

Ms. Pauline MacDonald
Earth Sciences Information Centre
Natural Resources Canada
601 Booth Street, Room 350
Ottawa, ON K1A 0E8

October 31, 2006

Dear Pauline:

Enclosed you will find a package of historical materials relating to James Merritt Harrison and his career at the Geological Survey of Canada. It was produced by the Ottawa-based GSC History Committee*, which is in the process of compiling a new archive collection of material on the history of the GSC since about 1972 (where Morris Zaslow's "Reading the Rocks" leaves off) to be housed at the Earth Sciences Information Centre in Ottawa.

The History Committee thought that each Survey library should have a copy of this particular item, as the CD of Dr. Harrison's reminiscences that he recorded in 1988 is a wonderful reference about the Survey's history and its people. The covering note for the package gives background about Dr. Harrison and details about the contents. The reference number for this item in the new collection is GSCHIS-B001. If you need further information, feel free to contact me at the email address below.

Please make staff aware of its availability.

Yours truly,



Christy Vodden
398 Hinton Avenue South
Ottawa, Ontario K1Y 1B1
E-mail: cvodden@sympatico.ca

*GSC History Committee members:

George Plant (chair)
Barb Cloutier (ex-officio)
Arthur Darnley (deceased 04-09-06)
Chris Findlay
Bill Poole
John Scott
Charles Smith
Christy Vodden

Dr. Murray Duke
Director General,
Central and Northern Canada Branch
Geological Survey of Canada
2nd floor, 601 Booth St.,
Ottawa, Ontario
K1A 0E8

May 1, 2006

Dear Murray:

Thank you for supporting the project to transfer Jim Harrison's wonderful anecdotes about the Survey from audiocassette to CD format. I have provided ESIC with a package that includes the CD set, the transcript, and a sampling of biographical information about Dr. Harrison. The master set will be housed in the GSC Library, with copies to be sent to each of the regional offices. ESIC will handle this distribution. I also plan to give additional copies of this package to Libraries and Archives Canada, which holds files on Dr. Harrison.

Attached is a copy of the set for you. If you would like any other copies just let me know. The remaining copies will be distributed to key past directors, including Charles Smith, Yves Fortier and Ray Price following discussion at the Anarchists. I hope this is agreeable to you.

Again thank you for your support.

Yours truly,



Christy Vodden
398 Hinton Avenue South
Ottawa, Ontario
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c.c. A.G. Plant, Head, GSC History Project

Tales of the Geological Survey of Canada (GSC)

GSCHISB001

By James Merritt Harrison

This two CD set contains anecdotes about the GSC and about the people that Jim Harrison encountered during his career (he started as a GSC field assistant in the late 1930s and was actively connected with the organization right up to the time of his death in 1990). He recorded the tapes in 1988, and they were subsequently transcribed and edited by Jean and Stuart Jenness. The total running length is just under two hours.

In addition to a copy of the transcript, this holding includes the original audiocassette, three poems by J. Willis Ambrose, which are referred to by Dr. Harrison (page 18 of the transcript). It also includes biographical information about him and his posthumous induction into the Canadian Mining Hall of Fame.

In transferring the tales from audiocassette to CD format, some minor edits were made to improve the sound quality (removal of sounds of the tape recorder being turned on, periods of silence, etc.) The beginning of the second audiocassette starts with an incomplete sentence (presumably Dr. Harrison turned the recorder on after he had started narrating). This has been edited out, but the missing sentence can be found in its entirety in the transcript (page 13).

Jim Harrison ((1915-1990) was a dynamic leader during a period of great change for the GSC. He had remarkable people skills and great charm. In 2006, Murray Duke, Director General of the Central and Northern Canada Branch of the Geological Survey of Canada summed up Dr. Harrison's career and contribution as follows:

“During Dr. Harrison's 17-year tenure as Director, the Survey enjoyed one of the most successful periods in its venerable history. In his capacity as Director and later Director General (1956-1964) the Survey expanded and elevated its mapping and research facilities, doubled its staff complement, greatly increased its operating budget, moved to new headquarters in 1959 (from the Victoria Memorial Museum Building to 601 Booth) and decentralized to new divisions across the country.

A variety of new challenges were met, including mapping the Canadian Arctic, studying the huge continental shelves and slopes, and increasing research and applications in the newly developing fields of geochemistry and geophysics. Under his extraordinary leadership and direction, the Survey grew in stature, accomplishment and recognition to become one of the finest geological surveys in the world, and he was instrumental in helping make Canada a world leader in mineral exploration and resource development. Dr. Harrison also served as President of the Royal Society of Canada, founding President of the International Union of Geological Sciences, and President of the International Union of Scientific Unions. In recognition of his many contributions to science in Canada and abroad, Dr. Harrison was named to the Order of Canada.”

Christy Vodden
April 22, 2006

TALES OF THE GSC

by James M. Harrison

(Transcribed from audio tapes by J.M. Jenness, July 1992;
corrections by James M. Harrison, 198?; text editing by S.E.
Jenness, July 1992)

[Tape 1, Side 1]

Introduction

This is some 'yarning' by Jim Harrison about people, events that occurred on the Geological Survey or that were related to the Geological Survey. These are not highlights in the sense of scientific exploration or breakthroughs in a variety of things, but nevertheless they do relate to the people who helped make the Geological Survey great. These are stories that either were told me or which I heard from various people in the course of my association with what I think is the greatest institution in Canada, the Geological Survey of Canada.

Now, few of these stories can be substantiated by written documents, the kinds of things that scientists swear by. These are highly personalized recollections of a variety of things, mostly without any particular thread, except perhaps to show what the people were like who set the standards for the Geological Survey, originally an unknown organization, and yet one that grew up with Canada to become today one of the leading scientific organizations in Canada and, indeed, in the world. If some of these stories seem irreverent, they are not meant to be; they are the kinds of things that make the place human. If you think that they're not true, well, maybe they aren't, but at any rate the substance of them is true, and I believe that what I am recording here is factual material or at least as nearly factual as it's possible to be when you are depending on memories. And memories, as anyone who is tempted to write up scientific material knows, are not to be depended upon completely.

I'm not quite sure how to deal with these things, but since I'm involved in most of them, or at least was involved with the raconteur of most of them, it will all be in the first person. And perhaps the best way is to go back as far as I can go in my contacts with people on the Geological Survey of Canada.

J.B. Tyrrell

J.B. was my earliest contact with the old days of the Geological

* note: The transcription must have been done earlier than 1992¹
as Jim Harrison corrected it prior to his death in 1990. CV.

Survey. I first met him in 1939, at a meeting of the Geological Society of America in Minneapolis, and it was a great thing to meet the grand old man of geology and of the Geological Survey. At that time I had never been anything more exalted than a student assistant on Geological Survey parties, but Tyrrell's name was known and some of the bloom of the Geological Survey had brushed off on me. I also met him in 1959, twenty years later, and he was still the grand old man of geology, and of the Geological Survey, and of the whole damn mining industry. A great fellow, had all his marbles, he joined the activities for the CIM that was held in Ottawa in 1954. I had the opportunity of talking with him. I have met him other times, in between those years, and he'd always impressed me with his remarkable memory. Many people from the Geological Survey probably participated in the meeting of the Royal Society of Canada that was held in Toronto in 1955. It was a fearfully hot summer, and J.B. Tyrrell invited all the Fellows from Section 4, as it was known then, that is to say, the Geology Division of the Royal Society, to be his guests at the St. George Club in Toronto. He received all the guests standing (and remember, he was then over 95), accompanied by his daughter, who had been born in the Yukon, his granddaughter, and his great-granddaughter. As I went through the queue, he said to me "Ah, yes, Harrison, nice to meet you again," and I thought that this is what he said to everybody. But directly behind me was Bruce Wilson, from the University of Manitoba. And when he greeted Wilson, he said, "Ah, Professor Wilson, I haven't had the pleasure before. I am glad to meet you." Which is not bad for somebody that age! My last meeting with him was just about a year before he died, in Toronto, again as a result of a CIM meeting. I went with Cliff Lord to visit him at his home, and we sat and talked for quite a time. By now the years were catching up with him; he was 99 years old. He couldn't get up and down stairs anymore, so he was pretty well confined to one room in the house and was more and more retreating to the days when he had walked across the tundra of northeastern Northwest Territories, taking pictures of myriads of caribou, and being accused of being Baron Munchausen for it. He was telling Cliff and me stories about those days. He talked about his first year in the Geological Survey, which was 1878, and this was 1958. 1878 was the year my father was born, and he'd been dead for a good many years, as I thought as a man fairly well on. He said his first boss was G.M. Dawson. I asked him what G.M. Dawson was like. "Well," he said, "he wasn't too bad of a boss. He expected a fair day's work; he didn't like me. He had one characteristic that used to bother me. If I came back from a day's field work to the camp and said that I'd seen a grizzly bear on such and such a point, Dawson would snort and say that he saw three there a few days before." Then Tyrrell went on to talk about his trips in the Northwest Territories in 1892 and '93 especially. These were quite remarkable trips, the sort of things that he and A.P. Low, George Dawson, Robert Bell, and others were noted for. But Tyrrell apparently came back with rather more glowing reports than the others did, so much so that he said Dawson referred to him as 'Baron Munchausen Tyrrell'! When he

was two or three months away from the end of life on this earth, I telephoned him to see if it would be at all possible for him to come to Ottawa for the official opening of the new Geological Survey building, which was planned in May of 1959. This, I expect, was about September or October of 1958. He couldn't answer the phone, but his [male] nurse did and said that no, he would not be able to join us. I said "Well, I hope the old boy gets better and is able to join us." He said "No, Dr. Harrison, if you could see him now, I don't think you'd wish that." So that was my last contact with one of the great men of the golden era of the Geological Survey, Joseph Burr Tyrrell.

What may not generally be known is that Tyrrell, so he said, was one of the first people in Canada to use film as we know it today, that is, flexible material on which the emulsion was placed. Before then, Tyrrell had used the very large glass plates, which were expensive and heavy to carry around, especially heavy when you were going by canoe. At any rate, Tyrrell said that he had seen an advertisement for this new flexible film in rolls, which weighed about one-fiftieth of what the old glass plates did, and he went to the Director to see if it was possible to get some of this stuff for his own field work. He was told "No," so he bought some himself, but he complained to the Director, "How is it that McConnell can get this kind of film, but I have to buy it myself?" He said Selwyn remarked, "McConnell needs all the help he can get!" So anyway, the pictures that Tyrrell took of the caribou, according to him, were made on film that he had purchased himself because the Geological Survey wouldn't purchase it for him. However, he did retain the film!

A.P. Low

Tyrrell, on the occasion of his 90th birthday, wrote a letter to the Logan Club, which has since been lost. He mentioned some of his contemporaries, including A.P. Low, and referred to him as the man who delighted in overcoming physical obstacles. I think Tyrrell did too, and that's probably one of the reasons why he admired Low so much, because Low, if nothing else, was a tough character. He used to spend a good bit of time in the bush, of course, as all men did then, but he seemed to specialize in wintering over in the bush. And one year, it was said, while he was out on a two-year stint, the regulations were changed. For the first year, as had been the practice in the past, each field party was allowed a gallon of rum, as part of its ration for hard living in the bush. While Low was away the regulations changed, and he came back to find that he was charged with a gallon of rum for his second year in the bush. He objected on the grounds that he had never received any information about this change, he had acted in good faith etc. etc. But the regulators were adamant, and Low paid for a gallon of rum. The next season he returned in the fall, along with the rest of the people. He is said to have gone into his office, unpacked his briefcase,

taken out his accounts, marched upstairs to the accountant's office, dropped them on the table, and said "There's two gallons of rum in those accounts, and if you can find them, I'll pay you double!" I don't think things have changed very much since then, as a matter of fact. Nevertheless, one of the great tragedies of the Survey was the onset of paresis, which totally destroyed the A.P. Low that had made such a name in the North. Unhappily, he lived for more than thirty years after the onset of paresis, and I was told by many about the shambling hulk of a man who spent nearly all his time in movies - a once great physical and mental specimen reduced to a shambling wreck.

Eugene Poitvin

Eugene Poitevin was a mineralogist who was around the Survey for a long time. His associations went back quite a long way. Most of his recollection concerned Charles Camsell, but I believe that he made a tape recording of his stories under the auspices of John Maxwell. Presumably these are in the Survey files someplace, I hope the main files. Anyway, that's the place to go for stuff relating to Eugene Poitevin and for Charles Camsell. The only story I heard about Camsell, which may not have got on the record, concerned a follow-up on the time he and Mackintosh Bell walked out from the Coppermine River country after a freeze up, the expedition on which they discovered the cobalt staining at Great Bear Lake, which 30 years later led to the discovery of the Eldorado mine on Great Bear Lake. Anyway, in their trek out, they came across an Eskimo camp, which had obviously been occupied quite recently, but there was nobody around. They thought that the Eskimo, or Inuit as we call them now, might have been frightened and disappeared, and so what to do? They thought they should leave them a gift [in exchange for some caribou meat they took], but since they were going to have to walk out, they were travelling as light as possible [and had little they could dispense with]. Finally they decided that they could spare a pack of needles, which they left behind and went on their way. This is recorded in the report. [The story is also told in Camsell's autobiography, *Son of the North*.] The follow-up came many years later on the Coppermine River when Camsell flew up there. And he was talking about the old days when he and Macintosh Bell had walked out and told the story about the needles. An Eskimo man who was in the group smiled and said "Yes, I was with that group as a young boy. We saw you coming. We were frightened, thought you must be bad people, and so we hid. But when we went back after you left and found the needles there, we decided it wasn't necessary to kill you." Camsell said that the short hair on the back of his neck went up pretty sharply when he heard the story.

People I Worked With

When I joined the Survey the people around the place included some of the great names of Canadian geology: **Morley Wilson**, who, I think, was the only geologist at the Survey to win the Penrose Medal, was a valued member of the staff; **H.C. Cooke**, whose memoir on the Noranda area with James and Mawdsley was something of a classic; **T.L. Tanton**, who spent virtually his whole lifetime working in iron deposits; **Bert MacKay**, who had spent some time in India but had mostly worked in the western part of Canada; **Alice Wilson**, the first woman geologist on the Geological Survey, and, indeed, I suppose, one of the first women geologists to be employed by any Survey, who had spent much of her career in the more or less settled areas of eastern and central Canada; **Frank McLearn**, who spent his whole lifetime working as a stratigraphic paleontologist, principally in the foothills and mountain regions of western Canada; **H.V. Ellsworth**, who was a prominent member and one that I had occasion to deal with fairly early on, an impressive man, excellent mind, thoroughly frustrated by the bureaucracy in which he found himself, but apparently content to live out his time with all the frustrations of the work. Nevertheless he made the first usable field geiger counter for determining radioactivity, amongst other things; **George Hanson**, who later became director; **George Hume**, **Robert Bell**, both of whom became directors, were well known in their areas, all with their special characteristics, of which I'll have more to say later on.

Morley Wilson

Morley Wilson was a small, spare, sparrow-like man whose religion, vocation, and hobby was geology. It was very difficult to get him to talk about anything else. He wasn't interested in anything else, so far as I could find out. I first met him in 1939 while I was a student assistant with Willis Ambrose in the Cléricy region of northwestern Quebec. Morley was noted for running his party as if it was in civilization. It was very well regimented as well, and everything was put properly in order. Dr. Ambrose and I were invited over for dinner one Sunday to Morley Wilson's field camp, which at that time was in some of the buildings of the abandoned McWatter Mine near Noranda. Roads were pretty good so we drove, of course, and we had polished ourselves up pretty well before we got there. I don't remember whether or not we wore ties, but I think we did. We were received by Morley at the entrance to his headquarters building, and we marched up the steps to be greeted by our host. We went into a sort of an ante-room, or living room, in this fairly large building, where we had a brief discussion about geological topics of concern to the two field parties. When the cook rang the bell for dinner, we trooped into the living room where Morley sat at the head of the table. On his right sat Dr. Ambrose, on his left sat the subchief of Dr. Wilson's party, who was also a doctor. I sat next to Willis Ambrose, as presumably the most senior of the

senior assistants on the two parties, and so on down the table, until finally the most junior assistant down at the far end seemed to be away out in limbo. Grace was said, Morley carved the meat, and we carried on exactly as if we were dining in the main dining room of the Chateau Laurier. Morley always ran his party like that, everyone had on a clean shirt, everyone's hair was combed, cleanshaven -- no beards in those days, folks -- and it was all done that way. He arose at a particular time in the morning, they had their breakfast at a particular time, and they started for the field at a particular time. I presume also they finished their day's work at a pre-assigned time.

Morley got his Penrose Medal for the stratigraphic work that he initiated in the Precambrian. So far as I know he was the first Canadian geologist who was able to demonstrate that you could use stratigraphic methods for working out structures and the sequence in the Precambrian. You must remember that in the early 1900s, Van Hise and Leith, who were the great men of Precambrian geology in the U.S.A., had defined the Precambrian as being, amongst other things, that system in which ordinary stratigraphic methods did not apply. Morley had started his work in the Noranda-Rouyn area in the '30s (Cooke and Mawdsley had been there in the '20s), and he had started to work and determine the stratigraphic sequence based on the usual stratigraphic criteria, except there were no fossils. This was a major breakthrough for Precambrian geology and came along at just the right time for people in my [age] group to benefit from it. Anyway, when Morley was awarded the Penrose Medal at the GSA in Washington, he accepted it with a fair degree of humility, and by quoting from G.K. Gilbert, that perhaps he might have been reasonably near to the truth. It is interesting to note that G.K. Gilbert was honored in 1979, the year of the USGS centennial, as one of the great men in the history of the United States Geological Survey. This, of course, was a posthumous award.

Morley, as I mentioned earlier, had nothing that he took much interest in except geology, and it happened that on September 3rd, 1939, the day on which Britain declared war [on Germany], Morley and Ambrose had together planned a meeting of Quebec and Ontario geologists to look at points of stratigraphic interest in Quebec, near Noranda. Well, as you can imagine, with the Nazis having invaded Poland, with Britain having declared war on that day, which was a Sunday, the people were thinking about other matters than geology.

[Tape 1, Side 2]

They were not listening to what Morley had to say and weren't hurrying quickly enough to look at the wonders of Precambrian geology that he wished to display to them during the morning. Morley had planned to give a little lecture during the course of a lunch, which had been arranged to be held on an island in Lake Dufault. It was pretty windy and I, as the chief chauffeur for the

people, had to get them across in an 18-foot prospector-freighter canoe. It was a little bit hairy, but everybody got there safely, but nobody, but nobody, wanted to hear what Morley had to say about Precambrian geology. Beer and sandwiches were there for lunch, and Dr. Wilson, who rarely ever took a drink of any sort, got so desperate that he grabbed a bottle of beer around the neck so that it hung down below his hand, and then he walked around through the crowd trying to stir up some talk on geology without any success whatever. I'm sure he felt that the whole day was entirely wasted talking about inconsequential things. The next Sunday, the return visit was to the Kirkland Lake area to meet the Ontario group and discuss their problems. That was the day that Canada declared war, September 10, 1939. While not as traumatic in effect as a week earlier -- we'd had a week to get used to the idea -- it still had a very stultifying effect on the usefulness of the excursion, again to Morley Wilson's dismay.

Years later, when I was living in Ottawa, I had occasion with some friends to go out to dinner with Mr. and Mrs. Wilson. It was quite interesting to see how Mrs. Wilson dominated the situation. When the waiter passed around the menus, Morley thought he'd have fried pork. Mrs. Wilson said "You know you don't like fried pork! He'll have liver." When it came to dessert, he asked for some apple pie, she said "You know you don't like apple pie! He'll have caramel pudding." This sort of domination was characteristic, and when Mrs. Wilson died, we all thought Morley would go to pieces. Not a bit. He was teaching at Carleton University as a special lecturer, he remarried, and he took a great interest in curling, becoming quite a member of the senior's at the Ottawa club. One time a year or two later, when I met him on the rink, I asked him about Carleton University. "No," he said, "I gave that up. It took too much time from my curling." But I imagine that he was devoting the full scale of his attention to curling just as he had to studying geology.

T.L. Tanton

I first heard about T.L. Tanton long before I joined the Geological Survey, because friends of mine had been student assistants on his field parties. He was a very jolly type of chap. He thought that anybody could be a geologist, I think, and he acted accordingly. Kids that were in second or third year university on his field parties would, inside of a month, be doing traverses on their own. He used a system to make it easier for them. The Keewatin volcanic rocks were all given numbers for particular types, so that the student could simply put down K3 or K2; and similarly for Timiskaming sedimentary rocks, the numbers would be T5 or whatever. One day one of the student's note book was being checked over by T.L., and he came across 'FRDK'. "What does this mean?" asked T.L. The boy said "Funny Rock. Don't know!" Tanton also had very definite ideas about the order of things in the geological universe. The Precambrian, according to him, could not have life

forms. Years later when I mentioned that I had seen very good stromatolites in Labrador, he turned to me and said very pontifically "Harrison, there is no reputable paleontologist in the world who will say those Precambrian forms came from life." He also had his own ideas about the organization of the camp meals, and one of the things he loved was fried oat cakes. You had to cook an excessive amount of oatmeal for the porridge in the morning so there would be some left over to fry into oatcakes in the evening. This didn't go over too well with most students, but they had to put up with it. One thing he did though, which I think was far in advance of his time and which I never heard of about other party leaders. When the boys went into town on a Saturday night, if there was a town nearby, he personally supplied them with some condoms, just in case, which, I think, was extremely thoughtful. He was unhappy at not being kept on beyond retirement age, but since he hadn't produced anything very much in the previous 20 years, there didn't seem to be much advantage to continuing to see if he could produce reports on some of the areas that he'd worked. So he set himself up as a consultant to look for mineral deposits, particularly iron deposits. And I remember one day he came into my office and asked me how you spotted a drill hole, which, I must say, shook me quite a bit. Here was a man who had worked around mining areas for 35 years and still didn't know what was involved in spotting a diamond drill hole.

B.R. MacKay

B.R. MacKay was another geologist that I heard about long before I met him, from other students with whom I came in contact at university. He was a short, little man, with a nice round belly, a high complexion, who looked as though he would die early from high blood pressure or a heart attack or both. As a matter of fact, at the age of 94 or 95, he still lived with his daughter in Montreal, and he died in Ottawa at 96. However, back in the thirties, when I was a university student, we were discussing the previous season's party chief. One of the fellows had worked in the foothills, and he said "We had a party chief named MacKay," he says, "a short, brisk little fellow. The first day in camp he got us all lined up and gave us a little talk just as if he were the captain of a destroyer. And he said, 'You know, I worked in India for several years, and I have discovered that you can be comfortable even if you are working in a field party.' So," said the student "we spent the rest of the summer making sure he was comfortable!" However, he did some of the pioneering work in the oil fields in Alberta and has left his work on coal as probably his major monument to posterity. While he was in India, one of the unexpected things he did was make quite a collection of Indian erotica. I don't know where it's gone to, his library is all gone now, but it was really quite a collection. When he retired he had a little money in addition to his pension, which, my goodness, he needed since he lived so long. As I recall, his salary on retirement was \$4,800 a

year, \$400 a month. That would leave him a maximum pension of \$280 a month. It probably increased over the years, slightly, but it didn't increase at all for a great many years. It's quite clear that people who retire on pension shouldn't live too long, at least not unless they've got some substantial resources in addition. Anyway, when he retired, to amuse himself, he got active in the Ottawa Historical Society, and I think he can be personally credited with saving as a heritage building the one on the corner of Sussex Street and George, which had been the first headquarters of the Geological Survey when it moved to Ottawa from Montreal. It was all set to be bashed down, and Bertie MacKay led the campaign that resulted in its being classified as a heritage building and reserved for posterity. He also, along with Robert Legget, led the fight to build up the Colonel By Museum, which is in the old lock house across the canal from the Chateau Laurier, just where the overpass crosses over the canal. Possibly in terms of humanity, these may be his major contributions. He never slowed down until progressive degeneration of some nerves in his legs made it difficult for him to walk. He used to drive a car with abandon. I only rode with him once. He gave me a lift one icy morning in the days when streetcars were still operating on Bronson and Bank, and we started down Clemow Avenue for Bank Street. He forgot the road was icy, talking about geology, I suppose, and when he put on the brakes at the corner of Clemow and Bank, nothing happened except that we seemed to gain speed. We shot out across Bank Street, and while traffic wasn't all that heavy in those days, it was still the 8:30 traffic. We went across Bank Street; we missed two streetcars, one going one way and one the other, and we crossed between them, as they tended to intersect directly in front of Clemow, and we piled up on the Shell service station that used to be at the corner. I walked the rest of the way to the Victoria Museum.

Scotty Stewart

One of MacKay's close associates was Scotty Stewart, who lived fairly close to him on what was then Carling Avenue but is now Glebe Avenue. Scottie had worked a long time for Imperial Oil and had been persuaded to come to Ottawa, where he only got about ten or twelve years in before he was pensioned off. He was extremely worried about what was going to happen to him now that he was retired. He lived in a big house, and I occasionally used to walk to the Museum with him. This was a rather trying job for me, because as a boy he had suffered from rickets, and his legs had not developed to the full normal length. So while Scotty was walking very fast, I seemed to be barely moving. Anyway, we used to discuss financial things and shortly before he was to retire he was expressing great worry about reducing his standard of living and that he would probably have to sell his house. And I said, "But Scotty, you could cash in some of those stocks that you have." "Oh, my God, man," he said, "you never touch your capital." As it turned out, in about a month he discovered that he had a bad cancer --

there are no good ones, of course -- but an advanced cancer, and three months later he died of a heart attack. So much for saving your capital!

H.C. Cooke

H.C. Cooke was one of the better-known Appalachian geologists when I joined the Survey. He was most widely known for the memoir by Cooke, James, and Mawdsley on what is now the Noranda region in Quebec. Being the senior author he got most of the credit for what was good and little of the blame for what wasn't so good. On some of the things that I checked as a student with Willis Ambrose, we both came to the conclusion that Cooke was probably as much responsible for some of the errors as were the other two combined. At least we discovered places he'd identified in the text and were quite unable to discern what he said he saw at those locations. He tended to be rather aloof, and wasn't the sort of person with whom one discussed problems of geology. Frankly, I don't think he was interested in discussing problems of geology. It was simply a way of earning a living. One of his partners in the northwestern Quebec study was Dr. J.B. Mawdsley, who left the Survey to become head of the Geology Department at the University of Saskatchewan. There he was one of the best loved geologists in all of Canada. He was truly a great guy. One day in 1939, while on a traverse in Quebec, I came across an outcrop that was beautifully exposed, with a nice slope, and on the slope was a prospector's pick. It was obvious that the pick had been left there to serve as a scale for a picture being taken of the rock. I picked up the hammer, and there into the handle was burned the initials J.B.M. Clearly it had been a prospector's pick of Jimmy Mawdsley's, and he'd left it there after he'd taken his picture. I carried it back to the camp and gave it to Willis Ambrose, who laughed and said Mawdsley was notorious for leaving his prospector's picks all over the Precambrian Shield, and said that we should return it to him. Well, as it happened, that very evening coming out of the Noranda Hotel, for some reason or other, we bumped into Jimmy Mawdsley in the doorway. This was my first meeting with him. I was introduced to him, and in the course of conversation, Willis said, "Oh, Jimmy, by the way, Jim here found one of the prospector's picks you lost when you were mapping up in this part of the country." Jimmy drew himself up to his full 5'8" and said "Prospector's pick that I lost? I never lost a prospector's pick in my life. I know exactly where everyone is, and I've got pictures of them to prove it!" I never heard anyone say a bad work of Jim Mawdsley.

Alice Wilson

Alice Wilson was, it seemed to me, pretty well on in years when I joined the Geological Survey. She had worked in types of rocks and in areas with which I had not been associated, so that I knew little about her. She was very pleasant to meet, a charming woman,

quiet, restrained, a little bit reserved yet nevertheless very friendly. She must have had a difficult time to be the only woman professional in the Geological Survey of Canada for so many years. I think only the second one was Francis Wagner or maybe Helen Belyea [Belyea preceded Wagner by nearly 15 years], but, at any rate, she lived quietly and unmarried amongst this multitude of male professionals. She loved dealing with younger people and was a staunch member of the Ottawa Field Naturalist Club, designing geological walks for the members and such things. She kept her work up to date so far as possible, but it was never quite up to date, so that when she retired she kept her office, and when we moved to the new building in 1959 on 601 Booth, she came with us and had her office there, where she continued her activities of writing all that she knew about all the work that she had done. One day, she came into my office, I was then Director, and said as she put down a sheaf of papers on my desk, "Dr. Harrison, I would now like to return to you my office key. I have completed all my work now and there's no need for me to come back any more." Well, I spent quite a long time trying to persuade her to hang on to that key, because it was quite clear that by giving up the key, she was giving up. I failed to persuade her and within a year she died.

Frank McLaren^{earn}

Frank McLaren^{earn} was another one of the quiet, reserved, but friendly types that I didn't get to know as well as I might have. Certainly his paleontological work was outstanding, and his quiet unassuming way of doing business made everyone like him. He had worked his whole professional life, as had Alice Wilson, in the Victoria Memorial Museum, which is now the Museum of Natural Sciences [and changed more recently to Canadian Museum of Nature], and in 1959 when we moved to the quarters on Booth Street, which were bright and shiny and new, with no character, I thought that he would be completely dismayed at the change in life style, having been in a building with so much character, so interesting, for so many years, to go into this new sterilized kind of existence. He had retired, but he, like Alice Wilson, kept on for a while, and one day I asked him if he didn't find it quite a culture shock to move from the museum to 601 Booth. He replied, "It's been wonderful. I love it here. I wouldn't trade it for a minute, for anything that we ever had at any time over in the museum."

Clive Cairnes

When I joined the Geological Survey in the spring of 1943, in the 'bull pen' at the old Memorial Museum, Clive Cairnes was then editor for the Survey, and he was the glue that held the Survey together. The Survey then did not have a Director. The Chief Geologist reported to the Director of the Bureau of Geology and Topography, Mr. F.C.C. Lynch. Also reporting to him was the Chief

Topographical Engineer and the Chief Cartographer, all on an equal basis. Dickison was the Chief Cartographer, and if he wasn't feared, he was certainly resented by most of the people on the Geological Survey. He insisted on the highest possible standards for all cartography that came out of the Geological Survey, whether it was a preliminary map or the finished product. All were done to the same standards, which was fine, except that with the flood of publications coming out after the war, it just could not be maintained. The Chief Topographer was Miller, a very difficult guy to deal with, although possible to deal with providing you dealt with him on his terms. Hanson was, of course, the Chief Geologist of the Geological Survey, and was at that time a very bright forward-looking individual. Shortly after I joined the Survey, that is to say a year or two, he had a severe heart attack, and this modified his characteristics greatly, as it so often does.

By the time I knew him Cairnes had had a severe heart attack in British Columbia, where he had worked and made a name for himself in the mountains, and he had been put onto a pretty stiff regime, or rather I suspect he put himself onto a regime, and he allowed very little deviation from it. He would work certain hours, including the hours from 7 to 9 in the evening, and he had specific activities for the remainder of his free time, if any. He was very quiet, very mild, could be cutting, had a glorious sense of humor, which many people seemed to be unaware of. But as the editor, everything that the Geological Survey published went through his hands, so that he had a wonderful understanding of what was going on and also had a great deal to do with the shaping of the individual geologists, because they had to meet certain standards in their presentations, and it was a good, rigorous apprenticeship. I left him my first serious manuscript just before I went to the field one summer, and when I got back I checked in with Cairnes to see how I had done. He had the manuscript in a folder, nicely put away, and he said, "Oh, yes," he said, "Your manuscript was rather good," he said. "I was very pleased at how well you expressed yourself. It wasn't difficult at all." Then he said, "I like the way you develop your arguments." So I went out of there walking on cloud nine. And it was a month or so before I got around to looking at this manuscript that had received such fulsome praise. What a shock! There was not one page of that manuscript that wasn't covered with the miniscule handwriting of Clive Cairnes. I doubt that there were a hundred sentences in the whole manuscript that didn't have some modification suggested to them. I couldn't help thinking that if he thought that was good, or, then he must have put up with some pretty dreadful stuff.

[Tape 2, side 1]

[The first sentence below is not on the tape, which starts with a fuzzy noise indicating some speech has been partly erased. This sentence, which completes the discussion at the end of Tape 1, is copied from the Harrison-corrected typescript.]

*Second audio cassette starts here; first two lines are a fragment on
the cassette + were edited out of the CD for clarity*
Anyway, it was a good lesson and it forced me to take a lot more
care about how I wanted to express myself and what I wanted to say.

One day I came down the corridor to go into his [Cairnes] office and heard him answer the telephone. "Who did you want to speak to?" he said. "Miss Minnow? You have the wrong number. She must be in the pool." This was a woman whose name was Mineau, and she was secretary to one of the anthropologists. I had known Cairnes for quite some time before I discovered that he was an avid sports fan. There was no television then, but he listened to the Saturday night hockey games, to the broadcasts of baseball games, or just about anything else that was possible to get on the radio. Later, of course, when the TV came in, he was one of the first to get a television, so that he could watch the football games and the hockey games. When the time came to decide when to retire -- he'd already made up his mind to take early retirement -- he decided to leave the Survey, I think about the first of April, 1952. The timing was deliberate as he wanted to see the British Empire games in Vancouver, and he thought this would be a good way to get seriously into retirement. The highlight of those games was the first confrontation of the two best milers in the world, John Bannister and John Landry, the only two men who had run a mile in less than 4 minutes. The question was, would they beat 4 minutes in Vancouver, and, if so, who would win. Well, it was a great race. It was broadcast all over the country. I listened to it on my car radio. Bannister won it, and Clive Cairnes was extremely pleased. The games ended a day or so later; he went to the hospital for a checkup and died in the hospital. Not a bad ending.

Walter Bell

It was about this time that the Survey was reorganized, along with other parts of the Department, so that it, once again, became a Branch with its own Director. George Hume, who had made a name for himself in the war controls concerned with fuels, especially petroleum, and also had made a name for himself as a geologist in the West, was appointed the first the Director, with George Hanson continuing as Chief Geologist. It wasn't too long before Hume was made Director General of Scientific Services, succeeding W.B. Timm of the Mines Branch, and he moved off uptown to be in closer association with the Minister. Most people on the Survey were rather surprised when Walter Bell was named to succeed Hume as Director of the Survey. Everyone liked and admired Walter Bell. He was a very fine person and an excellent paleobotanist, and a man who was dedicated to the Geological Survey. But he had steadfastly escaped administrative responsibility, except for being head of paleontology for a few years, a very small section, and didn't seem to be in the running. When Hume asked me what I, as one of the younger fellows, thought of the appointment, I said we were all pleased but rather surprised that it should have been Walter Bell. His remark was, "Surprised? Why should you be surprised? He had the

most seniority of anybody on the staff." I am glad to say that times have changed in that respect, and, as far as possible, Directors are selected on the basis of their suitability for the job. This would imply that Walter Bell was not a good Director. Not at all. He was a good Director, and, I think, he and George Hanson made a good team, except that neither liked the politicking that one has to do at that kind of level in order to achieve one's goals. And perhaps we suffered slightly at that time, in respect especially to the Mines Branch, which had been vigorously supported by W.B. Timm and continued to be supported by John Convey as its Director. However, there is no doubt that George Hume had a strong influence for the Geological Survey in the power circles up town.

Walter Bell was a medium sized, rather slender, spare man, vigorous, strong, and very active. His activity kept up until he died. After he retired from the Survey, he was kept on for some time as special advisor and made substantial contributions to the continuing work of the organization long after other people would normally have packed it in. He was terribly absent minded, and many of the stories concerning his activities relate to this characteristic. For example, Frank Beales, University of Toronto, had done a couple of seasons' work in the field for the Survey and was spending the following summer in Ottawa working the material up for a report. It happened that during the summer he was in Ottawa, his place of residence was fairly close to that of Walter Bell, and they used to walk together to work, fairly frequently or return home together, discussing matters of paleontological concern. Came the end of the summer, and Beales had done all he could do and it was time to go back to the University of Toronto. Of course, men were flooding in from the field and many used to go up to the Director's office to say "Hello"; Beales thought that it would be a good idea if he went up to say "Goodbye." He entered the office. Bell was working at the desk, looked up, saw him coming in, and said, "Well, well, Beales, glad to see you. Did you have a good summer?" Beales allowed he did and left.

One of Bell's other minor problems was that he had some difficulty in distinguishing between Harker and McLaren, I suppose because both were immigrants from England and had a somewhat similar accent (although not too much alike), about the same height, and the same general look. Anyway, McLaren and I were going skiing one glorious February afternoon, and as we were putting skis on top of the car, Bell passed on his way back to the Survey from lunch. He commented that we had a glorious day for it, and we agreed. We went on and had a very fine day/afternoon of skiing up in the Gatineau. Meanwhile, back at the Survey, some renovations were under way, and Harker discovered that there were some pieces of 2" x 4" oak that were being ripped out and for which nobody laid any claim. He thought that these were very good pieces of lumber for some project he had in mind, so he phoned his wife to bring the car at 5 o'clock, and he would load on the 2 x 4s on the ski rack on his car. Mrs. Harker arrived, and Harker was in the process of loading

these broken-ended pieces of 2 x 4 on the ski rack of the car when Bell came out and mistaking Harker for McLaren, said, "My word, you did have a difficult day!" Well anyway, all the stories that relate to Walter Bell relate to him very kindly, because I know of no one who was more highly regarded in my time on the Geological Survey than Walter Bell.

C.H. Stockwell

Cliff Stockwell was, I think, one of the giants on the Geological Survey. He probably had more influence on me and my development as a scientist than did anyone else, so perhaps, my enthusiasm for him ought to be discounted a bit because of self interest. At any rate, at the age of 82, he turned in another large work on behalf of the Geological Survey of Canada. I first met him as a student assistant in 1938 in southwestern, southeastern Manitoba, where we worked our butts off for C.H. Stockwell. He had the knack, in his quiet way, of getting remarkable enthusiasm from his students. He got us all together at one stage towards the end of the season, probably a month to go, or so, pointed out how much money he had left in his field allotment, the amount of work we had to do, and then said we were going to have to work even harder to finish off our activities to complete the map sheet. There were six students on the party, and they worked as hard, willingly, as any group that I've ever encountered in my life. I had worked on a farm, and I never worked any harder on the farm, even during the harvesting season, than I did that last month for Stockwell. On one occasion another assistant and I were sent away on a field trip, which was to take a certain number of days, let's say 15 days. We lost a day because of weather, so that when we started off on our two-day return trip, we were a day behind. Knowing that the boss was short of money and was desperate to finish the map-area, the other assistant and I got up at 4 o'clock in the morning. We were on our way before daybreak, and we paddled and portaged all day with no stop for lunch, and arrived back at the camp after dark that same day, figuring, of course, that having got back on time, we would certainly get the day off. Cliff, however, said, My, he was glad to see us, that he was wondering what he was going to do in order to get groceries from Beresford Lake. So that now that we were back we could do it. So the next morning the same assistant and I started off again to make eight portages and do a lot of paddling, to get to Beresford Lake to get groceries. When we got there we found that it was not Saturday, as we had thought, it was Sunday and everything was closed up. Since we were expected back the following day, there was nothing for it but to inquire around and eventually walk a couple of miles to the place where the store keeper was spending Sunday. He came back to the store and gave us our supplies, with one exception. We had needed, I think it was, eight cans of powdered milk. He had no powdered milk, so we took along twenty-four cans of Carnation milk. This meant that instead of carrying about 10 pounds of milk, we now had to carry 50 pounds. So the next morning early,

back we went and got to the camp for a late supper, with our legs bowed from portaging. At supper time Stockwell said, "Well, you fellows have been working pretty hard, so I'll give you an easy day tomorrow." So all we got was a 7-mile traverse through old burned forest, which meant that we stumbled and hacked our way over deadfall on an easy day following 17 days of steady work. We finished the map-area on September the 30th as scheduled.

Cliff didn't really believe in doing any portaging or such like when there was geology to be done, so on days when we had to move camp (and we had a pretty big camp), he would maybe help us across the portage on the first trip and then would keep on going on a day's work with one of the assistants. This meant that for a camp of seven people there would be five left to do the portaging, which is okay, I guess. I was always left to do the portaging, which may indicate something. On one occasion, I remember, during this thirty days in September of 1938, two of the lads were away on a fly camp and, of course, on a fly camp you always travelled as light as you could. And Cliff took one of the assistants on a traverse, which meant that there were three of us left to portage the outfit of seven. The only significant difference was a bit of grub, a couple of personal packs, and a canoe; they were away on the fly camp. It was a hell of a portage, as I recall, something over three-quarters of a mile through deadfall, tough going, to a creek. When we got to the creek, there wasn't enough water to run the motors or even to float us in the canoes. Being only three of us with two canoes, we wound up dragging the canoes up the creek, sometimes going up to our waists in water, 'till we got to the lake. There was a lift-over there, and it was just dark. We lit a flashlight to read a message that was left in a cleft stick stuck in a crack of a rock. It was a note from Cliff with a sketch of the lake -- we had no map of the lake -- saying that they would look for a campsite in a particular area, the area being circled on the sketch map. So we unloaded the canoes, dragged them across the lift-over, loaded up, tied the canoes in tandem, and started the motor, which went. At this point I realized that we didn't have any more gasoline than whatever happened to be in the motor. Also it was dark, we had no map of the lake, and we hadn't a clue as to where the shoals might be, but we knew approximately the direction we had to go. So away we went, I running the motor. And we were out in the middle of the lake, somewhere in the area within the circle, when the motor stopped and as it did there was a bang up in front of the canoe, and we'd hit a floating log. Just as well the motor had stopped or we might have overturned. Anyway, at this instant I saw a match flare over somewhere to one side, so I screamed over in rage and frustration, irritation, and whatever, "Have you found a decent place to camp?" And the answer came floating back across the water from our cheerful boss, "The best we've seen since dark!" He, of course, had worked until he couldn't see the rocks any longer. Anyway, we got camp up, it wasn't much of a place, but as it turned out it was the only one on the lake. We had supper that night about midnight, and at 6 o'clock the next morning we were on our way

again doing our regular chores. I don't know how you get a guy that can make people enjoy working so hard for him. Many years later, I bumped into the assistant with whom I had spent most of the tough times that summer, and while we were having a beer he said in a reflective voice, "You know, I think of that summer, and if I had to do it all over again, I wouldn't." But he said it with a smile, and obviously he'd have jumped at the chance to have another season like that with Cliff Stockwell.

Within the then Civil Service Commission regulations, there was no way that one could pay a scientist for his outstanding scientific contributions. There was a limit in salary beyond which he couldn't go. If he wanted to become fairly well off, he had to accept a job that had substantial administrative responsibilities. Shortly after I became Director, the opportunity came to appoint Cliff Stockwell as chief of the Precambrian Division. I did this with considerable reluctance, because I knew that Cliff, while he would take the work conscientiously, wouldn't like it. He would much rather be concerned with his geological studies and, as a scientific leader, he could make significant and more important contribution. However, I had been on a committee that was looking at the rates of pay that might be assigned to various classes of scientists, from the most junior to the most senior. There seemed to be a possibility that we could get a substantially increased level of pay for the scientists. And in the event, we managed to get it. I am glad that I had the chance to participate in that. And the first individual to be proposed for this new senior science category, now called Research Scientist 4, I think, was Cliff Stockwell. We got him a lateral transfer from Chief of Division to the Senior Research category at no loss in salary to him. He was the first in the public service. Hans Frebold was the second one on the Survey, and I know there have been many others since, Bob Boyle, included. Anyway, the idea that somebody by his own efforts could merit a senior level without administrative responsibilities was in the late '50s practically unheard of on this side of the border. I had been pushing for this procedure, because I knew that it had been used with considerable success in the United States Geological Survey.

Willis Ambrose

The other officer of the Geological Survey who had a profound influence on my professional development was **Willis Ambrose**. I became his assistant the year after I had worked for Stockwell, and it was a wonderful year. My appetite had been whetted for geological problems. To get out with Willis was a great break as there was only Willis and myself on the field party, plus a cook-canoe man, whose only contribution to cooking was opening a can of sausage and to boil potatoes. I worked every day with Willis Ambrose, reviewing, redoing, and reexamining an area that had been done the year before by his senior assistant, Willis having managed

to mistake his foot for a chopping block and been laid up for practically the whole season the year before. To be able to work with a skilled geologist on a one-to-one basis for a whole summer was an experience that was very fortunate for me at that time, especially someone who was as kind and had such a sense of fun as Willis Ambrose. He wrote a great many nonsense verses, some even while we were on traverse, and I am enclosing a group, the only ones that I have of the verses that Willis Ambrose wrote during his period with the Geological Survey. He left to become a private consultant and later became a professor and then Miller Research Professor at Queen's University, and he had just retired from that when he died from a heart attack. It was good fun and a good learning experience to be with him. His wife came out to the field for a week or so, stayed at our camp, and this involved a certain amount of socializing. One day, Mr. and Mrs. Ambrose were to go to a party in Noranda, which involved crossing the lake in a canoe, taking the Survey panel truck into Noranda, and then making the reverse trip. Willis was complaining bitterly about having to go to this party, he knew what would happen, it would be late getting started, the meal would be late, they would get in late, they would feel terrible the next day, and so on and so on. Anyway, they left in due course, and I happened to hear the motor as the canoe returned to our dock at full daylight the next morning. Looked at my watch, it was 6 o'clock, our normal getting up time. But it was a Sunday so we stayed in for a bit. We had a little cabin that we were using as a cook shack and office, so finally the cook-canoeman and I went into the cabin and cooked up some breakfast and a big pot of coffee. In due course, Willis came in for breakfast, looking like hell, hoarse voice, and I said, "Well, how was the party?" "Oh," he said, "just like I told you last night" and he went on and on about all the things that were poor about the party. He had a couple of cups of coffee but didn't want anything to eat. After he'd been there for nearly an hour his wife came bouncing into the shack. I said, "Well, how did you enjoy the party?" And she said "Oh, man, what a party! And you should have seen Willis playing patty cake with Mrs. Price!"

[Tape 2, side 2]

Willis was quite skilled at writing up verse, apparently on the spur of the moment. He parodied various things, and I enclose copies of three of his verses that I have been able to come across ~~[The whereabouts of these verses is not currently known. S.E.J.]~~ found
Now remember, these were written nearly 50 years ago, and the one marked number one was written at a time when the Chief Treasury Officer, who was appointed by the accountant's office to liaise with the particular branch or department, would examine the accounts and write directly to the Field Officer, and he got the sorts of replies that were similar to those expressed in verse by Willis Ambrose. Late in the '30s this procedure was changed, and the party chiefs used to get letters signed by the Chief Geologist or the Director, saying "The Chief Treasury Officer comments as

Poem appended
#1
Notice to
Field Officers
Poem
#2: untitled
starts "The
season now
is near at
hand."

follows:" The field men then had to write back to their own major bosses and the replies became quite subdued. The second [verse] refers to the outfitting for the field. In those days, of course, the Survey used a lot of horses, and the Equipment Officer was a gentleman named Sam Steeves, hence the reference to him in number two. The one marked number three was written when I was a student assistant to Willis Ambrose. On this particular day the flies were bloody awful, and I was running the compass line. I was down in the swamp, and Willis had hared off to the right to look at an outcrop and seemed to be gone a terribly long time. I thought he must have found a gold vein or something. So eventually I hollered over and said, "Is everything okay?" "Oh," he said, "I'm composing." I was somewhat indignant. "Composing what?" "Oh," he said, "writing a verse." And then about two minutes later he spouted the verse that is marked number three, which I thought was not bad for perhaps fifteen or twenty minutes, while surrounded by flies, on an outcrop in the lowlands near Cléricy, P.Q.

J.C. Sproule

Cam Sproule left the Survey very close to the time that I joined it and did very well for himself by establishing the company of J.C. Sproule and Associates. Cam was noted for having a fairly substantial nose, and on one occasion, so he said, he got into quite a heated argument at some meeting or other with [geology] Professor Rutherford of the University of Alberta. And both of them got quite heated and said some intemperate things to each other in loud voices. Finally the chairman brought it to a halt by saying, "Gentlemen, gentlemen, please desist. Seldom in my life have I seen two men who look so much like one end of a horse sound so much like the other!"

H.V. Ellsworth

When I joined the Survey in '43, Ellsworth was getting pretty well along in years but was still an interesting and challenging man to talk to. He liked to do whatever he could to get you into a corner and see if he couldn't make a fool of you. He'd started life as a chemist, and I had too, and when he discovered this, he had some sort of a fellow-feeling for me, I guess, and thought that since I had been a chemist I should be a better geologist. Be that as it may, one day he'd wrapped up some specimens for photographic emulsion, specimens that Yves Fortier and I had brought back from Otter Rapids from the Abitibi River in 1944, I think. Anyway, we had gone up there to look at a radioactive mineral deposit that had been discovered by Alec Mosher and another prospector named Kentie. I can't remember Kentie's first name. At any rate, Ellsworth had wrapped these up in photographic emulsion, and he asked us to look at some photographic emulsion of a specimen from Great Bear Lake and then at the one from Otter Rapids, and to tell him if we could

Poem
#3: untitled,
starts "A pillow
he cried in
vigorous
tones"

see any difference. So Yves looked at them, and he said, "No," he couldn't see any significant difference. This was after quite a long examination. And I looked at them and the only difference I could see, though I didn't know if it was significant or not, was the fact that the tracks in the emulsion from Otter Rapids were longer than those of Great Bear Lake. This seemed so obvious that I couldn't imagine that this was what Ellsworth was looking for, but since this was the only thing I could see, I said, "Yeah, the tracks from Otter Rapids are longest." So then Ellsworth went on, "That shows your chemical training. That's exactly right, you've got to be an observer, you've got to understand, see things, if you are going to understand chemical reactions, etc." And Yves meantime was getting so upset about this that he was fit to be tied. And maybe that shows that sometimes you should say the obvious, even if you think it is so obvious that it isn't worth saying.

Anyhow, to get back to Otter Rapids, Yves and I went up there, and it was agreed that we would meet Alec Mosher and Kentie (Albert Kentie maybe), at the camp, which was about a mile and a half or so from the railway track over towards the river. In those days the ONR, the Ontario Northland Railway, would stop anywhere if there were passengers aboard, so they let us out at the head of the backpacking trail, and Yves and I loaded on quite a pile of stuff that we had with us. Anyway, it was in October and pretty damn cold up there. We had a stove and all that sort of nonsense. We had gone a short distance when Yves' pack slipped a bit, and instead of pulling straight back on his head it cantered him over to the side a little bit. But rather than stop and readjust it, he kept slogging ahead, so that by the time we got to the camp -- it was nearly dark then -- Yves had a wry neck that you wouldn't believe. He couldn't straighten up for five days afterwards; he couldn't bend over, rather, for five days afterwards, and his head was at an angle to the vertical at all times. And the result was that Kentie and I had most of the job of putting up the tent, because Alec Mosher had suffered a bleeding ulcer and had had emergency surgery, and he had been told told that he had to take things easy. Kentie, I might say, was about 75 years old at the time, though he didn't seem that old at all. Anyway, we started putting the tent up, and we had the stove pipes to put together. They came in flat sheets and had to be heeled together into little catches. Well, by this time my hands were very cold and were wet with snow and one thing and another, and I was having difficulty getting this damn stovepipe to fit. So I hit it with the heels of my hands coming together to try and force the damn thing to close, but my hands slipped on the stovepipe and dragged my thumbs across its ragged top edge. I wound up with two deep cuts, one on each thumb. So here were three people in camp to look at this wonderful prospect, and it had lots of kicks on the geiger, and the only person who was fit was Kentie, the oldest man of the crew. That was the most decrepid-looking party I ever had anything to do with.

Anyway, to get back to Ellsworth, one of Ellsworth's contributions,

I guess, to the arts consisted in having taken chemistry at McGill and staying in the same boarding house as that being occupied by a young fellow named Paul Hebert, who was taking a master's degree in philosophy. And he and Ellsworth used to argue at great length about the relative merits of this, that, and the other thing. And Ellsworth, by golly, persuaded Hebert that unless he took chemistry and understood its precision, he would not be able to understand philosophy. So, after he finished his master's degree in philosophy, he took his master's in chemistry. And so, Hebert told me years later, he flipped a coin to see which way he should go, and he took chemistry. However, this is the same Hebert that later wrote the humorous novel called *Sarah Binks*, which has now been made into plays and is best known, perhaps, for the one-man show that [the Newfoundland actor] Gordon Pinsent has put on called *Sarah Binks*, which ran for several weeks in Ottawa in the winter of 1980-81. Well anyway, to carry on with Hebert for a bit, which hasn't much to do with Ellsworth, I graduated first with most of my effort in chemistry, and Hebert was my professor. And I guess I was a pretty good analyst, because he got me a job. I worked for two years as a chemist, then went back to university to take geology, much to his disappointment that a student for whom he'd got a job as a chemist would now bite the hand that fed him and go upstairs to take geology in the science building. Anyway, he came up one day, I can't remember why; I was talking to Professor Ed Leith, at the University of Manitoba, when Hebert came in. And this would be, I should think, in October, maybe November of 1938, the year before war with Nazi Germany broke out. And when he walked into the lab where Leith and I were talking, he was wearing a brand new, worsted wool suit made in England. And Leith said, "My God, Paul. That's a pretty nice thread you've got there." Paul said, "Yeah, I figure there's gonna be a war pretty soon, and we may not be able to get any suits, so, I thought I better get one while I could." He said, "In fact, I got two just like this." At which point Leith flipped the fly in the front of his trousers and said, "Good heavens, Paul. You haven't got a zipper." "No," said Paul, "I don't hold with a zipper. I had a zipper on my sweater, and it wore the end off my tie."

Well, that's not much to do with the Survey, except as a sort of a sidelight on what happens when people start serious discussions. Incidentally, it has been said often about Hebert that he would teach you just enough chemistry so that you could pass the exam, the rest of the time he would spend teaching philosophy. If you wanted a good mark in chemistry, you had to work at it yourself. And that's true.

Yves Fortier

Now I guess I'd better say a few words about Yves Fortier. Yves and I joined the Survey within a week of the same date, and we were assigned, twice, on joint field projects. So I got to know him

pretty well in my younger days and have stayed good friends with him ever since. We worked together first in the fall of 1943, I think it was, looking for quartz crystals up in the area north of Gananoque, and we stayed at a farm house at a place called Black Rapids, where we had a couple of bedrooms and a dining room as our work area. We'd work all day -- and this was in October and November and it was pretty darn cold -- and then we'd come back to the farm house about dark, where we'd then get something to eat, maybe after a drink. And Yves had apparently never had hot, buttered rum. So I got a bottle of over-proof rum, you could get it in Ontario in those days, and made up some hot, buttered rum one evening. And Yves sipped his, sipped it again, and his eyes rolled up, and he said "My, that slips down like a pair of velvet panties!" From which I take it that he liked hot, buttered rum.

Yves was a terrifically hard worker and was one of the best I've ever come across at putting things together. His weakness, I think, was in wanting one more bit of supporting evidence before he published. However, be that as it may, he could think things out just about as well as anybody I know, and his work on Operation Franklin, I think, shows that. That was truly a monumental piece of work. He organized that right from day one through to the compilation and final edition of the report. And he deserves a medal for it; I hope he gets it. Whenever females were around he used to sparkle like champagne. It was really quite amazing to see how he lit up when there was a young woman near by. He met his wife while on a skiing holiday towards the end of March, and he came back absolutely ecstatic about this young, very talented, and very beautiful woman that he'd met while skiing. In fact he was walking four feet off the ground. One miserable, rainy day in early April, we were leaving the Museum together on our way to dinner, and Yves was prancing down the hall and around the rotunda in the Museum. That evening one of the sourest-faced commissionaires that it has ever been my experience to have anything to do with was on the job, probably just having come in from outside soaking wet from the icy rain and wind, and he saw this crazy nut waltzing around as if it really was spring, and he got a very sour look on his face, and Yves went up to him and put his hands on his shoulder and said "What's de matter wid you? It's a beautiful day today," and waltzed out into the rain! I'm sure that the commissionaire thought that he had a nut on his hands. Well, he did too, but Yves and Trudy actually got married, I think, less than two months after they first met, which is pretty good going. And they've had a good life together, very fortunate. Very nice people, both of them.

G.A. Young

Young was the Chief Geologist at the time that I applied at the Survey, but by the time I got to the Survey in the middle of May 1943, he had retired a couple of weeks before. I did meet him two or three times, and I certainly heard a lot about him. He was one of the old school. He believed that you could do things the hard

way and get away with them. He read every paper and report that was ever written by a geologist on the Survey during his tenure as Chief Geologist. In fact, he went farther. I've heard several people comment (some of them rather bitterly), that they would leave G.A. Young their paper, report, whatever, when they went to the field and come back to find that he had rewritten it and sent it in for publication. In some cases at least, the way he had modified the paper did not suit the presumed author. But of course, his authority was absolute, and it would be quite impossible to write to the editor of whatever journal it had been sent to, or if it were published as a Geological Survey Report there was nothing that anyone could do to try and countermand his actions. Absolutely autocratic. When I asked him some questions about life on the Geological Survey, he gave me the most equivocal answers that I have ever gotten from anybody in such a position, "on the one hand, but on the other..." You couldn't get anything out of him at all. I remember hearing once, from Willis Ambrose I think, that he'd put in a request for a motor car for the summer. And he said that Young got him up to the office and gave him quite a dressing down for asking for a car. He said "We didn't have cars in my days, and we got our work done," and so on and so on. So Willis said, "Well, if you want to pay 150 dollars a day for a field party to walk around on perfectly good roads, that's all right with me." And he got his car. Young wouldn't allow aircraft when I came on the Survey, although many other agencies were using aircraft as a fairly general thing, it wasn't until about 1947 or '48 that aircraft got generally to be used for field work in the North. By this I mean you got carried up to the field area and you got your supplies brought in by an airplane, but the idea of using airplanes to save people from wasting days portaging from one river system to another and that sort of thing, just wasn't on. You were expected to do it yourself, and I think maybe in 1947 I was one of the first that really had an aircraft on call for my party and one or two others jointly. I don't think we had it full time. In 1948 we certainly had one aircraft full time for all field parties working in Manitoba, and that was certainly one of the earliest, largely because of G.A. Young's influence, which had always forced you to do things the hard way. He was the son-in-law of A.P. Low, and he admired the old man tremendously in his fortitude, and I think it was partly that that controlled his thought processes. At any rate, it seems like damn near everybody was frightened silly of him.

W.H. Collins

I didn't know Collins, for he died quite a while before I came to the Survey. But I think that nearly everyone knows the story of his eldest daughter eloping with A.C. Lawson, at a time when Lawson was in his eighties and she was about twenty. They were married and later on, when Lawson was about ninety, she conceived and had a son. Presumably one of the very first of the babies conceived with sperm from an unknown donor! At any rate, here was Andy Lawson, 93 years old, or something like that, with a new son. Now Dunc

Whitmore, who later worked for the Survey, married the youngest daughter of W.H. Collins. So Whitmore was able to say that he was the uncle of Andy Lawson's child. And, of course, Andy Lawson was then his brother-in-law. This caused a few people to gulp in some astonishment when they heard this.

A.C. Lawson

In 1947, I think it was, the Geological Society of America met in Ottawa, and Yves Fortier had the notion of getting all the over-eighty people together in one row in the Museum auditorium for some special function of the GSA, which he did. And that was one of the most imposing arrays of geological names of that day that it would be possible to find anywhere. There was A.C. Lawson, A.C. Lane, J.C. Hobbs, Bailey Willis, and I forget, half a dozen others. And several pictures appeared of these people. And later in the meeting a reporter from one of the Montreal newspapers came up to A.C. Lane and A.C. Lawson, who happened to be looking at an exhibit in Peacock Alley in the Chateau Laurier, and she was asking them about their lives and so forth, and as Lawson was never one to talk very much, Lane was doing most of the talking. Suddenly she said, "Well, I'd like to get a picture of you two people in some great discussion, where you're disagreeing with each other, arguing with each other." And A.C. Lane said, "Look, we're so old now, we don't disagree about anything much. All our enemies are dead or forgotten." And then he turned to Lawson and said, "Andy, you know, there is one thing though, you are all wrong about the Couchiching." Andy's jaw stuck out, and his beard started to quiver, and the cigarette in his mouth pointed out like a pistol, and the girl, realizing that she'd got her picture, snapped it, and it looked great. And she thanked them, and when the flash gun went off, Andy Lawson sort of smirked and realized that he'd been had. Anyway, they went then with A.C. Lane having his arm around Lawson, and as they went past me Lane said, "You know, Andy, you were all wrong about the Couchiching." I think that must have been the end of a beautiful friendship.

Well, here is one other story about Lawson. He only worked for the Survey for a couple of summers, up in the Rainy Lake area, and that was the area where he determined, to his satisfaction, that there was an older Keewatin volcanic assemblage and a younger Couchiching sedimentary assemblage, which overlay the Keewatin. There has been much argument about this over the years, and, I suppose, some day we will get the answer, but this was a very heated kind of exchange. And Bailey Willis and Andy Lawson came to odds over this, and they had little to do with each other from then on. This disagreement goes back to the early 1900s. It is said that one day when Bailey Willis was on a trip to Africa, an erroneous report came out that Bailey Willis had been killed in an accident in the Rift Valley in East Africa. And one of the grad students rushed into Lawson's office, where he was busy looking down the barrel of

a microscope, and he said, "Dr. Lawson, we just got word. Bailey Willis is dead." He said Lawson didn't raise his head from his telescope and said, "Bailey Willis has been dead for twenty years."

Well there are many more stories, I suppose, that could be told. I think I have run pretty well dry, and I think that maybe I shall drop it here and leave it to somebody more knowledgeable than I to fill this out. I would suggest that as soon as possible you contact A.W. Jolliffe in Kingston and see if you can get him to tape record some of his memories of the days of the Geological Survey. He left the Survey shortly after I arrived here, and so his corporate memory goes back a lot farther than mine does.

Notice to Field Officers

J. Willis Ambrose

Circa 1936

A notice has come to a higher authority
That some of the field men – some say a majority –
Spend most of their summers just looking at rocks
Or turning off angles, or chaining off blocks.
Now if this is true it is most reprehensible,
Completely unjustified, and quite indefensible.
The object of sending these men out each year –
We've said it before, now we'll make ourselves clear –
Is not to be spending their time at such fun
But in order to get from each separate one
A series of forms – in triplicate please
Concerning the purchase of apples and cheese.
And then explanations of course must be sent
As to why all that dollar was recklessly spent
In buying up fly dope and wire and nails
And thoughtlessly spending the balance on pails.
Then forms must be filled concerning each auto
And whether the officer driving was blotto,
Accompanied by photos from both front and rear,
From top and from bottom, from both far and near.
And horses each day must have pulses counted,
And temperatures taken before they are mounted.
Their hooves must be pared with file number 3
And they must be fed upon sassafras tea – see form 83
Henceforth be it known the officers all
Must fill forms like lightning from spring until fall,
And stop wasting time on angles and rocks
Or chaining in cut-lines of map-sheets and blocks
Such material is useless – we can't understand it
But forms are our lifeblood – our system must have it.

Untitled

J. Willis Ambrose

Circa 1938

The season now is near at hand
When stagger forth that gallant band,
Geologists, surveyors too,
Determined quite to do or die.
Each one has had, before he leaves,
Some quiet talks with Mr. Steeves:
“What’s that you say? No flit this year,
Just kill the flies with bottled beer.
Why I remember in eighty five
We lived inside a live bees’ hive
And since we couldn’t feel their bites
We bit each other during nights.”
These things adjusted, off they hurry
Without a care, without a worry
Until about the end of June
A letter comes in words of gloom:
“The Chief Accountant comments as follows:
Item: Why did you buy a case of olives?
Item: Your postage stamps are two cents short
Please let us have a full report.
Item: No washing was allowed last week
Item: Your excuses all are much too weak.
Item: Fill in forms 2, 8, 10 and 20 –
Item: When you get back we’ll get you plenty.”
To this, while officers in fury burn
Replies like this soon make return:
“Item: We used the olives in place of grain,
Fed them to horses in the rain.
We had some trouble with the pits
But use them now as chicken grits.
For the other items I wouldn’t know
But I know a place where you can go!”
In spite of this they all survive,
And in the fall they all arrive
Back in the office – but all is gone!
My books – my desk – all, all are gone!
Not gone you say, but moved? To where?
Into Confederation Square?
And so the hectic season’s done,
And so are we, but it’s been fun.

Untitled

J. Willis Ambrose

July 4, 1939

“A pillow” he cried in vigorous tones
That sounded out above the groans
Of Jim, who busy running line
Was fighting flies most all the time.

“A pillow” he cried, and danced with glee
“And look! it’s dipping under me!
And facing south, for by the rood
That form just can’t be misconstrued!”

They came in droves to see this wonder
But, too bad, he’d made a blunder –
It wasn’t a pillow; so back they pushed
“You know” they sighed, “the man is bushed.”

Epilogue

“A pillow” he cried, then tore his hair
for only half of a pillow was there.
From what there was, he couldn’t tell
If it dipped, or struck, or went to hell.

J.M. HARRISON
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K1S 3G4
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CURRICULUM VITAE

Born in Canada, 20 September, 1915. Canadian citizen - married, no other dependents.

LANGUAGES

English, mother tongue
French, good working knowledge

TRAINING

B.Sc. (1935), M.A. (1941), Ph.D. (1943), all in earth sciences. Have worked as chemist, geologist, professor. In last 35 years have been responsible for science policy and organization, planning resource development, and for science administration.

EXPERIENCE

1976 to present - have acted as consultant on development of natural resources, and on science and technology policies for many agencies - UNESCO, UNDP, UN University, UN New York, Asian Development Bank, International Development Research Centre, Canadian International Development Agency, Kenting Earth Sciences, etc. Have also consulted for many departments of the Government of Canada and for national and international non-governmental organizations. These have involved assignments in Britain, Germany, France, Belgium, Netherlands, Finland, Scandinavia, Greece, Turkey, Iran, Italy, Cyprus, Kenya, Thailand, Indonesia, China, Japan, Philippines, and possibly others. While with Unesco, I visited 30-40 countries on Unesco business. Chairman of the Board, Science Institute of the Northwest Territories (1984-89), President of Canadian Commission for Unesco (1985-88). Chairman of an international group under ICSU on disposal of high-level radioactive wastes (1979-83), and on disposal of other hazardous wastes (1983-87).

January 1973 to March 1976 - Assistant Director General for Science and Technology, Unesco. In general charge of Unesco's programmes in teaching of science and engineering, and in the operation of scientific, engineering, and technological projects, which are directed mostly to developing countries.

July 1964 to December 1972 - Assistant Deputy Minister, Department of Energy, Mines and Resources in general charge of scientific and engineering programmes in geology, geophysics, surveying, hydrology, fuels and metals.

May 1943 to June 1964 - successively: geologist, Chief of Division, and Director (1956) of the Geological Survey of Canada.

Prior to 1943 was chemist, engineer in mines, field assistant on geological and mineral surveys, etc.

Have written about 65 scientific and technical papers, including several on development, administration, and organization of scientific and technological activities.

Fellow: Royal Society of Canada, Geological Association of Canada, Royal Canadian Geographical Society, Arctic Institute of North America; formerly of Geological Society of America and Mineralogical Association of Canada.

Member: Canadian Institute of Mining and Metallurgy (life), Society of Economic Geologists (life), Ontario Association of Professional Engineers.

Original member of Science Council of Canada (1964-1970); Chairman of committees such as Science and Technology in the Arctic; Resource Satellites; Canadian Committee on Oceanography; member of many advisory committees; special lecturer at Queen's University, and for the American Association of Petroleum Geologists.

President of Geological Association of Canada (1960-61); President of the Royal Society of Canada (1967-68); President, Canadian Institute of Mining and Metallurgy (1969-70); first President of International Union of Geological Sciences (1961-64); President, International Council of Scientific Unions (1966-68).

HONOURS

Include Companion, Order of Canada (1971); Montgomery Fellow, Dartmouth College, N.H., April 1988; R.C. Wallace Medal, University of Manitoba (1987); Honorary Member Engineering Institute of Canada (1986); Achievement Award of Public Service of Canada (1970); Logan Medal of Geological Association of Canada (1969); Blaylock Medal of Canadian Institute of Mining and Metallurgy (1966); Foreign Associate of National Academy of Sciences, U.S.A. (1965); Honorary Fellow, Geological Society of London (1965); Kemp Gold Medal, Columbia University (1962).

Honorary doctorates from universities of Manitoba (1965), Queen's (1967), McMaster (1967), Calgary (1967), New Brunswick (1971), Carleton (1976).

BIBLIOGRAPHY OF J.M. HARRISON

Occurrences of quartz crystals in Leeds County, southeastern Ontario (1944); Geological Survey of Canada, Paper 44-8 (with Y.O. Fortier).

Anorthosites in southeastern Ontario, Canada (1944); Bull. Geological Society of America, vol. 55, p.1401-1430.

Mikanagan Lake, Manitoba (1944); Geological Survey of Canada, Paper 44-22 (with J.D. Bateman).

Geology of the Mikanagan Lake map-area, Manitoba (1944); The Precambrian, vol. 17, no. 10, p. 4-7, 12.

Snow Lake, Manitoba (1945); Geological Survey of Canada, Paper 45-7.

Sherridon, Manitoba (1945); Geological Survey of Canada, Paper 45-15 (with J.D. Bateman).

Mikanagan Lake, Manitoba (1945); Geological Survey of Canada, Map 832A plus marginal notes (with J.D. Bateman).

Mineral occurrences in the Snow Lake map-area, Manitoba (1945); The Precambrian, April, 6 p.

Sherridon, Manitoba (1945); Geological Survey of Canada, Map 862A plus marginal notes (with J.D. Bateman).

Snow Lake and Nor-Acme mine area, Manitoba (1946); Geological Survey of Canada, Paper 46-9.

Morton Lake map-area, Manitoba (1946); Geological Survey of Canada, Paper 46-26.

Otter Rapids Showing, Pitt. Township, Ontario (1947); Geological Survey of Canada, special report G-70 (with Y.O. Fortier).

Kississing Lake, Manitoba (1948); Geological Survey of Canada, Paper 48-10.

Structural control of ore deposits in northern Manitoba (1948); in CIM structural geology of Canadian ore deposits, p. 284-291 (with C.H. Stockwell).

Flin Flon and Sherritt Gordon mines (1948); Congrès géologique international 18th Report, pt. 7, p. 47-69, (with T.L. Tanton).

Nor-Acme mine (1948); in Structural geology of Canadian ore deposits, CIM Symposium; p.304-306.

Kississing Lake, Manitoba (1949); Geological Survey of Canada, Map 970A, plus marginal notes.

Geology and mineral deposits of File-Tramping Lakes area, Manitoba (1949); Geological Survey of Canada, mem. 250, 92 p.

Structural features of the Canadian shield (1950); World oil, vol. 130, no.2, p.202-204, 206.

Precambrian correlation and nomenclature, and Kiseynew gneisses (1951), Geological Survey of Canada, Bull. 20, 53 p.

Possible major structural control of ore deposits, Flin Flon-Snow Lake mineral belt (1951); Trans. Canadian Inst. Min. and Met., vol. LIV, p.4-8.

Sipiwesk, Manitoba (1951); Geological Survey of Canada, Paper 51-3.

Prospecting in Quebec-Labrador Iron Fields (1952); Canadian Min. Journ., Oct., p.78-82.

Quebec-Labrador iron belt, Quebec and Newfoundland (1952); Geological Survey of Canada, Paper 52-20.

Iron formations of Ungava peninsula, Canada (1953); XIX Sess. Int'l. Geol. Cong., Comptes Rendus, vol. 10, p.19-33.

Ungava (Chubb) crater and glaciation (1954); Roy. Astron. Soc. Canada, vol. 48, no. 1, p.16-20.

Geological relations of Canadian deposits of iron ore (1955); in "Iron ore in Canada", Bull. Canadian Inst. Min. and Met., p.5-7.

Northwest Territories, its economic prospects (1955); brief presented to Royal Commission on Canada's economic prospects, 47 p. (with R.G. Robertson).

Prospecting for iron ore in Canada (1956); Canadian Min. Sour., vol. 77, no.5, p.64-66.

Proterozoic in Canada (1957) in "The Proterozoic of Canada"; Roy. Soc. Canada, Spec. Pub. No.2, p.3-9 (with K.E. Eade).

Canadian Shield Mainland (1957), in "Geol. & econ. minerals of Canada", Geological Survey of Canada, Econ. Geol. Ser. #1, 4th edit.

Oil and Gas development in Canada (1957); statistic of oil and gas development, vol. 11, p.526-537.

The Geological Survey of Canada (1960); Canadian Min. Jour., vol. 81, no.8, p.49-57.

History and work of the Geological Survey of Canada (1960); Canada Year Book, 7p.

Future role of the geologist in government surveys (1961); Trans. Cdn. Inst. Min. and Met., vol. LXIV, p.377-379.

Frontiers of geology (1961) Proc. Geol. Assoc. Canada, v.13, p.9-12.

Geological Survey of Canada and mineral exploration (1963), in "The role of national governments in exploration for mineral resources"; Princeton Univ., Littoral Press, p.37-50.

Nature and significance of geological maps (1963), in "Fabric of Geology", ed. C.C. Albritton; Geol. Soc. America, 75th Anniv. vol., p.225-232.

Canadian research in economic geology (1963); Econ. Geol., vol.58, p.622-624.

William Edmond Logan (1963); Geol. Assoc. Canada, vol. 15, p.33-42 (with E. Hall).

Geological Survey of Canada; its founder, William Logan set the pattern for research; (1964), in Geotimes, vol.9, no.3, p.9-11.

The new tempo of mineral resource exploration in Canada (1965); Mining in Canada, vol. 38, p.10-27.

Role of government in the future of geology (1965) Proc. of Inter-university Conf., Univ. of Sask., p.45-55.

Memorial to James Edwin Hawley (1966); American Mineral, vol. 51, p.563-568.

Geology of Canada (1966); Sixth Int'l. Conf. on Soil Mechanics and Foundation Engineering, Proc. p.98-103.

Research and mineral exploration (1967); Canadian Inst. Min. and Met., vol. 60, p.68-70, (with D.R.E. Whitmore).

Nature and organization of earth sciences in Canada (1968); in "The Earth Sciences in Canada", Roy. Soc. Canada, Spec. Pub. no. 11, p.3-12 (with D.c. Rose and R.J. Uffen).

Royal Society of Canada and research (1968); Roy. Soc. Canada, vol. VI, ser. iv, p.3-8.

Geological sciences in the world scientific community; 21st Sir William Smith Lecture; (1968); Quart. Jour. Geol. Soc. London, vol. 124, p.1-7.

Oil and gas potential in the Canadian Arctic (1969); in Arctic & Middle North Transportation, ed. B.F. Sater, p.96-98.

A geological cross-section of the Labrador mio-geosyncline near Schefferville, Quebec (1970); Geological Survey of Canada, Paper 70-37 (with W.F. Fahrig and J.E. Howell);

Memorial to John Fletcher Caley (1972); Proc. Roy. Soc. Canada, p.46-48.

Copernicus after 500 years (1973) speech for Unesco at Torun, Sept. (mss. lost, though published in Poland).

Perspectives for progress (1974) in "On a disquieting earth - 500 years after Copernicus", Roy. Soc. Canada, p.111-126.

Organization of European Geology: Present and Future (1975); in "Europe from Crust to Core"; edited by D.Y. Ager & M. Brooks; p.183-191.

Management of Canada's nuclear wastes (1977); Dept. Energy, Mines and Resources, rept. EP77-6, 63 p. (with A.M. Aikin and F.K. Hare).

The roots of IUGS (1978); Episodes, no.1, p.20-23.

Western Canada's coal - the sleeping giant (1980); Canada West Foundation, Calgary, 207 p. (with R.A.D. Beck, I. Mackay, T.H.Patching).

Proposed international networks for cooperation in northern science (1981); in "Renewable resources and the economy of the north", p.239-248 (with E. Carter).

Review of R&D on disposal of high-level radioactive wastes (1983); Int'l. Council Scientific Unions, Paris, 42p.

Disposal of highly radioactive wastes: a report to ICSU (1984); Episodes, vol. 7, no. 2, p.20-25.

Disposal of Radioactive Wastes (1984); Science, vol. 226, no. 4670, p.11-14.

Research Needs of Hazardous Waste (1988); in Hazardous Waste; the Detection Control and Treatment; edited by R. Abbou, Elsevier, Amsterdam, P.1-13.

Memorial to A.W. Jolliffe, Roy. Soc. Canada (in press).

Memorial to M.H. Haycock, (1989), Arctic, vol. (in press).

In addition, some dozens of reports have been presented as a result of consulting activities.

GSCHHS-Book

DIGBY J. McLAREN, O.C., F.R.S.C.

James Merritt Harrison
1915 - 1990



TRANSACTIONS OF THE ROYAL SOCIETY OF CANADA / SERIES VI / VOLUME I / 1990

JAMES MERRITT HARRISON suffered a bicycle accident on 18 April 1990 and remained in a coma until he died on 6 July 1990. Jim Harrison had a long and successful career as a scientist and as an influential manager and policy-maker both nationally and internationally. He was one of those rare people who appeared at the right time in the right place. He was a natural leader, reacting to challenge apparently effortlessly, decisive, intelligent, confident and humane. He possessed an inner strength that never failed him. His life was shaped and influenced by his links to the Geological Survey of Canada and he served it well.

He took a B.Sc. at the University of Manitoba in 1935, and a M.A. in 1941 and a Ph.D. in 1943 from Queen's University. In the same year he joined the permanent staff of the Geological Survey. A competent "hard-rock" geologist, he produced authoritative reports on mineral-bearing regions of the Canadian Shield in Manitoba, and subsequently became an authority on the banded iron ore formations in Labrador. His work was central to the exploration and subsequent development of the rich ores in that region. His competence gave him the necessary authority as a manager when, in 1956, at the age of 41, he was appointed Director of the Geological Survey. It would be hard to exaggerate the importance of his appointment at that time. Hume, Bell and Hansen, the previous three Directors, had recognized the need for innovative approaches in dealing with the revolution in post-war geology. Harrison accepted this challenge, and as Director for eight years, with Cliff Lord as Chief Geologist, he consolidated and extended processes already begun. These challenges included: the need to map the "third side" of the continent (the whole of the Canadian Arctic); to study the geology of the continental shelves and slopes; to extend and develop techniques of large airborne field operations; to increase research and applications of geochemistry and geophysics, including geophysical instrumentation; development and exploitation of new techniques in age determination; and improved data processing.

When Yves Fortier became Director in 1964, Harrison was able to continue his remodelling and expansion of the Earth Sciences from the position of Assistant Deputy Minister in the Department of Mines and Technical Surveys. Here he was able to exercise his skills, which developed rapidly, in dealing with senior bureaucrats and politicians. Through his activities, the role of the Geological Survey was understood by the public and by politicians better than ever before. Because good science was performed, it was recognized that geology requires a deep theoretical basis if it is to be also an important applied science. Support from government and from the petroleum and mining industries grew, and the Survey enjoyed one of the most successful periods in its history.

During the sixteen years that Harrison was a manager, within the Canadian Department of Mines and Technical Surveys that evolved during that period into Energy Mines and Resources, the Geological Survey more than doubled its staff, greatly increased its budget, moved to its new headquarters on Booth Street in 1959, and further decentralized many of its activities across the country, with divisions in Vancouver/Victoria, Calgary and Halifax. The

of Science, U.S.A. (1965), and he was President of The Royal Society of Canada (1967-68). Of many medals one should mention: the R.C. Wallace Medal, University of Manitoba; the Achievement Award of the Public Service of Canada; the Logan Medal of the Geological Association of Canada; the Blaylock Medal of the Canadian Institute of Mining and Metallurgy; and the Kemp Gold Medal, Columbia University.

On 5 May 1944 Jim Harrison married Herta Sliter, and they were close to celebrating their fiftieth anniversary when he died. Herta was a source of strength and encouragement throughout his career, and took a particular interest in the Geological Survey staff. She was very active in the Geologists Wife's Club of the Survey and did much to engender the *esprit de corps* and morale of the organization. She continued her interest long after he had moved to other responsibilities. Our sympathy goes out to Herta and to stepson Norman and his wife Bette, their children and grandchildren.

Jim Harrison was a close personal friend, and will be sorely missed by many of us. To meet and talk with him was always a pleasure. He was warm, friendly and liked to laugh. Underlying the surface, however, was a steely determination to do what was right and what was needed. He would ask advice and debate issues, but he made the decisions. He loved controversy and accepted the fact that many of the best scientists are not easy to get along with. When necessary he could be hard. He has left a memorial behind which extends across the world and involves all classes and kinds of human beings. We mourn his loss, but we are glad he lived; he enriched the world he knew and loved.

Jim Harrison was planning to attend the CIM Past Presidents Dinner at the Annual General Meeting in Ottawa last May, but an unfortunate cycling accident left him in a deep coma from which he never recovered. He passed away at the Ottawa Civic Hospital on Friday, July 6, at the age of 74. He was still pursuing an active career at the time of his accident, and his sudden loss is a tremendous blow to the mineral and scientific communities.

James Merritt Harrison was born in Regina in 1915. He received a B.Sc. degree from the University of Manitoba in 1935. Following two field seasons as an assistant on field parties of the Geological Survey of Canada and two years as a chemist, he returned to the University of Manitoba for graduate work, specializing in geology. He transferred to Queen's University and obtained his M.A. degree in 1941 and his Ph.D. in 1943. The course of his productive career led to numerous additional academic awards, including honorary doctorate degrees from the University of Manitoba (1965), Queen's University (1967), McMaster University (1967), University of Calgary (1967), University of New Brunswick (1971), and Carleton University (1976).

Immediately following completion of his studies at Queen's, he joined the Geological Survey of Canada as a field geologist, and carried out investigations in various parts of the Precambrian Shield, mainly in northern Manitoba before 1949, and afterward in the iron ranges of Labrador, which were just coming under development. His talents were quickly recognized, and he became chief of the Precambrian Division in 1955 and director in 1956. During this period, he led the Survey into new scientific fields and it enjoyed one of its most successful periods. In 1964 he was appointed Assistant Deputy Minister (Research) in the Department of Mines and Technical Surveys, assuming responsibility for the scientific activities of the entire department. Later his title was changed to Assistant Deputy Minister (Mines and Geosciences) in the new Department of Energy, Mines and Resources. In 1972 he was named Senior Assistant Deputy Minister.

While playing a major management and science policy role in the federal public service, Jim Harrison extended his intellectual and personal talents to the benefit of many national and international bodies. He was president of the Geological Association of Canada (1960-61); regional vice-president, Society of Economic Geologists (1962); first president of the International Union of Geological Sciences (1961-64); president of the International Council of Scientific Unions (1966-68); and **President of The Canadian Institute of Mining and Metallurgy (1969-70)**. He had a long and valuable record of service to the Institute as Chairman of the Ottawa Branch, General Chairman of the 1952 Annual General Meeting in Ottawa, Vice-President of District 3, 1959-60, President, 1969-70 and Honorary Chairman of the 1984 AGM.

Jim Harrison se proposait d'assister au dîner des anciens présidents lors du congrès annuel de l'ICM à Ottawa en mai dernier lorsqu'un malheureux accident de bicyclette le plongea dans un profond coma dont il ne se remit jamais. Il mourut à l'Hôpital Civic d'Ottawa le vendredi, 6 juillet, à l'âge de 74 ans. Il était encore actif dans sa profession au moment de son accident et sa perte soudaine sera vivement ressentie dans le monde des sciences et par la fraternité minière.

James Merritt Harrison naquit à Régina en 1915 et obtint son diplôme de B.Sc. de University of Manitoba en 1935. Après deux saisons sur le terrain comme assistant sur des équipes de la Commission géologique du Canada et deux autres années comme chimiste, il retourna à University of Manitoba pour y poursuivre des études de cycles supérieurs avec spécialité en géologie. Il passa ensuite à Queen's University où il reçut ses diplômes de M.A. en 1941 et de Ph.D. en 1943. Sa féconde carrière fut marquée de nombreuses distinctions académiques additionnelles, entre autres des doctorats honorifiques de University of Manitoba en 1965, de Queen's University en 1967, de McMaster University en 1967, de University of Calgary en 1967 et de Carleton University en 1976.

Dès la fin de ses études à Queen's, il entra à la Commission géologique du Canada comme géologue de terrain et effectua des recherches dans diverses parties du bouclier canadien, surtout dans le nord du Manitoba avant 1949 et par la suite dans les gisements de fer du Labrador dont la mise en valeur venait de commencer. Ses talents ne tardèrent pas à être appréciés et il devint chef de la division du Précambrien en 1955 et directeur en 1956. Sous sa direction, la Commission s'engagea alors dans des domaines scientifiques nouveaux et connut l'une de ses plus remarquables périodes. En 1964, il fut nommé Sous-ministre adjoint (Recherche) au ministère des Mines et Relevés techniques et devint responsable de toutes les activités scientifiques du ministère. Son titre fut plus tard changé à celui de Sous-ministre adjoint (Mines et Sciences de la terre) au nouveau ministère de l'Énergie, des Mines et des Ressources. En 1972 on le nomma Sous-ministre adjoint principal.

Tout en jouant un rôle de premier plan dans la direction et l'orientation scientifique de la fonction publique du Canada, Jim Harrison fit bénéficier de ses talents intellectuels et personnels plusieurs organismes nationaux et internationaux. Il fut président de l'Association géologique du Canada (1960-61), vice-président régional de la Society of Economic Geologists (1962), premier président de l'Union internationale des sciences géologiques (1961-64), président du Conseil international des Unions scientifiques (1966-68) et **président de l'Institut canadien des mines et de la métallurgie (1969-70)**. Durant ses longues et précieuses années de service à l'Institut, il fut tour-à-tour président de la section Ottawa, président du congrès annuel de 1952 à Ottawa, vice-président du district 3 en 1959-60, président

James Merritt Harrison



1915-1990

Jim's contributions as a scientist, public servant and a born leader were recognized on many occasions, not only by the honorary degrees mentioned previously. He received the Kemp Memorial Gold Medal from Columbia University for "outstanding contributions to geological science in the field of public service" (1963); he was elected a Foreign Associate of the U.S. National Academy of Sciences (1965); elected an Honorary Fellow of the Geological Society of London (1965); received the Gold Medal of the Professional Institute of the Public Service of Canada (1966); awarded the Blaylock Medal of The Canadian Institute of Mining and Metallurgy (1966); received the Logan Medal of the Geological Association of Canada (1969); received the Outstanding Achievement Award of the Federal Public Service (1970); and, in 1971, he was named a Companion of the Order of Canada.

Leaving the Canada Department of Energy, Mines and Resources in 1973, Jim Harrison went on to 'service of the world'. From 1973 to 1976, he created training programs and promoted science, particularly in developing countries, while Assistant Director General for Science and Technology for UNESCO (United Nations Educational, Scientific and Cultural Organization) in Paris. Returning to Ottawa in 1976 as a consultant in natural resources and science policy, he advised an array of international institutions and foreign governments, travelling to over thirty countries. He continued to further the ideals and activities of UNESCO through membership and chairmanship (1985-88) of the Canadian Commission for UNESCO.

Jim Harrison had developed a deep knowledge and understanding of Canada's north, and he continued to use his global knowledge and people skills to benefit the northern people. He was a member of the Science Advisory Board of the Northwest Territories from early 1981 and its chairman from 1982. He guided the Advisory Board through its incorporation as the Science Institute in 1985, and continued as its chairman until early 1989. During this period he was awarded the R.C. Wallace Medal of the University of Manitoba (1987) and he was Montgomery Fellow at Dartmouth College, New Hampshire (1988).

He published 65 scientific and technical papers which constitute the formal record of his research, ranging from earlier petrologic and geological works to issues of science policy.

Jim married Herta Roehmer Sliter in 1944; they had one stepson Norman Sliter, two grandchildren and four great-grandchildren.

Jim Harrison was a truly remarkable person. His scientific and leadership skills, his integrity, his vision, and his warmth and desire to help others, took him to the national and then the international stage. There he earned the love and respect of people around the world, who will be forever grateful for his accomplishments.

Charles H. Smith, September, 1990

en 1969-70 et président honoraire du congrès annuel de 1984.

Les réalisations de Jim Harrison, homme de science, fonctionnaire et leader-né, lui valurent de nombreuses distinctions en plus des doctorats honorifiques mentionnés précédemment. En 1963, il reçut la médaille d'or commémorative Kemp de l'University of Columbia pour «contribution exceptionnelle aux sciences géologiques dans le domaine de la fonction publique»; en 1965, il fut élu associé pour l'étranger de la U.S. National Academy of Sciences et membre titulaire honoraire de la Geological Society of London; en 1966 on lui décerna la médaille d'or de l'Institut professionnel de la fonction publique du Canada et la médaille Blaylock de l'Institut canadien des mines et de la métallurgie; en 1969, il reçut la médaille Logan de l'Association géologique du Canada et, en 1970, le prix pour services insignes octroyé par la fonction publique du Canada. Enfin, en 1971, on le nomma Compagnon de l'Ordre du Canada.

Après son départ en 1973 du ministère de l'Energie, des Mines et des Ressources du Canada, Jim Harrison poursuivit sa carrière sur une base internationale. De 1973 à 1976, il s'occupa de création de programmes d'enseignement et de l'avancement des sciences, en particulier dans les pays en voie de développement; il séjournait alors à Paris comme directeur général adjoint pour les sciences et la technologie pour l'UNESCO (Organisation des Nations Unies pour l'éducation, la science et la culture). De retour à Ottawa en 1976, à titre de consultant dans le domaine des sciences et des ressources naturelles, il agit comme conseiller pour un grand nombre d'organismes internationaux et de gouvernements étrangers, ce qui l'amena à voyager dans plus de 30 pays. Il continua plus tard à promouvoir les idéals et les activités des l'UNESCO en devenant membre et président (1985-88) de la Commission canadienne pour l'UNESCO.

Jim Harrison avait acquis une connaissance approfondie et une grande compréhension du Nord canadien et il continua d'utiliser son expérience à l'échelle mondiale et les talents de ses collaborateurs au bénéfice des résidents du Nord. Il faisait partie du Conseil consultatif scientifique des Territoires du Nord-Ouest dont il devint membre au début de 1981 et président à partir de 1982. Il dirigea le Conseil consultatif depuis sa constitution en 1985 sous le nom d'Institut des sciences et en demeura le président jusqu'au début de 1989. Durant cette période il se vit attribuer la médaille R.C. Wallace de University of Manitoba (1987) et fut nommé Montgomery Fellow au Dartmouth College, New Hampshire (1988).

Il publia 65 articles scientifiques et techniques qui constituent le dossier officiel de ses recherches, depuis ses premiers travaux de pétrologie et de géologie jusqu'aux questions de politique générale en matière de sciences.

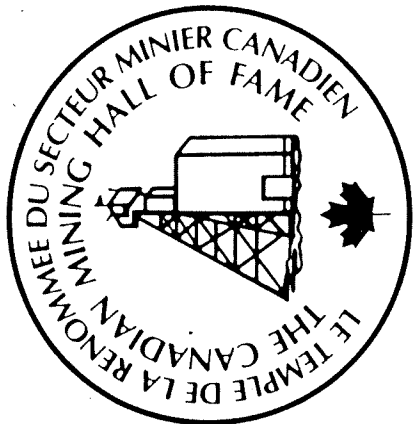
Il épousa Herta Roehmer Sliter en 1944 et ils eurent un beau-fils, Norman Sliter, deux petits-enfants et quatre arrière-petits-enfants.

Jim Harrison fut vraiment une personne remarquable. Ses talents d'homme de science et de leader, son intégrité, sa vision, sa chaleur humaine et son désir d'aider les autres en ont d'abord fait une personnalité nationale et l'ont ensuite amené sur la scène internationale où, dans tous les pays, il s'est gagné l'amitié et le respect de gens qui se rappelleront toujours ses oeuvres avec un sentiment de reconnaissance.

Charles H. Smith, septembre 1990

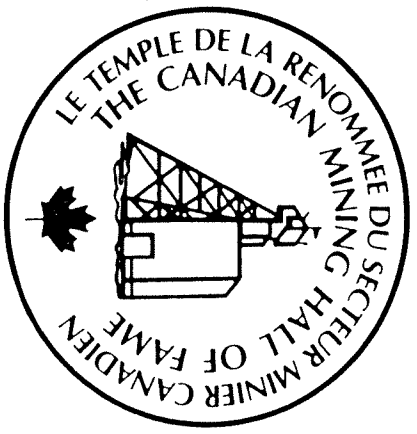
CANADIAN MINING HALL OF FAME

ACHIEVEMENTS OF THE INDUCTEES
INTO THE MINING HALL OF FAME
JANUARY 2001



LE TEMPLE DE LA RENOMMÉE DU SECTEUR MINIER CANADIEN

LES RÉALISATIONS DES PERSONNES INTRONISÉES
AU TEMPLE DE LA RENOMMÉE DU SECTEUR
MINIER — JANVIER 2001



James Merritt Harrison

(1915-1990)



Like Sir William Logan before him, James Merritt Harrison was the right man in the right place at the right time. During his 17-year tenure with the Geological Survey of Canada (GSC), the scientific organization enjoyed one of the most successful periods of its venerable history. When he became director in 1956, the GSC was ready for a major, post-war expansion and elevation of its mapping and research facilities. Owing to strong demand for its services, the GSC more than doubled its staff, greatly increased its budget, moved to new headquarters in 1959 and decentralized to new divisions across the country. A variety of new challenges were met, including mapping the Canadian Arctic, studying the huge continental shelves and slopes, and increasing research and applications in the newly developing fields of geochemistry and geophysics, to name but a few. These and other government programs, developed under his guidance,

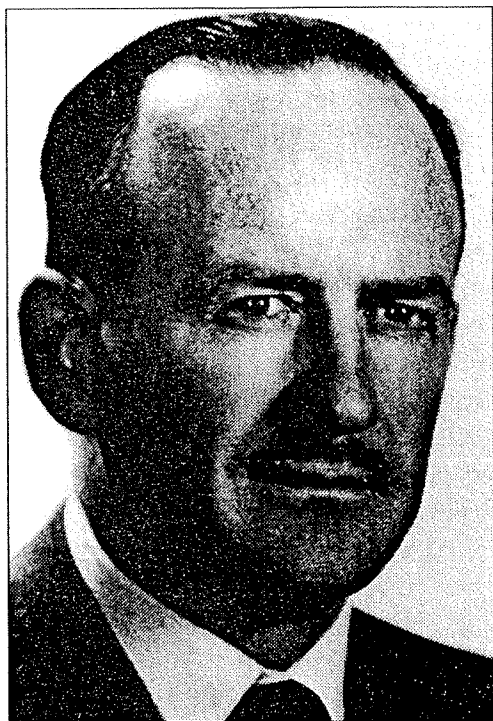
helped make Canada a world leader in mineral exploration and resource development.

Born in Regina, Saskatchewan, Harrison obtained his B.Sc. degree at the University of Manitoba in 1935. After transferring to Queen's University, he earned his M.A. in 1941 and Ph.D. in 1943. His early field work for the GSC produced authoritative reports on the mineral-bearing regions of the Canadian Shield and provided him with knowledge and experience that would stand him in good stead as he rose through the ranks to become director-general. Under his extraordinary leadership and direction, the GSC grew in stature, accomplishment and recognition to become one of the finest in the world. Harrison recognized the importance of the GSC to natural resource development and successfully gained the support and trust of industry through the use of advisory committees and his extensive range of personal contacts. His top priority was service to the prospecting community. He directed, guided and encouraged the use of new technology and geological concepts that would yield benefits to prospecting. Some examples are the commissioning of airborne magnetic and radiometric surveys and ground geochemical surveys. Later, as a senior officer with the federal government department that is now Natural Resources Canada, he became a respected spokesman on mineral industry issues.

In 1973, Harrison joined the United Nations Educational, Scientific and Cultural Organization in Paris as assistant director for science and technology, in which capacity he was responsible for teaching programs, mainly in developing countries. He returned to Canada in 1976 to spend his remaining years as a general consultant — work that took him to more than 20 countries. He published 65 scientific and technical papers and was awarded many honours during his career.

James Merritt Harrison

(1915-1990)



Comme Sir William Logan, James Merritt Harrison fut l'homme qu'il fallait, au bon endroit et au bon moment. Durant sa carrière de 17 ans auprès de la Commission géologique du Canada (CGC), l'organisme scientifique connut une des périodes les plus illustres de son histoire. Lorsqu'il en devint directeur, en 1956, la CGC était prête à amorcer un virage important qui allait mener à l'expansion de ses services de cartographie et de recherche. Devant l'intensification de la demande de services, la CGC fit plus que doubler son effectif, accrut considérablement son budget et, en 1959, déménagea son siège social et décentralisa ses opérations dans de nouvelles divisions partout au pays. De nombreux défis furent relevés : on cartographia l'Arctique canadien, on étudia le vaste plateau continental, et on accrut la recherche et les applications novatrices, notamment dans les domaines de la géochimie et de la géophysique. Les programmes gouvernementaux éla-

borés sous ses directives aidèrent à faire du Canada un chef de file mondial de l'exploration minérale et de la mise en valeur des minéraux .

Né à Regina, en Saskatchewan, M. Harrison obtint son B.Sc. à l'Université du Manitoba en 1935. Il s'inscrivit ensuite à l'Université Queen's où il obtint sa M.A. en 1941 et son Ph.D. en 1943. Ses premiers travaux sur le terrain pour le compte de la CGC donnèrent lieu à des rapports décisifs sur les régions minéralisées du Bouclier canadien, lui procurant les connaissances et l'expérience qui lui permirent de gravir les échelons de la Commission et d'en devenir le directeur général. Sous sa direction, la CGC connut une expansion fantastique, réalisa des projets remarquables et se fit reconnaître dans le monde entier. M. Harrison vit toute l'importance du rôle de la CGC dans la mise en valeur des ressources naturelles et gagna la confiance et l'appui de l'industrie en formant des comités consultatifs et en se tournant vers ses nombreuses connaissances personnelles. Sa priorité consistait à soutenir le secteur de la prospection. Il dirigea, guida et encouragea l'utilisation de nouvelles technologies et de nouveaux concepts géologiques qui allaient favoriser la prospection. Notamment, il mit en oeuvre des programmes de levés magnétiques et radiométriques aéroportés, et de levés géochimiques au sol. Plus tard, à titre de haut fonctionnaire au ministère maintenant connu sous le nom de Ressources naturelles Canada, il devint un porte-parole respecté, faisant autorité sur l'industrie des minéraux.

En 1973, M. Harrison se joignit à l'Organisation des Nations Unies pour l'éducation, la science et la culture, à Paris, en qualité de directeur adjoint des sciences et de la technologie, responsable de l'enseignement de programmes principalement dans les pays en voie de développement. Il revint au Canada en 1976 pour terminer sa carrière à titre d'expert-conseil général, un travail qui l'amena dans plus de 20 pays. Durant sa carrière, il publia 65 rapports scientifiques et techniques, et il se mérita de nombreuses mentions honorifiques.