In *Leabhar na h-Uidhri*, a copy of which is in my possession, *Amra Colum Cille* or the elegy of the poet Dallan Forgaill on the death of St. Columba, is contained. There is also a poem of eight verses which is attributed to St. Columba himself. It begins with the words, *Dia ar d airlethhar*, May the High God advise us.

The Gaels of Scotland are familiar with the sayings which have been assigned to St. Columba regarding women. "Far am bi bo, bithidh bean, agus far am bi bean, bithidh mallachadh. Where a cow will be, there will be a woman, and where a woman will be, there will be cursing." It is said that Columba compelled the workmen, who were employed by him in the erection of various buildings in Iona, to reside on the shore of Mull, that the female members of their families might not come to Iona.

His well known prophecy with regard to the future fortunes of Iona has been thus happily paraphrased:

An I mo chridhe, I mo ghnaidh,
 An aite guth manaich, bithidh geum ba,

Ach mun tig an saoghal gu crìoch,
Bithidh I mar a bha.

O sacred dome and my beloved abode!
Whose walls now echo to the praise of God;
The time shall come when lauding monks shall cease,
And howling herds here occupy their place.
But better ages shall hereafter come,
And praise re-echo in the sacred dome.

Tradition has it that forty-eight Scottish kings, four Irish monarchs and eight Norwegian princes were interred in Iona, and that so marked a preference for Iona as a place of interment was the result of this prophecy of Columba.

Seachd bliadhna roimh 'n bhrath,
Thig muir, thar Eirinn re aon tràth;
'S thar Ile ghuirn ghlais,
Ach snamhaidh I Cholum clairich.

Seven years before that awful day
When time shall be no more,
A watery deluge shall o'ersweep,
Hibernia's mossy shore.
The green clad Islay too shall sink,
Whilst with the great and good,
Columba's happy isle shall rear
Her towers above the flood.

DÉNÉ ROOTS.

BY THE REV. FATHER A. G. MORICE, O.M.I.

(Read 21st November, 1891.)

I.—INTRODUCTION.

Comparative Philology considered as a distinct science cannot boast of a very ancient origin. As late as a hundred years ago, it was still in its infancy. Of course the study of languages for the sake of philological deductions had been prosecuted long before with varying success. As far back as A.D. 1563, Pigafetta, the naive chronicler of Magellan's discoveries, enriched his narrative with three vocabularies of foreign tongues*, and his example was followed by some later navigators. Missionaries also walked in his footsteps, though they generally paid more attention to texts than to words, some of them concentrating their efforts towards the collecting of the Lord's Prayer in as many languages as possible. Yet it is to Leibnitz that we must look for the first author of repute who applied himself to the systematic study of foreign tongues with a view of deducing therefrom ethnological conclusions. "Je trouve," he says in a letter to Father Verjus,† "que rien ne sert d'avantage à juger des connexions des peuples que les langues. Par exemple, la langue des Abyssins nous fait connaitre qu'ils sont une colonie d'Arabes." Lacroze‡ and Reland,§ his followers in the same scientific field, pursued their studies animated by a like spirit and reached similar conclusions.

However, it was not until the reign of Catherine II. of Russia that Comparative Philology began to assume a separate and concrete form. That monarch drew out a list of one hundred Russian words and had them translated in as many languages as possible. She soon discovered unexpected affinities, and with her own hand drew up comparative tables. About the same time, Dom Pezron, a learned Benedictine, showed by numerous examples that many words of the Greek language have a Celtic origin. "Vous serez surpris," he wrote to a friend, "quand je vous dirai que j'ai environ sept ou huit cents mots

* *Navigazioni e Viaggi raccolti già M. Gio. Bat. Ramusio, Ven. 1563.*

† *G. Leibnitzii opera omnia, edit. Dut. Vol. VI., Part II., p. 227.*

‡ *Commerce, Epistol. tom III., p. 79, Leipz. 1742.*

§ *Ubi supra, p. 78.*

Grecs, je dis de simples racines, qui sont tirés de la langue des Celtes, avec presque tous les nombres. Par exemple, les Celtes disent *dec*, dix, et les Grecs *δέκα*. Les Celtes disent *pemp*, cinq, et les anciens Grecs Éoliens *πεντέ*. Les Celtes disent *pedwar* ou *petoar*, quatre, et les Éoliens *τέτραπέ*. Les Celtes disent *undec*, onze; *dloudec*, douze, etc. Les Grecs, *εἰδέκα*, *δωδέκα*, etc. Jugez du reste par cet échantillon."* Another pioneer in the Comparative-philological field, Col. Vans Kennedy, wrote a work wherein he quotes nine hundred words common to Sanskrit and other idioms. Lastly, in the early years of this century, the German Francis Bopp, in his *Das Conjugationssystem*, instituted a comparison between the grammatical systems of Sanskrit, Greek, Latin, Persian and German which won for him the title of founder of Comparative Philology.

The paramount importance of such studies is evident, inasmuch as even those scholars who deny the common origin of the human race allow that identity or similarity of language between nations however distant cannot be the result of mere chance, but proves some real connection of origin or early relationship. Nor have believers in the original unity of man's mind ever failed to perceive it. "It is then," says Abel Rémusat, "we should be able to pronounce with decision what, according to the language of a people, was its origin, what the nations with which it has stood in relations, what the character of those relations was to the stock it belongs to."†

These researches which brought forth such valuable ethnological and archaeological results in connection with peoples, as the European and most of the Asiatic nations, whose historical data are embodied in well authenticated records, cannot fail to prove at least as useful relatively to such races as the American tribes which have no other history than a few vague and disconnected legends and traditions. Nay, it might almost be said that Comparative Philology is in their case the only beacon which can throw any light upon their origin, their migrations and their connection with the other branches of the human family. Unless, of course, we choose to believe in their autochthony and thereby reject the only authority upon which we can depend as upon an unerring guide, I mean the inspired Books. For, as there is on our planet but one species of man, and as the Bible furnishes us with only one Genesis, it follows that, unless we regard the American continent as the cradle of the human race—which I think nobody is prepared to do—we must look to the old world for the birth place of our Aborigines.

*Encyclopédie ou Dictionnaire universel raisonné, art. Celtes.

†Recherches sur les Langues Tartares, Vol. 1., p. XXIX.

And let nobody say that, because the American facies and physique in general are somewhat different from those of the nations of Europe and Asia, we must conclude to a diversity of origin as well as of race. Have we not in our own Indo-European family types more dissimilar than those which characterize the American and some Asiatic races? Surely nobody will deny that a North American Aborigine is physically more alike to a Samoyed or a Mongolian than the inhabitants of the Indian peninsula resemble either a German or a Greek*. Even in such ethnological subdivisions as the Celtic and the Italic, we find notable differences of type and complexion. Yet nobody ever dreamt of considering, for instance, the Irish or the Saxons, and the French or the Italians as the products of two distinct creations.

The question then for the Christian ethnographer is: Since we cannot regard the American tribes as autochthonous, in what part of the old world are we to find their parents or relatives? Many have been the answers to that query, and the opinions of Americanists have been so varied and contradictory that the student is fairly puzzled as to which is the most plausible. Grotius, de Laet, Garcia and others discussed it in their days with more learning than judgment. To Brerewood, Korn, Jefferson, Charlevoix, Buffon and Cuvier, the red skins were nothing else than expatriated Mongolians or Scyths. Foster even designated the Tartar emperor Kublai-Khan as the virtual colonizer of the New World. Mitchell made the North American Indians regular Samoyeds. During the last century and early in this, a number of writers, treating many primitive usages of mankind as particularly Jewish, endeavoured to prove that the Americans were descended from one of the twelve tribes.

But, without disregarding what there might be of truth in any of these conflicting theories, it must be confessed that sociology is of itself utterly unequal to the task of solving such a problem. Comparative Philology, alone of all the kindred sciences, can claim the right and ability to do so. It was thus understood by the judicious Reland who may be regarded as one of the first to collect from travellers specimens of American languages.† Later on, Smith Barton made considerable progress in the attempt to compare words in the American dialects with terms found among the nations of Northern and Eastern Asia. "In 83 languages examined by Barton and Vater, 170 words have been found the roots of which appear to be the same; three-fifths resemble the

* The facial similarities of the Mongolians and some American natives are so striking that I know of persons who mistook in my presence British Columbia Indians for Chinese.

† *De linguis Americanis*, Traject. 1708.

Mantchou, the Tongouse, the Mongul and the Samoyed."* I do not speak of more recent and better known Americanists such as Gallatin, Humboldt, Schoolcraft, Gibbs and a host of others—without mentioning those who are still living—whose researches and judicious studies have illustrated American science. All of them concur in the opinion that the most infallible sign of the congenerousness of two Indian tribes is the similarity of their speech.

What Smith Barton did for the Iroquoian, Siouan, Muskogean and other languages may, I think, be repeated in favour of the Athabaskan or Déné idioms. Or indeed it may be that our own efforts will simply be the continuation of what he commenced himself; for I am not aware of the nature of all the dialects he examined. Be it as it may, his move being certainly a step in the right direction, I beg to enrol myself as one of his humble followers. I live in the midst of Indians who belong to an Aboriginal family roaming over thousands of miles in the North West of British America. In that immense expanse of country we find many congenerous tribes which cannot understand each other, and yet from the territory of the Loucheux of Northern Alaska to the plains bordering on the Chilcotin river in Southern British Columbia, words expressive of those primaries of Indian life such as beaver, bear, canoe, and of the objects of simplest import as water, fire, stone, etc., are singularly similar when not altogether identical.

This almost perfect homonymy has ever struck me as a circumstance of the utmost importance to the ethnologist. For if we are to discover in any corner of the globe races connected with our Dénés by direct or parallel descent from a common stock, it seems to me that it must be through the medium of these fixed, immutable and probably very ancient root words. And I dare hope that this assumption will bear the most rigid criticism. For were we to suppose for an instant that, owing to some impossible cataclysm, we are suddenly deprived of the least historical records relating to the civilized nations, how could we, for example, reconstitute the ethnological map of Europe otherwise than with the help of the roots of the languages spoken by its inhabitants? In like manner, had not the roots of the liturgical Coptic tongue been identical with the Egyptian of the Pharaohs of old, the key to those mysterious hieroglyphics which for centuries puzzled generations of savants would still be sought after. The basis for comparison failing, no practical result could have been obtained.

Therefore, instead of presumptuously building up hasty theories before

*Al. von Humboldt, *Views of the Cordilleras*, Vol. 1.

we have amassed and impartially collated reliable data, as Abel Rémusat accuses some writers of doing,* I take the liberty of laying before the scientific world the following list of roots extracted from the vocabulary of a dozen or more Déné tribes. May I be permitted to respectfully request lovers of philological and ethnological lore to examine them patiently, and most earnestly beg of those who are in a position to do so, to carefully compare them with terms of Asiatic languages, more especially with those of the Turanian stock? Should any Déné words be found to have sufficient phonetic similarity to synonymous terms from heterogeneous tongues to allow of ethnological argument, I would consider it a very great favor if the discoverer of such affinities were pleased to send me† or the Canadian Institute the result of his researches.

I am well aware that terminology is not of itself what entirely constitutes a language. We must reckon also with its grammar and syntax. But, in the first place, I have already given an outline of the grammatical aspect of the Déné idioms‡ which my kind co-operators might consult perhaps to advantage. Then we should not lose sight of the following words of a great authority on the subject: "It appears that nothing whatever could be inferred with respect to the relations of two languages from the coincidence of the sense of any single word in both of them, and that the odds would be three to one against the agreement of two words; but if three words appear to be identical, it would be then more than ten to one that they must be derived in both cases from some parent language or introduced in some other manner. Six words would give more than 1,700 chances to one, and eight almost 100,000 chances; so that in these cases the evidence would be little short of absolute certainty."§ Moreover, some instances seem to warrant us in maintaining that under the pressure of peculiar influences a language may undergo such alterations as that its words shall belong to one class and its grammar to another. In other words, though the grammatical structure of the Déné dialects differs from that of other idioms wherewith they are terminologically co-affin, it would not follow that the relations to the latter would be philologically worthless.

This being premised, I shall now proceed to offer a few remarks to facilitate the intelligence of the following vocabulary and bring out into

* Ici comme ailleurs, on a commencé par bâtir des systèmes au lieu de se borner à l'observation des faits." Recherches sur les Langues Tartares, Paris, 1820, p. xviii.

† Stuart's Lake Mission, 771 Ashcroft and Quasnelle, British Columbia.

‡ Transactions Canadian Institute Vol. I., Part II., 1891, p. 170.

§ Alex. von Humboldt, ap. Klaproth, Asia polyglotta, p. vi.

greater relief the similarity or even identity of the root words which compose it.

1. One great principle of the Déné phonetics which should never be lost sight of is that in those dialects, as in the ancient Semitic tongues, the vowels are transmutable, and therefore, except in a very few cases, no importance whatever should be attached to them. To still better illustrate this peculiarity, I have gone to the trouble of writing down after each separate set of synonyms the real root (marked RR.) which lies at the bottom of each of them. Had I crowded said lists with all the roots which I had at my disposal, the evidence of this principle would have been still more apparent. Initial consonants, that is those which begin *any* syllable, contain the quintessence of the word, sometimes in common with the final consonant which, however, may be said to have but a relative importance.

2. Of the radical consonants, some are interchangeable in any single dialect through the whole linguistic stock to such an extent that they are not differentiated by the natives of any tribe. To this class belong B and P, T and D, K and G, T_l and K_l or 'Kl. A Déné ear perceives no difference whatever between, for instance *pés* and *bés*, "knife;" *ta* and *da*, "lip;" *ku* and *gu*, "worm;" *l'a* and *k'a*, "bottom." Such is not the case with transmutable consonants of the second class. These are invariable within the vocabulary of the dialect which they characterize, but change from tribe to tribe. Pronounce, for example in the presence of a Carrier Indian the word *Na-'kra-ztli-'ten* and he will at once understand you as saying in his own idiom, "people of Na'kraztli" or Stuart's Lake. Change it now into *Na-'kra-ztli-'qén*. He will still understand you, but will remark that you now speak in a different dialect and if he is at all acquainted with the idiom of the Sikanais, he will recognize that word as belonging to it. Radical consonants of this class are 't which is convertible into 'q; 't's, into 'kw and 'q; ts into kw, kfw and tc. In a few cases, initial n is also convertible into y, and small bands of Rocky Mountain Dénés as well as the large tribe of the Loucheux or Ku-tchin* likewise change the original p common to all the dialects into a regular r which is proper to themselves. Therefore the phonetic difference between such words as *tsi*, *ckfwi* and *itci* is more apparent than real. They are all the monosyllable *tsi* modified by the phonology of the Hare and a few other tribes into *kfwi*, while the Loucheux change the *ts* into its co-relative *tc* and say *itci*.

3. As for the initial vowels *a*, *e*, *i*, to which we should add the prefixes

*Pronounce, *ku-'qin*.

kuwo, ko, kwō, etc., they are meaningless accretions which, strictly speaking, are not component parts of the words and which should be treated as if they did not exist. They are proper to a few nouns expressing objects of simple import among which we must count the names of the different parts of an animal body. When the words refer to a human being their prefixes are changed into *ne, ni; ti, tin, tēy*, etc., according to the dialects, and they disappear altogether when said nouns are preceded by another word forming therewith compound nouns, as '*kre-tan*, "birch-leaf," instead of '*kre-tan*.'

4. Of non-initial consonants, *s* is sometimes converted into *w* and *r*, while the first *t* in quite a number of monosyllables is changed into *r*. *Apropos* of *s*, I should remark here that in such works as *et'quze*, "vein," *e'tuze*, "skin," etc., that letter should not be considered as initial relatively to the last syllable of the word, the final *e* being a mere accretion characteristic of certain dialects. The real words are '*quz* and '*tuz*. Thus pronounced they will be understood by most of the tribes.

5. As for the value of the letters with reference to the sense of the words, a close examination of the following vocabulary will disclose the fact that, in all the dialects, connection with water is expressed by an initial *th*: *thu*, water; *thit*, bottom of the water; *tha-tsi*, wave, etc. Besides, a *t* suffixed to certain nouns or pronouns adds to their original meaning that of reference to place.* For instance, in Carrier, *thu* means "in the water," when we suffix a *t* thereto (*thut*); *e*, "it" becomes "at it," that is, "there" with the same addition. *Ayu*, "another (thing)" Tciḵkohtin, signifies "at another place," i. e., "elsewhere" when changed into *ayut*. *s* and *z* in a similar position denote derivation from the place expressed by the word to which they are suffixed. Ex.: *nlo*, "above"; *nləs*, "from above"; *nu*, "in the direction of the head of the water"; *nuz*, "from the same direction," etc. For more detailed remarks concerning the value of letters in Déné, I take the liberty to refer the reader to my paper on "The Déné Languages."

6. The main, and generally only, root of the verbs contained in the following vocabulary, is to be found in their last syllable which, in a number of cases, is subject to radical variations. This applies also to the adjectives which, with barely two or three exceptions, are regular verbs. I give the verbs in the first person singular of the indicative present—there is no infinitive—and the adjectives in the third person of the same mode tense and number.

* A final *k* performs the same function in relation with some nouns. Ex.: *ta-thi*, "doorway"; *ta-thik*, "in the doorway."

7. The capital letters within parentheses denote the particular tribe to which the preceding root belongs. Here is a list of all the tribes quoted in the vocabulary together with their habitat :—

ABBREV.	TRIBE.	HABITAT.
A.L.	Alaskan Loucheux	Alaska.
B.	Beavers	Peace River east side of the Rockies.
Bab.	Babines	Babine Lake & "Rocher Déboulé," B.C.
B.L.	Bastard Loucheux	Northern McKenzie District.
C.	Carriers	Stuart's Lake, North and South, B.C.
Ch.	Chijkhoh'tins	Chilcotin River, B.C.
D.R.	Dog Ribs	Between Gt. Slave & Gt. Bear Lakes.
H.	Hares	McKenzie, Anderson, McFarlane Rivs.
L.	Loucheux or Kut-chins	MacKenzie River, 67° and northwards.
L.C.	Lower Carriers	South of Stuart's Lake, B.C.
M.	Montagnais or Chipewayans	Lake Athabaska, etc.
N.	Navajos	Arizona and New Mexico, U.S.A.
Na.	Nah'anés	Stickeen River and east.
R.M.	Rocky Mountain "Montagnards"	Rocky Mountains, about 60° N.
S.	Sékanais	R. Mountains from 54° to 57° W. and E.
V.L.	Variety of Loucheux	MacKenzie River and Alaska.
Y.K.	Yellow Knives	North East of Gt. Slave Lake.

Various other less important tribes are also represented without credit through several words of the vocabulary. My principal aim in introducing the above initial capitals in the vocabulary is, in most cases, to point out the wonderful homophony which reigns between dialects of tribes separated sometimes by thousands of miles.

8. All the words proper to the Eastern dialects are extracted from Petitot's *Dictionnaire de la Langue Déné-Dindjé*.^{*} For the sake of uniformity I have taken the liberty to re-spell them according to the requirements of my own orthography. For most of the Navajo terms I am under obligation to Dr. W. Matthews' "Mountain Chant," published in a late volume emanating from the Smithsonian Institution.† Shall I confess in this connection that the irregularity of some radical and, in all the other dialects, unchangeable consonants entering into the composition of those words would lead me to suspect that such delicate, but very important, sounds as t's, 'k, ɬ, may possibly have escaped the notice of the compiler? Those and many other terms in the said Mountain Chant are, in other respects, so similar to synonyms from the Northern Déné dialects as to hardly leave me any other way of explaining away the discrepancies between, for instance, the Navajo roots Nos. 3, 76, 84, 185 and 327 and their equivalents in the other dialects. If I

^{*}Paris, Ernest Leroux Editeur, 1876.

†Vth Annual Report of the Bureau of Ethnology, p. 379.

am mistaken in my assumption, these alterations of essential consonant sounds afford the comparative philologist data well worth some moments of study.

9. As for the phonetic value of letters, it is as follows:—The vowels are pronounced as in Italian except *ɔ*, which is equivalent to the *e* in the French words *je, te, le, me*; *ɛ* corresponds to the vowel in the French “mets;” *è* to the *e* of English “ten.” Phonetic accents (*â, î, ô, ù*) as in French. The consonants have generally the English sound except the following:—*g* is always hard; *j* is sounded as in French; *ɟ, ɟ* are very guttural; *ʎ* is a peculiarly sibilant *l*; *ɲ* is nasal, but its sound is usually followed by that of a common *n*.* *Q* almost corresponds to *ty*, both letters being consonant and simultaneously pronounced. *R* is the result of uvular vibrations and in such compounds as *kr, yr, 'kr*, it is hardly audible. *Th, kh*, are equivalent to *T plus h* and *k plus h*. The apostrophe before certain consonants represents the Indian exploding sound. *C* is the English *sh*: *tc* is the English *ch* in church. There are two principal diphthongs: *au* and *ai*, pronounced respectively as the *ow* of “how” and the *i* of “mire.”

10. Initial or terminal *ʎ* is changed into *l* or *ʎ* when the word is in the possessive case, and initial *ɲ* likewise becomes *r* in the possessive.

II.—VOCABULARY.

- 1 **Man** (homo)Déné, dinè, danè, dunè, dena, tane (C), tani (Ch), tana (N), dunyè (Esp.); dindjyé (L.) tey in compos.=RR.: d-n-, t-n-
- 2 **Man** (vir).....dènè-yu (M.), dènè-ju (S.), dènè-yi (B.); dene-liñè (H.): dindjyé-yu and Tikrèñ (L.); taysz (Ch.)=RR.: y-, i-, tiñ-
- 3 **Woman**T'sè-khè, t'sè-khu, t'sè-kwi (M.), t'sè-ndjò (L.); t'sè-liñè (H.); t'sò (A.L. and S.); Tei-ké? (N.); ekhué (R.M.) =RR.: t'-k-
- 4 **Child**ɟskhe (L.C.) 'eskhè (Bab.), eskha (B.), êkhé (H.), ekyé (D.R.); t'sútàn (C.), t'siñto, t'sidoñé (B.); t'siya and t'siñè (L.); a-cike (N.)=RR.: -skh-; t's-t-n
- 5 **Young man** (juvenis)Tei plur. Teilkhe (C.), teç plur. teçlekhe (Ch.), teilekwi (M.) tsilké (N.) tsteia (L.)=RR.: te-ik.
- 6 **Girl** (puella)Tèt plur. 'tèdèkhò (C.), 'tyede (A.L.) 'téro (D.R.), e'tte (B.), e'ttedu (S.), e'ttede-kwi (M.), e'ttede-khe; t'se-liñ (S.)=RR.: t-t
- 7 **Father**ɟtha, thy'ñ (L.), theni (V.L.); əpa (C.), əpép (t'ab.)=RR.: -th-; -p-
- 8 **Mother**ɟrañ, əroñ; emañ, emoñ; enañ (R.M. (əpan (Ch.); 'ellu. (C.)=RR.: -ñ; -p-n; -llu.

*In Tei'khoh'tin, *ñ* is the equivalent of the French nasal *n* in such words as *entends, sei n, sen*

- 9 Son (said by mother) ʒyaz, eyaze, yaji (N.), eja (S.), eyañ (H.), ezaze (D.R.); ikhi (L.);=RR. -ya-
- 10 Son (said by father) ʒyé, eyéssé, eñle (V.K.); etcune (H.); izjyow (L.)=RR.: -y-; -ch-n-
- 11 Daughter (said by mother) . ʒya-t'ʒé (i.e. "little one—feminine) (C.), et'sóá (Na.), yet'si (L.), et'sale (V.L.); ethue (H.), ihiñ (L.); ʒan (A.L.); =RR.: y-t's-; -t's-; -th-
- 12 Daughter (said by father) . . ʒtsé, tzoé=RR.: -ts.or-tz. *
- 13 Grandfather ʒtsiyan, etsiyé, etséé, itsi (L.); asse (B.)=RR.: -ts-y-
- 14 Grandmother ʒtsu, et-un, etsune, etsuneta (B.); assun, esson (L.)=RR.: -tsu-; -ssun
- 15 Grandchild ʒtcai, etcéy (L.), etca-aze (M.), etcaze (B.); ekfwie (H.), ekfuié (B.L.)=RR.: -tca-; -kfw-
- 16 Brother (elder) ʒná (C.), nai (N.), unare (M.), oñre (Bab), uñ laré (S.); güntyé (H.), iyondé (L.)=RR.: un-; yunt-
- 17 Brother (younger) ʒtcal, ʒtecl, etcéle, etcile; t'sili (N.)=RR.: tc-l-
- 18 Sister (elder) are, tare, etare: ʒyat, elji (L.); eʒoa (S.)=RR.: -are.
- 19 Sister (younger) ʒtiz (Ch.), edéze (M.). etyéze, eti-zé, edjyéz (L.), ʒtis (C.)=RR.: -t-z-
- 20 Uncle (maternal) ʒz'c, e'c, e'én, o'i (L.), e'c=RR.: -'c-
- 21 Uncle (paternal) ʒthai, ethi (L.), ethiyi (L.), estha (S.)=RR.: -th-

PARTS OF THE BODY.*

- 22 Head * ʒtsi, ekfwi, itci (L.)=RR.: -tsi and co-transmutables.
- 23 Hair (fr. "poils") ʒra, era, ʒrc.=RR.: -r-
- 24 Hair (fr. cheveux) ʒtsi-ra, ekfwi-ra, etci-re=RR.: the above two combined.
- 25 Face iñne, iñni, iñn; ñan (A.L.), nin (C. and Ch.)=RR.: ñ-n
- 26 Mouth ʒzé, eza, ca (M.), fwa (H.), ewa, fa (R.M.), zat (A.L.), cet (L.)=RR.: -g- and commutables.
- 27 Teeth ʒru, ʒrwo.=RR.: -ru and rō
- 28 Lips ʒta, e'da'noc (M. and H.), ite-va'(L.), ite-va-die (L.)=RR.: -t-
- 29 Tongue ʒtsu (M.), ʒtsol (Ch.), ʒtsulla (C.), ʒtsuri (B.), itca (L.)=RR.: -ts-
- 30 Eyes ʒna, iñe (L. in compos.), enare (M.); eta (S.), woda, enda, ʒnde (L.)=RR.: n-; t-, -t-
- 31 Ears ʒtzo (C.), edzi (L.), edzie (H.), edzare (M.), wodzare (S.)=RR.: -dz-
- 32 Drum of Ears ʒtzé (C.), edzi (H.), idzi (L.), edzie (M.)=RR.: -dz-
- 33 Neck e'kroc, ʒ'kwac (Ch.), e'ko.=RR.: -'k-
- 34 Arms ekone, ekin, ekun, ʒkran (C.), ʒkan (A.L.)=RR.: -k-n
- 35 Elbows etsé, etso, etséz, etsuze.=RR.: -ts-z
- 36 Hands ʒlla, ʒlla, iñlla, ʒñlle (L.)=RR.: -ll-
- 37 Fingers ʒlla-t'san, iñlla-'kwene, iñlla-t'sale.=RR.: hands-bones
- 38 Finger-nails ʒkre (C.), ʒkai (L.), ʒkran (Ch.), ekrane (M.), ekone (H.)=RR.: -kr-or-k-. Follows always the word "hands": ʒlla-kre
- 39 Legs edzare, idzjiedi (L.); ʒt'san, et'séne, e'kwene.=RR.: -dz-; -t's- and commutables. ʒt'san and following words mean "bone." The Carriers say khé-tcən, "feet-stick," or "-handle."

* See Remark 3, Introduction.

- 40 **Knees** əkwət (C.), əkwot (L.), əkot (A.L.), eko (H.), eker (M. and Y.K.)=RR.: -k-t
- 41 **Feet** əkhe, əkré=RR.: -khé. The accent is here, by exception, necessary to differentiate that word from the term used by some tribes to say "husband."
- 42 **Sole** khé-t'la, khé-k'la, kré-klén (L.)=RR.: "Feet-bottom."
- 43 **Breasts** ət'sù, et'sə; 'tagu (L.)=RR. -t'sù or t'sò; 't-
- 44 **Milk** t'sù, t'sùe, t'sù-ge (B.), e'tə-ihu ("breasts-water," H.) RR.: same as above.
- 45 **Belly and Womb** etcañ, ətcan, etcoñ, etsteiet (L.)=RR.: -tc-n
- 46 **Abdomen** əpət, ebət, ebər, epə (H.), enbə (S), evət (L.)=RR.: -p-t
- 47 **Heart** ətzi, edzji, edzéz, edziye; kidzjan (A.L.)=RR.: -dz-
- 48 **Kidneys** etse, et-eze, etəsgə (L.); ene-tcaí (R.M.)=RR.: -ts.
- 49 **Liver** əzət, azət (L.), ezər (M.); ewət (H.), kowo (D.R.)=RR.: -z-t
- 50 **Lungs** ətəs, ətis, ətize, etewé, ətoyo (L.); efuñ (R.M.)=RR.: -t- -
- 51 **Entrails** et'siye, et'síg. =RR.: -t's.
- 52 **Back** ənèn (Ch.), ənnene (M.), ihnene (H.), ənnan (L.); e'taziñ, e'ta-nə; ən'tien; əyən (C.)=RR.: -n-n : -t-
- 53 **"Tergum"** ət'la, e'kla, e'klé=RR.: -l-

INTERNAL PARTS OF THE BODY AND ACCIDENTS THERETO.

- 54 **Corpse** əzi (C.), ezie (M.), ejigə (L.), əzik (L.C.); ewie (H.); etciñe (L.)=RR.: -zi and commutables. the "i" being always retained.
- 55 **Flesh, Meat** t'sén, t'séñ, kfvéñ (H.), ətsəng (C.), ətsi (Bab.)=RR.: ts-n
- 56 **Bone** t'sén, e'kwéne (H.), t'sən (C. and L.)=RR.: t's-n
- 57 **Fat (solid)** ə'krâ, e'kra, e'kré. =RR.: -'kr-
- 58 **Fat** əe (C.), əéi (L.), ere; k'lés, 'klé. =RR.: əe; 'kl-
- 59 **Blood** t'éi, ta (L.) eté, etéle. =RR.: t-l. The Carriers say əzkhrai
- 60 **Vein** ət'qúž, et'qúze (M.), et'quwe (H.), et'qoñ (L.)=RR. -'q.-
- 61 **Muscle** t'sé, 'kwé, 'qé, et'sége. =RR. t'sé and commutable consonants.
- 62 **Skin** ezəz, ewé, evə, ezow (L.) evé (S.)=RR. -z- and commut.
- 63 **Skin (fine, as of fruits, etc.)** .. 'tuz, 'tus, 'tu, 'tis, e'tuze. =RR.: 'tu and a sibilant.
- 64 **Excrement** tsañ, tseñ, tsoñ, tseyñ (L.)=RR.: ts-ñ
- 65 **Urine** jéz, jé, jəz (C.), jajz (L.)=RR. j-z.
- 66 **Pus** jəz (C.), jaw (L.), jéz, jəwi (H.)=RR.: j-z. Possess rəz, etc.
- 67 **Boil** t'sés, t'səs, t'sé, t'sə. =RR.: t's-s
- 68 **Scar, cicatrice** jaz, jazi; ja (C.)=RR.: j-z and j-. Possess., raz, etc.
- 69 **Scab** jut, jur (M), kolled (H.), elludé; néyview (L.)=RR. j-t.

THE EARTH AND CONCOMITANTS.

- 70 **Earth** nni, nne, nna, nnu, nən (L.), nèn (Ch.), nan; yən (C.)=RR.. nn- or -nn
- 71 **Earth (dust, etc.)** jéz, jiz, jic, jic. =RR.: jz.
- 72 **Country (pays)** néne, nan, nən; dyc; khé-yər (C.), kri-yé (M.)=RR.: n-n, etc.
- 73 **Land** sai, séi, cai, ca, fwa, fa (R.M.)=RR.: s-
- 74 **Stone** tsé, tci, tco (L.), kfvé, fwé. =RR.: ts-
- 75 **Mountain (wooded)** céc, cəs, cyé, ci, ciw. =RR.: c-

- 76 Mountain (steep and rocky). tʒəj (C.), dsil (N.)=RR.: tʒ-
 77 Summit ta, tig, tare; la, lla, llé, lleñi.=RR.: t-; ll-
 78 Grass (hay). t'lo, 'klo, 'klòr, =RR.: t'lo
 79 Prairie t'lo-'kai, 'klo-'ké, 'klò-dye, 'klow-tizjə (L.), 'klo-néné (M.)=
 RR.: "grass-on" and "grass-country."
 80 Road. thi (C.), thēñ (Ch.), thacñ (L.), thuñ-lu (M.), tiñ-lu (Y.K.);
 ghé (H.), =RR. th-
 81 End la, lla, llé, lañ, lloñi, luñ (B.)=RR.: Same as "Hands," 36.
 82 Middle niz, nize, nie; nitig (L.)=RR.: ni-
 83 Edge pa (C.), pè (Bab.), pañne (Y.K.), bañne (M.), veñ (L.);
 e'ka (H.); winañ; meñ (D.R.)=R. p-, -k-

LAND ANIMALS.

- 84 Dog ji, jin, jñ, t'leñ kli? (N.); possess. s. bəf, sə llik, se lline -jin,
 etc.=RR.: ji. These words are used in connection
 with all domestic animals.
 85 Wolf yés, yə-, zjow (L.); nūn (Ch.), nunnaye; tika (R.M.), tikai
 (H.)=RR.: y-s, nūn; tik-
 86 Lynx noñta, nūntí (Ch.), nidzjin (L.); tcize (M.), tcere (B.L.)=
 RR.: n-nt-; tc-z.
 87 Bear (black) sas, cac (N.), s'əs, sa, sié =RR.: s-s
 88 Caribou hwotziñ (C.), pətziñ (Ch.), medzi (S.), mindzi (R.M.);
 thañ-dzjye (M.)=RR.: -tzi
 89 Moose dani, denié, denii, tendi, dendjig (L.), tenni (R.M.)=RR.:
 d-n-
 90 Beaver tsa, tsé, tsi, tso, t-u. =RR.: ts-
 91 Rabbit gha, gho, kha, kho, khé, khəj. =RR.: kh-
 92 Porcupine t'si (M.), t'sit (L.); 'quñe (H.), 'qâh (Ch.), tet'que (B.)=R
 R.: t'si; 'q-
 93 Squirrel (sciurus Alpinus)...g'lic, k'lic, k'lik, k'lag, k'le, k'loye. =RR. k'l-
 94 Mouse tlun, tlunc, gluñé, kiu, klo (L.)=RR.: tlu-
 95 Worm gu, ku, kyoñ (L.), asku (C.)=RR.: ku

WATER AND CONCOMITANTS.

- 96 Water thù, thó (Ch. and N.), thyoñ (L.); in compos. tha, thé= RR.
 th-
 97 Water (bottom of) thè, thère, thè, thè=RR.: thè
 98 Water (surface of) tha-ɣra, thi-ɣra (D.R.), thu-ɣrare; tha-taé=RR.: ɣra-
 "surface."
 99 Current 'niliñ, nilèñ, nilini (N.), nñli (C.)=RR.: ni-l- These
 words are as many verbs meaning "it flows."
 100 Cascade nainliñ, nainli, na-deñlin (H), na-deñleñ (L.)=RR. na-nli.
 These words are also verbs meaning "it falls down
 while flowing."
 101 Foam əwos, oiwos, kəjo (H. and L.)=RR.: -ɔ-
 102 Eddy 'o (C.), o'e (D.R.), ornéé (M.), oghé (H.), ogho (L.)=RR.: o-
 103 Wave tha-tsi "water head" (C.); tha-dethiñe (M.), tha-detco (H.),
 thic-ditcig (L.)=RR.: tha-
 104 Shore tha-pa, tha-bañne, tha-pañre, tha-ma (B.L.), the-veñ (L.)=
 RR.: "Water-Edge."
 105 Beach jan, tlañ, 'klanc, kllen (L.)=RR.: l-n

- 106 **Bay**t'łai (C.), 'kla-zeñ (M.), 'kllen (L.)=RR.: t'ł-, root of the words for No. 53.
 107 **End of Lake**.....Tha-t'la, théy-t'let, tha-t'let=RR.: "Water-bottom."
 108 **Island**nu, nnu, ndu, ndju and ndow (L.); tu.=RR.: nu.
 109 **Ice (on water)**thèn, thəu (C. and A.L.); :han (L.), thène (B)=RR.: th-n
 110 **Ice (floating or in pieces)**tu, tətəm (C.); kwollu (Ch.), kollu (D.R.)=RR.: t-; -ollu

WATER ANIMALS (FISHES).

- 111 **Fish**.....tuc, tuge tugu, tōh (C.), tuk (L.C.)=RR.: tu-
 112 **White fish**.....tu, tō, tuge-wa (H.), tugu.=RR.: tu
 113 **Salmon**tha-llo, tha-llok.=RR.: "Water-fish."
 114 **Eggs and Fry**ə'kūn (C.), e'kin (L.), e'kūne, e'krune.=RR.: 'kūn
 115 **Fish bone**.....ərai (C.), era (H.), erwosse (M.)=RR.: -r-

SKY, CONCOMITANTS AND DERIVATIVES.

- 116 **Sky**ya, jya (S.), jā, zjyé (L.); in compos. yé, yi, yu=RR.: y-
 117 **Sky (without clouds)**ya-zañ, ya-zoñ, jya-zañ, ya-zai, zjyé-zjin.=RR.: "sky-bare."
 118 **Clouds**.....'kwos, 'kwəs, 'kwroc, 'kro=RR.: 'k-
 119 **Sun**sa, sye (L.)=RR.: s-
 120 **Moon**Same as above, and eldzī, ildzīn (L.C.), 'adzi (S.), adzie (H.), adzji.=RR.: -dzi. Many tribes say also "night-its-sun."
 121 **Star**sən (Ch. and L.) sən, cən (M.), fwèñ (H.), fèñ (R.M.), səm (C.)=RR.: s-n
 122 **Rain**.....tcan, tcoñ, tcyèn (L.)=RR.: te-n
 123 **Snow**yəs, yac (M.) jyah (H.), jah (S), zjyow (L.)=RR.: y- -
 124 **Snow (crusted by winds in the t'si, t'si=RR.: t'si-.** When it is hardened by the cold of spring.) the nights, not by the wind, it is said
 125 **Snow (hardened.)**ollu, kollu, kullu.=RR.: -llu
 126 **"Gresil" "frimas."**so, sor, kózo, kozjo.=RR.: sibilant-
 127 **Hail**.....iñllu, iñllue, enllu, anllu, kiñllu (A.L.)=RR.: -nllu
 128 **Fog**'a, 'ha, 'hég; tséł, tsə.=RR.: ':- ts-
 129 **Wind**nīt'si, nīñt'si, ət'sey (L.)=RR.: -t'si

BIRDS AND CO-RELATIVES.

- 130 **Bird**.....de't'āñi, de'toñi, tə'tāñ (old C.), tə'tai (modern C.), RR.: t'-t- from 'ta, "feather;" means "the feathered ones."
 131 **Feather**t'a, 'té (L.)=RR.: 't-
 132 **Feather Down**tciwc, tciéc, tcéz, tcus, tcow; t'səz (C.)=RR.: tc and a sibilant; t's-z
 133 **Wings**.....ət'séne (M.), int'séne, -a -t'sən (L.), 'ta- t'sən (C.)=RR.: -t's-n
 134 **Tail**etéc, etcé, etstci (L.), tsé (N.)=RP. -tcé. The é being characteristic.
 135 **Egg**əcz, əlez, əreze, arwo (L.)=RR.: ə-z
 136 **Nest**t'o, 'tó, 'tór=RR. 'to. "Bili" is said as "Lip."

SPECIES OF BIRDS.

- 137 **Raven**t'a-tsañ, 'ta-tsoñ, 'téc-tsiñ=RR. "Feathers-dung."

* Same word in all the dialects for "louse," the intonation determining the sense.

- 138 Crow (small) 'ta-tsañ-təł, ta-tsan-tšéle, etc. Same words as above with the diminutives tšéł, təł, tšéle
 139 Wild Goose (A. Canadensis.) ɔɔ, ɔé, réy, ɔə, =RR.: ɔ-
 140 Gull (L. cburneus).....pís-'kraí, pes-'kraye, pə-'kra (H.), və-'ké (L.), RR.: p- 'kr.
 141 Crane tet, tí, tiele, tele; djya (L.)=RR. t-ɪ; the final e in tiele; tele is instrumental in changing the radical ɪ into l.
 142 Loon (C. articus) tha-tzi, tha-dzéne, tha-dzjeñ (L.)
 143 Fly (common).....t'suz, t'soz, t'só, ɔɔt'soz (C.); tain (L.)=RR.: t's-z
 144 Mosquitoe.....t'seh, t'sih, 'qi (L.), 'kwi (H.), det'qule (Y.K.)=RR.: t'- and commutables

FIRE AND CONCOMITANTS.

- 145 Fire kron, krun (B.), krwon (C. and L.)=RR.: kr-n
 146 Smoke.....tér, ɔt (L.), ɔt (A.L. and C.), ɛ. =RR.: t-t
 147 Coals tés, 'tie (H.), 'te (R.M.), 'to (L.)=RR.: 't-
 Ashes is translated by "Dust" in all the dialects.
 148 Fire-wood tséz, tsəz, tsé (H.), tsow (L.) =RR., ts-z

WOOD AND CONCOMITANTS.

- 149 Wood de-tecən, tə-tecən, tcñ (H.), teran and tə-teran (L.)=RR.: tc-n. "Də" and "de" is strictly speaking no real root. These particles simply refer to the length of the stick.
 150 Bark 'tuz, etc. as "skin."—of spruce to cover houses, etc., ɔlla
 151 Branch 'kwé (H.), cow (L.) Is more generally rendered by the tw. following
 152 Leaf e'tan, a'tañ, iñ'tañ. =RR.: t-n
 153 Leaf (of coniferous) 'əl, 'el; 'el-kare, tila-kare (H.), tila-ko (D.R.)=RR.: -l
 154 Thorn ɔwəs, ɔwə, ɔə, ko-ɔə. RR.: ɔ-
 155 Root rai, ray, re, ɔrel =RR.: re
 156 Gum dzé, dzéh. =RR.: dzé
 157 Fruit djiyé, djie, djég; nai (C.), nez'tan (Ch.)=RR.: dj-
 158 Bush t'sel, t'səl, t'sele; ko-t'sele (H.), ko-t'səl (L.)=RR.: t's-l

TREES.

- 159 Spruce (A. alba) t'sú, t'si (R.M.), t'səvi (L.) =RR.: t's-
 160 Birch 'kri, 'kre, 'kek (A.L.)=RR.: 'kr-
 161 Willow 'krai, 'kraye (H.)=RR.: as above.
 162 Fr. Can. "jard"..... 'taze (M.), 'tewi (H.), 'taw (L.), 'tesh (A.L.)=t-z
 164 Service berry 'krin-djiyé, 'ki-djeg (L.), 'kren-mai (C.)=RR.: 'kr-n
 165 Service berry-tree 'krin-tcəne, 'ki-teran (L.), 'kren-tcən (C.)=RR.: preceding with "stick."
 166 Raspberry da-krale, tañ-kral, ta-kraie (D.R.)=RR.: t-kra-

HABITATIONS.

- 167 House yé, zé, yi, yə; kħəñ, kħuñe, khuni =RR.: y- kħ-ñ
 168 Den 'an, 'on, 'añr, 'añre, 'oñi.=RR.: -n
 169 Lodge (beaver) ekhin, ekrin, əkren (C. and L.)=RR.: -k-n
 170 Dam (beaver) 'el, 'əɪ, 'ch; t'sia (L.)=RR.: -ɪ

WEARING APPAREL.

- 171 Head-geart'sai (C.), t'sé (L.), t'sor (A.L.), t'a-krale (M.) =RR.: t's-
 172 Blankett'sère, t'sède (L.), t'sote (A.L.), t'sot (C.); na'ti (L.C.)=R
 R.: t's-t
 173 Beltsé, cé, fwé (H.), caw (L.), caw (M.)=RR.: sibilant-
 174 Coati, ie, ig. RR.: i
 175 Breech clothtsan, fwoñ (H.), ekfwoñ. = RR.: ts-n
 176 Leggingscej, fwé (H.), possess. (se) zele (se) wewe (H.)= R
 R.: sibil.-
 177 Mocassinskhé, kre, kie, khé-skwoñ (C.)=RR.: same as "foot," 41.
 178 Mittensdjis, teis (Y.K.), djécé (L.); pa, pat, pare. RR.: dj-s; p-
 179 Snow-shoesai, aih, 'a, 'ey. =RR.: ai diphthong.

IMPLEMENTS.

- 180 Canoet'si, t'su (H.), t'sé (D.R.); ella (Slave and Sék.)=RR.: t's-;
 -lla
 181 Paddle'toc; 'óh, 'to, 'qoc (C.)=RR.: 'to
 182 Knifebés, bié, bé; pəzhih (C.); əthés (L.C.)=RR.: b-
 183 Axetséñ, kokfwñ (H.), tsé-tsiq (C.), té 'éñ (L.)=RR.: ts-
 184 Irontsañ-tsənc, sa-tsoñne, sa-tsoñ (R.M.); iñtsi (L.); pəzhih (C.)
 =RR.: "beaver-dung" and "bear-dung."
 185 Arrow'kra, 'kroñ. 'kiñ, 'kie (L.), ka (?) (N.)=RR.: 'kr-
 186 Quiver'krañc, 'kras, 'kroñ, 'ki-ia (L.)=RR.: "Arrow," and a
 sibilant indicating "room for, place of."
 187 War clubtañ, tañ, ta (H. and L.); possess. rale=RR.: t-
 ral, etc., t and l being changed into r, l.
 188 Snarepij, bij; mi; via (L.)=RR.: piñ.
 189 Vessel (any small deep re-
 cipient)thej, thiñ, theli, thiññ (L.) RR.: th-
 190 Kettle (anything to put on the oñca, òca, uñca, oñwa (H.)=RR.: -o-ca. The C. formerly
 fire) said: nòcaí
 191 Plate (or any flat vessel)t'sai, t'ak (Bab.) 'qek (L.), 'kwa (H.)= RR.: t's-
 192 Ropet'luñ, t'luñ, t'lu (H.), tlla (L.)=RR.: t'lu
 193 Handleteñ, teñc, teñc, teran (L.)=RR.: same as that of "Wood."
 194 Handle (long)thi (C.), thín-teñ (Ch.), thín-teñc (H.), thacñ (L.)=RR.: th-
 195 Edge (of cutting tool) 'kra, 'ka (S.), 'kyé (L.)=RR.: Same as that of "Arrow"
 (185).
 196 Fishing Hookqəc (C.), qec (Y.K.), djycé (M.)=RR.: q-c-
 197 Hook (large)sə, sa, san, sət; sa; zañ (M.)=RR.: s-
 198 Bowcəthín, añthén (L.), iñthiñ, əñthi (modern C.)=RR.: t-
 199 Walking stickthəz, théz, thaz, thén (H.)=RR.: th-z

ABSTRACT NOUNS.

- 200 Day (from morn till eve)tzin, dzin, dzjin (L.), dzine (M.)=RR.: dzin
 201 Nightthəz, thaz (L.), théze, théwe (H.)=RR.: th-z
 202 Midnightthəz-niz, théze-nize, thaz-itləc (L.)=RR.: Same as in Eng-
 lish. the order being reversed ("night-mid").
 203 Daily recurrence of obscuritytañ, jif, ta, ze = RR.: t
 204 Sleeppej, pə, bej, pə (H.), vah (L.)=RR.: p-
 205 Mind, thought, caresni, inni; kojya, kwi-zjye.=RR.: ni; k-jy-
 206 Spirit; double selftsín, tsine: cyuñne (M.)=RR.: tsín

- 207 Smiletló, kló, dló, dlor, tlóh.=RR.: tló
 208 Weeping.....tsá, tsar, tsé, tsic.=RR.: ts-
 209 Song.....cén, cən, cū; possess. se-yén, ci-gin (N.); ellik (L.)=
 RR.: c-n-
 210 Whistlingyuyuz (C.), yulyiñz (M.), yuzjyo (L), uyū (H.)=RR.: -uy-
 211 Breath.....oyiz, eyic, eyu.=RR.: -y-
 212 Old age.....cāñ, cūñ, cion (H.), sañ, (N.), qañ (C.)=RR.: -an
 213 Faminetan, tañ, dāñ, teñ, doñ, toñ, tai (C.)=RR.: -t-n
 214 Disease, plaguetata; lae (H.), t'sik (L.)=ta; l-; t's-
 215 Coughkrwəs, kroc, khro.=RR.: k-
 216 "Essoufflement".....cūh, ci.=RR.: ci
 217 Shame.....uya, yuya, ozjyé (L.)=uy-
 218 Nameiñzi, ūzi (C.), ūzi (H.), rózi (Ch.)=zi
 219 Halfkəz, k'ez, k'ew (H.)=k-z
 220 Month.....Is rendered by "sun" and: sa-nən, sa-ni, sa-ne (V.M.), sié-
 nan=RR.: "sun-duration" or "moon-duration or
 season."
 221 Season.....nén, nən, nan, mēñ =RR.: n-n
 222 Winterte, jāi, zey, zaye, ahare, zet.=RR.: z-. All the tribes also
 say, yac-ké, ya-kət, etc. "Snow-on."
 223 Summertan, atonle, tañ-grən (C.) =RR.: t-
 224 Summer (first or early).....cūñ (C. and L.), cūñ (H.), sūñ (M.)=RR.: c-n
 225 Ursa major (constellation) .yeta, yita (D.R.), yé-ta (M.), ych-tai (Ch.)=RR.: y-t-
Ursa minor is rendered by the same words followed by
 the diminutives tsél, tsəl: yaz, etc.

ADJECTIVES.*

- 226 Good; nice, etc.....ne-zūñ, ne-zūñ, ne-zoñ (R.M.), ni-zjūñ (L.), n-zu (C.)=RR.:
 zu
 227 Longel-nez, ne-nez ne-nəz (Ch.), nin-djiw (L.); en-tew*=RR.:
 -z. The C. say n-yiz.
 228 Shorte-tue, iñ-tue, nən-ti (Ch.), n-tuk (C.)=RR.: t-
 229 Heavy.....ne-taz, nən-taz (Ch.), n-taz (C.), nen-ta (B.L.), ni-tije (L.)
 =RR.: j-t-
 230 Lightnən-tzai (Ch.), ni-tzik (L.), n-tzak (L.C.), n-tza (C.), ne-zare
 (M.)=RR.: tz-
 231 Thickdes-thi, de-thi, tə-thai, tidi-thiñ.=RR.: th-
 232 Thin.....t'sə'tan, t'se'tañne, t'se'tale (M.); iñ'toñne, RR.: 'tan from
 ə'tan "leaf."
 233 Flat ("épaté")de-kraj, tə-kraj, inde-krale (H.), déy-kañ (L.)=RR.: kraj
 234 Big, greatne-tea, iñ-teo (R.M.), cū-teai (V.M.), nən-teā (Ch.), niñ-
 tcyé (L.), n-tea (C.)=RR.: te
 235 Smallnən-tsul (Ch.), n-tsul (C.), n-tvol (L.C.), tsula (M.), otséle
 (M.), iñ-tséle (H.), kwen-tsel (L.)=RR.: ts- and a
 labial.
 236 Warmne-zəl, ne-zéli (M.), ni-zu (L.), fwe-wele (H.)=RR.: z- and
 commutables with z.
 237 Cold.....nin-kraz, ni-kraz, nez-kraz, we-kra (H.), zey-kraz (L.);
 ellu (M.), we-klu (H.), elluze (H.), ekle (L.)=RR.:
 kraz; -lu
 238 Wetsəl-tsel, ol-tsel, nil-tsel, we-tsel, nal-tsa (L.)=RR.: tsél

*See Introduction, remark 6.

- 239 Moist nal-zor, te-zo, ðl-zjo (L.)=RR.: zo
 240 Red de-t'le (H.), t'el-tel (Ch.); di-t'si, di-t'sig (L.); tal-k'on (C.)
 =RR.: t'el, "blood"; t'si, "vermillion"; k'on,
 "fire."
 241 Grey tal-pa, del-paye, kole-pa (H.), teo-péze=RR.: pa
 242 Grey (hair) del-kray (M.), t'el-krey (C.), de-kay (H.), da-kay (L.), de-
 krali (S.)=RR.: kray
 243 Yellow del-t'sor, tal-tso, de-kfwoy (H.), zə-t'ow (L.) RR.: to
 244 Rancid ez-t'oy, re-t'sor (S.), ye-kfwo (H.), zə-t'ow (L.), RR.: t'ow
 245 Prickly de-t'sé, sət-t'si (C.), tenin-t'sa (H.), tinin-t'sik (L.), sət-t'sik
 (L.-C.)=RR.: t'si.
 246 Precious, dear ti-t'hi, der-thi, de-thi. -RR.: thi. Hence t'one-thi, muti-
 thi, "man-precious," old-man; "chief-precious," big
 chief. The C. of 100 years ago said than in-teal of thi.
 247 Muddy (water) dzai, dzin, dzon.=RR.: dz-n
 248 Numerous jañ, jan, jōñ, chlon, kinjen (L.), jai (C.), =RR.: j-
 249 Raw (meat) t'ec, e'te, e't'qe.=RR.: t'ec
 250 Green (wood) ðellin, dellin, detlin, t'elli, atlow (L.)=RR.: ðli. The syl-
 lables "tə, de" indicate that the adject. qualifies an
 elongated object.
 251 Naked in'tit (Ch.), s'tet (C.), in'teri (M.), in'tien. =RR.: t'et.
 These words are genuine non-verbal adjectives.*
- VERB.
- 252 To be ðli, ðtli, eli ili, nətli (Ch.), s'tbñ (old C.)=RR.: ðli.
 This verb is used only in connection with nouns and two
 or three real adjectives.
 253 To be sitting down sət-a, seta, cita, wita, zidie (L.)=RR.: -ta. Plural t'si;
 dual kré
 254 To be lying down sət'hi, set'hi, nət'hi, nethi, nitci (L.)=RR.: tu, plural th's.
 Applies only to living animals.
 255 To be lying down sət'hi, celthi RR.: same as above. Applies to *lifeless*
 animals and their empty skins.
 256 To be lying down One single object with no striking characteristic -RR.: -at,
 añ
 257 To be lying down Several non-particularized objects. RR.: -ta. b
 258 To be lying down Soft as linen, tanned skins, etc. =RR.: -teur
 259 To be lying down Granulous as sand, salt, etc. =RR.: -t'ai
 260 To be lying down Long as wood, etc. =RR.: -than
 261 To be lying down Round (but single) =RR.: n-t'ai, n-t'añ
 262 To be lying down Liquid =RR.: -t'zēh
 263 To be lying down Coagulated =RR.: -t'qē
 264 To be lying down In an uncovered recipient =RR.: -krali, etc., etc., etc.
 265 To be standing up s'eyin, seyin, ciyin. RR.: -yin
 266 To sing s'qen, s'qon, eqin (H.). RR. -qen and cən "song."
 267 To weep estsar (M.), esté (H.), ité (L.), s'ésá 2nd pers. int'sá (C. and
 Ch.)=RR.: -tsá
 268 To Laugh s'tloh (C.), na-stlór (M.), eklo (H.), itla (L.)=RR.: -tlo
 269 To cough t'asqas, deskroc, tekro (H.)=RR.: t-qwas
 270 To say déssi, déñi, tiño (L.)=RR.: d-i

* I omit such adjectives as "fat" "frozen," etc., because the root of their equivalent in Dene is the same as the words "fat" and "ice" which I have given among the nouns.

- 271 To ask.....utaskrat (C.), odekrat (L.), uteké (H.), ureskər (M.)- RR.: ut-k-
- 272 To think.....(opinari) yenescən (M.), yeneścən (Ch.), yenicən (L.), nəsən (C.)- RR.: n (from "ni" mind) -z-
- 273 To see.....es'i, e'i, əs'en=RR.: -i, 1st conj.
- 274 To snore.....əsro (C.), əsroñ (Ch.), deroñ (H.), esros (M.), éjrwok (L.) =RR.: -ro
- 275 To Burn.....təs'krən, dəs'kran, de'koñ, ti'ki=RR.: -'k-
- 276 To kiss.....ést'sun, et'su, na-d-əst'suz (C.), nej-t'sun (L.)=RR.: -t'su
- 277 To tear.....təs'qel, dəs'qel; de'kla (H.)=RR.: -'q-l
- 278 To make (v. tr.).....(construct, fabricate) əslé (M.), əslə (Ch.), əstle (C.), a'pə (H.), 'il'ə (L.)=RR.: -le
- 279 To make (v. tr.).....so and so, to cause a change in an object already existing, éstsi, essi, əssih=RR.: -tsi
- 280 To do.....əs'in, əs'i, a'i=RR.: -i, 2nd conj.
- 281 To blow out.....əs'qul, ə'qul, e'qó (H.), it'sý (L.)=RR.: 'qul
- 282 To smell (v. intr.).....etsin, etsən, ətsən, ətsən=RR.: -ts-n
- 283 To go out.....thé-nəcya (C.), thi-néssai (M.), thi-na-déca. =RR.: thi from "door" and "wall."
- 284 To prick v. intr.).....əlt'si, wet'si, əlt'sik, sətsik, səlt'si=RR.: t'si
- 285 To fry.....əs'tés, əst'éc=RR.: -'tés, "coals."
- 286 To steal.....əns-i (Ch.), ene-i (M.), ene-i (H.), eni-i, (L.)=RR.: n-i
- 287 To fall down.....na-zt'sət, na-st'sər, elt'sət (L.), na-dekwé (H.)=RR.: na (*i.e.* relation to the soil (ni) and -t'sət, expressive of the locomotion of a single object
- 288 To kill (many pers.).....əsrən, esran, eskran. ekun (H.), iran (L.)=RR.: -ran and convertible kan
- 289 To cut (with axe).....əsej 2nd pers. in-tsej, destsej, dékfin=RR.: -tsej, "axe."
- 290 To cut (with scissors).....əs'tas, əst'ac=RR.: -'tas
- 291 To grease (friction).....əstə (C.), eljar (A.L.), eskjar (M.), ekjé (H.), əkjé (L.), estjar (Slaves)- RR.: -tj-
- 292 To deceive.....nəs'a, nes'a, ne'a, ni'é=RR.: n-a
- 293 To mistake (make a).....nes'ta, nis'ta, ne'ta=RR.: n'ta
- 294 To command.....əs'a, es'a, e'a, əp'é=RR.: -a
- 295 To take (v. tr.).....əstcūt, éstco, etcu=RR.: -tcu
- 296 To hold.....usthən, usthun, uthon, uñhan=RR.: uth-n
- 297 To teach.....hwonəsthan, unesthan, unethəñ, unethan =RR.: un-th-n
- 298 To be afraid.....nəzqét (C.), nesqél (H.), nejqét (L.), nesqér (M.)- RR.: n-qét
- 299 To hide.....na-nes'i, na-ene'i, ne-ni'i=RR.: - -i
- 300 To loosen.....'ké nas-ək, 'ké nae'a, berəñ nes'ar, 'ké ney'at=RR.: n--
- 301 To be daylight.....yəjkrai, yelkrañ, yekrañ, nejkrən=RR.: -kr
- 302 To count.....ustho, ustha, uletha (H.)=RR.: -u-th-
- 303 To exist, there is.....hunli (C.), uñli (M.), guñli (H.), goñli (Ch.), koñli (L.) =RR.: unli
- 304 To swim.....əspij (C.), ə-pej (M.), epie (H.)=RR.: -pi

PRONOUNS.

- 305 I, Fr. "moi".....si (M. C. L. Bab. &c.), sit (Ch.), seni (H.)=RR.: s-
- 306 Thou, Fr. "toi".....nan (L.), nən (M.), nin (Ch.), nyən (C.), neni (H.B.)=RR.: n-n
- 307 It, Fr. "lui, elle".....(non-human) e (C.), ey (L.), yéy (B.), eye (Ch.), eyi (M.-H.) =RR.: e

- 308 He, *zhè*, Fr. "lui, elle" (human) *èn* (C.), *éyèn* (Ch.), *edini* (M.), *etini* (Y.K.), *edetan* (L.), *edeteni* (II.) RR.: *e* (3rd pers.) and *n* (from *dene*, *tòne*, etc., "man.")
- 309 We, Fr. "nous autres" *nañ* (Ch.), *nurwun* (L.), *nuni* (M.), *nakheni* (II.), *hwèni* (C.)=RR.: same as
- 310 You, Fr. "vous autres".... *ñon* (Ch.), *nurwun* (L.), *nnúni* (M.), *nakheni* (II.), *nuhni* (C.) RR.: *n-n*
- 311 They, Fr. "eux, elles"..... *enè* (C.), *éyène* (M. Ch.); *ekhedetan* (L.), *ekhedeteni* (II.) =RR.: same as that of "he, she," plus: *ne* (sign of plural) or *khe* (sign of plural).
- 312 This *ni* (C.), *dji* (L.), *diri* (M.), *didi*, *dedi*, *teri*, *tiri*=RR.: *t*
- 313 That..... *nyu* (C.), *eyi* (M.), etc., as "It." RR.: *y-*
- 314 What? (in compos.)..... *ta* (C., Ch., H., L., Bab.), *té* (L.); *etla* (M.)=RR.: *t-*
- 315 What? (with a noun)..... *tí* (C.), *tteidi* (L.)=RR.: same above (314).
- 316 My *s, sə, se, si, ci* (N.) RR.: *s*
- 317 Thy *n, nə, ne, ni* (N.), *nyə, nye* (C.)=RR.: *n*
- 318 His, its *p, pə, pe, be, bi* (N.), *və* (L.), *vi*; *u* (C.), *hwo* (C.) RR.: *p, u*
- 319 His (third pers.) *y, yə, ye, yi* (N.); *we* (D.R.)=RR.: *y*
- 320 His (reflective) *t, tə, te, ti, ta, de*=RR.: *t*
- 321 Our *nu* (M.), *ne* (C.), *uwo* (Ch.), *nurwe* (L.), *nakhe* (II.) RR.: *n-*
- 322 Your..... *nuli* (C.), *nohwe* (C.); other dialects as above (321).
- 323 Their *ube* (M.), *ope, opə* (L.C.); *ku* (Ch., B., H., L.), *ko* (L.)
up; *ku*.

INVARIABLE WORDS, CONJUNCTIONS, POSTPOSITIONS, ADVERBS, ETC.

- 324 If, when (future non-interrog.)*de, te, ènde, nide, anide, dji* (L.)=RR.: *te*. Is a postposition.
- 325 Lest *'qa*, in all the dialects, except in (L.), *'qen* RR.: *'q-* Postposition.
- 326 In (side) *yé* (M.), *yo, yi* (N.); *pít* (C.)=RR.: *y-* Postposition.
- 327 On *'kat* (C.), *'ké* (M., H., C.), *ki* (?) (N.), *'kie* (D.R.), *'krage* (L.)=RR.: *'k-* Postposition.
- 328 Amidst *tha* (M.H.), *thət* (L.), *thə* (without movement), *thəz* (with mov.) (C.)=RR.: *th-* Postpositions.
- 329 With *pəj, pej, yej*, etc. Nos. 316 to 323 with *l* added to the pron. Postposition.
- 330 Without..... *əd* (C.), *eden* (Ch.), *ediñ* (M.), *etiñ* (II.), *etiñ* (D.R.), *atan* (L.)=RR.: *-t-* Postp.
- 331 In the middle *niz, nize, djizə* (L.) RR.: *-iz*
- 332 For, owing to (me, etc.).... *(s)ja* (M., H., Ch., etc.), *(s)jət* (L.), *(s)pa* (C.)=RR.: except in C. it consists simply in the vowel *a* added to the RR. of the pronouns. Postp.
- 333 To (marks direction) *t'sən, t'san*=RR.: *t's-n*. Postp.
- 334 Close to (me, etc.) *ran, rən, ron, roh, rə, rne*=RR.: *r-* Postp.
- 335 By the side of *zih, zire, zige, zégə*=RR.: *zi-* Postp.

CONJUNCTIONS AND ADVERBS.

- 340 And, also *tea, tci, tco, teu, terañ, teiñ*=RR.: *te-*
- 341 However *khulu, kholu, khuli* (all initial); *kan'te, kwalan'te, kulan'te* (final)=RR.: *kh-l-*; *k-te*
- 342 Far *neza* (L.C.), *niza* (M.), *nizjəd* (L.), *nirwa* (II.), *inzath* (N.), *nijtza* (C.)=RR.: *n-z-*
- 343 Farther *(yu)əz, (yu)az, etc.; (oñ) 'ən, (oñ) 'az, etc.*=RR.: The hiatus preceded by the complement and followed by the postposition.

- 344 Well (in compos).....sa, sañ, se, sie, só, su = RR.: s and a vowel sound
 345 Badly (in compos).....tza, tza, dza; tsé, tsá. tsen- RR.: tz or t and any sibilant.
 346 Aboveyetare (M.), yutare (M.), yetagá (L.), yatige (B.), yateye (D.R.), yuto (C.), yutih (Ch.), yetók (L.C.)=RR.: -t-
 The syllables yu, ye, ya, are merely to give the adverb an additional meaning untranslatable in English. They can be replaced by several other particularizing particles.
 347 Belowvuyo (C.), yayak (L.C.), yayai (Ch.), yaye (M.), yayuro (D.R.), yuyuro (A.L.), etc. RR.: -y- Same remark as at No. 346.
 348 Heredyañ (M.), dyañ (H.), djun (B.), djyñ (L.), nqan (C.), nqan (Ch.)=RR.: dj-n or its equivalent (even phonetically) q-n.
 349 There.....Éyèr (M.), éyét (Ch.), eyédi (B. H.); zjig (L.)=RR.: No. 307 with localizing consonant t or r.
 350 Knowingly and spitefully.aomé (M. C.), annj (L.C.), awemlé=RR.: diphth. au-nj

WORD FORMATIVE ELEMENTS.

- 351 Reduplication, mark of . na in all the dialects and N., except in L. and B. ne. RR. =n-
 352 Reciprocity.....t, t, e, e, e, ñ (L.)=RR.: t; ñ
 353 Reflectionede, edá, etá, atá=RR.: -t-
 354 Rejectionon, on, onne=RR.: ' with a nasal sound.
 355 Relation to watertha in all the dialects except in L.: thé=RR.: th- 96.
 356 Relation to the fire.....tsé, tsíye, tei, kwí.=RR.: ts-and
 357 Relation to the soil.ni, ne=RR. 70.
 358 Amplificativeteo, tea, teor, teore, tseyé=RR.: same as No. 23.
 359 Diminutive.....yaz, yaze, aze; tsá, tsé, tséle.=RR.: same as No. 6 and No. 235.

NUMERALS.

- 360 One (thing)máre (M.), máge (H.), injé (L.), ipó (C.), itji (Ch.), í'kre (L.C.)=RR.: -t-
 361 Two (things).nakhe (M.), nañkhe (C.), nakrñ (L.), nañkhó (L.C.), oñkhe (H.), nək (Bab.)=RR.: na, "again" and khe "feet."
 362 Three (things)thare (M.), thage (H.), thake (L.C.), thiég (L.), thá (C.), thai (Ch.)=RR.: th-
 363 Four (things).....diñri (M.), diñyi (H.), tinqi (Bab.), tǎnge (C.), tankre and tan (L.), tñ (Ch.)=RR.: t-ñ
 364 Five (things).....askoñla (L.C.), askoñlai (Ch.), kwollai (C.), s-sunlare (M.); llá'ke (H.) RR.: -k-lla; and "hand-on."
 365 Six (things)é'ke-thare (M.), é'kə-thai (Ch.), kə-tha (C.), et'ñ-thage (H.), et-é-thé'ñji.=RR.: "mutually-on-three," i.e., "on both it is three."
 366 Eighté'ke-diñri (M.), í'kə-tǎnge (C.), etc., RR.: same formation as 365. The other numbers are not roots.
 367 Firsttsé (M. and Bab.), ekhvé (H.), tei (L.); at'qan (Ch.)=RR.: ts-: 'q-n
 368 Yes!.....a (C.) and a, héñ (M.), hénhén (S.H.), hahá (L.), ñ 'ñ (Ch.)=RR.: a vowel.
 369 No!.....to (L.C.), tu, du (H.), taudi, taodi; akrwa (L.): awantuh (C.)=RR.: t-
 370 Take this!.....na' (C., Ch.), na (L.), nañ (M.), noñ (H.)=RR.: n-

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In answer to numerous enquiries concerning the Publications of the Canadian Institute, and applications for missing numbers, the attention of members and Correspondents is requested to the following :—

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Vol. I.,	Third Series,	contains	5	Fasciculi.
" II.,	"	"	3	"
" III.,	"	"	4	"
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