

Geology in the Hamilton Association 1857 - 1957¹

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The instrument of incorporation of the Hamilton Association for the Advancement of Literature, Science and Art, dated January 20, 1883, includes among the aims of the Association "the illustration of the National History and the Physical Characteristics of the Country". It was proposed to implement this admirable objective through Article XIV of the Constitution and By-Laws in which provision is made, among others, for Section B: Chemistry and Mineralogy and their application to the Arts, Agriculture, and Horticulture; and for Section C: Geology and Palaeontology. The purpose of these sections was "to allow members who devote attention to particular branches of science, fuller opportunities and facilities of meeting and working together".

An historical review of the Association's activities, and more particularly those of Section C, over the past century falls readily into three periods: the early, pre-publication, period from 1857 to 1883; the middle period, from 1883 to 1922, during which the Association published its *Journal and Proceedings* in 30 numbers; and the later, post-publication, period from 1922 to 1957.

The Early Period (1857-1883)

Little definite information has been found concerning this part of our history. Occasional references to a lecture given, and some knowledge of a few of the men active in those early days of the Association suggest that the members were not permitted to remain ignorant of matters of geological interest. In the classic "Geology of Canada, 1863", his comprehensive report based on the first 20 years of the Geological Survey of Canada, Sir William Logan acknowledges the information provided by Charles Robb, charter member and early officer of the Association, who moved to Montreal in the early '60's. A civil engineer associated at one time with the Great Western Railway, Robb's qualifications appear to have been such that Logan referred to him as a mining engineer. In his delightful remarks made at the Jubilee Celebration of 1907, Adam Brown, one of the charter members, refers to Robb's being sent by the Association to a place "somewhere between London and the St. Clair river" in order to examine the "black earth that burned" there. His subsequent report to a meeting in the old City Hall was, as Brown put it, "the first discovery [page 41 ends] by any scientific body of the oil region in Canada, now Petrolia". This trip is probably the basis of Robb's paper, "On the Petroleum Springs of Western Canada", which first appeared in the *Canadian Journal* (Toronto) in 1861. After leaving Hamilton, Robb mapped the geology of a number of areas in the Maritime Provinces for the Geological Survey of Canada, from which body he resigned in the late 1870's.

1 *The Hamilton Association for the Advancement of Literature, Science and Art. 100th Anniversary, 1857-1957.* Hamilton, Canada: The Hamilton Association, 1958. pp. 41-51.

One of Robb's co-officers in the Association, and also a civil engineer, was T. C. Keefer, chief engineer of the Hamilton Water Works. He is said to have provided information on local geological features to the Geological Survey, but his name does not appear in the lengthy list of acknowledgements in Logan's report referred to above.

During the late 1850's the Arctic explorer, John Rae, M.D., lived in Hamilton for a few years and was the second president (1858) of the Association. His travels of some thousands of miles undoubtedly provided material for addresses to the members. Unfortunately, no record of that early time is available.

In 1873, George Dickson, M.A., then principal of the Hamilton Collegiate Institute, became secretary of the Association. His later activities as chairman of the Geological Section hint at the probability that the meetings of the Association were not without geological value from time to time. Between 1877 and 1880 the science master at the Collegiate was J. W. W. Spencer, who was born in Dundas and had taken his Ph.D. degree in geology at Gettingen in 1877. After leaving Hamilton he was Professor of Geology at King's College, Nova Scotia, and at the University of Missouri, later serving as geologist in the southern United States and in Central America. Spencer was probably one of the first young men of this district to enter the geological profession. Unhappily, much of his work (more than 130 published articles) appears to have been overlooked, probably because of his absence from Canada for the greater part of his active career. He wrote a number of interesting and valuable papers dealing with the post-glacial history of the Great Lakes. A footnote in the paper by William Kennedy, published in the *Journal and Proceedings* of 1883-84, refers to a paper on the Dundas valley read by Spencer before the Hamilton Association on December 8 of the "previous year" (1881). This paper, entitled "An Ancient River – Did Lake Erie Ever Discharge its Waters Through Dundas Valley?", was privately printed and is bound in with the first volume of the *Journal and Proceedings* in the Mills Memorial Library at McMaster University. Kennedy's paper, although published in the 1883-84 number, was actually presented to the Association on May 11, 1882. A [page 42 ends] fortnight later, P. S. VanWagner read his paper on "The Formation of Burlington Beach", which is published with Kennedy's. These are the only definitely recorded papers of this early period, but it is more than likely that others were read to the Association.

The Middle Period (1883-1922)

This period of 39 years was probably the most important in the life of the Association. There is no doubt that geological interest was most profound at this time, and that it was closely tied to the activities of a small group of men, of whom Lt.-Col. C. C. Grant appears to have been the most indefatigable and certainly the most widely known.

The outstanding feature of the period, from the geological viewpoint, was the vigour, until 1910, of the Geological Section of the Association. Formed on January 21, 1882, the Section had already held 30 meetings by the time the first report was presented in mid-November of 1883, when it is recorded that "the members employed themselves at these meetings chiefly in examining, labelling, and arranging specimens". The Association learned on that occasion that "the museum contains over 1,200 specimens", several hundreds of which had been donated by Col.

Grant. A list of the specimens in the collection at that time occupies 16 pages in the *Journal and Proceedings* for 1883-84. The chairman of the Section was George Dickson, and the secretary A. T. Neill, later assistant tax collector for the City of Hamilton. One member of the executive committee, William Kennedy, an accountant at the Bank of British North America, read a paper before the Association on "The Superficial Geology of Dundas Valley and Western Ancaster" in May, 1882. This paper, the first of geological significance to be published in the *Journal and Proceedings*, was printed in the first number two years later and is a very interesting and useful record of Kennedy's observations on a subject that has engaged the curiosity of many geologists and laymen since his time. It is not without interest that we read in the minutes of the meeting on December 12, 1889, that William Kennedy, of the Arkansas Geological Survey, was elected a corresponding member of the Association. The minutes of exactly one year later record his appointment as assistant geologist of Texas, and his name appears in the geological bibliographies as the author of a number of reports and contributions concerning geological features in the Gulf Coast region.

Kennedy's paper includes an observation of significance relative to the objectives of the Geological Section. He writes: "On the formation of the Geological Section of the Association, it was understood that the geology of the district, and indeed [page 43 ends] the whole of Wentworth County, should be worked out by the Section and the report presented to a full meeting of the Association." An examination of the titles of papers read before the Section and before the Association indicates that steps were taken in the direction of attaining this objective. There is no evidence, however, that the Section ever did present a comprehensive report.

Among the papers read to the Association should be noted that of Dr. A. C. Lawson, the famous Canadian geologist, a corresponding member of the Association, on "The Physical Development of the Niagara Escarpment". In his absence, Lawson's paper was read by Mr. Dickson at the meeting of April 16, 1885. In attendance on the occasion was Thomas Froid, of Kincardine, after whom the famous Froid mine at Sudbury is named and who was elected a corresponding member at the next meeting. At an earlier meeting in the same year, Mr. Dickson had read a paper contributed by J. W. W. Spencer, the subject being "The Great Landslide on the Grand River". During the years 1889 and 1890 the Principal of the Beamsville High School, D. F. H. Wilkins, B.A., B. A. Sc., contributed several papers to the Section and to the Association, one of which, "River Valleys of the Niagara Escarpment," is particularly well worth reading. Wilkins' geological background, which had included studies in Eastern Ontario and on the Labrador coast, is indicated by several articles which appeared under his name in the *Canadian Naturalist and Geologist* (Montreal) during 1876 and 1877.

On February 15, 1895, J. W. Tyrrell, C.E., gave the first lecture of six he was to deliver during the ensuing 35 years. In it he described under the title "A Two Thousand Mile Tour to the Land of Perpetual Ice and Snow", his travels in the Canadian northwest in company with his distinguished geologist brother, Dr. J. B. Tyrrell. A year later Archibald Blue, first geologist of the newly-formed Ontario Bureau of Mines, lectured on "The New Ontario", an account of the mineral resources of Northern Ontario known at that time.

One of the features of the Association's history is the closeness of the relationship with members of the geological staff at the University of Toronto who, over the years, were responsible for exactly 50 per cent of the geological lectures delivered before the Association. Of the 45 papers of geological interest read during the middle period, 23 were by Professors A. P. Coleman and W. A. Parks. Dr. Parks' total contribution of 22 papers extended over 29 years, beginning on March 10, 1904, with his lecture on "Ontario's Northland". His many lectures on palaeontological topics were obviously of wide interest to the membership of the Association, probably as a [page 44 ends] result of the work of the Geological Section. Dr. Coleman presented a total of nine papers between December 14, 1905, and May 7, 1915, the first being entitled "Rivers of Canada".

Except for a visit on December 12, 1912, from T. W. Gibson, Deputy Minister of Mines for Ontario, the Association heard no geologists other than Coleman and Parks between 1910 and 1923, although W. A. Child read a paper on "Natural Scenery and Its Geologic Causes" in November, 1919. Even so, during the last half of the middle period at least one geological lecture was presented to the Association each season.

During its first six or seven years, the activities of the Geological Section appear to have been concerned largely with the collecting, arranging and labelling of specimens, particularly fossils. By 1888-89, however, the curator-librarian reported decreasing numbers of specimens being added to the collection. Compensating for this, on the other hand, we find a note concerning what appears to be the first lecture given before the Section alone — a paper by D. F. H. Wilkins, entitled "Geological Notes", dealing with the Ordovician-Silurian boundary in this region. The following year (1889-90) the Geological Section held six meetings, at which papers were read by one or more Section members. Col. Grant addressed three of the meetings, but other speakers were heard at the remaining meetings. The report of the Section indicates that younger members of the Association were taking an active interest, and it appears that many of the local quarries and rock cuttings were kept under almost daily observation.

The report of the Section for 1890-91 records an increase in members consequent on moving from the Alexandra Arcade to the new Library Building (later the Art Gallery and Public Health Building, now razed). Tribute was paid to Col. Grant who "has been most indefatigable in his exertions". The extent of his labours is perhaps suggested by the fact that he addressed seven of the eight Section meetings of that season. At one of these, in a paper concerning Burlington Heights, Grant raised his voice against the action of the Grand Trunk Railway officials who had apparently denied him (and others) access to the railroad right-of-way. His poor eyesight and marked tendency to become completely engrossed in his search for fossils are reported to have nearly caused him serious accident on more than one occasion, and one can imagine the railway officials eventually being forced to take action to protect him from himself. Grant apparently never did overcome his indignation at this action, which he regarded as unwarranted interference with the advancement of scientific research, for his protests recur periodically in his later papers. In the same season, Grant's "Notes on an Indian Ossuary at Burlington Beach" provides a very interesting [page 45 ends] account of some of his digging at a site now probably under water. All the papers read that season are printed in the *Journal and Proceedings*, as are most of those given in the succeeding 15 to 20 years (see Appendix A).

The reports of the Geological Section from 1891 to 1910 record some 86 addresses given by Col. Grant at meetings of the Section; on only three occasions in that time was his place at the lectern taken by others. Although most of his papers deal with local fossil collecting, or with local geological phenomena, Grant's antiquarian and philosophical interests were given frequent expression, as indicated by the following titles: "The Glacial Man Controversy" (1895), "Our Critics Answered" (1897), "The Lost Atlantis" (1898), "Evolution vs. The Fall of Man" (1902), "Science and Theology" (1909). Many of Grant's geological papers are well worth careful reading today. They provide a contemporary viewpoint of certain geological and palaeontological problems. In addition, they contain useful information regarding fossil-collecting localities, some of which are still accessible.

In spite of the extent of his writings, Grant's special contribution was not so much in published works as in his never-ending efforts to collect and distribute among museums all over the world fossils of interest from this region. This work earned him recognition among the palaeontologists especially interested in these fossils, and a number of new species were named in his honour over the years. His activities did much to establish the name of Hamilton, Ontario, in the geological world at the turn of the century. Specimens of graptolites collected by him, for example, were sent to Dr. R. S. Bassler of Washington whose "Dendroid Graptolites of the Niagaran Dolomites at Hamilton, Ontario" was published as Bulletin 65 of the Smithsonian Institution in 1909.

While the prophet was thus gaining honour outside his own district, within it he seems to have encountered some difficulty. Although the interest of the Section was so great that, for one of its regular meetings, it actually met on Christmas Day of 1891, by 1894 the report of the Section indicates a falling-off in the number of visitors, apparently on the grounds that "the papers read are too technical". Grant, the Section chairman, who by this time had read 23 papers at as many meetings in the three years, defended himself by claiming "to have adopted the popular phraseology so far as can consistently accord with the dignity of the subject under discussion". There is, unfortunately, no record of the effects of this stern reproof of the palaeontologically faint-hearted!

During the ensuing years the Geological Section appears to have continued its work, hearing five or so papers by Col. [page 46 ends] Grant at the meetings of each winter session, and making collecting trips in the vicinity of Hamilton during good weather. The Section was accompanied on one of its excursions to the Grimsby ravine, in 1895, by Professor Charles Schuchert, world-famous palaeontologist of Yale University. Mr. A. T. Neill, secretary of the Section, served as president of the Association from 1895 to 1897. A. E. Walker, one of the most active members of the Section, presented, in 1895, his collection of fossils acquired over a period of 30 years.

Studies were made in the Hunter Street tunnel as it was being excavated, and reports on the subject were presented to the Section in 1896. In August, 1897, geologists attending the Toronto meeting of the British Association for the Advancement of Science visited the museum and examined the collections. The report of the Section for 1898-99 includes the significant statement: "The Section was gratified to learn that the museum of the Hamilton Association was pronounced by competent authority to be superior to anything of like nature in the Queen City of

Toronto." It would appear that the rivalry of the present day had its counterpart half a century ago, at least in the matter of museums.

One of the first losses to the Section is set down in the 1901-02 report, which records the death of A. E. Walker, its chairman at that time. Walker had been especially interested in two groups of fossils which are particularly difficult to study — the stromatoporoids and the lithistid sponges. His interest in the latter had prompted him to correspond with, and to supply specimens to Dr. H. Rauff, the German palaeontologist whose classic monograph on this group appeared in "Palaeontographica" in 1893 and 1894. This important work contains much information derived from the studies of sponges collected from the local chert beds, so well known to both Walker and Grant.

Upon the death of A. E. Walker, A. T. Neill acted as chairman and secretary of the Geological Section, reporting in 1904 the death of Alexander Gaviller, curator-librarian of the museum since 1885. Col. Grant succeeded to the curatorship, which office he filled until his death, except for a few months in 1906, at which time he had presented his resignation. One of Grant's articles of that year devotes two pages to explaining his resignation; apparently the result of his objection to an action of the Council of the Association, which had ordered, without consulting him, the moving of some of the cases in the museum in order to make much-needed space. The report of the Section for 1906-07 records a happy issue of the "contretemps" and Grant's acceptance of re-appointment. An interesting paper by him in that year presents his [page 47 ends] "Remonstrance Respectfully Submitted to the Council re the Preparation of a Catalogue". It was apparently felt that sufficient fossils had been collected to justify the preparation of a catalogue of all the fossils to be found in the local strata. Col. Grant, who had collected most of them, regarded such a venture as being premature at that time, and his paper outlines his argument. The report for the following year, 1907-08, records the "deep regret" of the Section at a 50 per cent cut in the yearly grant to the Hamilton Association by "local government". The feeling is indicated by the further statement: "This action on the part of the government seems to be a slap at all and sundry such institutions situated outside of Toronto."

An important item in the report of 1908-09 is a resolution concerning Col. Grant: "The Geological Section of Hamilton, in presenting this, the Annual Report, wishes to place on record the high appreciation of the work accomplished on behalf of the Section by the veteran collector and curator, Col. C. C. Grant. His efforts on behalf of the Section have been unceasing, and he has accomplished much, not only as a palaeontologist and geologist of this vicinity, but his observations as a topographer are valuable, inasmuch as he has directed the attention of property owners on the lake shore to the inroads made annually upon their possessions by the elements. His notations respecting the shifting of the shore line should lead to definite and concerted action by the owners to resist in some degree this encroachment upon their property." It is evident that concern was already being felt about what may generally be regarded as the modern problems "of shore-line erosion.

A poignant note in the report for 1909-10, written by Col. Grant, heralds the approaching end of the significant activity of the Geological Section. "We lately lost A. G. (sic) Neill, the writer's old friend and fellow-worker for many years." The Association, on May 26, 1910, passed a

resolution of sympathy to the widow of A. T. Neill. The bell was tolled, however, by Col. Grant whose report of the Geological Section for 1910-11 consists simply of two paragraphs, as follows:

Since the death of the late President of the Geological Section A. T. Neill, it has practically ceased to exist. It has had merely a few members at any time, and when these died off or removed from the city, no fresh members were forthcoming to replace them.

The writer can see no chance, unfortunately, for the present, for a revival of the Section, while he feels satisfied we may have still much to learn here regarding the plants and fossils in our local Silurian rocks. Where new specimens [page 48 ends] have been discovered of late years, after nearly half a century's exploration, who can imagine research is quite exhausted? We must not forget that many organic remains in former times were sent away from this area and are yet unrepresented in our collection.

Finally, in the Association report for the 1914-15 session, there is recorded a resolution concerning the death of Col. Grant himself, at the age of 94 years. References are made to his "numberless services" extending over "more than a quarter of a century", to his having "worked with tireless energy", and having "rendered service to the cause of science . . . winning the esteem of scientific men of note in other countries". A delightful sketch of the many facets of this very interesting man is to be found on pages 19 to 24 of W. A. Child's address to the Association at its 75th anniversary in 1932.

The publications of the Association contain no further references to the Geological Section, and it may be assumed to have been essentially inactive at the time of Grant's death. The flame of geological interest flickered briefly about 1920, however, according to the *Hamilton Spectator*, which reports, on May 17 and November 1 of that year, field studies of the Geological Section led by John Wallace, "the Y.M.C.A. geologist". Visits were paid to Burlington Heights and to Ancaster, and Wallace appears to have arranged to give a series of lectures on the Dundas valley, and to have planned additional field trips.

While the foregoing presents a rather detailed picture of the activities of the Geological Section, it is convenient to record, as a summary, that during the 39 years of publication more than 100 articles and abstracts were printed. All of these either are of geological value, or were presented by geologists. The list is recorded as Appendix A. The papers comprise a total of 740 pages and include a number of full-page and smaller engravings. The first of these plates of fossils appeared in Number XVI (1899-1900), and thereafter, until Number XXVIII (1911-12), several appeared each year. While the quality of these figures does not compare favourably with present-day illustrations, they represent an attempt on the part of the Association to produce a worthwhile scientific journal. The articles themselves vary widely in quality and in value, and although many of them are simply of historical and contemporary interest, others are of more distinctly scientific value and will repay study by geologists or laymen interested in the local strata. It is by no means inappropriate that the Association at this time was widely known, even among its own members, as the Hamilton Scientific Association. [page 49 ends] It is significant that the bro-

chure published at the 50th anniversary celebration in 1907 actually displays on its cover a carefully executed seal bearing this title.

The articles listed in Appendix A were, for the most part, read before the Geological Section. The entire Association, however, heard no fewer than 45 lectures on geological subjects during the 39 years of the middle period. These are included in Appendix B of this report, a list of the titles of all such lectures given to date. Reference has already been made to the contributions of Professors Coleman and Parks, who account for 23 of the lectures delivered during this period. The decline in the geological interests of the Association, insofar as it is reflected in this kind of lecture, was both rapid and marked after World War I, only 21 papers being read after publication of the *Journal and Proceedings* was suspended in 1923.

The Later Period (1922-1957)

During this period the geological inclinations of the membership of the Association appear to have been met by hearing occasional lectures on geological subjects. In the seasons between 1922-23 and 1937-38 14 such lectures were given, only four seasons lacking a paper in the field which had formerly seemed so important to the members. Eight of these 14 lectures were given by Professor W. A. Parks, and two others by his colleagues in the Department of Geology at the University of Toronto. One of Parks' lectures, "Geology of the Region Around Hamilton", read in 1931, may be regarded as an alternative to the long-awaited report of the Geological Section to which Kennedy had referred half a century earlier. Upon the arrival of McMaster University in Hamilton, it was natural that its Professor of Geology should address the Association. Professor W. H. McNairn gave, in 1934, the first of three lectures he was to deliver, his last being his Presidential Address in 1941, entitled "Earth's Unsolved Mysteries". J. W. Tyrrell and Professor Parks were the only two men who lectured in both the middle and later periods, Tyrrell's last lecture being given in 1931 on "Recent Advances in the Hudson Bay District".

In the last 19 years of the Association's activity only seven lectures of a geological nature have been presented, two of them by the writer. During these recent years the science of geology has been contributing more and more to what has been called "the technical ascent of man". Facilities for rapid travel, bringing people into contact with a wider variety of landscapes than ever before, should be increasing their awareness of, and interest in geological phenomena. It is a curious [page 50 ends] anomaly, therefore, that the Hamilton Association has turned away from, rather than toward the science concerned with the earth beneath our feet.

During his last years as curator of the museum, Col. Grant had been assisted by a daughter of A. E. Walker, Miss Isabel Walker. She succeeded to the post after Grant's death and continued until the early 1930's when Miss Bertha T. Bauer took up the responsibilities of the curatorship. Little is recorded of the activities at the museum during these two decades, but it is probable that there was relatively little growth of the geological collections. About 1938 the fossil, mineral, and rock specimens were conveyed to McMaster University on "permanent loan", and were accommodated in what were at that time commodious quarters. As requirements for space at the University increased, however, it became impossible to preserve the old collections intact, and steps were taken to incorporate these specimens with the teaching collections of the Department of

Geology. Permission was sought and obtained in 1942 to take this final action, and for the past 15 years the specimens collected by Grant, Walker, and others have fulfilled an important function in the instruction of young men and women taking courses in geology. Perhaps the ghosts of the old Geological Section are mollified by the knowledge that the fruits of their labours are being, and will be, enjoyed by student generations which they could not have envisaged.

Looking back over the years, we must acknowledge with gratitude and respect the efforts of men, for the most part self-educated, whose breadth and intensity of interest placed the Hamilton Association in a noteworthy position among the many societies of its kind. They laboured long, mightily, and well!

Editors note (2007): Neither Appendix A nor Appendix B, referred to above, were published in the 100th Anniversary booklet.